

## 10-36. Body Extension Maintenance (M718A1 Ambulance) (Cont'd)

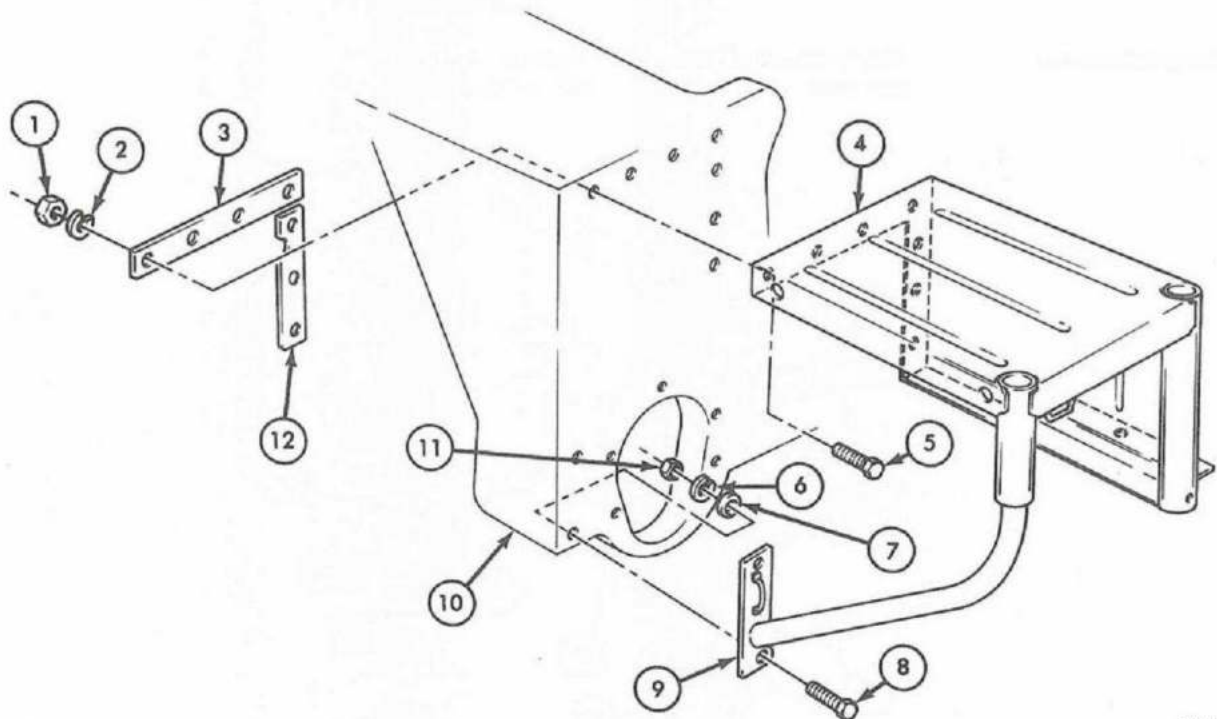
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. INSTALLATION

## NOTE

Assistant will support body extension while mechanic installs capscrews.

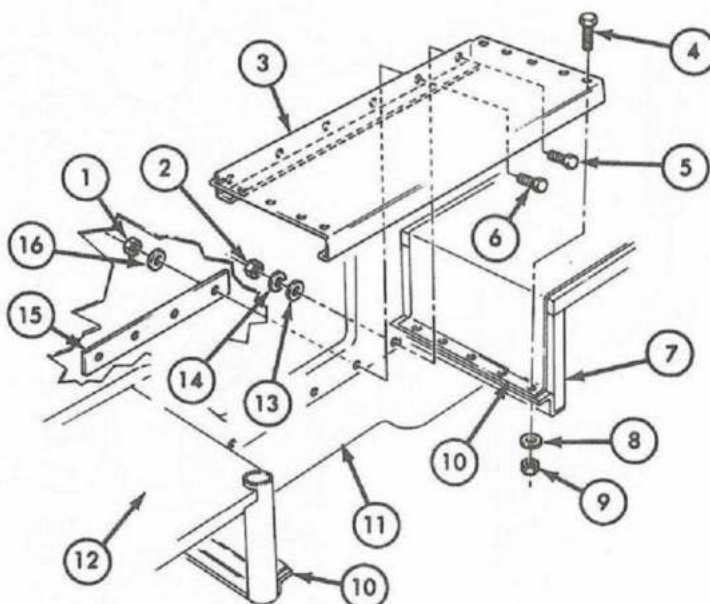
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|-----|--------------------------|--|---|
| 22. | Body extension (4)       | Secure to rear of vehicle (10) with seven capscrews (5), two reinforcement plates (3) and (12), seven lockwashers (2), and seven nuts (1). | Make sure tagged four-holed reinforcement plate (3) is installed on left extension (4).<br><br>Finger tighten only. |
| 23. | Body extension brace (9) | Secure to rear of vehicle (10) with two capscrews (8), flat washers (7), lockwashers (6), and nuts (11).                                   | Finger tighten only.  |
| 24. |                          | Repeat steps 22 and 23 for right extension installation.   |   |



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10-36. Body Extension Maintenance (M718A1 Ambulance) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
25.		Center body extension (3)	<p>a. Place on side extension flanges (10) and slide forward.</p> <p>b. Secure to rear of vehicle (11) with two capscrews (5), flat washers (13), lockwashers (14), and nuts (2), at left and right corners.</p> <p>c. Secure to center rear of vehicle (11) with four capscrews (6), one reinforcement plate (15), four lockwashers (16), and four nuts (1).</p> <p>d. Secure to left and right body extensions (12) and (7) with ten capscrews (4), lockwashers (8), and nuts (9).</p>	<p>Finger tighten only.</p> <p>Finger tighten only.</p> <p>Finger tighten only.</p>
26.	Body extensions	Thirty-six capscrews and nuts	Tighten 17-21 lb-ft (23-30 N•m).	

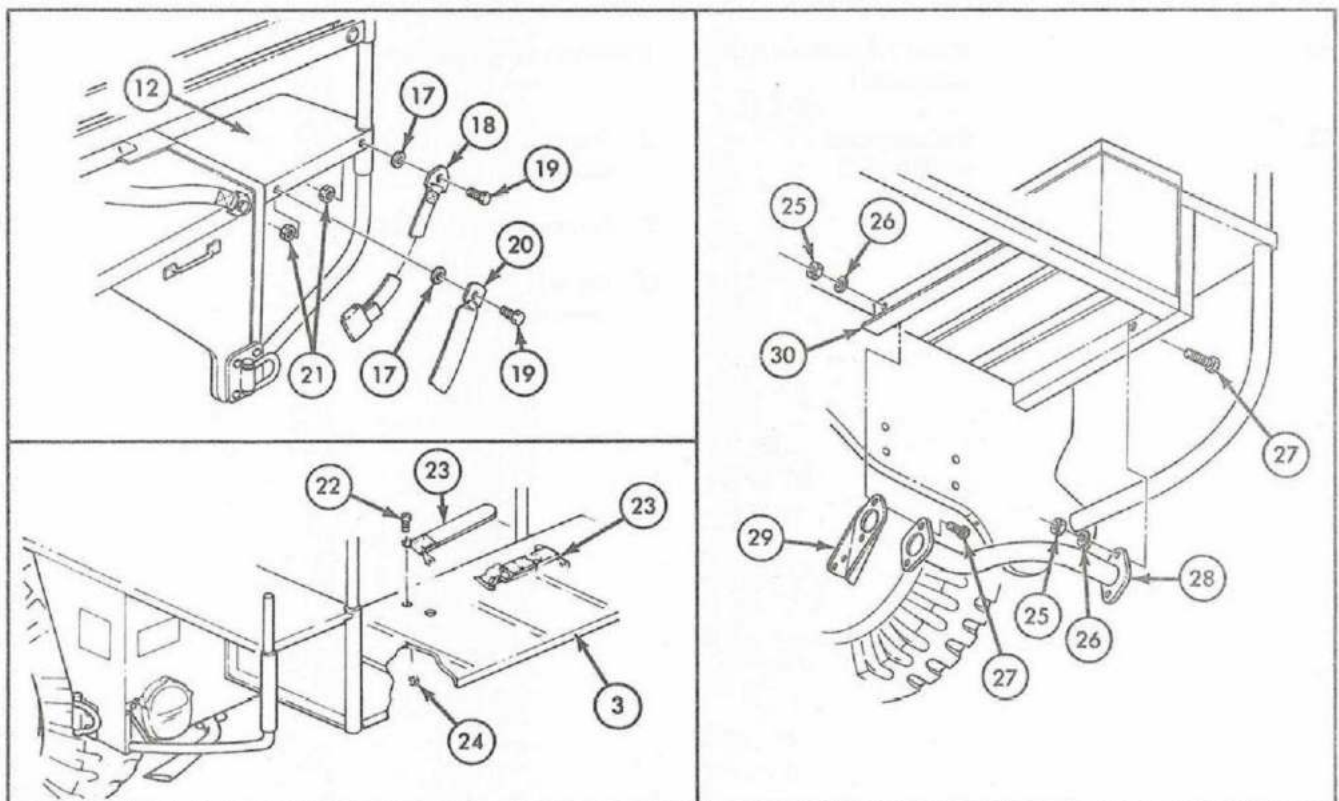


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## 10-36. Body Extension Maintenance (M718A1 Ambulance) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
27.		Two left body extension seatbelt anchors (18) and (20)	<p>a. Secure to left body extension (12) with two capscrews (19), flat washers (17), and nuts (21).</p> <p>b. Aline to normal sitting position, and tighten 30-40 lb-ft (41-54 N·m).</p>	<p>Buckle end anchor (18) is at rear, flatwashers are between anchors (18) and (20), and left body extension (12).</p> <p>Finger tighten only.</p>
28.		Two footman loops and belts (23)	Secure to center body extension (3) with four screws (22) and locknuts (24).	
29.		Tailpipe extension (28) and support (29)	Secure to underside of center body extension (30) with two capscrews (27), lockwashers (26), and nuts (25).	



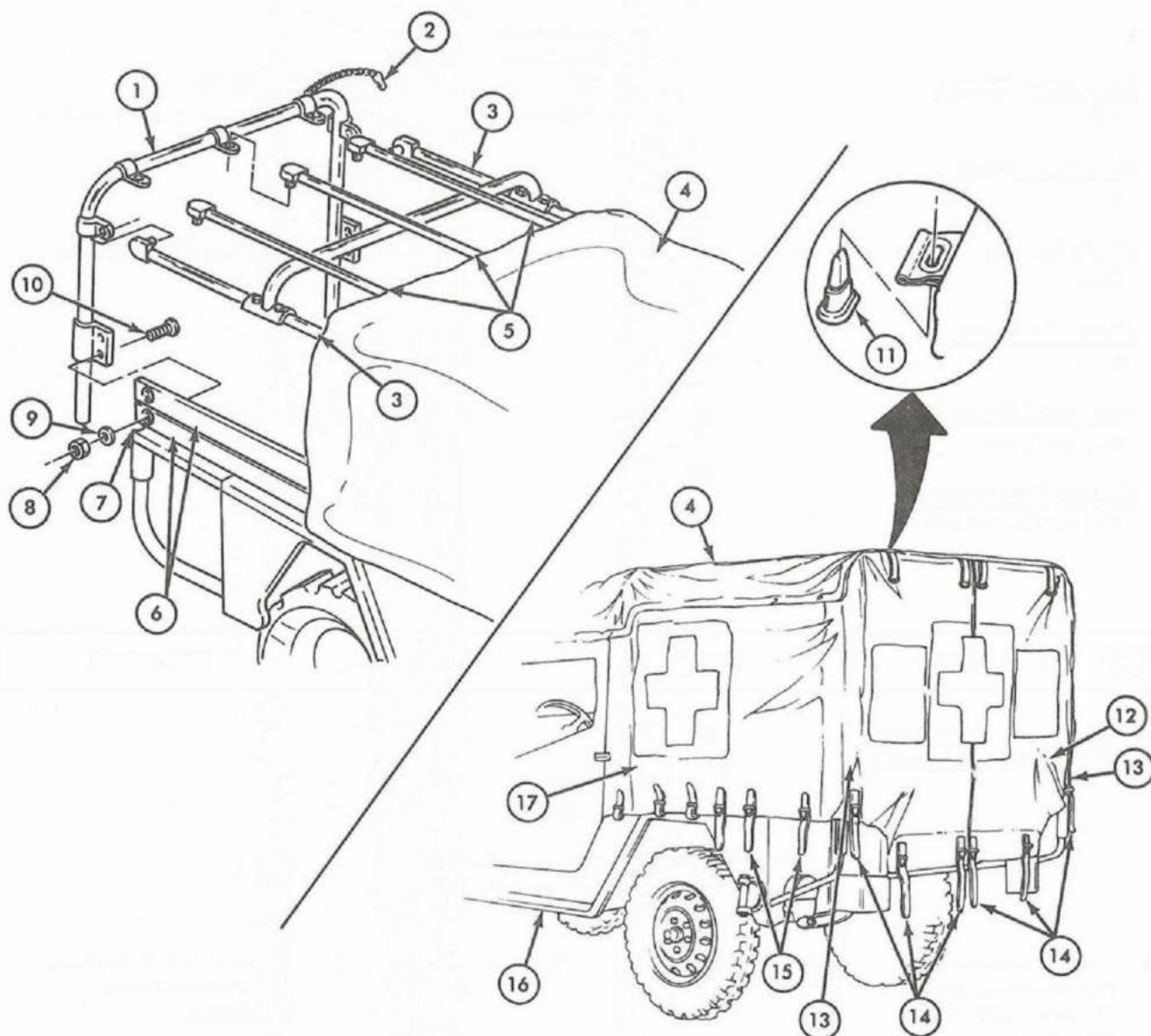
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## 10-36. Body Extension Maintenance (M718A1 Ambulance) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
30.		Soft-top rear bow (1)	Place in left and right body extension holders (7).	
31.		Three top supports (5) and two side supports (3)	Install in rear bow (1) and secure with five ring and chain retainers (2).	
32.		Four seat back supports (6)	Secure to rear bow (1) with four carriage bolts (10), flat washers (9), and locknuts (8).	
33.		Soft-top curtain (4)	Pull rearward leaving rear curtain (12) on top.	
34.		Two soft-top side curtains (17)	Secure around side supports (3) with four turn button fasteners (11) each.	
35.		Sixteen side and top curtain turn button fasteners (11)	Fasten around rear bow (1).	
36.		Three left side curtain straps (15)	Fasten to vehicle (16).	
37.		Soft-top rear curtain (12)	<ol style="list-style-type: none"> <li>Flip down off of top curtain (4).</li> <li>Fasten six straps (14).</li> <li>Zip left and right corners (13).</li> </ol>	

## 10-36. Body Extension Maintenance (M718A1 Ambulance) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Install spare wheel mounting support (para 10-35).
  - Install rear composite light assemblies (para 5-42).
  - Install left rear litter rail support (TM 9-2320-218-10).

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**10-37. Fuel Can Mounting Bracket and Holddown Strap Maintenance**

This task covers:

*a. Removal (M151A2)**b. Removal (M825 AND M718A1)**c. Installation (M151A2)**d. Installation (M825 AND M718A1)***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Fuel can removed from storage bracket.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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***a. REMOVAL (M151A2)*****NOTE**

M151A2 utility truck fuel can rests on left rear bumperette, and has no mounting bracket assembly.

1.	Three holddown strap footman loops (1) and (5) to left rear of vehicle (6)	Six screws (2) and four nuts (7)	Remove.	Top strap footman loop (1) is secured with weld nuts.
2.		Holddown straps (3) and (4), and footman loops (1) and (5)	Remove from vehicle (6).	



## 10-37. Fuel Can Mounting Bracket and Holddown Strap Maintenance (Cont'd)

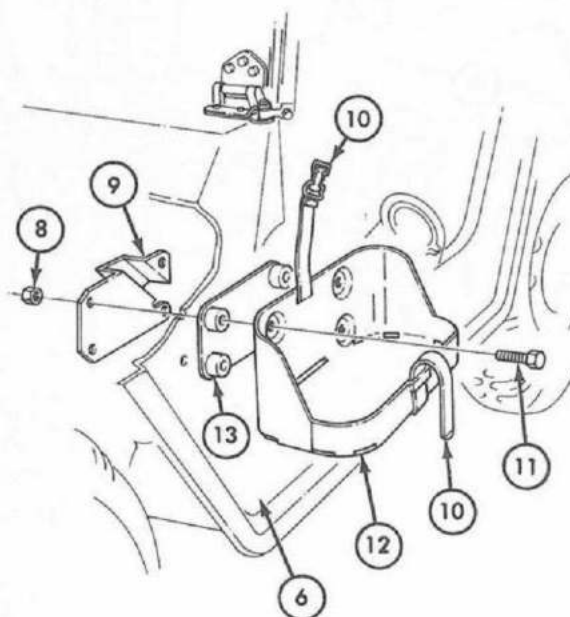
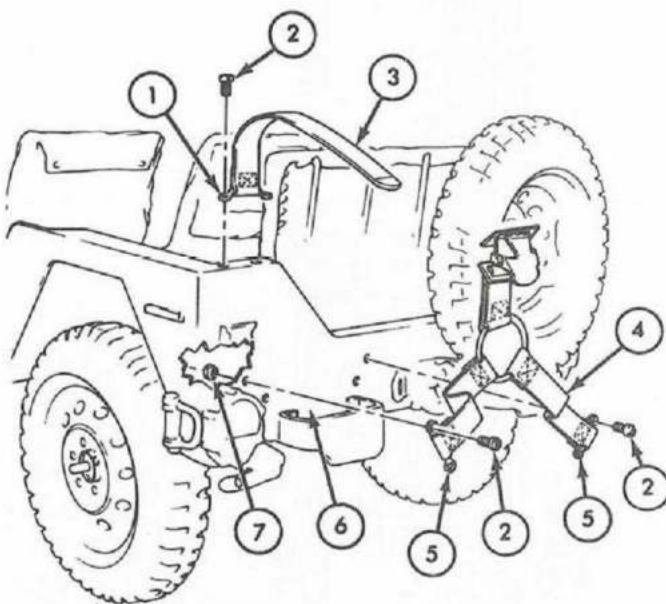
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. REMOVAL (M825 AND M718A1)

## NOTE

- M718A1 utility truck fuel can mounting bracket and holddown strap removal procedure is identical to M825 ambulance except that they mount on opposite sides of vehicle.
- The holddown strap (10) and mounting bracket (12) are supplied as an assembly.

- |    |   |   |                          |
|----|---|---|--------------------------|
| 3. | Mounting bracket assembly (12) to forward side of vehicle (6) | Four nuts (8), one reinforcement plate (9) and plate assembly (13), and four capscrews (11) | Remove.                  |
| 4. | Mounting bracket assembly (12)                                |   | Remove from vehicle (6). |



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## 10-37. Fuel Can Mounting Bracket and Holddown Strap Maintenance (Cont'd)

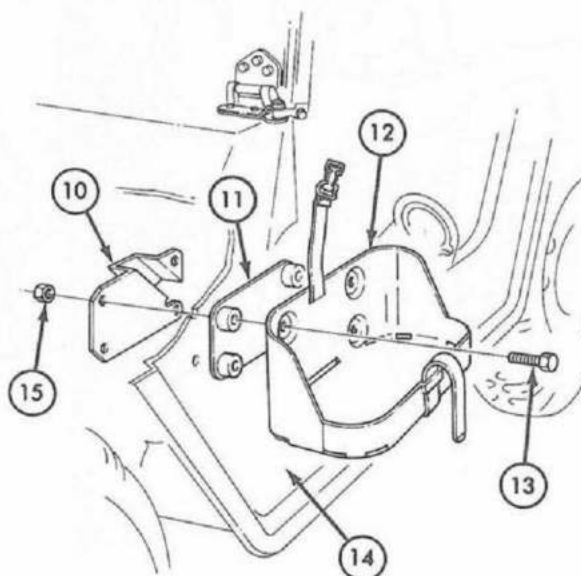
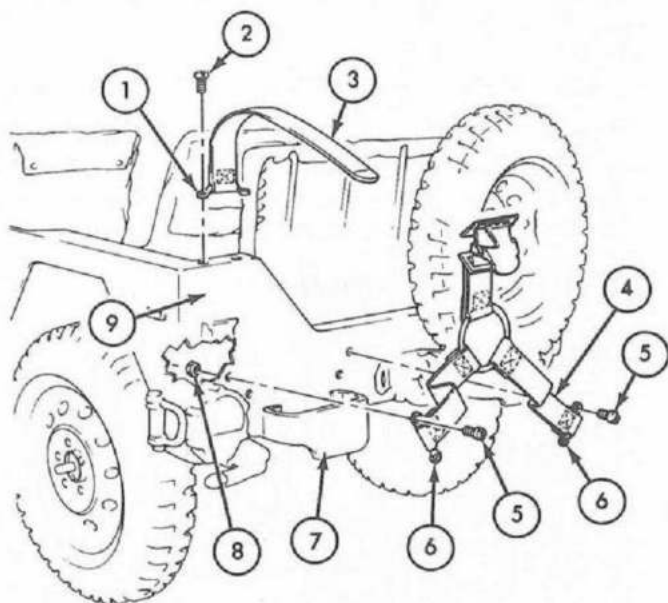
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*c. INSTALLATION (M151A2)*

- |    |   |   |
|----|---|---|
| 5. | Footman loop (1) and upper strap (3)      | Secure to top of rear cross sill (9) with two capscrews (2).                                  |
| 6. | Two footman loops (6) and lower strap (4) | Secure to rear cross sill (9) above left bumperette (7) with four capscrews (5) and nuts (8). |

*d. INSTALLATION (M825 AND M718A1)*

- |    |  |  |
|----|--|--|
| 7. | Mounting bracket assembly (12) and plate assembly (11) | Secure to forward side of vehicle (14) with four capscrews (13), one reinforcement plate (10), and four nuts (15). |
|----|--|--|



END OF TASK!

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## CHAPTER 11 SPECIAL PURPOSE KITS MAINTENANCE

### 11-1. Overview

*a.* This chapter provides maintenance information for special purpose kits. Components covered can be found in one of the following sections:

- Section I. Winterization Kit -65°F (-54°C) Maintenance (page 11-1)
- Section II. Hot Water Heater Kit -25°F (-32°C) Maintenance (page 11-80)
- Section III. Hardtop Kit Maintenance (page 11-114)
- Section IV. Deep Water Fording Kit Maintenance (page 11-149)
- Section V. 100-Ampere Alternator Kit Maintenance (page 11-172).
- Section VI. 180-Ampere Battery Charging System Maintenance (page 11-200)
- Section VII. M16/14 Rifle Mount Kit Maintenance for Soft and Hardtop Vehicles (page 11-201)
- Section VIII. Door and Side Curtain, M4 Gun Mount Pedestal, Decontamination, and Rear Suspension Spring Kits Maintenance (page 11-212).

*b.* Each section is preceded by a list that provides a breakdown of the procedures covered in that section, and provides a paragraph and page number leading you to each task.

*c.* Organizational level maintenance procedures for special purpose kits and a description of major units involved are covered in this chapter.

*d.* Before a special purpose kit can be authorized for use, the requirements as defined in the appropriate supply bulletin must be met. For example, SB 9-16 covers requirements for a winterization kit, as defined by climate, geographical location, etc.

*e.* Approval must be obtained from the Army Command representative if it is necessary to go beyond the maintenance functions covered in appendix B to service a kit.

### Section I. WINTERIZATION KIT -65°F (-54°C) MAINTENANCE

#### 11-2. General

This section provides maintenance procedures assigned to the organizational level for winterization kits -65°F (-54°C). To find a specific maintenance procedure, see the maintenance task summary.



### 11-3. Service Upon Receipt of Material

- a. Use the procedure described on the dash panel instruction decal to start the heater.

#### **CAUTION**

Do not operate the heater with all dampers closed (2), (3), and (4).

- b. Snap control switch to HI position.
- c. Check operation of battery compartment damper actuator. With a temperature of approximately 100°F (38°C) in the battery compartment, the actuator should close the damper. When the temperature in the battery box drops to about 70°F (21°C), the actuator should open the damper and permit heated air to again flow to the batteries. Perform test by removing battery compartment and battery box covers after the damper door has closed. This will allow the thermostat to cool more rapidly and cause the actuator to open the damper. If the damper opens when it should close, reverse the thermostat lead wire connections at the terminal strip of the actuator. Repeat test.
- d. Pull exhaust diverter T-handle (3) up. Check for heat at the engine oil pan shroud.
- e. Push exhaust diverter T-handle (3) down. Check for exhaust gas and smoke from heater exhaust pipe. Heavy smoke indicates a malfunctioning heater.
- f. Position diverter box damper control handle (2) toward the exhaust diverter T-handle (3). This positions the damper for maximum air to defroster heater.
- g. Position defroster diverter control handle (4) to ON. Check for hot air output from both defroster nozzles.
- h. Snap heat control switch (1) to LO position. Check for cooler air leaving the heater. Blower speed should remain constant for both the HI and the LO positions of the control switch since switch controls heat output, not blower speed.
- i. Snap start switch (5) to OFF position. Indicator lamp (8) and blower must remain on for several minutes until heater has cooled.

Table 11-1. Heater Control Box Function

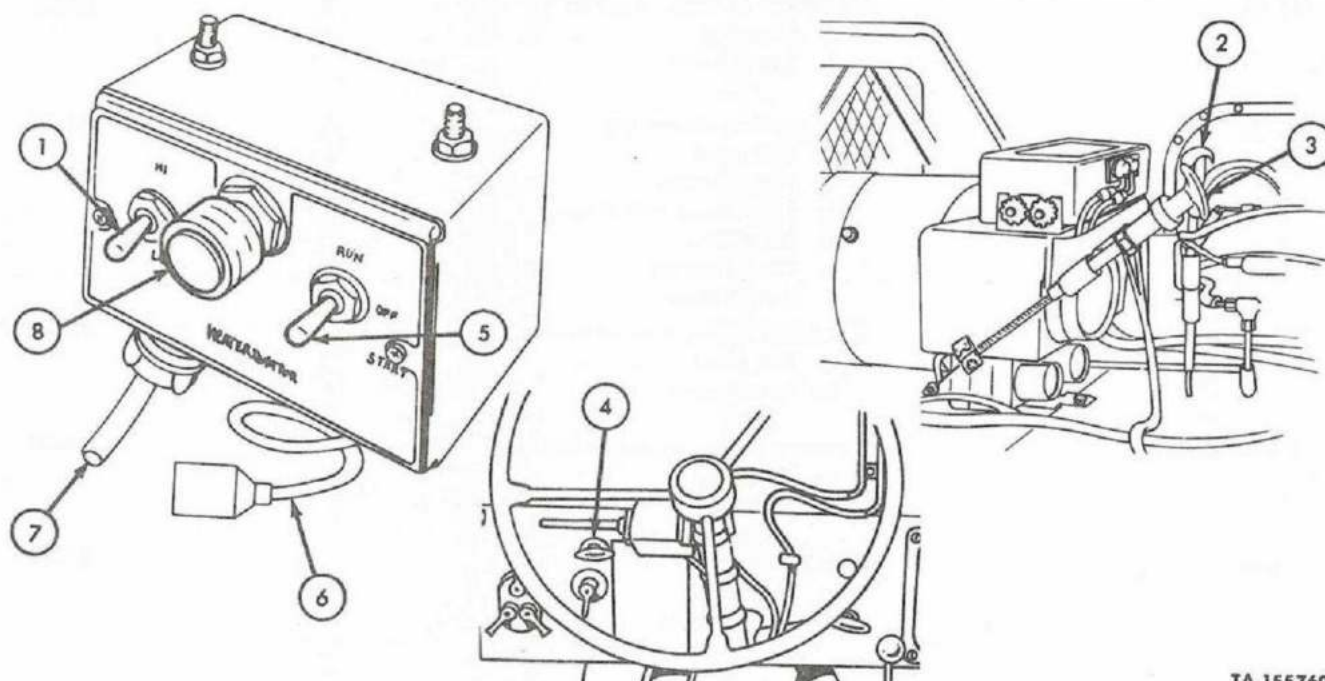
CONTROL OR INDICATOR	DESCRIPTION	FUNCTION
HI or LO position	Heat control switch (1)	Determines amount of heat produced by heater.
START position	Start switch (5)	Starts fuel flow and energizes igniter.
Amber ON	Indicator lamp (8)	Indicates fuel is ignited.
RUN position	Start switch (5)	OFF position is bypassed and heater is in fixed operating condition.



## 11-3. Service Upon Receipt of Material (Cont'd)

Table 11-1. Heater Control Box Function (Cont'd).

CONTROL OR INDICATOR	DESCRIPTION	FUNCTION
<p align="center"><b>NOTE</b></p> <p>If start switch is transferred from START to RUN position too soon, flame will be extinguished and heater will require restarting. If heat control switch is set on HI, heater will go into high-heat only when flame detector switch transfers. When set on LO, heater will continue to burn on low-heat.</p>		
OFF position	Start switch (5)	Shuts off heater.
PRESS TO TEST	Indicator lamp (8)	Indicates heater is ready for operation when lamp glows.
<p align="center"><b>NOTE</b></p> <p>If lamp does not glow, service is required. Check lamp bulb or electrical circuits.</p>		
Amber ON	Indicator lamp (8)	When heater is turned OFF, lamp will continue to glow approximately 180 seconds until heater is purged of fuel.
	Cable (6)	Provides power to control box.
	Interconnecting cable (7)	Provides power to heat exchanger and heater components.



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**11-4. Preventive Maintenance**

See table 3-1.

**11-5. Troubleshooting**

Refer to table 3-4.

**11-6. Winterization Kit -65°F (-54°C) Maintenance Task Summary**

<b>TASK PARA</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
11-7.	Heater Assembly a. Removal b. Installation	11-6
11-8.	Fuel Pump a. Removal b. Installation	11-16
11-9.	Fuel Filter a. Removal b. Installation	11-18
11-10.	Defroster Diverter Assembly a. Removal b. Installation	11-20
11-11.	Control Box Assembly a. Removal b. Disassembly c. Inspection and Repair d. Assembly e. Modification f. Installation	11-24
11-12.	Electrical Cable Assemblies a. Removal b. Installation	11-40
11-13.	Diverter Actuator Assembly a. Removal b. Installation	11-48
11-14.	Slave Receptacle Assembly a. Removal b. Installation	11-50

<b>11-6. Winterization Kit -65°F (-54°C) Maintenance Task Summary (Cont'd)</b>
--

<b>TASK PARA</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
11-15.	Thermostat and Circuit Breaker a. Removal b. Installation	11-54
11-16.	Diverter Exhaust Control Assembly a. Removal b. Installation	11-58
11-17.	Cab Ducting Control Assembly a. Removal b. Installation	11-62
11-18.	Defroster Control Assembly a. Removal b. Installation	11-64
11-19.	Air Hose a. Removal b. Installation	11-66
11-20.	Battery Heating Cover and Box a. Removal b. Installation	11-76

**11-7. Heater Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10 Para 10-10	Parking brake set. Front seats removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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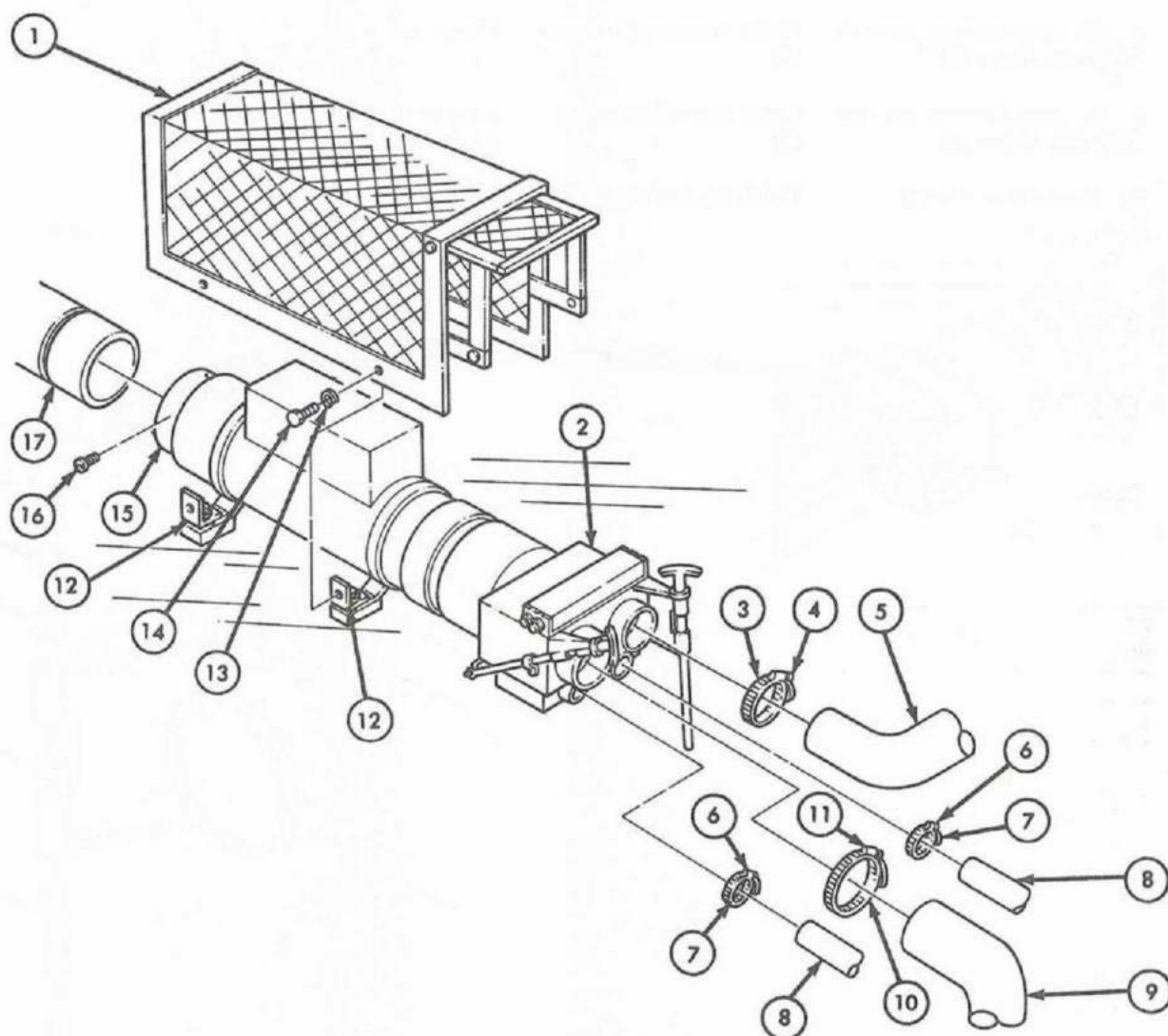
**a. REMOVAL**

- |   |  |   |
|---|--|---|
| 1. Heater guard (1) to heater retaining brackets (12) | Four capscrews (14) and lockwashers (13) | Remove.                                     |
| 2.  | Heater guard (1)                         | Remove from retaining brackets (12).        |
| 3. Battery box heater hose (5) to heater diverter (2) | Clamp (3)                                | Loosen screw (4) and disconnect hose (5).   |
| 4. Two cab heater hoses (8) to heater diverter (2)    | Two clamps (7)                           | Loosen screws (6) and disconnect hoses (8). |
| 5. Defroster diverter hose (9) to heater diverter (2) | Clamp (10)                               | Loosen screw (11) and disconnect hose (9).  |
| 6. Air intake pipe (17) to heater inlet adapter (15)  | Three screws (16)                        | Remove and disconnect pipe (17).            |



# 11-7. Heater Assembly Maintenance (Cont'd)

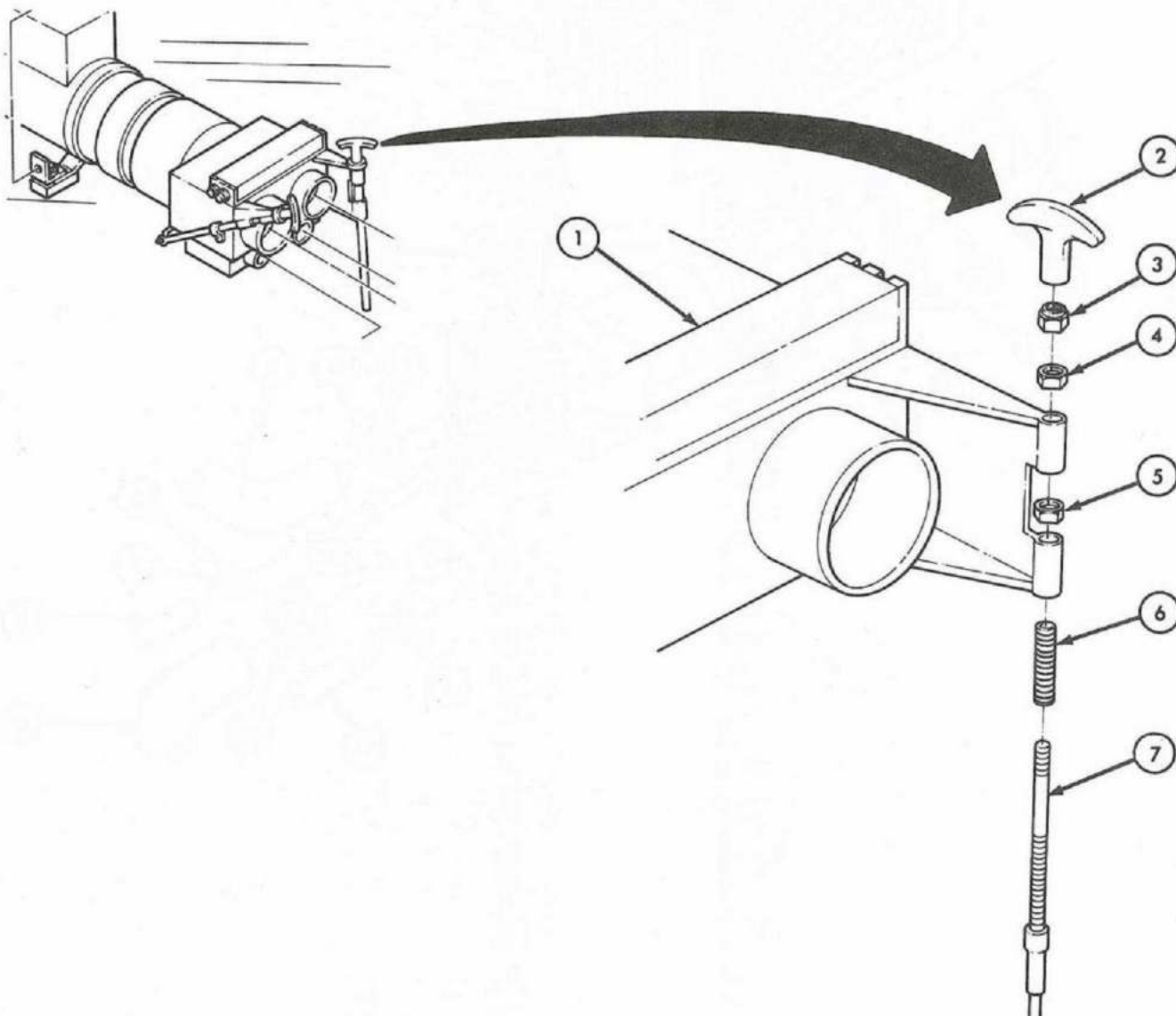
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11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Exhaust diverter control cable (7)	T-handle (2) and locknut (3)	Remove.	
8.	Exhaust diverter control cable sleeve (6)	Cable sleeve upper nut (4)	Remove.	
9.	Exhaust diverter control cable sleeve (6)	Cable sleeve lower nut (5)	Run up threaded portion of sleeve (6).	
10.	Heater diverter (1)	Cable (7) and sleeve (6)	Remove.	

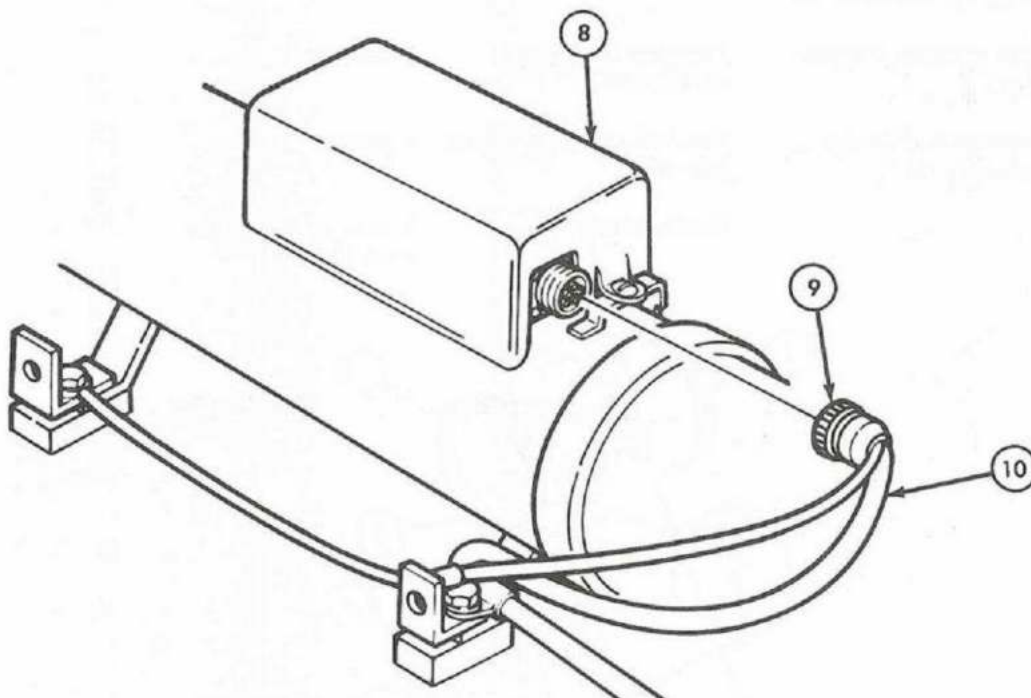


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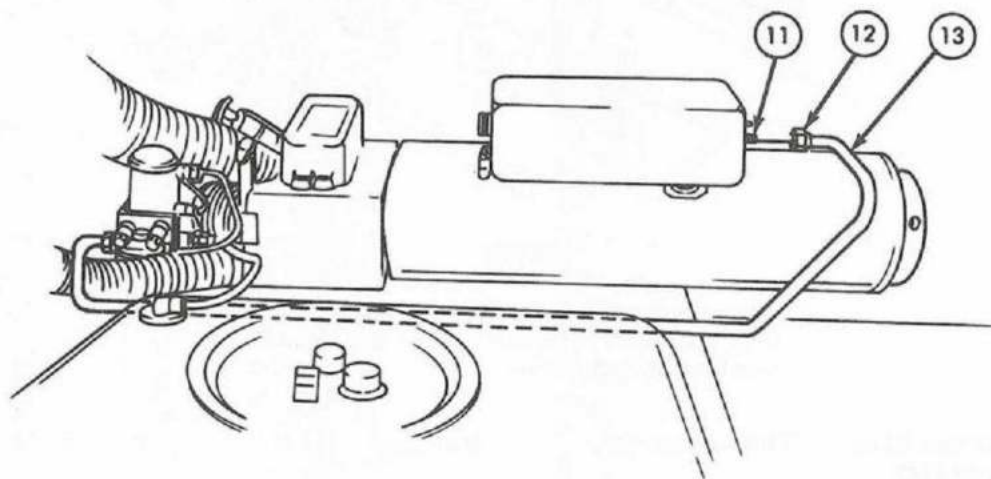
## 11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- |     |                                 |                     |             |  |
|-----|---------------------------------|---------------------|-------------|--|
| 11. | Wiring cable (10) to heater (8) | Cable connector (9) | Disconnect. |  |
|-----|---------------------------------|---------------------|-------------|--|

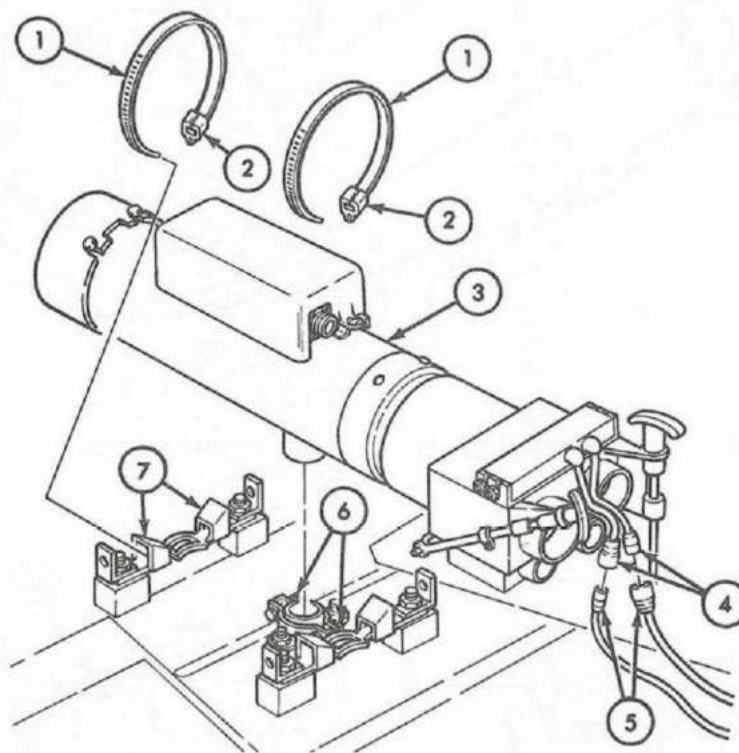


- |     |   |                        |                     |  |
|-----|---|------------------------|---------------------|--|
| 12. | Fuel line (13) to fuel control valve (11) | Fuel line fitting (12) | Unscrew and remove. |  |
|-----|---|------------------------|---------------------|--|



## 11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.	Two heater mounting straps (1) to heater (3)	Two screw clamps (2)	Disengage and remove.	
14.	Two actuator connectors (4)	Two thermostat lead connectors (5)	Disconnect.	
15.	Underside of heater assembly (3)	Two exhaust tube clamp nuts (6)	Loosen.	
16.		Heater assembly (3)	Lift from mounting pads (7).	



## NOTE

Place chalk mark on heater body (3), adapter (11), and heater diverter (13) to coordinate location for installation.

17.	Heater diverter (13) to outlet adapter (11)	Three screws (12)	Remove.
18.		Heater diverter (13)	Remove from outlet adapter (11).

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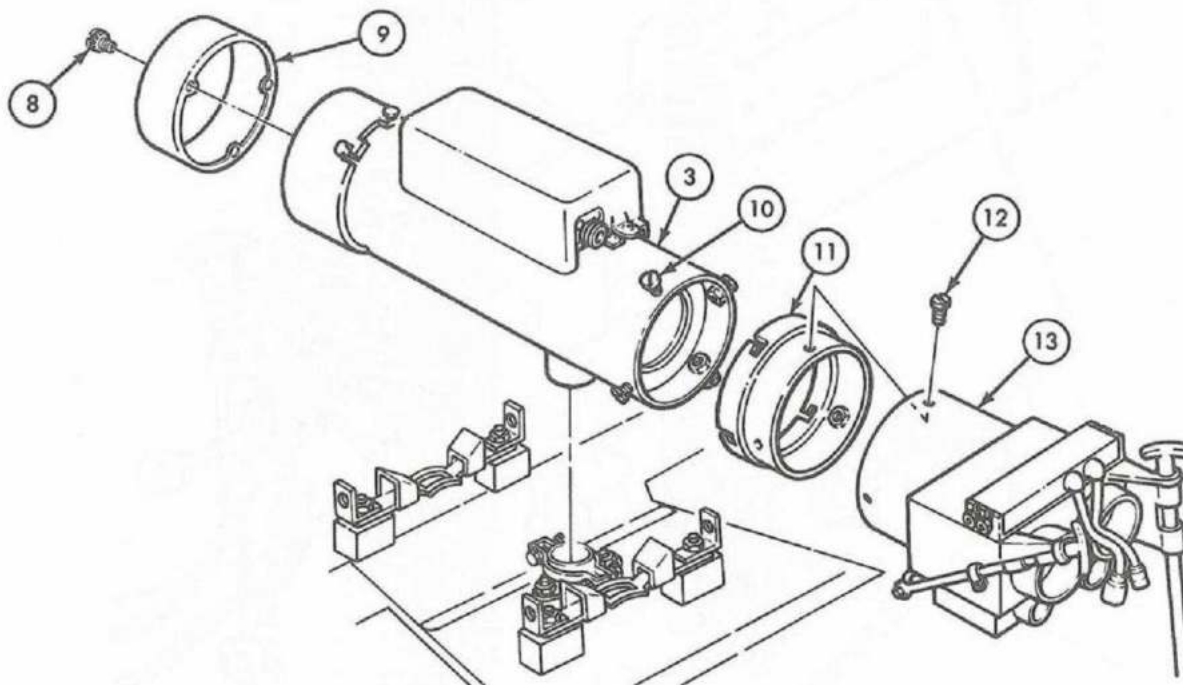


# 11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
19.	Outlet adapter (11) to heater (3)	Four screws (10)	Loosen.	
20.		Outlet adapter (11)	Rotate counterclockwise and remove from heater (3).	
21.	Heater inlet adapter (9) to heater (3)	Three screws (8)	Remove.	
22.		Heater inlet adapter (9)	Remove from heater (3).	

## b. INSTALLATION

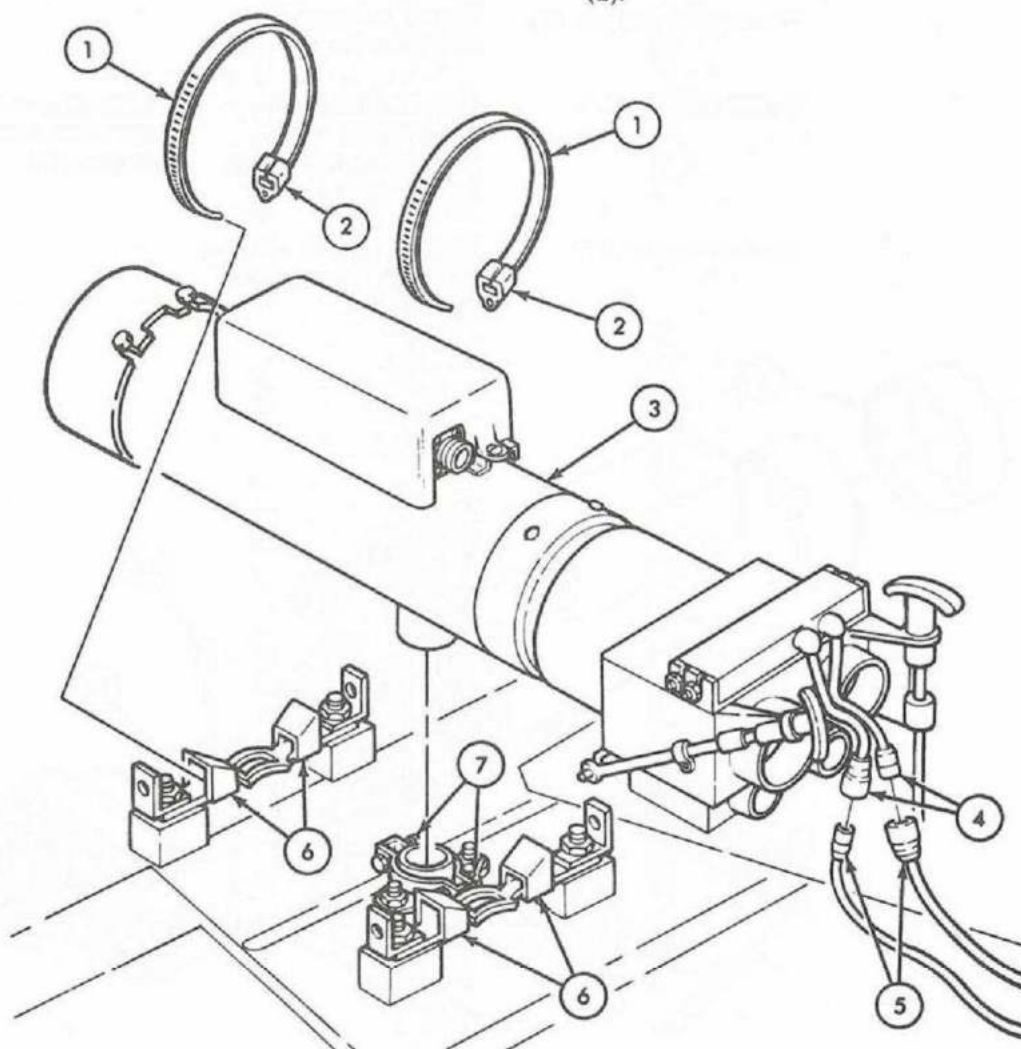
23.		Heater inlet adapter (9)	Secure to heater (3) with three screws (8).	
24.		Outlet adapter (11)	Place on outlet end of heater (3), rotate clockwise, and tighten four screws (10).	Make sure screws (10) insert into slots of adapter (11).
25.		Heater diverter (13)	Secure to outlet adapter (11) with three screws (12).	



TA 155765

11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
26.		Heater assembly (3)	Place on mounting pads (6).	
27.		Two exhaust tube clamp nuts (7)	Tighten.	
28.		Two thermostat lead connectors (5)	Connect to two actuator connectors (4).	
29.		Two heater mounting straps (1)	a. Position around heater assembly (3) and through slots in mounting pads (6). b. Tighten screw clamps (2).	

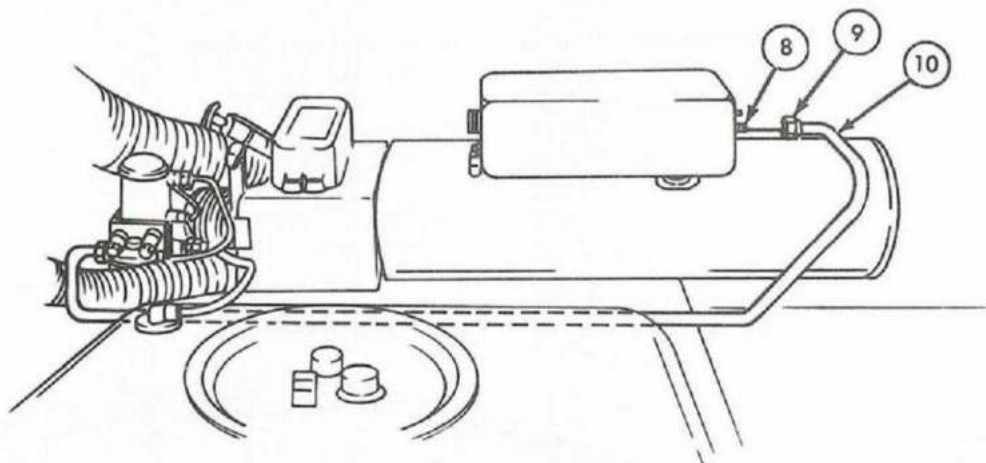


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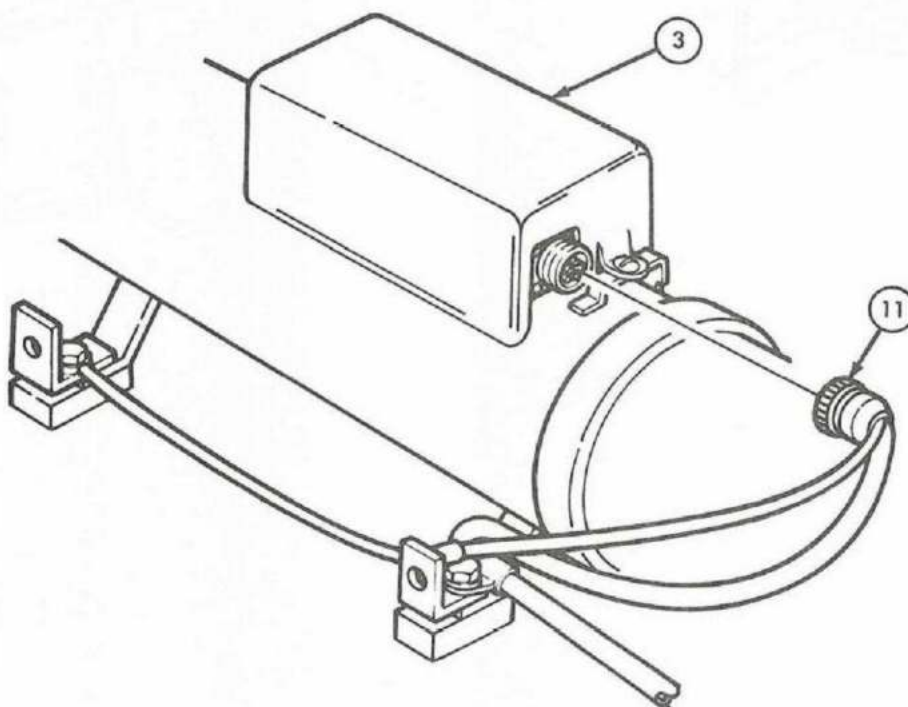
## 11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- |     |                |   |
|-----|----------------|---|
| 30. | Fuel line (10) | Attach to fuel control valve (8) with line fitting (9). |
|-----|----------------|---|



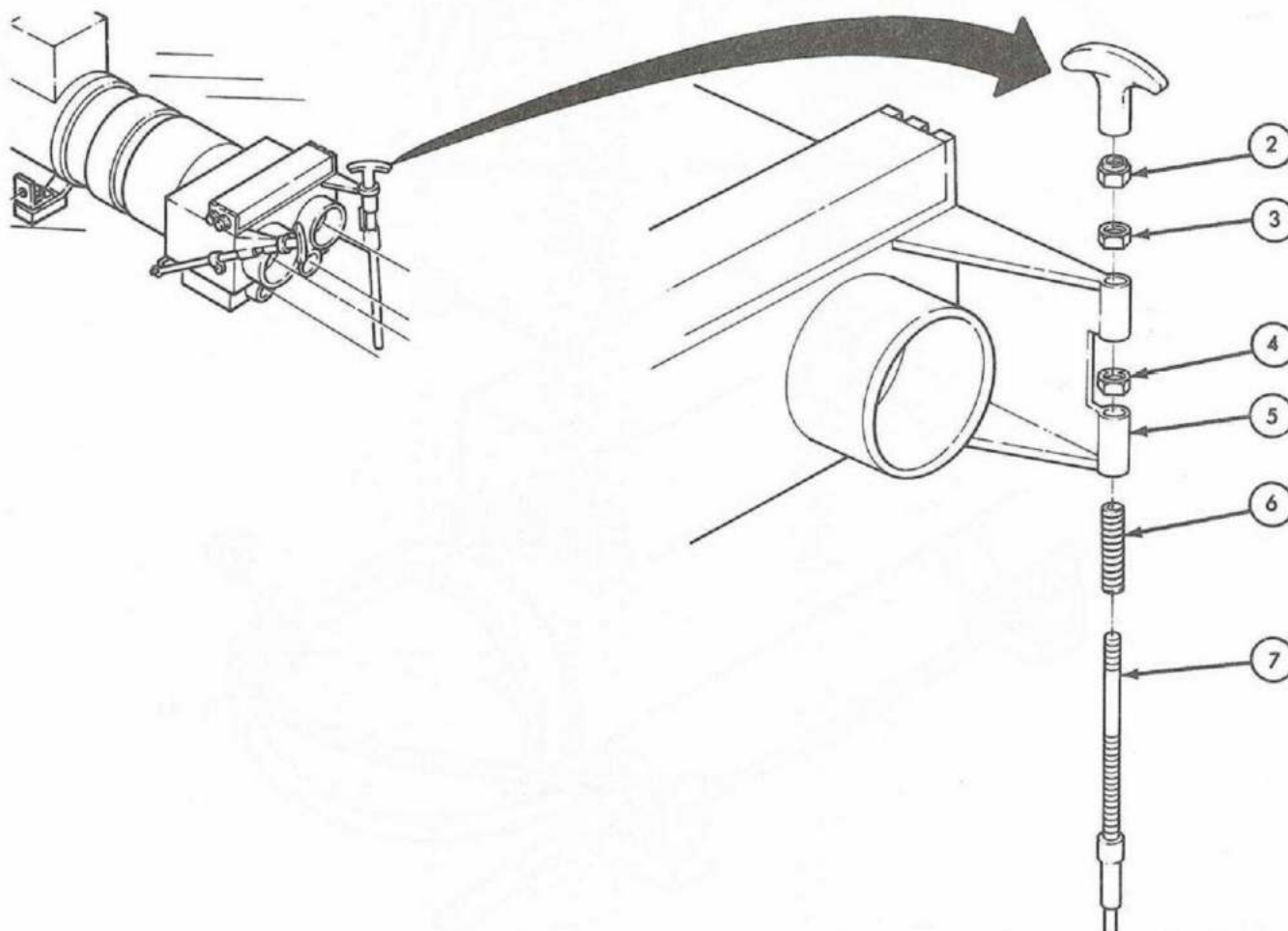
- |     |                             |                        |
|-----|-----------------------------|------------------------|
| 31. | Wiring cable connector (11) | Connect to heater (3). |
|-----|-----------------------------|------------------------|



TA 155767

11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
32.		Exhaust diverter control cable (7) and sleeve (6)	Insert upward through lower end of diverter bracket (5).	
33.		Lower locknut (4)	Run down threaded portion of sleeve (6).	
34.		Exhaust control sleeve (6)	a. Insert through upper hole of bracket (5). b. Secure with upper locknut (3). c. Tighten lower locknut (4).	
35.		Locknut (2) and T-handle (1)	Install on cable (7) and tighten.	



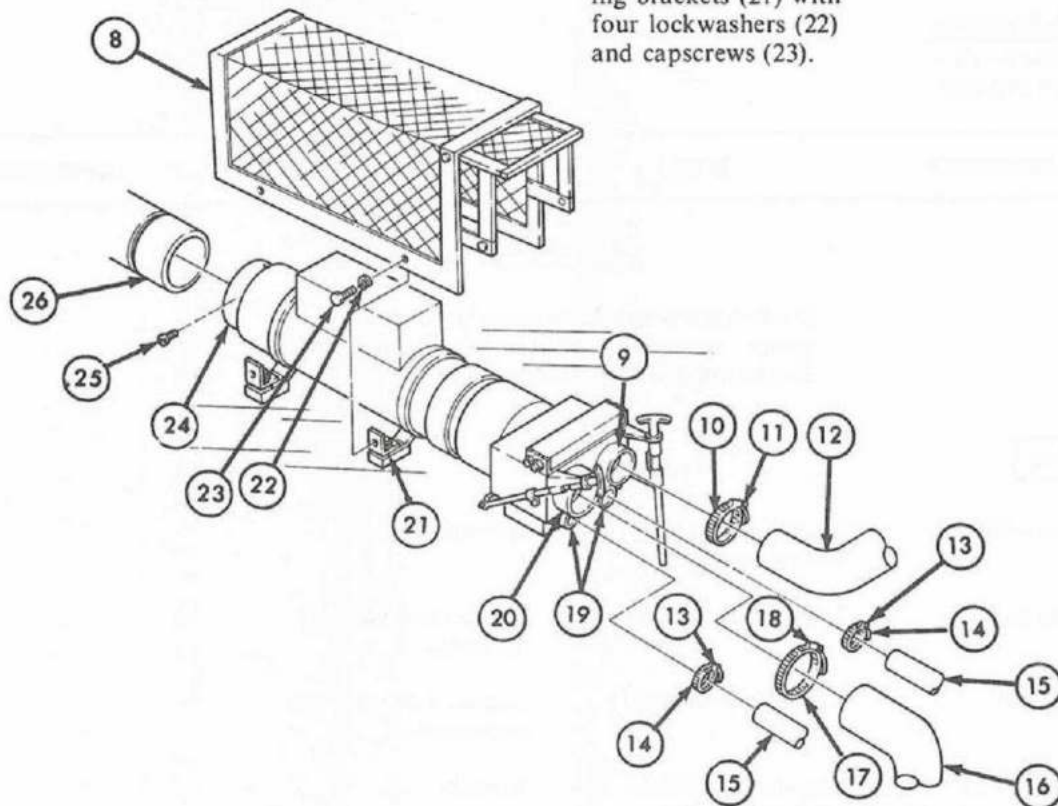
TA 155768



## 11-7. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
36.		Air intake pipe (26)	Secure to heater inlet adapter flange (24) with three screws (25).	
37.		Defroster diverter hose (16) and clamp (17)	Connect to upper right heater diverter flange (20) and tighten clamp screw (18).	
38.		Two cab heater hoses (15) and clamps (14)	Connect to lower diverter flanges (19) and tighten clamp screws (13).	
39.		Battery box heater hose (12) and clamp (10)	Connect to upper left heater diverter flange (9) and tighten clamp screw (11).	

40. Heater guard (8)
- Secure to heater retaining brackets (21) with four lockwashers (22) and capscrews (23).



END OF TASK!

- FOLLOW-ON TASKS:**
- Install front seats (para 10-10).
  - Check operation of heater (TM 9-2320-218-10).

TA 155769

**11-8. Fuel Pump Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**TM 9-2320-218-10  
Para 10-10**Condition Description**Parking brake set.  
Driver's seat removed.**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

Well-ventilated work area.

**Materials/Parts**

None.

**Personnel Required**

One mechanic

**General Safety Instructions**Do not allow sparks or open flame  
near fuel pump.**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**WARNING**

Do not allow sparks or open flame near fuel pump during removal and installation. Explosion and fire will result.

**a. REMOVAL**

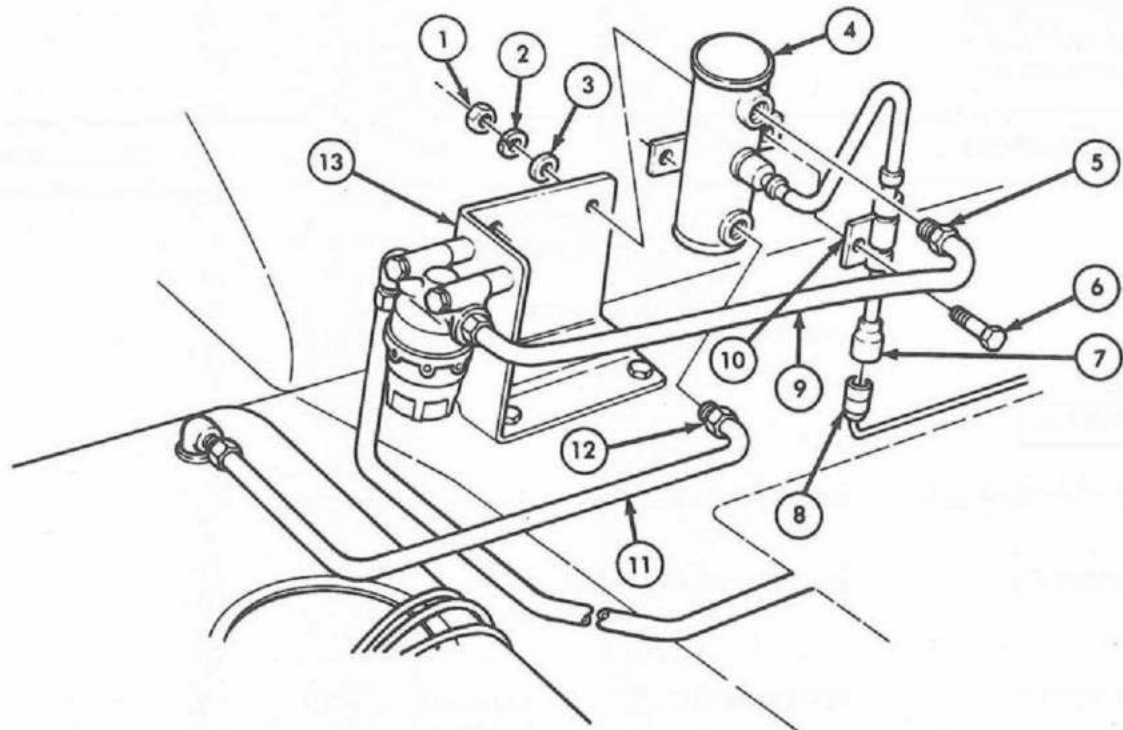
- |   |  |                                  |
|---|--|----------------------------------|
| 1. Fuel pump cable (8)                    | Fuel pump cable connector (7)  | Disconnect.                      |
| 2. Fuel pump (4)                          | Upper fuel tube (9)  | Loosen tube nut (5) and remove.  |
| 3. Fuel pump (4)                          | Lower fuel tube (11)   | Loosen tube nut (12) and remove. |
| 4. Fuel pump (4) to mounting bracket (13) | Two nuts (1), lock-washers (2), flat washers (3), one cable clamp (10), and two capscrews (6). | Remove.                          |
| 5. Mounting bracket (13)                  | Fuel pump (4)  | Remove.                          |

## 11-8. Fuel Pump Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**b. INSTALLATION**

- |    |                               |  |
|----|-------------------------------|--|
| 6. | Fuel pump (4)                 | Secure to mounting bracket (13) with two capscrews (6), one cable clamp (10), two flat washers (3), lockwashers (2), and nuts (1). |
| 7. | Lower fuel tube (11)          | Install on fuel pump (4) and tighten tube nut (12).  |
| 8. | Upper fuel tube (9)           | Install on fuel pump (4) and tighten tube nut (5).   |
| 9. | Fuel pump cable connector (7) | Connect to fuel pump cable (8).  |



END OF TASK!

- FOLLOW-ON TASKS:**
- Check operation of fuel pump and for leaks at fuel line fittings.
  - Install driver's seat (para 10-10).

TA 155770

**11-9. Fuel Filter Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**TM 9-2320-218-10  
Para 10-10**Condition Description**Parking brake set.  
Driver's seat removed.**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

Well-ventilated work area.

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**Do not allow sparks or open flame  
near fuel filter.**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**WARNING**

Do not allow sparks or open flame near fuel filter when removing or installing. Explosion and fire will result.

**a. REMOVAL**

- |  |                            |                                   |
|--|----------------------------|-----------------------------------|
| 1. Fuel filter elbow pipe (4)              | Heater fuel tube (3)       | Loosen tube nut (8) and remove.   |
| 2. Fuel filter (2)                         | Fuel filter elbow pipe (4) | Remove.                           |
| 3. Fuel filter (2)                         | Fuel pump tube (6)         | Loosen tube nut (7) and remove.   |
| 4. Fuel filter (2) to mounting bracket (5) | Two capscrews (1)          | Remove.                           |
| 5.   | Fuel filter (2)            | Remove from mounting bracket (5). |

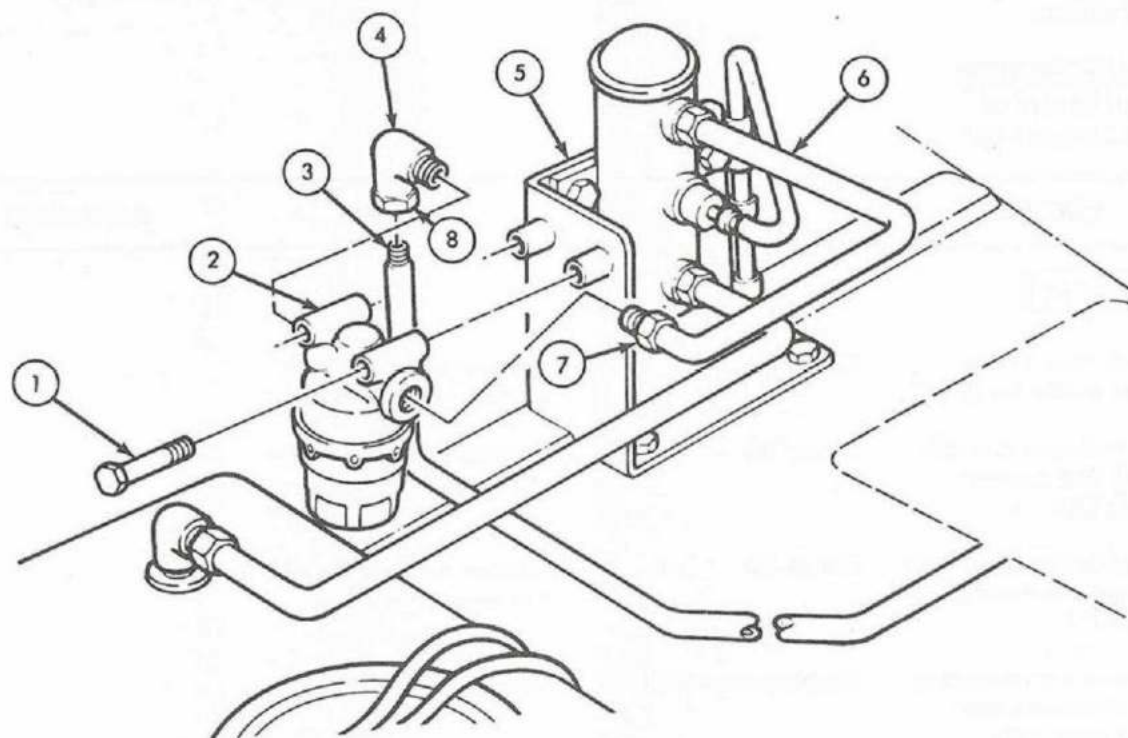


## 11-9. Fuel Filter Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*b. INSTALLATION*

- |    |  |                            |   |
|----|--|----------------------------|---|
| 6. |  | Fuel filter (2)            | Secure to mounting bracket (5) with two capscrews (1).          |
| 7. |  | Fuel pump tube (6)         | Install on fuel filter (2) and tighten tube nut (7).            |
| 8. |  | Fuel filter elbow pipe (4) | Install on fuel filter (2).                                     |
| 9. |  | Heater fuel tube (3)       | Install on fuel filter elbow pipe (4) and tighten tube nut (8). |



END OF TASK!

- FOLLOW-ON TASKS:
- Check for leaks at fuel tube fittings.
  - Install driver's seat (para 10-10).

TA 155771

**11-10. Defroster Diverter Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10 Para 10-10	Parking brake set. Front passenger seat removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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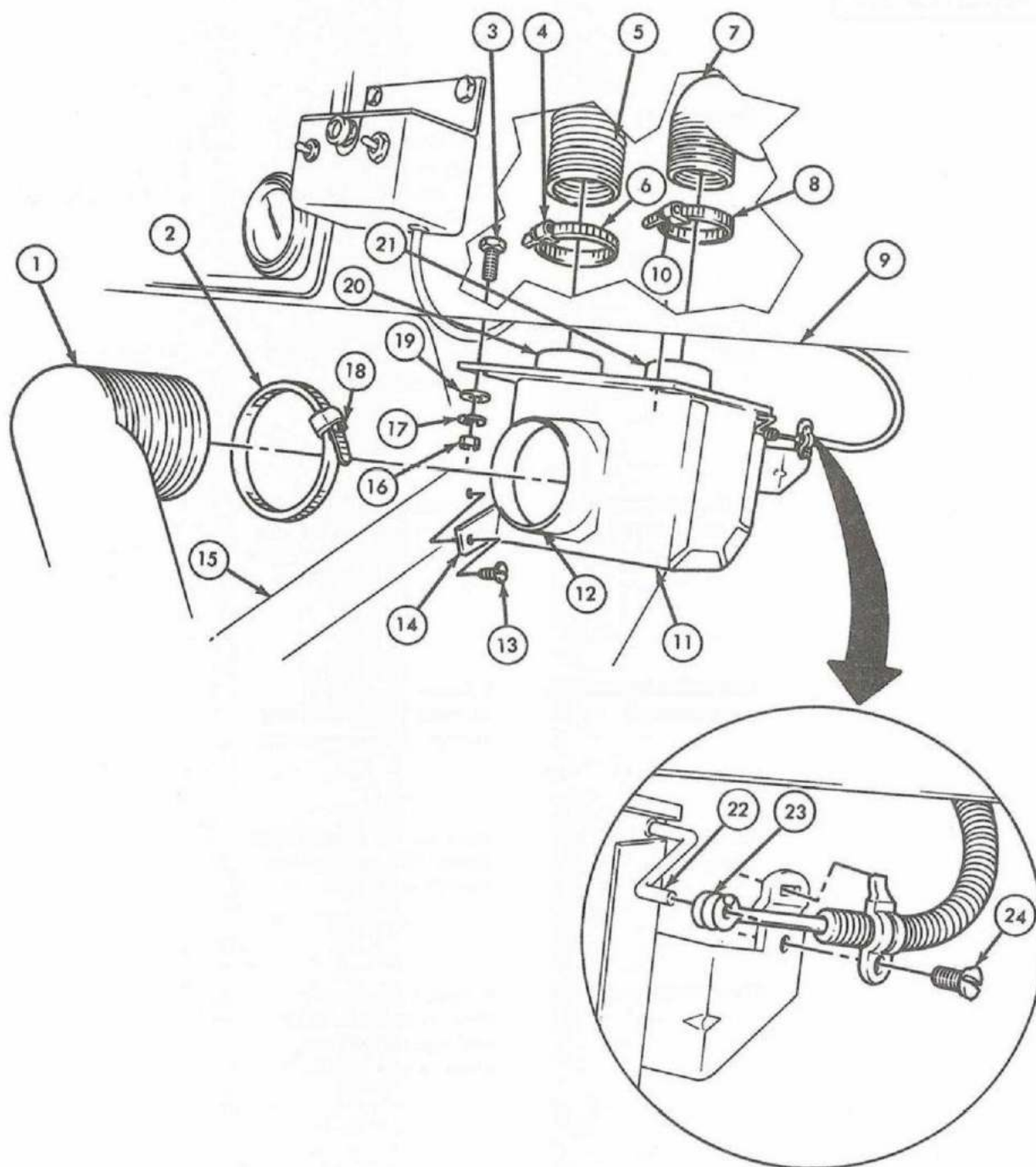
**a. REMOVAL**

- |   |   |   |
|---|---|---|
| 1. Heater hose (1) to diverter inlet flange (12)                  | Clamp (2)   | Loosen screw (18) and disconnect hose (1).  |
| 2. Left defroster hose (5) to left top diverter flange (20)       | Clamp (6)   | Loosen screw (4) and disconnect hose (5).   |
| 3. Right defroster hose (7) to right top diverter flange (21)     | Clamp (8)   | Loosen screw (10) and disconnect hose (7).  |
| 4. Diverter retaining strap (14) to transmission cover panel (15) | Tapping screw (13)  | Remove.                                     |
| 5. Control cable (23) to diverter control arm (22)                | Retainer clamp screw (24)   | Loosen and remove cable (23) from arm (22). |
| 6. Diverter (11) to dash panel (9)                                | Two nuts (16), lock-washers (17), flat washers (19), and cap-screws (3) | Remove.                                     |

# 11-10. Defroster Diverter Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

- |    |  |                         |                             |  |
|----|--|-------------------------|-----------------------------|--|
| 7. |  | Defroster diverter (11) | Remove from dash panel (9). |  |
|----|--|-------------------------|-----------------------------|--|



TA 155772

## 11-10. Defroster Diverter Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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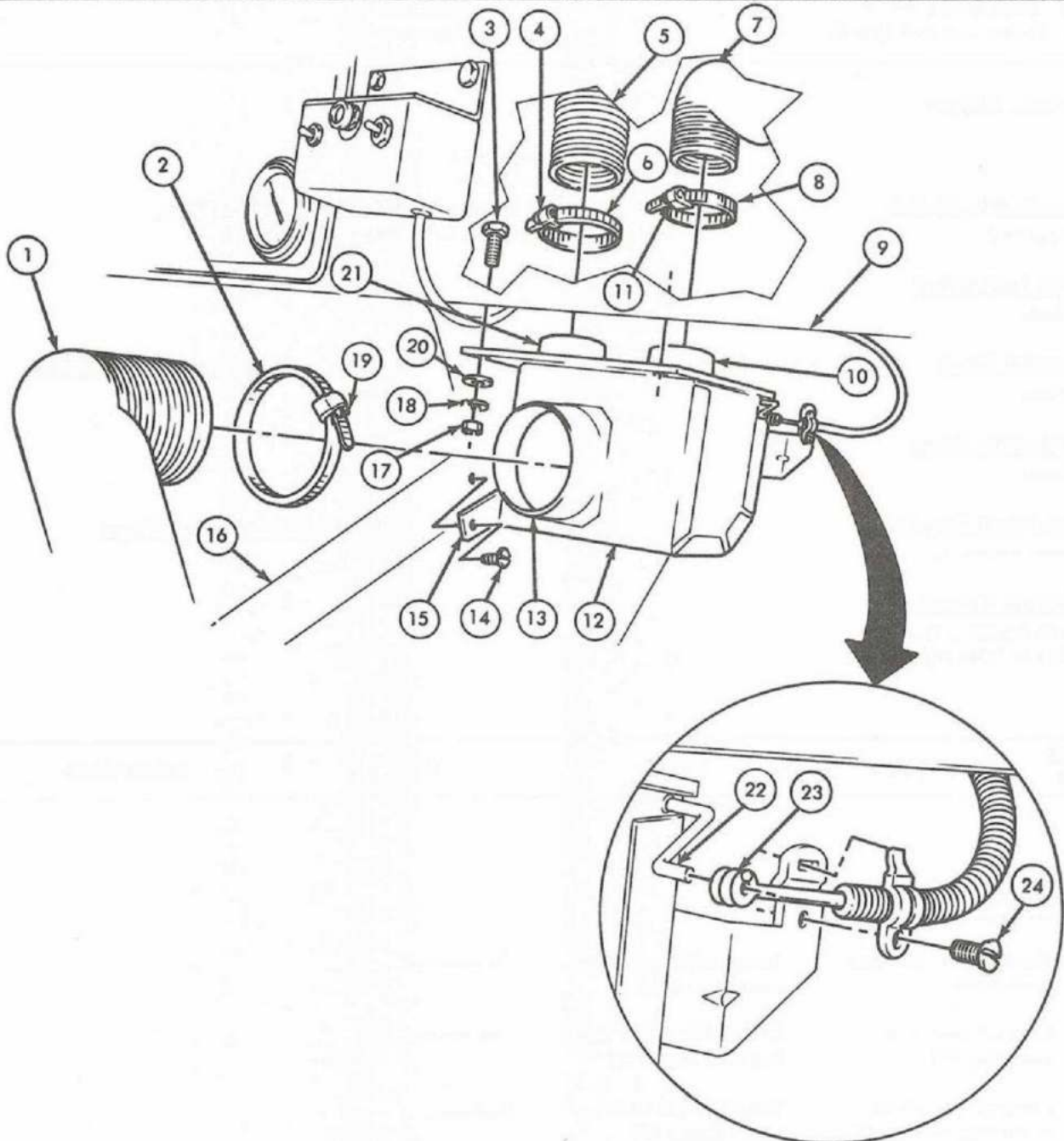
*b. INSTALLATION*

8.		Defroster diverter (12)	Secure to right underside of dash panel (9) with two capscrews (3), flat washers (20), lockwashers (18), and nuts (17).	
9.		Diverter retaining strap (15)	Secure to transmission cover panel (16) with tapping screw (14).	
10.		Right defroster hose (7) and clamp (8)	Connect to right top diverter flange (10) and tighten clamp screw (11).	
11.		Left defroster hose (5) and clamp (6)	Connect to left top diverter flange (21) and tighten clamp screw (4).	
12.		Heater hose (1) and clamp (2)	Connect to diverter inlet flange (13) and tighten clamp screw (19).	
13.		Control cable (23)	Connect to diverter box control arm (22) and tighten retainer clamp screw (24).	



## 11-10. Defroster Diverter Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Install front passenger seat (para 10-10).
- Check operation of defroster diverter (TM 9-2320-218-10).

TA 155773

# 11-11. Control Box Assembly Maintenance

This task covers:

- |                                 |                        |
|---------------------------------|------------------------|
| <i>a. Removal</i>               | <i>d. Assembly</i>     |
| <i>b. Disassembly</i>           | <i>e. Modification</i> |
| <i>c. Inspection and Repair</i> | <i>f. Installation</i> |

## INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

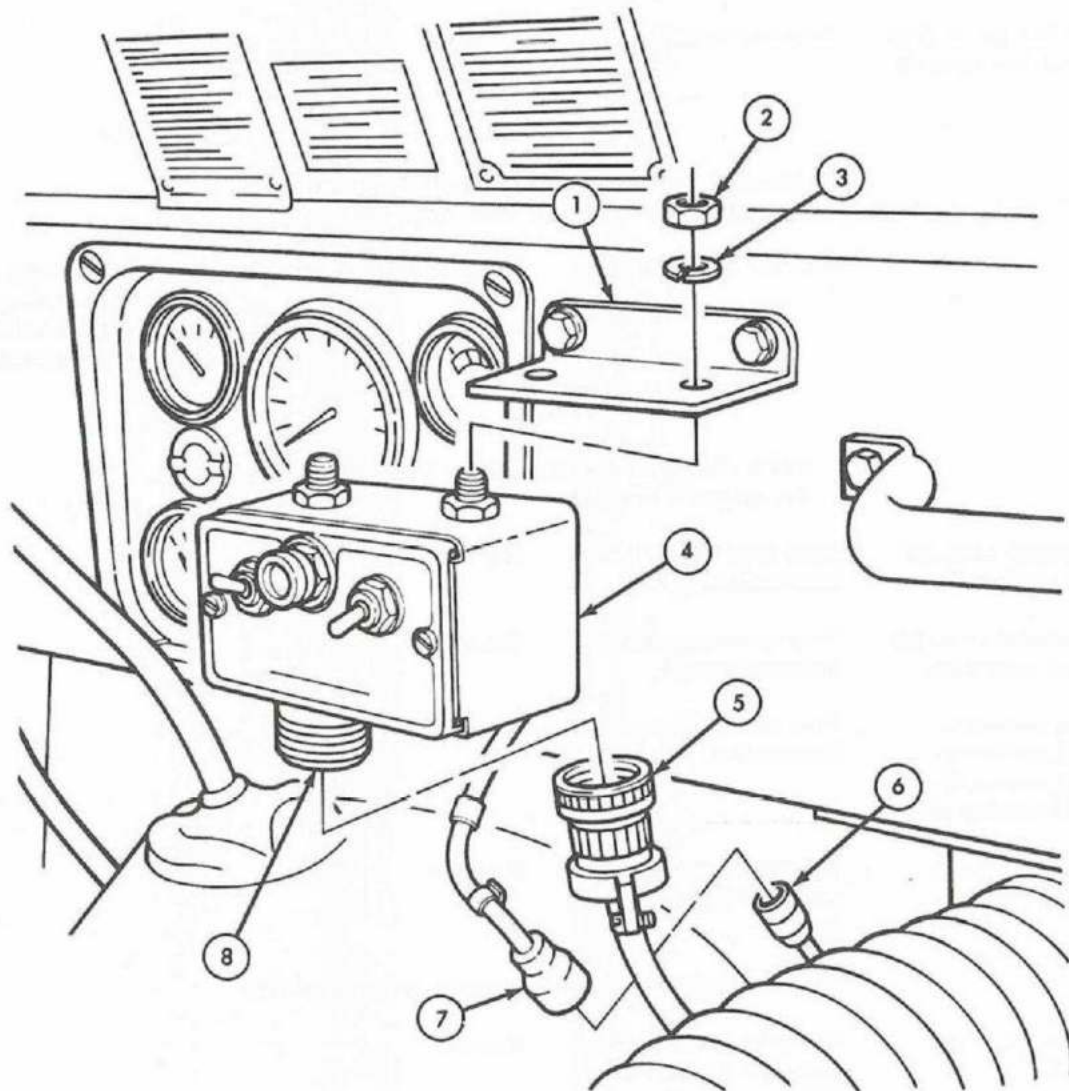
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### a. REMOVAL

- |  |   |                                   |
|--|---|-----------------------------------|
| 1. Control box five-pin socket (8)         | Large cable assembly connector (5)        | Disconnect.                       |
| 2. Control box wire assembly (7)           | Control box electrical lead connector (6) | Disconnect.                       |
| 3. Control box (4) to mounting bracket (1) | Two nuts (2) and lockwashers (3)          | Remove.                           |
| 4.   | Control box (4)                           | Remove from mounting bracket (1). |

11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*b. DISASSEMBLY*

- |    |  |                 |         |
|----|--|-----------------|---------|
| 5. | Control box panel (22) to control box case (4) | Two screws (12) | Remove. |
|----|--|-----------------|---------|

**NOTE**

Observe that case flanges are outside internal assembly at bottom and back only.

- |    |                      |                         |   |
|----|----------------------|-------------------------|---|
| 6. | Control box case (4) | Remove from panel (22). | Gently work case (4) free because mounting bolt heads (5) can catch on internal components. |
|----|----------------------|-------------------------|---|

**NOTE**

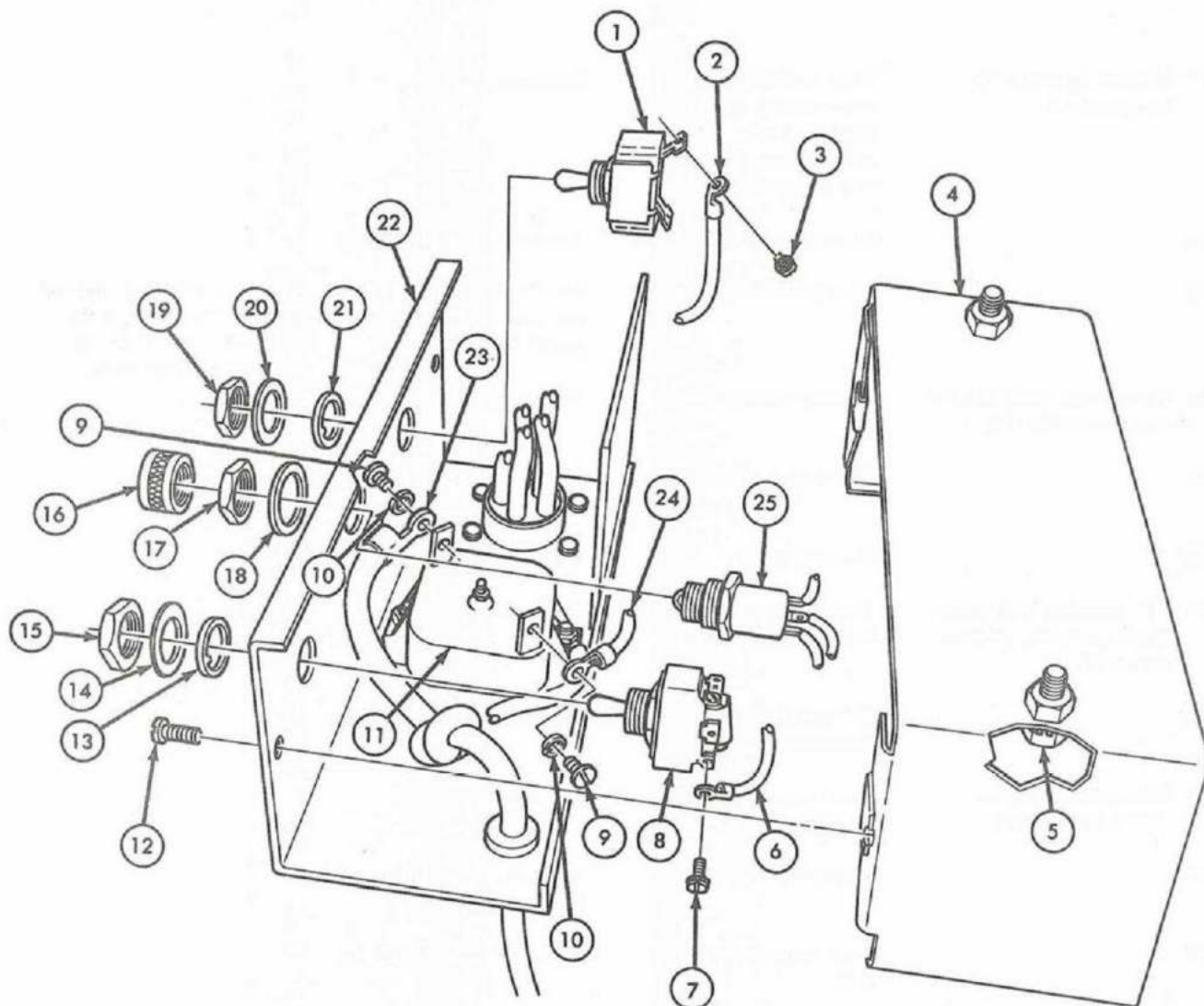
Mark all wire locations during disassembly for proper reassembly.

- |     |   |  |                     |
|-----|---|--|---------------------|
| 7.  | Six electrical wires (6) to starter switch (8)                                      | Four screw-assembled lockwashers (7)             | Remove.             |
| 8.  | Two electrical wires (2) to HI-LO switch (1)  | Two screw-assembled lockwashers (3)              | Remove.             |
| 9.  | One wire assembly lead (23) and three electrical wires (24) to circuit breaker (11) | Two screws (9) and lockwashers (10)              | Remove.             |
| 10. | Starter switch (8) to panel (22)  | Nut (15), lockwasher (14), and keyed washer (13) | Remove.             |
| 11. | Starter switch (8)  | Remove from panel (22).                          |                     |
| 12. | HI-LO switch (1) to panel (22)  | Nut (19), lockwasher (20), and keyed washer (21) | Remove.             |
| 13. | HI-LO switch (1)  | Remove from panel (22).                          |                     |
| 14. | Indicator lamp (25)   | Lens (16)  | Unscrew and remove. |
| 15. | Lamp (25) to panel (22)   | Nut (17), and flat washer (18)                   | Remove.             |
| 16. | Lamp (25)   | Remove from panel (22).                          |                     |



11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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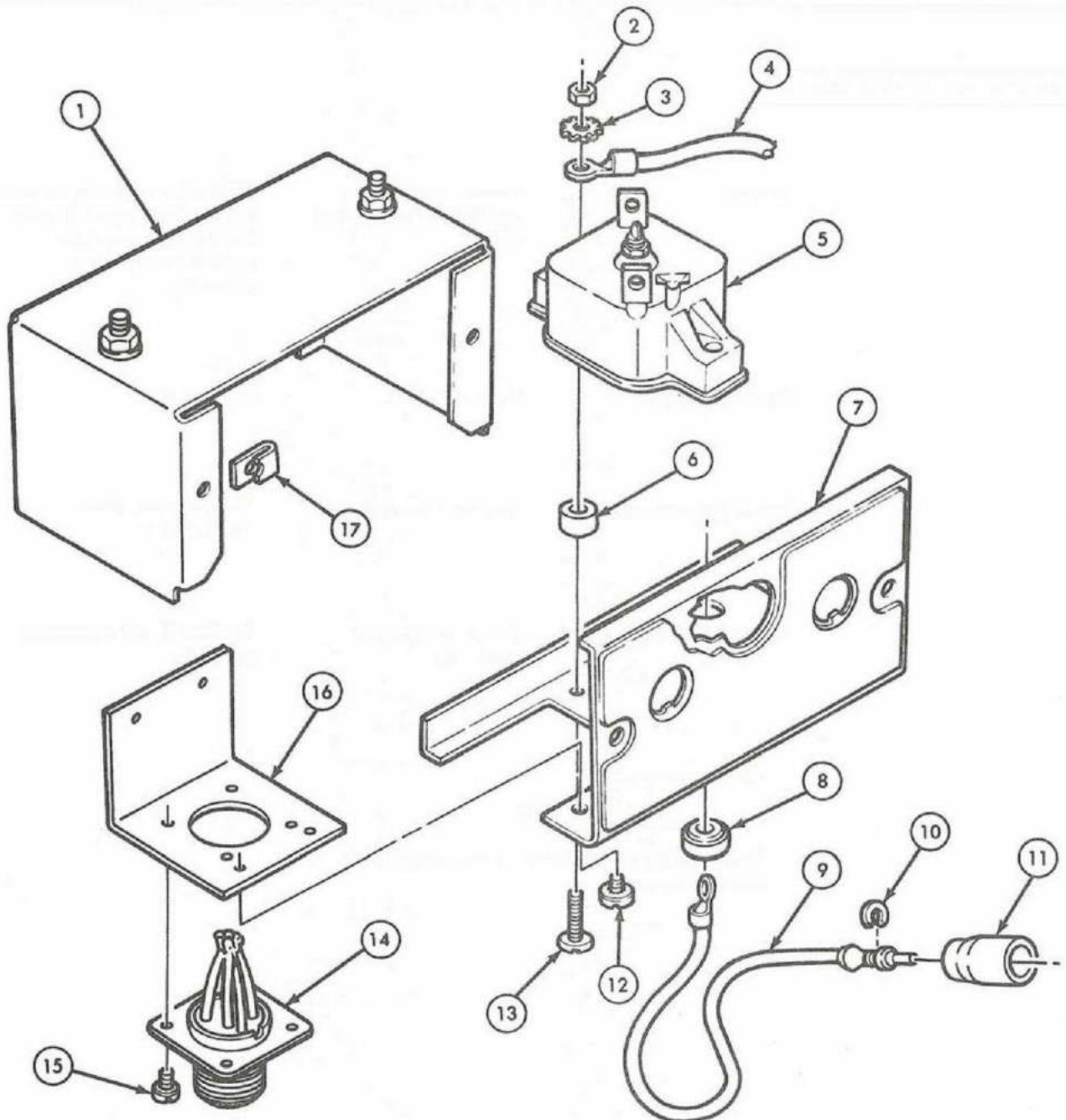


## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
17.	Circuit breaker (5) to panel (7)	Two nuts (2), lock-washers (3), one electrical wire (4), two spacers (6), and two screws (13)	Remove.	
18.		Circuit breaker (5)	Remove from panel (7).	
19.		Wire assembly (9)	Pull through grommet (8), and remove from panel (7).	
20.	Connector shell (11) to wire assembly (9)	Slotted washer (10)	Remove.	
21.		Connector shell (11)	Pull from wire assembly (9).	
22.		Grommet (8)	Remove from panel (7).	
23.	"L" bracket and receptacle assembly (16) to panel (7)	Two screw-assembled lockwashers (12)	Remove.	
24.		"L" bracket and receptacle assembly (16)	Remove from panel (7).	
25.	Receptacle (14) to "L" bracket (16)	Four screw-assembled lockwashers (15)	Remove.	
26.		Receptacle (14)	Remove from "L" bracket (16).	
27.		Two tinnerman nuts (17)	Remove from case (1).	

11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*c. INSPECTION AND REPAIR*

28.		Wiring	Inspect for broken insulation, welds, and wires.	If insulation, welds, or wires are broken, repair if possible. If non-repairable, replace control box assembly.
29.		Distorted parts	Reform.	See FM 43-2.
30.		Panel (2) and case (1)	Inspect for cracks.	Weld cracks. (See TM 9-237.)
31.		Replaceable components	Check for proper operation.	Replace if not operating properly.

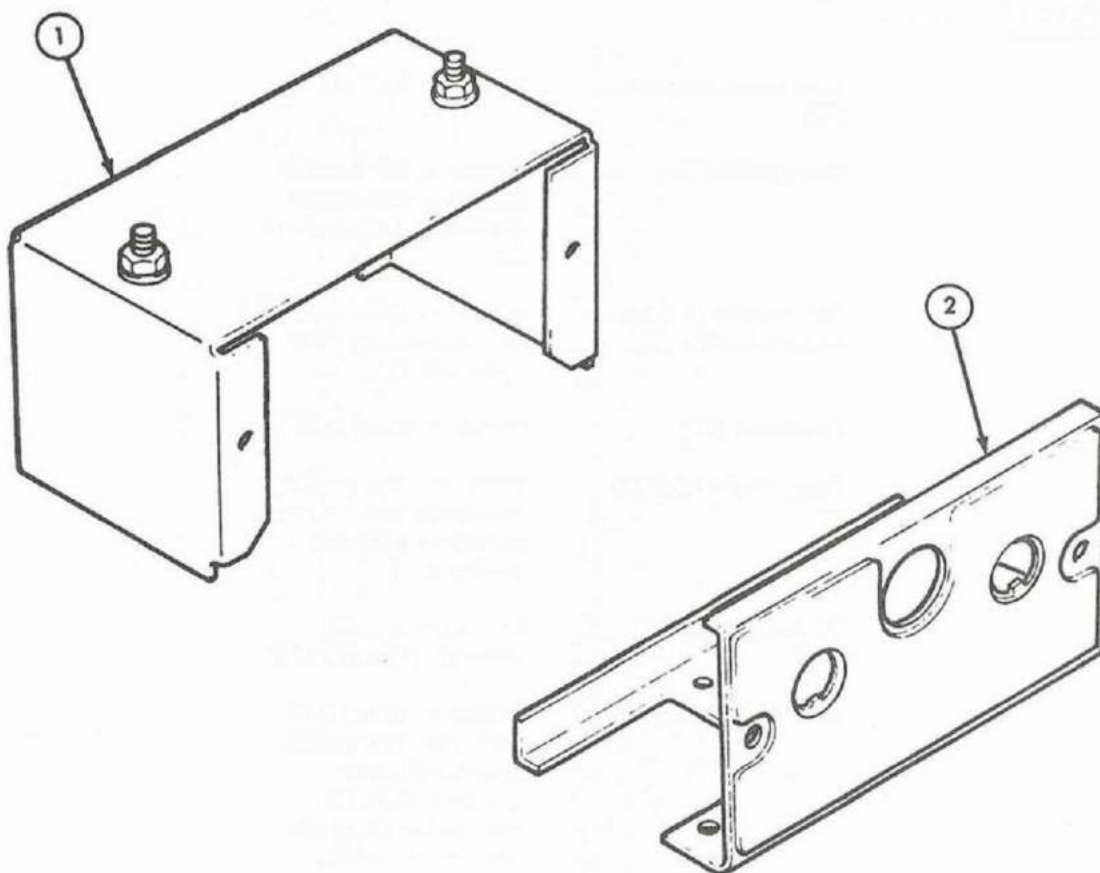
**NOTE**

If control box assembly requires replacement, see tasks *e* and *f*.



**11-11. Control Box Assembly Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*d. ASSEMBLY*

32.		Two tinnerman nuts (26)	Install on case (1).	
33.		Receptacle (23)	Secure to "L" bracket (25) with four screw-assembled lockwashers (24).	
34.		"L" bracket and receptacle assembly (25)	Secure to panel (11) with two screw-assembled lockwashers (21).	
35.		Grommet (20)	Install in panel (11).	
36.		Connector shell (15)	Slide on wire assembly connector end (16) and secure with slotted washer (17).	
37.		Wire assembly (18)	Pull lead end (19) through grommet (20).	
38.		Circuit breaker (8)	Secure to panel (11) with two screws (22), spacers (9), one electrical wire (2), two lockwashers (3), and two nuts (4).	

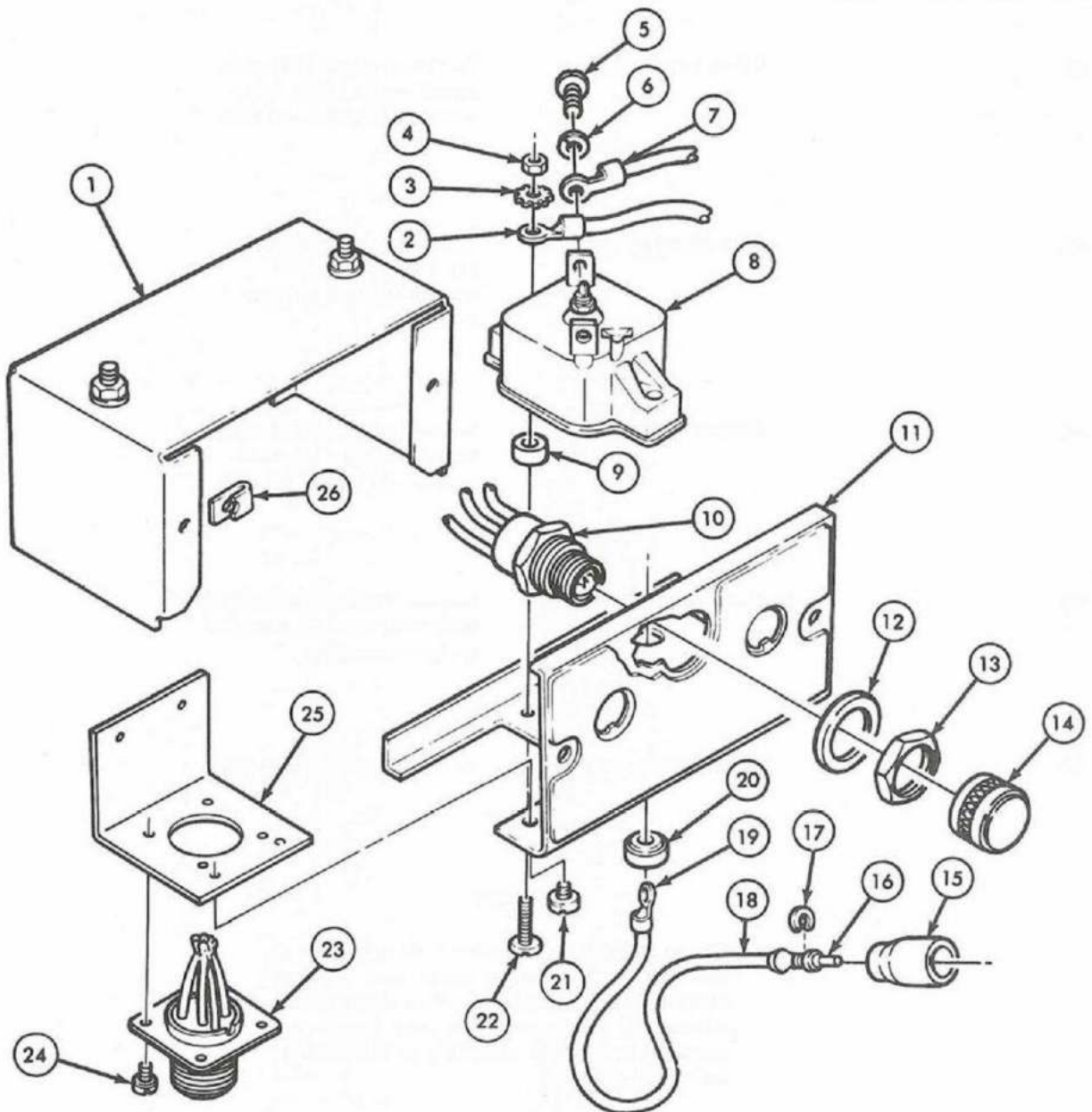
**NOTE**

Make sure all wires are connected to marked locations during installation.

39.		Three electrical wires (7) and one wire assembly lead (19)	Secure to circuit breaker (8) with two lockwashers (6) and screws (5).	
40.		Indicator lamp (10)	Secure to panel (11) with flat washer (12) and nut (13).	
41.		Lamp lens (14)	Screw on lamp end (10).	

11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
42.		Hi-lo switch (1)	Secure to panel (16) with keyed washer (15), lock-washer (14), and nut (13).	
43.		Two electrical wires (2)	Secure to hi-lo switch (1) with two screw-assembled lockwashers (3).	
44.		Starter switch (7)	Secure to panel (16) with keyed washer (12), lock-washer (11), and nut (10).	
45.		Six electrical wires (6)	Secure to starter switch (7) with four screw-assembled lockwashers (8).	
46.		Control box case (4)	a. Position to panel (16).	

## NOTE

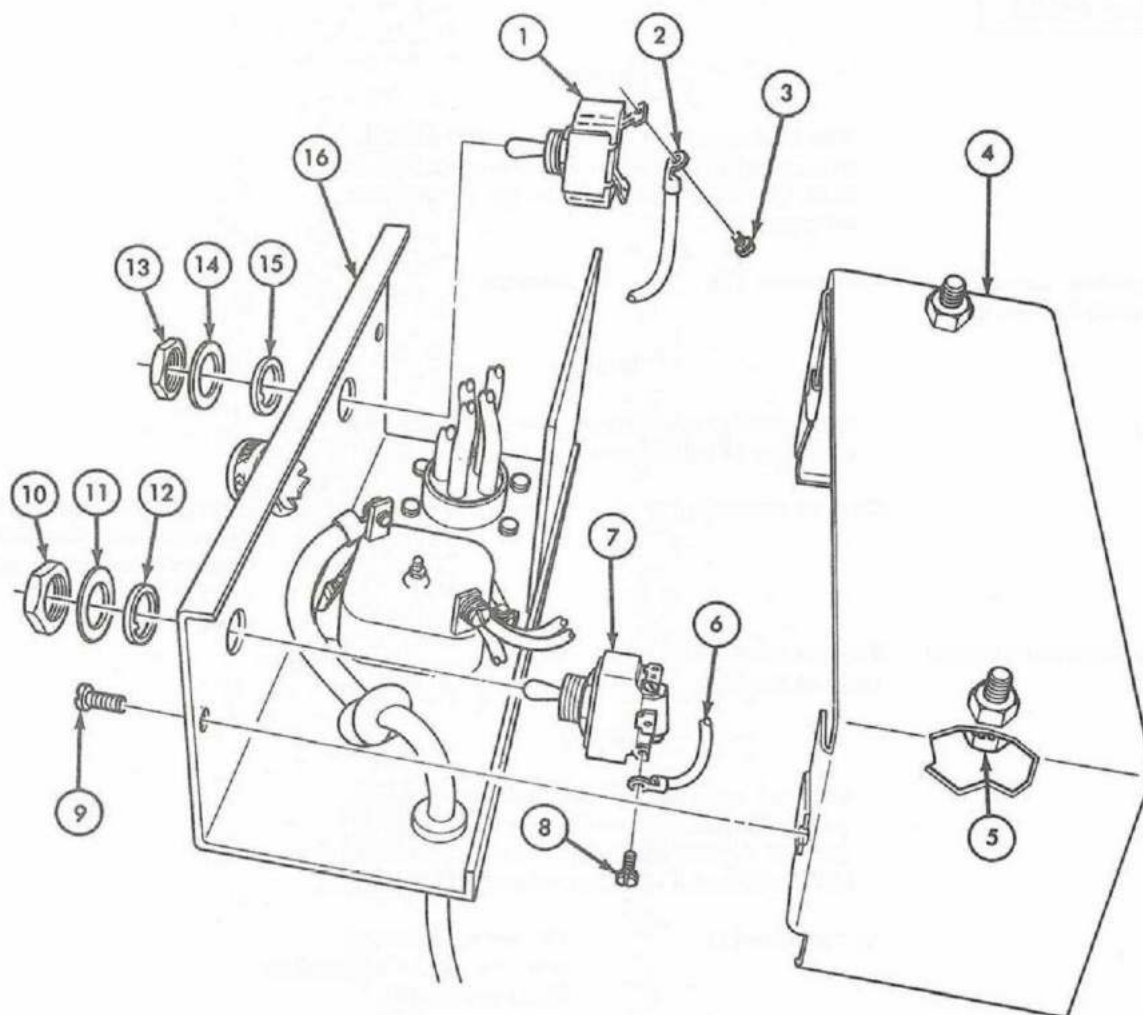
Slip rear internal assembly (16) into control box case (4) by pushing gently and working around bolt heads (5) extending through top of case (4). Make sure that case flanges are outside the internal assembly at the bottom and back only.

b. Secure to panel (16) with two screws (9).



11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*e. MODIFICATION***NOTE**

The heater control box is supplied with the interconnecting five-pin socket at the rear. It must be relocated. The change is made as follows:

- |  |                |         |
|--|----------------|---------|
| 47. Control box case (1)<br>to control box panel (3) | Two screws (4) | Remove. |
|--|----------------|---------|

**NOTE**

Observe that case flanges are outside internal assembly at bottom and back only.

- |                                  |                                     |                        |   |
|----------------------------------|-------------------------------------|------------------------|---|
| 48.                              | Control box case (1)                | Remove from panel (3). | Gently work case (1) free because mounting bolt heads (2) can catch on internal components. |
| 49. "L" bracket (6) to panel (3) | Two screw-assembled lockwashers (5) | Remove.                |   |

**NOTE**

Lift and turn the "L" bracket, with the five-pin socket attached, so it extends through the bottom of case opening. Aline "L" bracket holes with bottom of internal assembly casing.

- |     |                      |   |
|-----|----------------------|---|
| 50. | "L" bracket (6)      | Secure to panel (3) with two screw-assembled lockwashers (5). |
| 51. | Control box case (1) | a. Position to panel (3).                                     |

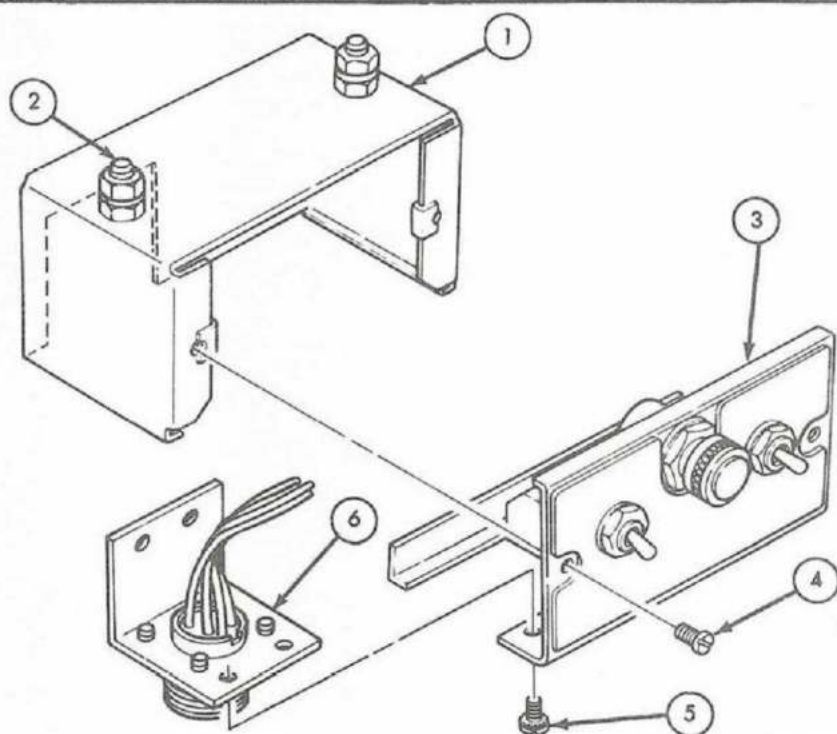
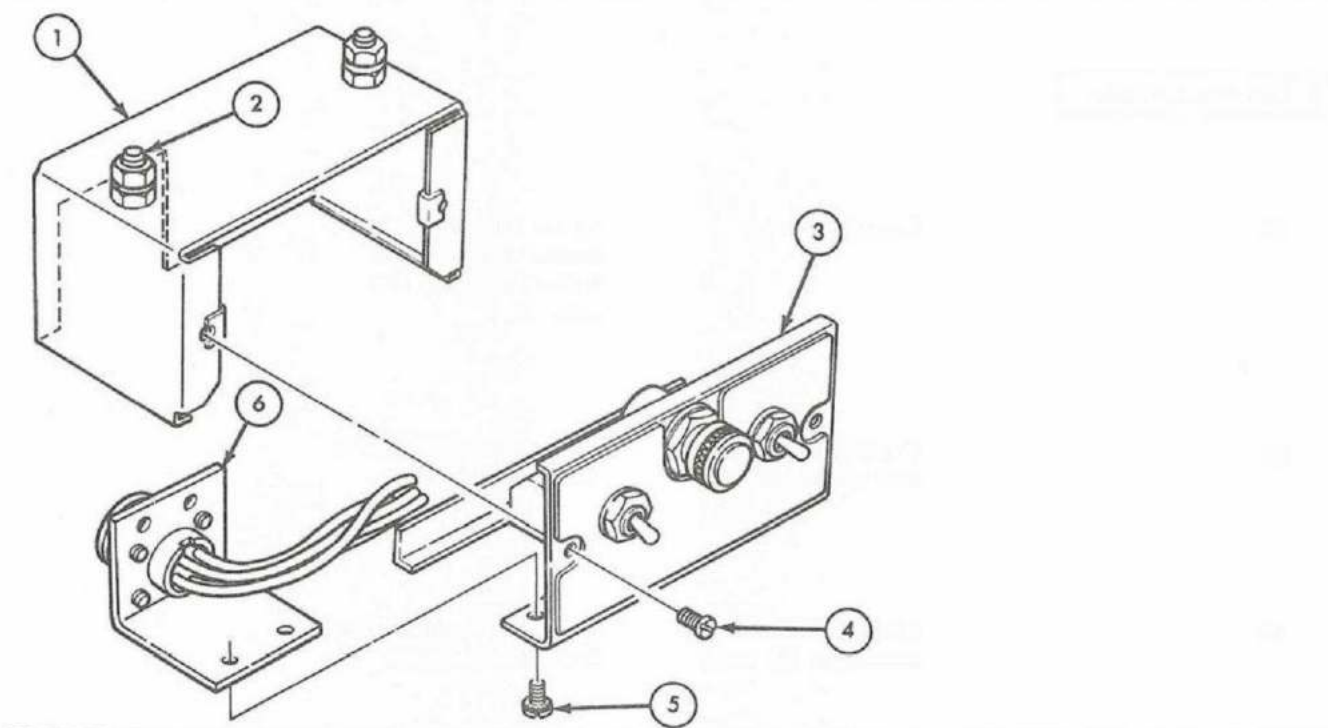
**NOTE**

Slip rear internal assembly (3) into control box case (1) by pushing gently and working around bolt heads (2) extending through top of case (1). Make sure that case flanges are outside the internal assembly at the bottom and back only.

- b. Secure to panel (3) with two screws (4).

11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155780

**11-11. Control Box Assembly Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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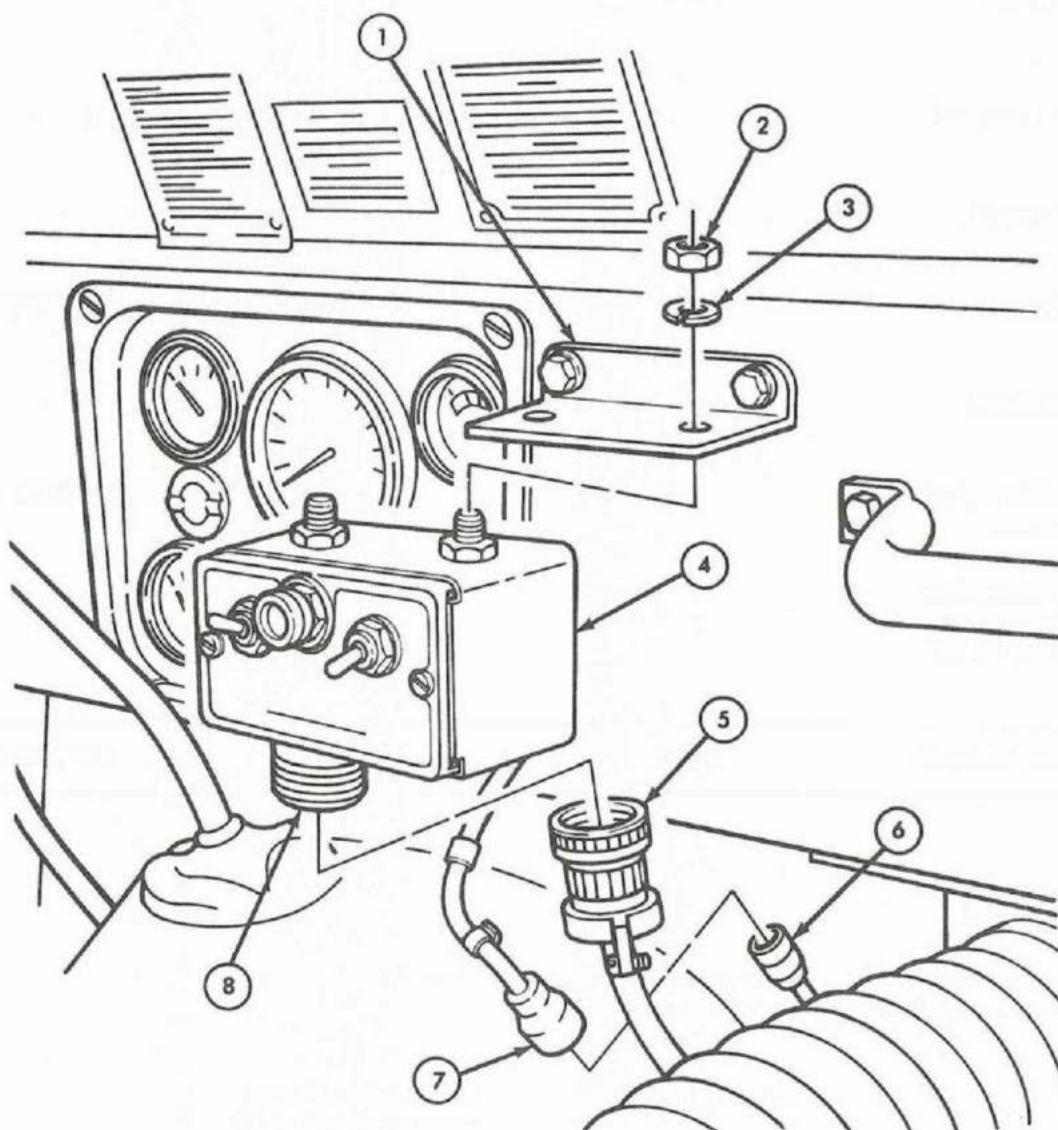
**f. INSTALLATION**

52.		Control box (4)	Secure to mounting bracket (1) with two lockwashers (3), and nuts (2).	
53.		Control box electrical lead connector (6)	Connect to control box wire assembly (7).	
54.		Large cable assembly connector (5)	Connect to control box five-pin socket (8).	



## 11-11. Control Box Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check operation of control box (TM 9-2320-218-10).

TA 155781

**11-12. Electrical Cable Assemblies Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

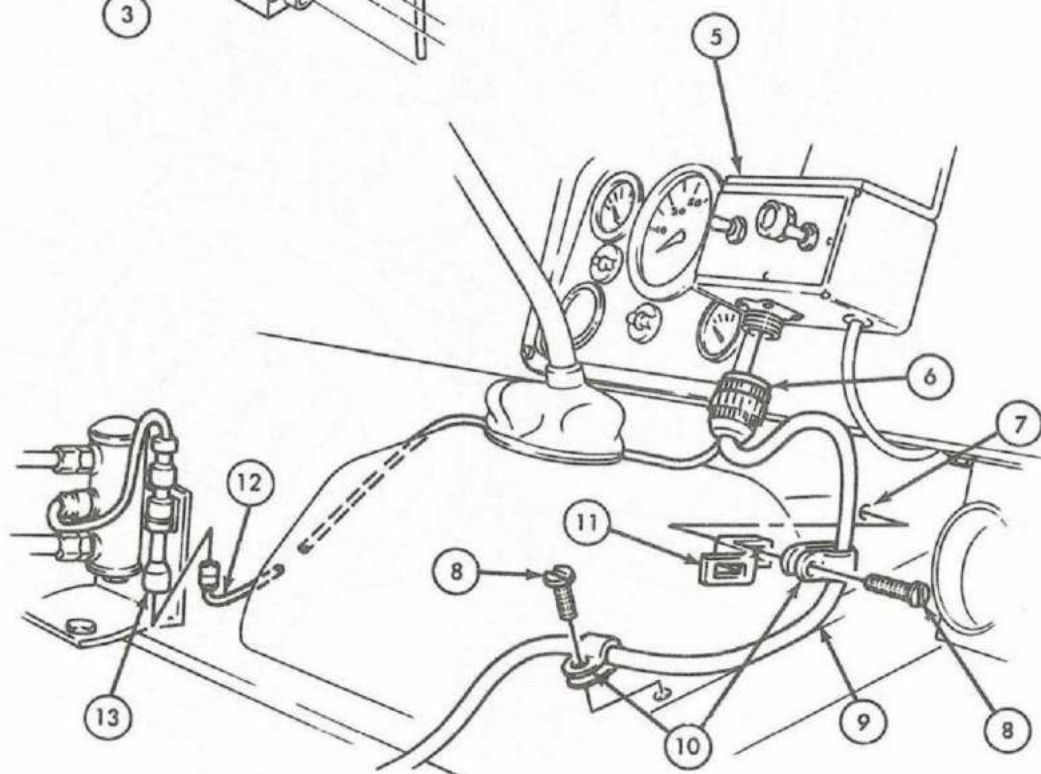
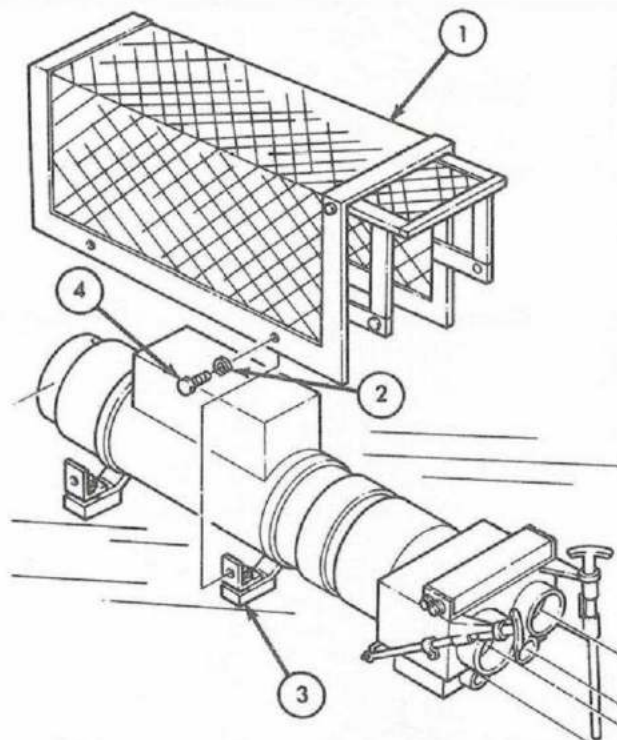
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

- |  |  |  |
|--|--|--|
| 1. Heater guard (1) to heater retaining brackets (3) | Four capscrews (4) and lockwashers (2)                           | Remove.                                    |
| 2.   | Heater guard (1)   | Remove from heater retaining brackets (3). |
| 3. Control box (5)                                   | Large cable assembly connector (6)                               | Disconnect.                                |
| 4. Fuel pump cable (12)                              | Fuel pump cable connector (13)                                   | Disconnect.                                |
| 5. Large cable (9) to transmission cover panel (7)   | Two screws (8), clamps (10), and one defroster hose bracket (11) | Remove.                                    |

# 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

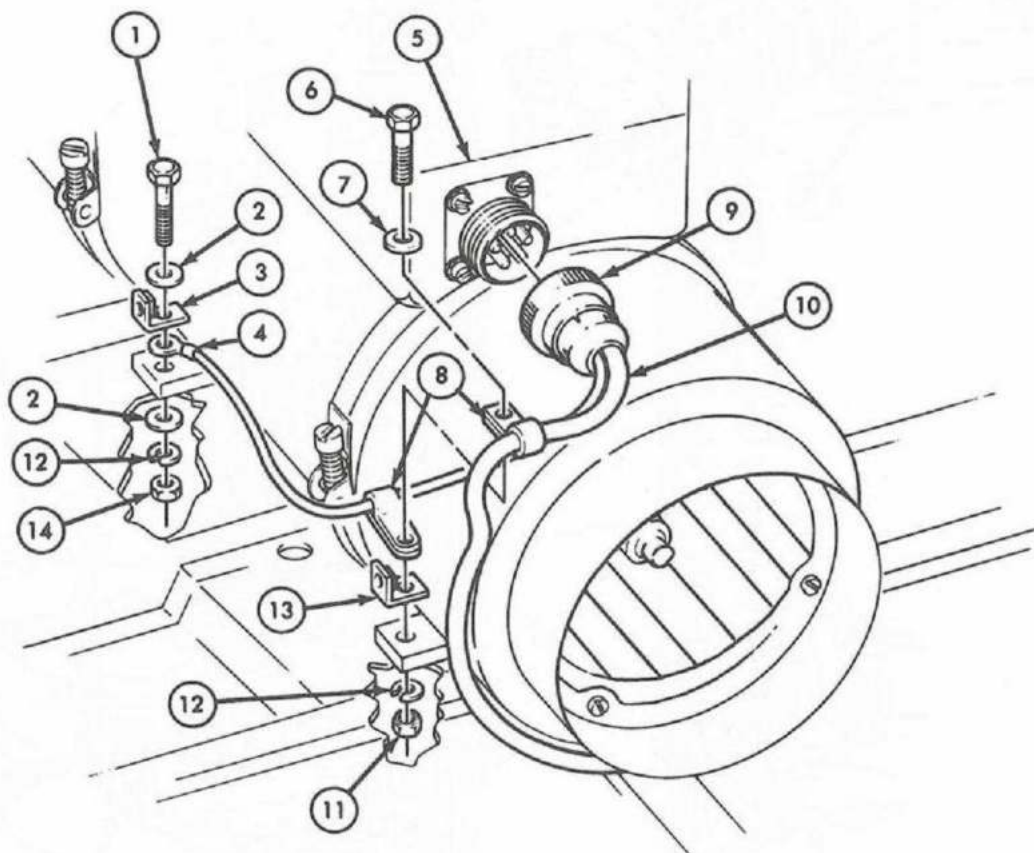
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155782

## 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Heater assembly (5)	Large cable assembly connector (9)	Disconnect.	
7.	Large cable (10) and heater ground cable (4) to right front mounting bracket (13)	Nut (11), lockwasher (12), flat washer (7), two clamps (8), and screw (6)	Remove.	
8.	Heater ground cable lead (4) to right rear mounting bracket (3)	Nut (14), lockwasher (12), two flat washers (2), and one screw (1).	Remove.	
9.		Large cable assembly (10)	Remove.	

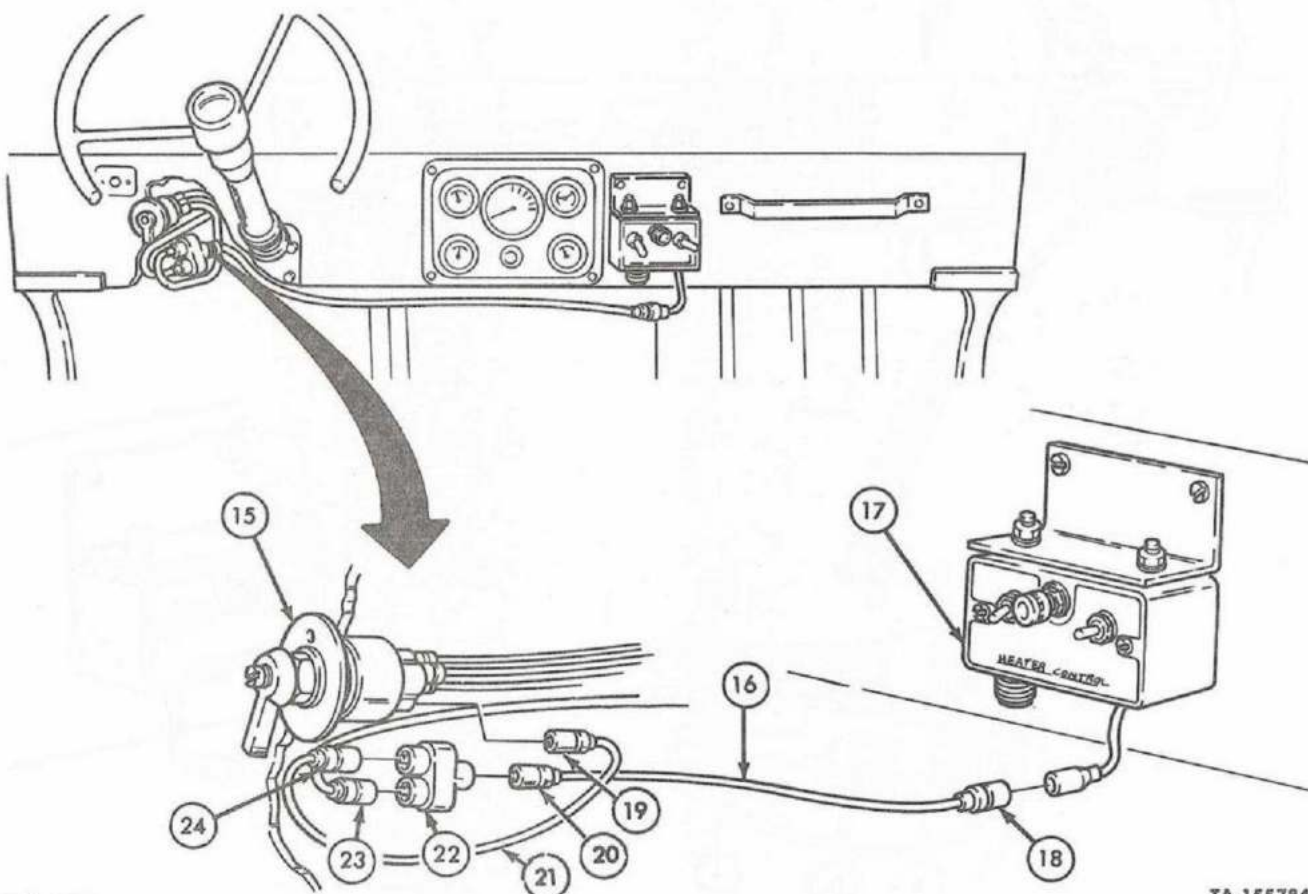


TA 155783



## 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Cable adapter (22)	Ignition switch circuit 11 connector (23)	Disconnect.	
11.	Ignition switch (15)	Ignition switch electrical lead connector (19)	Disconnect.	
12.	Cable adapter (22)	Ignition switch electrical lead connector (24)	Disconnect.	
13.		Ignition switch electrical lead (21)	Remove.	
14.	Cable adapter (22)	Control box electrical lead connector (20)	Disconnect.	
15.	Control box (17)	Control box electrical lead connector (18)	Disconnect.	
16.		Control box electrical lead (16)	Remove.	



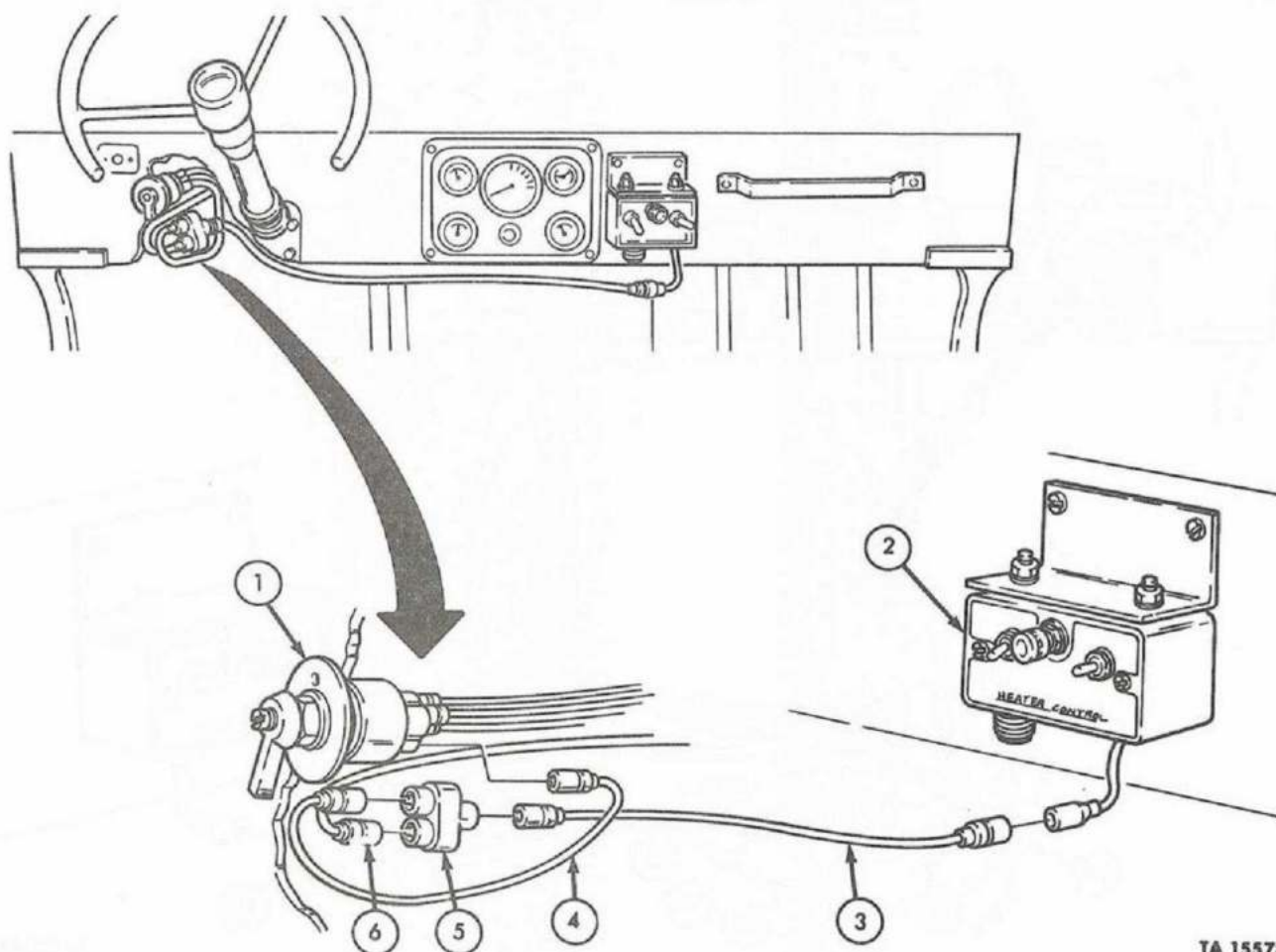
TA 155784

## 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. INSTALLATION**

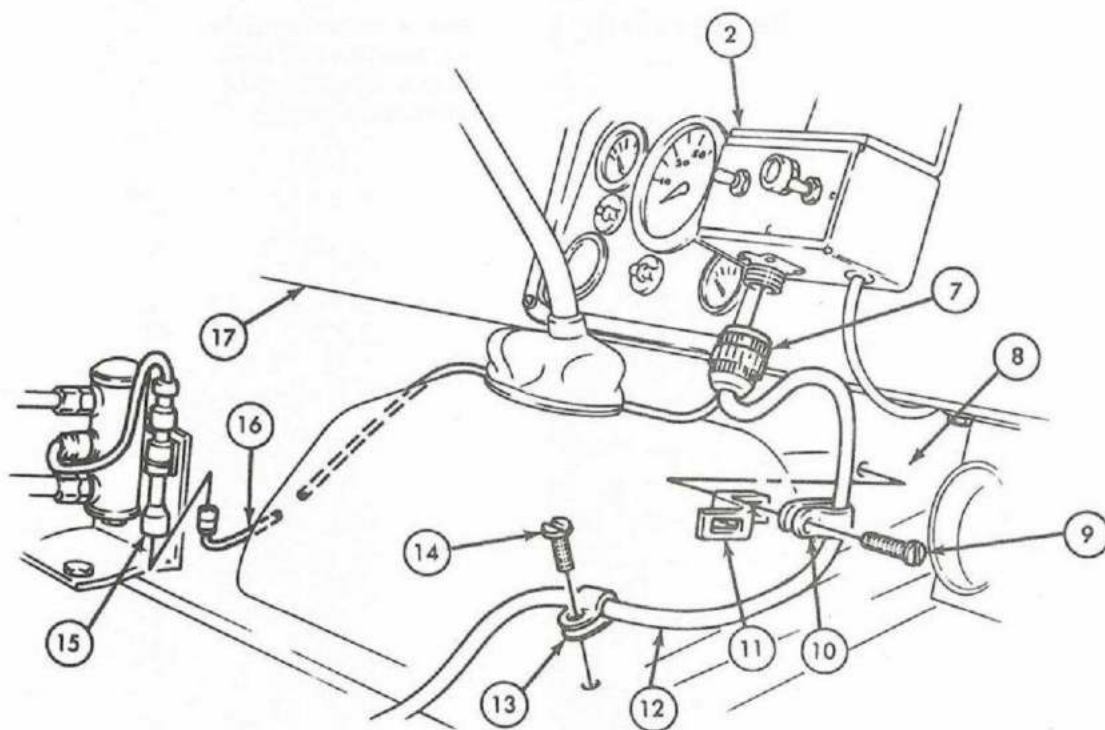
- |     |  |   |
|-----|--|---|
| 17. | Control box electrical lead (3)          | <p>a. Connect to control box (2).</p> <p>b. Connect to single opening of cable adapter (5).</p> |
| 18. | Ignition switch electrical lead (4)      | <p>a. Connect to cable adapter (5).</p> <p>b. Connect to ignition switch (1).</p>               |
| 19. | Ignition switch circuit 11 connector (6) | Connect to cable adapter (5).   |



TA 155785

## 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
20.		Large cable assembly connector (7)	Connect to control box (2).	
21.		Fuel pump cable (15)	Connect to fuel pump cable connector (16).	
22.		Large cable assembly (12)	<p>a. Secure to transmission cover panel (8) with upper clamp (10), defroster hose bracket (11), and screw (9).</p> <p>b. Secure to transmission cover panel (8) with lower clamp (13) and screw (14).</p>	The slotted face of bracket (11) should be parallel with dash panel (17) and leaning towards rear.



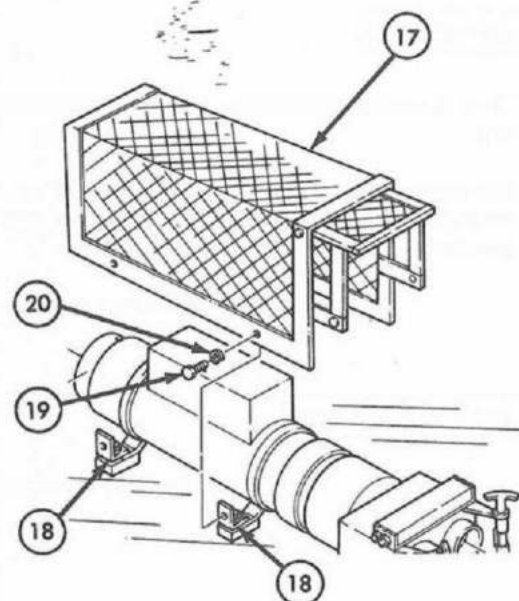
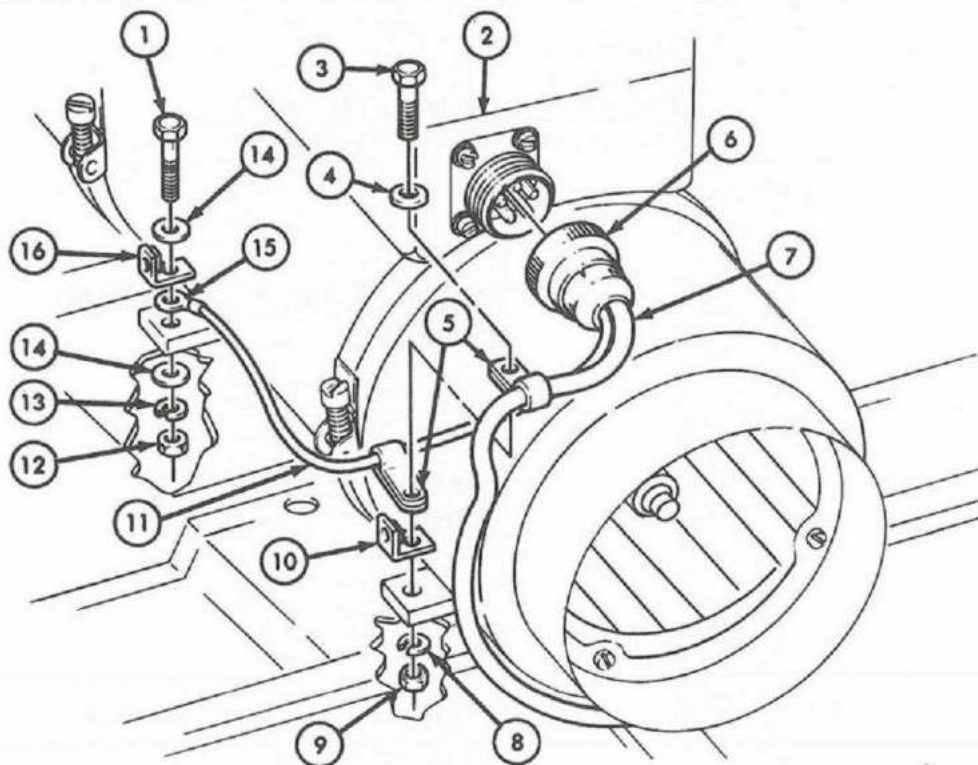
## 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
23.		Large cable assembly connector (6)	Connect to heater assembly (2).	
24.		Large cable assembly (7) and heater ground cable (11)	Secure to right front mounting bracket (10) with screw (3), two clamps (5), flat washer (4), lockwasher (8), and nut (9).	The large cable assembly (7) should be attached to forward clamp (5).
25.		Heater ground cable lead (15)	Secure to right rear mounting bracket (16) with screw (1), two flat washers (14), one lockwasher (13), and one nut (12).	
26.		Heater guard (17)	Secure to heater retaining brackets (18) with four lockwashers (20) and capscrews (19).	



## 11-12. Electrical Cable Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155787

FOLLOW-ON TASK: Check operation of -65°F (-54°C) winterization kit components (TM 9-2320-218-10).

**11-13. Diverter Actuator Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

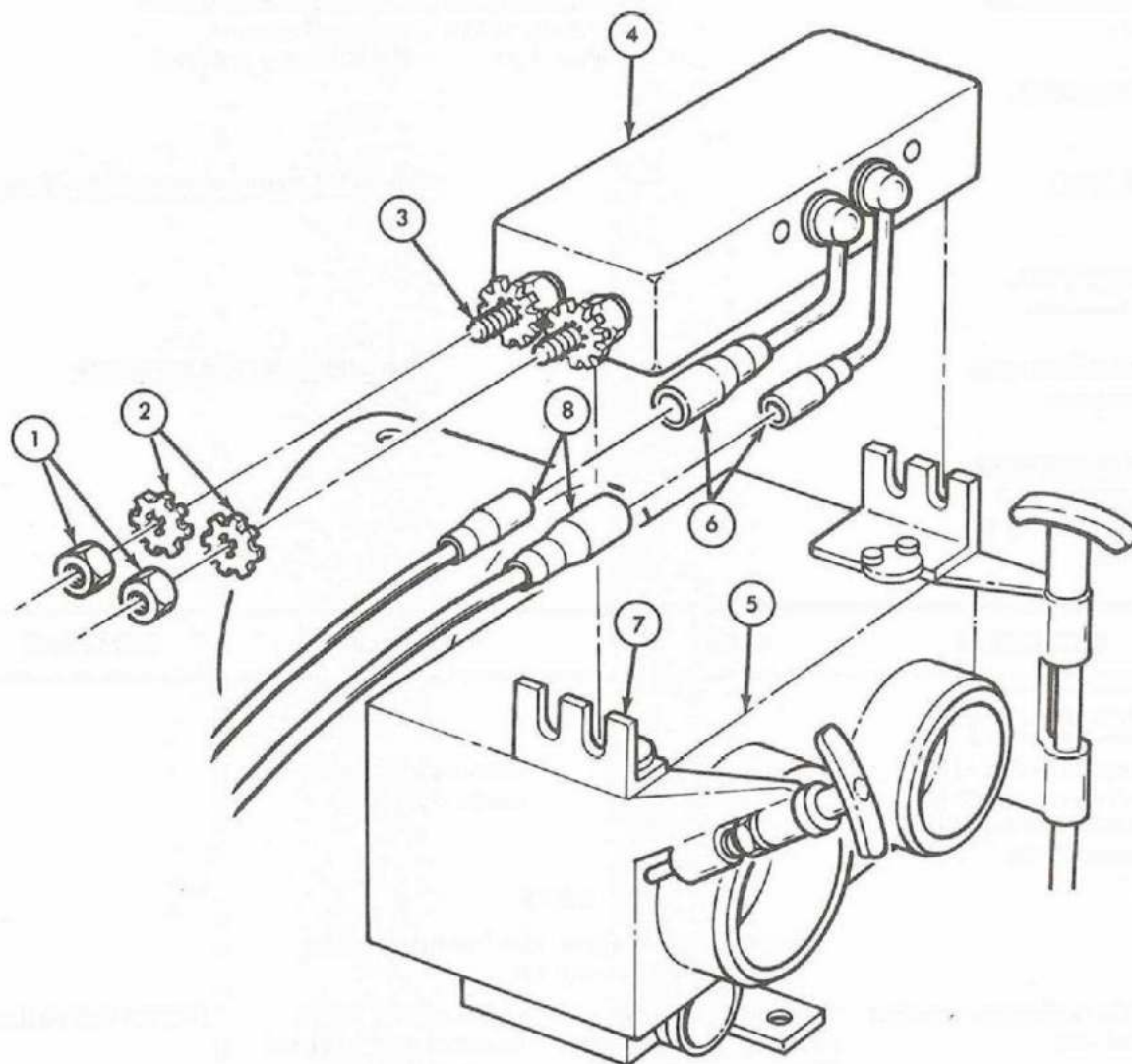
- |    |  |  |                                  |
|----|--|--|----------------------------------|
| 1. | Two actuator connectors (6)                                    | Two thermostat lead connectors (8)     | Disconnect.                      |
| 2. | Diverter actuator (4) to heater diverter mounting brackets (7) | Four nuts (1) and star lockwashers (2) | Remove.                          |
| 3. |  | Diverter actuator (4)                  | Remove from heater diverter (5). |

**b. INSTALLATION**

- |    |                                    |  |
|----|------------------------------------|--|
| 4. | Diverter actuator (4)              | <i>a.</i> Insert four studs (3) in diverter mounting bracket grooves (7).<br><br><i>b.</i> Secure with four star lockwashers (2) and nuts (1). |
| 5. | Two thermostat lead connectors (8) | Connect to two actuator connectors (6).  |

## 11-13. Diverter Actuator Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check operation of diverter actuator (TM 9-2320-218-10).

TA 155788

**11-14. Slave Receptacle Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**TM 9-2320-218-10  
Para 5-31**Condition Description**Parking brake set.  
Right battery removed.**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

Six lockwashers

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P  
FM 9-207

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

***a. REMOVAL***

- |   |                       |                                       |
|---|-----------------------|---------------------------------------|
| 1. Receptacle cable (9) and ignition cable (8) to left battery positive terminal (10) | Nut (11) and bolt (4) | Remove and detach cables (8) and (9). |
|---|-----------------------|---------------------------------------|

**NOTE**

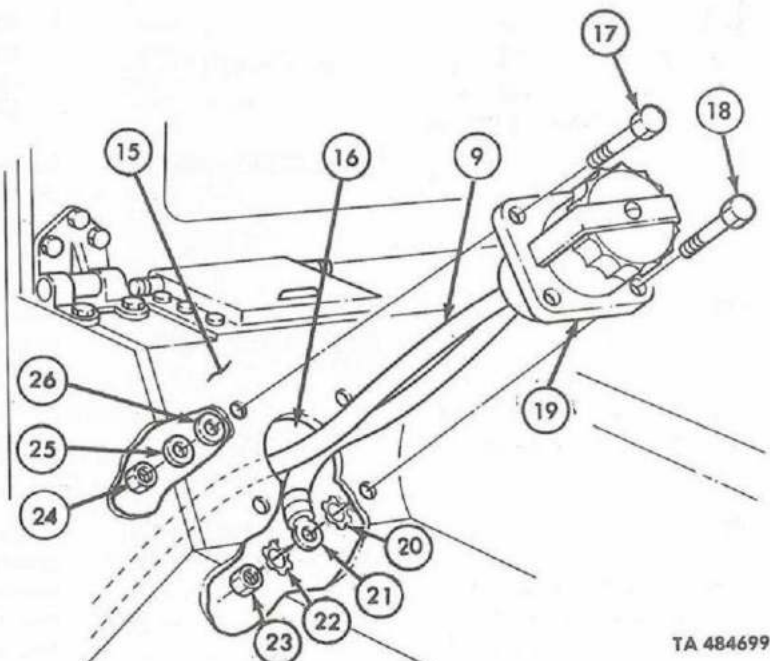
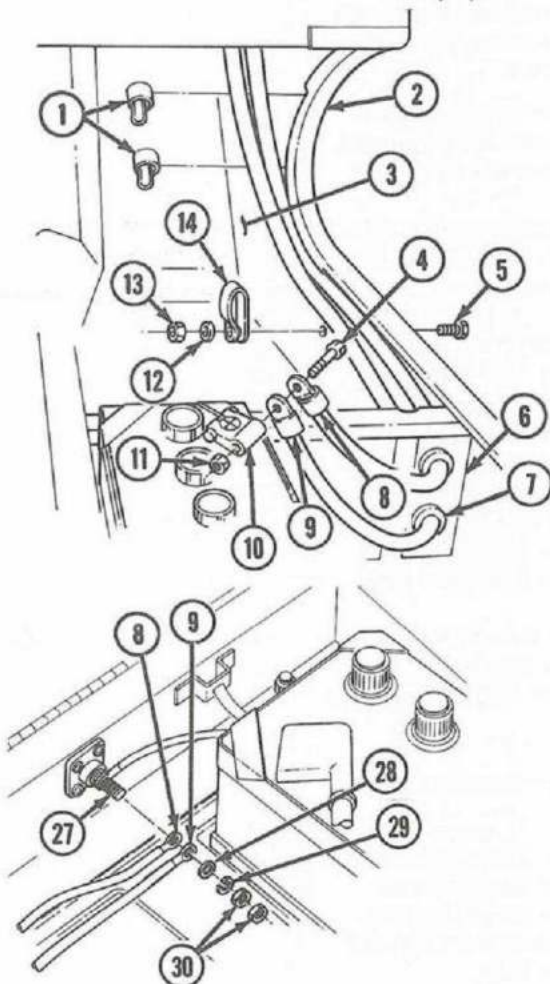
For vehicles equipped with battery junction terminal, perform step 1.1.

- |   |   |  |                          |
|---|---|--|--------------------------|
| 1.1. Battery junction terminal stud (27)                            | Two nuts (30), lock-washer (29), and washer (28). | Remove, and detach receptacle cable (9) and ignition cable (8) | Discard lockwasher (29). |
| 2. Retaining clamp (14) to body side panel (3)                      | Nut (13), washer (12), and capscrew (5)           | Remove.  |                          |
| 3.  | Retaining clamp (14)                              | Detach from receptacle (9) and ignition (8) cables.            |                          |
| 4. Receptacle (9) and ignition (8) cables to right cowl channel (2) | Two retaining clips (1)                           | Remove.  |                          |



## 11-14. Slave Receptacle Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Receptacle cable (9)	Pull forward through grommet (7) in seat riser (6).	
6.	Slave receptacle (19) and ground cable lead (21) to cowl (15)	Nut (23), two internal/external tooth lockwashers (22), and (20), and one cap-screw (18)	Remove.	Discard lockwashers (22) and (20).
7.	Slave receptacle (19) to cowl (15)	Three nuts (24), lockwashers (25), flat washers (26), and capscrews (17)	Remove.	Discard lockwashers (25).
8.		Slave receptacle (19) and cables (9) and (21)	Remove from opening (16) in cowl (15).	



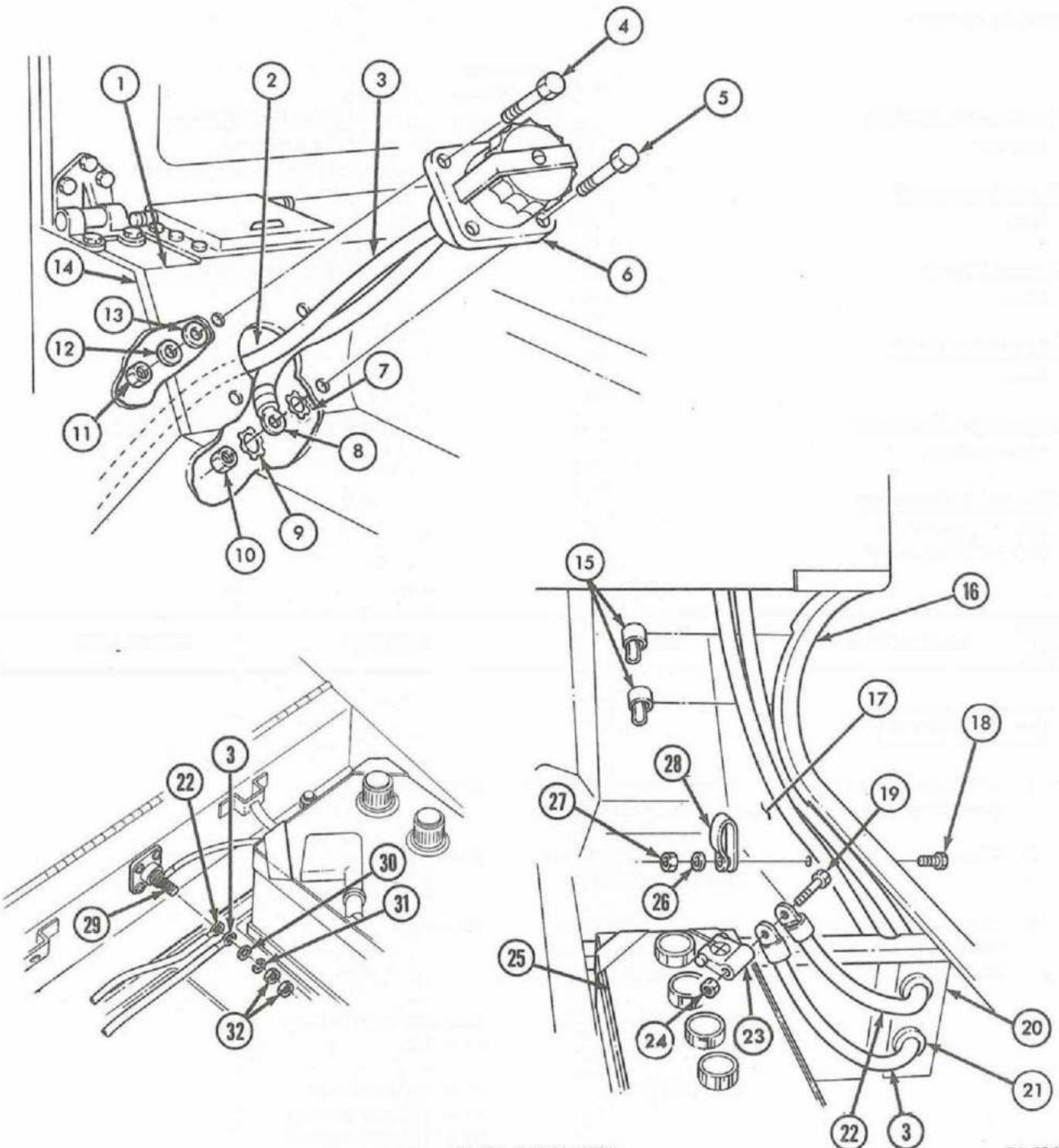
TA 484699

## 11-14. Slave Receptacle Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>b. INSTALLATION</i>				
9.		Receptacle cable (3)	Insert through cowl opening (2).	Make sure cable (3) is routed next to body side panel (14).
10.		Slave receptacle (6)	<p><i>a.</i> Secure to cowl (1) with three capscrews (4), flat washers (13), new lockwashers (12), and nuts (11).</p> <p><i>b.</i> Secure at remaining hole with capscrew (5), new internal/external tooth lockwasher (7), ground cable lead (8), new internal/external tooth lockwasher (9), and nut (10).</p>	
11.		Receptacle cable (3)	Insert through grommet (21) in seat riser (20) and pull toward battery (25).	
12.		Retaining clamp (28)	<p><i>a.</i> Install around receptacle (3) and ignition (22) cables.</p> <p><i>b.</i> Secure to body side panel (17) with capscrew (18), washer (26), and nut (27).</p>	
13.		Two retaining clips (15)	Install around receptacle (3) and ignition (22) cables and secure to right cowl channel (16).	
14.		Slave receptacle cable (3) and ignition cable (22)	Secure to battery (25) positive terminal (23) with bolt (19) and nut (24).	
<p style="text-align: center;"><b>NOTE</b></p> <p>For vehicles equipped with battery junction terminal, perform step 15.</p>				
15.		Ignition cable (22) and slave receptacle cable (3)	Place on battery junction terminal stud (29) and secure with washer (30), new lockwasher (31), and two nuts (32).	

# 11-14. Slave Receptacle Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 484700

**FOLLOW-ON TASKS:**

- Install right battery (para 5-31).
- Check slave receptacle for proper operation (FM 9-207 cold starting kit instructions).



**11-15. Thermostat and Circuit Breaker Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

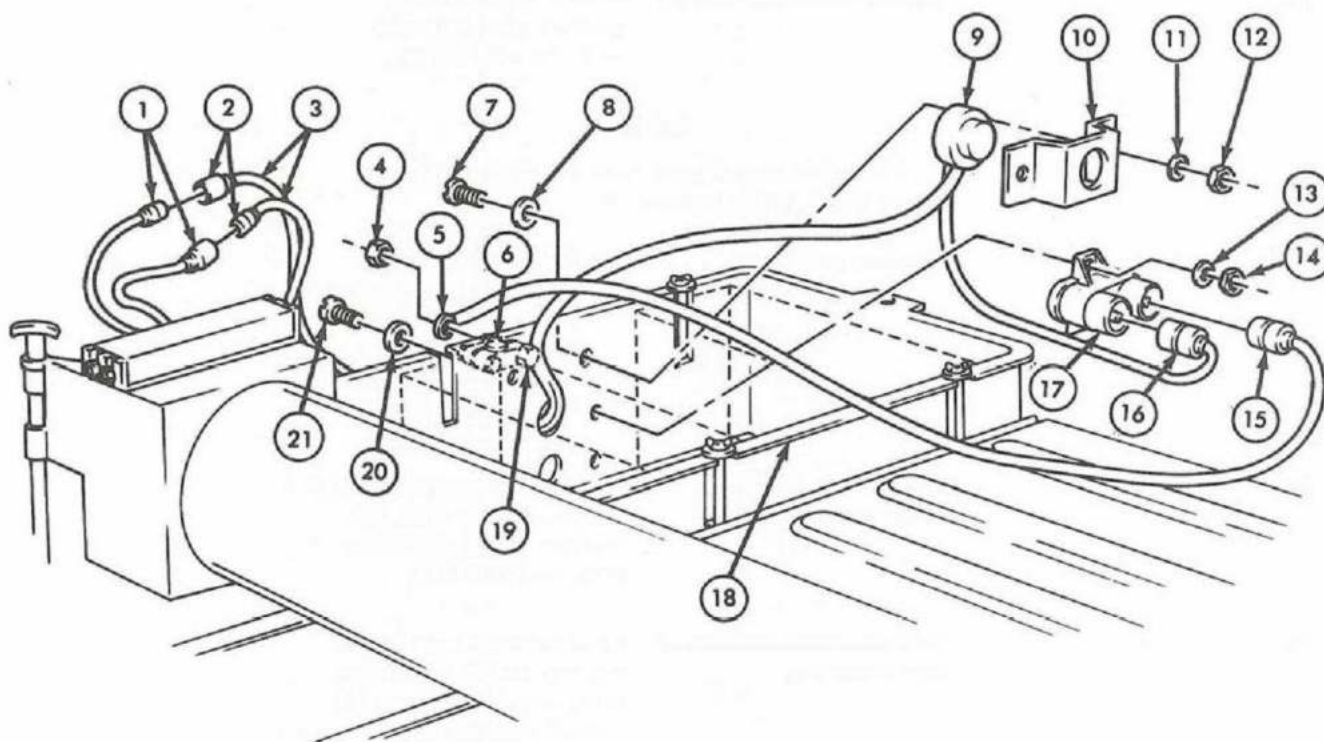
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Battery box cover removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b><i>a. REMOVAL</i></b>				
1.	Two actuator cable connectors (1)	Two thermostat electrical wire connectors (2)	Disconnect.	
2.	Circuit breaker (17)	Thermostat electrical lead connector (16)	Disconnect.	
3.	Thermostat retainer bracket (10) to battery box (18)	Two nuts (12), lock-washers (11), flat washers (8), and screws (7)	Remove.	
4.		Retainer bracket (10)	Remove from battery box (18).	
5.		Thermostat (9)	Pull electrical lead wires (3) into battery box (18), and remove from box (18).	
6.	Circuit breaker (17)	Battery electrical lead connector (15)	Disconnect.	



## 11-15. Thermostat and Circuit Breaker Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Battery electrical lead (5) to left battery positive post (6)	Nut (4)	Remove from bolt (19).	
8.		Battery electrical lead (5)	a. Remove from left battery positive post (6). b. Remove from box (18).	
9.	Circuit breaker (17) to battery box (18).	Two nuts (14), lock-washers (13), flat washers (20), and screws (21).	Remove.	
10.		Circuit breaker (17)	Remove from box (18).	

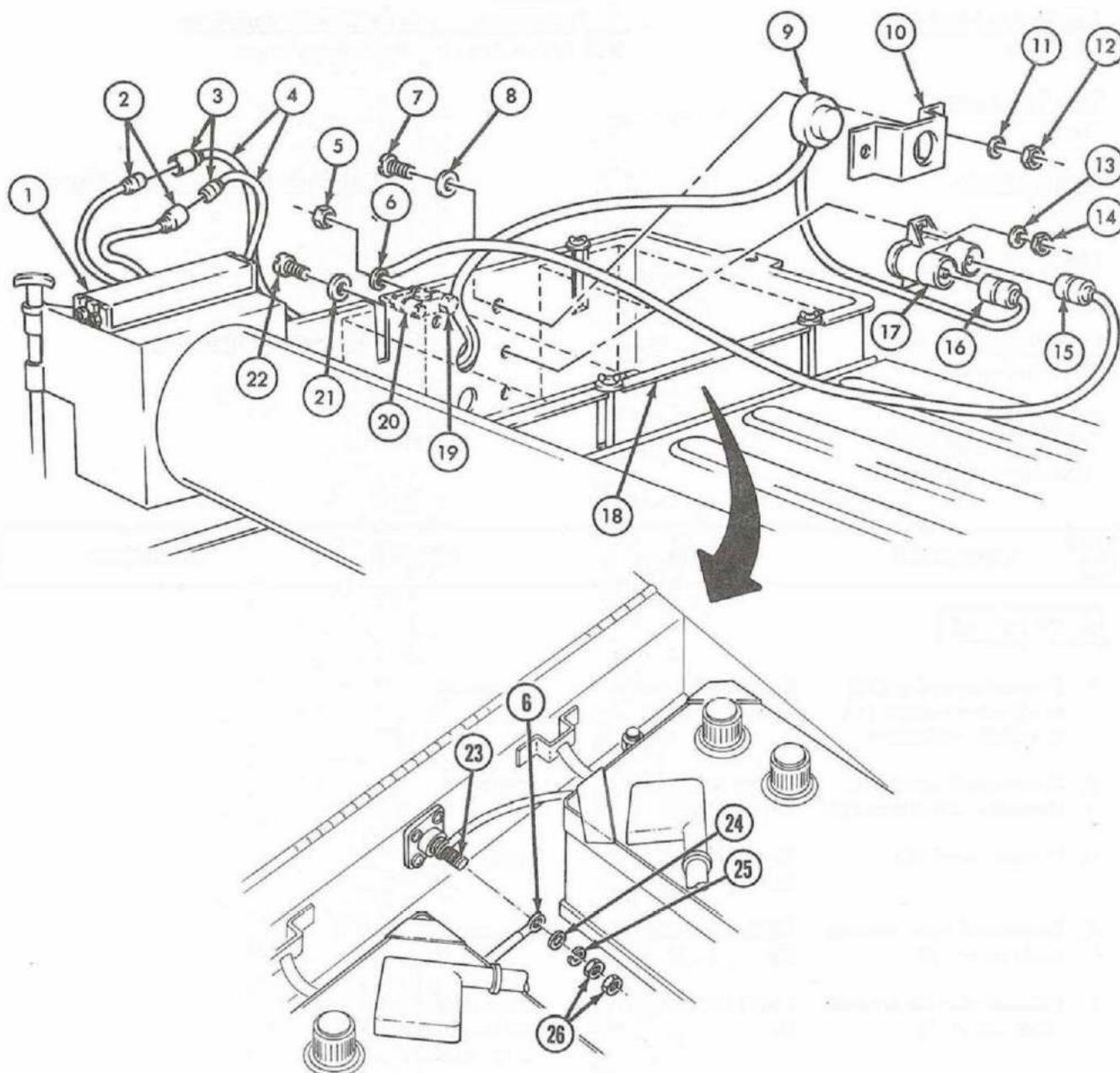


## 11-15. Thermostat and Circuit Breaker Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. INSTALLATION</b>				
11.		Circuit breaker (17)	Secure to battery box (18) with two screws (22), flat washers (21), lockwashers (13), and nuts (14).	
12.		Battery electrical lead connector (15)	Connect to circuit breaker (17).	
13.		Battery electrical lead (6)	Secure to left battery positive post (20) with bolt (19) and nut (5).	
<p style="text-align: center;"><b>NOTE</b></p> <p>For vehicles equipped with battery junction terminal, perform steps 13.1.</p>				
13.1.		Ignition cable (6)	Place on battery junction terminal stud (23) and secure with washer (24), new lockwasher (25), and two nuts (26).	
14.		Thermostat (9) and retainer bracket (10).	Secure to battery box (18) with two screws (7), flat washers (8), lockwashers (11), and nuts (12).	
15.		Two thermostat electrical lead wires (4)	Feed through hole below thermostat (9), and route along outside of box (18) toward actuator (1).	
16.		Two thermostat wire connectors (3)	Connect to actuator cable connectors (2).	
17.		Thermostat electrical lead connector (16)	Connect to circuit breaker (17).	

## 11-15. Thermostat and Circuit Breaker Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 484701

FOLLOW-ON TASKS:

- Install battery box cover (TM 9-2320-218-10).
- Check diverter actuator for proper operation.

**11-16. Diverter Exhaust Control Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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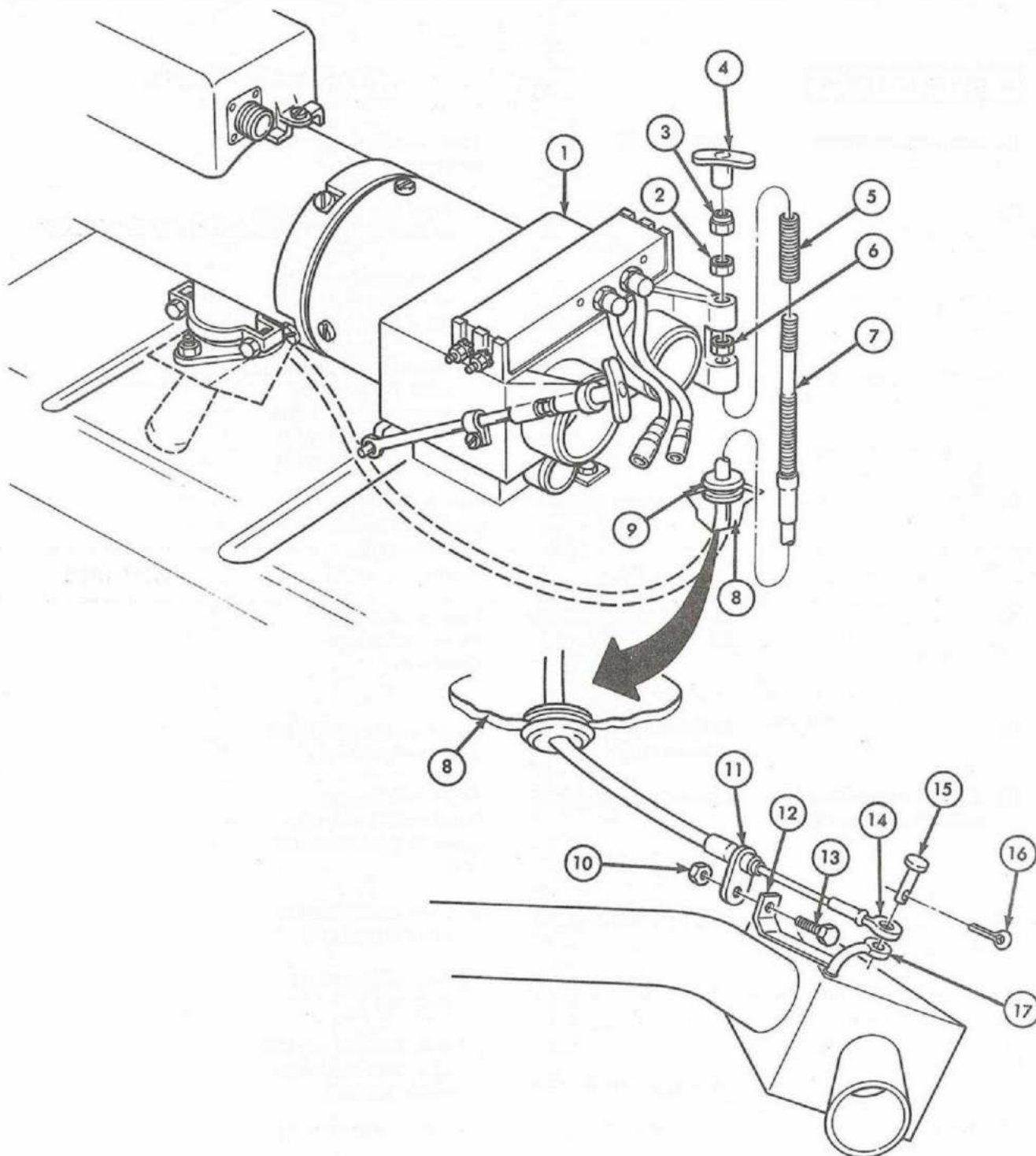
**a. REMOVAL**

- |  |                                     |   |
|--|-------------------------------------|---|
| 1. Control assembly (11) to diverter bracket (12) at vehicle underside | Locknut (10) and capscrow (13)      | Remove.   |
| 2. Control cable (14) to diverter control arm (17)                     | Cotter pin (16) and clevis pin (15) | Remove.   |
| 3. Control cable (7)   | T-handle (4) and locknut (3)        | Remove.   |
| 4. Exhaust diverter control cable sleeve (5)                           | Cable sleeve upper nut (2)          | Remove.   |
| 5. Exhaust diverter control cable sleeve (5)                           | Cable sleeve lower nut (6)          | Run up threaded portion of cable sleeve (5) and remove. |
| 6. Heater diverter (1)   | Cable (7) and sleeve (5)            | Remove.   |
| 7. Floor panel (8)   | Grommet (9)                         | Remove and slide up cable (7).                          |
| 8. Floor panel (8)   | Control cable (7)                   | Pull through opening.                                   |



# 11-16. Diverter Exhaust Control Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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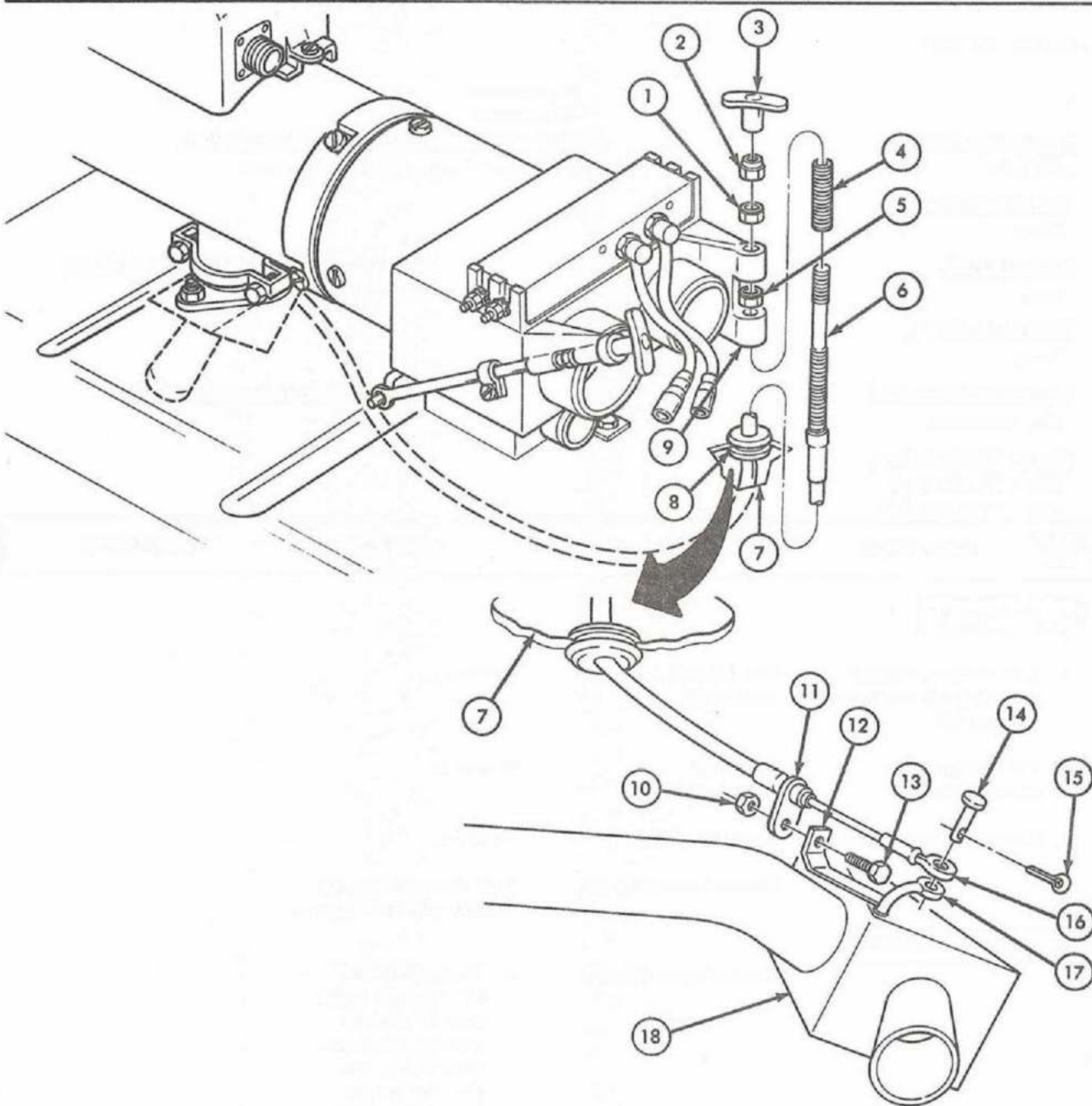
TA 155793

## 11-16. Diverter Exhaust Control Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. INSTALLATION</b>				
9.	Crew compartment	Grommet (8)	Slide over control cable (6).	
10.		Control cable (6)	<ol style="list-style-type: none"> <li>Feed through opening in floor panel (7).</li> <li>Install grommet (8) in floor panel opening (7).</li> <li>Insert threaded end of cable (6) through lower hole of heater diverter bracket (9) and cable sleeve (4).</li> </ol>	
11.		Cable sleeve lower nut (5)	Run down threaded portion of cable sleeve (4) and secure.	
12.		Cable sleeve upper nut (1)	Run up threaded portion of cable sleeve (4).	
13.		Locknut (2) and T-handle (3)	Install on threaded end of control cable (6).	
14.	Vehicle underside at exhaust diverter (18)	Control assembly (11)	Secure to diverter bracket (12) with cap-screw (13) and locknut (10).	
15.		Control cable (16)	<ol style="list-style-type: none"> <li>Connect to diverter control arm (17).</li> <li>Secure with clevis pin (14).</li> <li>Install cotter pin (15) and bend ends over clevis pin (14).</li> </ol>	

## 11-16. Diverter Exhaust Control Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check for binding of diverter exhaust control assembly (TM 9-2320-218-10).

TA 155794

**11-17. Cab Ducting Control Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Test Equipment**

None

**Special Tools**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Special Environmental Conditions**

None

**General Safety Instructions**

None

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |    |  |                             |   |
|----|--|-----------------------------|---|
| 1. | Cab ducting control assembly (4) to diverter bracket (5) | Nut (7) and lock-washer (6) | Remove.                                       |
| 2. | Cable clip (8) to diverter (3)                           | Screw (9)                   | Remove.                                       |
| 3. | Diverter control arm (2)                                 | Control cable (1)           | Remove.                                       |
| 4. |  | Control assembly (4)        | Pull through diverter bracket (5) and remove. |

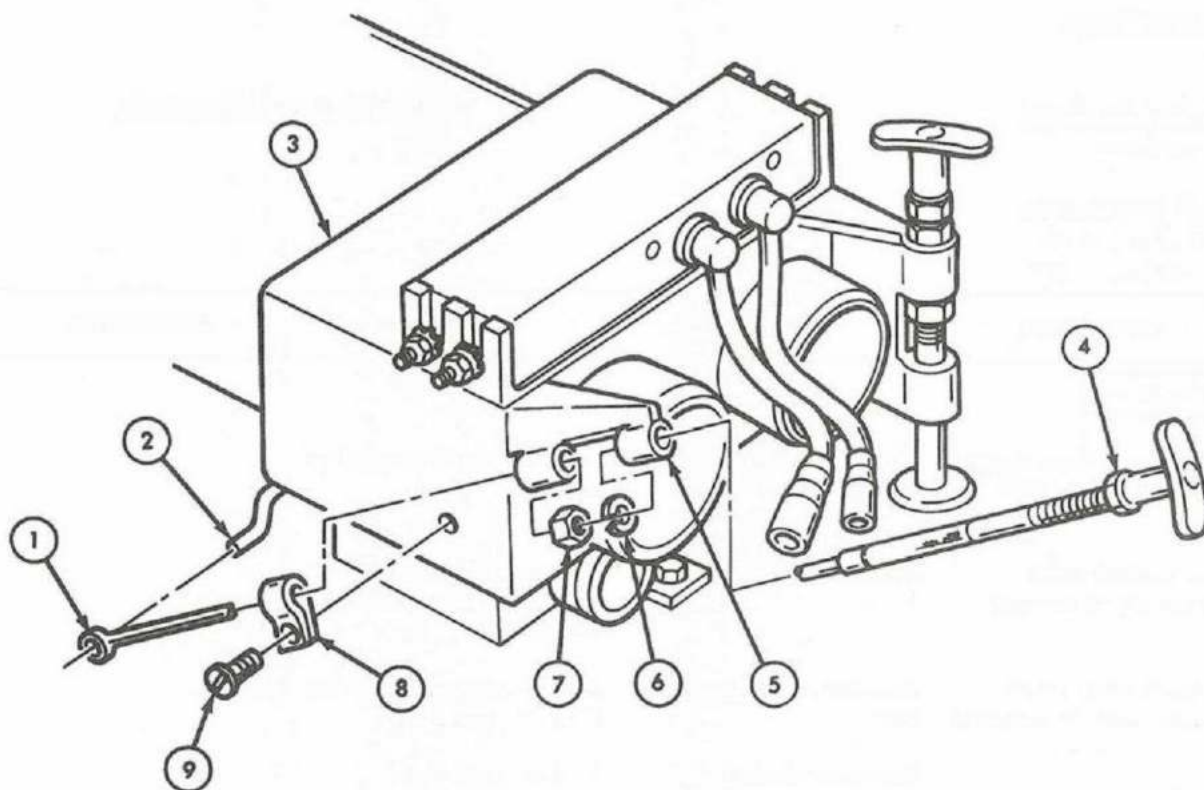
**b. INSTALLATION**

- |    |                      |   |
|----|----------------------|---|
| 4. | Control assembly (4) | <p>a. Feed cable end (1) through upper hole of diverter bracket (5), lock-washer (6), nut (7), and lower hole of diverter bracket (5).</p> <p>b. Run nut (7) up threaded portion of control assembly (4) and tighten.</p> |
|----|----------------------|---|



## 11-17. Cab Ducting Control Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Control cable (1)	<p>a. Connect to diverter control arm (2).</p> <p>b. Secure to diverter with clip (8) and screw (9).</p>	



END OF TASK!

FOLLOW-ON TASK: Check for binding of cab ducting control assembly (TM 9-2320-218-10).

TA 155795

**11-18. Defroster Control Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

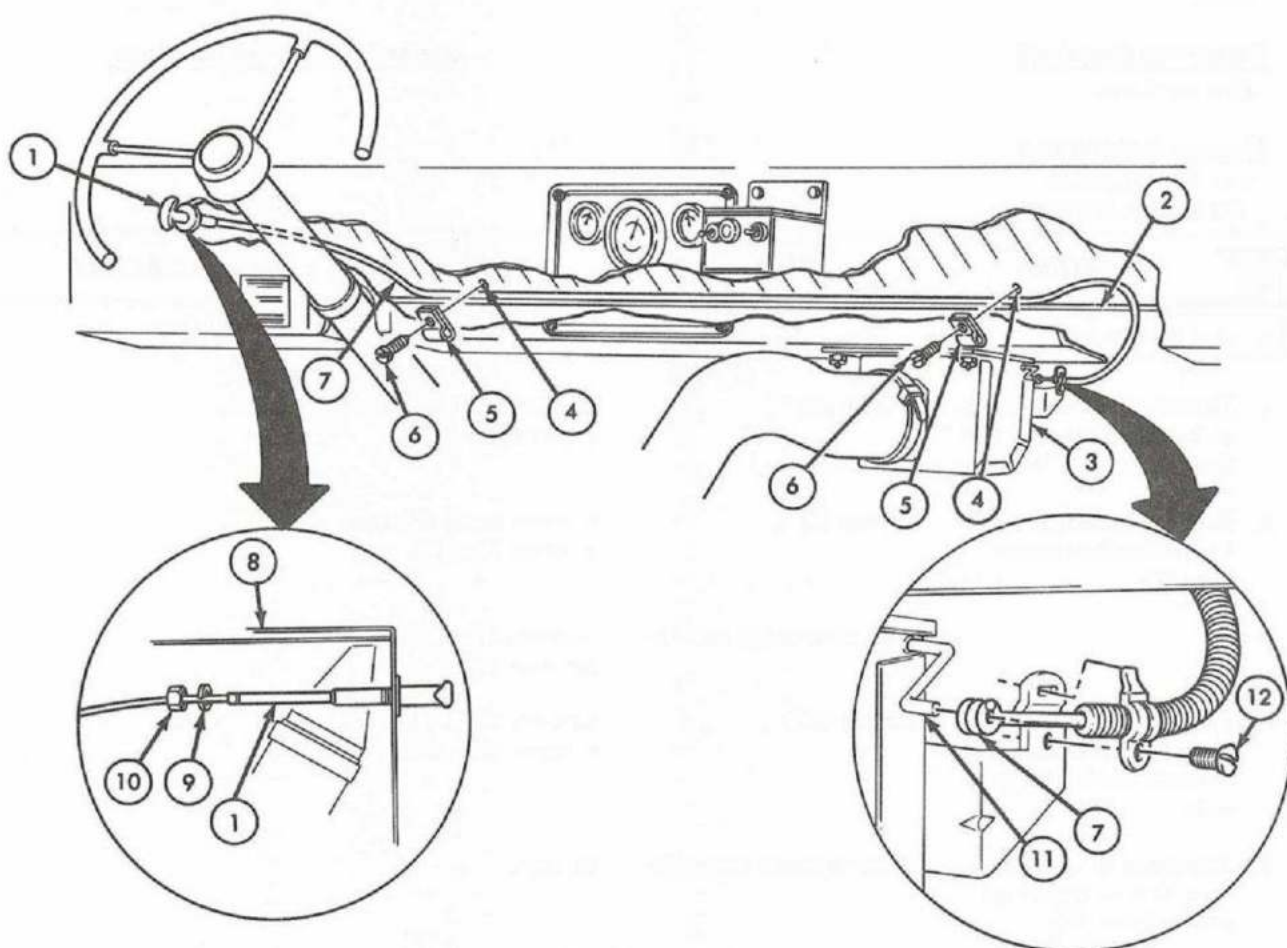
- |    |  |                                |   |
|----|--|--------------------------------|---|
| 1. | Defroster control assembly (1) to dash panel (8) | Nut (10) and lock-washer (9)   | Remove from backside of panel (8).                    |
| 2. | Two control cable clamps (5) to firewall (4)     | Two screws (6)                 | Remove and detach clamps (5) from cables (2) and (7). |
| 3. | Control cable (7) to diverter control arm (11)   | Retainer clamp screw (12)      | Loosen and remove cable (7) from arm (11).            |
| 4. |  | Defroster control assembly (1) | Pull through dash panel (8).                          |

**b. INSTALLATION**

- |    |                                |  |
|----|--------------------------------|--|
| 5. | Defroster control assembly (1) | <i>a.</i> Feed through opening in dash panel (8), lockwasher (9), and nut (10).<br><br><i>b.</i> Route along firewall (4) to diverter box (3). |
|----|--------------------------------|--|

## 11-18. Defroster Control Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Control cable (7)	Connect to defroster diverter control arm (11) and tighten retainer clamp screw (12).	
7.		Control cable (7) and battery cable (2)	Secure to firewall (4) with two clamps (5) and screws (6).	
8.		Defroster control assembly (1)	Secure to dash panel (8) with lockwasher (9) and nut (10).	



END OF TASK!

FOLLOW-ON TASK: Check for binding of defroster control assembly (TM 9-2320-218-10).

TA 155861

**11-19. Air Hose Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10 Para 10-10	Parking brake set. Front seats removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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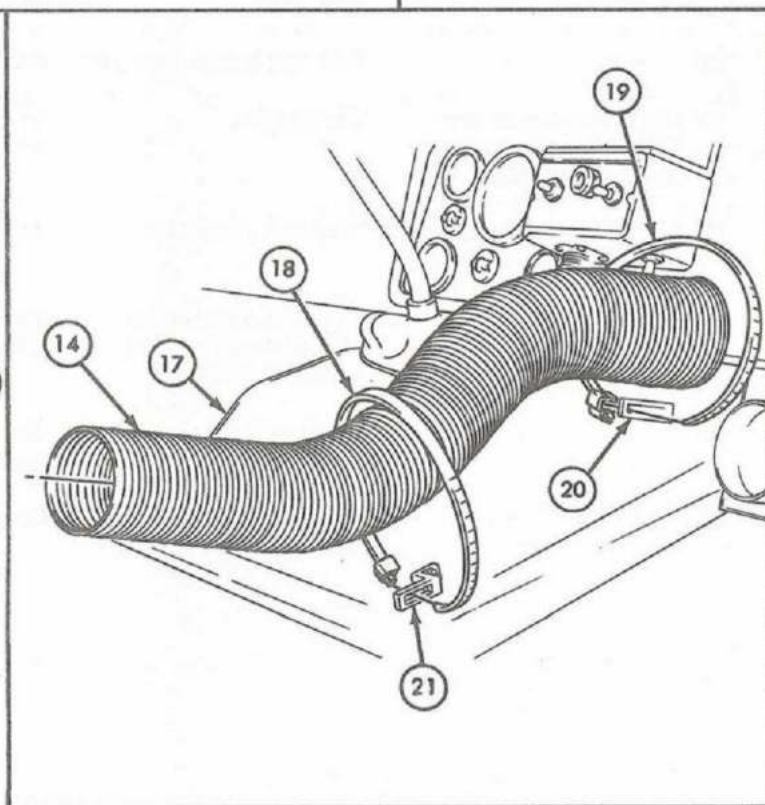
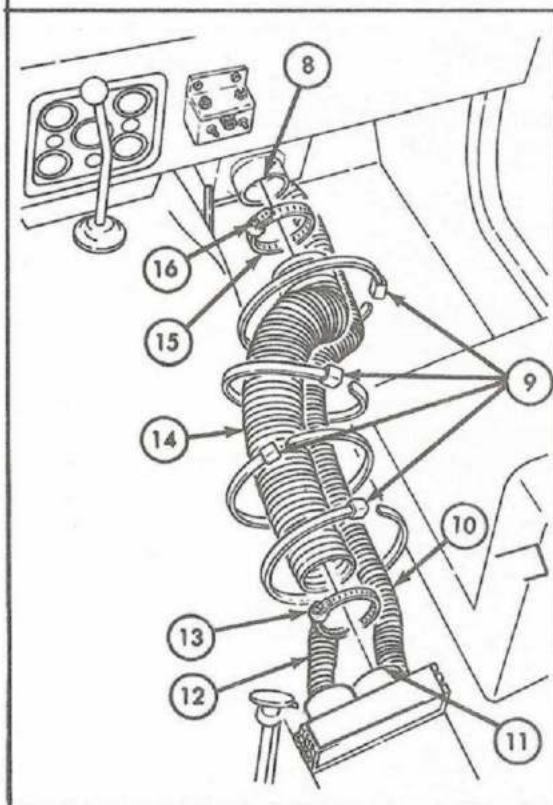
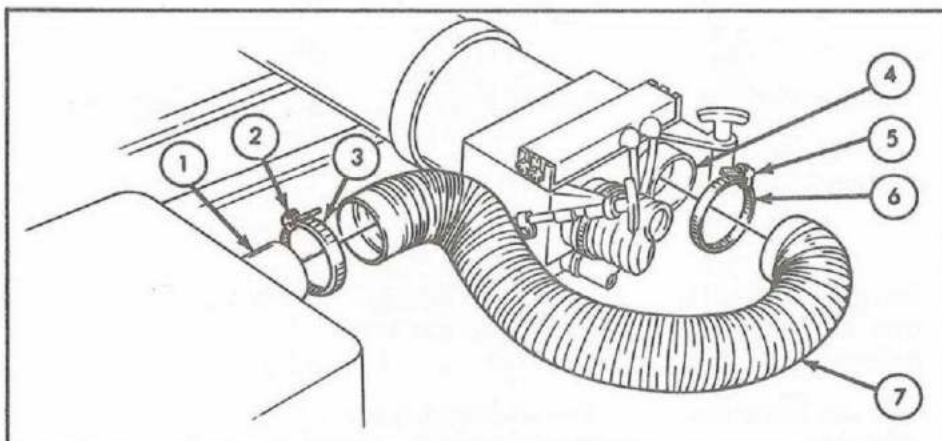
**a. REMOVAL**

- |  |                         |   |
|--|-------------------------|---|
| 1. Battery box air hose (7) to heater diverter outlet flange (4)           | Clamp (6)               | Loosen screw (5) and remove hose (7).   |
| 2. Battery box air hose (7) to battery box cover inlet (1)                 | Clamp (3)               | Loosen screw (2) and remove hose (7).   |
| 3.   | Two clamps (3) and (6)  | Remove from battery box air hose (7).   |
| 4. Defroster diverter air hose (14) to heater diverter outlet flange (11)  | Clamp (12)              | Loosen screw (13) and remove hose (14). |
| 5. Defroster diverter air hose (14) to right cab heater hose (10)          | Four tiedown straps (9) | Remove.                                 |
| 6. Defroster diverter air hose (14) to defroster diverter inlet flange (8) | Clamp (15)              | Loosen screw (16) and remove hose (14). |



## 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Defroster diverter air hose (14) to two retainer brackets (21) and (20) on transmission cover panel (17)	Two retainer clamps (18) and (19)	Unscrew and remove from hose (14) and brackets (21) and (20).	
8.		Two clamps (18) and (19)	Remove from defroster diverter air hose (14).	

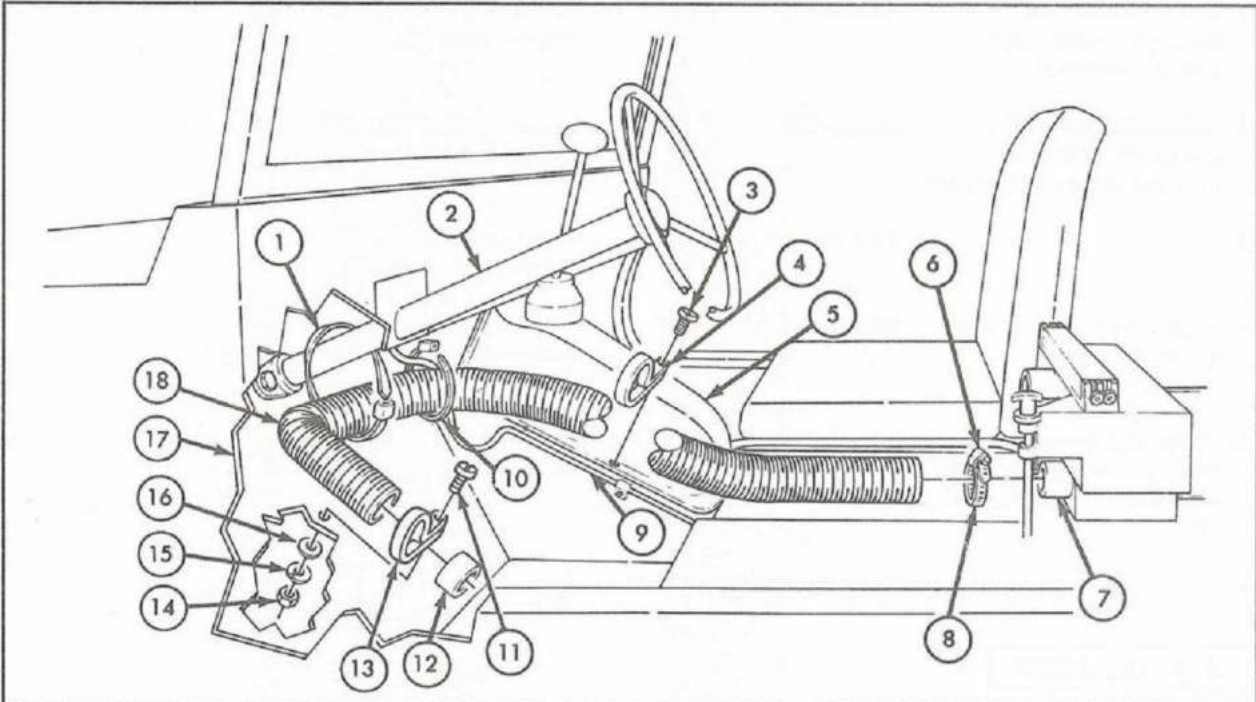
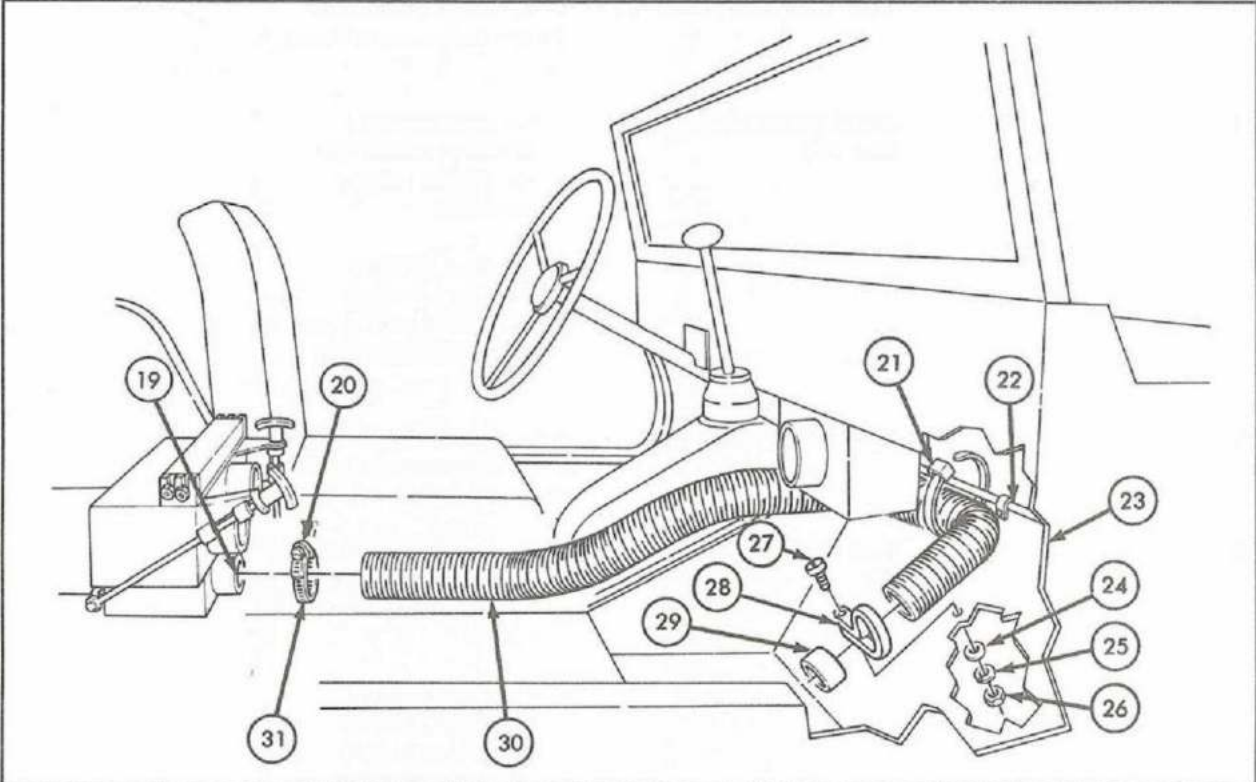


TA 155862

## 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.	Left cab heater hose (18) to heater diverter outlet flange (7).	Clamp (8)	Loosen screw (6) and remove hose (18).	
10.	Left cab heater hose loop clamp (4) to transmission cover panel (5)	Panel capscrew (3)	Remove and detach clamp (4) from heater hose (18).	
11.	Left cab heater hose (18) to brake line (9)	Tiedown strap (10)	Remove.	
12.	Left cab heater hose (18) to steering column (2)	Tiedown strap (1)	Remove.	
13.	Left cab heater hose loop clamp (13) to floor panel (17)	Nut (14), lockwasher (15), flat washer (16), and screw (11)	Remove and detach clamp (13) from heater hose (18).	
14.		Left cab heater hose tube (12)	Remove from left cab heater hose (18).	
15.		Left cab heater hose (18)	Remove.	
16.	Right cab heater hose (30) to heater diverter outlet flange (19)	Clamp (31)	Loosen screw (20) and remove hose (30).	
17.	Right cab heater hose (30) to battery cable (22)	Tiedown strap (21)	Remove.	
18.	Right cab heater hose loop clamp (28) to floor panel (23)	Nut (26), lockwasher (25), flat washer (24), and screw (27)	Remove and detach clamp (28) from heater hose (30).	
19.		Right cab heater hose tube (29)	Remove from right cab heater hose (30).	
20.		Right cab heater hose (30)	Remove.	

11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

TA 155863



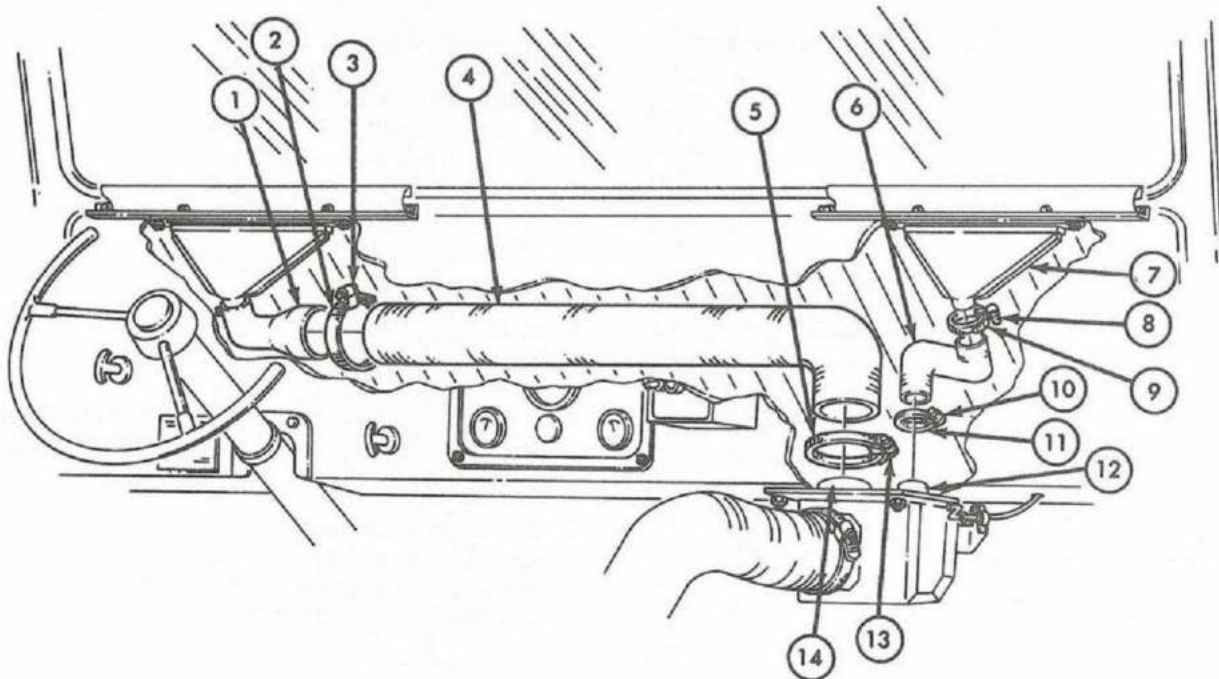
## 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
21.	Left defroster air hose (4) to defroster elbow nozzle (1)	Clamp (2)	Loosen screw (3) and remove hose (4).	
22.	Left defroster air hose (4) to left defroster diverter outlet flange (14)	Clamp (5)	Loosen screw (13) and remove hose (4).	
23.		Two clamps (2) and (5)	Remove from left defroster air hose (4).	
24.	Right defroster air hose (6) to defroster nozzle (7)	Clamp (9)	Loosen screw (8) and remove hose (6).	
25.	Right defroster air hose (6) to right defroster diverter outlet flange (12)	Clamp (11)	Loosen screw (10) and remove hose (6).	
26.		Two clamps (9) and (11)	Remove from right defroster air hose (6).	
<b>b. INSTALLATION</b>				
27.		Two clamps (9) and (11)	Install one on each end of right defroster air hose (6).	
28.	Right defroster air hose (6)		<ul style="list-style-type: none"> <li>a. Connect to right defroster nozzle (7) and tighten clamp screw (8).</li> <li>b. Connect to right defroster diverter outlet flange (12) and tighten clamp screw (10).</li> </ul>	
29.		Two clamps (2) and (5)	Install one on each end of left defroster air hose (4).	
30.	Left defroster air hose (4)		<ul style="list-style-type: none"> <li>a. Connect to defroster elbow nozzle (1) and tighten clamp screw (3).</li> <li>b. Connect to left defroster diverter outlet flange (14) and tighten clamp screw (13).</li> </ul>	



11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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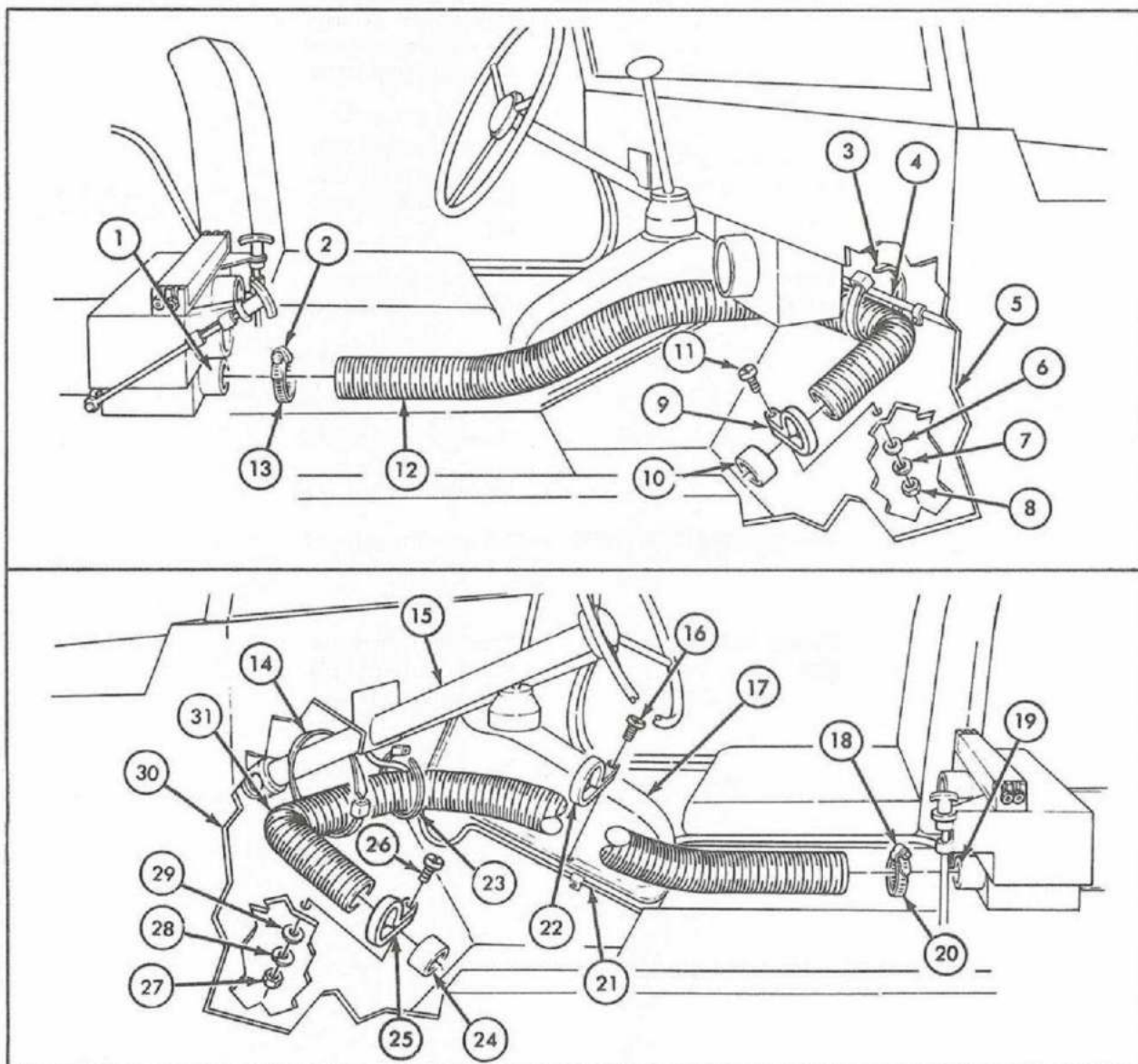


## 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
31.		Clamp (13)	Install on diverter end of right cab heater hose (12).	
32.		Right cab heater hose (12)	<ol style="list-style-type: none"> <li>Connect to right heater diverter outlet flange (1) and tighten clamp screw (2).</li> <li>Attach to battery cable (4) with tie-down strap (3).</li> </ol>	
33.		Right cab heater hose tube (10)	Insert in free end of right cab heater hose (12).	
34.		Loop clamp (9)	<ol style="list-style-type: none"> <li>Install on free end of right cab heater hose (12).</li> <li>Secure to floor panel (5) with screw (11), flat washer (6), lock-washer (7), and nut (8).</li> </ol>	Make sure hose (12) is on outboard side of clamp screw (11).
35.		Clamp (20)	Install on diverter end of left cab heater hose (31).	
36.		Left cab heater hose (31)	<ol style="list-style-type: none"> <li>Connect to left heater diverter outlet flange (19) and tighten clamp screw (18).</li> <li>Attach to brake line (21) with tiedown strap (23).</li> <li>Attach to steering column (15) with tiedown strap (14).</li> </ol>	
37.		Loop clamp (22)	<ol style="list-style-type: none"> <li>Install on left cab heater hose (31).</li> <li>Secure to transmission cover panel (17) with panel capscrew (16).</li> </ol>	

## 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
38.		Left cab heater hose tube (24)	Insert in free end of left cab heater hose (31).	
39.		Loop clamp (25)	<p>a. Install on free end of left cab heater hose (31).</p> <p>b. Secure to floor panel (30) with screw (26), flat washer (29), lock-washer (28), and nut (27).</p>	Make sure hose (31) is on outboard side of clamp screw (26).



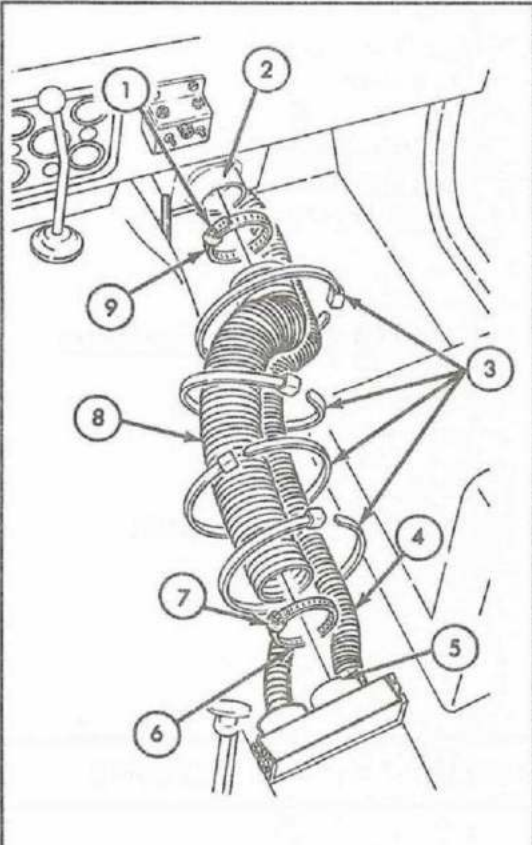
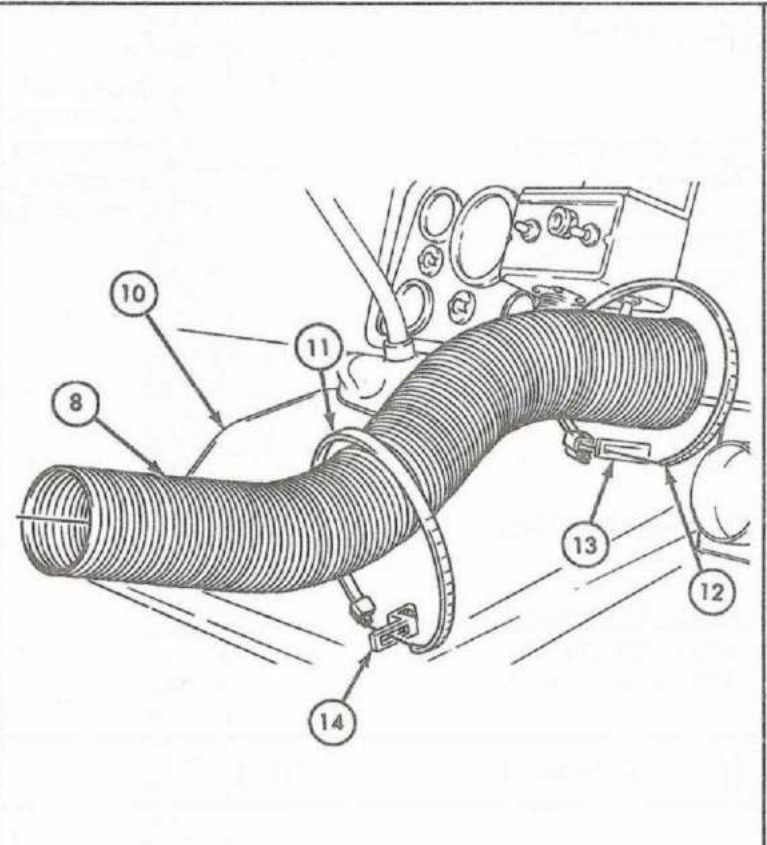
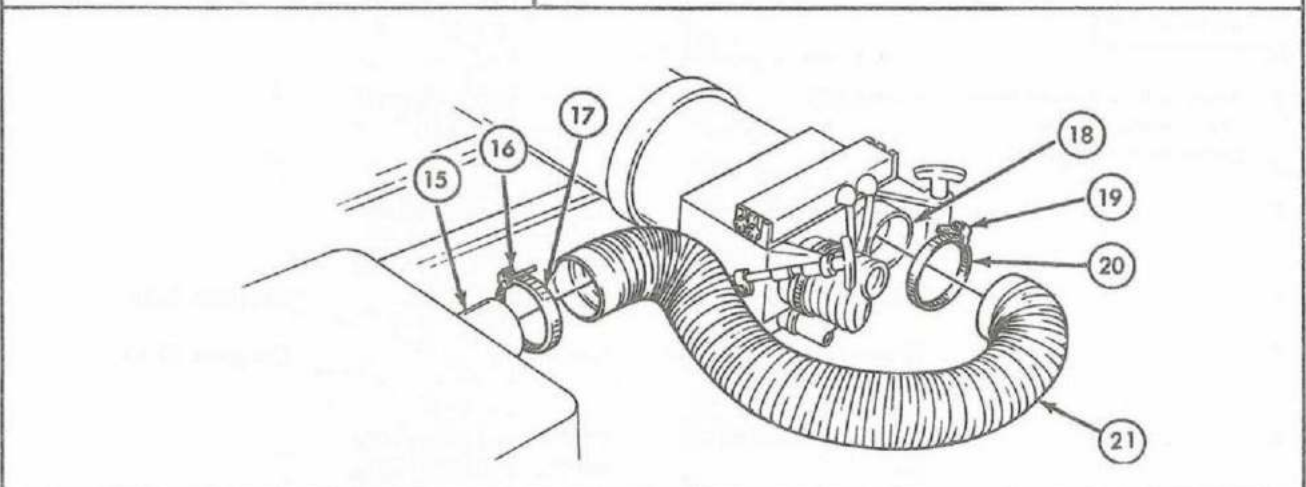
TA 155796

## 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
40.		Two clamps (6) and (9)	Install one on each end of defroster diverter air hose (8).	
41.		Defroster diverter air hose (8)	<ol style="list-style-type: none"> <li>Connect to defroster diverter inlet flange (2) and tighten clamp screw (1).</li> <li>Connect to upper right heater diverter outlet flange (5) and tighten clamp screw (7).</li> <li>Attach to right cab heater hose (4) with four tiedown straps (3).</li> </ol>	
42.		Two retainer clamps (11) and (12)	<ol style="list-style-type: none"> <li>Place on defroster diverter air hose (8).</li> <li>Insert through slots in retainer brackets (13) and (14) on transmission cover panel (10).</li> <li>Tighten.</li> </ol>	
43.		Two clamps (17) and (20)	Install one on each end of battery box air hose (21).	
44.		Battery box air hose (21)	<ol style="list-style-type: none"> <li>Connect to battery box cover inlet (15) and tighten clamp screw (16).</li> <li>Connect to upper left heater diverter outlet flange (18) and tighten clamp screw (19).</li> </ol>	



# 11-19. Air Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
  				

END OF TASK!

FOLLOW-ON TASK: Install front seats (para 10-10).

TA 155797

**11-20. Battery Heating Cover and Box Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Battery box cover removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

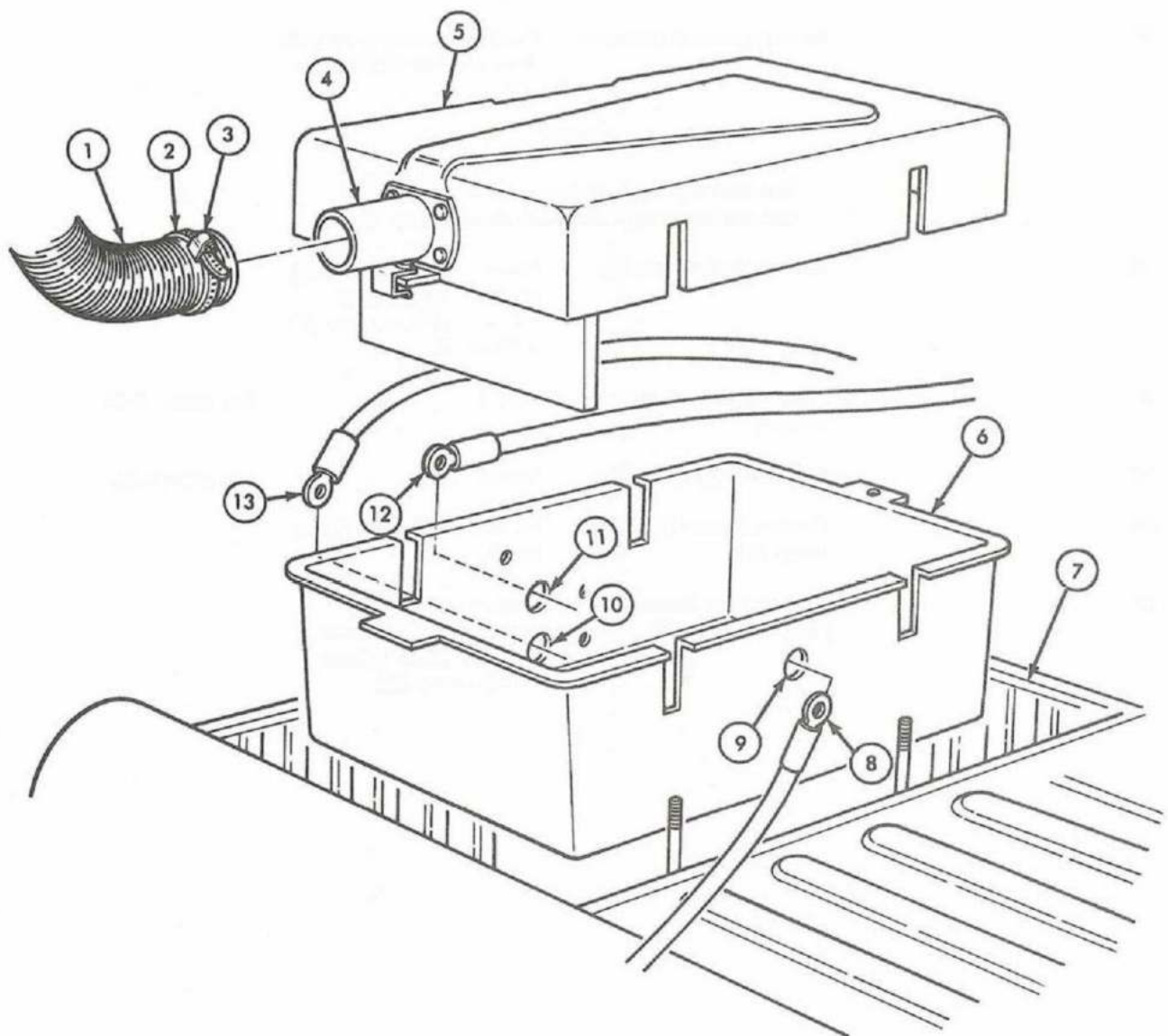
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

- |    |   |                                |  |                 |
|----|---|--------------------------------|--|-----------------|
| 1. | Battery box heater hose (1) to battery box cover inlet flange (4) | Clamp (2)                      | Loosen screw (3) and remove hose (1).                    |                 |
| 2. |   | Battery heater box cover (5)   | Remove from battery box (6).                             |                 |
| 3. |   | Left and right batteries       | Remove.  | See para 5-31.  |
| 4. |   | Thermostat and circuit breaker | Remove.  | See para 11-15. |
| 5. |   | Battery ground cable (8)       | Pull from battery box (6) through hole (9) in rear side. |                 |

## 11-20. Battery Heating Cover and Box Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Battery positive (12) and slave (13) cables	Pull from battery box (6) through holes (11) and (10).	
7.		Battery heater box (6)	Remove from battery compartment (7).	



## 11-20. Battery Heating Cover and Box Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**b. INSTALLATION**

- |    |   |  |
|----|---|--|
| 8. | Battery positive (13) and slave (14) cables | Feed into battery box (6) through holes (12) and (11).   |
| 9. | Battery ground cable (8)                    | Feed into battery box (6) through hole (9) in rear side. |

**NOTE**

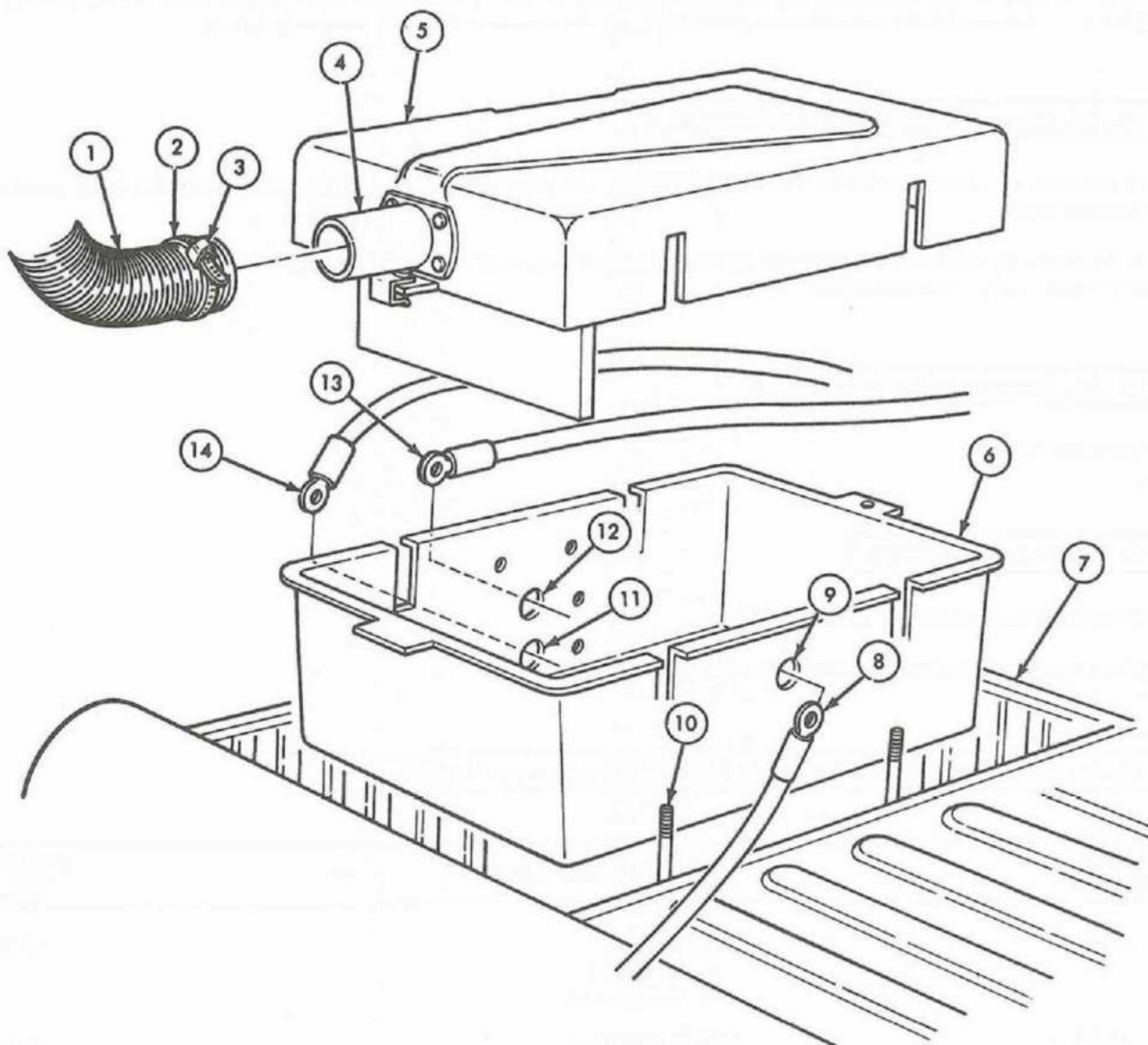
The four battery holddown bolts (10) must be retained in upright position during step 10.

- |     |   |   |                 |
|-----|---|---|-----------------|
| 10. | Battery heater box (6)                    | Move down into battery compartment (7) by pulling cables as box (6) is lowered.   |                 |
| 11. | Thermostat and circuit breaker            | Install.  | See para 11-15. |
| 12. | Left and right batteries                  | Install.  | See para 5-31.  |
| 13. | Battery heater box cover (5)              | Install on battery heater box (6).  |                 |
| 14. | Battery box heater hose (1) and clamp (2) | Connect to battery heater box cover inlet flange (4) and tighten clamp screw (3). |                 |



## 11-20. Battery Heating Cover and Box Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install battery box cover (TM 9-2320-218-10).

TA 155799

## Section II. HOT WATER HEATER KIT -25°F (-32°C) MAINTENANCE

### 11-21. General

This section provides maintenance procedures assigned to the organizational level for hot water heater kits -25°F (-32°C). To find a specific maintenance procedure, see the maintenance task summary below.

### 11-22. Service Upon Receipt of Material

a. Operate all controls (refer to TM 9-2320-218-10). Lower windshield and inspect rubber seal for tears, cracks or misalignment.

b. Perform all semiannual preventive maintenance tasks covered in TM 9-2320-218-10 and all daily preventive maintenance tasks described below.

### 11-23. Preventive Maintenance

See table 3-1.

### 11-24. Troubleshooting

Electrical troubleshooting. (See table 3-4.)

Mechanical troubleshooting. (See table 3-2.)

### 11-25. Hot Water Heater Kit -25°F (-32°C) Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
11-26.	Diverter Box a. Removal b. Installation	11-82
11-27.	Heater Assembly a. Removal b. Installation	11-84
11-28.	Slave Receptacle Assembly a. Removal b. Installation	11-90
11-29.	Hot Water Hoses a. Removal b. Inspection c. Installation	11-94

<b>11-25. Hot Water Heater Kit -25°F (-32°C) Maintenance Task Summary (Cont'd)</b>
--

<b>TASK PARA</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
11-30.	Shutoff Cocks a. Removal b. Installation	11-98
11-31.	Defroster and Diverter Hoses a. Removal b. Installation	11-100
11-32.	Heater Switch a. Removal b. Installation	11-106
11-33.	Resistor a. Removal b. Installation	11-108
11-34.	Circuit Breaker a. Removal b. Installation	11-110
11-35.	Blower Motor and Wheel Assembly a. Removal b. Installation	11-112

**11-26. Diverter Box Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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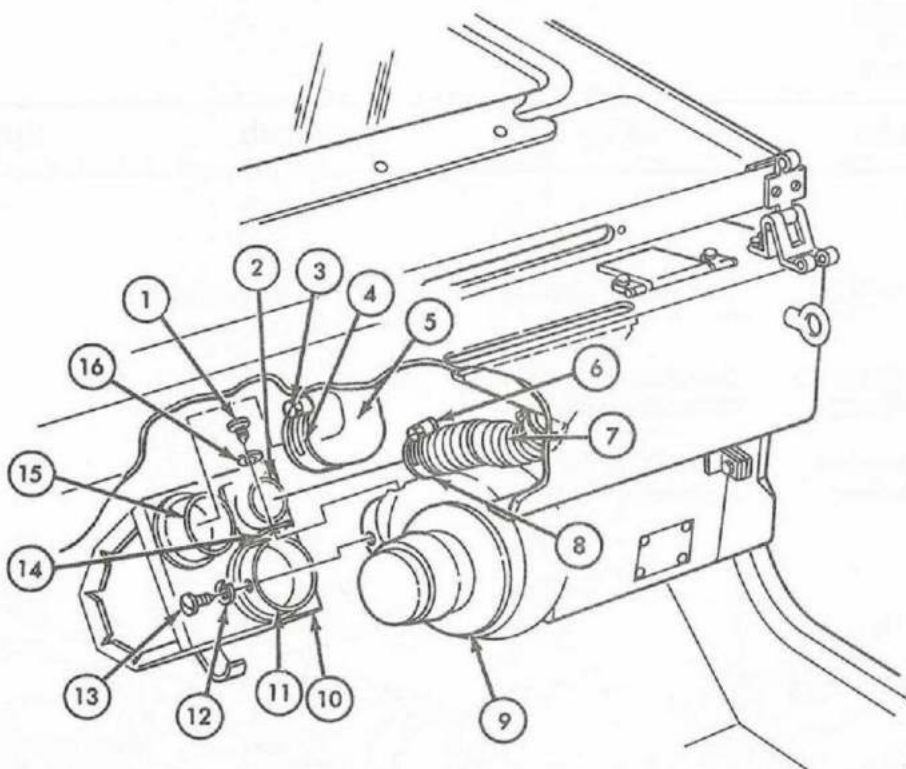
**a. REMOVAL**

- |   |                                      |                                   |
|---|--------------------------------------|-----------------------------------|
| 1. Diverter box retainer (14) to heater blower (9)    | Screw (1) and lockwasher (16)        | Remove.                           |
| 2. Lower flange (11) to heater blower (9)             | Two screws (13) and lockwashers (12) | Remove.                           |
| 3.  | Diverter box (10)                    | Pull away from heater blower (9). |
| 4. Defroster hose elbow (7) to upper right flange (2) | Defroster hose clamp screw (6)       | Loosen.                           |
| 5.  | Defroster hose elbow (7)             | Pull away from flange (2).        |
| 6. Hot air duct (5) to upper left flange (15)         | Hot air duct clamp screw (3)         | Loosen.                           |
| 7.  | Hot air duct (5)                     | Pull away from flange (15).       |



## 11-26. Diverter Box Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. INSTALLATION</b>				
8.		Hot air duct (5) and clamp (4)	Place on upper left flange (15), and tighten clamp screw (3).	
9.		Defroster hose elbow (7) and clamp (8)	Place on upper right flange (2), and tighten clamp screw (6).	
10.		Diverter box (10)	Connect lower flange (11) to heater blower (9), and secure with two lockwashers (12) and screws (13).	
11.		Diverter box retainer (14)	Secure to heater blower (9) with lockwasher (16) and screw (1).	



END OF TASK!

FOLLOW-ON TASK: Start engine and check heater for proper hot air flow (TM 9-2320-218-10).

TA 155800

**11-27. Heater Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

TM 9-2320-218-10

**Condition Description**

Parking brake set.

Hood raised and secured.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

Sealer (NSN 8030-00-275-8114)

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

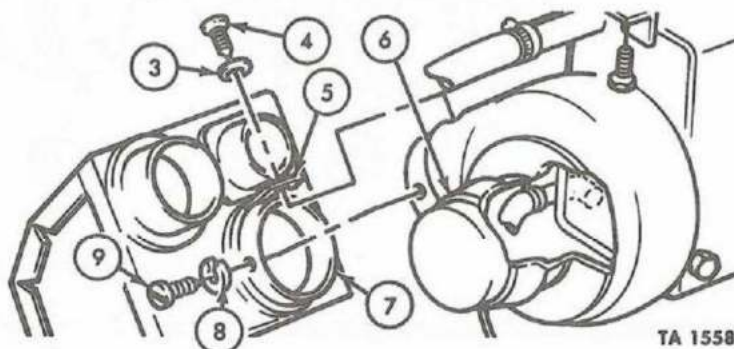
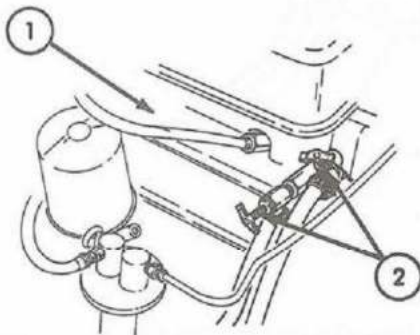
TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |   |                                    |  |
|---|------------------------------------|--|
| 1. Right side of cylinder head (1)                | Two shutoff cocks (2)              | Close both by turning handles clockwise. |
| 2. Diverter box flange (7) to heater blower (6)   | Two screws (9) and lockwashers (8) | Remove.                                  |
| 3. Diverter box retainer (5) to heater blower (6) | Screw (4) and lockwasher (3)       | Remove.                                  |



TA 155801

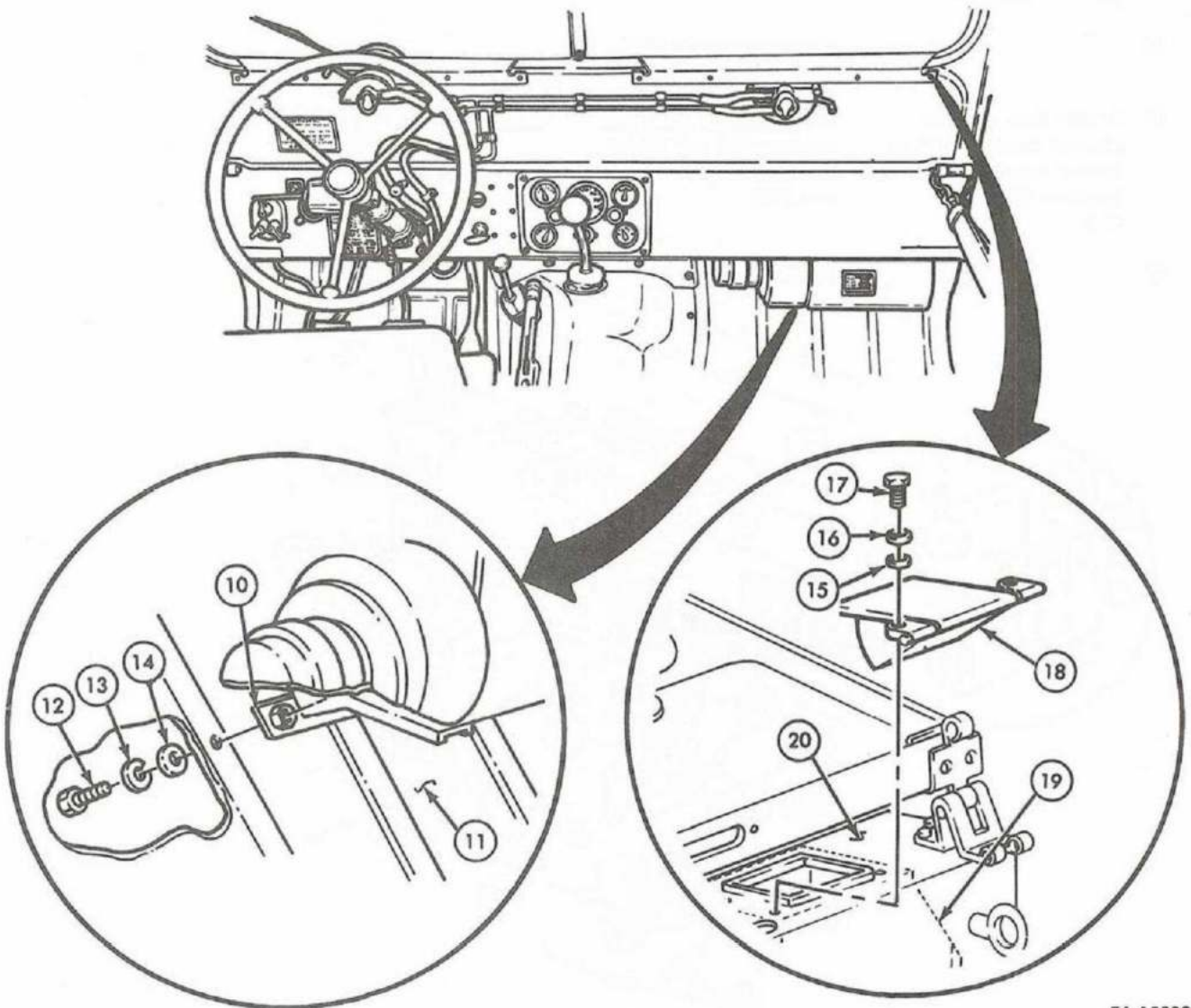
## 11-27. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**CAUTION**

Support heater assembly to avoid damage when final disconnections are made.

- |    |   |  |         |   |
|----|---|--|---------|---|
| 4. | Heater mounting bracket (10) to floorboard (11) | Two screws (12), lock-washers (13), and flat washers (14)  | Remove. | Screws (12) are accessible behind floorboard (11), outside vehicle. |
| 5. | Intake duct (19) and cover (18) to cowl (20)    | Four screws (17), lock-washers (16), and flat washers (15) | Remove. |   |

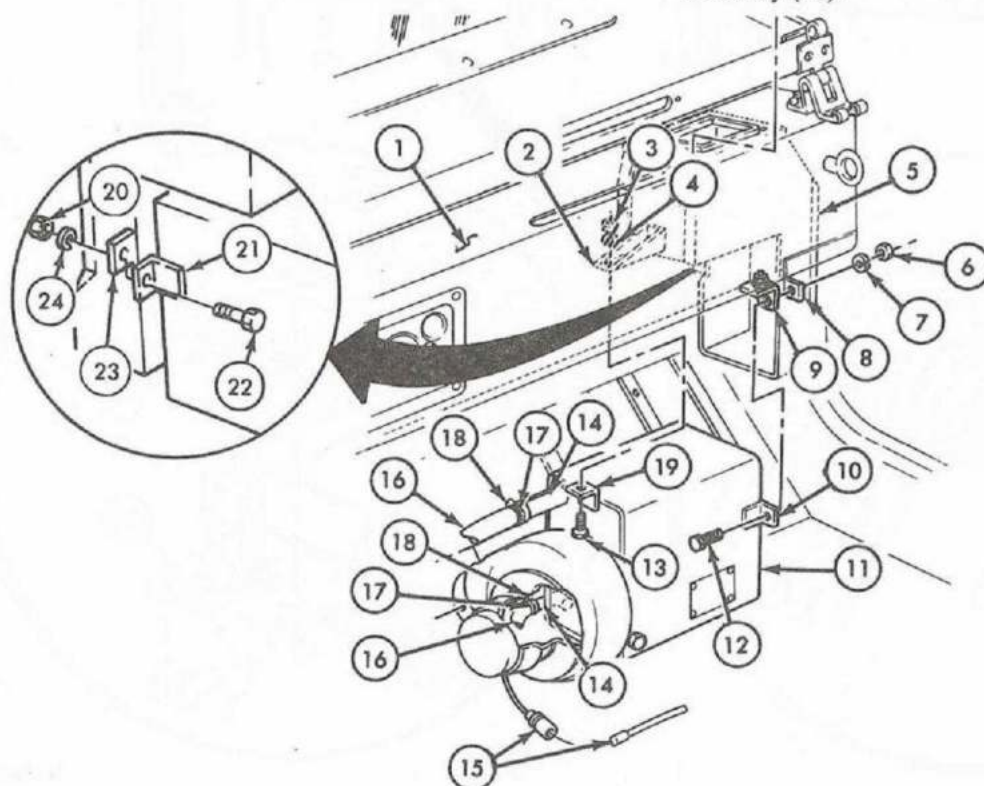


TA 155802



## 11-27. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Under dash panel (1)	Blower motor cable connector (15)	Separate.	
7.	Two hoses (16) to heater core tubes (14)	Two hose clamp screws (18)	Loosen.	Clamps (17) remain on hoses (16).
8.		Two hoses (16)	Remove from core tubes (14).	
9.	Intake duct bracket (8) to heater assembly bracket (10) and dash panel bracket (9)	Nut (6), lockwasher (7), and screw (12)	Remove.	
10.		Heater assembly (11)	Remove from dash panel (1).	
11.	Intake duct support (2) and bracket (23) to heater assembly brackets (19) and (21)	Nuts (3), and (20), lockwashers (4) and (24), and screws (13) and (22)	Remove.	
12.		Intake duct (5)	Remove from heater assembly (11).	

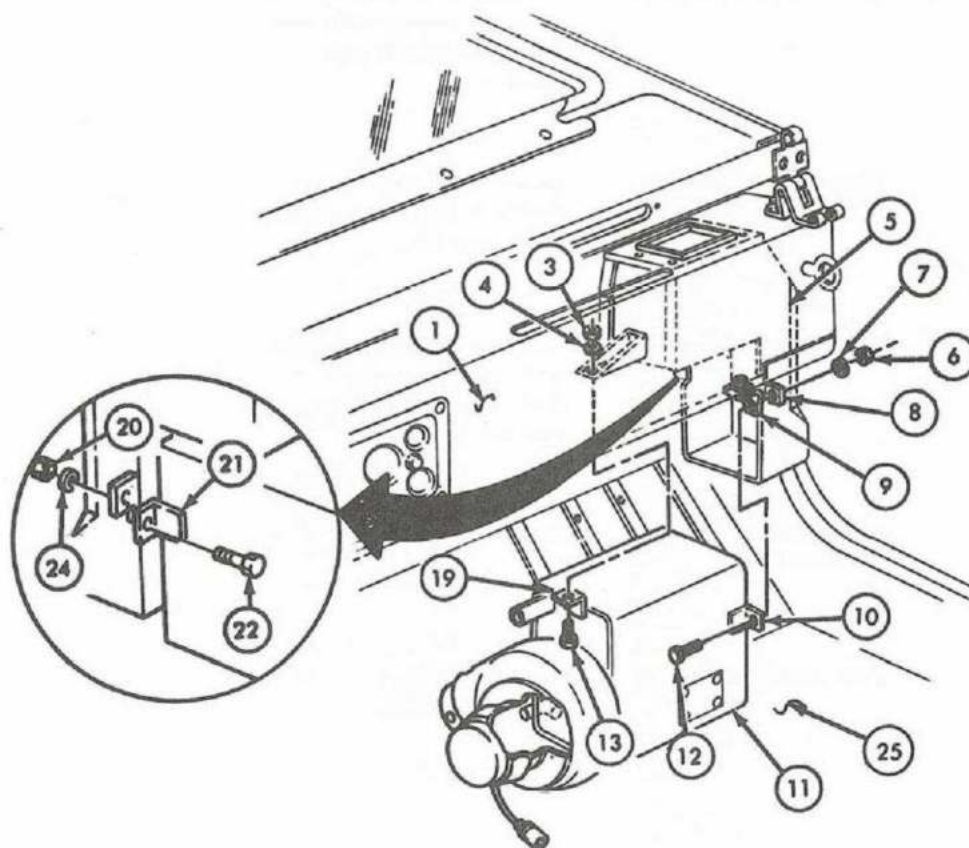


TA 155803



## 11-27. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b><i>h. INSTALLATION</i></b>				
13.		Intake duct (5)	Place on heater assembly (11), and secure at heater assembly brackets (19) and (21), with screws (13) and (22), lockwashers (4) and (24), and nuts (3) and (20).	
14.		Heater assembly (11)	Raise beneath dash panel (1) and support from floor (25).	
15.		Heater assembly bracket (10)	Secure to intake duct bracket (8) and dash panel bracket (9) with screw (12), lockwasher (7), and nut (6).	



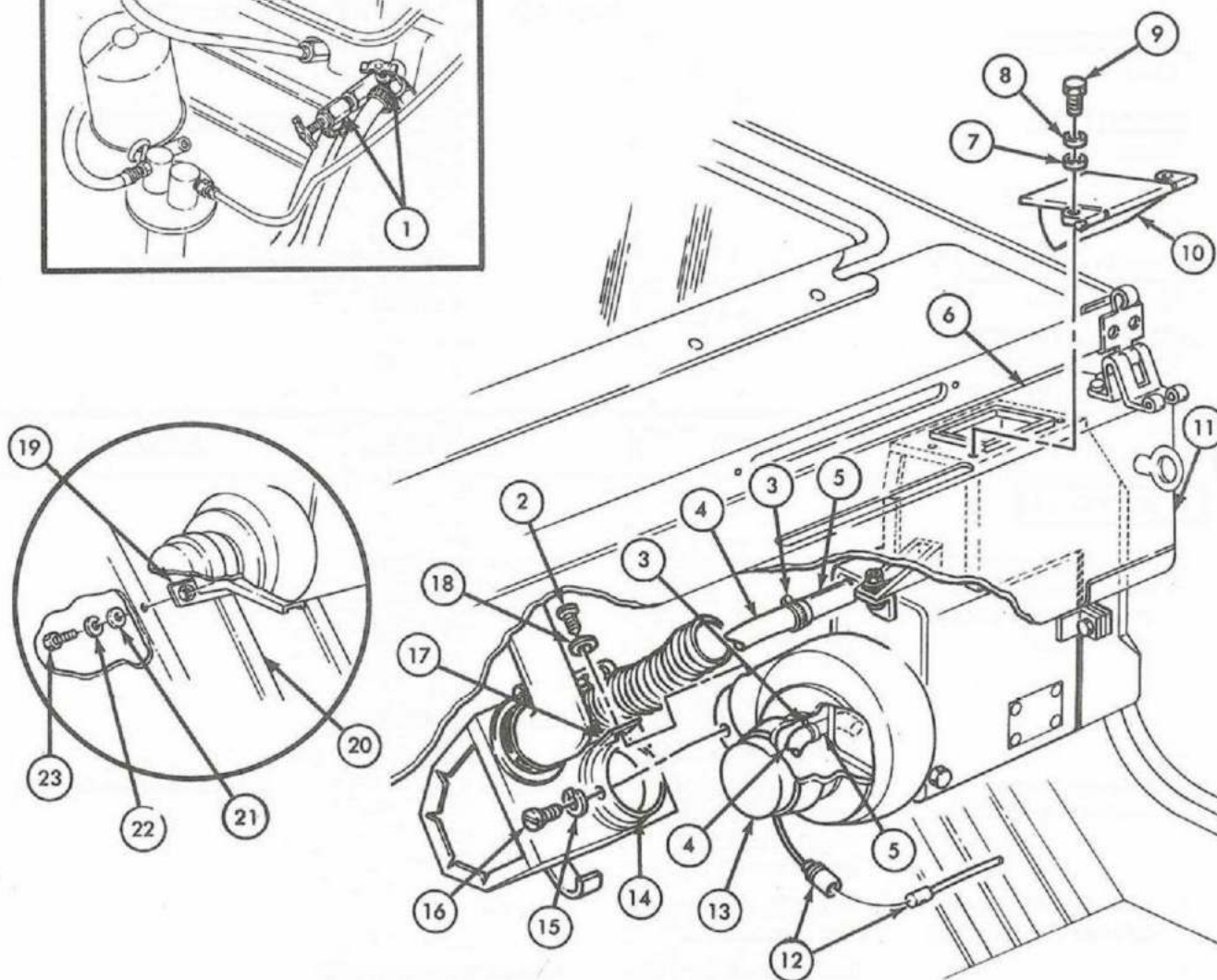
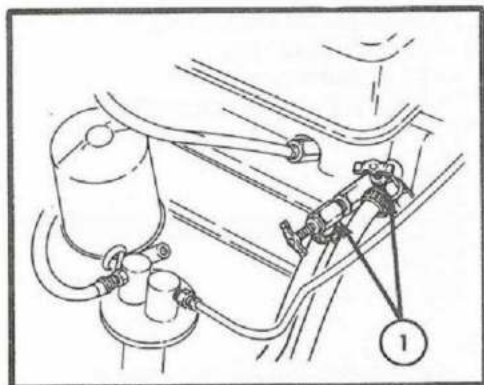
TA 155804

## 11-27. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
16.		Intake duct (11) and cover (10)	<p>a. Aline with holes in cowl (6), and apply sealer between intake duct (11) and cowl (6).</p> <p>b. Secure with four flat washers (7), lockwashers (8), and screws (9).</p>	
17.		Two rubber hoses (4)	Place on two heater core tubes (5), and tighten clamp screws (3).	
18.		Diverter box flange (14)	Connect to heater blower (13), and secure with two lockwashers (15) and screws (16).	
19.		Diverter box retainer (17)	Secure to heater blower (13) with lockwasher (18) and screw (2).	
20.		Mounting bracket (19)	Secure to floorboard (20) with two flat washers (21), lockwashers (22), and screws (23).	
21.		Blower motor cable connector (12)	Connect.	
22.		Two shutoff cocks (1)	Open by turning counterclockwise.	

## 11-27. Heater Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Start engine and allow to idle until normal operating temperature is reached (TM 9-2320-218-10).
  - Check coolant level, and add coolant if necessary (para 4-53).
  - Check heater operation (TM 9-2320-218-10).

TA 155805

**11-28. Slave Receptacle Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**TM 9-2320-218-10  
Para 5-31  
Para 11-27**Condition Description**Parking brake set.  
Right battery removed.  
Heater assembly removed.**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

Six lockwashers

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |   |                       |                                       |
|---|-----------------------|---------------------------------------|
| 1. Receptacle cable (9) and ignition cable (7) to left battery positive terminal (10) | Nut (11) and bolt (4) | Remove and detach cables (7) and (9). |
|---|-----------------------|---------------------------------------|

**NOTE**

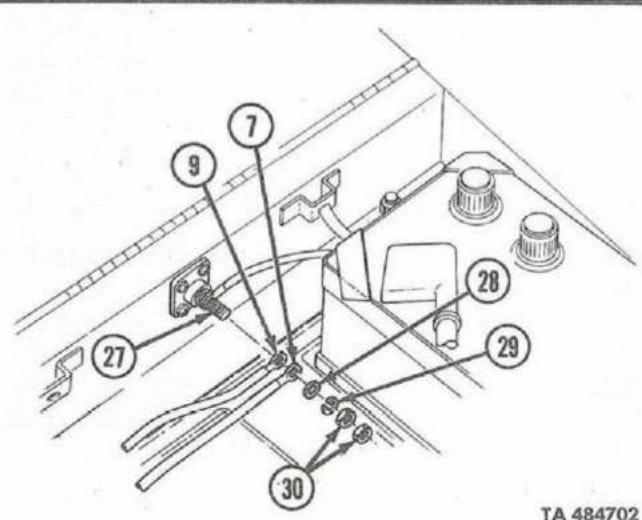
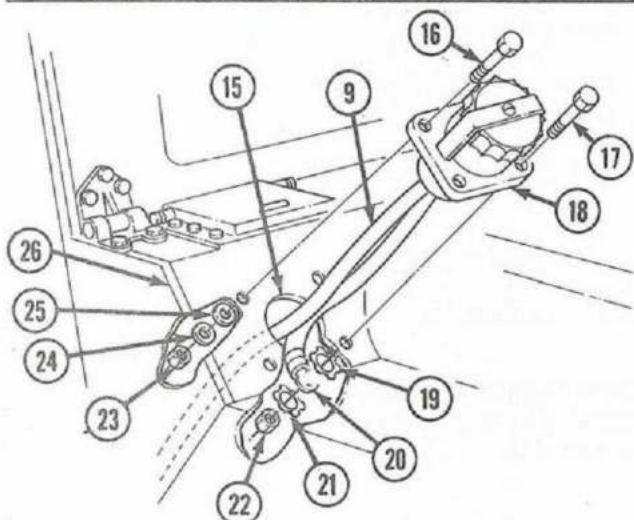
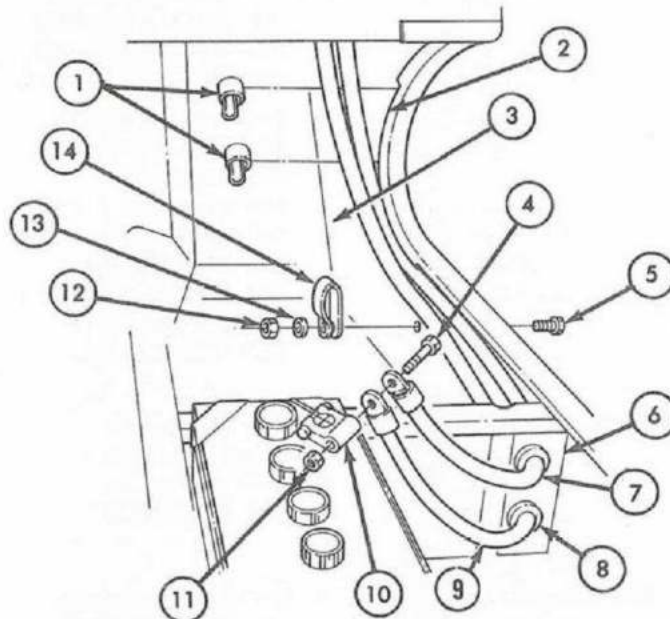
For vehicles equipped with battery junction terminal, perform step 1.1.

- |  |  |  |                          |
|--|--|--|--------------------------|
| 1.1. Battery junction terminal stud (27)                           | Two nuts (30), lock-washer (29), washer (28), receptacle cable (9), and ignition cable (7) | Remove.  | Discard lockwasher (29). |
| 2. Retaining clamp (14) to body side panel (3)                     | Nut (12), washer (13), and capscrew (5)  | Remove.  |                          |
| 3.   | Retaining clamp (14)   | Detach from receptacle cable (9) and ignition cable (7). |                          |
| 4. Receptacle cable (9) and ignition cable (7) to cowl channel (2) | Two clips (1)  | Remove.  |                          |
| 5.   | Receptacle cable (9)   | Pull forward through grommet (8) in seat riser (6).      |                          |



# 11-28. Slave Receptacle Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Slave receptacle (18) to cowl (26)	Nut (22), two internal/external tooth lockwashers (19) and (21), and one capscrew (17)	Remove.	Discard lockwashers (19) and (21).
7.	Slave receptacle (18) to cowl (26)	Three nuts (23), lockwashers (24), flat washers (25), and capscrews (16)	Remove.	Discard lockwashers (24).
8.		Slave receptacle (18) and cables (9) and (20)	Remove from opening (15) in cowl (26).	



TA 484702

## 11-28. Slave Receptacle Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. INSTALLATION</b>				
9.		Receptacle cable (9)	Insert through opening (16) in cowl (27).	Make sure receptacle cable (9) is routed next to body side panel (3).
10.		Slave receptacle (19)	<p>a. Secure to cowl (27) with three capscrews (17), flat washers (26), lockwashers (25), and nuts (24).</p> <p>b. Secure at remaining hole with capscrew (18), internal/external tooth lockwasher (20), ground cable (21), internal/external tooth lockwasher (22), and nut (23).</p>	
11.		Receptacle cable (9)	Insert end through grommet (8) in seat riser (6), and pull toward battery (12).	
12.		Retaining clamp (15)	<p>a. Install on receptacle cable (9) and ignition cable (7).</p> <p>b. Secure to body side panel (3) with cap-screw (5), washer (14), and nut (13).</p>	
13.		Two retaining clips (1)	Install around cables (9) and (7), and secure to cowl channel (2).	
14.		Slave receptacle cable (9), and ignition cable (7)	Secure to battery positive terminal (10) with bolt (4) and nut (11).	

## 11-28. Slave Receptacle Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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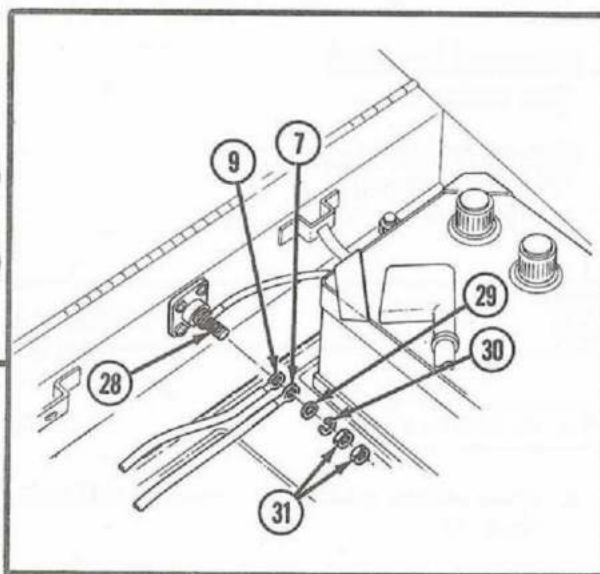
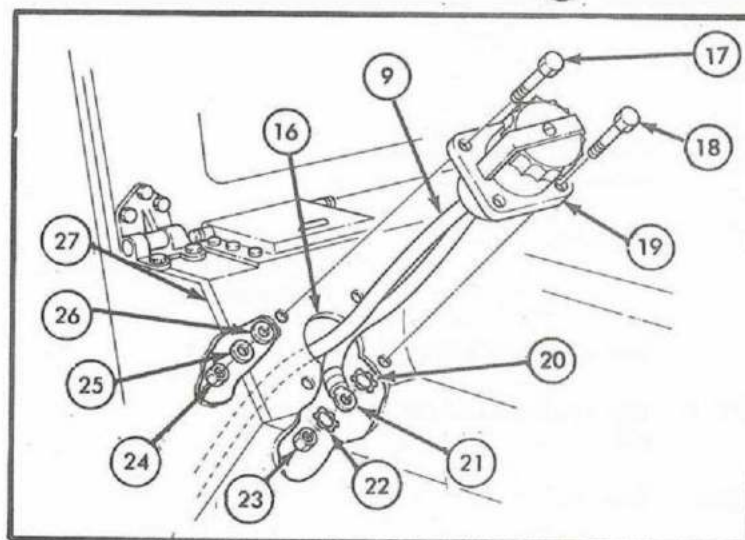
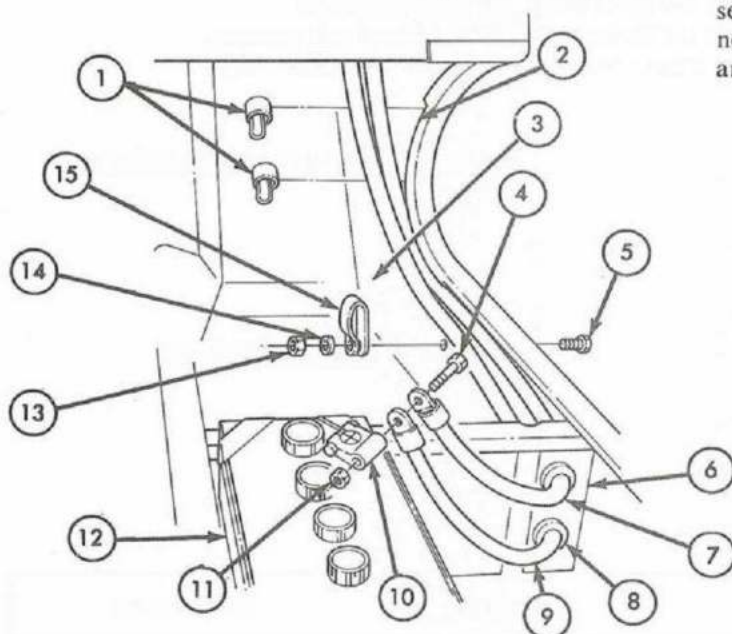
## NOTE

For vehicles equipped with battery junction terminal, perform step 14.1.

14.1.

Ignition cable (7) and  
receptacle cable (9)

Place on battery junction  
terminal stud (28) and  
secure with washer (29),  
new lockwasher (30),  
and two nuts (31).



END OF TASK!

- FOLLOW-ON TASKS:
- Test slave receptacle assembly for proper operation.
  - Install heater assembly (para 11-27).
  - Install right battery (para 5-31).

TA 484703



**11-29. Hot Water Hoses Maintenance**

This task covers:

- a. Removal
- b. Inspection

c. Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Hood raised and secured.
	Para 11-26	Diverter box removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

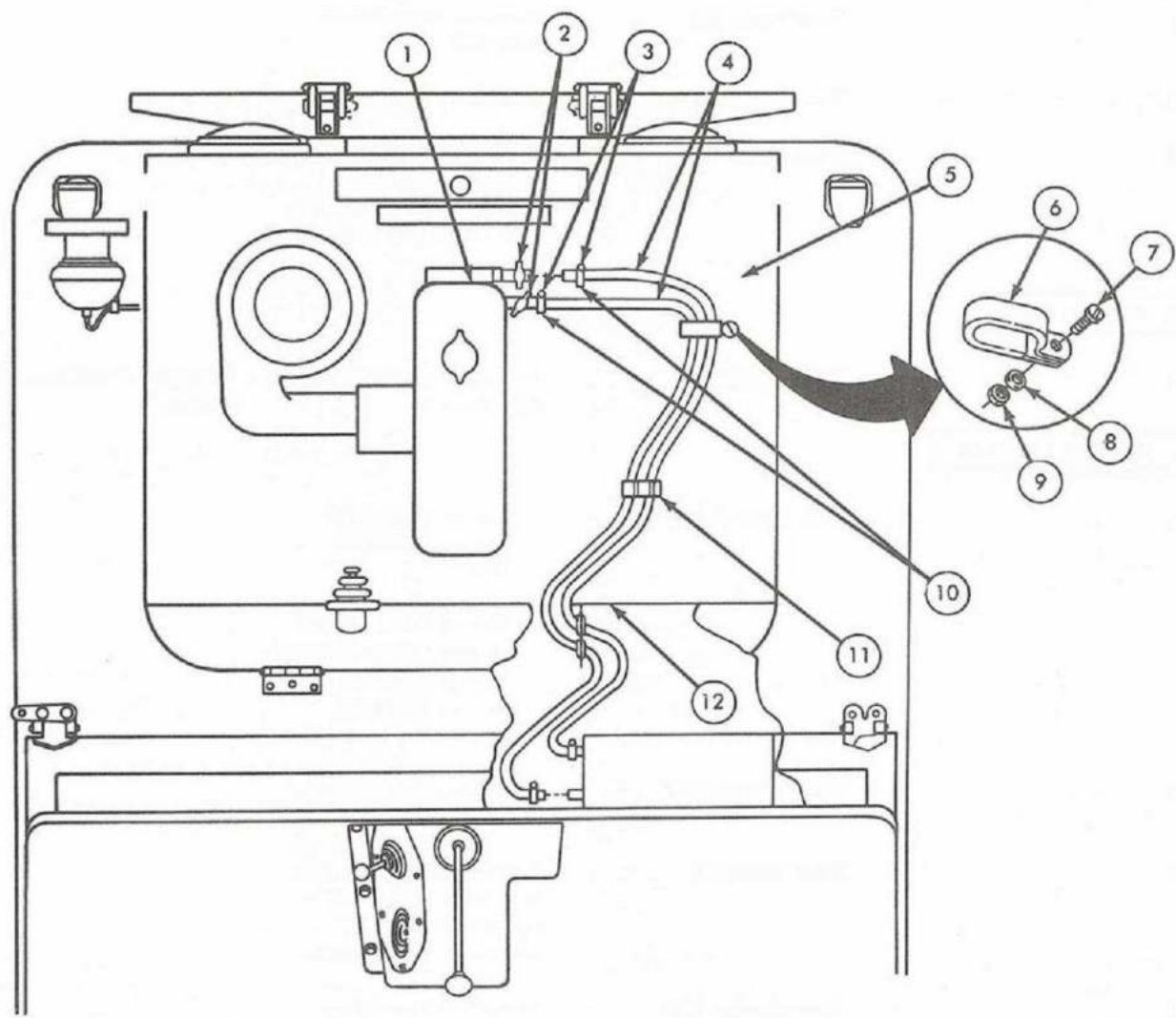
**a. REMOVAL**

1.	Right side of cylinder head (1)	Two shutoff cocks (2)	Close by turning handles clockwise.	
2.	Retainer clamp (6) to right front fender well (5)	Nut (9), lockwasher (8), and screw (7)	Remove.	Nut and washer are accessible from underside of fender well.
3.		Retainer clamp (6)	Remove from hoses (4).	
4.	Right front fender well at firewall (12)	Hose support clamp (11)	Open and remove hoses (4).	
5.	Two hoses (4) to shutoff cocks (2)	Two hose clamp screws (3)	Loosen.	
6.		Two hoses (4)	Remove from shutoff cocks (2).	
7.		Two hose clamps (10)	Remove from hoses (4).	



11-29. Hot Water Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



## 11-29. Hot Water Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.	Two hoses (5) to heater core tubes (15)	Two hose clamp screws (17)	Loosen.	
9.		Two hoses (5)	Remove from heater core tubes (15).	
10.		Two hose clamps (16)	Remove from hoses (5).	
11.		Two hoses (5)	Remove by pulling from engine compartment through two grommets (14) in tunnel panel (13).	
<b>b. INSPECTION</b>				
12.		Two hoses (5)	Inspect for cracks, splits, and breaks.	Replace if cracked, split, or broken.
<b>c. INSTALLATION</b>				
13.		Two hoses (5)	<p>a. Cut replacement hoses to proper length.</p> <p>b. Route from engine compartment through two grommets (14) in tunnel panel (13).</p>	
14.		Two clamps (16)	Install on two hoses (5) at heater ends.	
15.		Two hoses (5)	Connect to two heater core tubes (15) and tighten two clamp screws (17) to secure.	
16.		Two clamps (11)	Install on two hoses (5) at cylinder head.	
17.		Two hoses (5)	Attach to two shutoff cocks (1) and (18), and tighten clamp screws (4) to secure.	Attach 48-inch (122 cm) hose to water pump draincock (1), and 44-inch (112 cm) hose to cylinder head draincock (18).
18.		Hose support clamp (12)	Secure to two hoses (5).	
19.		Retainer clamp (7)	Install on two hoses (5) and secure to right front wheel well (6) with screw (8), lockwasher (9), and nut (10).	

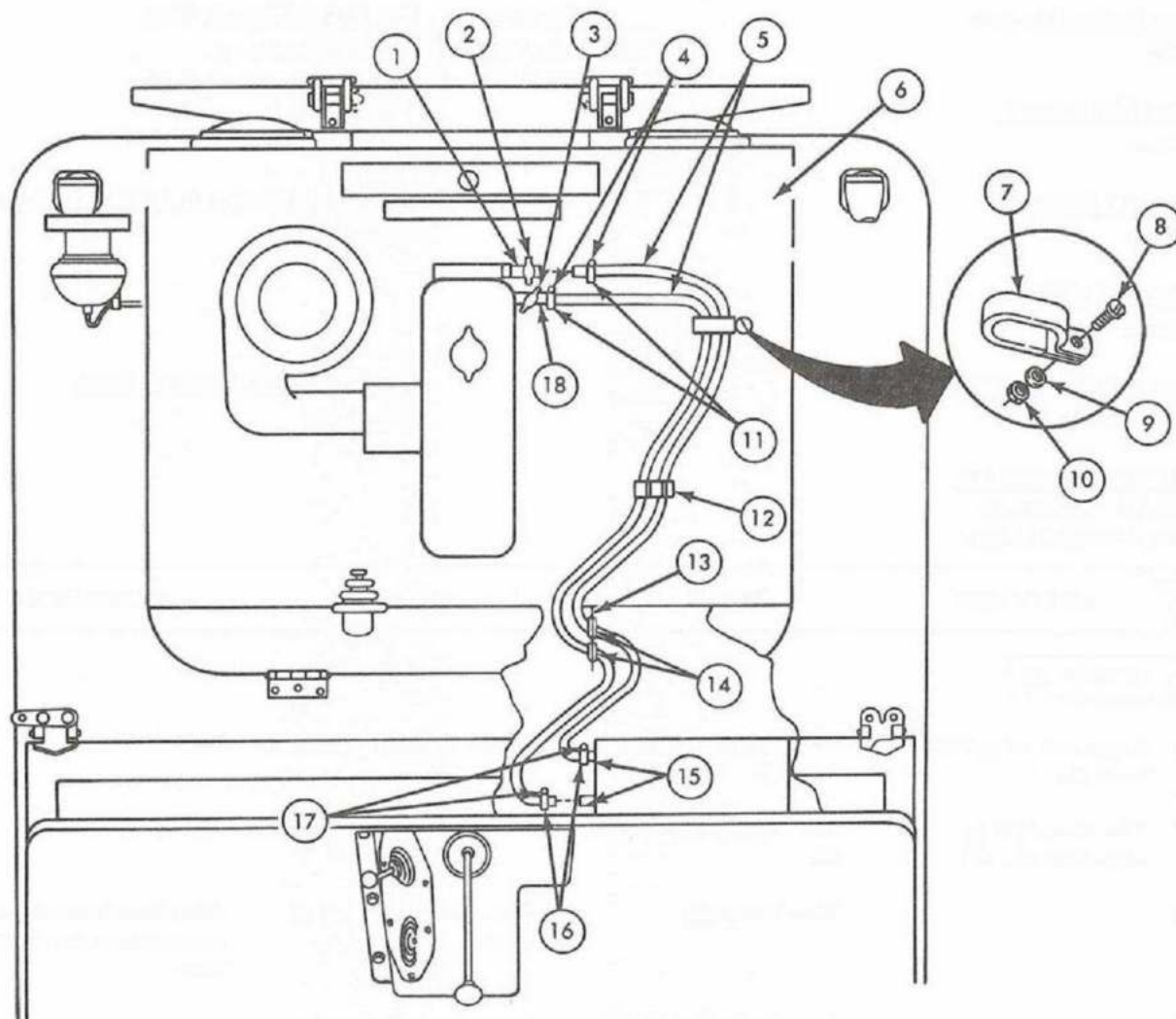
## 11-29. Hot Water Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

20.

Two shutoff cock handles (2) and (3)

Open by turning counterclockwise.



END OF TASK!

- FOLLOW-ON TASKS:
- Install diverter box (para 11-26).
  - Start engine and operate until normal operating temperature is reached (TM 9-2320-218-10).
  - Check coolant level and add coolant if necessary (para 4-53).
  - Check hose connections for leaks.

TA 155809

**11-30. Shutoff Cocks Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10 Para 4-53	Parking brake set. Cooling system drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

***a. REMOVAL***

- |    |                                    |                           |  |  |
|----|------------------------------------|---------------------------|--|--|
| 1. | Right side of cylinder head (1)    | Two shutoff cocks (3)     | Close by turning handles clockwise.        |  |
| 2. | Two hoses (5) to shutoff cocks (3) | Two hose clamp screws (4) | Loosen.                                    |  |
| 3. |                                    | Two hoses (5)             | Remove from shutoff cocks (3).             | Note locations of hose connections for installation. |
| 4. |                                    | Two shutoff cocks (3)     | Unscrew and remove from two couplings (2). |  |

***b. INSTALLATION***

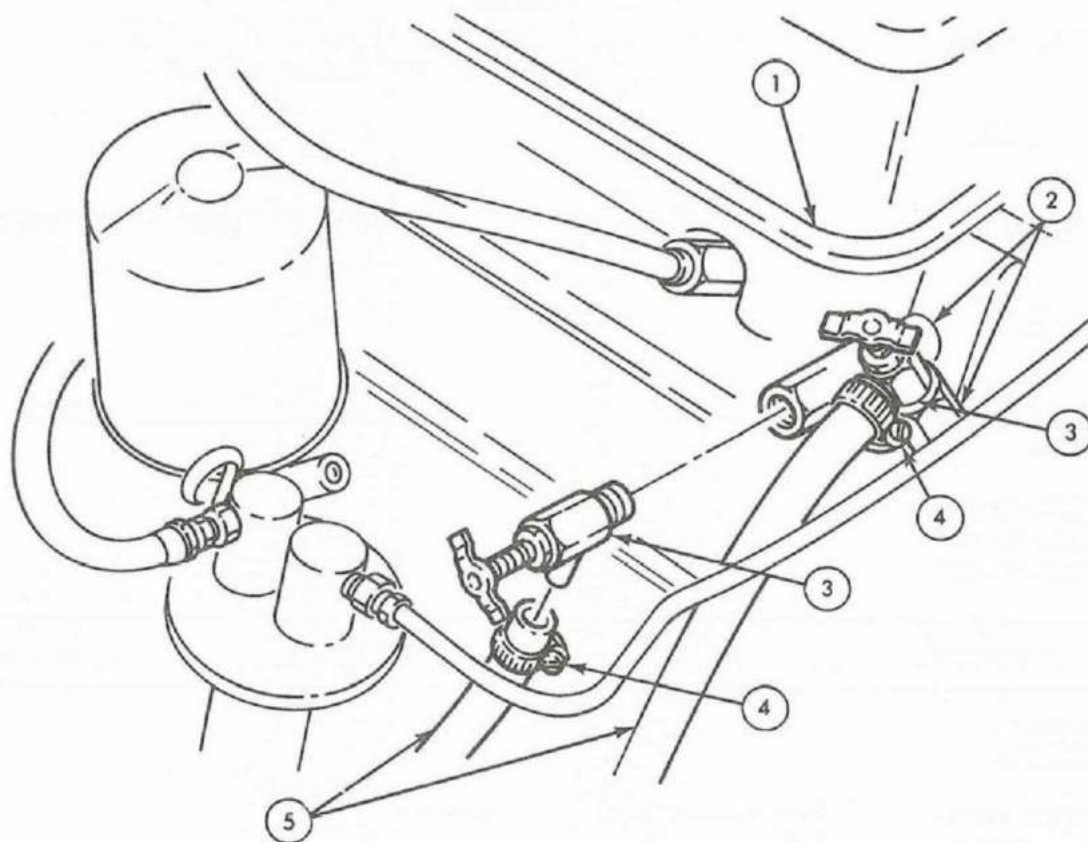
- |    |  |                       |   |  |
|----|--|-----------------------|---|--|
| 5. |  | Two shutoff cocks (3) | Screw into two couplings (2), and tighten.                                    |  |
| 6. |  | Two hoses (5)         | Connect to two shutoff cocks (3), and tighten two clamp screws (4) to secure. |  |



## 11-30. Shutoff Cocks Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

- |    |  |                       |   |  |
|----|--|-----------------------|---|--|
| 7. |  | Two shutoff cocks (3) | Open by turning handles counterclockwise. |  |
|----|--|-----------------------|---|--|



END OF TASK!

- FOLLOW-ON TASKS:
- Replace coolant to cooling system (para 4-53).
  - Start engine and allow to idle until normal operating temperature is reached (TM 9-2320-218-10).
  - Check hose and draincock connections for leaks.

TA 155810

**11-31. Defroster and Diverter Hoses Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL.**

- |    |  |                                     |                                      |
|----|--|-------------------------------------|--------------------------------------|
| 1. | Instrument cluster (4) to instrument panel (3) | Four screws (1) and lockwashers (2) | Remove.                              |
| 2. |  | Instrument cluster (4)              | Pull away from instrument panel (3). |

**CAUTION**

While disconnecting speedometer shaft assembly (8) from speedometer (5), make sure core cable (6) is not pulled away from shaft (8). This can cause core separation from transmission transfer.

- |    |  |                                 |                              |
|----|--|---------------------------------|------------------------------|
| 3. | Speedometer drive shaft (8) to speedometer (5) | Speedometer drive shaft nut (7) | Unscrew.                     |
| 4. |  | Speedometer drive shaft (8)     | Remove from speedometer (5). |
| 5. |  | Instrument cluster (4)          | Pull down.                   |

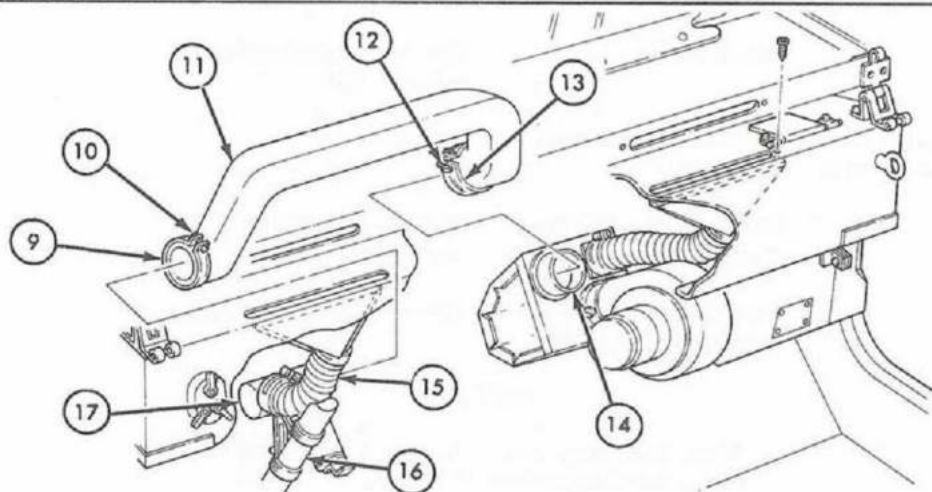
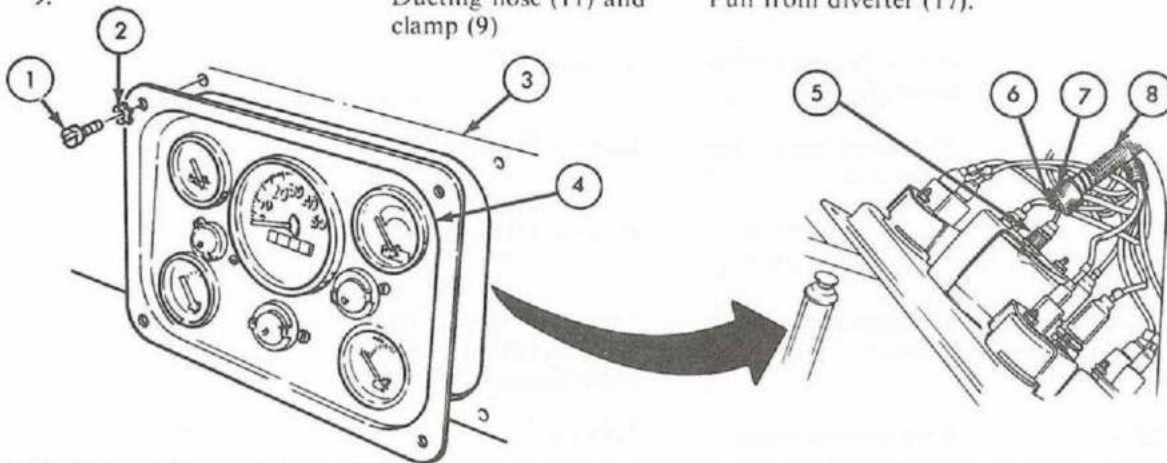
## 11-31. Defroster and Diverter Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

## NOTE

Access for removal and installation of ducting hose (11) and left defroster hose (15), is through opening in instrument panel for instrument cluster (4). Ratchet wrench is recommended for removal and installation of hose and duct clamps.

- |    |  |                                  |                          |
|----|--|----------------------------------|--------------------------|
| 6. | Ducting hose (11) to diverter box flange (14)              | Ducting hose clamp screw (12)    | Loosen.                  |
| 7. |  | Ducting hose (11) and clamp (13) | Pull from flange (14).   |
| 8. | Ducting hose (11) to diverter (17) at steering column (16) | Ducting hose clamp screw (10)    | Loosen.                  |
| 9. |  | Ducting hose (11) and clamp (9)  | Pull from diverter (17). |



TA 155811

## 11-31. Defroster and Diverter Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.		Ducting hose (2) and clamps (1) and (3)	Remove from instrument panel (21).	
11.	Defroster hose (6) and clamp (5) to diverter box flange (11)	Defroster hose clamp screw (4)	Loosen.	
12.		Defroster hose (6) and clamp (5)	Pull from diverter box flange (11).	
13.	Right defroster nozzle (10) to instrument panel (21)	Two screws (9)	Remove.	
14.		Right defroster nozzle (10) and hose (6)	Pull down and remove.	
15.		Defroster hose clamp screw (7)	Loosen.	
16.		Defroster hose (6) and clamp (8)	Remove from nozzle (10).	
17.		Two defroster hose clamps (5) and (8).	Remove from hose (6).	
18.	Defroster hose (15) to diverter (20) at steering column (18)	Defroster hose clamp screw (17)	Loosen and pull hose (15) and clamp (16) from diverter (20).	
19.	Diverter (20) to steering column (18)	Two retainer clamp screws (19)	Loosen.	
20.		Diverter (20)	Remove from steering column (18).	
21.	Defroster hose (15) to left defroster nozzle (12)	Defroster hose clamp screw (14)	Loosen.	
22.		Defroster hose (15) and clamp (13)	Pull from defroster nozzle (12).	
23.		Two defroster hose clamps (13) and (16)	Remove from hose (15).	

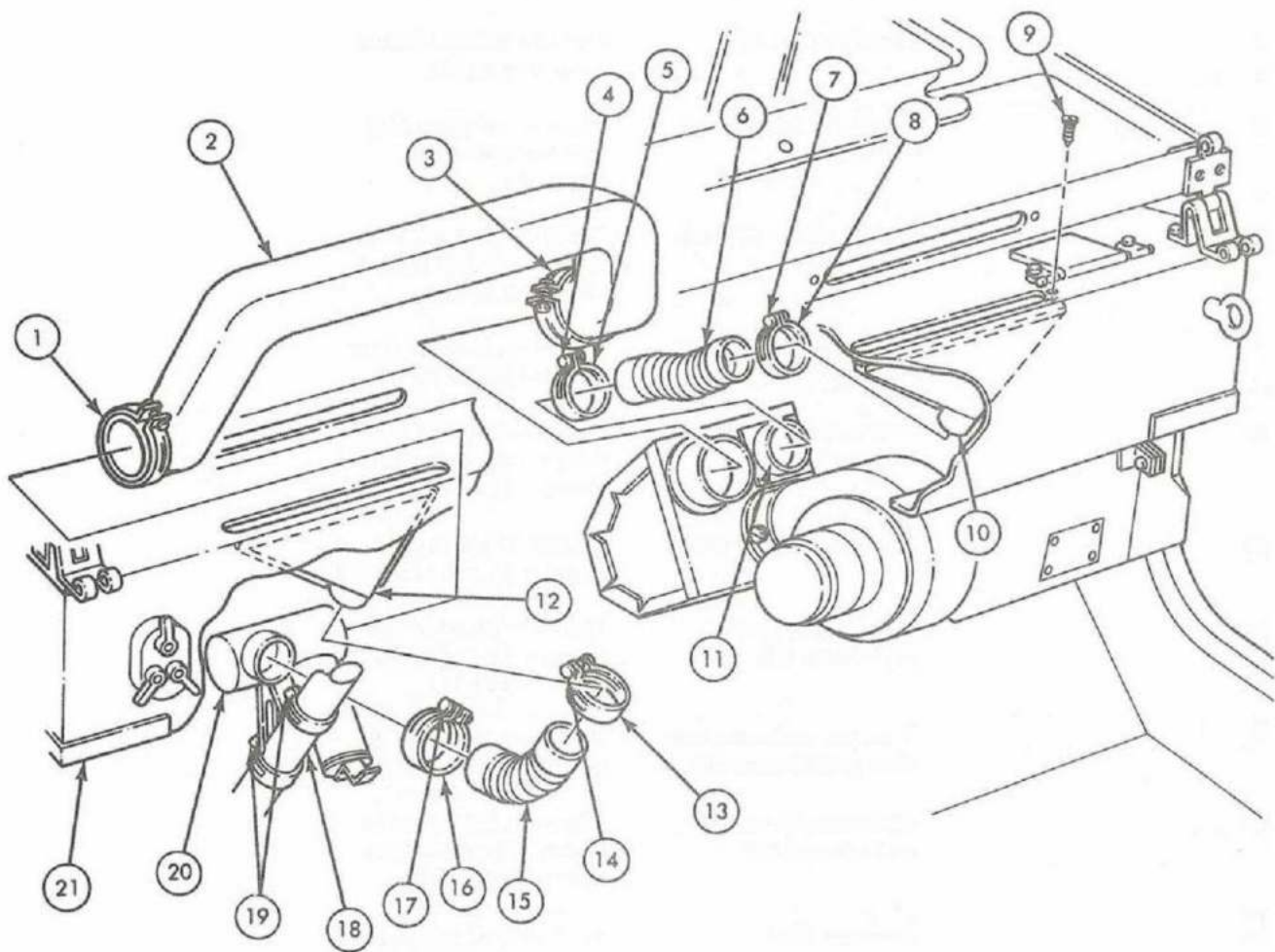
## NOTE

When installing new defroster or ducting hoses, use clamps from old hoses.



11-31. Defroster and Diverter Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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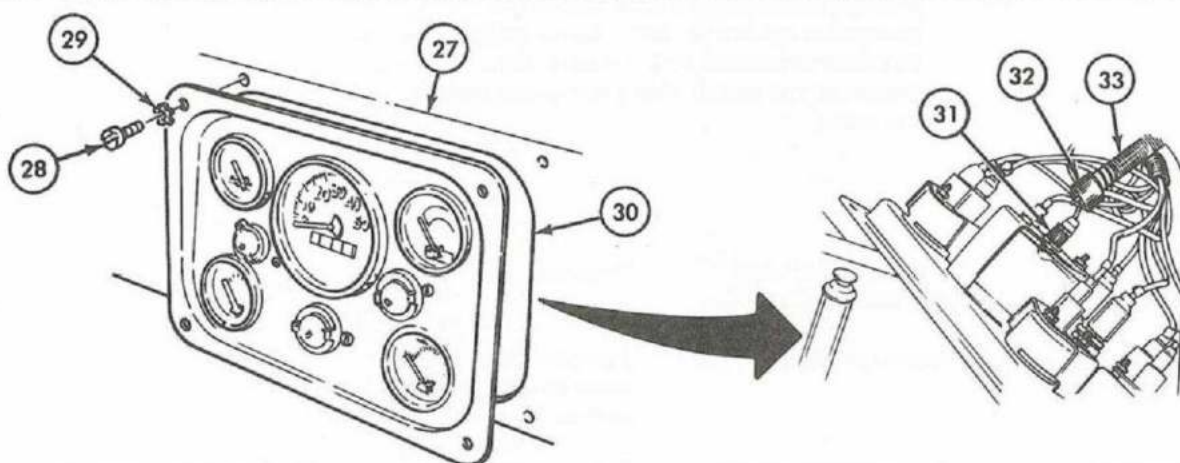
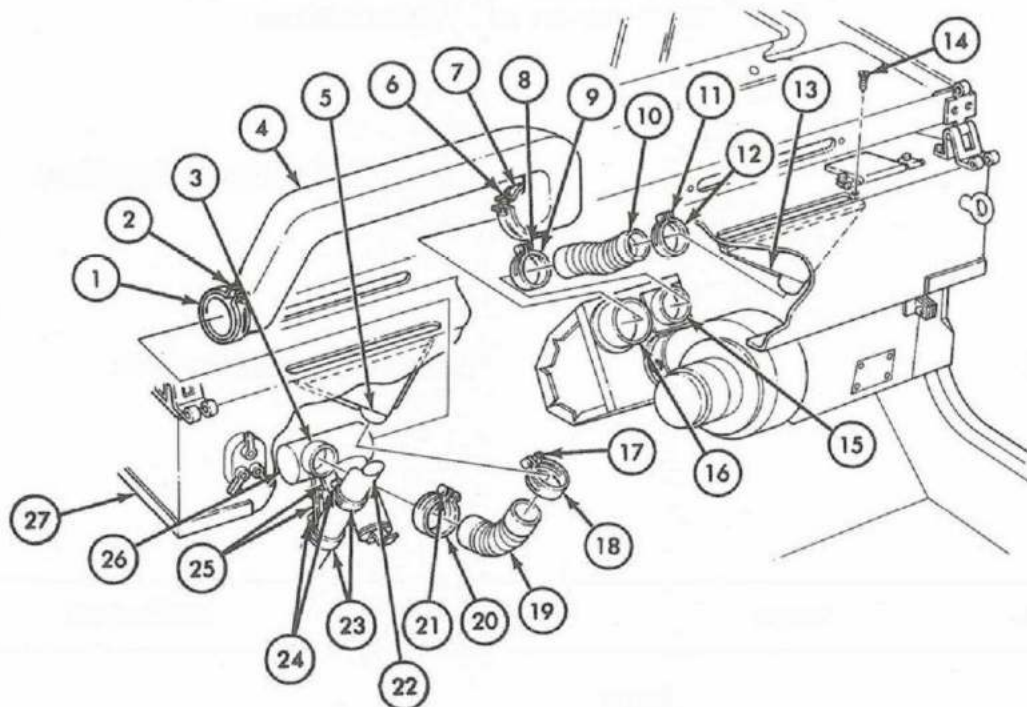
## 11-31. Defroster and Diverter Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>b. INSTALLATION</i>				
24.		Two ducting hose clamps (1) and (7)	Install on ends of ducting hose (4).	
25.		Ducting hose (4)	Position behind instrument panel (27).	
26.		Ducting hose (4) and clamp (1)	Place on diverter (26) and tighten clamp screw (2).	
27.		Ducting hose (4) and clamp (7)	Place on diverter box flange (16) and tighten clamp screw (6).	
28.		Two right defroster hose clamps (9) and (12)	Install on ends of right defroster hose (10).	
29.		Defroster hose (10) and clamp (12)	Place on right defroster nozzle (13) and tighten clamp screw (11).	
30.		Right defroster nozzle (13)	Secure to instrument panel with two screws (14).	
31.		Defroster hose (10) and clamp (9)	Place on diverter box flange (15) and tighten clamp screw (8).	
32.		Two left defroster hose clamps (18) and (20)	Install on ends of left defroster hose (19).	
33.		Defroster hose (19) and clamp (18)	Place on left defroster nozzle (5) and tighten clamp screw (17).	
34.		Diverter (26)	<p>a. Place on steering column (22) and position two clamps (23) over mounting legs (25).</p> <p>b. Tighten clamp screws (24) to secure.</p>	
35.		Defroster hose (19) and clamp (20)	Place on diverter flange (3) and tighten clamp screw (21).	
36.		Speedometer shaft assembly (33)	Secure to speedometer (31) and tighten shaft nut (32).	

## 11-31. Defroster and Diverter Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

37. Instrument cluster (30) Secure to instrument panel (27) with four lockwashers (29) and screws (28).



END OF TASK!

FOLLOW-ON TASK: Activate heater, and check hot air flow (TM 9-2320-218-10).

TA 155813

**11-32. Heater Switch Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**NOTE**

For vehicles equipped with rollover protection system (ROPS), heater switch is installed in vertical position as shown. Removal and installation procedures remain the same.

***a. REMOVAL.***

- |  |  |  |   |
|--|--|--|---|
| 1. Heater switch (5) to instrument panel (3) | Two screws (1) and instruction plate (2) | Remove.  |   |
| 2.   | Heater switch (5)                        | Push through instrument panel opening (4) and pull down. |   |
| 3. Heater switch (5)                         | Three connectors (6)                     | Disconnect.  | Tag locations of disconnections for installation. |

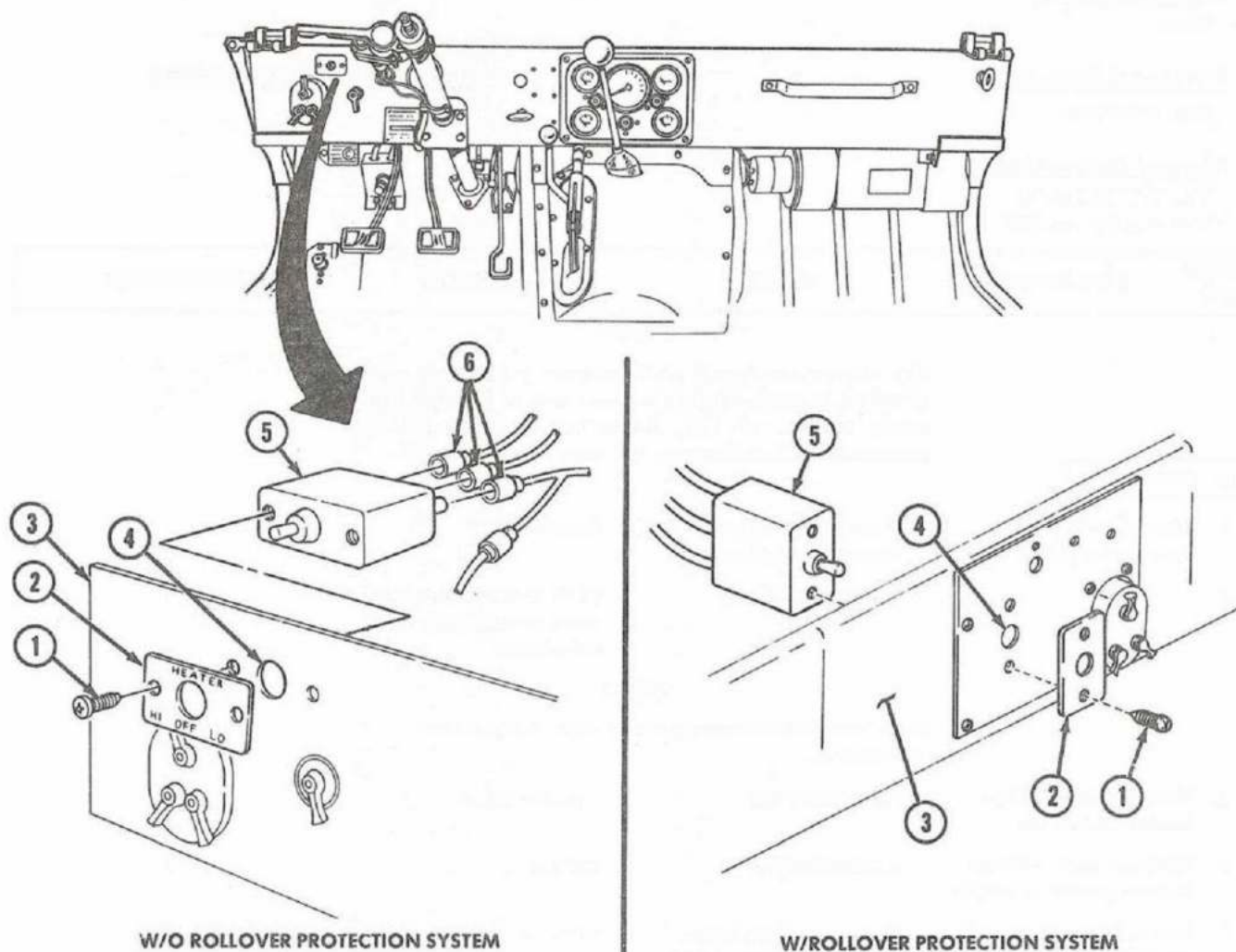


## 11-32. Heater Switch Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

*b. INSTALLATION*

- |    |                      |  |   |
|----|----------------------|--|---|
| 4. | Three connectors (6) | Connect to heater switch (5) at same points where disconnected.  |   |
| 5. | Heater switch (5)    | Place through instrument panel opening (4) from behind panel (3) and secure with instruction plate (2) and two screws (1). | Make sure HI-LO position on switch (5) matches instruction plate (2). |



END OF TASK!

FOLLOW-ON TASK: Check switch for proper operation (TM 9-2320-218-10).

TA 484704

**11-33. Resistor Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**NOTE**

On vehicles equipped with rollover protection system (ROPS), heater switch is located and positioned differently (para. 11-32). Removal and installation procedures for resistor are the same.

**a. REMOVAL**

- |    |   |  |  |
|----|---|--|--|
| 1. | Heater switch (5) to instrument panel (3) | Two screws (1) and instruction plate (2) | Remove.  |
| 2. | Heater switch (5)                         |  | Push through instrument panel opening (4) and pull down. |

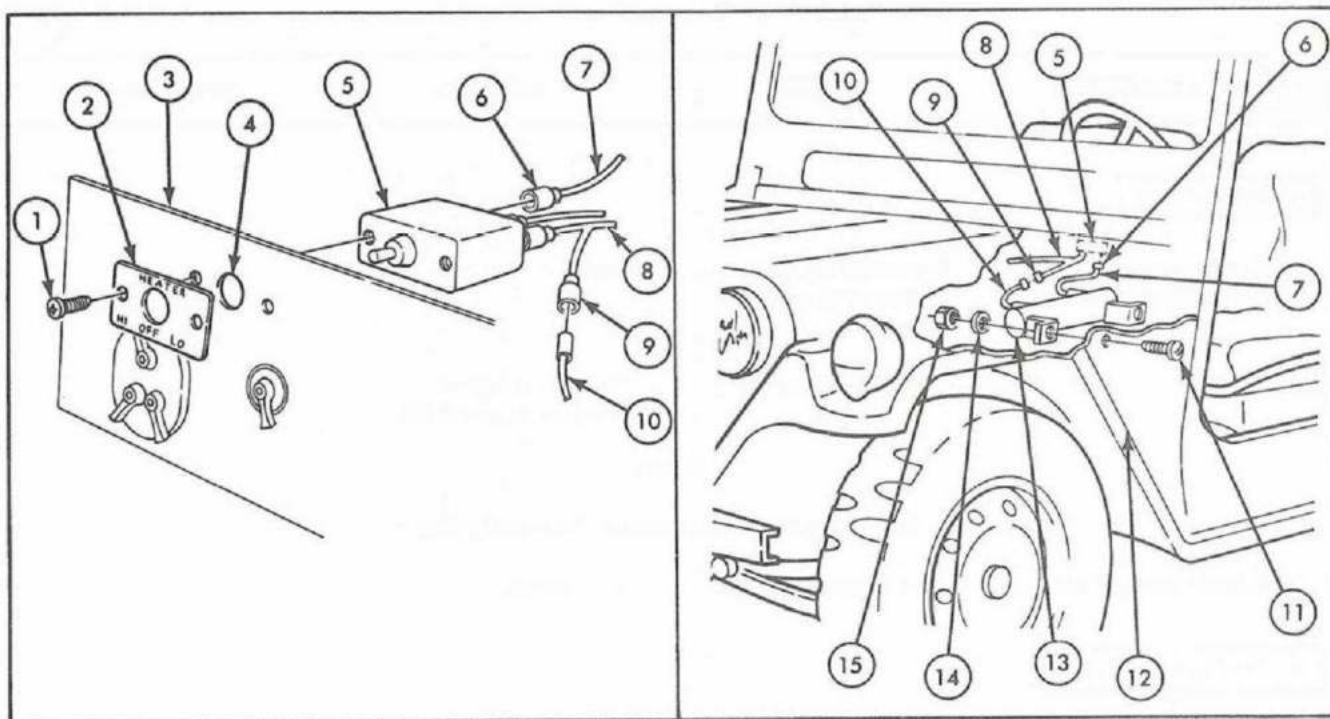
**NOTE**

Note location of connectors in steps 3 and 4 for installation.

- |    |   |   |  |
|----|---|---|--|
| 3. | Resistor cable (7) to heater switch (5)             | Connector (6)                                     | Disconnect.                            |
| 4. | Resistor cable (10) to blower motor cable (8)       | Connector (9)                                     | Separate.                              |
| 5. | Resistor assembly (13) to left body side panel (12) | Two nuts (15), lock-washers (14), and screws (11) | Remove.                                |
| 6. | Resistor assembly (13)                              |   | Remove from left body side panel (12). |

## 11-33. Resistor Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. INSTALLATION</b>				
7.		Resistor assembly (13)	Secure to left body side panel (12) with two screws (11), lockwashers (14), and nuts (15).	
8.		Resistor cable connector (6)	Connect to heater switch (5).	
9.		Resistor cable (10) to blower motor cable connector (9)	Secure halves together.	
10.		Heater switch (5)	Place through instrument panel opening (4) from behind panel (3), and secure with instruction plate (2) and two screws (1).	Make sure HI-LO position on switch (5) matches instruction plate (2).



END OF TASK!

FOLLOW-ON TASK: Check heater for proper operation (TM 9-2320-218-10).

TA 155815

**11-34. Circuit Breaker Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

***a. REMOVAL***

- |    |   |  |                                       |
|----|---|--|---------------------------------------|
| 1. | Circuit breaker (3) to left body side panel (5) | Two nuts (7), lock-washers (6), and screws (4) | Remove.                               |
| 2. | Circuit breaker (3)                             |  | Pull down below instrument panel (2). |

**NOTE**

Note locations of connectors for installation.

- |    |                     |                    |             |
|----|---------------------|--------------------|-------------|
| 3. | Circuit breaker (3) | Two connectors (1) | Disconnect. |
|----|---------------------|--------------------|-------------|

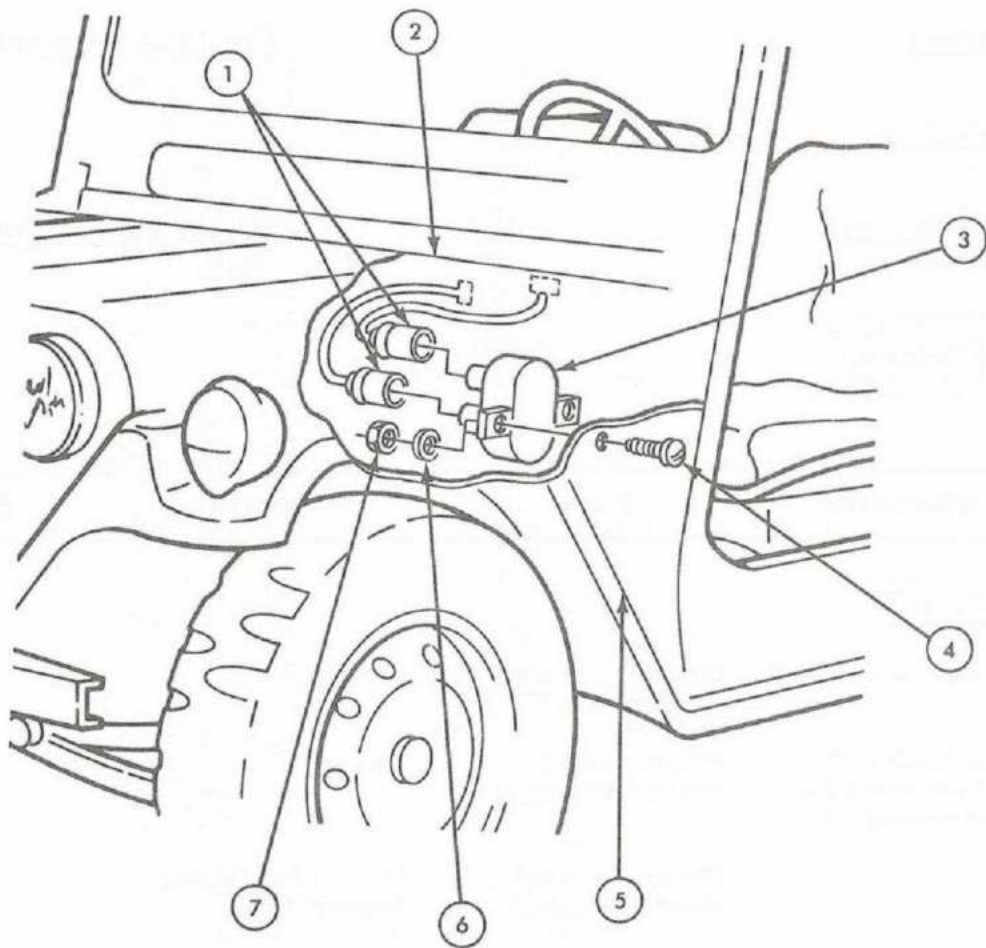
***b. INSTALLATION***

- |    |                    |   |
|----|--------------------|---|
| 4. | Two connectors (1) | Connect to circuit breaker (3) at same points where disconnected. |
|----|--------------------|---|



## 11-34. Circuit Breaker Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Circuit breaker (3)	Secure to left body side panel (5) with two screws (4), lock-washers (6), and nuts (7).	



END OF TASK!

FOLLOW-ON TASK: Check heater for proper operation (TM 9-2320-218-10).

TA 155816

**11-35. Blower Motor and Wheel Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
-------------	----------	------	--------	---------

**a. REMOVAL**

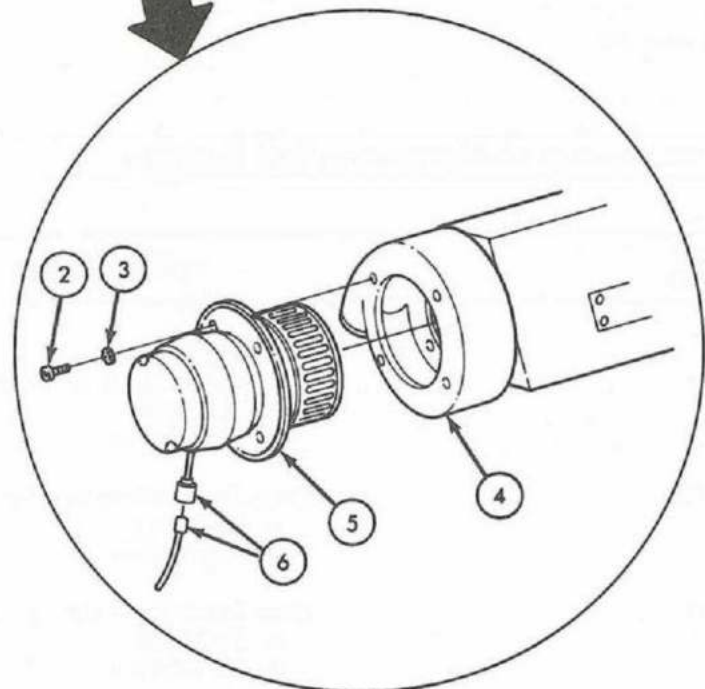
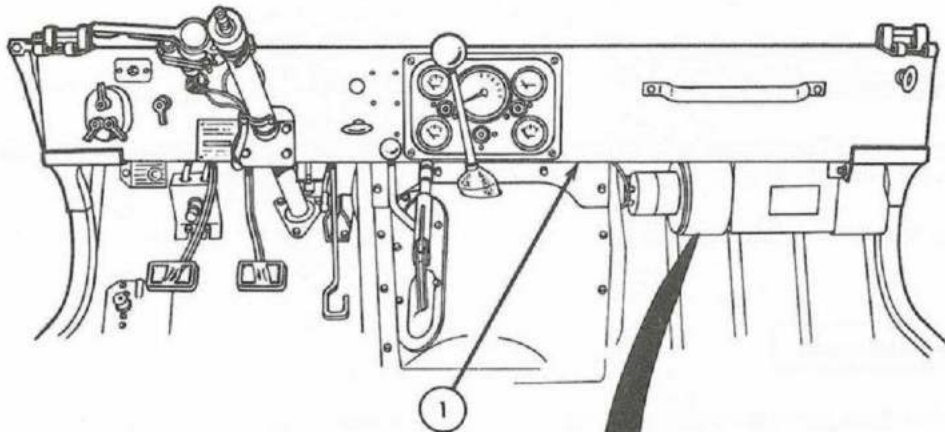
- |    |   |                                     |                                 |
|----|---|-------------------------------------|---------------------------------|
| 1. | Under instrument panel (1)                                | Blower motor cable connector (6)    | Separate.                       |
| 2. | Blower motor and wheel assembly (5) to blower housing (4) | Four screws (2) and lockwashers (3) | Remove.                         |
| 3. |   | Blower motor and wheel assembly (5) | Remove from blower housing (4). |

**b. INSTALLATION**

- |    |                                     |   |
|----|-------------------------------------|---|
| 4. | Blower motor and wheel assembly (5) | Place on blower housing (4), and secure with four washers (3) and screws (2). |
| 5. | Blower motor cable connector (6)    | Secure halves together.   |

## 11-35. Blower Motor and Wheel Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK: Check heater blower for proper operation (TM 9-2320-218-10).

TA 155817

### Section III. HARDTOP KIT MAINTENANCE

#### 11-36. General

This section provides maintenance procedures assigned to the organizational level for hardtop kits. To find a specific maintenance procedure, see the maintenance task summary below.

#### 11-37. Service Upon Receipt of Material

a. Inspect the following: outside body panels for scratches or dents; tightness of all attaching parts; glass for breakage; sliding windows and doors for ease of operation and condition of weatherseals.

b. Make sure insulating material is properly attached.

#### 11-38. Preventive Maintenance

See TM 9-2320-218-10 for daily preventive maintenance.

#### 11-39. Troubleshooting

See table 3-2.

#### 11-40. Hardtop Kit Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
11-41.	Outside and Inside Door Handles a. Removal b. Installation	11-116
11-42.	Door Handle Stop and Spring a. Removal b. Installation	11-118
11-43.	Door Latch Stop and Spring a. Removal b. Installation	11-120
11-44.	Door Support and Pad Maintenance a. Door Support Removal b. Door Pad Removal c. Door Support Installation d. Door Pad Installation	11-122



11-40. Hardtop Kit Maintenance Task Summary (Cont'd)
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TASK PARA	PROCEDURES	PAGE NO.
11-45.	Door Weatherstripping a. Removal b. Cleaning c. Installation	11-124
11-46.	Side Panel Weatherstripping a. Removal b. Cleaning c. Installation	11-128
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11-48.	Door Glass and Seals a. Removal b. Cleaning and Inspection c. Installation	11-140
11-49.	Door Glass Frost Shields a. Inspection b. Removal c. Installation, Front Glass d. Installation, Rear Glass	11-144

**11-41. Outside and Inside Door Handles Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Cotter pin		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**NOTE**

- On vehicles equipped with rollover protection system (ROPS), a new inside door handle with different configuration (as shown) is installed. Procedures for removal and installation are the same except as noted.
- Lockwasher (5) is welded on new hardtop kit door handle.

**a. REMOVAL**

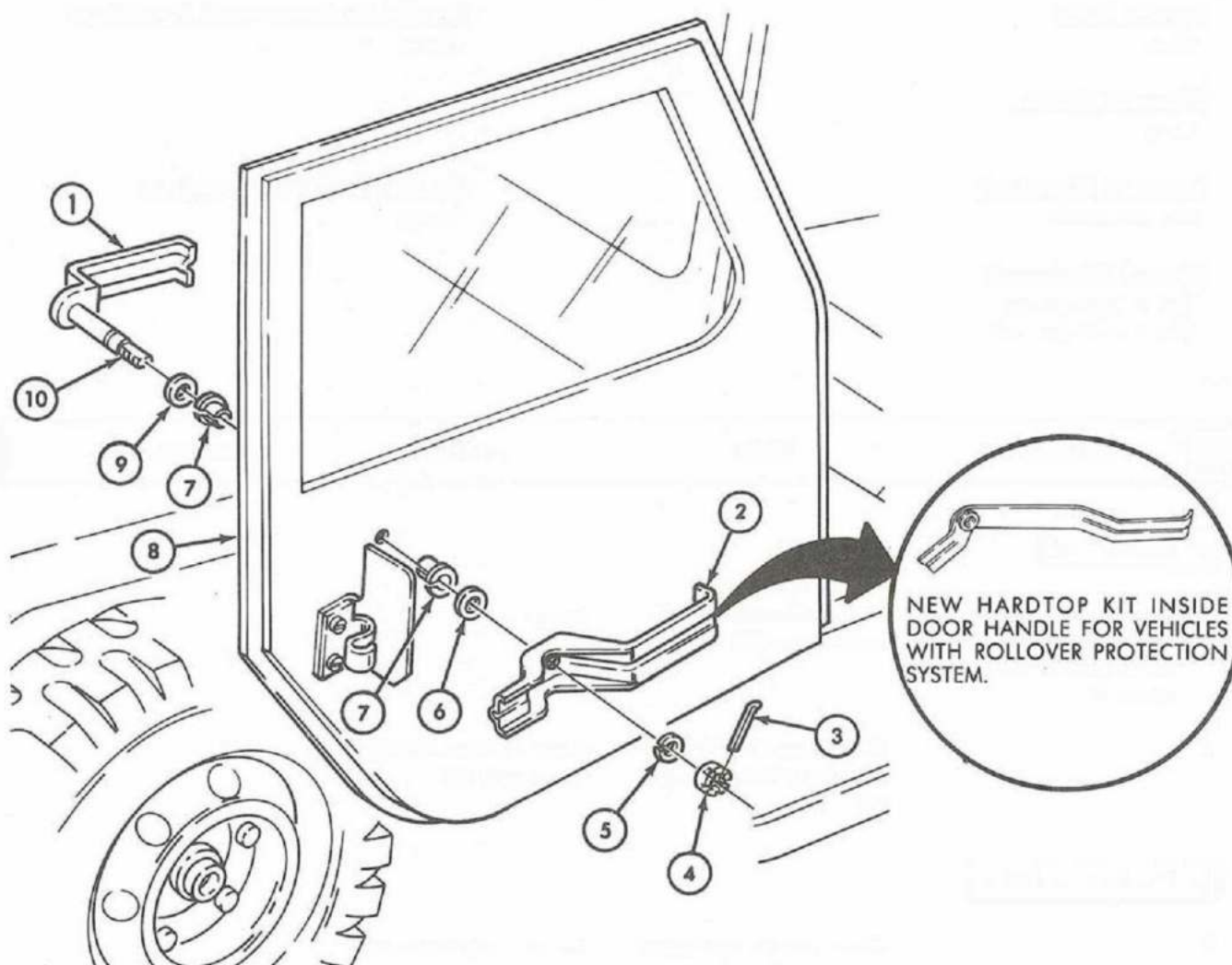
- |   |   |   |                         |
|---|---|---|-------------------------|
| 1. Inside door handle (2) to outside door handle shaft (10) | Cotter pin (3), slotted nut (4), and lockwasher (5) | Remove.                                     | Discard cotter pin (3). |
| 2.  | Inside door handle (2) and flat washer (6)          | Remove from outside door handle shaft (10). |                         |
| 3. Outside of door panel (8)                                | Outside door handle (1) and flat washer (9)         | Remove.                                     |                         |
| 4. Outside and inside of door panel (8)                     | Two bushings (7)                                    | Remove.                                     |                         |

**b. INSTALLATION**

- |    |                  |  |
|----|------------------|--|
| 5. | Two bushings (7) | Install on inside and outside of door panel (8). |
|----|------------------|--|

## 11-41. Outside and Inside Door Handles Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Flat washer (9) and outside door handle (1)	Place handle shaft (10) through opening in outside of door panel (8).	
7.		Flat washer (6) and inside door handle (2)	Place on outside door handle shaft (10) and secure with lockwasher (5), slotted nut (4), and new cotter pin (3).	



END OF TASK!

FOLLOW-ON TASK: Check door handles for proper operation (TM 9-2320-218-10).

TA 484705

**11-42. Door Handle Stop and Spring Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |    |  |                                    |                                      |
|----|--|------------------------------------|--------------------------------------|
| 1. | Door handle spring (5) and door handle stop (2) to interior side panel (1) | Two lockwashers (4) and screws (3) | Remove.                              |
| 2. | Door handle spring (5) and door handle stop (2)                            |                                    | Remove from interior side panel (1). |

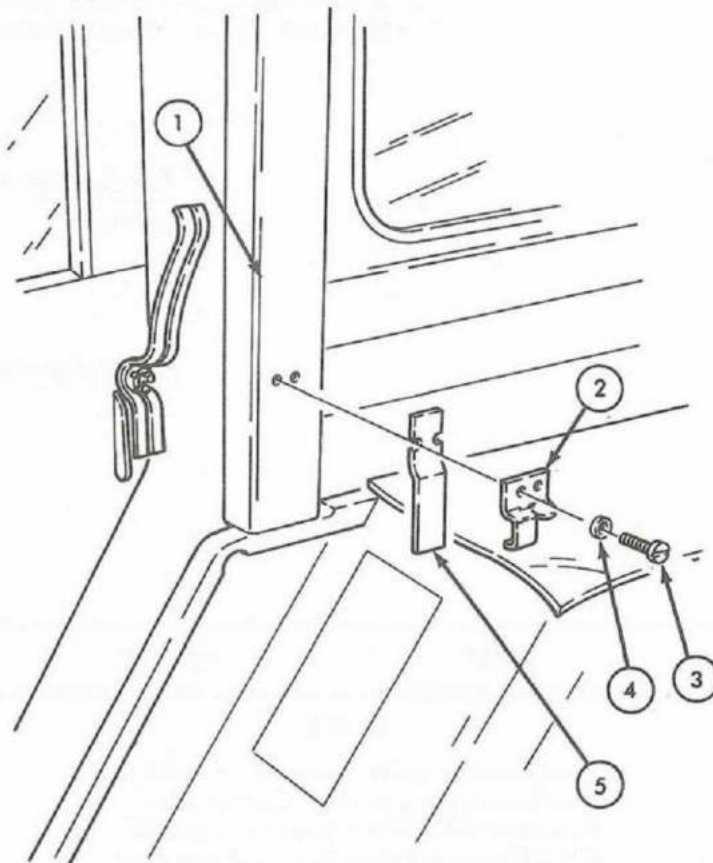
**b. INSTALLATION**

- |    |   |  |
|----|---|--|
| 3. | Door handle spring (5) and door handle stop (2) | Secure to interior side panel (1) with two lockwashers (4) and screws (3). |
|----|---|--|



## 11-42. Door Handle Stop and Spring Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK: Check door handle for proper operation (TM 9-2320-218-10).

TA 155819

**11-43. Door Latch Stop and Spring Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

It is necessary to cut and form inside edge of door handle stop, as shown, on vehicles equipped with rollover protection system (ROPS) to enable installation of new door handle. Removal and installation procedures are the same.

**a. REMOVAL**

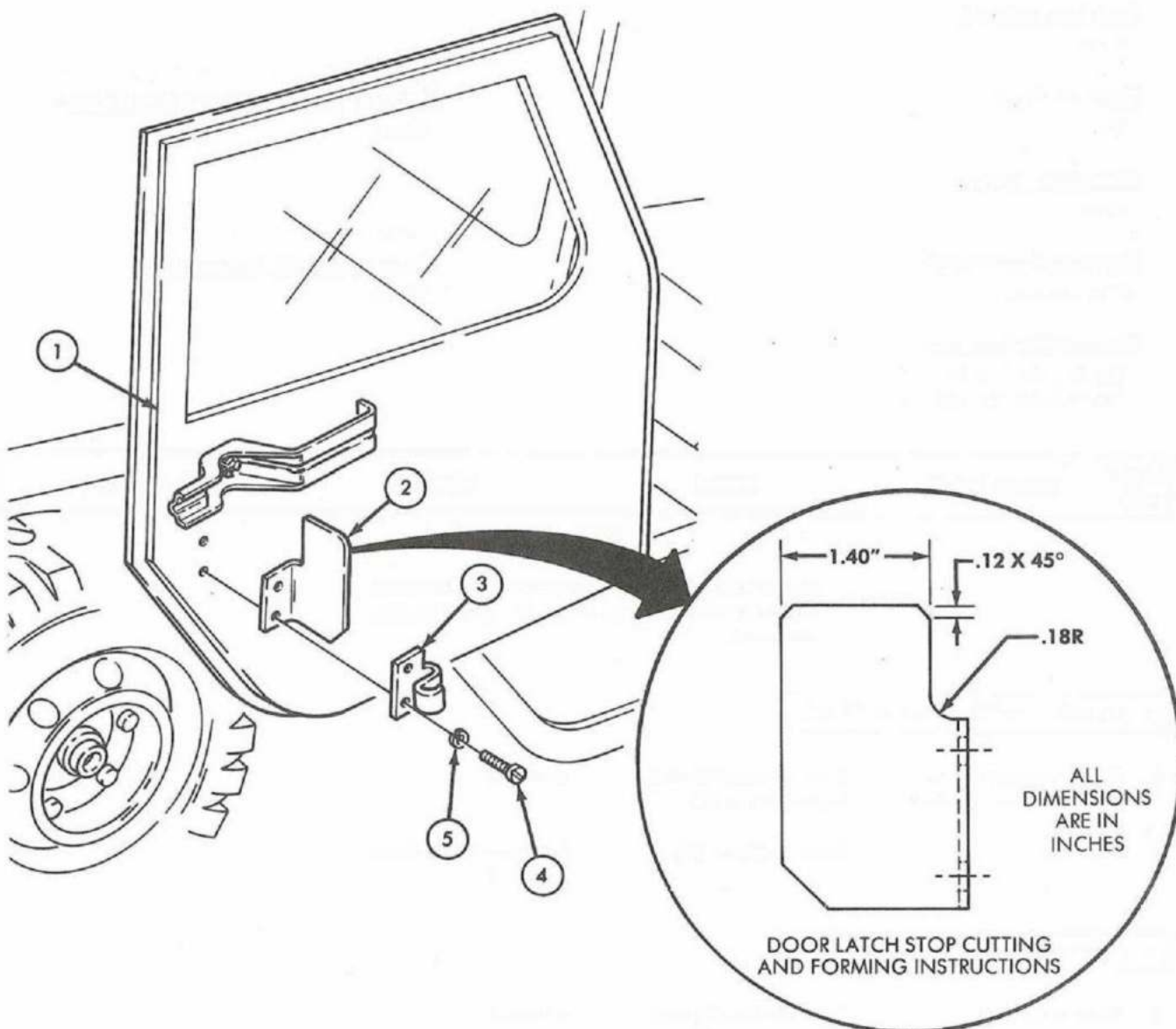
- |    |  |  |                                       |
|----|--|--|---------------------------------------|
| 1. | Door latch spring (3)<br>and door latch stop (2)<br>to inside door panel (1) | Two capscrews (4)<br>and lockwashers (5) | Remove.                               |
| 2. | Door latch spring (3)<br>and door latch stop (2)                             |  | Remove from inside<br>door panel (1). |

# 11-43. Door Latch Stop and Spring Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. INSTALLATION

- |    |   |   |
|----|---|---|
| 3. | Door latch stop (2) and door latch spring (3) | Secure to inside door panel (1) with two lockwashers (5) and capscrews (4). |
|----|---|---|



END OF TASK!

FOLLOW-ON TASK: Check door handle for proper operation (TM 9-2320-218-10).

TA 484706

**11-44. Door Support and Pad Maintenance**

This task covers:

- a. Door Support Removal
- b. Door Pad Removal

- c. Door Support Installation
- d. Door Pad Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
MI51A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

Removal and installation procedures for door supports and pads on left and right sides are identical.

**a. DOOR SUPPORT REMOVAL**

- |    |   |                                    |                             |
|----|---|------------------------------------|-----------------------------|
| 1. | Door support (2) to interior door panel (1) | Two screws (4) and lockwashers (3) | Remove.                     |
| 2. | Door support (2)                            |                                    | Remove from door panel (1). |

**b. DOOR PAD REMOVAL**

- |    |                                |                                    |                             |
|----|--------------------------------|------------------------------------|-----------------------------|
| 3. | Door pad (6) to side panel (5) | Two screws (8) and lockwashers (7) | Remove.                     |
| 4. | Door pad (6)                   |                                    | Remove from side panel (5). |



## 11-44. Door Support and Pad Maintenance (Cont'd)

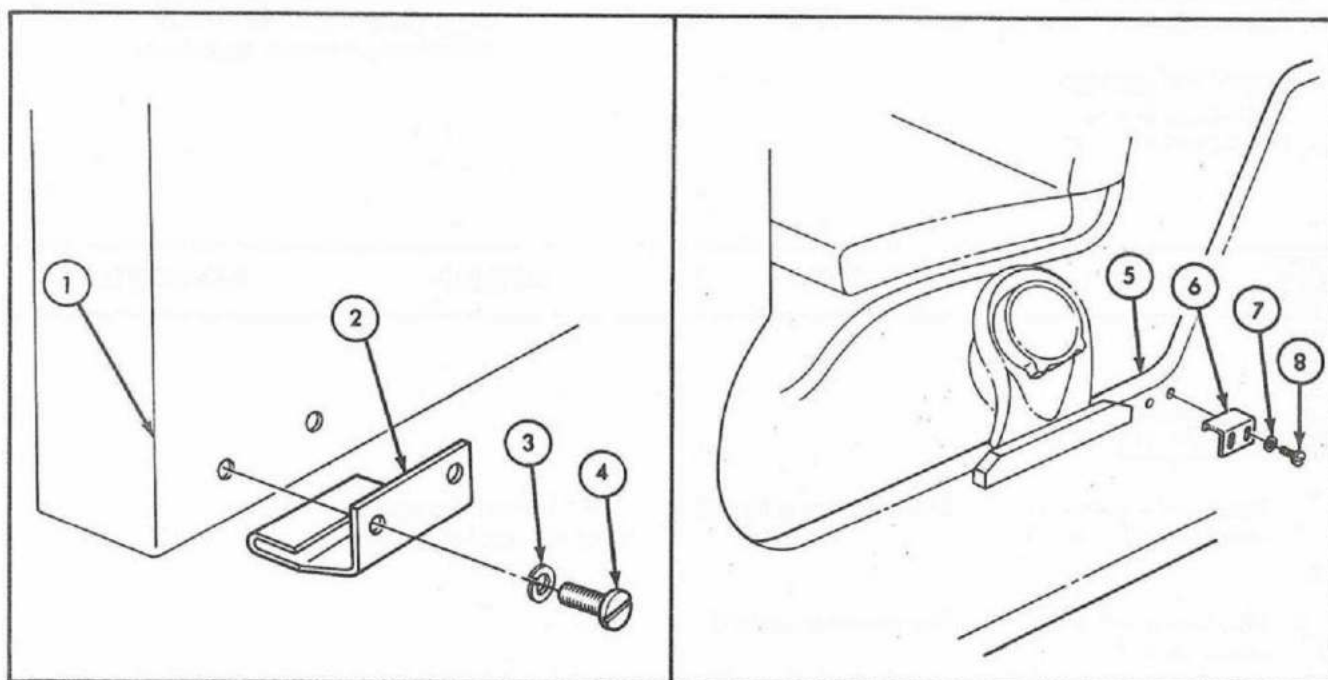
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

*c. DOOR SUPPORT INSTALLATION*

- |    |                  |   |
|----|------------------|---|
| 5. | Door support (2) | Secure to door panel (1) with two lockwashers (3) and screws (4). |
|----|------------------|---|

*d. DOOR PAD INSTALLATION*

- |    |              |   |
|----|--------------|---|
| 6. | Door pad (6) | Secure to side panel (5) with lockwasher (7) and screw (8). |
|----|--------------|---|



**11-45. Door Weatherstripping Maintenance**

This task covers:

- a. Removal
- b. Cleaning

- c. Installation

**INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

Wire brush

**Special Environmental Conditions**

Clean, well-ventilated work area.

**Materials/Parts**

Drycleaning solvent

Adhesive (NSN 8040-00-262-9031)

**Personnel Required**

One mechanic

**General Safety Instructions**Keep fire extinguisher nearby  
when using drycleaning solvent.**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

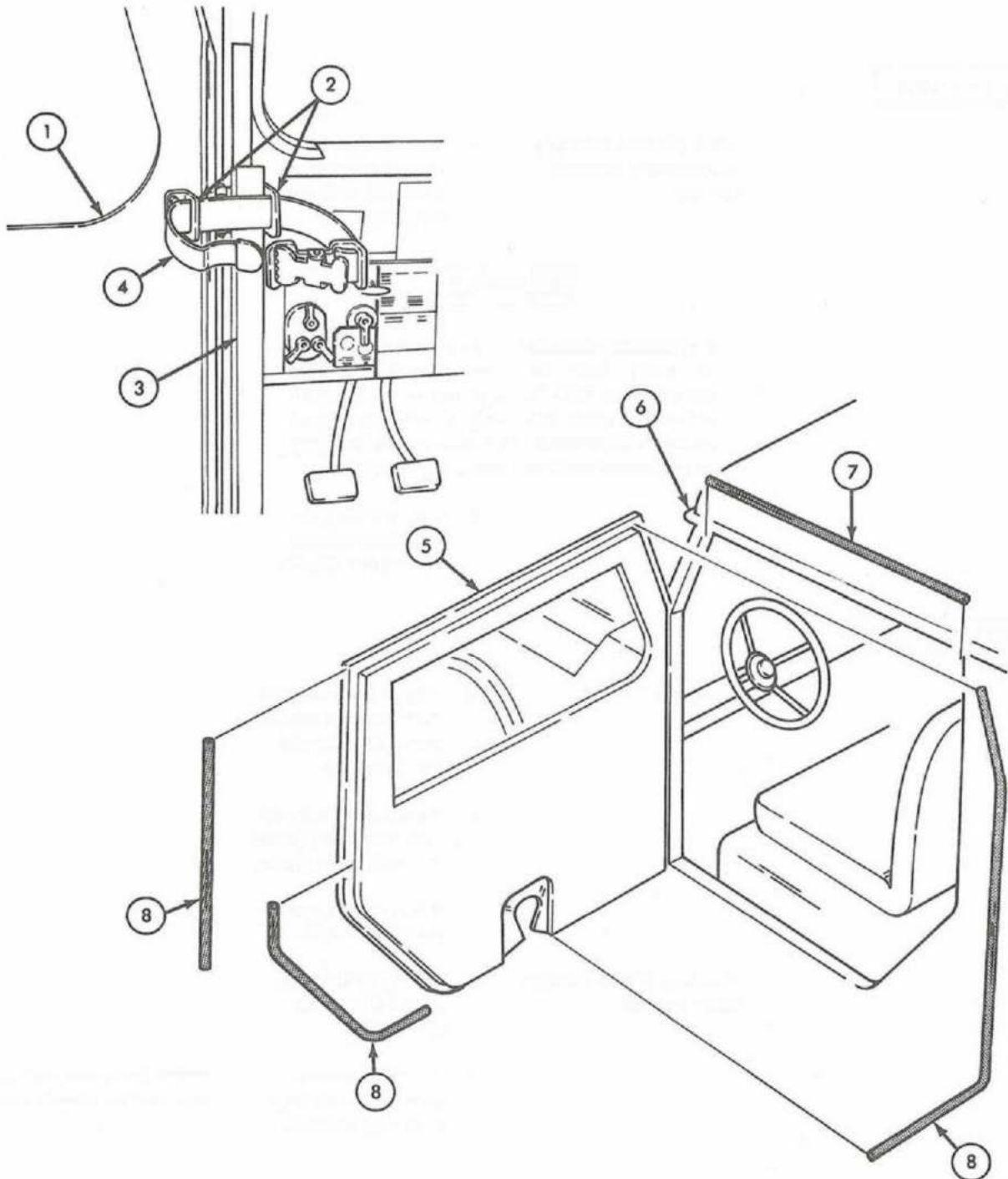
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
-------------	----------	------	--------	---------

**a. REMOVAL**

- |  |                                 |   |  |
|--|---------------------------------|---|--|
| 1. Inside door panel (1)<br>and hardtop pillar (3) | Door anchor strap (4)           | Unbuckle and remove<br>from two anchor brackets<br>(2). |  |
| 2. Hardtop panel (6)<br>above door.                | Weatherstrip seal (7)           | Remove.   |  |
| 3. Left door panel (5)                             | Three weatherstrip seals<br>(8) | Remove.   | Right door panel uses two<br>weatherstrip seals. |

## 11-45. Door Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



TA 155821

## 11-45. Door Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**b. CLEANING**

- |    |  |  |
|----|--|--|
| 4. | Door (5) and roof (6) weatherstrip contact surface | a. Scrub with wire brush to remove excess adhesive and weatherstripping. |
|----|--|--|

**WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.

- |    |   |
|----|---|
| b. | Clean with dry-cleaning solvent to remove grease. |
|----|---|

**c. INSTALLATION**

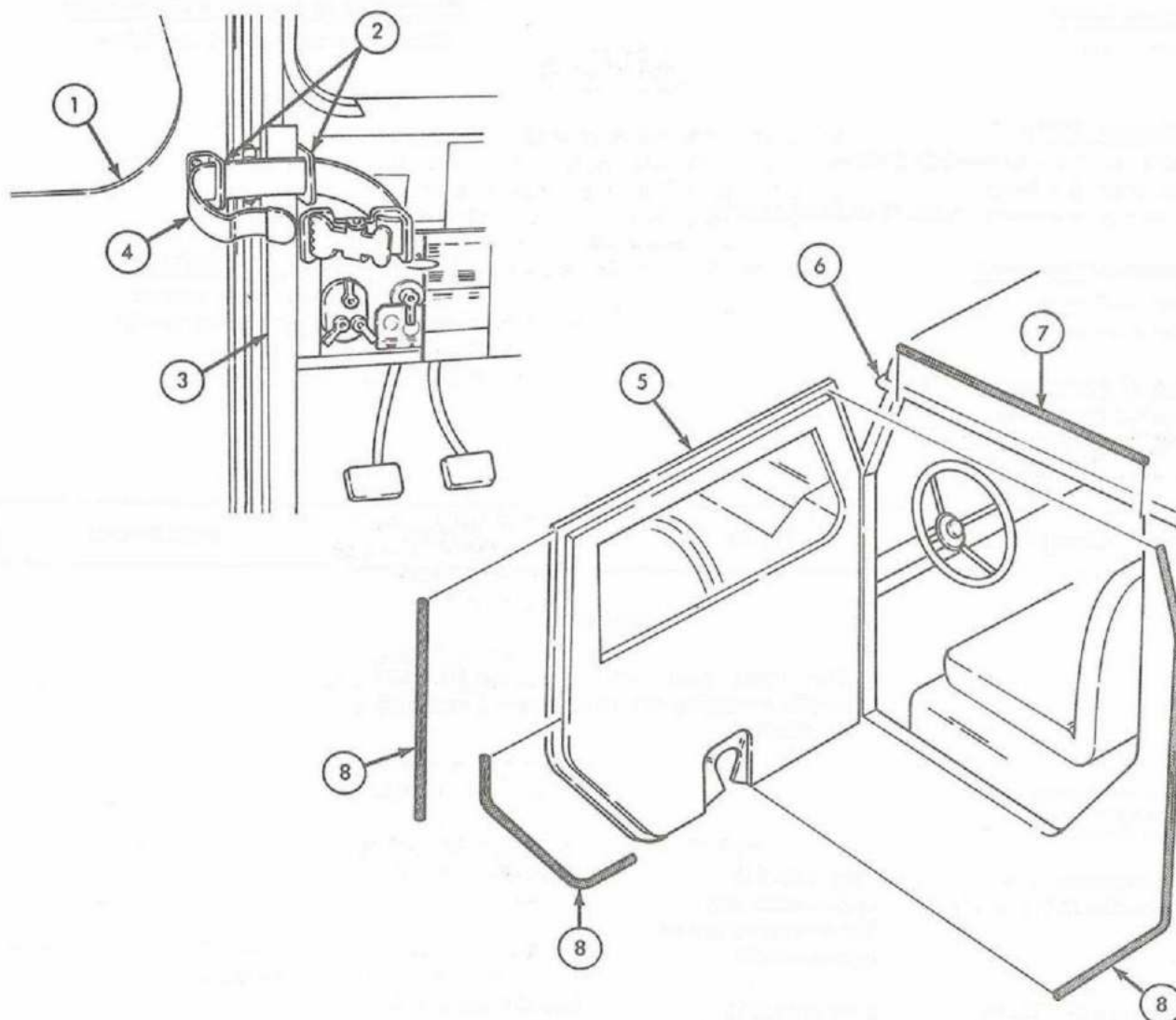
- |    |                                     |   |
|----|-------------------------------------|---|
| 5. | Adhesive                            | a. Apply light coat to weatherstrip contact areas of door (5) and roof (6). |
|    |                                     | b. Apply light coat to weatherstrip (7) and (8) mating surfaces.            |
|    |                                     | c. Allow to dry until tacky to touch.                                       |
| 6. | Hardtop panel weatherstrip seal (7) | a. Apply to hardtop panel (6) above door (5).                               |
|    |                                     | b. Remove excess adhesive with dry-cleaning solvent.                        |

Work from one end using care not to stretch rubber.



## 11-45. Door Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.		Three door panel weatherstrip seals (8)	<p>a. Apply to left door panel (5).</p> <p>b. Remove excess adhesive with dry-cleaning solvent.</p>	<p>Apply two weatherstrip seals to right door panel.</p> <p>Work from one end using care not to stretch rubber.</p>
8.		Door anchor strap (4)	Install in two door anchor brackets (2) and secure by buckling.	



END OF TASK!

TA 155822

**11-46. Side Panel Weatherstripping Maintenance**

This task covers:

- a. Removal
- b. Cleaning

c. Installation

**INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

Wire brush

**Special Environmental Conditions**

Work area will be well ventilated.

**Materials/Parts**

Adhesive (NSN 8040-00-262-9031)

Drycleaning solvent

Caulking compound (NSN 8030-00-682-6745)

**Personnel Required**

One mechanic

One assistant

**General Safety Instructions**Keep fire extinguisher nearby  
when using drycleaning solvent.**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
-------------	----------	------	--------	---------

**NOTE**

The right and left side panels and weatherstripping are removed and installed identically.

**a. REMOVAL**

- |  |   |         |
|--|---|---------|
| 1. Top panel (6) to windshield frame (3) | Four nuts (1),<br>lockwashers (2),<br>flat washers (4), and<br>capscrews (5)        | Remove. |
| 2. Side panel (20) to top panel (6)      | Five nuts (21),<br>lockwashers (22),<br>ten flat washers (7),<br>and five bolts (8) | Remove. |

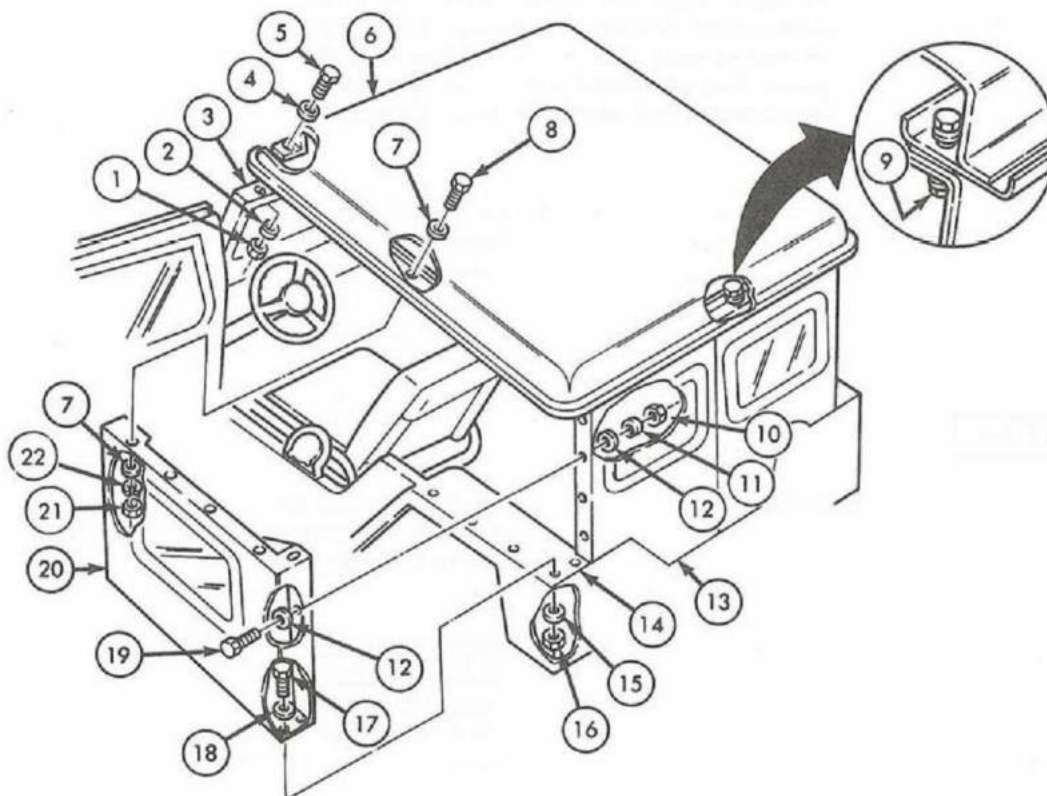
**11-46. Side Panel Weatherstripping Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Side panel (20) to body (14)	Five nuts (16), lockwashers (15), flat washers (18), and capscrews (17)	Remove.	
4.	Side panel (20) to rear panel (13)	Four nuts (10), lockwashers (11), eight flat washers (12), and four bolts (19).	Remove.	
5.	Top panel (6) to rear panel (13)	Six nuts (9)	Loosen.	

**NOTE**

Assistant will raise front end of top panel (6) during step 6.

- |    |                 |                       |
|----|-----------------|-----------------------|
| 6. | Side panel (20) | Slide out and remove. |
|----|-----------------|-----------------------|



TA 155823

## 11-46. Side Panel Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

- |    |                |   |         |  |
|----|----------------|---|---------|--|
| 7. | Side panel (1) | Upper, and lower weatherstrip seals (3) and (4) | Remove. |  |
|----|----------------|---|---------|--|

**b. CLEANING**

- |    |   |  |
|----|---|--|
| 8. | Side panel (1) weatherstrip contact surface | a. Scrub with wire brush to remove excess adhesive and weatherstripping. |
|----|---|--|

**WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and or damage to equipment.

- b. Clean with dry-cleaning solvent to remove grease.

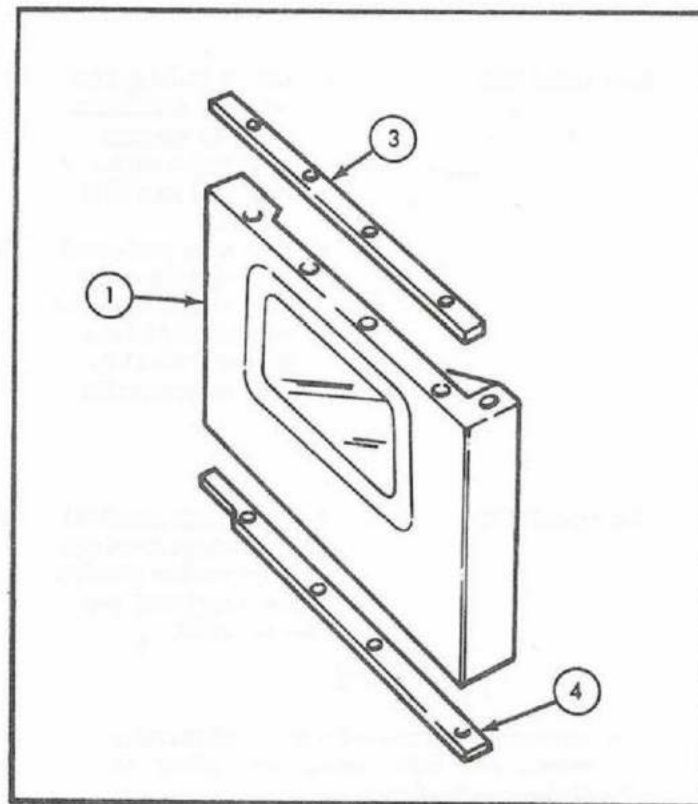
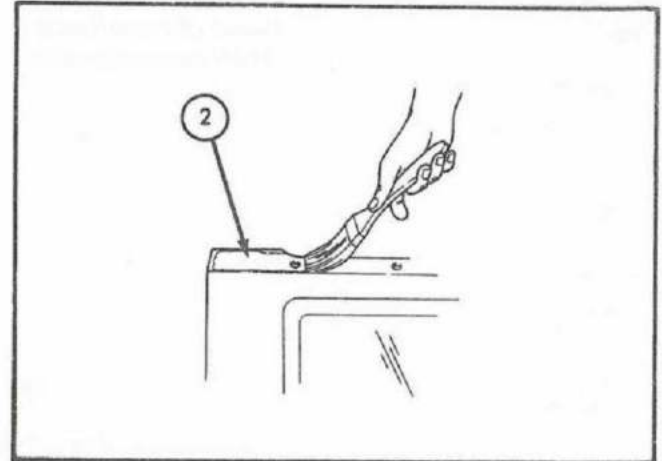
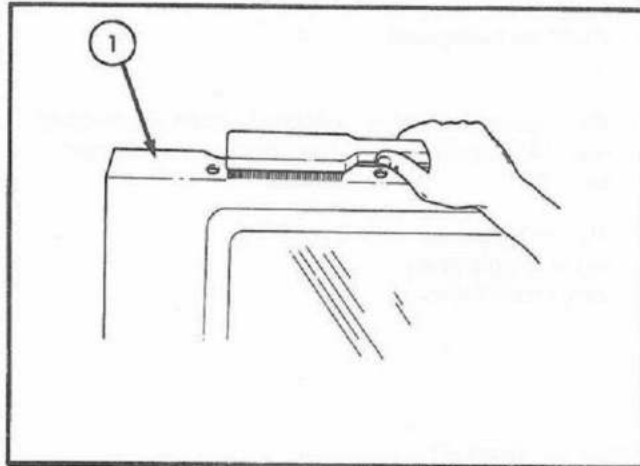
**c. INSTALLATION**

- |    |          |  |
|----|----------|--|
| 9. | Adhesive | <p>a. Apply light coat to weatherstrip contact surfaces of side panel (2).</p> <p>b. Apply light coat to mating surfaces of upper (3) and lower (4) weatherstrip seals.</p> <p>c. Allow to dry until tacky to touch.</p> |
|----|----------|--|



11-46. Side Panel Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



## 11-46. Side Panel Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.		Upper (25) and lower (21) weatherstrip seals	<p>a. Place on side panel (22).</p> <p>b. Remove excess adhesive with drycleaning solvent.</p> <p>c. Punch holes at same locations as side panel holes.</p>	Work from one end using care not to stretch seals.

## NOTE

Assistant will raise front end of top panel (7) during step 11.

11.	Side panel (22)	<p>a. Secure to body (15) with five capscrews (19), flat washers (18), lockwashers (16), and nuts (17).</p> <p>b. Secure to rear panel (11) with four capscrews (20), eight flat washers (14), four lockwashers (13), and four nuts (12).</p>	<p>Finger tighten only.</p> <p>Finger tighten only.</p>
12.	Side panel (22)	Secure to top panel (7) with five capscrews (8), ten flat washers (9), five lockwashers (24), and five nuts (23).	Finger tighten only.

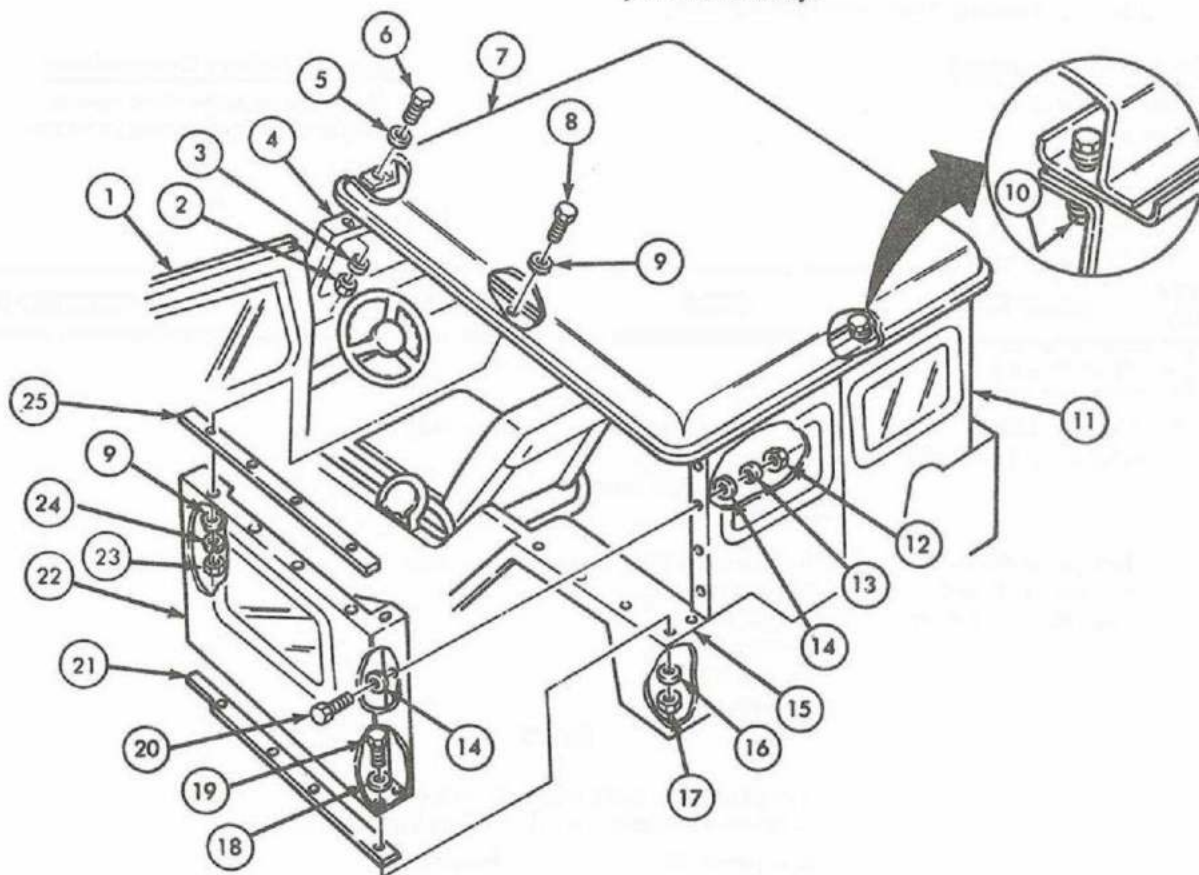
## NOTE

- Assistant will remain inside vehicle to align doors and side panels, and assist in tightening hardware.
- Close both doors (1) to square off hardtop panels before tightening all attaching hardware.

**11-46. Side Panel Weatherstripping Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

- |     |  |  |
|-----|--|--|
| 13. | Top panel (7)  | Secure to windshield frame (4) with four capscrews (6), flat washers (5), lock-washers (3), and nuts (2); and tighten. |
| 14. | Five nuts (23), nuts (17), four nuts (12), six nuts (10) | Tighten.   |
| 15. |  | Apply caulking compound to outside joining surfaces of panels and body.  |



END OF TASK!

- FOLLOW-ON TASKS:**
- Check for spaces between panels.
  - Check doors for proper opening and closing operation.

TA 155825

**11-47. Top and Rear Panels Weatherstripping Maintenance**

This task covers:

- a. Removal
- b. Cleaning

c. Installation

**INITIAL SETUP:****Applicable Models**

M151A2

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

Wire brush

**Special Environmental Conditions**

Work area will be well ventilated.

**Materials/Parts**

Adhesive (NSN 8040-00-262-9031)

Drycleaning solvent

Caulking compound (NSN 8030-00-682-6745)

**Personnel Required**

One mechanic

One assistant

**General Safety Instructions**Keep fire extinguisher nearby  
when using drycleaning solvent.**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
-------------	----------	------	--------	---------

**a. REMOVAL**

- |    |  |   |         |
|----|--|---|---------|
| 1. | Top panel (1) to windshield frame (20)                   | Four nuts (21), lockwashers (22), flat washers (2), and capscrews (3)                         | Remove. |
| 2. | Top panel (1) to rear panel (9) and two side panels (19) | Sixteen nuts (8), lockwashers (7), thirty-two flat washers (5) and (6), and sixteen bolts (4) | Remove. |

**NOTE**

Assistant will hold one side of top panel (1) while mechanic holds other side during step 3.

- |    |                             |   |
|----|-----------------------------|---|
| 3. | Top panel (1)               | Remove.   |
| 4. | Rear panel (9) to body (17) | Four nuts (16), lockwashers (15), flat washers (11), and bolts (10) |



## 11-47. Top and Rear Panels Weatherstripping Maintenance (Cont'd)

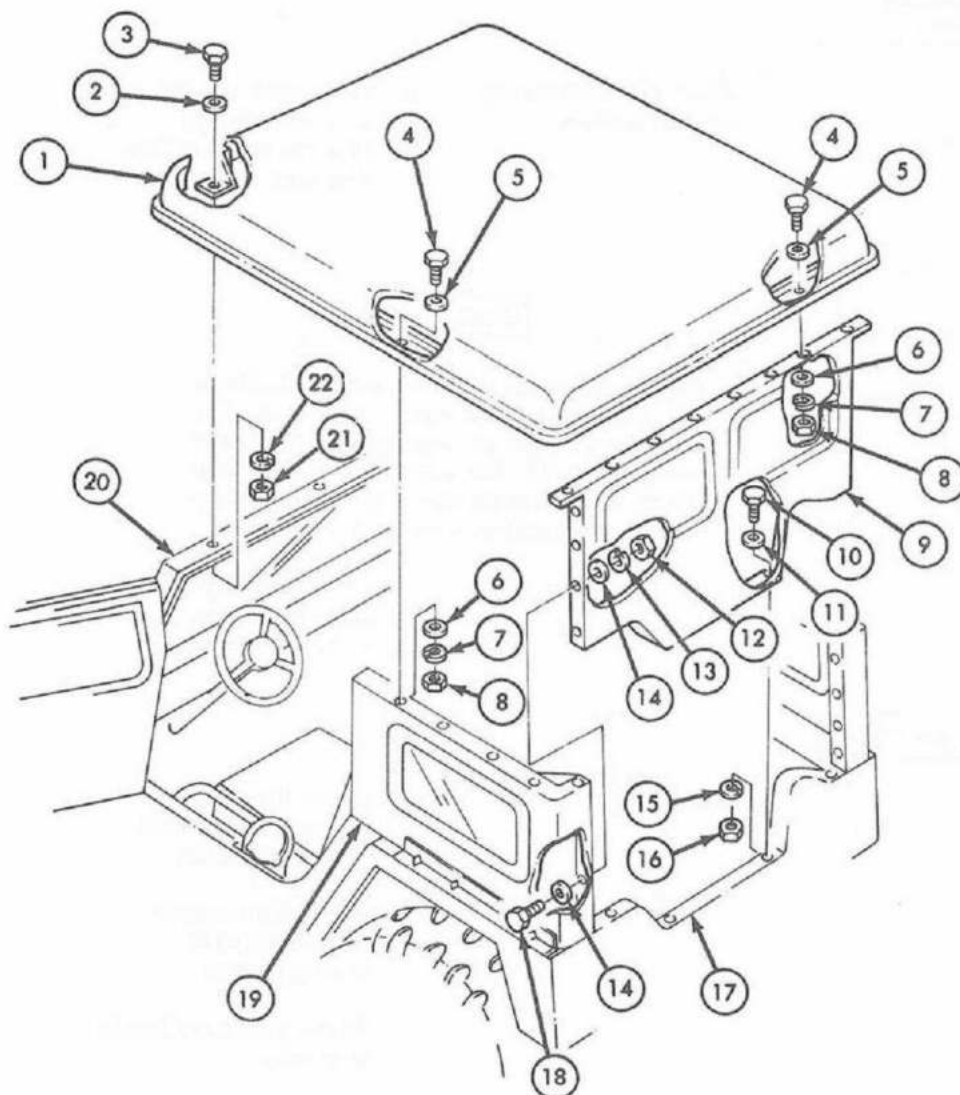
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

- |    |  |  |         |  |
|----|--|--|---------|--|
| 5. | Rear panel (9) to two side panels (19) | Eight nuts (12), lockwashers (13), sixteen flat washers (14), and eight bolts (18) | Remove. |  |
|----|--|--|---------|--|

## NOTE

Assistant will hold one end of rear panel (9) while mechanic holds other end during step 6.

- |    |                |  |   |  |
|----|----------------|--|---|--|
| 6. | Rear panel (9) |  | Remove from side panels (19) and body (17). |  |
|----|----------------|--|---|--|



TA 155826

## 11-47. Top and Rear Panels Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Top panel to windshield seal (7), top panel to rear panel seal (4), two rear panel to side panel seals (5), and five rear panel to body seals (6) are removed and installed identically. Steps seven through ten apply to all seals.

- |    |                       |                    |
|----|-----------------------|--------------------|
| 7. | Weatherstrip seal (7) | Remove from panel. |
|----|-----------------------|--------------------|

**b. CLEANING**

- |    |   |  |
|----|---|--|
| 8. | Panel (1) weatherstrip contact surface. | a. Scrub with wire brush to remove excess adhesive and weatherstripping. |
|----|---|--|

**WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.

- b. Clean with dry-cleaning solvent to remove grease.

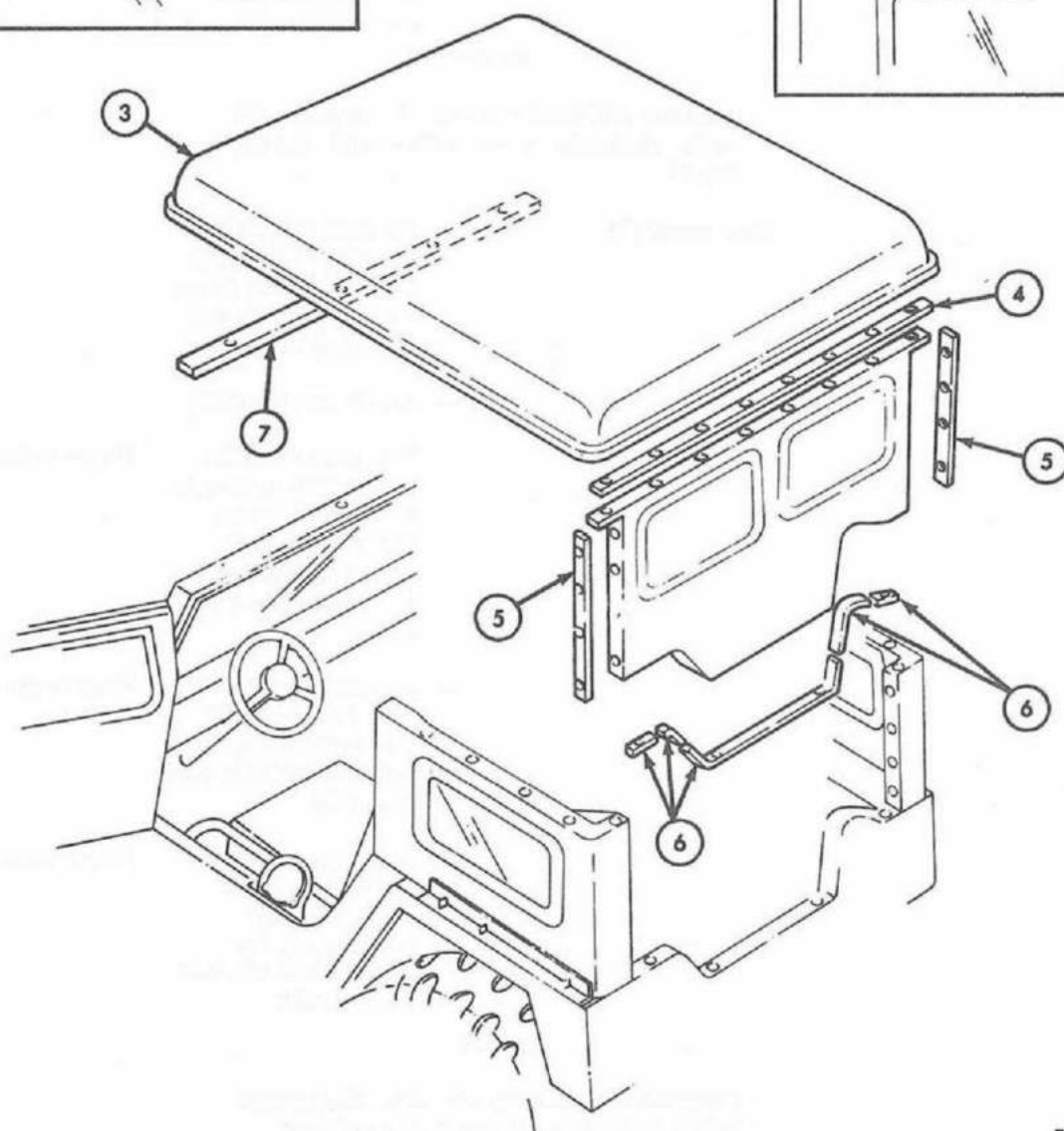
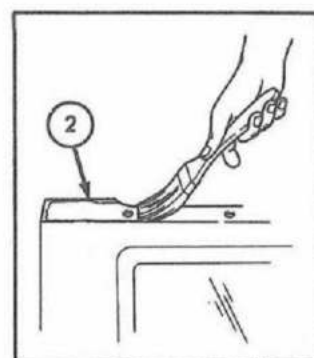
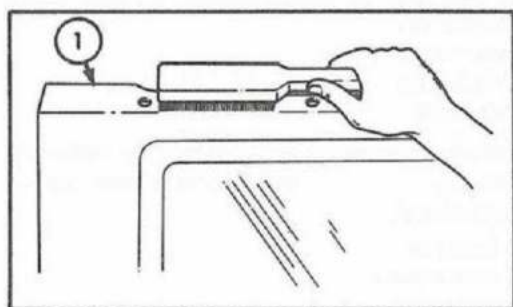
**c. INSTALLATION**

- |    |              |   |
|----|--------------|---|
| 9. | Adhesive (2) | <p>a. Apply light coat to weatherstrip contact area of panel (3).</p> <p>b. Apply light coat to weatherstrip (4) mating surface.</p> <p>c. Allow to dry until tacky to touch.</p> |
|----|--------------|---|

### 11-47. Top and Rear Panels Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

10. Weatherstrip seal (4) a. Apply to panel (1).



TA 155827

## 11-47. Top and Rear Panels Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.

- b. Remove excess adhesive with dry cleaning solvent. Work from one end using care not to stretch seals.
- c. Punch holes at same locations as rear panel holes.

**NOTE**

Assistant will hold one end of rear panel (7) while mechanic holds other end during step 11.

- |     |                |  |   |
|-----|----------------|--|---|
| 11. | Rear panel (7) | <ul style="list-style-type: none"> <li>a. Hold top (2) and two side (10) panels clear of mating edges and position on rear of body (13).</li> <li>b. Lower top panel (2).</li> <li>c. Secure to two side panels (10) with eight bolts (15), sixteen flat washers (14), eight lockwashers (17), and eight nuts (16).</li> <li>d. Secure to body (13) with four bolts (8), flat washers (9), lockwashers (11), and nuts (12).</li> <li>e. Secure to top panel (2) with six bolts (3), twelve flat washers (4), six lockwashers (5), and six nuts (6).</li> </ul> | <p>Finger tighten only.</p> <p>Finger tighten only.</p> <p>Finger tighten only.</p> |
|-----|----------------|--|---|

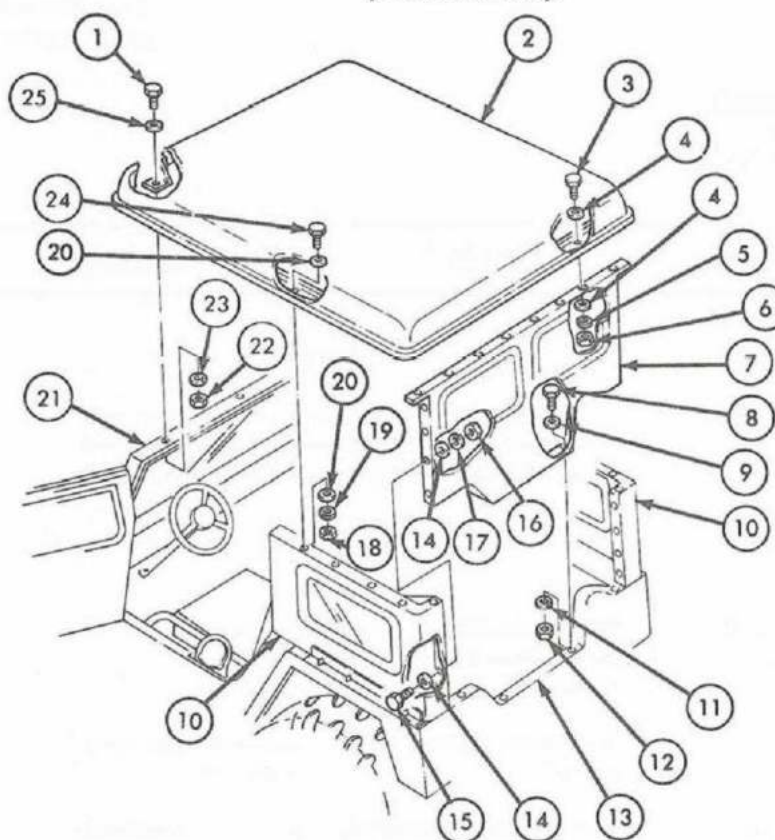
**NOTE**

Close both doors to square off hardtop panels before tightening all attaching hardware.



## 11-47. Top and Rear Panels Weatherstripping Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
12.	Top panel (2)		<p>a. Secure to windshield frame (21) with four capscrews (1), flat washers (25), lockwashers (23), and nuts (22), and tighten.</p> <p>b. Secure to two side panels (10) with ten bolts (24), twenty flat washers (20), ten lockwashers (19), and ten nuts (18) and tighten.</p>	
13.	Rear panel (7)	attaching hardware.	Tighten.	
14.			Apply caulking compound to outside joining surfaces of panels and body.	



END OF TASK!

FOLLOW-ON TASKS:

- Check for spaces between panels.
- Check doors for proper operation.

TA 155828

**11-48. Door Glass and Seals Maintenance**

This task covers:

- a. Removal* *c. Installation*  
*b. Cleaning and Inspection*

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		Clean, well-ventilated work area.
<u>Materials/Parts</u>		
Drycleaning solvent		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		Keep fire extinguisher nearby when using drycleaning solvent.
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**NOTE**

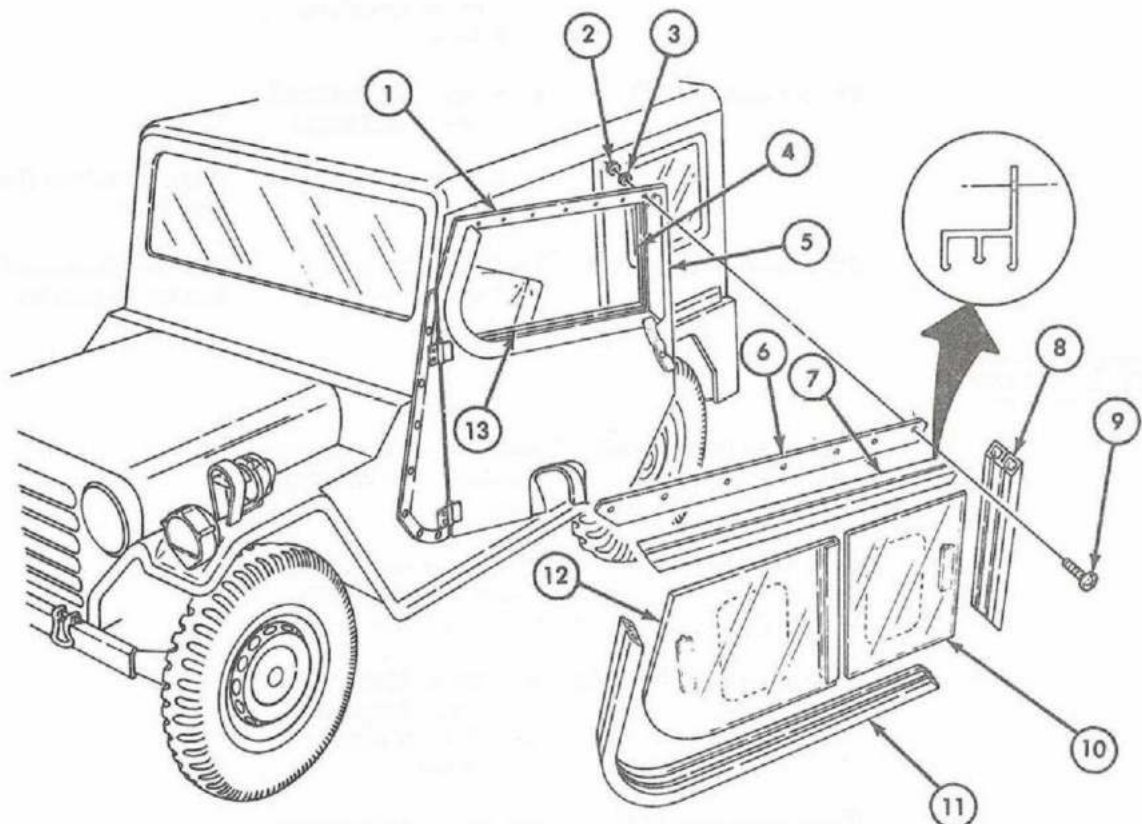
The procedure for removal, cleaning and inspection, and installation of door glass and seals for left and right hand doors is identical.

**a. REMOVAL**

- |   |   |  |
|---|---|--|
| 1. Top frame (6) and seal (7) to door frame (1) | Seven nuts (2), lockwashers (3), and screws (9) | Remove.  |
| 2.  | Top frame (6) and seal (7)                      | Remove from door frame (1).  |
| 3. Upper door panel (5)                         | Front glass assembly (12)                       | <i>a.</i> Slide completely toward rear.<br><br><i>b.</i> Lift upward and remove. |

## 11-48. Door Glass and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Upper door panel (5)	Rear glass assembly (10)	Lift upward and remove.	
5.	Upper door panel (5)	Front and bottom seal (11)	Pull from channel (13) and remove.	
6.	Upper door panel (5)	Rear seal (8)	Pull from channel (4) and remove.	
7.	Top frame (6)	Top seal (7)	Remove.	



## 11-48. Door Glass and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**b. CLEANING AND INSPECTION**

- |    |                               |                                      |
|----|-------------------------------|--------------------------------------|
| 8. | Door seals (6), (8), and (11) | a. Remove rust and foreign material. |
|----|-------------------------------|--------------------------------------|

**WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when solvent is used. Failure to do this may result in injury to personnel and/or damage to equipment.

- b. Use drycleaning solvent to remove adhesive.

- |     |                         |  |  |
|-----|-------------------------|--|--|
| 9.  | Door seal tracks (7)    | a. Inspect for damaged or collapsed areas. |  |
|     |                         | b. Repair as necessary.                    | Replace seal (8) if not repairable.          |
| 10. | Door glass handles (12) | Check if broken or missing.                | Replace glass assembly if broken or missing. |

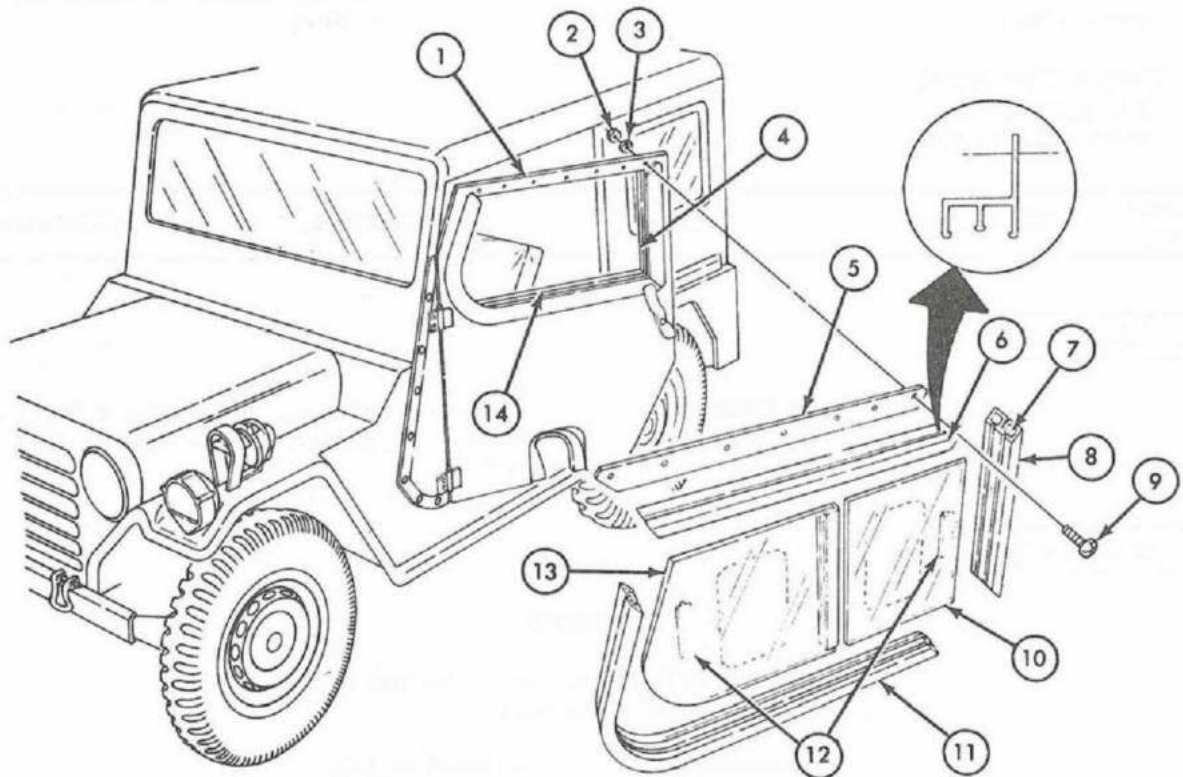
**c. INSTALLATION**

- |     |                            |   |
|-----|----------------------------|---|
| 11. | Front and bottom seal (11) | Position in door channel (14) and press firmly in place.  |
| 12. | Rear seal (8)              | Position in rear door channel (4) and press firmly in place.  |
| 13. | Rear glass assembly (10)   | Position in inner track of front and bottom seal (11) and slide toward rear.                            |
| 14. | Front glass assembly (13)  | Position in outer track of front and bottom seal (11) and slide completely forward into curved section. |



**11-48. Door Glass and Seals Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
15.		Top seal (6)	Position in top frame (5) and press firmly into place.	
16.		Top frame (5) and seal (6)	<p>a. Position on front (13) and rear (10) glass assemblies and aline with holes in door frame (1).</p> <p>b. Secure on door frame (1) with seven screws (9), lock-washers (3), and nuts (2).</p>	Make sure front glass (13) is in outer track and rear glass (10) is in inner track of seal (6).



END OF TASK!

FOLLOW-ON TASK: Check door glass movement in seal tracks for easy opening and closing.

TA 156096

**11-49. Door Glass Frost Shields Maintenance**

This task covers:

- a. Inspection*
- b. Removal*

- c. Installation, Front Glass*
- d. Installation, Rear Glass*

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

***a. INSPECTION***

- |    |                  |  |  |
|----|------------------|--|--|
| 1. | Frost shield (2) | Check for cloudiness, damage, and broken seal. | Replace if cloudy, damaged, or seal is broken. |
|----|------------------|--|--|

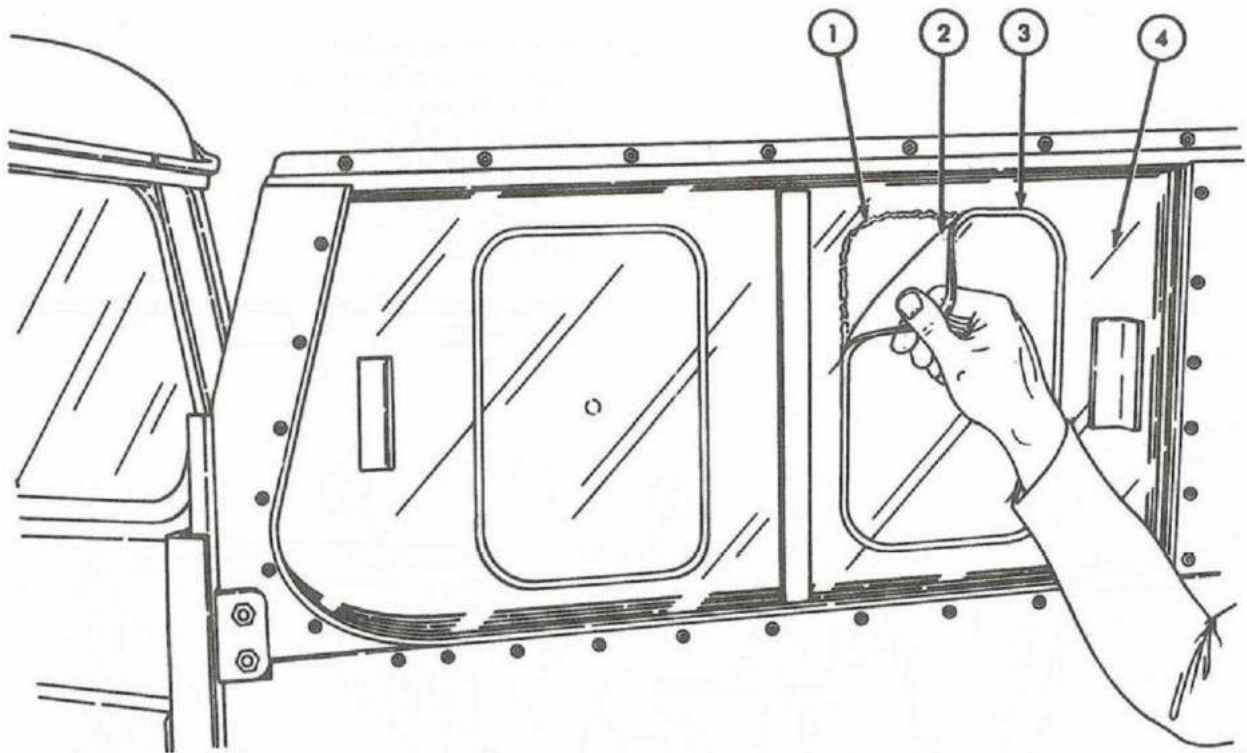
***b. REMOVAL*****NOTE**

Removal of front and rear, and left and right side frost shields is identical.

- |    |                  |   |
|----|------------------|---|
| 2. | Frost shield (2) | <ul style="list-style-type: none"> <li><i>a. Break seal (3).</i></li> <li><i>b. Pull away from glass (4) and remove.</i></li> </ul> |
| 3. | Adhesive (1)     | Scrape from glass (4).  |

**11-49. Door Glass Frost Shields Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



## 11-49. Door Glass Frost Shields Maintenance (Cont'd)

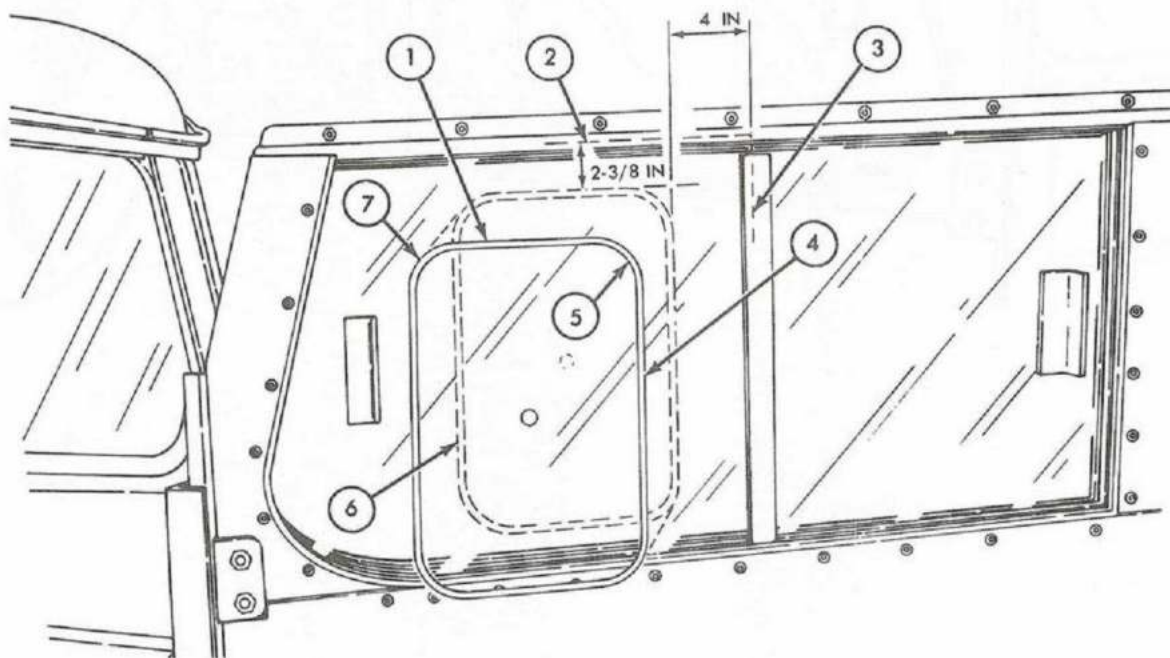
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

## c. INSTALLATION, FRONT GLASS

## NOTE

Left and right front glass frost shields are installed identically.

- |    |                  |   |                                      |
|----|------------------|---|--------------------------------------|
| 4. | Frost shield (7) | <p>a. Remove protective covering from shield adhesive (5).</p> <p>b. Position rear vertical edge (4) 4 in. (101.6 mm) forward from glass rear vertical edge (3), and top horizontal edge (1) 2-3/8 in. (60.33 mm) down from glass top edge (2).</p> <p>c. Press adhesive firmly to glass (6).</p> | <p>Press from rear toward front.</p> |
|----|------------------|---|--------------------------------------|



TA 156098



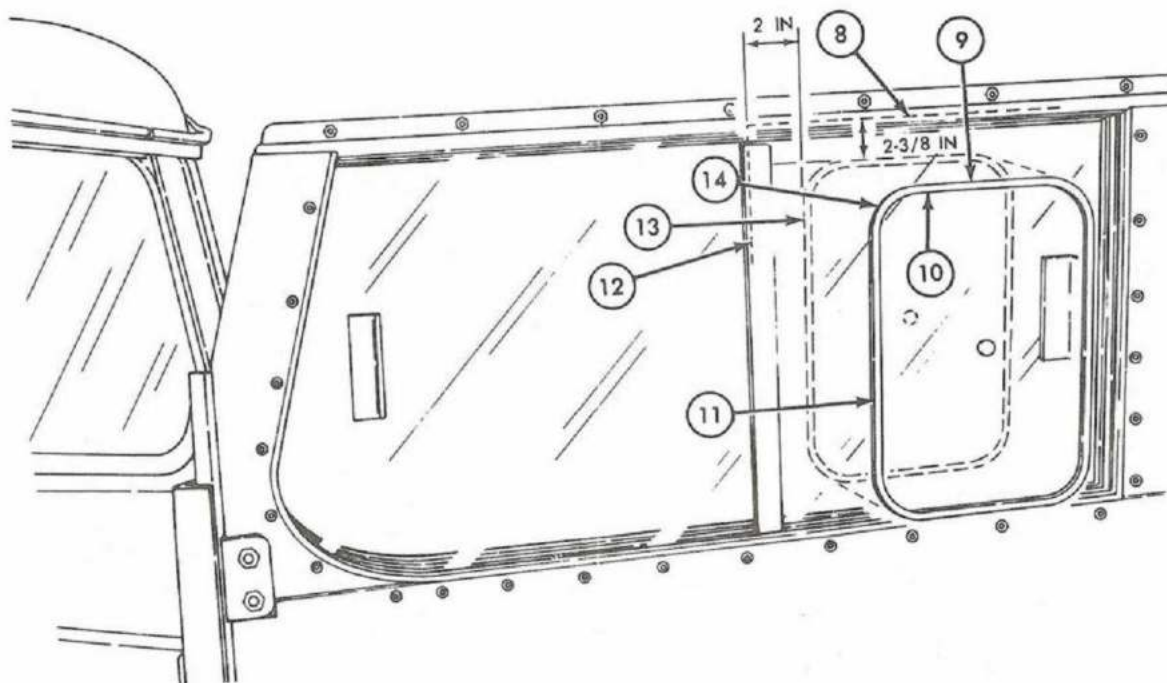
## 11-49. Door Glass Frost Shields Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>d. INSTALLATION, REAR GLASS</i>				

## NOTE

Left and right rear glass frost shields are installed identically.

- |    |                   |   |                                      |
|----|-------------------|---|--------------------------------------|
| 5. | Frost shield (14) | <p>a. Remove protective covering from shield adhesive (10).</p> <p>b. Position front vertical edge (11) 2 in. (50.8 mm) back from glass front vertical edge (12), and top horizontal edge (9) 2-3/8 in. (60.33 mm) down from glass top horizontal edge (8).</p> <p>c. Press adhesive (10) firmly to glass (13).</p> | <p>Press from front toward rear.</p> |
|----|-------------------|---|--------------------------------------|



END OF TASK!

TA 156099

## Section IV. DEEP WATER FORDING KIT MAINTENANCE

### 11-50. General

This section provides maintenance procedures assigned to the organizational level for deep water fording kit. To find a specific maintenance procedure, see the maintenance task summary below.

### 11-51. Service Upon Receipt of Material

a. Inspect the following: air intake tube for secure attachment to body and air cleaner; exhaust extension tailpipe for secure attachment to body, and exhaust extension cover for operation; tailpipe extension for watertight connections; attachment of brake master cylinder; fuel tank cap fording valve setting for ease of operation; tightness of vent connections on firewall.

b. Operate engine and fording valve to verify operation.

### 11-52. Preventive Maintenance

See table 3-1.

### 11-53. Troubleshooting

See table 3-2.

### 11-54. Deep Water Fording Kit Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
11-55.	Fording Valve a. Removal b. Installation	11-150
11-56.	Four-Way Ventilation Fitting a. Removal b. Installation	11-154
11-57.	Fording Valve Control a. Removal b. Installation	11-156
11-58.	Air Intake Hose a. Removal b. Installation	11-160
11-59.	Exhaust Pipe a. Removal (M151A2) b. Removal (M718A1) c. Installation (M151A2) d. Installation (M718A1)	11-162

**11-55. Fording Valve Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2, M718A1

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

TM 9-2320-218-10

**Condition Description**

Parking brake set.

Hood raised and secured.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |    |  |                            |                                      |
|----|--|----------------------------|--------------------------------------|
| 1. | Control cable (8) to retaining bracket (9) | Cable retaining screw (10) | Loosen.                              |
| 2. | Control cable (8)                          |                            | Remove from fording valve lever (7). |

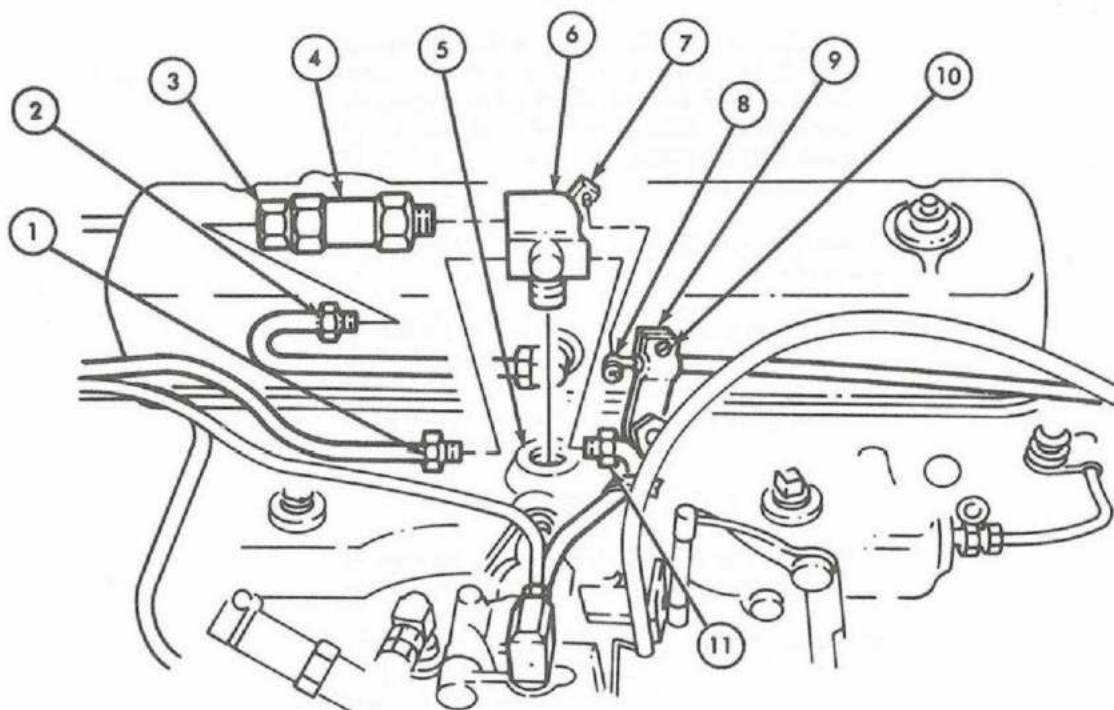
**CAUTION**

Crankcase ventilation valve (4) must be properly removed to avoid damaging internal crimp. Always position wrench at point closest to connection being turned. Damage to ventilating system will result if valve or crimp is twisted.

- |    |                               |                                 |         |
|----|-------------------------------|---------------------------------|---------|
| 3. | Ventilation valve adapter (3) | Rocker arm cover vent tube (2)  | Remove. |
| 4. | Fording valve (6)             | Crankcase ventilation valve (4) | Remove. |

## 11-55. Fording Valve Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Fording valve (6)	Cylinder block vent tube (1)	Remove.	
6.	Fording valve (6)	Carburetor vent tube (11)	Remove.	
7.	Intake manifold (5)	Fording valve (6)	Remove.	





## 11-55. Fording Valve Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**b. INSTALLATION**

8.		Fording valve (6)	Install in intake manifold (5).	
9.		Carburetor vent tube (11)	Install in fording valve (6).	
10.		Cylinder block vent tube (1)	Install in fording valve (6).	

**CAUTION**

Crankcase ventilation valve must be properly installed to avoid damaging internal crimp. Always position wrench at point closest to connection being turned. Damage to ventilating system will result if valve is overtightened.

11.		Crankcase ventilation valve (4)	Install in fording valve (6).	
12.		Rocker arm cover vent tube (2)	Install in ventilation valve adapter (3).	
13.		Control cable (8)	Connect to fording valve lever (7).	

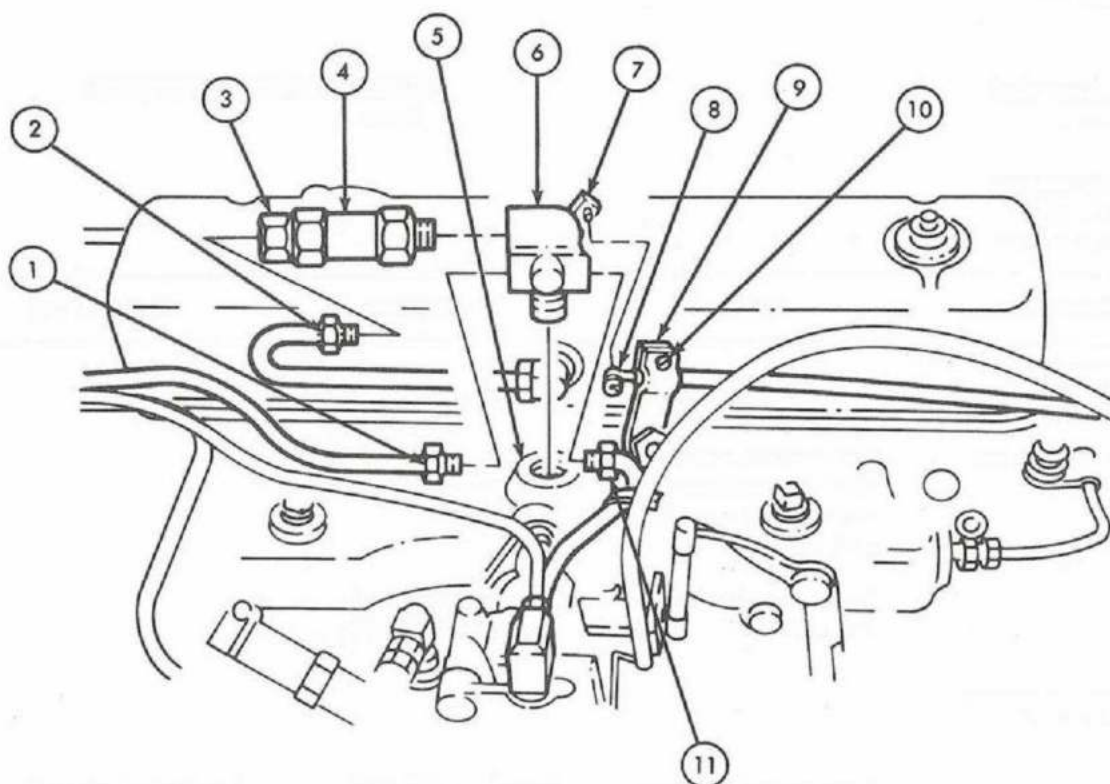
**NOTE**

Be sure the fording valve operating lever is pushed completely forward to closed position.

14.		Control cable (8)	Place in retaining bracket (9), and secure with screw (10).	
-----	--	-------------------	---	--

## 11-55. Fording Valve Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASKS:

- Start engine (TM 9-2320-218-10) and check for ventilation line leaks.
- Check fording valve for proper operation (TM 9-2320-218-10).

TA 155830

**11-56. Four-Way Ventilation Fitting Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2, M718A1

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

TM 9-2320-218-10

**Condition Description**

Parking brake set.

Hood raised and secured.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

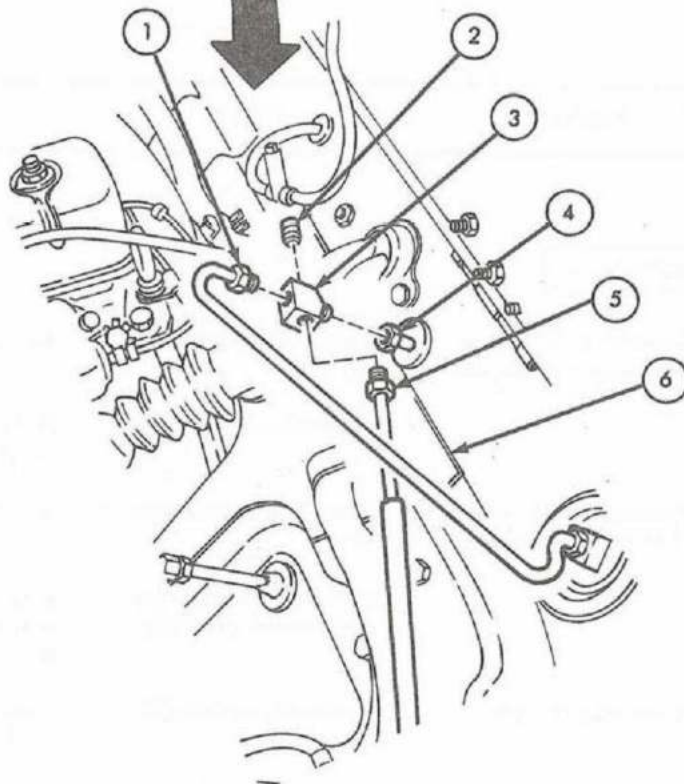
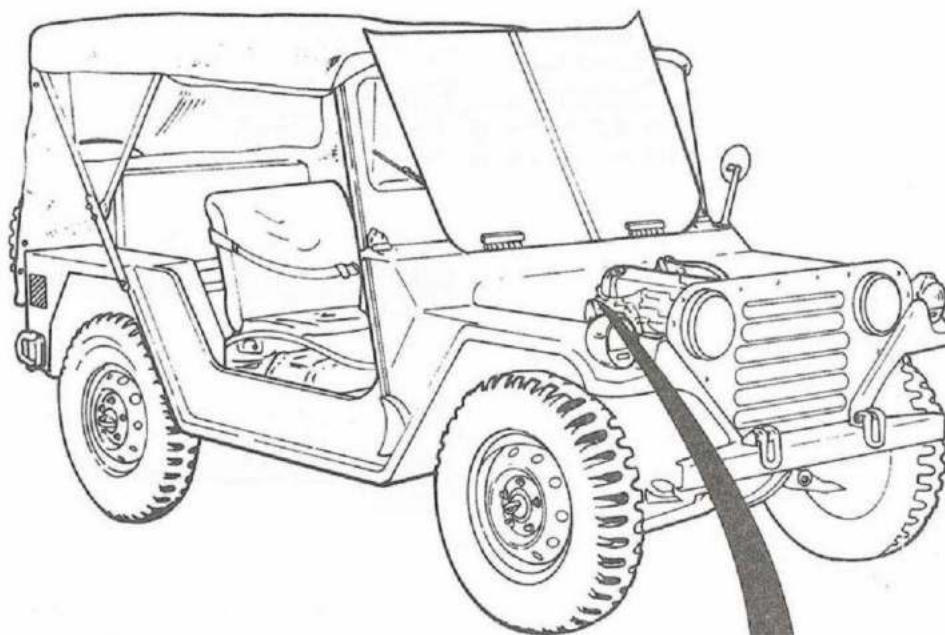
- |    |                      |   |   |
|----|----------------------|---|---|
| 1. | Face of firewall (6) | Brake master cylinder tube (1), carburetor ventilation tube (5), and setscrew (2) | Remove from four-way ventilation fitting (3). |
| 2. |                      | Four-way ventilation fitting (3)  | Remove from fuel tank ventilation tube (4).   |

**b. INSTALLATION**

- |    |  |   |                      |
|----|--|---|----------------------|
| 3. | Four-way ventilation fitting (3)                                   | Install in fuel tank ventilation tube (4).            | Finger tighten only. |
| 4. | Carburetor ventilation tube (5) and brake master cylinder tube (1) | Install in four-way ventilation fitting (3).          | Finger tighten only. |
| 5. | Setscrew (2)   | Install in fourth opening of ventilation fitting (3). |                      |
| 6. | Setscrew (2) and three tubes (1), (4), and (5)                     | Tighten securely.                                     |                      |

## 11-56. Four-Way Ventilation Fitting Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

TA 155831



**11-57. Fording Valve Control Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2, M718A1

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

TM 9-2320-218-10

**Condition Description**

Parking brake set.

Hood raised and secured.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

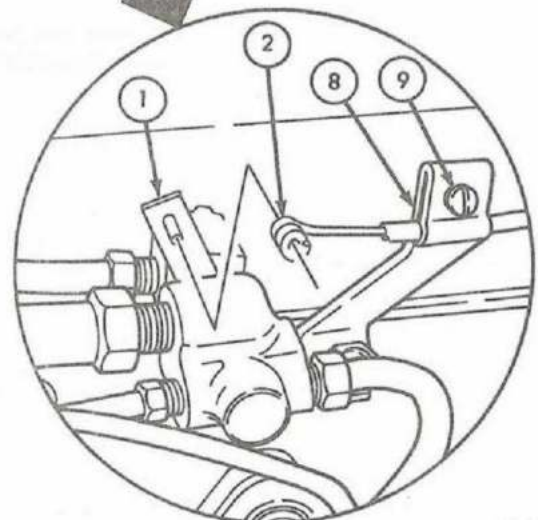
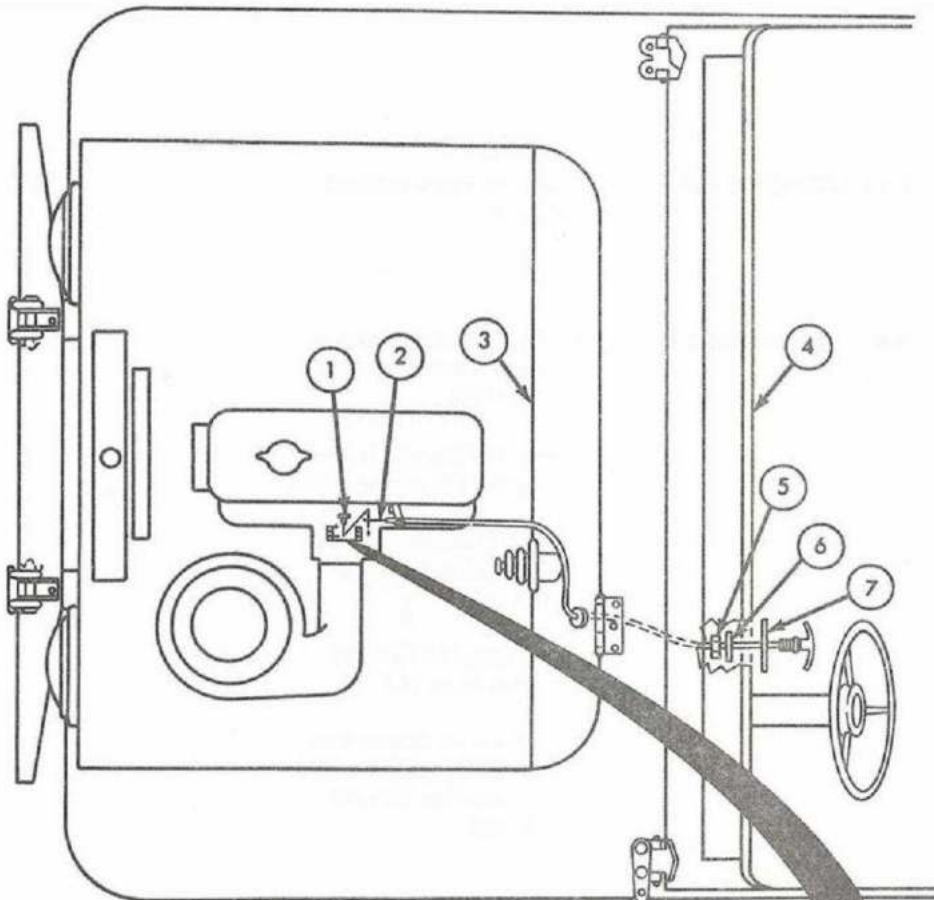
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |   |   |  |
|---|---|--|
| 1. Control cable (2) to retaining bracket (8) | Cable retaining screw (9)                   | Loosen.  |
| 2.  | Control cable (2)                           | Remove from fording valve lever (1).                       |
| 3. Control cable (2) to instrument panel (4)  | Nut (5) and lockwasher (6)                  | Remove.  |
| 4.  | Control cable (2) and instruction plate (7) | Carefully pull from instrument panel (4) and firewall (3). |
| 5. Control cable (2)                          | Instruction plate (7)                       | Remove.  |

11-57. Fording Valve Control Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



TA 155832

## 11-57. Fording Valve Control Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

*b. INSTALLATION*

- |    |                         |   |
|----|-------------------------|---|
| 6. | Instruction plate (8)   | Install on valve control cable (2).   |
| 7. | Valve control cable (2) | <ul style="list-style-type: none"> <li><i>a.</i> Route through opening in instrument panel (5).</li> <li><i>b.</i> Route through lockwasher (7) and nut (6).</li> <li><i>c.</i> Route through grommet (4) in firewall (3).</li> <li><i>d.</i> Connect to fording valve lever (1).</li> <li><i>e.</i> Secure to instrument panel (5) with lockwasher (7) and nut (6).</li> </ul> |

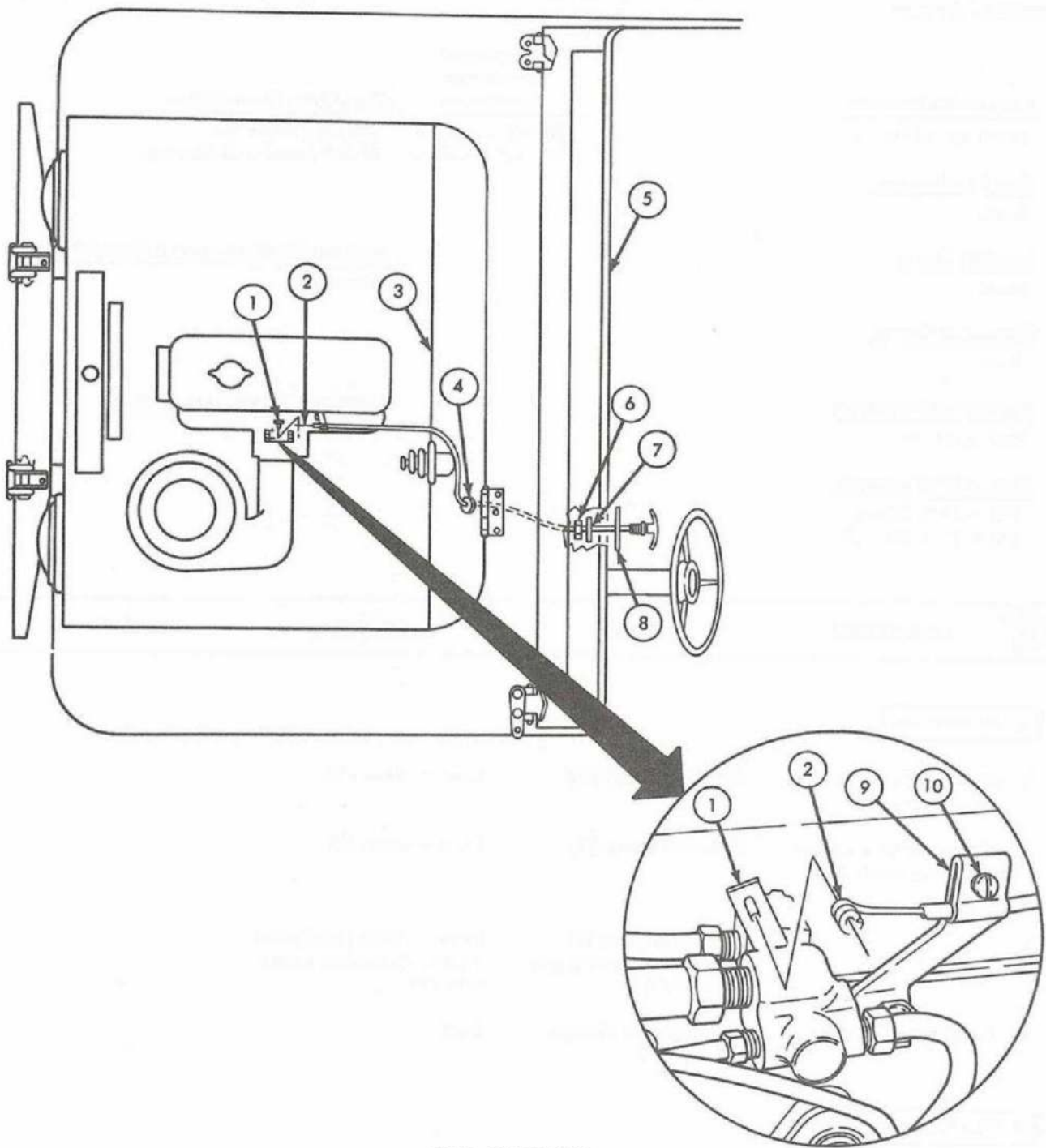
**NOTE**

Be sure the fording valve adjusting lever is pushed completely forward to closed position.

- f.* Place in retaining bracket (9) and secure with retaining screw (10).

11-57. Fording Valve Control Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK: Check fording valve control for proper operation. (See TM 9-2320-218-10.)

TA 155833



**11-58. Air Intake Hose Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2, M718A1

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

TM 9-2320-218-10

**Condition Description**

Parking brake set.

Hood raised and secured.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**a. REMOVAL**

- |   |   |  |
|---|---|--|
| 1. Air intake hose (1) to air cleaner (4)           | Retainer clamp (2)                                      | Loosen screw (3).  |
| 2. Air intake hose (1) to extension intake tube (5) | Retainer clamp (7)                                      | Loosen screw (6).  |
| 3.  | Air intake hose (1) and two retainer clamps (2) and (7) | Remove from air cleaner (4) and extension intake tube (5). |
| 4. Air intake hose (1)                              | Two retainer clamps (2) and (7)                         | Remove.  |

**b. INSTALLATION**

- |    |                                 |                                     |
|----|---------------------------------|-------------------------------------|
| 5. | Two retainer clamps (2) and (7) | Install on ends of intake hose (1). |
|----|---------------------------------|-------------------------------------|

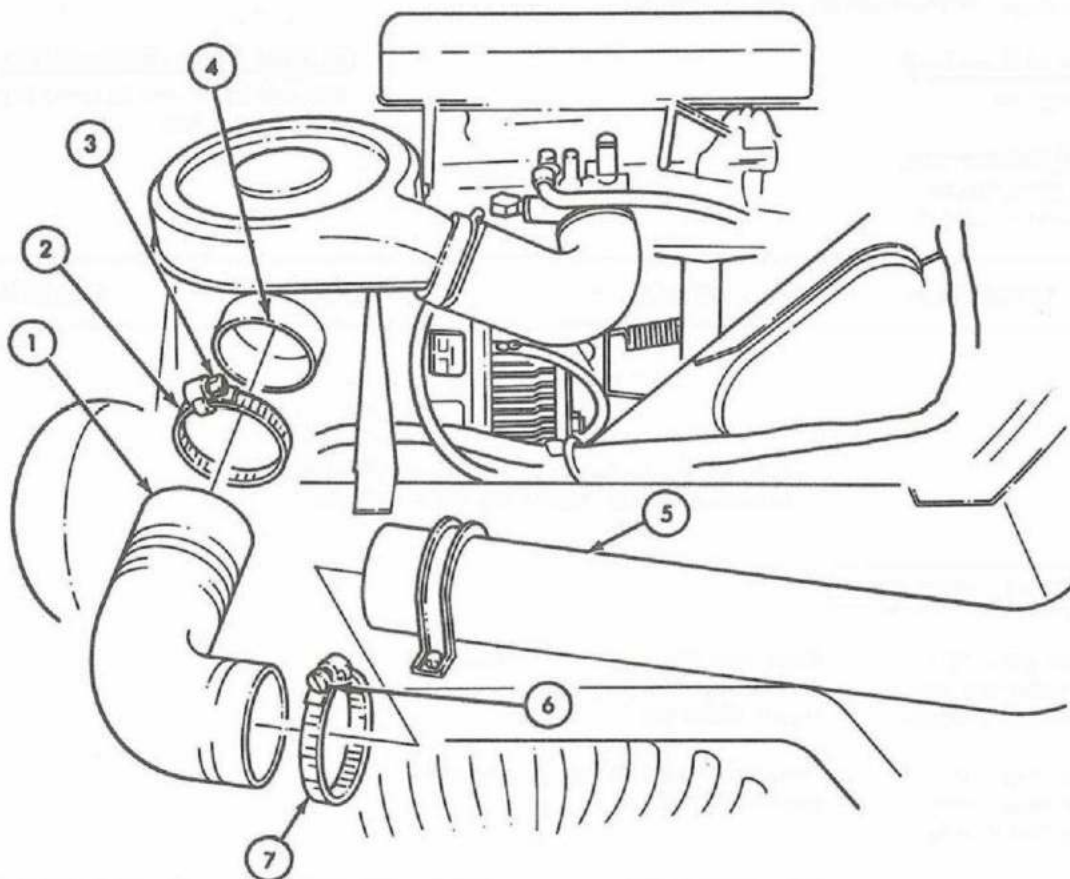
## 11-58. Air Intake Hose Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

## NOTE

Compress intake hose from ends while installing on air cleaner and extension intake tube, making sure tube is curving freely and equally spaced on attaching ends.

- |    |   |  |
|----|---|--|
| 6. | Intake hose (1) and two retainer clamps (2) and (7) | <p>a. Install on air cleaner (4) and extension intake tube (5).</p> <p>b. Secure by tightening clamp screws (3) and (6).</p> |
|----|---|--|



END OF TASK!

FOLLOW-ON TASK: Check hose connections for leaks.

TA 155834

**11-59. Exhaust Pipe Maintenance**

This task covers:

- a. Removal (M151A2)  
b. Removal (M718A1)

- c. Installation (M151A2)  
d. Installation (M718A1)

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2, M718A1	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Torque wrench (0-175 lb-ft)		None
<u>Materials/Parts</u>		
Exhaust pipe gasket Two tailpipe extension gaskets (M718A1 only)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		Do not touch hot exhaust pipes with bare hands.
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-34P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**WARNING**

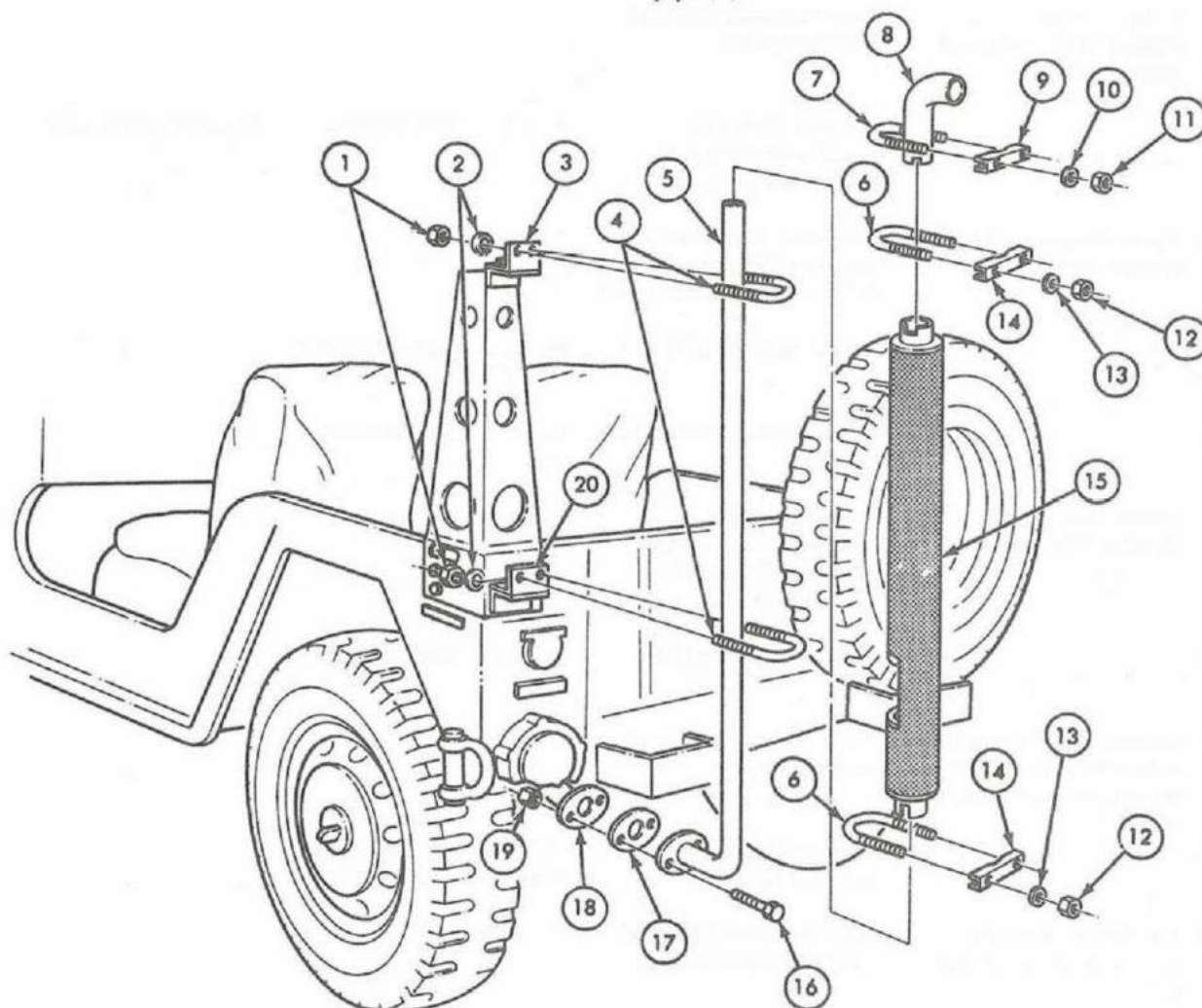
Do not touch hot exhaust pipes or muffler with bare hands. Severe injury will result.

**a. REMOVAL (M151A2)**

- |   |  |                      |                      |
|---|--|----------------------|----------------------|
| 1. Exhaust pipe (5) to upper (3) and lower (20) mounting clamps | Four nuts (1), lockwashers (2), and two U-bolts (4)    | Remove.              |                      |
| 2. Exhaust pipe (5) to rear outlet pipe mating flange (18)      | Two locknuts (19) and capscrews (16)                   | Remove.              |                      |
| 3.  | Exhaust pipe (5), guard assembly (15), and gasket (17) | Remove from vehicle. | Discard gasket (17). |

## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Upper tailpipe (8) to exhaust pipe (5)	Two nuts (11), lock-washers (10), one clamp (9), and one U-bolt (7)	Remove.	
5.		Upper tailpipe (8)	Remove from exhaust pipe (5).	
6.	Guard assembly (15) to exhaust pipe (5)	Four nuts (12), lock-washers (13), two clamps (14), and two U-bolts (6)	Remove.	
7.		Guard assembly (15)	Remove from exhaust pipe (5).	



TA 155946

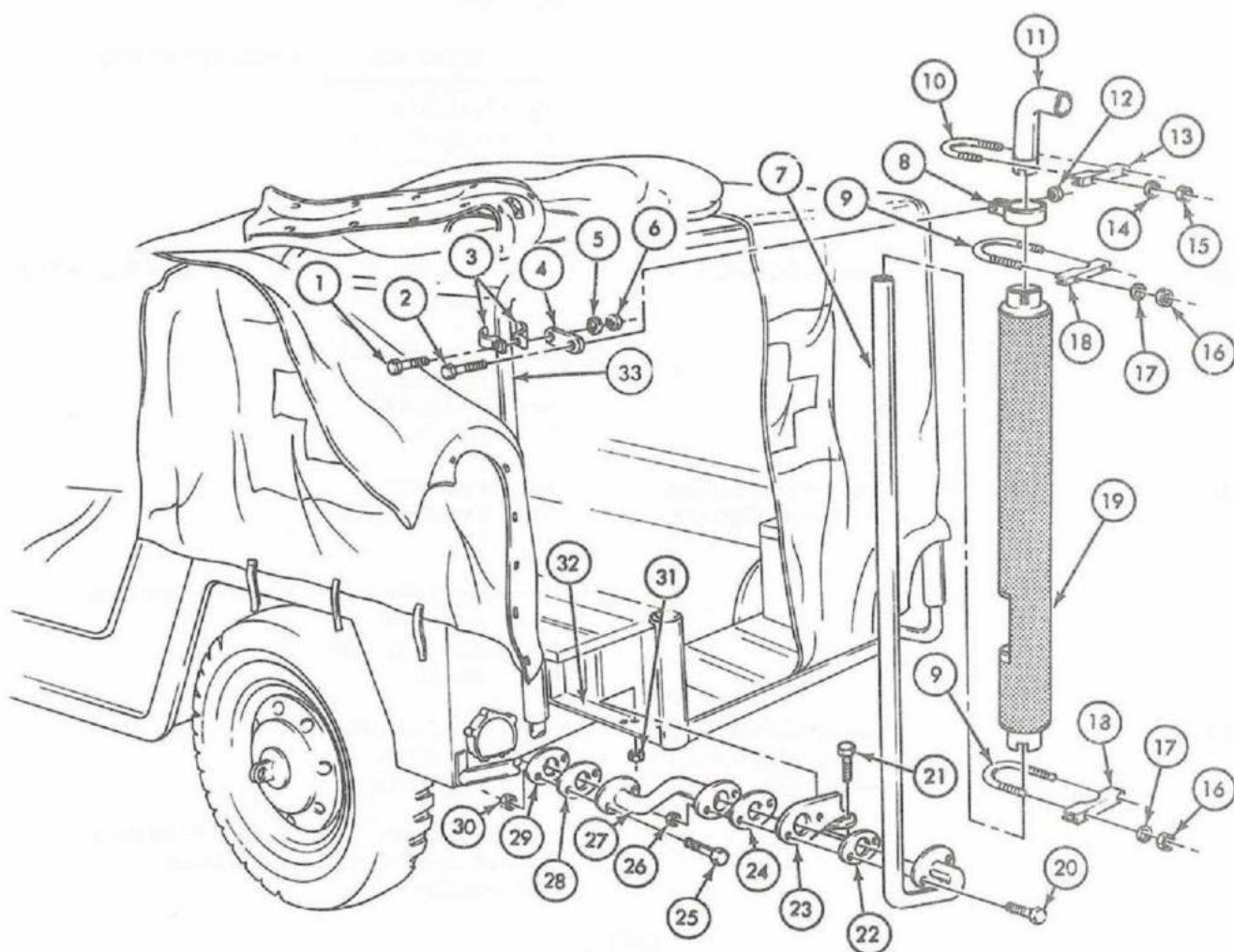


## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>b. REMOVAL (M718A1)</i>				
8.	Exhaust pipe support clamp (8) to rear top bow support link (4)	One locknut (12) and bolt (2)	Remove.	
9.	Support clamp assembly (3) and link (4) to rear top bow (33)	One locknut (6), flat washer (5), and bolt (1)	Remove.	
10.		Support clamp (3) and link (4)	Remove from top bow (33).	
11.	Exhaust pipe (7) to exhaust pipe extension support (23)	Two locknuts (26) and capscrews (20)	Remove.	
12.		Exhaust pipe (7), guard assembly (19), and gasket (22)	Remove from vehicle.	Discard gasket (22).
13.	Upper tailpipe (11) to exhaust pipe (7)	Two nuts (15), lockwashers (14), one clamp (13), and one U-bolt (10)	Remove.	
14.		Upper tailpipe (11)	Remove from exhaust pipe (7).	
15.		Pipe support clamp (8)	Remove from exhaust pipe (7).	
16.	Guard assembly (19) to exhaust pipe (7)	Four nuts (16), lockwashers (17), two clamps (18), and two U-bolts (9)	Remove.	
17.		Guard assembly (19)	Remove from exhaust pipe (7).	
18.	Exhaust pipe extension support (23) to ambulance extension flange (32)	Two locknuts (31) and capscrews (21)	Remove.	
19.		Exhaust pipe extension support (23)	Remove from ambulance extension flange (32).	
20.	Tailpipe extension (27) to rear outlet pipe (29)	Two locknuts (30) and capscrews (25)	Remove.	
21.		Tailpipe extension (27) and two gaskets (24) and (28)	Remove from rear outlet pipe (29).	Discard gaskets (24) and (28).

11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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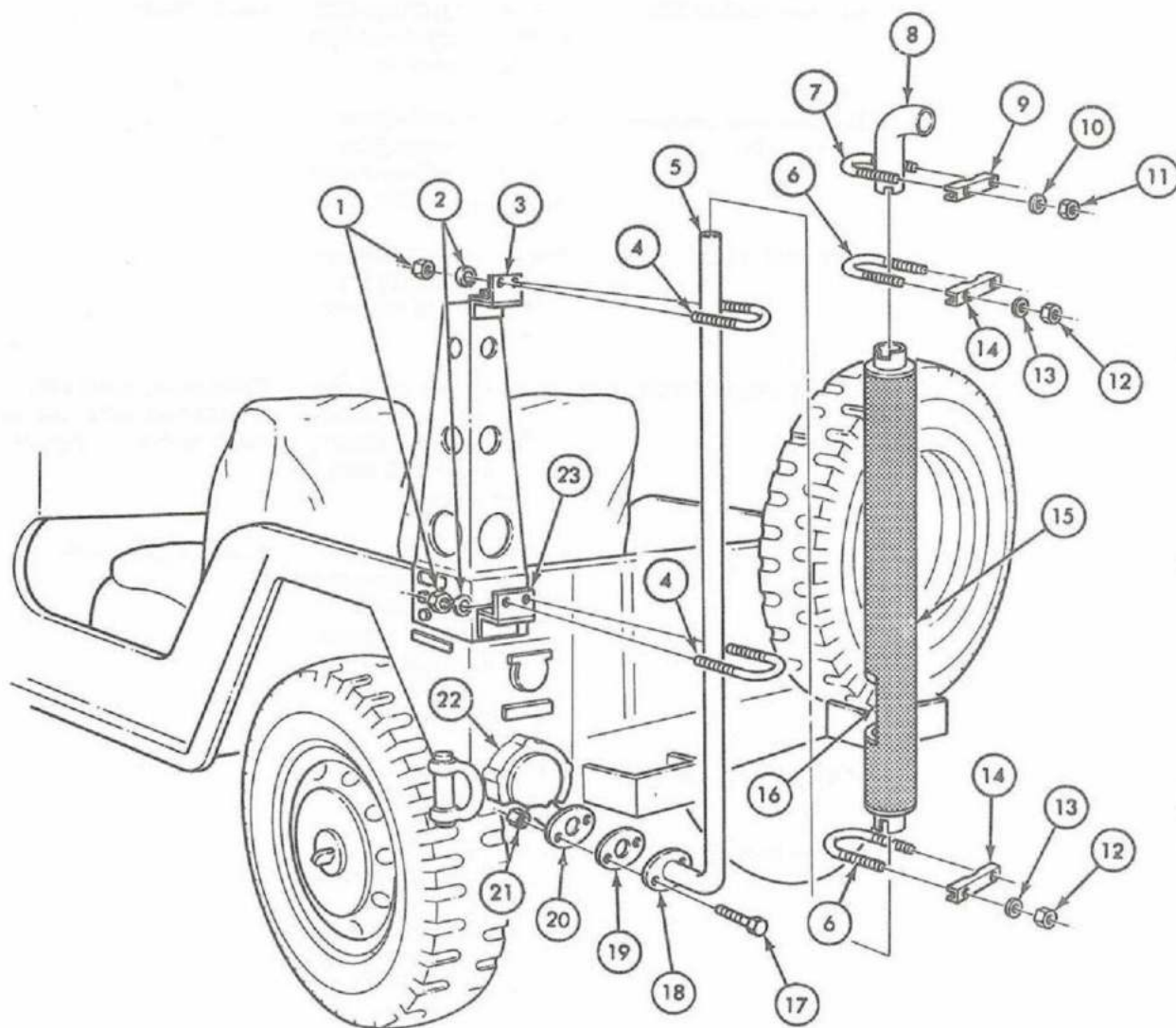
TA 155947

## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>c. INSTALLATION (M151A2)</i>				
22.		Guard assembly (15)	<p><i>a.</i> Slide over long end of exhaust pipe (5) and position about 5 inches (127 mm) from bend.</p> <p><i>b.</i> Attach upper and lower ends to exhaust pipe (5) with two U-bolts (6), clamps (14), four lockwashers (13), and four nuts (12).</p>	<p>Opening (16) in guard (15) should face same way as short portion of pipe (5).</p> <p>Finger tighten only.</p>
23.		Upper tailpipe (8)	<p><i>a.</i> Install on long end of exhaust pipe (5).</p> <p><i>b.</i> Secure with U-bolt (7), clamp (9), two lockwashers (10), and two nuts (11).</p>	Position away from vehicle.
24.		Exhaust pipe (5) and guard assembly (15)	<p><i>a.</i> Position on two mounting clamps (3) and (23).</p> <p><i>b.</i> Attach with two U-bolts (4), four lockwashers (2), and four nuts (1).</p>	Finger tighten only.
25.		New gasket (19) and exhaust pipe mating flange (18)	<p><i>a.</i> Aline with holes in rear outlet pipe mating flange (20).</p> <p><i>b.</i> Secure with two capscrews (17) and locknuts (21).</p>	Tighten 12-15 lb-ft (16-20 N•m).
<b>NOTE</b>				
Guard (15) must be positioned to clear top of taillight assembly (22).				
26.		Exhaust pipe (5) and guard assembly (15)	<p><i>a.</i> Adjust position on mounting clamps (3) and (23), and tighten U-bolt nuts (1).</p> <p><i>b.</i> Tighten all U-bolt nuts (12).</p>	

# 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155948

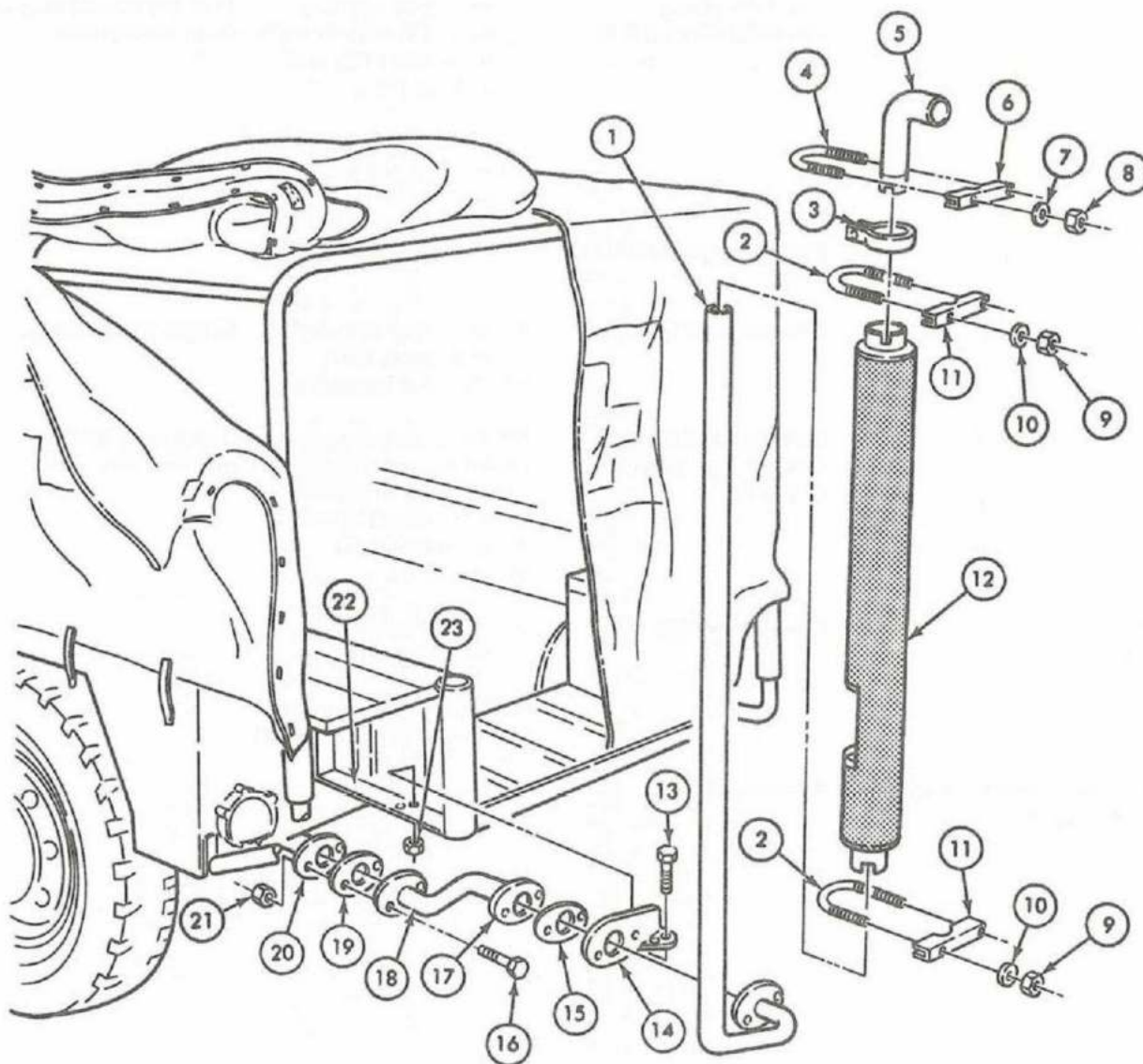


## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>d. INSTALLATION (M718A1)</i>				
27.		Tailpipe extension (18) and new gasket (19)	Secure to rear outlet pipe mating flange (20) with two capscrews (16) and locknuts (21).	Tighten 12-15 lb-ft (16-20 N•m).
28.		Exhaust pipe extension support (14)	Secure to ambulance extension flange (22) with two capscrews (13) and locknuts (23).	
29.		New gasket (15)	Insert between tailpipe extension flange (17) and extension support (14).	
30.		Guard assembly (12)	<p>a. Slide over long end of exhaust pipe (1) and position about 5 inches (127 mm) from bend.</p> <p>b. Attach upper and lower ends to exhaust pipe (1) with two U-bolts (2), clamps (11), four lockwashers (10), and four nuts (9).</p>	<p>Opening in guard (12) should face same way as short portion of pipe (1).</p> <p>Finger tighten only.</p>
31.		Pipe support clamp (3)	Slide over long end of exhaust pipe (1).	
32.		Upper tailpipe (5)	<p>a. Install on long end of exhaust pipe (1).</p> <p>b. Secure with U-bolt (4), clamp (6), two lockwashers (7), and two nuts (8).</p>	

## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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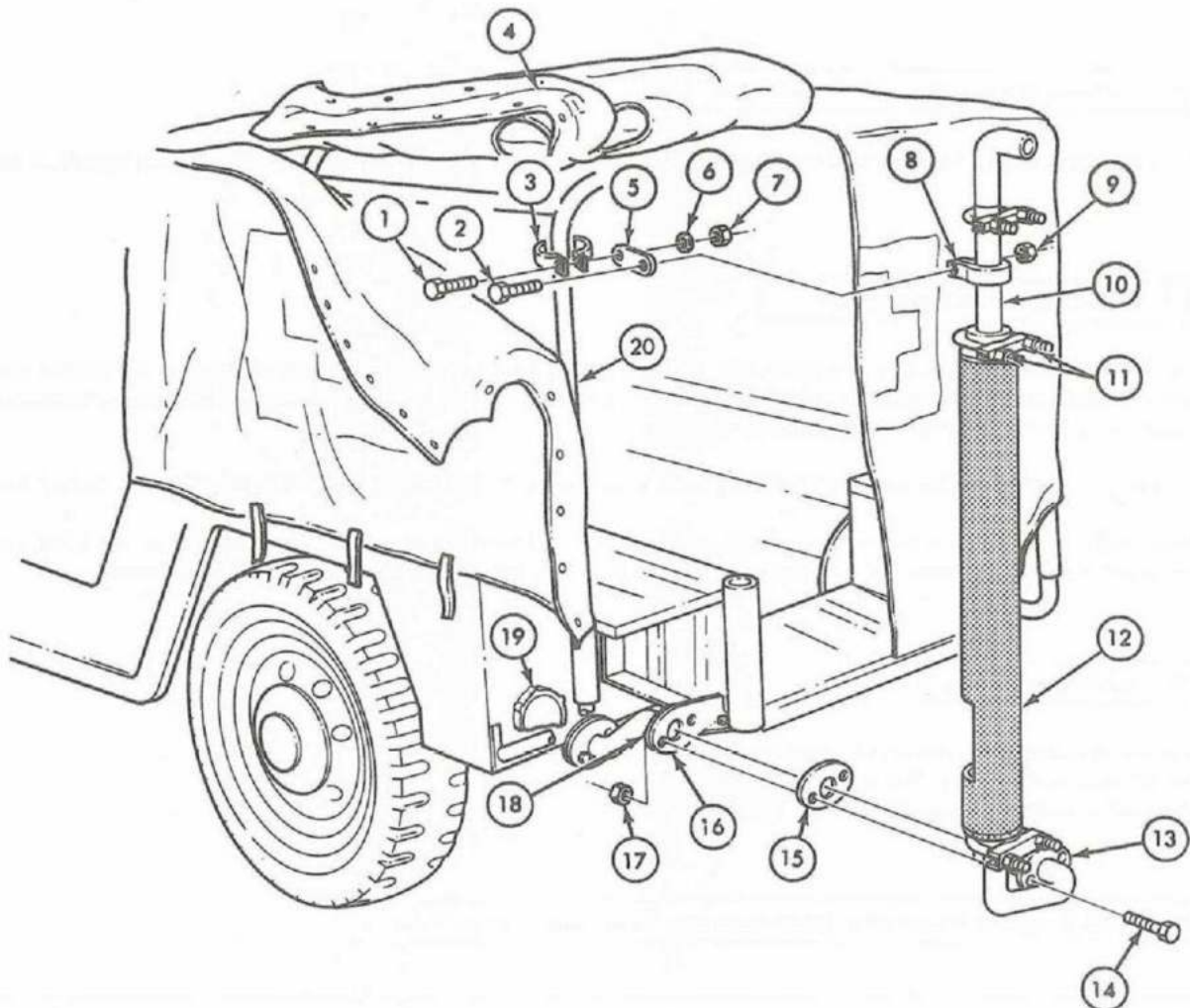


## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
33.		Top bow clamp assembly (3) and link (5)	<p><i>a.</i> Secure to rear top bow (20) with bolt (1), flat washer (6), and locknut (7).</p> <p><i>b.</i> Extend link (5) through slit in canvas (4).</p>	Link (5) should face away from vehicle rear.
34.		Exhaust pipe assembly (10)	Place on rear of vehicle.	
35.		Pipe support clamp (8)	Align to roof bow link (5) and secure with bolt (2) and locknut (9).	Finger tighten only.
36.		New gasket (15) and exhaust pipe mating flange (13)	Secure to exhaust pipe extension support (16) and tailpipe extension mating flange (18) with capscrew (14) and locknut (17).	Tighten 12-15 lb-ft (16-20 N•m)
37.		Guard assembly (12)	<p><i>a.</i> Adjust to clear taillight (19).</p> <p><i>b.</i> Tighten upper and lower U-bolt nuts (11).</p>	
38.	Pipe support clamp (8) to link (5).	Locknut (9)	Tighten.	

## 11-59. Exhaust Pipe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155950

END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-218-10) and check exhaust pipe connection for leaks.



## Section V. 100-AMPERE ALTERNATOR KIT MAINTENANCE

### 11-60. General

This section provides maintenance procedures assigned to the organizational level for the 100-ampere alternator kit. To find a specific maintenance procedure, see the maintenance task summary below.

### 11-61. Service Upon Receipt of Material

Perform the preventive maintenance services specified in paragraph 11-59 and voltage output test specified in table 3-4.

### 11-62. Preventive Maintenance

*a.* Check the following: fan and alternator belt tension. See paragraph 11-64 for belt deflection; alternator and regulator attaching parts for tightness; tightness of cable connectors; breaks in conduits and harnesses; tightness of battery cables and tighten, clean or replace as required.

*b.* Battery-generator indicator on instrument panel must move to the yellow band when ignition is turned on.

*c.* Start engine and allow it to reach operating temperature. Observe battery-generator indicator. At 1,500 rpm, indicator must be in green band. If it is not, turn off engine and troubleshoot entire generating system.

### 11-63. Troubleshooting

Preventive maintenance and checks and services. (See table 3-1.)

Electrical troubleshooting. (See table 3-4.)

Mechanical troubleshooting. (See table 3-2.)

### 11-64. 100-Ampere Alternator Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
11-65.	Regulator Assembly a. Removal b. Installation c. Adjustment	11-174

<b>11-64. 100-Ampere Alternator Maintenance Task Summary (Cont'd)</b>
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<b>TASK PARA</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
11-66.	Alternator Assembly a. Removal b. Installation	11-178
11-67.	Fan and Alternator Belts a. Removal b. Installation	11-180
11-68.	Water Pump Pulley a. Removal b. Inspection c. Installation	11-180
11-69.	Alternator Pulley a. Removal b. Installation	11-182
11-70.	Alternator to Regulator Cable a. Removal b. Installation	11-186
11-71.	Regulator to Battery Wiring Harness a. Removal b. Installation	11-192

**11-65. Regulator Assembly Maintenance**

This task covers:

*a. Removal**b. Installation**c. Adjustment***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**TM 9-2320-218-10  
TM 9-2320-218-10  
Para 5-27**Condition Description**Parking brake set.  
Hood raised and secured.  
Negative battery ground cable  
disconnected.**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

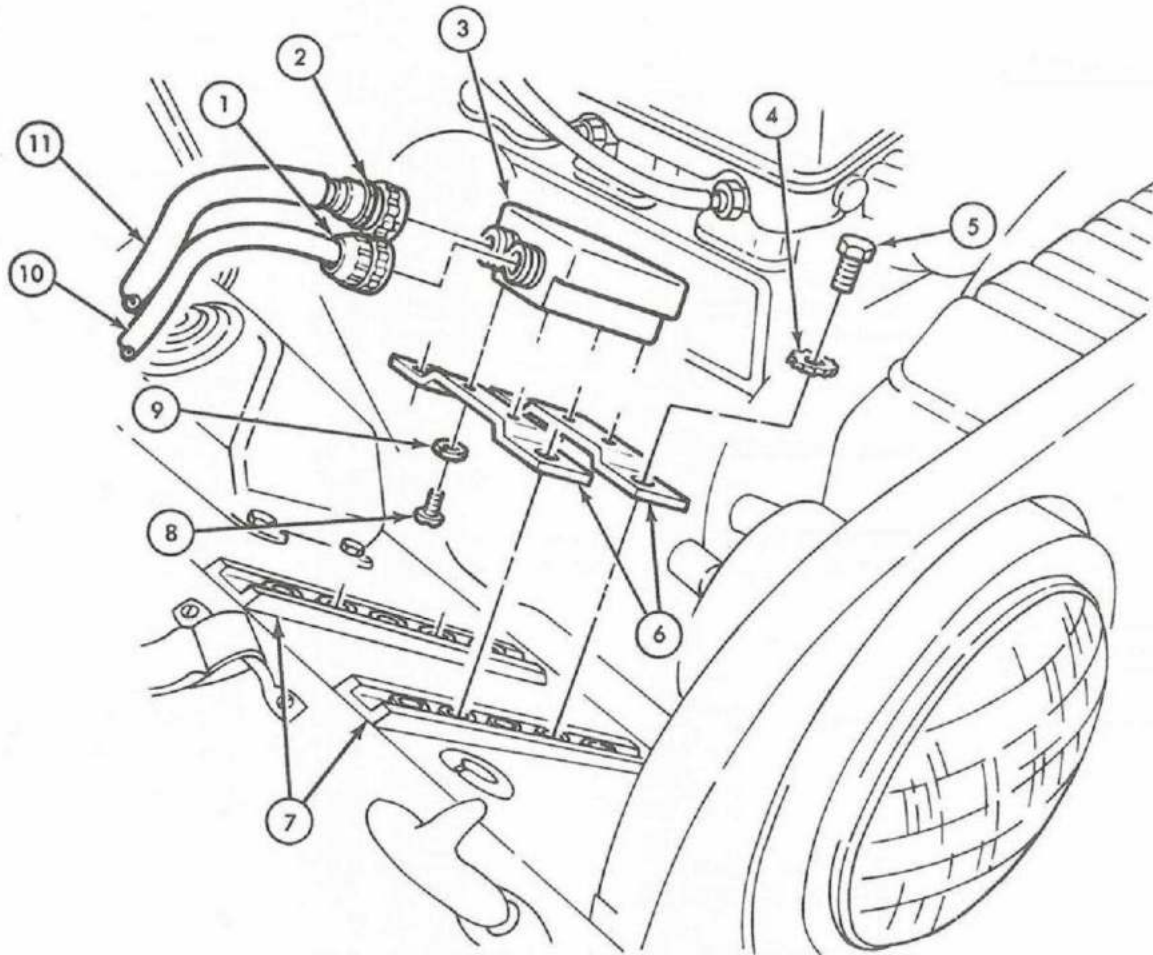
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

- |    |   |  |   |
|----|---|--|---|
| 1. | Regulator (3)   | Alternator to regulator cable (11)     | Loosen nut (2) and disconnect.              |
| 2. | Regulator (3)   | Battery cable (10)                     | Loosen nut (1) and disconnect.              |
| 3. | Two regulator mounting brackets (6) to two weldment mounting brackets (7) | Four capscrews (5) and lockwashers (4) | Remove.                                     |
| 4. |   | Regulator assembly (3)                 | Remove from weldment mounting brackets (7). |
| 5. | Regulator assembly (3) to two regulator mounting brackets (6)             | Four screws (8) and lockwashers (9)    | Remove.                                     |
| 6. |   | Regulator assembly (3)                 | Remove from two mounting brackets (6).      |

## 11-65. Regulator Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-65. Regulator Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*b. INSTALLATION*

7.		Two regulator mounting brackets (6)	Secure to regulator assembly (3) with four lockwashers (9) and screws (8).	
8.		Regulator assembly (3) and two mounting brackets (6)	Secure to two weldment mounting brackets (7) with four lockwashers (4) and capscrews (5).	
9.		Battery cable (10)	Connect to regulator (3) and tighten nut (1).	
10.		Alternator to regulator cable (11)	Connect to regulator (3) and tighten nut (2).	

*c. ADJUSTMENT*

11. Voltage regulator (3)	Plug (12)	Remove.	
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**NOTE**

Rheostat adjusting screw will be visible through plug opening.

12.	Rheostat adjusting screw (13)	Turn clockwise to increase and counterclockwise to decrease voltage.	
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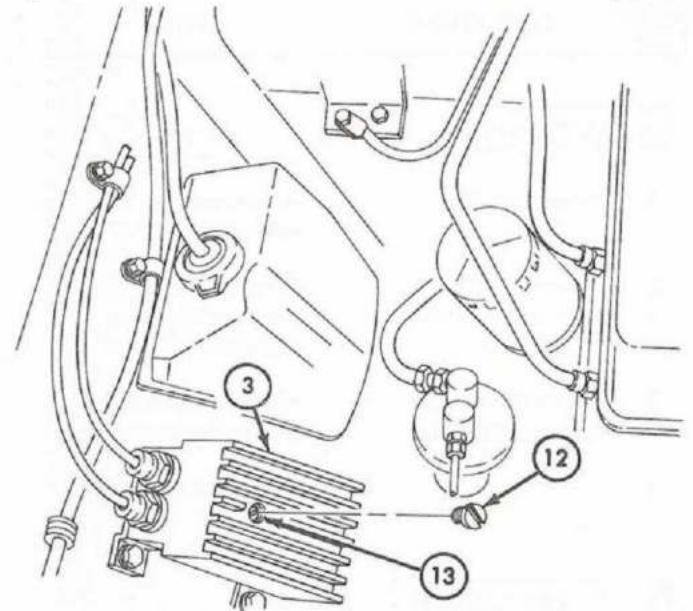
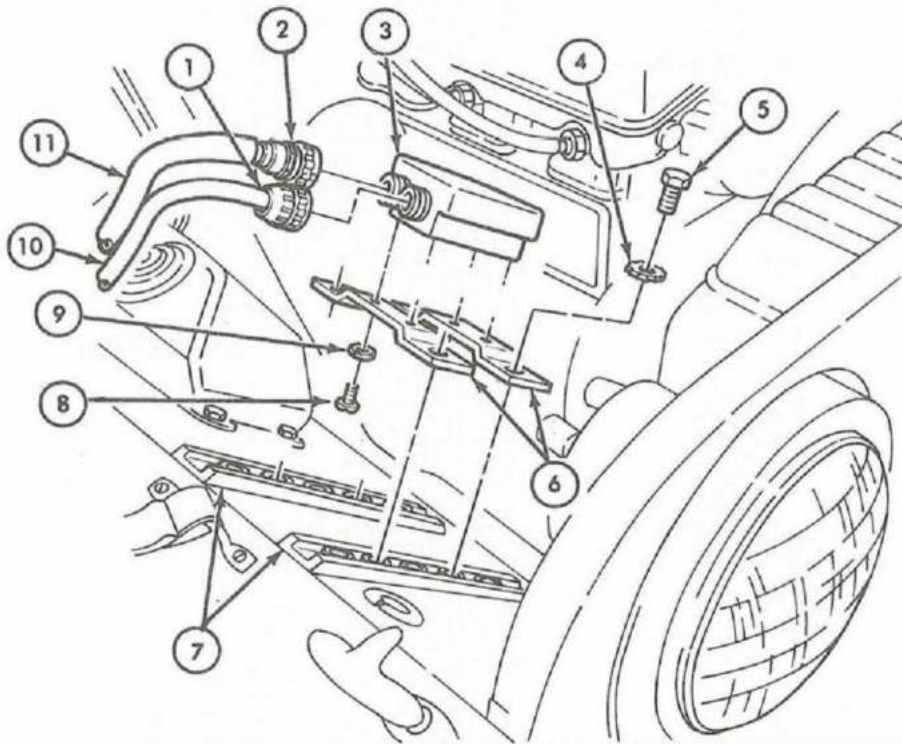
**NOTE**

Rheostat should not allow more than 5-volt range in its adjustment and voltage should remain stable.

13.	Plug (12)	Install in voltage regulator (3).	
-----	-----------	-----------------------------------	--

## 11-65. Regulator Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Connect negative battery ground cable (para 5-27).
  - Start engine and check for proper operation of regulator (TM 9-2320-218-10).

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**11-66. Alternator Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para 4-28 Para 4-59 Para 5-27	Air cleaner removed. Drive belts removed. Negative battery ground cable disconnected.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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***a. REMOVAL***

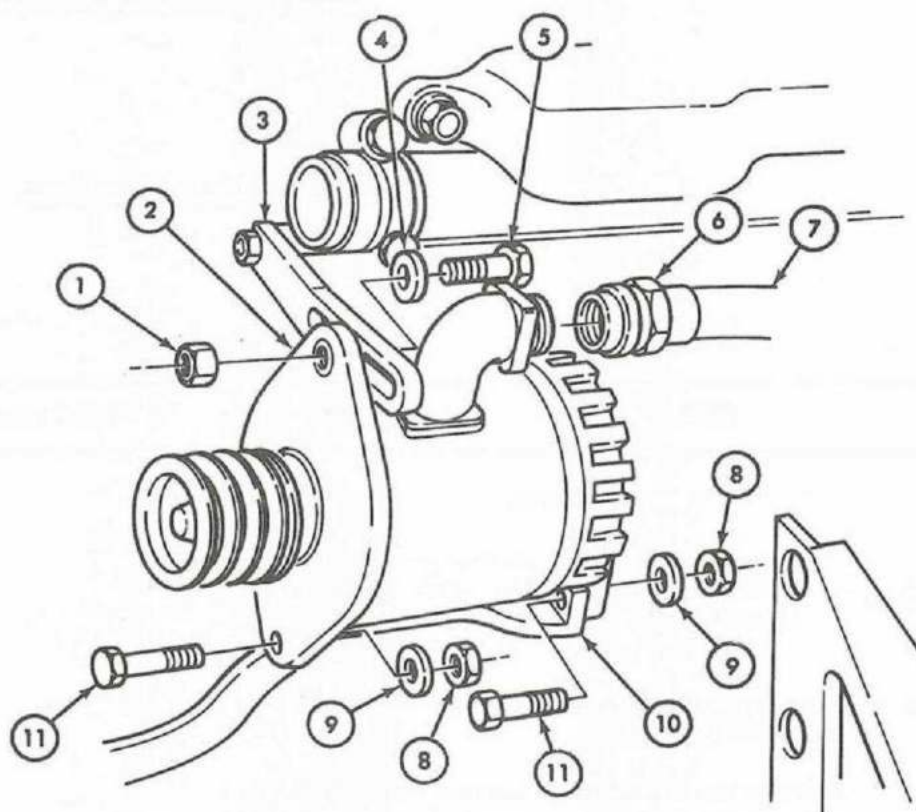
- |   |   |                                    |
|---|---|------------------------------------|
| 1. Alternator (2)                                     | Alternator to regulator cable (7)                     | Loosen nut (6) and disconnect.     |
| 2. Alternator (2) to alternator mounting bracket (10) | Two locknuts (8), flat washers 9), and capscrews (11) | Remove.                            |
| 3. Alternator (2) to adjusting arm (3)                | Nut (1), flat washer (4), and capscrew (5)            | Remove.                            |
| 4.  | Alternator assembly (2)                               | Lift and remove from from vehicle. |

***b. INSTALLATION***

- |    |                         |  |
|----|-------------------------|--|
| 5. | Alternator assembly (2) | <i>a.</i> Position to mounting bracket (10) and adjusting arm (3). |
|----|-------------------------|--|

## 11-66. Alternator Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			b. Secure to mounting bracket (10) with two screws (11), flat washers (9), and locknuts (8).	
			c. Secure to adjusting arm (3) with cap-screw (5), flat washer (4), and nut (1).	
6.		Alternator to regulator cable (7)	Connect to alternator (2), and tighten nut (6).	



END OF TASK!

- FOLLOW-ON TASKS:
- Install and adjust drive belts (para 4-59).
  - Install air cleaner (para 4-28).
  - Connect negative battery ground cable (para 5-27).
  - Start engine (TM 9-2320-218-10) and check alternator for proper operation. TA 155839



**11-67. Fan and Alternator Belts Maintenance**

The procedure for removal and installation of the fan and alternator belts can be found in paragraph 4-58.

**11-68. Water Pump Pulley Maintenance**

- a. Removal  
b. Inspection

c. Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10 Para 4-53 Para 4-56 Para 4-59	Parking brake set. Cooling system drained. Radiator and radiator shroud removed. Drive belts removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

This procedure covers the four-groove water pump pulley provided with 100-amp alternator kit.

**a. REMOVAL**

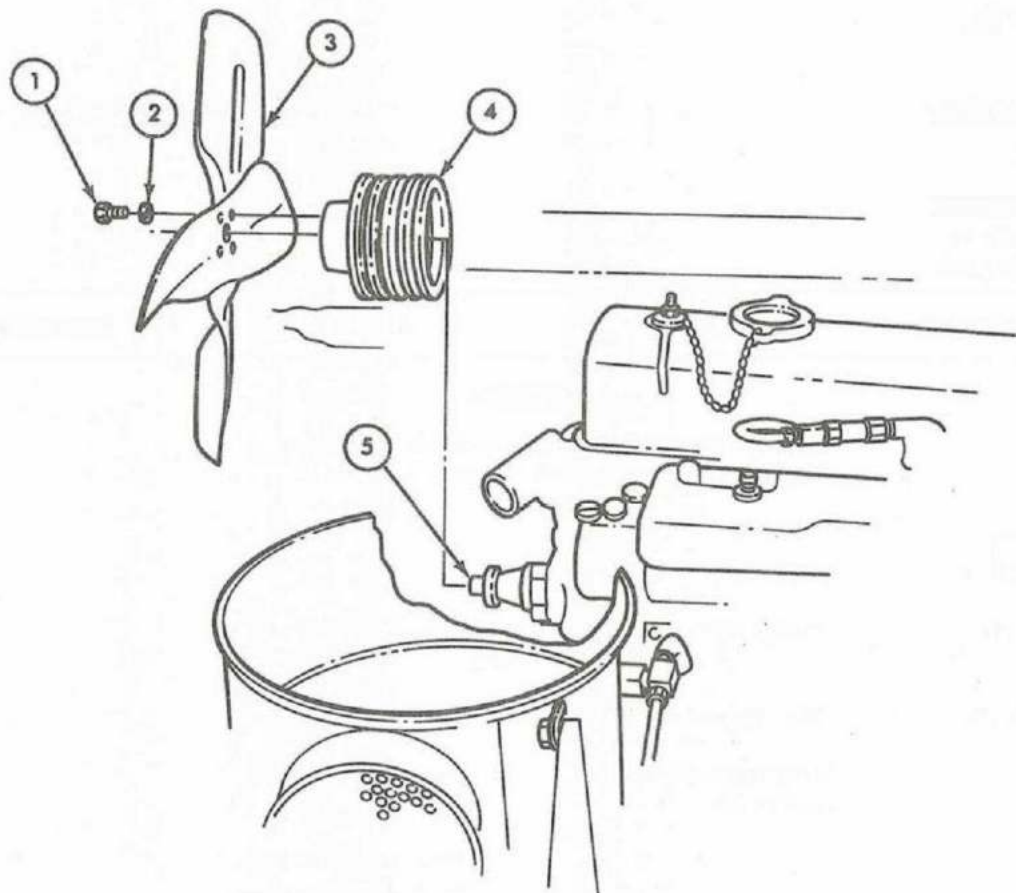
- |   |  |                             |
|---|--|-----------------------------|
| 1. Radiator fan blade (3) to water pump (5) | Four capscrews (1) and lockwashers (2)           | Remove.                     |
| 2.  | Radiator fan blade (3) and water pump pulley (4) | Remove from water pump (5). |

**b. INSPECTION**

- |    |                       |  |                               |
|----|-----------------------|--|-------------------------------|
| 3. | Water pump pulley (4) | Inspect for cracks and warped condition. | Replace if warped or cracked. |
|----|-----------------------|--|-------------------------------|

## 11-68. Water Pump Pulley Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>c. INSTALLATION</i>				
4.		Water pump pulley (4)	Install on water pump (5).	
5.		Radiator fan blade (3)	Place against pump pulley (4) and secure with four lockwashers (2) and capscrews (1).	Tighten 15-20 lb-ft (20-27 N•m).



END OF TASK!

- FOLLOW-ON TASKS:
- Install drive belts and adjust (para 4-59).
  - Install radiator and radiator shroud (para 4-56).
  - Fill cooling system and inspect for leaks (para 4-53).

TA 155840

**11-69. Alternator Pulley Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

All

**Equipment  
Condition  
Reference**

Para 11-66

**Condition Description**

Alternator assembly removed.

**Test Equipment**

None

**Special Tools**Pulley puller  
Torque wrench (0-175 lb-ft)**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**CAUTION**

Do not wedge anything inside alternator fan during pulley removal. Damage will result.

**a. REMOVAL**

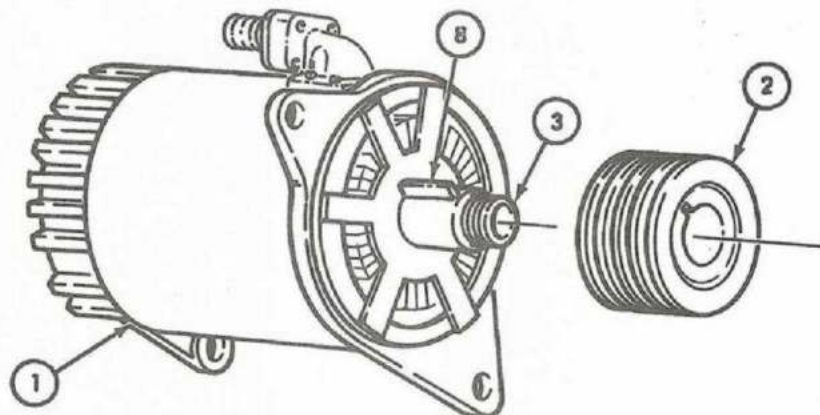
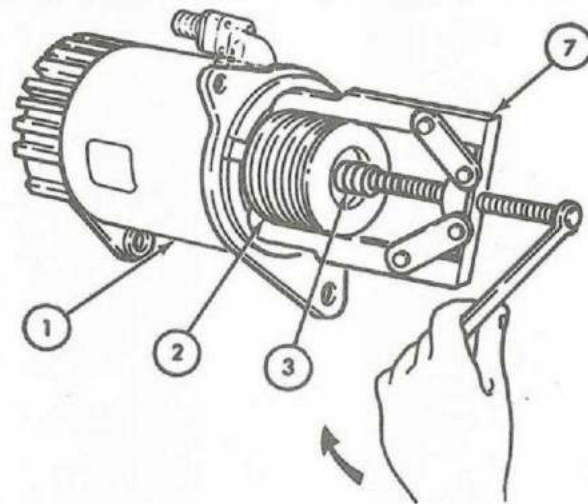
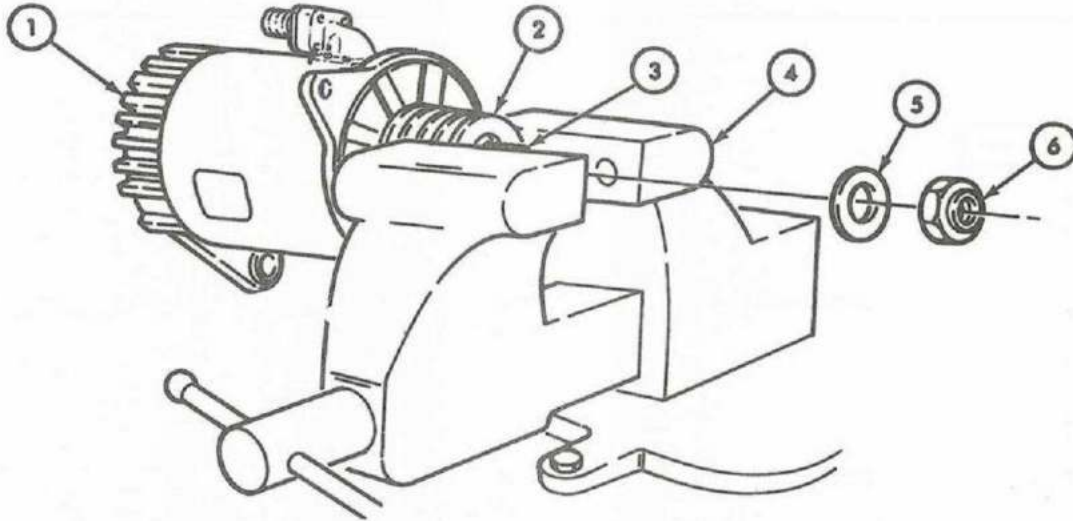
- |                     |                               |  |
|---------------------|-------------------------------|--|
| 1. Alternator (1)   | Pulley (2)                    | Secure in soft-jaw vise (4).   |
| 2. Pulley shaft (3) | Nut (6) and washer (5)        | Remove.  |
| 3.                  | Alternator (1) and pulley (2) | a. Remove from vise (4).<br><br>b. Position puller (7) to pulley (2) and shaft (3).<br><br>c. Remove pulley (2). |

**NOTE**

Do not remove woodruff key (8) from pulley shaft (3) unless damaged.

### 11-69. Alternator Pulley Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155841



## 11-69. Alternator Pulley Maintenance (Cont'd)

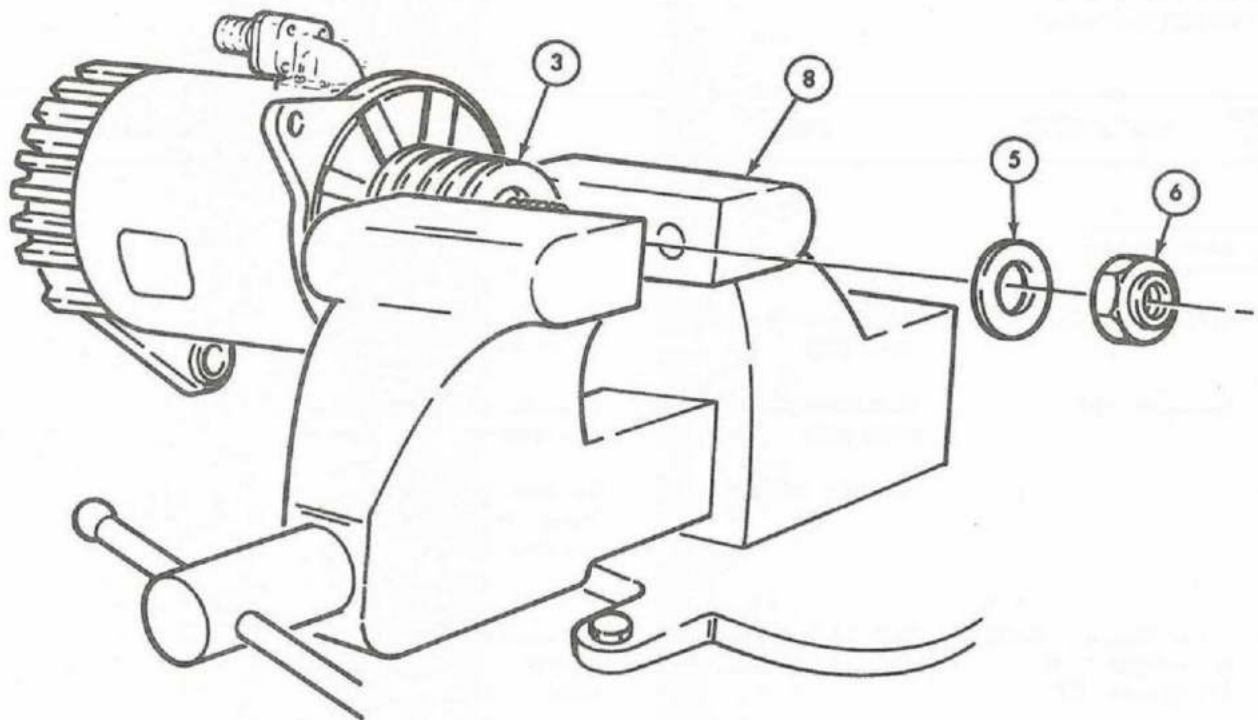
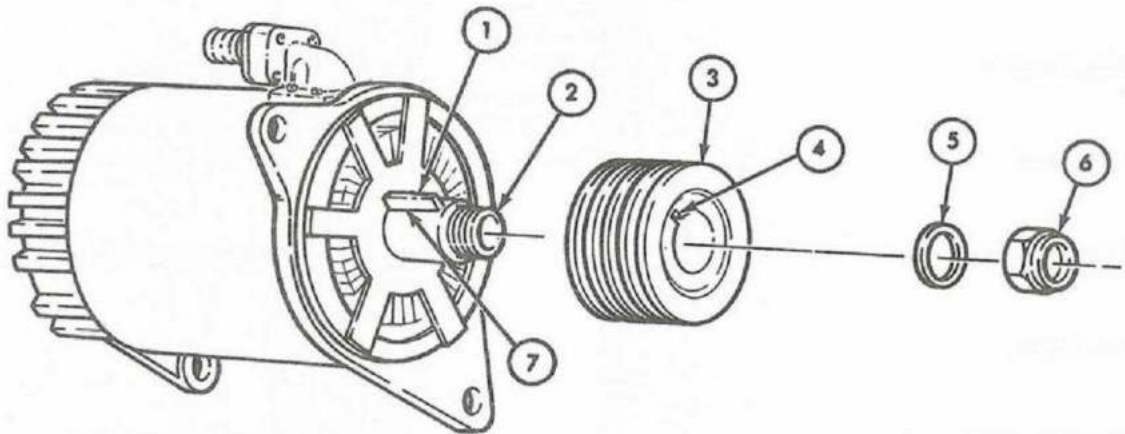
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. INSTALLATION**

4.		Woodruff key (1)	Position to shaft keyway (7) with flat edge up.	
5.		Pulley (3)	<p>a. Position to shaft (2) so pulley keyway (4) fits to shaft keyway (7).</p> <p>b. Secure to pulley shaft (2) with washer (5) and nut (6).</p> <p>c. Position in soft-jaw vise (8) so pulley (3) will not move.</p> <p>d. Tighten pulley shaft nut (6).</p>	<p>Finger tighten only.</p> <p>Tighten 40-50 lb-ft (54-68 N•m).</p>

# 11-69. Alternator Pulley Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install alternator assembly (para 11-66).

TA 155842

**11-70. Alternator to Regulator Cable Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Hood raised and secured.
	Para 5-27	Negative battery ground cable disconnected.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

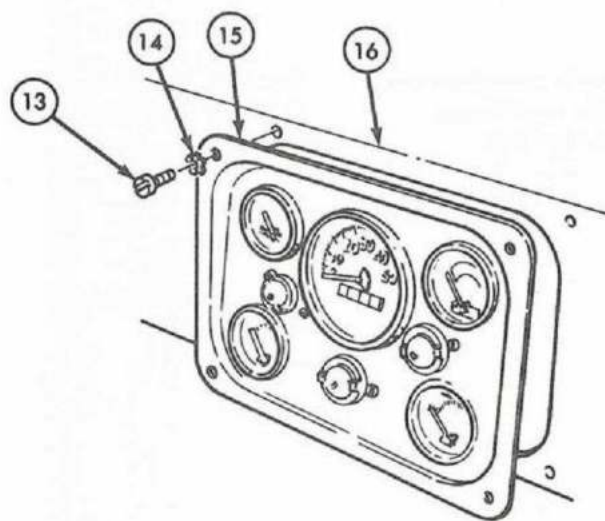
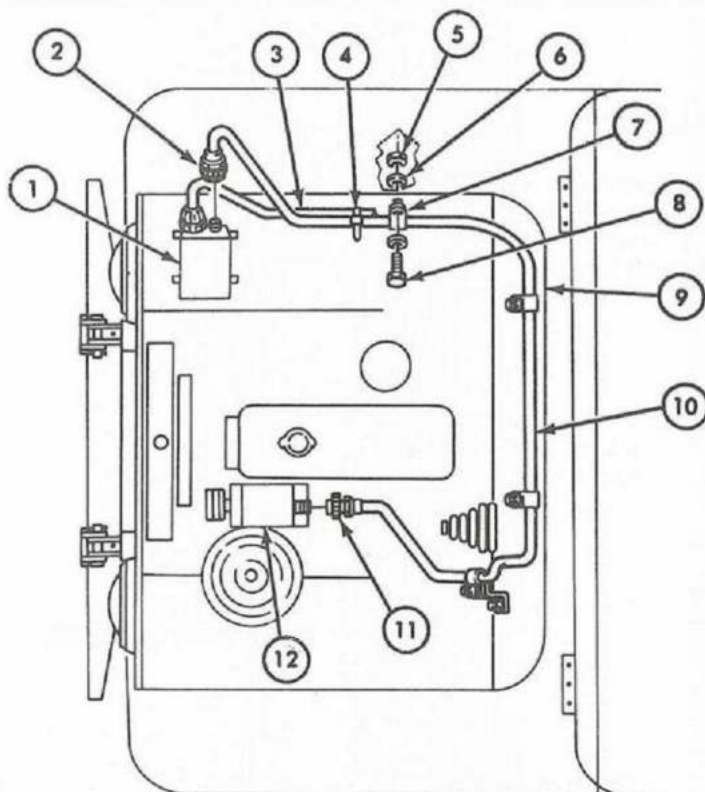
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

- |  |   |   |
|--|---|---|
| 1. Alternator (12)   | Alternator to regulator cable (10)        | Loosen nut (11), and disconnect.                    |
| 2. Regulator (1)   | Alternator to regulator cable (10)        | Loosen nut (2), and disconnect.                     |
| 3.   | Tiedown strap (4)                         | Loosen, and remove from cable (10) and harness (3). |
| 4. Cable retaining clamp (7) to right front fender panel (9) | Nut (5), lockwasher (6), and capscrew (8) | Remove and detach clamp (7) from cable (10).        |
| 5. Instrument cluster (15) to instrument panel (16)          | Four screws (13) and lockwashers (14)     | Remove.   |
| 6.   | Instrument cluster (15)                   | Pull away from instrument panel (16).               |

11-70. Alternator to Regulator Cable Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155843



## 11-70. Alternator to Regulator Cable Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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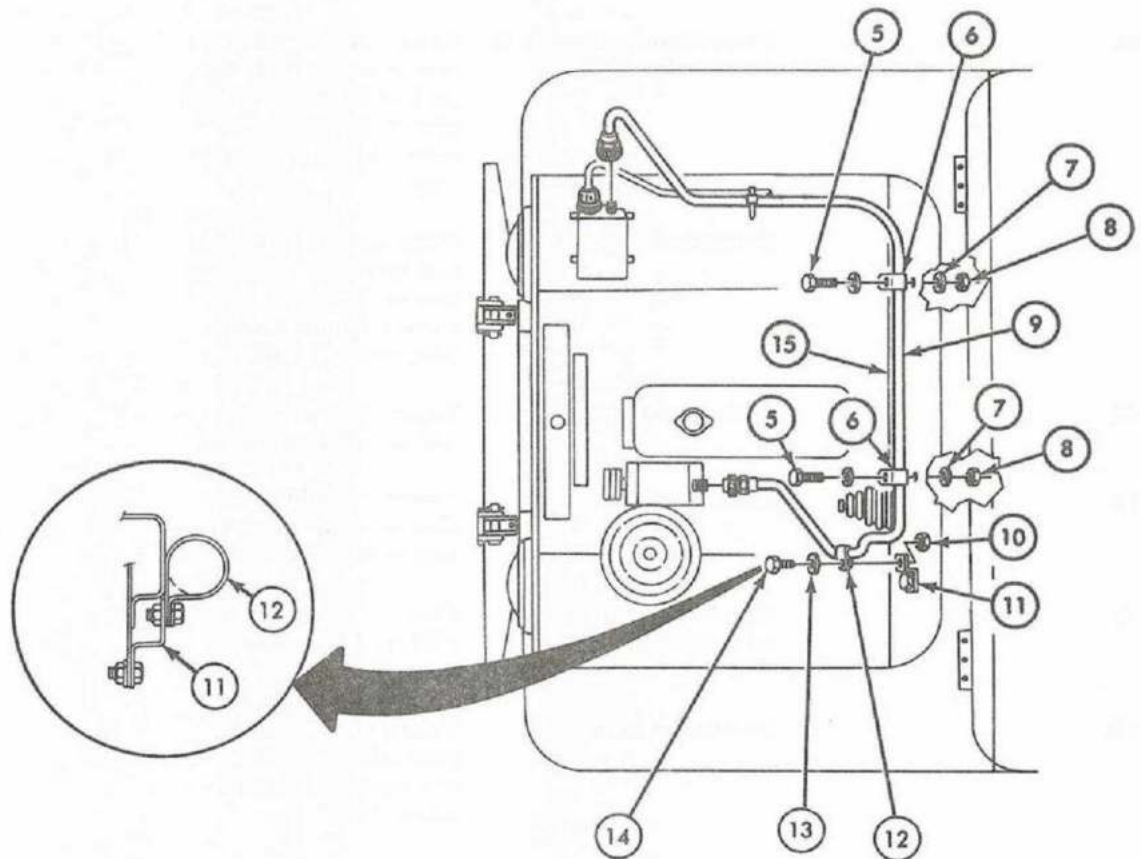
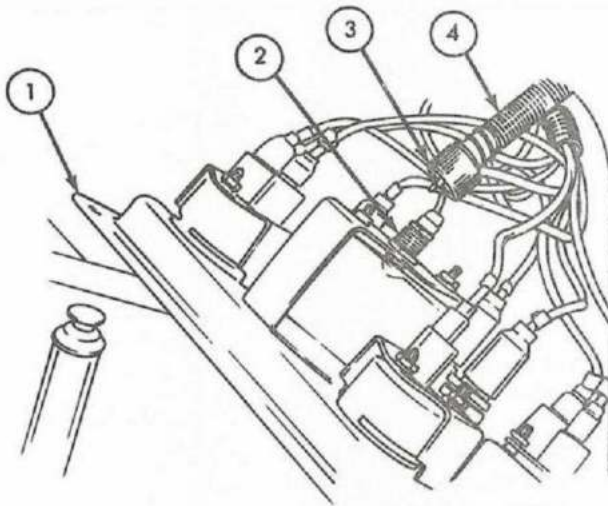
**CAUTION**

While disconnecting speedometer shaft assembly (4) from speedometer (2), make sure core cable is not pulled away from shaft. This can cause core separation from transmission transfer.

7.	Behind instrument cluster (1)	Speedometer shaft assembly (4)	Loosen shaft nut (3) and disconnect from speedometer (2).	
8.		Instrument cluster (1)	Pull down.	To provide access to retaining clamp nuts (8).
9.	Two cable retaining clamps (6) to dash support panel (15)	Two nuts (8), lock-washers (7), and cap-screws (5)	Remove and detach clamps (6) from cable (9).	
10.	Cable retaining clamp (12) to retaining bracket (11)	Nut (10), lockwasher (13), and capscREW (14)	Remove and detach clamp (12) from cable (9).	
11.		Alternator to regulator cable (9)	Remove from vehicle.	

11-70. Alternator to Regulator Cable Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-70. Alternator to Regulator Cable Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. INSTALLATION**

- |     |                                    |  |
|-----|------------------------------------|--|
| 12. | Alternator to regulator cable (10) | Route across dash support panel (15) and under wiring harness (4). |
|-----|------------------------------------|--|

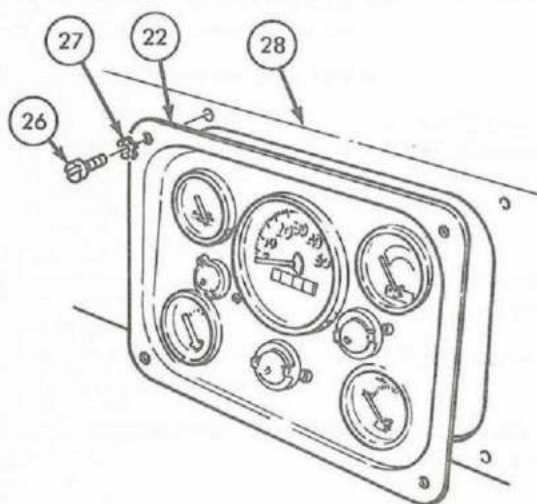
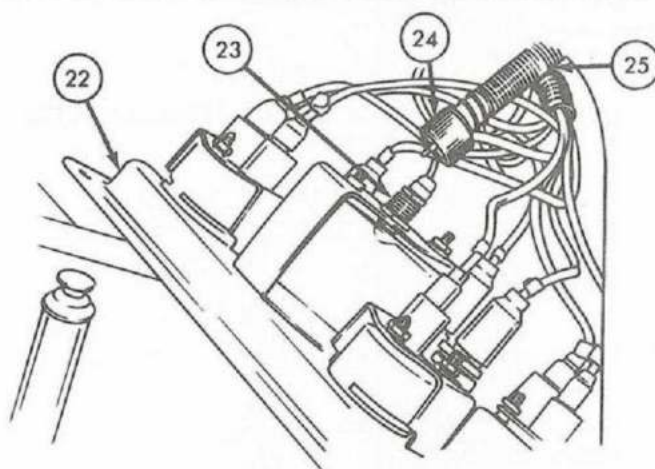
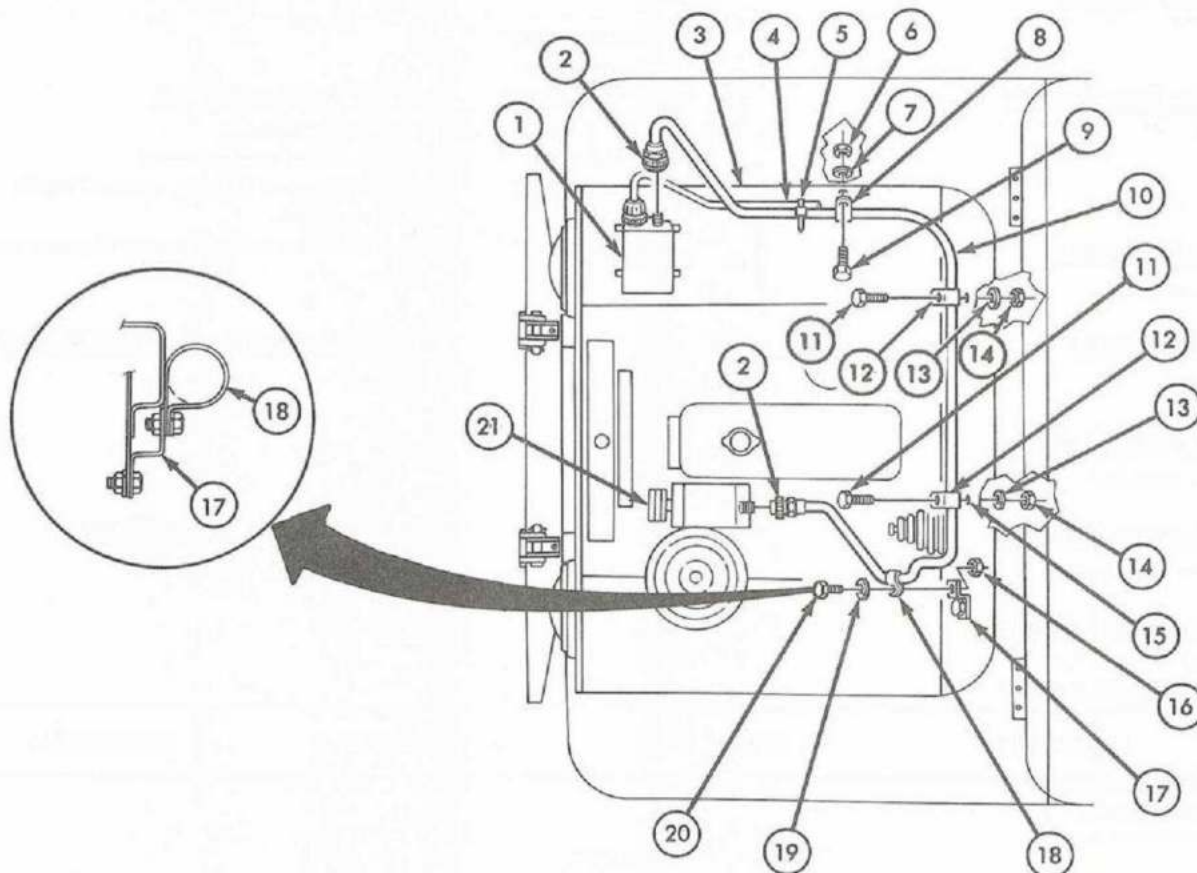
**NOTE**

Keep cable under carburetor choke control and above accelerator pedal rubber boot.

- |     |                                 |  |
|-----|---------------------------------|--|
| 13. | Retainer clamp (8)              | Place around cable (10) and secure to right front fender panel (3) with capscrew (9), lockwasher (7), and nut (6).       |
| 14. | Two retainer clamps (12)        | Place around cable (10), and secure to dash support panel (15) with two capscrews (11), lockwashers (13), and nuts (14). |
| 15. | Retainer clamp (18)             | Place around cable (10) and secure to retaining bracket (17) with capscrew (20), lockwasher (19), and nut (16).          |
| 16. | Tiedown strap (5)               | Secure to cable (10) and wiring harness (4).   |
| 17. | Cable connectors (2)            | Connect to alternator (21) and regulator (1), and tighten nuts (2).  |
| 18. | Speedometer shaft assembly (25) | Connect to speedometer (23), and tighten shaft nut (24).   |
| 19. | Instrument cluster (22)         | Secure to instrument panel (28) with four lockwashers (27) and screws (26).  |

## 11-70. Alternator to Regulator Cable Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Connect negative battery ground cable (para 5-27).
- Start engine (TM 9-2320-218-10) and check alternator for proper operation. TA 155845



**11-71. Regulator to Battery Wiring Harness Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10 TM 9-2320-218-10 Para 5-27	Parking brake set. Hood raised and secured. Right negative battery ground cable disconnected.
<u>Test Equipment</u>	Para 5-28	Left positive battery cable disconnected.
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Lockwasher		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>a. REMOVAL</i>				

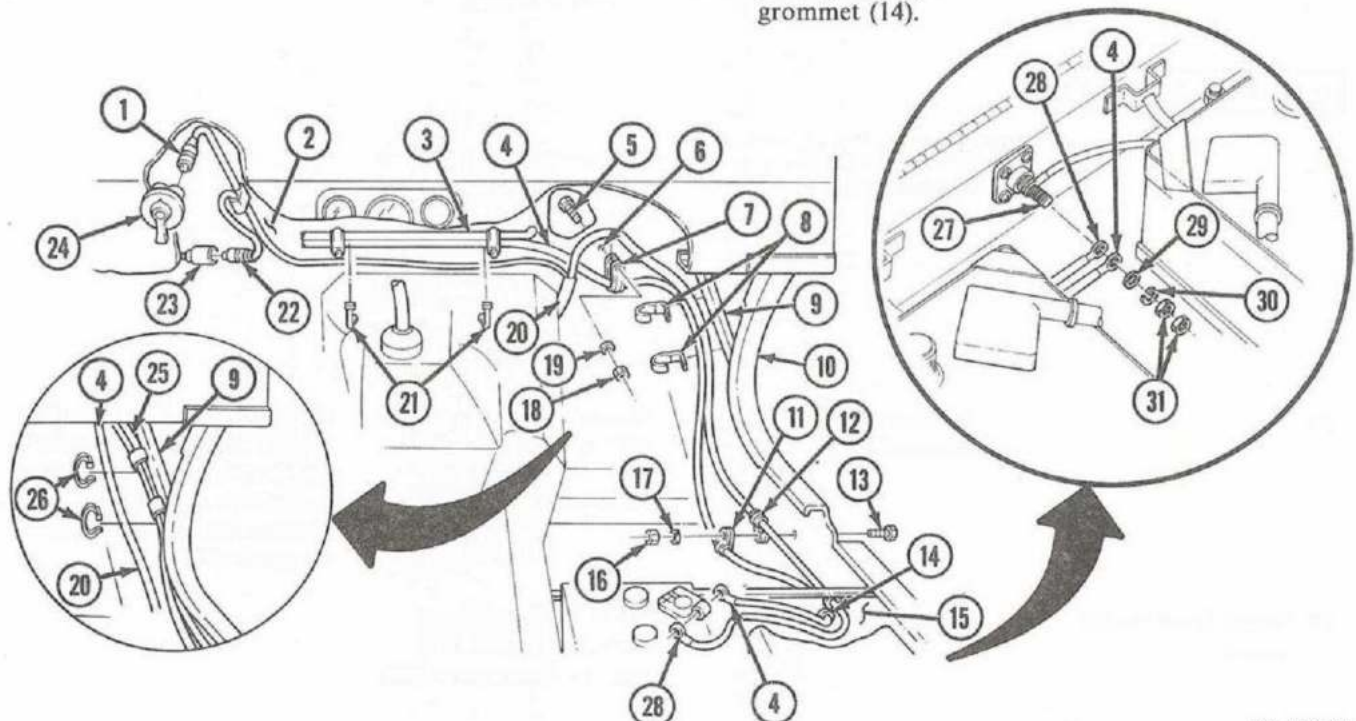
**NOTE**

- The regulator to battery wiring harness positive lead is disconnected when left positive battery cable is disconnected.
- For vehicles equipped with battery junction terminal, perform step 1.

1. Battery junction terminal stud (27)	Two nuts (31), lockwasher (30), washer (29), receptacle cable (4) and ignition cable (28)	Remove.	Discard lockwasher (30).
1.1 Wiring harness (20) to main light cable (23)	Circuit 27 connector (22)	Separate.	
2. Ignition switch (24)	Wiring harness circuit 27 connector (1)	Disconnect.	
3. Behind center of dash panel (2)	Two tiedown straps (21)	Remove at points where wiring harness (20) is tied to washer hose (3) and receptacle cable (4).	
4. Cable clamp (7) to firewall (6)	Nut (18), lockwasher (19), and capscrew (5)	Remove.	

## 11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Wiring harness (20)	Remove from clamp (7).	
<p align="center"><b>NOTE</b></p> <p align="center">Step 6 is required only when slave receptacle is not installed in vehicle.</p>				
6.	Cowl channel (9)	Two spring clips (8)	Remove.	
<p align="center"><b>NOTE</b></p> <p align="center">Step 7 is required only when slave receptacle is installed in vehicle.</p>				
7.	Cowl channel (9)	Two tiedown straps (26)	Remove at points where wiring harness (20) is tied to slave receptacle cable (25) and positive battery cables (4).	
8.	Cable clamp (12) to right side body panel (10)	Nut (16), lockwasher (17), and capscrew (13)	Remove.	Also detaches positive battery cable clamp (11).
9.		Wiring harness (20)	<p>a. Remove from cable clamp (12).</p> <p>b. Remove from battery compartment (15) by pulling through grommet (14).</p>	



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## 11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Regulator (13)	Wiring harness connector (15)	Loosen nut (15), and disconnect.	
11.	Right front fender panel (1)	Tiedown strap (16)	Remove at point where wiring harness (18) is tied to regulator/alternator cable (17).	
12.	Right cowl (6), above horn (2)	Two tiedown straps (4)	Remove at points where wiring harness (18) is tied to main light cable (5).	
13.	Harness ground lead terminal (9) to horn bracket (12)	Capscrew (3) and two tooth lockwashers (8) and (11)	Remove and disconnect ground lead terminal (9).	
14.	Right transmission tunnel (7)	Wiring harness (18)	<p>a. Remove from crew compartment by pulling through grommet (10).</p> <p>b. Remove from engine compartment.</p>	

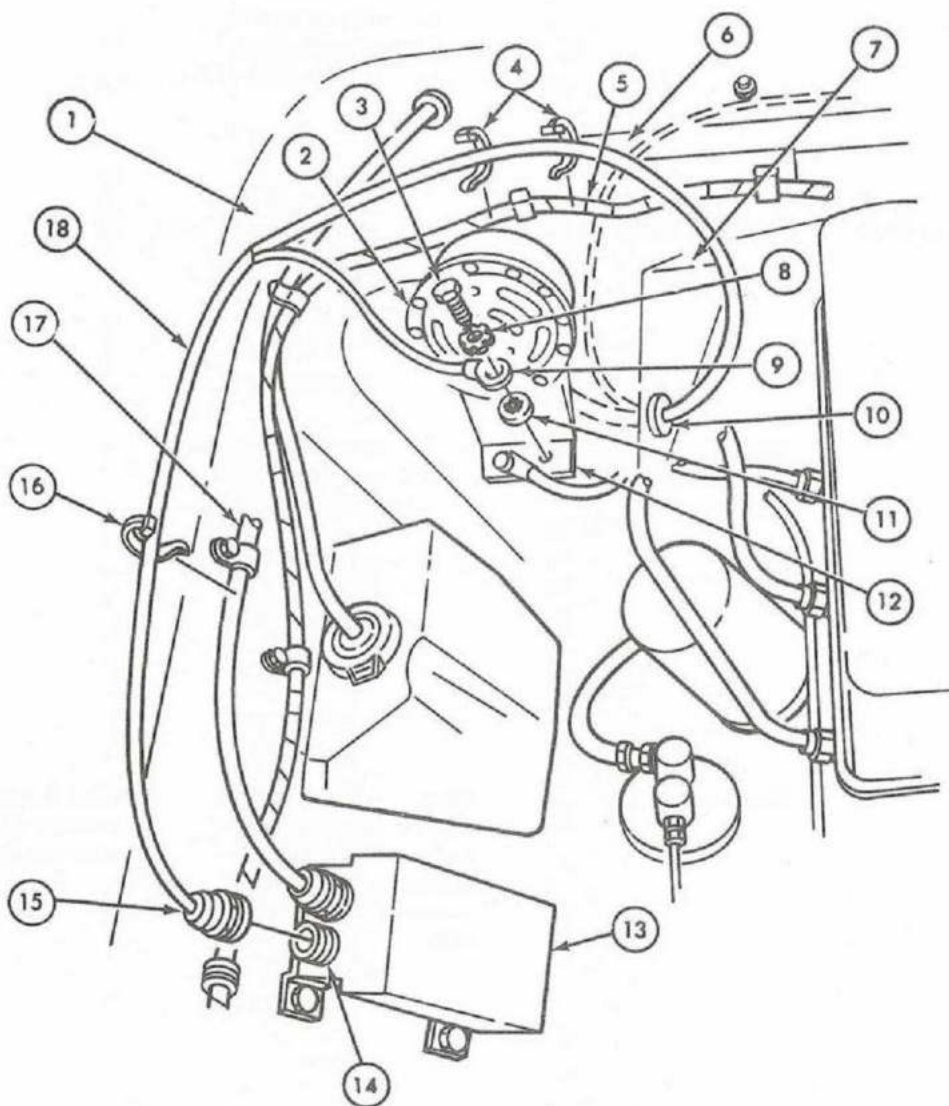
**b. INSTALLATION**

15.		Wiring harness connector (15)	<p>a. Connect to regulator forward receptacle (14), and tighten connector nut (15).</p> <p>b. Route wiring harness (18) along right front fender panel (1).</p>	
16.		Harness ground lead terminal (9)	Secure to horn bracket (12) with capscrew (3) and two tooth lockwashers (8) and (11).	Place one tooth lockwasher (11) between terminal (9) and bracket (12), and other tooth lockwasher (8) between terminal (9) and capscrew (3).
17.	Right front fender panel (1)	Wiring harness (18)	Secure to regulator/alternator cable (17) with tiedown strap (16).	



## 11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
18.	Right cowl (6), above horn (2)	Wiring harness (18)	Secure to main light cable (5) with two tiedown straps (4).	
19.		Wiring harness (18)	Route through grommet (10) in right transmission tunnel (7), and into crew compartment.	



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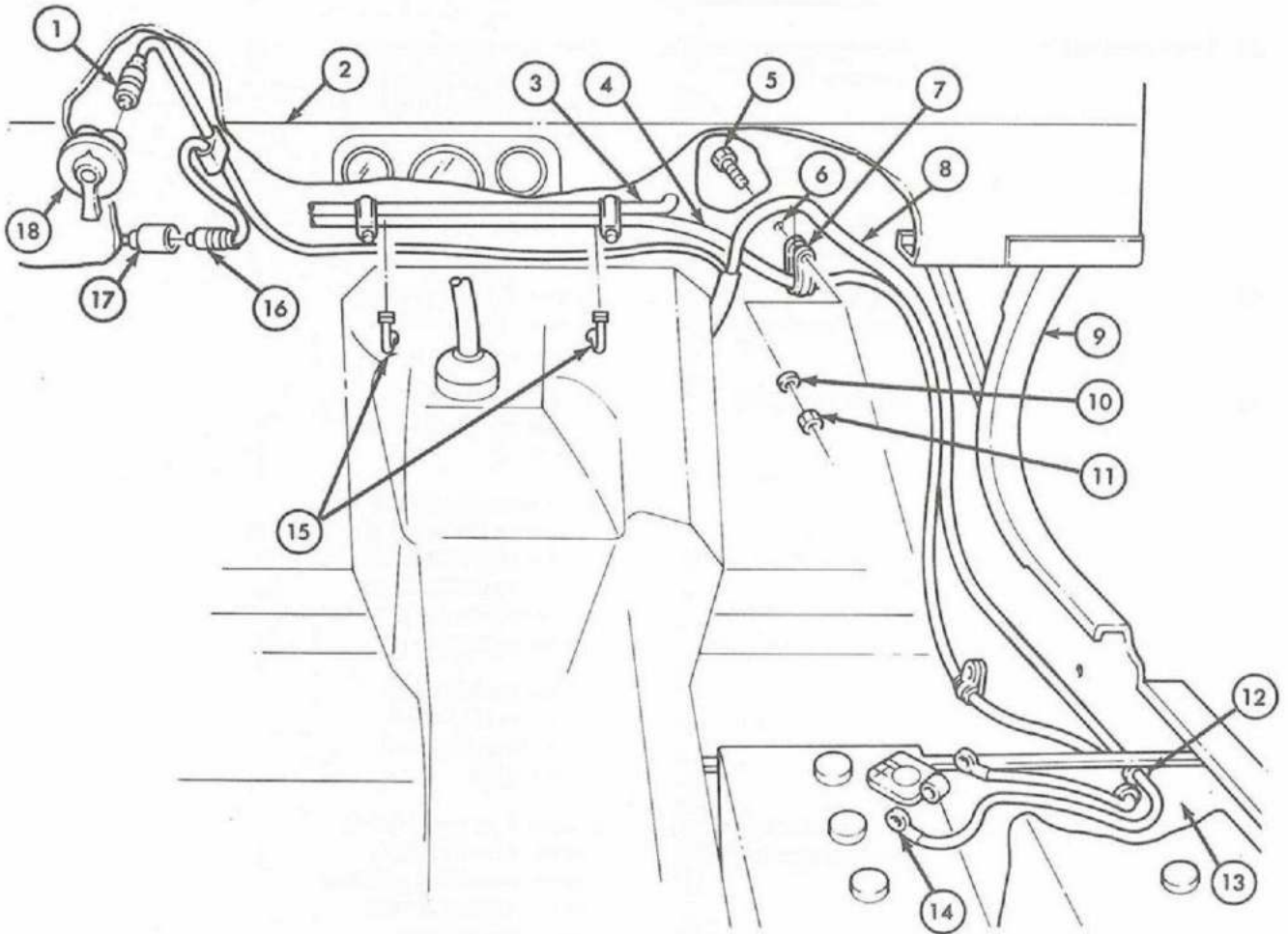


## 11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
20.		Two circuit 27 connectors (1) and (16)	<p>a. Route behind dash panel (2) to ignition switch (18).</p> <p>b. Connect connector (1) to ignition switch (18).</p> <p>c. Connect connector (16) to main light switch connector (17).</p>	
21.	Behind center of dash panel (2)	Wiring harness (8)	Secure to washer hose (3) and positive battery cable (4) with two tiedown straps (15).	
22.		Wiring harness battery positive lead (14)	<p>a. Route across firewall (6), and along right side body panel (9).</p> <p>b. Insert through grommet (12) in battery compartment (13).</p>	
23.		Cable clamp (7)	Place around wiring harness (8) and secure to firewall (6) with capscrew (5), lock-washer (10), and nut (11).	Positive battery cable (4) is in clamp (7), and will also be secured.

11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Step 24 is required only when slave receptacle is installed in vehicle.

- |     |                  |  |  |
|-----|------------------|--|--|
| 24. | Cowl channel (4) | Wiring harness battery positive lead (3) | Secure to slave receptacle cable (14) and positive battery cable (2) with two tiedown straps (15). |
|-----|------------------|--|--|

## NOTE

Step 25 is required only when slave receptacle is not installed on vehicle.

- |     |  |   |  |
|-----|--|---|--|
| 25. |  | Harness battery positive lead (3) and cable (2) | Secure to cowl channel (4) with two spring clips (1).  |
| 26. |  | Cable clamp (7)                                 | <p>a. Place around harness battery positive lead (3).</p> <p>b. Aline with hole in clamp (6) holding positive battery cable (2), and aline both to hole in right side body panel (5).</p> <p>c. Secure with cap-screw (8), lock-washer (13), and nut (12).</p> |
| 27. |  | Harness battery positive lead (3) and cable (2) | Connect to positive left battery terminal (11) when connecting positive battery cable (2) with capscrew (10) and nut (9).  |

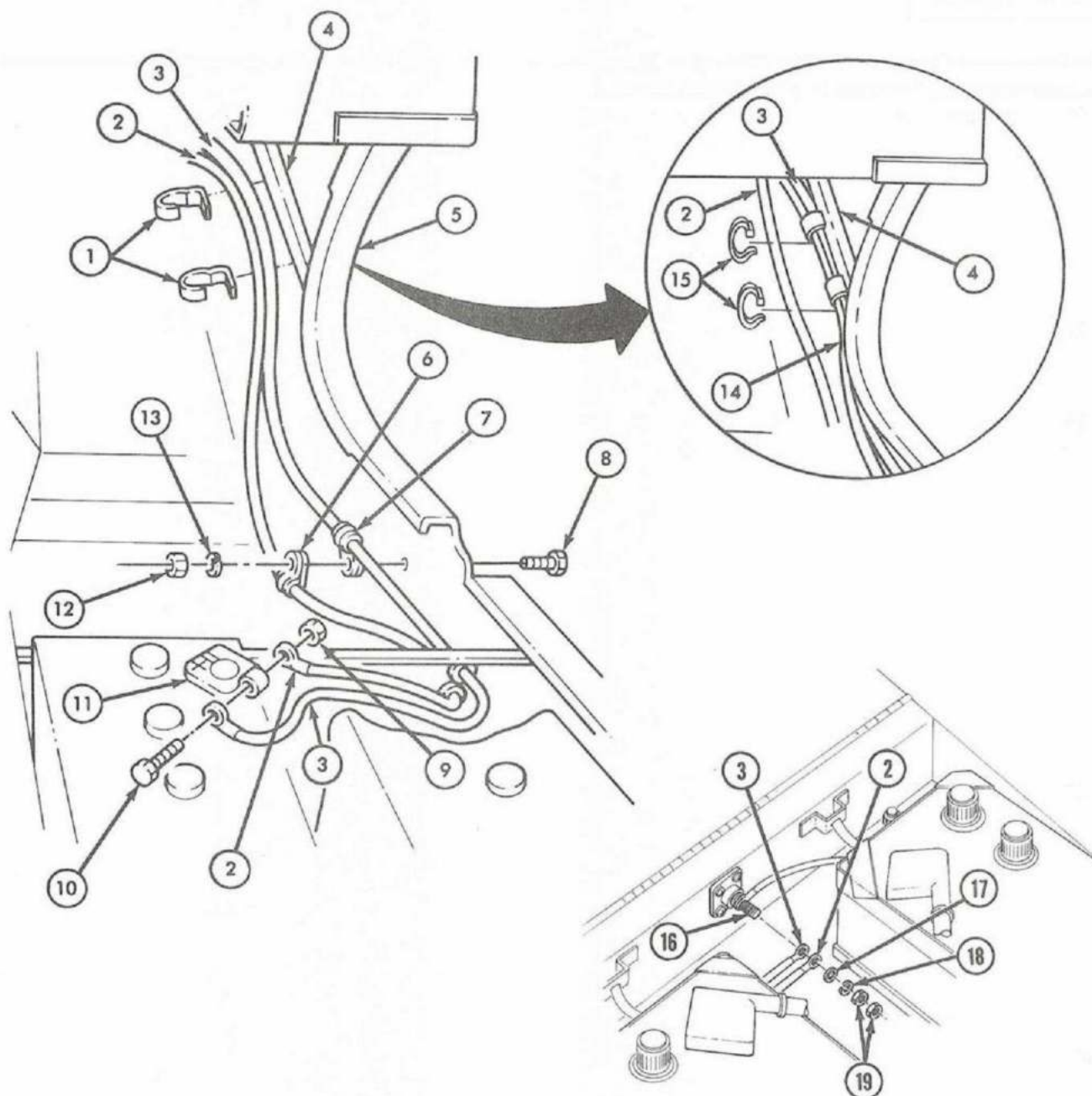
## NOTE

For vehicles equipped with battery junction terminal, perform step 27.1.

- |       |  |   |   |
|-------|--|---|---|
| 27.1. |  | Harness battery positive lead (3) and cable (2) | Place on battery junction terminal stud (16) and secure with washer (17), new lockwasher (18), and two nuts (19). |
|-------|--|---|---|

## 11-71. Regulator to Battery Wiring Harness Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Connect right negative battery ground cable (para 5-27).
  - Start engine (TM 9-2320-218-10) and check alternator for proper operation.

TA 484709



## Section VI. 180-AMPERE BATTERY CHARGING SYSTEM MAINTENANCE

### 11-72. General

Maintenance information for the 180-ampere battery, service upon receipt of material, preventive maintenance and troubleshooting can be found in TM 11-2300-351-15-3.

## Section VII. M16/14 RIFLE MOUNT KIT MAINTENANCE FOR SOFT TOP AND HARDTOP VEHICLES

### 11-73. General

This section provides maintenance procedures assigned to the organizational level for the M16/14 rifle mount kit for soft top and hardtop vehicles. To find a specific maintenance procedure, see the maintenance task summary below.

### 11-74. Service Upon Receipt of Material

This paragraph does not apply to M16/14 rifle mount kit for soft top and hardtop vehicles.

### 11-75. Preventive Maintenance

See table 3-1.

### 11-76. Troubleshooting

See TM 9-1000-205-12 Weapons Systems Mounting

### 11-77. M16/14 Rifle Mount Kit for Soft Top and Hardtop Vehicles Task Summary

TASK PARA	PROCEDURES	PAGE NO.
11-78.	Rifle Mounting Catch (Left Side) a. Removal b. Installation	11-202
11-79.	Rifle Mounting Catch (Right Side) a. Removal b. Installation	11-206
11-80.	Rifle Mounting Floor Bracket (Left Side) a. Removal b. Installation	11-208
11-81.	Rifle Mounting Floor Bracket (Right Side) a. Removal b. Installation	11-210

**11-78. Rifle Mounting Catch (Left Side) Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2, M825	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

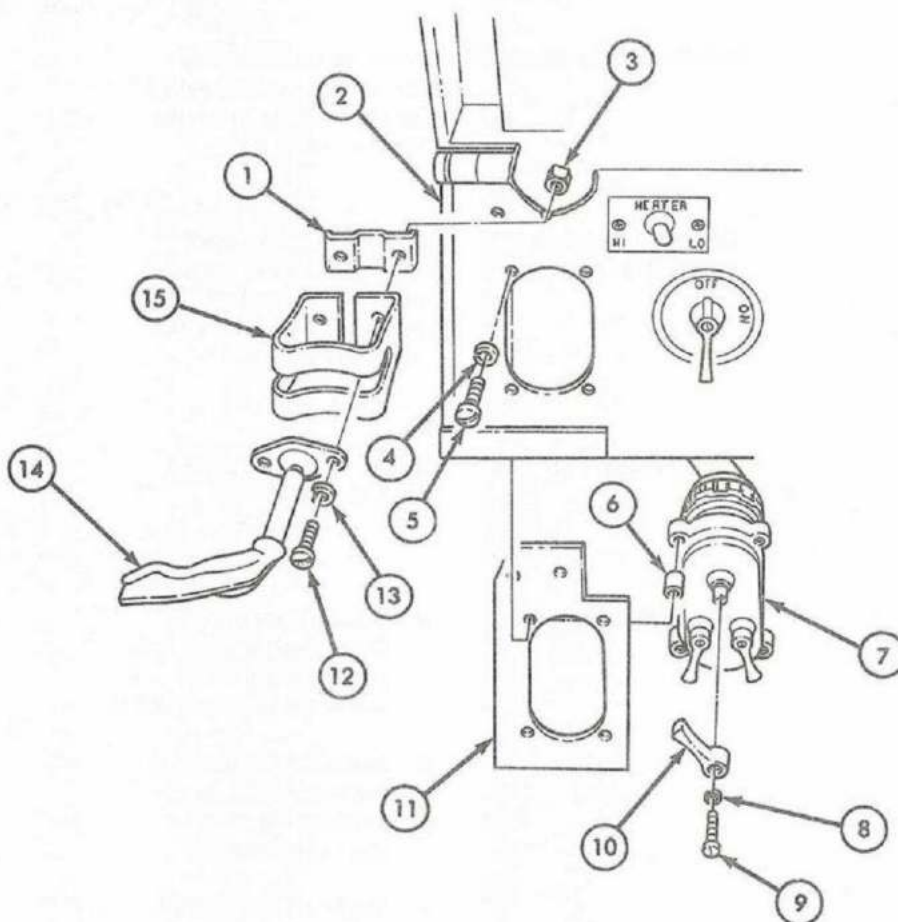
Rifle mounting catch (left side) will be deleted from vehicles equipped with rollover protection system (ROPS).

**a. REMOVAL**

- |   |   |                             |
|---|---|-----------------------------|
| 1. Catch assembly (14), catch bracket (15), and bracket spacer (1) to left dash panel (2) | Two nuts (3), lockwashers (13), and screws (12)                 | Remove.                     |
| 2.  | Catch assembly (14), catch bracket (15), and bracket spacer (1) | Remove from dash panel (2). |
| 3. Upper light switch lever (10) to main light switch (7)                                 | Screw (9) and lock-washer (8)                                   | Remove.                     |

## 11-78. Rifle Mounting Catch (Left Side) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.		Upper light switch lever (10)	Remove from main light switch (7).	
5.	Main light switch (7) and reinforcement panel (11)	Four screws (5), lockwashers (4), and sleeve spacers (6)	Remove.	





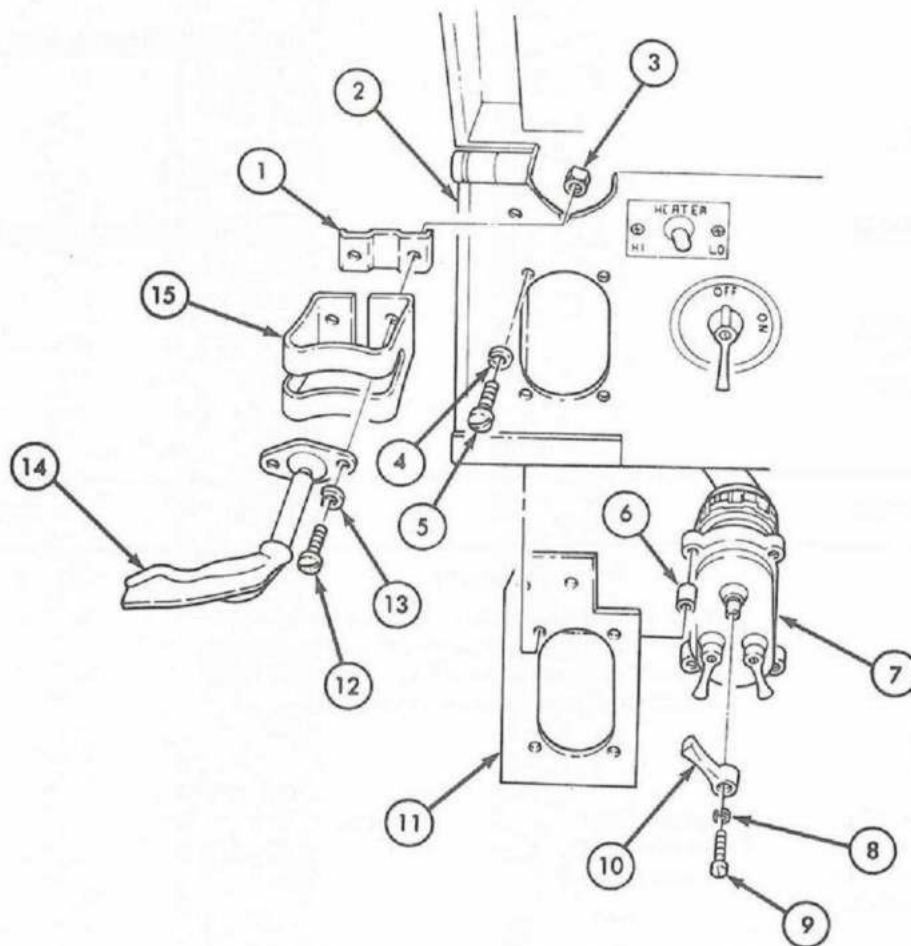
## 11-78. Rifle Mounting Catch (Left Side) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Main light switch (7) and reinforcement panel (11)	Remove from backside of dash panel (2).	
<b>b. INSTALLATION</b>				
7.		Reinforcement plate (11)	Place on back side of left dash panel (2) with beveled corner to upper left and align holes.	
8.		Screw (5) and lock-washer (4)	Insert through upper left light switch mounting hole in front of dash panel (2) and reinforcement plate (11).	
9.		Sleeve spacer (6)	Place on screw (5) and hold in place.	
10.		Main light switch (7)	<ol style="list-style-type: none"> <li>Place through hole from backside of dash panel (2) and start screw (5) into switch (7).</li> <li>Install three remaining screws (5), lock-washers (4), and sleeve spacers (6).</li> <li>Tighten four screws (5).</li> </ol>	
11.		Upper light switch lever (10)	Secure to main light switch (7) with screw (9) and lockwasher (8).	

## 11-78. Rifle Mounting Catch (Left Side) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

12. Catch bracket spacer (1), catch bracket (15), and catch assembly (14) Secure to upper left dash panel (2), with two screws (12), lockwashers (13), and nuts (3).



END OF TASK!

TA 155851

**11-79. Rifle Mounting Catch (Right Side) Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**M151A2, M825, and  
M151A2 (w/ROPS)**Equipment  
Condition**Reference  
TM 9-2320-218-10**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

Rifle mounting catch will be located differently on vehicles equipped with rollover protection system (ROPS). Removal and installation procedures are the same.

**a. REMOVAL**

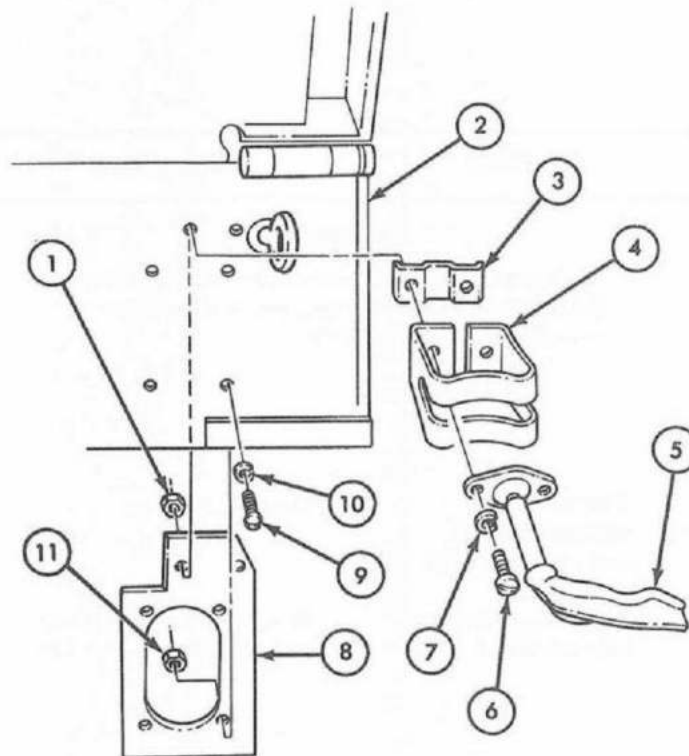
- |    |   |   |   |
|----|---|---|---|
| 1. | Catch assembly (5), catch bracket (4), and bracket spacer (3) to right dash panel (2) | Two nuts (1), lockwashers (7), and screws (6)                 | Remove.                                 |
| 2. |   | Catch assembly (5), catch bracket (4), and bracket spacer (3) | Remove from dash panel (2).             |
| 3. | Reinforcement plate (8) to dash panel (2)   | Four nuts (11), lockwashers (10), and screws (9)              | Remove.                                 |
| 4. |   | Reinforcement plate (8)                                       | Remove from backside of dash panel (2). |

**11-79. Rifle Mounting Catch (Right Side) Maintenance (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. INSTALLATION**

- |    |   |  |
|----|---|--|
| 5. | Reinforcement plate (8)   | <p>a. Place on backside of right dash panel (2) with beveled corner to upper right, and aline holes.</p> <p>b. Secure with four screws (9), lockwashers (10), and nuts (11).</p> |
| 6. | Catch bracket spacer (3), catch bracket (4), and catch assembly (5) | Secure to upper right dash panel (2) with two screws (6), lockwashers (7), and nuts (1).   |



END OF TASK!

TA 155852



**11-80. Rifle Mounting Floor Bracket (Left Side) Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2, M825	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

Rifle mounting floor bracket (left side) will be deleted from vehicles equipped with rollover protection system (ROPS).

***a. REMOVAL***

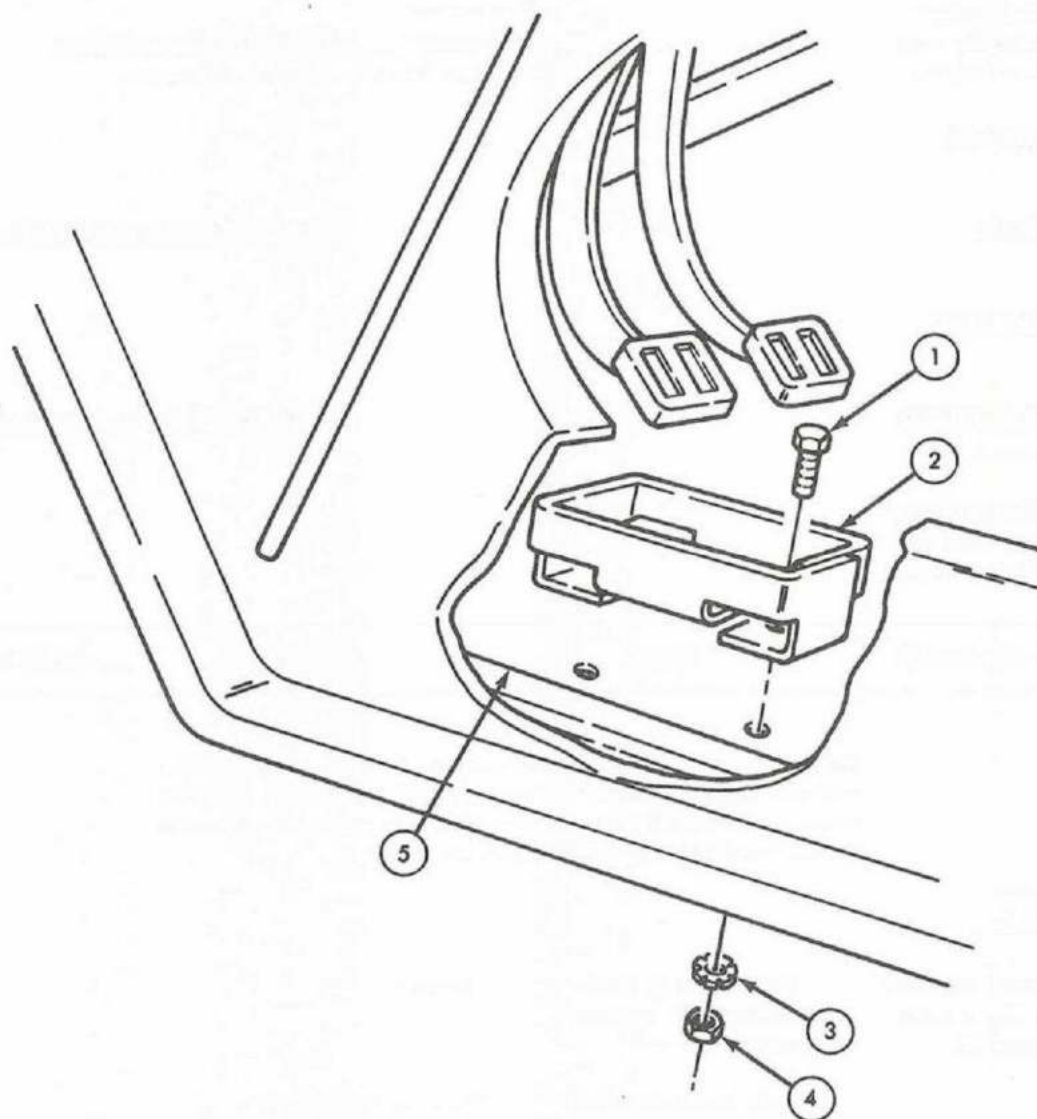
- |    |  |  |                                   |
|----|--|--|-----------------------------------|
| 1. | Rifle mounting floor bracket (2) to left floor panel (5) | Two nuts (4), lockwashers (3), and capscrews (1) | Remove.                           |
| 2. | Rifle mounting floor bracket (2)                         |  | Remove from left floor panel (5). |

***b. INSTALLATION***

- |    |                                  |   |                               |
|----|----------------------------------|---|-------------------------------|
| 3. | Rifle mounting floor bracket (2) | Secure to left floor panel (5) with two capscrews (1), lockwashers (3), and nuts (4). | Tighten 6-7 lb-ft (8-10 N•m). |
|----|----------------------------------|---|-------------------------------|

## 11-80. Rifle Mounting Floor Bracket (Left Side) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

TA 155853

**11-81. Rifle Mounting Floor Bracket (Right Side) Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**M151A2, M825, and  
M151A2 (w/ROPS)**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**

One mechanic

**General Safety Instructions**

None

**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

Rifle mounting floor bracket will be located differently on vehicles equipped with rollover protection system (ROPS) because of front rollbar mounting bracket installation. Removal and installation procedures are the same.

**a. REMOVAL**

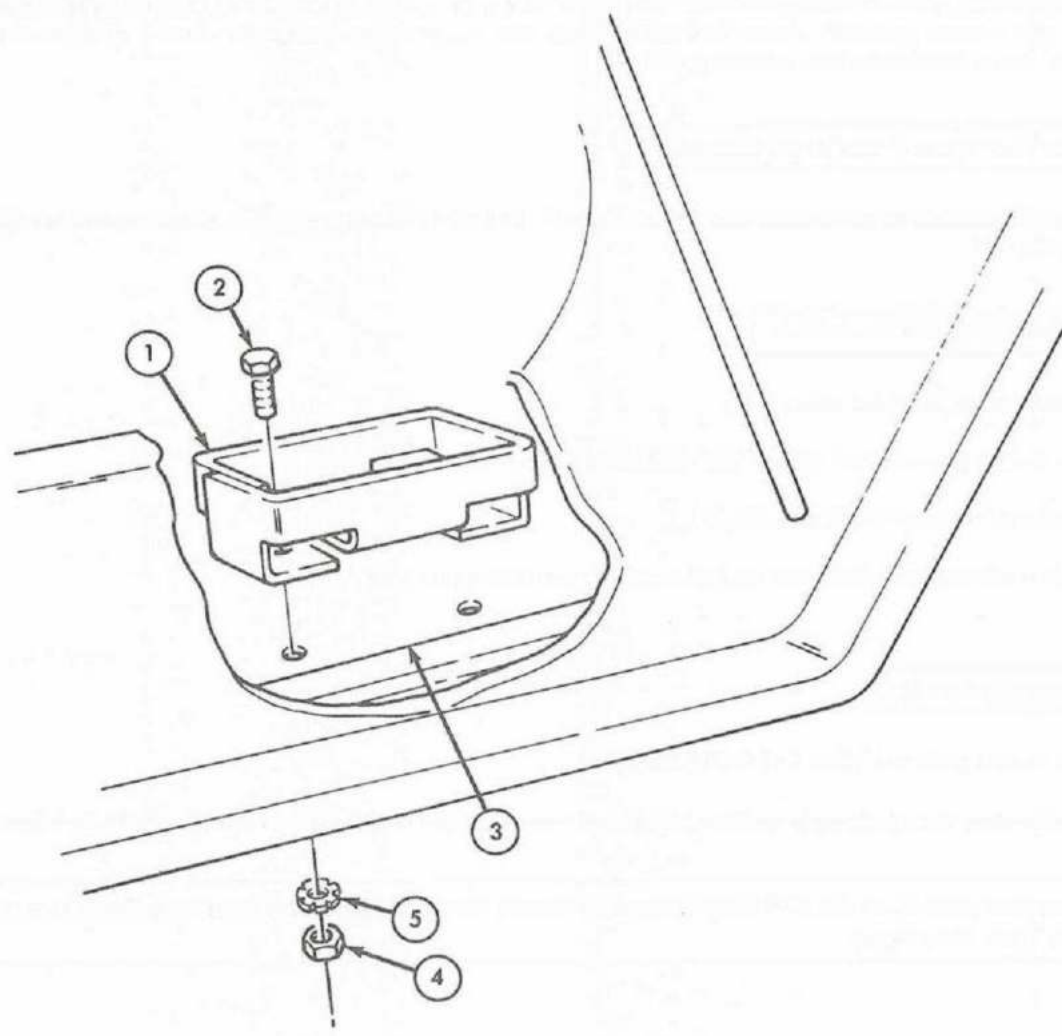
- |    |   |  |                                    |
|----|---|--|------------------------------------|
| 1. | Rifle mounting floor bracket (1) to right floor panel (3) | Two nuts (4), lock-washers (5), and cap-screws (2) | Remove.                            |
| 2. | Rifle mounting floor bracket (1)                          |  | Remove from right floor panel (3). |

**b. INSTALLATION**

- |    |                                  |  |                               |
|----|----------------------------------|--|-------------------------------|
| 3. | Rifle mounting floor bracket (1) | Secure to right floor panel (3) with two cap-screws (2), lock-washers (5), and nuts (4). | Tighten 6-7 lb-ft (8-10 N•m). |
|----|----------------------------------|--|-------------------------------|

11-81. Rifle Mounting Floor Bracket (Right Side) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155854



## Section VIII. DOOR AND SIDE CURTAIN, M4 GUN MOUNT PEDESTAL, DECONTAMINATION, AND REAR SUSPENSION SPRING KITS MAINTENANCE

### 11-82. General

This section provides maintenance procedures assigned to the organizational level for the following kits: door and side curtain, M4 gun mount pedestal, decontamination, and rear suspension spring. To find a specific maintenance procedure, see the maintenance task summary below.

### 11-83. Service Upon Receipt of Material

This paragraph does not apply to door and side curtain kit, M4 gun mount pedestal kit, decontamination kit, and rear suspension spring kit.

### 11-84. Preventive Maintenance

- a. Decontamination kit. (See table 3-1.)
- b. M4 gun mount pedestal kit. (See TM 9-1000-205-12 and table 3-1.)
- c. Door and side curtain kit. (See table 3-1.)
- d. Preventive maintenance does not apply to rear suspension spring kit.

### 11-85. Troubleshooting

- a. M4 gun mount pedestal. (See TM 9-1000-205-12.)
- b. Troubleshooting does not apply to door and side curtain kit, decontamination kit, and rear suspension spring kit.

### 11-86. Door and Side Curtain, M4 Gun Mount Pedestal, Decontamination, and Rear Suspension Spring Kits Task Summary

TASK PARA	PROCEDURES	PAGE NO.
11-87.	Door and Side Curtain Kit <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Installation</li> </ul>	11-213

<b>11-86. Door and Side Curtain, M4 Gun Mount Pedestal, Decontamination, and Rear Suspension Spring Kits Task Summary (Cont'd)</b>
--

TASK PARA	PROCEDURES	PAGE NO.
11-88.	M4 Gun Mount Pedestal Kit <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Installation</li> <li>c. Lubrication</li> </ul>	11-214
11-89.	Decontamination Kit <ul style="list-style-type: none"> <li>a. Installation, M151A2 and M718A1</li> <li>b. Installation, M825</li> <li>c. Removal</li> </ul>	11-216
11-90.	Rear Suspension Overload Spring Kit <ul style="list-style-type: none"> <li>a. Installation</li> <li>b. Removal</li> </ul>	11-220

<b>11-87. Door and Side Curtain Kit Maintenance</b>
---

The procedure for removal and installation of the door and side curtain kit can be found in TM 9-2320-218-10. For repair of curtains, notify DS maintenance.

**11-88. M4 Gun Mount Pedestal Kit Maintenance**

This task covers:

- a. Removal
- b. Installation

c. Lubrication

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Canvas top assembly removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
Torque wrench (0-175 lb-ft)	None	
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
One mechanic	None	
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-1000-205-12		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

- |    |   |   |                               |  |
|----|---|---|-------------------------------|--|
| 1. | Two pedestal braces (3) to floor panel (10)     | Two nuts (4), lockwashers (5), and flat washers (6) | Remove.                       | Two capscrew studs (7), lockwashers (8), and nuts (9) will remain installed. |
| 2. | Pedestal mounting base (13) to floor panel (10) | Four nuts (11), lockwashers (12), and capscrews (1) | Remove.                       |  |
| 3. |   | Gun mount pedestal (2)                              | Remove from floor panel (10). |  |

**b. INSTALLATION**

- |    |                             |  |                                  |
|----|-----------------------------|--|----------------------------------|
| 4. | Pedestal mounting base (13) | Place on floor panel (10) between front seats and secure with four capscrews (1), lockwashers (12), and nuts (11). | Tighten 55-65 lb-ft (75-88 N·m). |
|----|-----------------------------|--|----------------------------------|

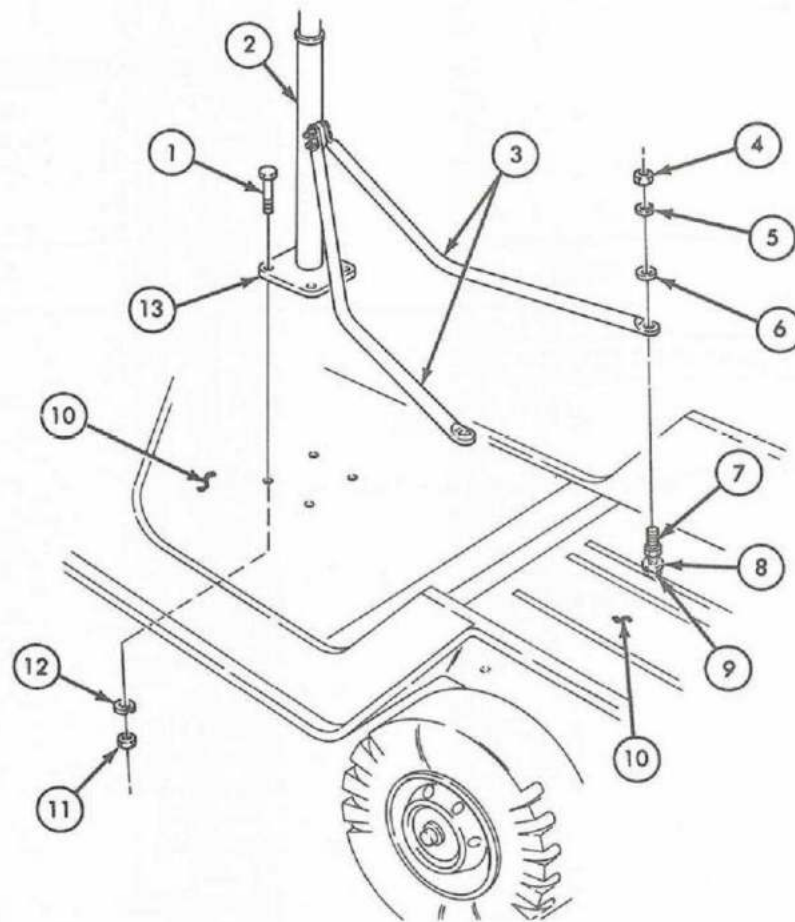
## 11-88. M4 Gun Mount Pedestal Kit Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Two pedestal braces (3)	Place on two capscrew studs (7) and secure with two flat washers (6), lockwashers (5), and nuts (4).	Tighten 55-60 lb-ft (75-81 N•m).

## c. LUBRICATION

## NOTE

Lubrication instructions for the M4 gun mount pedestal can be found in TM 9-1000-205-12.



END OF TASK!

FOLLOW-ON TASK: Install canvas top assembly (TM 9-2320-218-10).

TA 155855



**11-89. Decontamination Kit Maintenance**

This task covers:

- a. Installation, M151A2 and M718A1*  
*b. Installation, M825*

*c. Removal***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Torque wrench (0-175 lb-ft)		None
<u>Materials/Parts</u>		
5/16 in. (8 mm) drill bit		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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***a. INSTALLATION, M151A2 AND M718A1*****NOTE**

Step 1 is required for first-time installation only.

- |  |   |   |
|--|---|---|
| 1. Floor panel (2) at left rear fender (7) | Decontamination kit support bracket (3) | <p><i>a.</i> Measure 2-1/16 in. (52 mm) forward from existing left gun mount hole (1) and make a mark.</p> <p><i>b.</i> Place forward right hole of bracket (3) over mark with bracket back panel flat against fender (7).</p> <p><i>c.</i> Using bracket (3) as a template, mark locations of four holes on floor panel (2) and two holes on left rear fender (7).</p> |
|--|---|---|

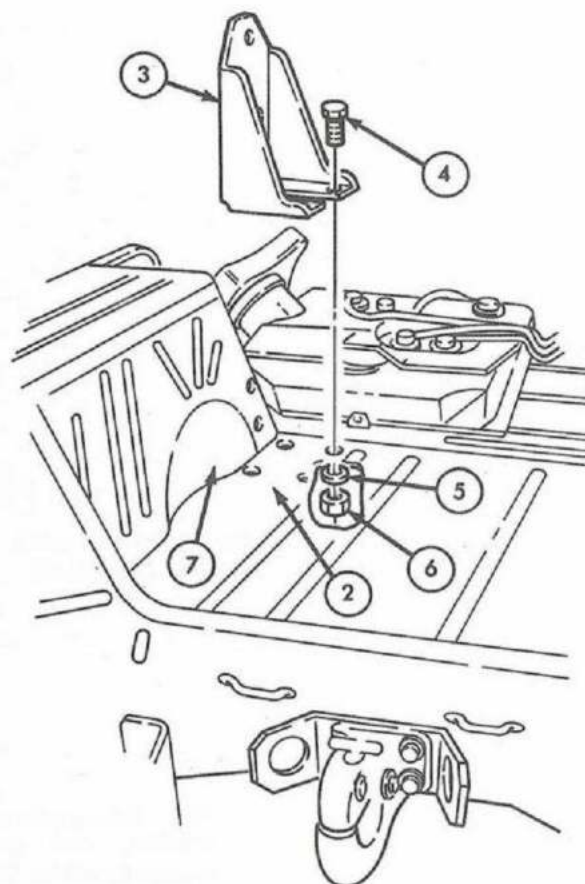
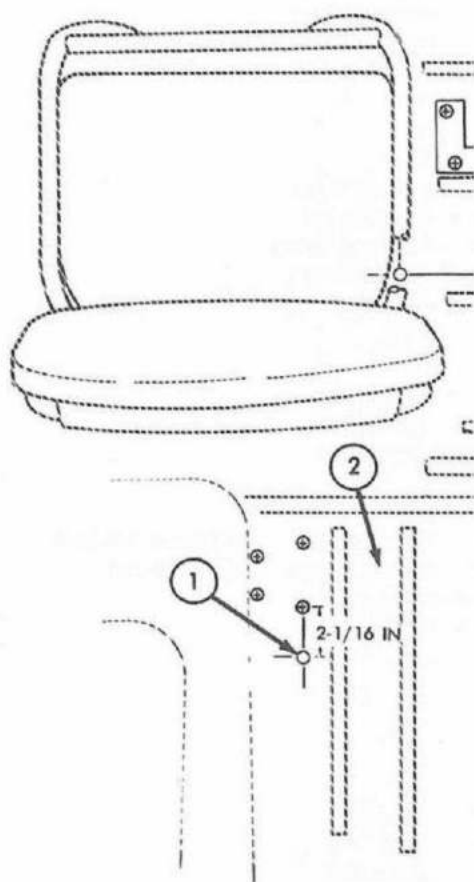
## 11-89. Decontamination Kit Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
2.		Decontamination kit support bracket (3)	Secure to floor panel (2) with four capscrews (4), washers (5), and locknuts (6).	Tighten 5-9 lb-ft (7-12 N•m).

d. Drill six 5/16 in. (8 mm) holes at marked locations.

## NOTE

The decontaminating apparatus, holding bracket, and attaching parts will be requisitioned by the chemical unit, limiting installation and removal procedures to authorized personnel.



TA 155856

## 11-89. Decontamination Kit Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*b. INSTALLATION, M825***NOTE**

Step 3 is required for first-time installation only.

3.	Floor panel (3) between front seats (1)	Decontamination kit support bracket (6)	a. Measure 6 in. (152 mm) right from driver's seat frame (2), and 8 in. (203 mm) forward from existing gun mount hole (4) and make a mark.	
			b. Place forward right hole of bracket (6) over mark, and using as a template, mark locations of four holes.	
			c. Drill four 5/16 in. (8 mm) holes at marked locations.	
4.		Decontamination kit support bracket (6)	Secure to floor panel (3) with four capscrews (5), washers (8), and locknuts (7).	Tighten 5-9 lb-ft (7-12 N•m).

**NOTE**

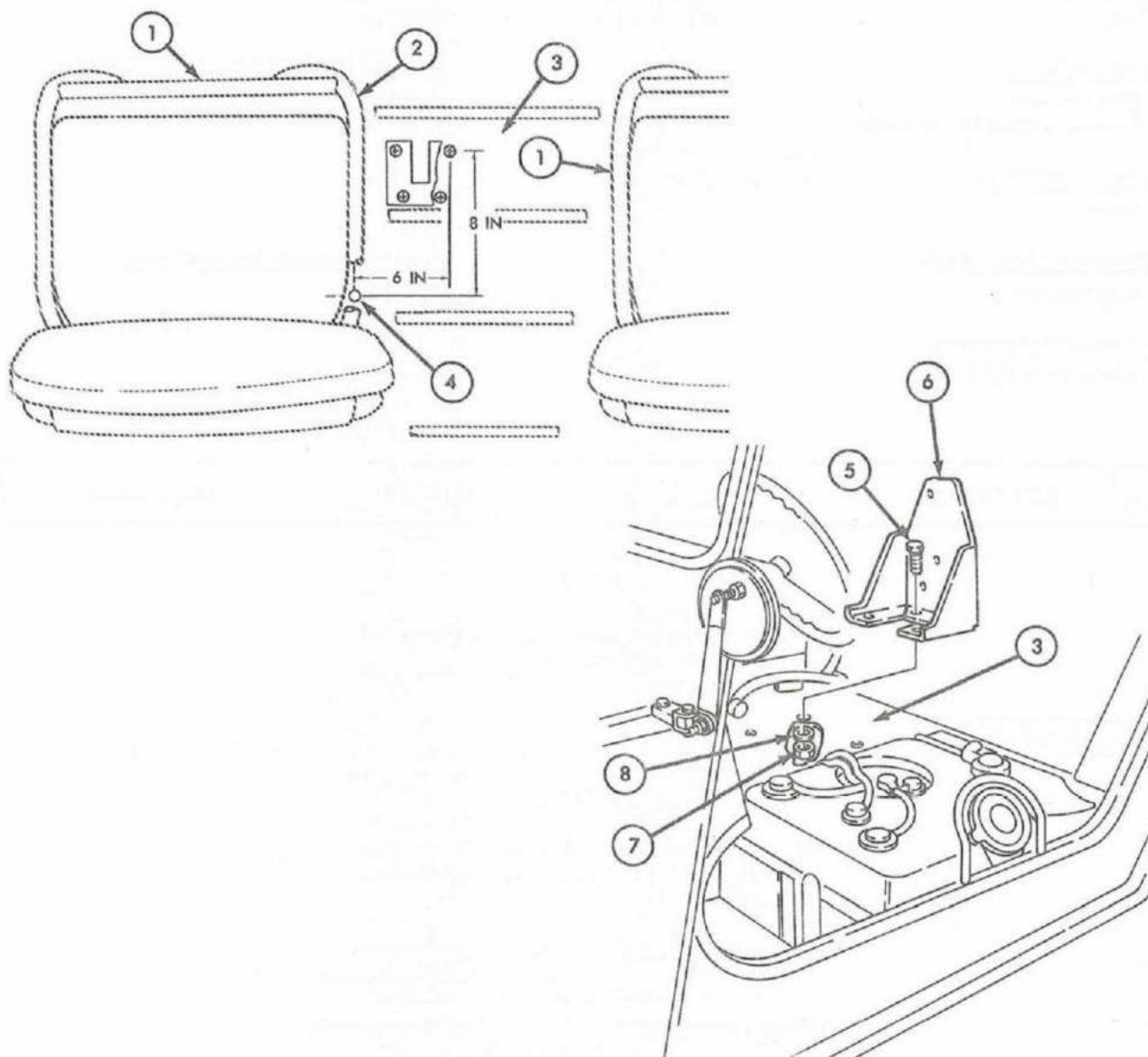
The decontaminating apparatus, holding bracket, and attaching parts will be requisitioned by the chemical unit, limiting installation and removal procedures to authorized personnel.

## 11-89. Decontamination Kit Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

## c. REMOVAL

- |    |  |  |                              |
|----|--|--|------------------------------|
| 5. | Decontamination kit support bracket (6) to floor panel (3) | Four locknuts (7), washers (8), and cap-screws (5) | Remove.                      |
| 6. | Decontamination kit support bracket (6)                    | Decontamination kit support bracket (6)            | Remove from floor panel (3). |



END OF TASK!

TA 155857



**11-90. Rear Suspension Overload Spring Kit Maintenance**

This task covers:

*a. Installation**b. Removal***INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M825	Para 7-12	Rear spring removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Hydraulic jack Torque wrench (0-175 lb-ft)		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

The left and right rear springs are installed and removed the same way.

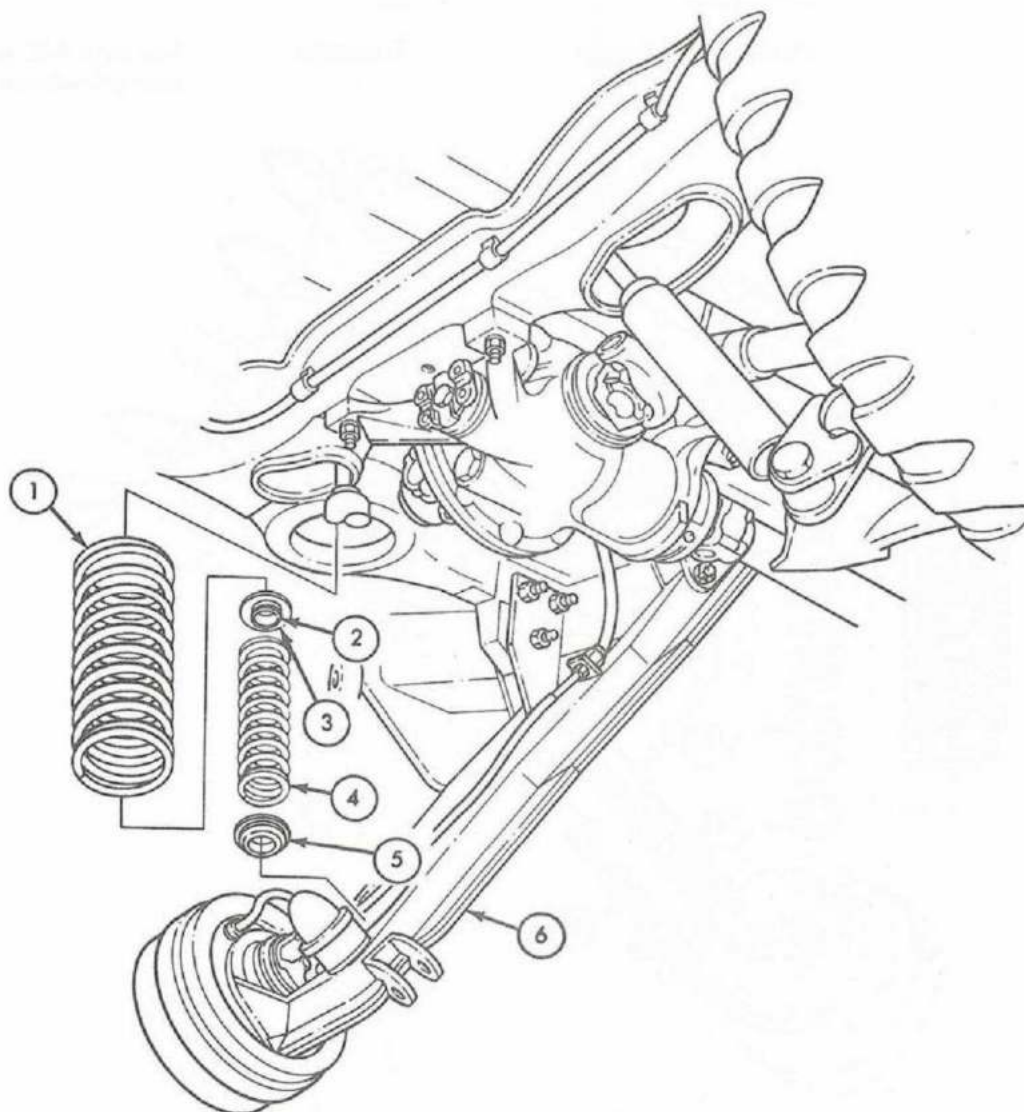
***a. INSTALLATION*****NOTE**

It may be necessary to remove brake line retaining clip to relieve straining flexible brake line.

- |    |                       |   |
|----|-----------------------|---|
| 1. | Lower spring seat (5) | Place in position on rear suspension arm (6). |
| 2. | Overload spring (4)   | Position on lower spring seat (5).            |

## 11-90. Rear Suspension Overload Spring Kit Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Upper spring seat (3)	Place on upper end of of overload spring (4).	Make sure seat flange (2) is facing down.
4.		Existing rear spring (1)	Slip over overload spring (4) down to suspension arm (6).	
5.		Rear spring (1)	Install.	See para 7-12 for installation procedures.

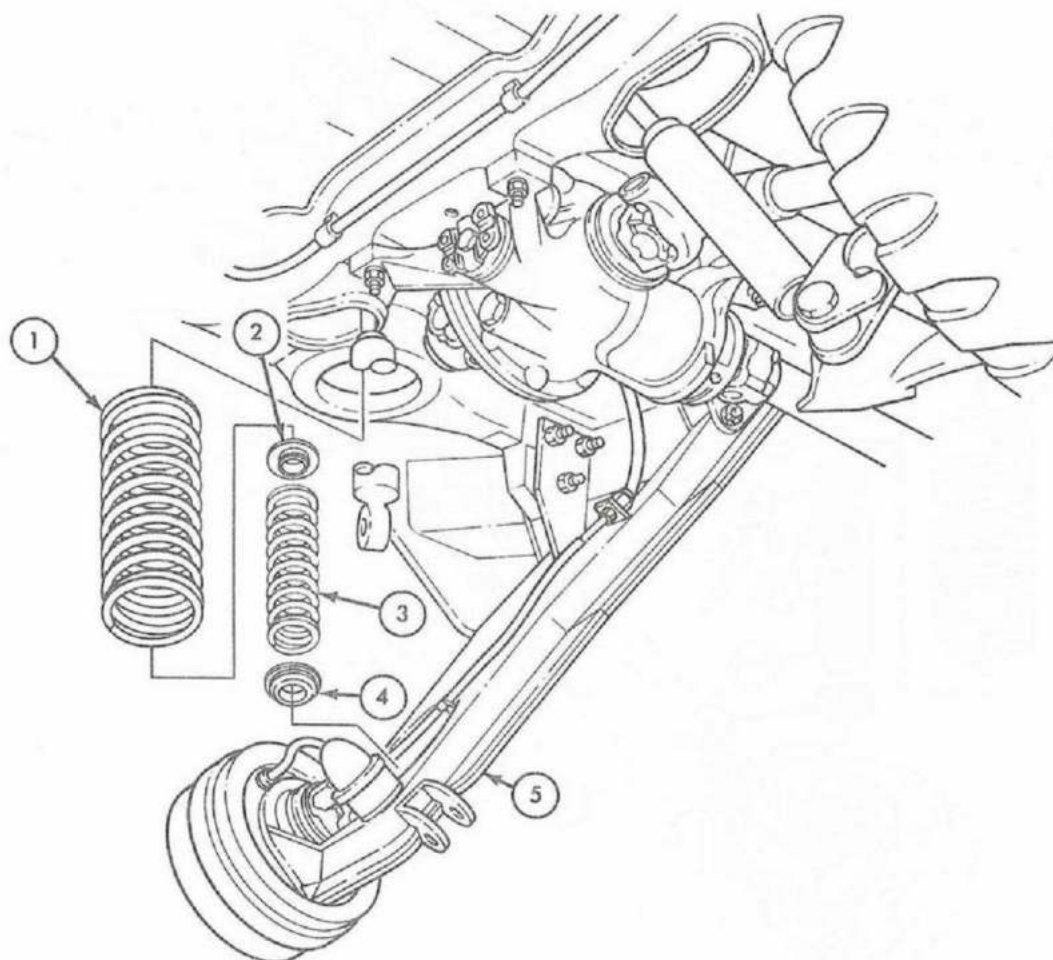


## 11-90. Rear Suspension Overload Spring Kit Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. REMOVAL**

6.		Outer rear spring (1)	Remove from vehicle.	See para 7-12 for removal procedures.
7.		Outer rear spring (1)	Slip off of overload spring (3).	
8.		Upper (2) and lower (4) spring seats	Remove from overload spring (3).	
9.		Outer rear spring (1)	Install on vehicle.	See para 7-12 for installation procedures.



END OF TASK!

TA 155859

## Section IX. ROLLOVER PROTECTION SYSTEM (ROPS), DRIVER AND PASSENGER SEAT BELTS, AND SIDE RESTRAINT MAINTENANCE

### 11-91. General

This section provides maintenance procedures assigned to the organizational level for the rollover protection system (ROPS) installed on M151A2 vehicles. To find a specific maintenance procedure, see the maintenance task summary below.

### 11-92. Service Upon Receipt of Material

This paragraph does not apply to rollover protection system for M151A2 vehicles.

### 11-93. Preventive Maintenance

See table 3-1.

### 11-94. Troubleshooting

See table 3-3.

### 11-95. Rollover Protection System (ROPS), Driver and Passenger Seat Belts, and Side Restraint Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO
11-96.	Rollbar Assembly a. Removal b. Installation	11-225
11-97.	Rollbar Impact Padding a. Removal b. Installation	11-230
11-98.	Rollbar Bracket a. Rear Rollbar Bracket Removal b. Rear Rollbar Bracket Installation c. Intermediate Rollbar Bracket Removal d. Intermediate Rollbar Bracket Installation e. Front Rollbar Bracket Removal f. Front Rollbar Bracket Installation	11-234
11-99.	Front Restraint a. Removal b. Installation	11-238
11-100.	Rear Restraint a. Removal b. Installation	11-242



**11-95. Rollover Protection System (ROPS), Driver and Passenger Seat Belts, and Side Restraint Maintenance Task Summary (Cont'd)**

<b>TASK PARA</b>	<b>PROCEDURES</b>	<b>PAGE NO</b>
11-101.	Front Seat Belt Assembly a. Removal b. Installation	11-244
11-102.	Rear Seat Belt Assembly a. Removal b. Installation	11-248
11-103.	Seat Belt Warning Label a. Removal b. Cleaning c. Installation	11-252

**11-96. Rollbar Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2 (w/ROPS)

**Test Equipment**

None

**Special Tools**

None

**Materials/Parts**PPP-T-60 tape  
(Appendix D, 7510-00-074-5124)**Personnel Required**One mechanic  
One assistant**Manual References**TM 9-2320-218-10  
TM 9-2320-218-20-1-2**Equipment  
Condition  
Reference**TM 9-2320-218-10  
Para. 10-10  
Para. 10-12  
Para. 11-99  
Para. 11-100  
Para. 11-102**Condition Description**Parking brake set.  
Front seat assembly removed.  
Rear seat removed.  
Front restraints removed.  
Rear restraints removed.  
Rear seat belt assembly removed.**Special Environmental Conditions**

None

**General Safety Instructions**

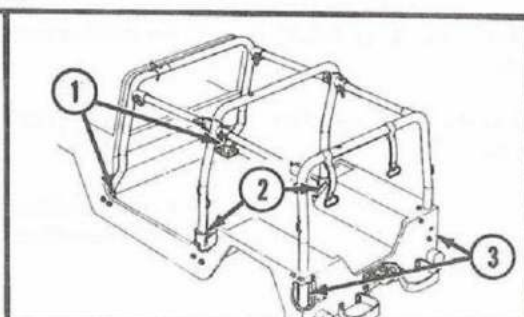
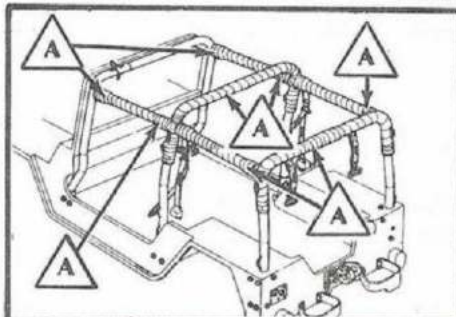
None

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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***a. REMOVAL*****NOTE**

- Impact padding must be cut and separated at all rollbar and crossbar connecting points (A) before removal procedure.
- After rollbar assembly has been removed, all remaining mounting bracket hardware must be tightened before operation of vehicle.

1. Rear (3), intermediate (2), and front (1) rollbar brackets

All mounting hardware  
nutsLoosen, but do not  
remove.

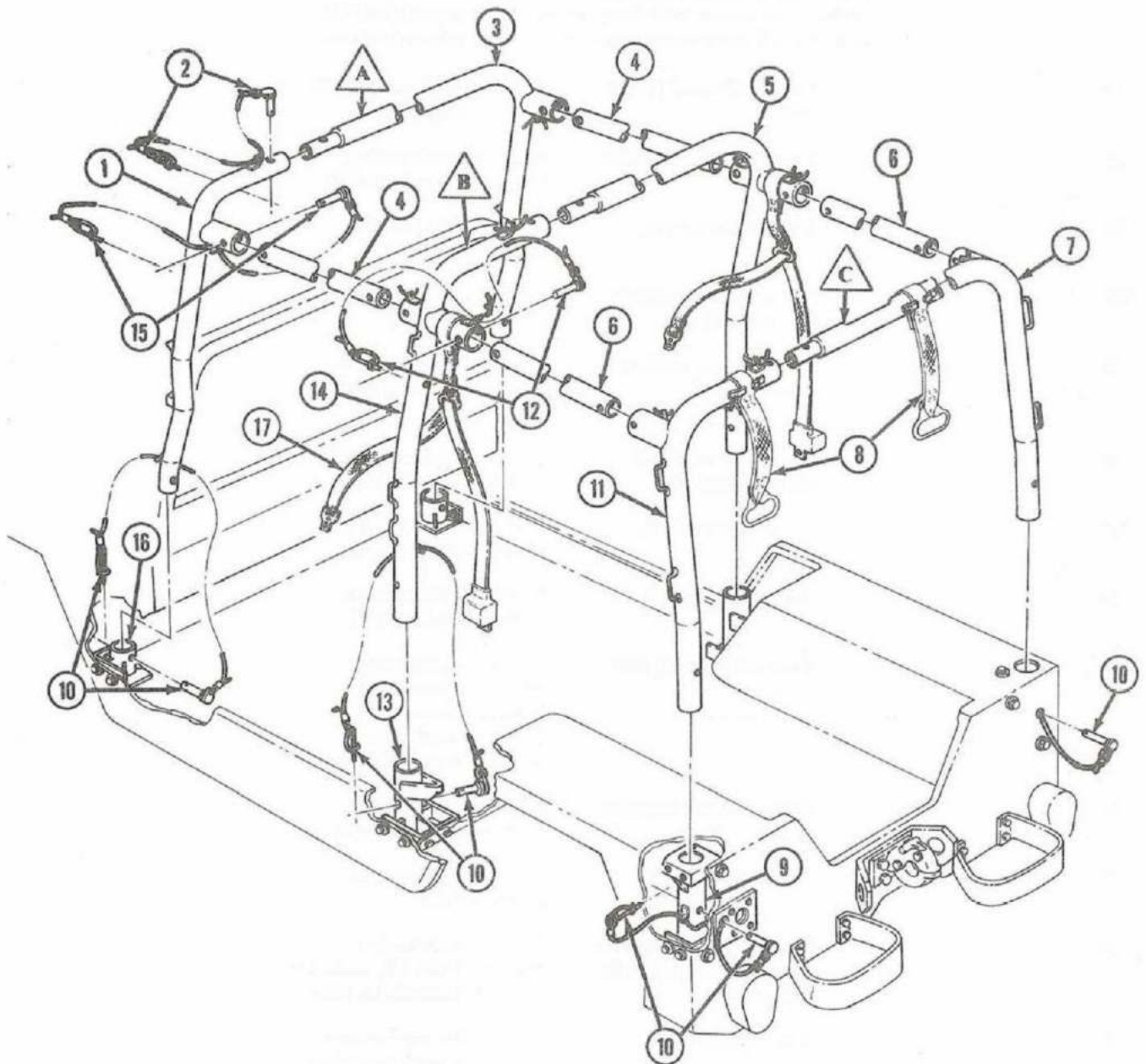
TA 484710

## 11-96. Rollbar Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
2.	Four crossbars (4) and (6) to rollbars (A), (B), and (C)	Four pin assemblies (12) and pin assemblies (15)	Remove, and slide crossbars (4) and (6) forward in rollbars (A) and (B).	
3.	Front (A), intermediate (B), and rear (C) rollbar assemblies to mounting brackets (9), (13), and (16)	Six pin assemblies (10)	Remove.	
4.	Two mounting brackets (9)	Rear rollbar assembly (C)	Remove.	
5.	Rear rollbar assembly (C)	Pin assembly (2)	Remove.	
6.		Left rear rollbar (11) and right rear rollbar (7)	Disconnect.	
7.		Two rear shoulder strap assemblies (8)	Remove.	
8.	Intermediate rollbar assembly (B)	Two crossbars (6)	Remove.	
9.		Two front seat belt assemblies (17)	Remove.	
10.	Two mounting brackets (13)	Intermediate rollbar assembly (B)	Remove.	
11.	Intermediate rollbar assembly (B)	Pin assembly (2)	Remove.	
12.		Left intermediate rollbar (14) and right intermediate rollbar (5)	Disconnect.	
13.	Front rollbar assembly (A)	Two crossbars (4)	Remove.	
14.	Two mounting brackets (16)	Front rollbar assembly (A)	Remove.	
15.	Front rollbar assembly (A)	Pin assembly (2)	Remove.	
16.		Left front rollbar (1) and right front rollbar (3)	Disconnect.	

11-96. Rollbar Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 484711



## 11-96. Rollbar Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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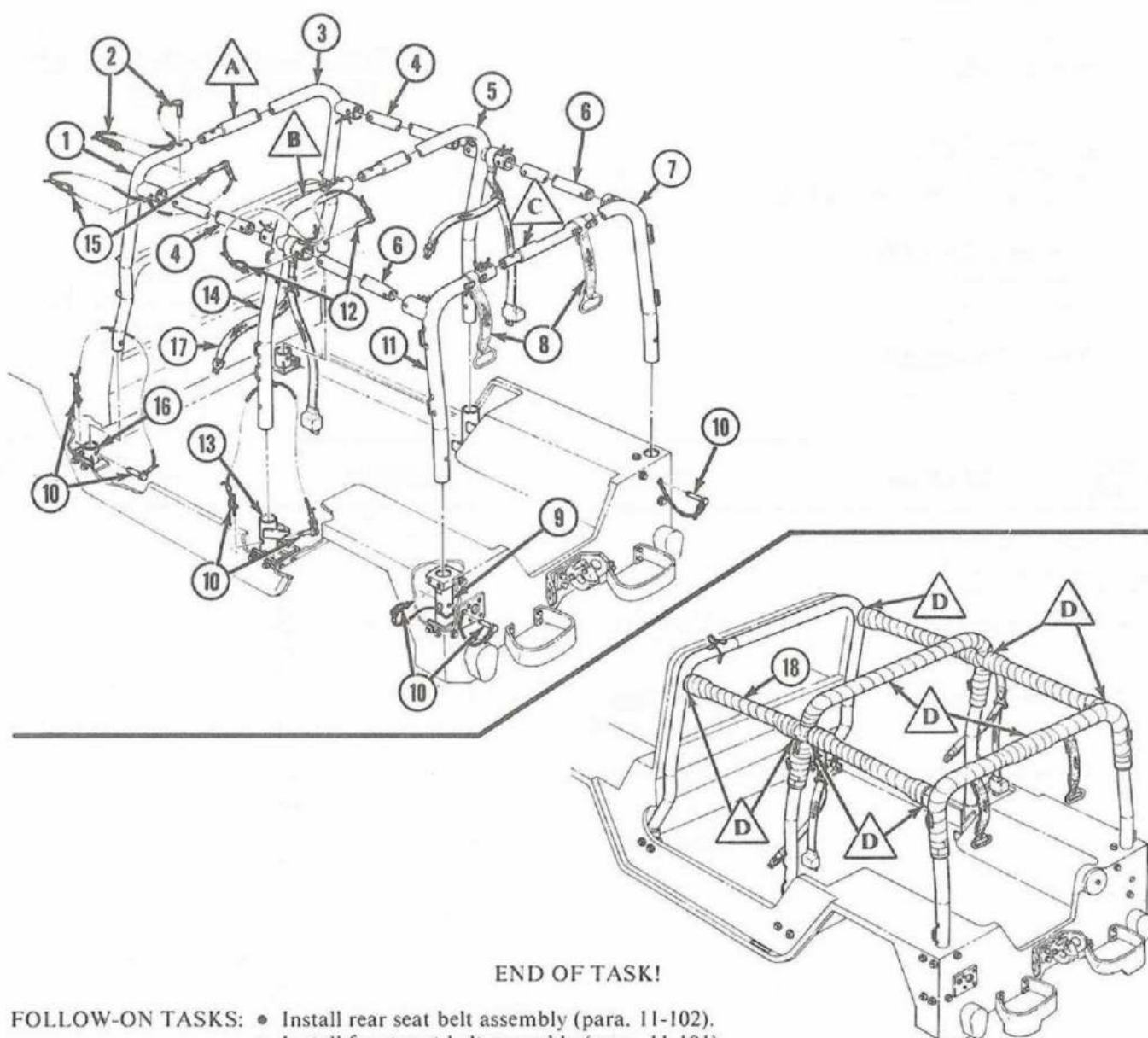
*b. INSTALLATION***NOTE**

Ensure installation of pin assemblies (2) is from top of rollbar downward, and installation of pin assemblies (12) and (15) is from inside toward outside of vehicle as shown.

17.		Front rollbars (1) and (3)	Connect, and secure with pin assembly (2).
18.		Front rollbar assembly (A)	Insert in front rollbar mounting brackets (16).
19.		Two crossbars (4)	Insert in front rollbar assembly (A).
20.		Intermediate rollbars (5) and (14)	Connect, and secure with pin assembly (2).
21.		Intermediate rollbar assembly (B)	Insert in intermediate rollbar mounting brackets (13).
22.		Two front seat belt assemblies (17)	Install on intermediate rollbar assembly (B).
23.		Two crossbars (4)	Insert in intermediate rollbar assembly (B).
24.		Two crossbars (6)	Insert in intermediate rollbar assembly (B).
25.		Rear rollbars (7) and (11)	Install two shoulder strap assemblies (8), connect rollbars (7) and (11), and secure with pin assembly (2).
26.		Rear rollbar assembly (C)	Insert in rear rollbar mounting brackets (9).
27.		Two crossbars (6)	Insert in rear rollbar assembly (C).
28.		Front (A), intermediate (B), and rear (C) rollbar assemblies	Secure to mounting brackets (16), (9), and (13) with pin assemblies (10).
29.		Crossbars (4)	Aline holes and secure with four pin assemblies (15).
30.		Crossbars (6)	Aline holes and secure with four pin assemblies (12).

## 11-96. Rollbar Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
31.		Front (16), rear (9), and intermediate (13) rollbar brackets	Tighten all mounting hardware nuts.	Tighten 30-40 lb-ft (41-54 N·m).
32.		Impact padding (18)	Wrap all cut and separated points (D) with PPP-T-60 tape.	



- FOLLOW-ON TASKS:
- Install rear seat belt assembly (para. 11-102).
  - Install front seat belt assembly (para. 11-101).
  - Install rear restraints (para. 11-100).
  - Install front restraints (para. 11-99).
  - Install rear seat (para. 10-12).

TA 484712

**11-97. Rollbar Impact Padding Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2 (w/ROPS)

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.  
Front side restraints removed  
(para. 11-99).

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

Well-ventilated work area.

**Materials/Parts**

PPP-T-60 tape  
(Appendix D, 7510-00-074-5124)

**Personnel Required**

One mechanic  
One assistant

**General Safety Instructions**

Keep fire extinguisher nearby when  
using drycleaning solvent.

**Manual References**

TM 9-2320-218-10

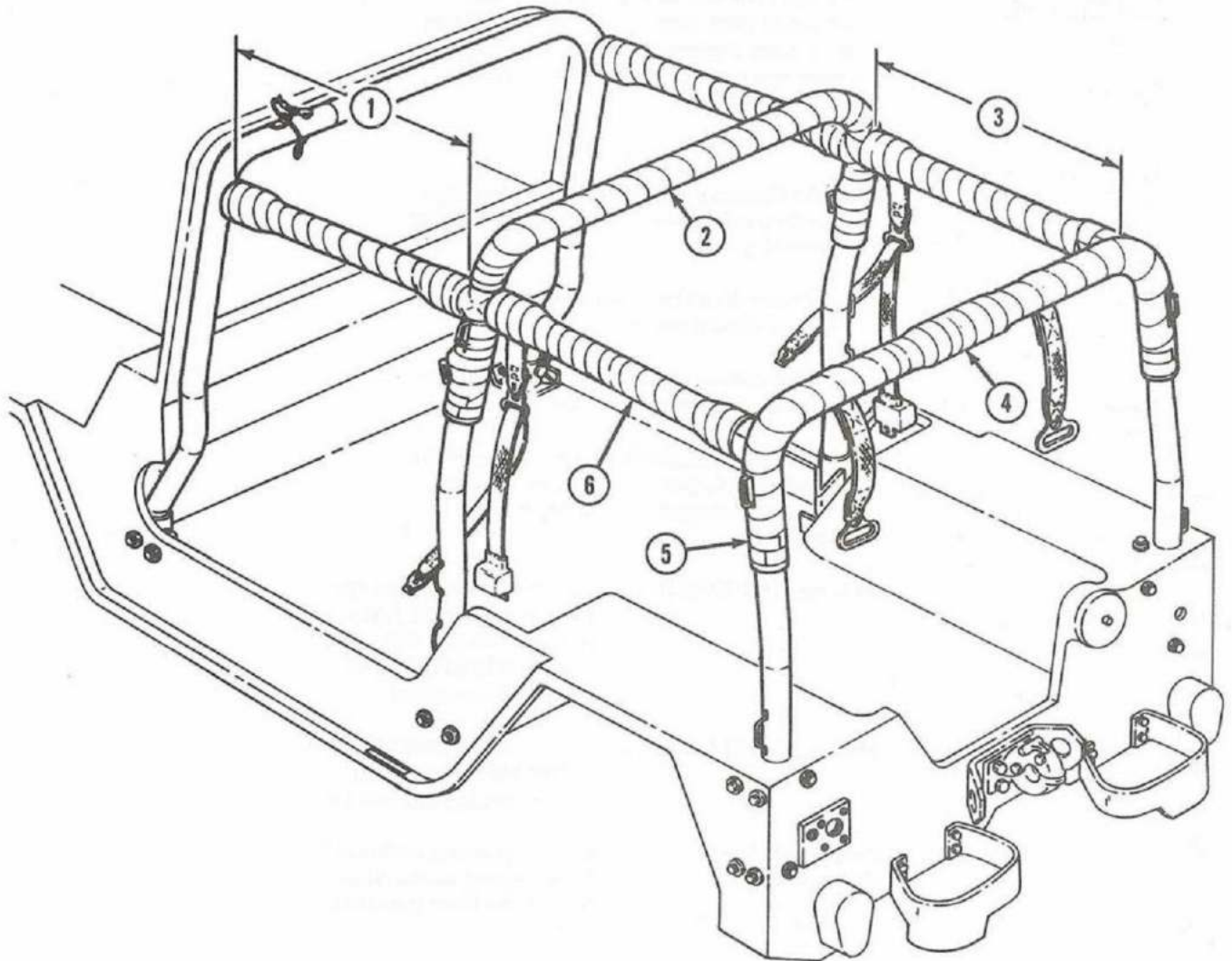
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. REMOVAL**

- |                                |                             |         |
|--------------------------------|-----------------------------|---------|
| 1. Two crossbars (1)           | Tape (5) and padding<br>(6) | Remove. |
| 2. Two crossbars (3)           | Tape (5) and padding<br>(6) | Remove. |
| 3. Intermediate rollbar<br>(2) | Tape (5) and padding<br>(6) | Remove. |
| 4. Rear rollbar (4)            | Tape (5) and padding<br>(6) | Remove. |

11-97. Rollbar Impact Padding Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 484713



## 11-97. Rollbar Impact Padding Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*b. INSTALLATION***WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when solvent is used. Use only in well-ventilated work area. Failure to do this may result in injury to personnel and/or damage to equipment.

**NOTE**

- Use drycleaning solvent to clean rollbar and crossbar assemblies before installing padding.
- Observe and follow all dimensions given for wrapping padding.
- Trim ends of padding at 45° for square fit before wrapping rollbars.
- Padding has an adhesive on one side for installation, but tape must be used to secure starting and finishing ends of padding.

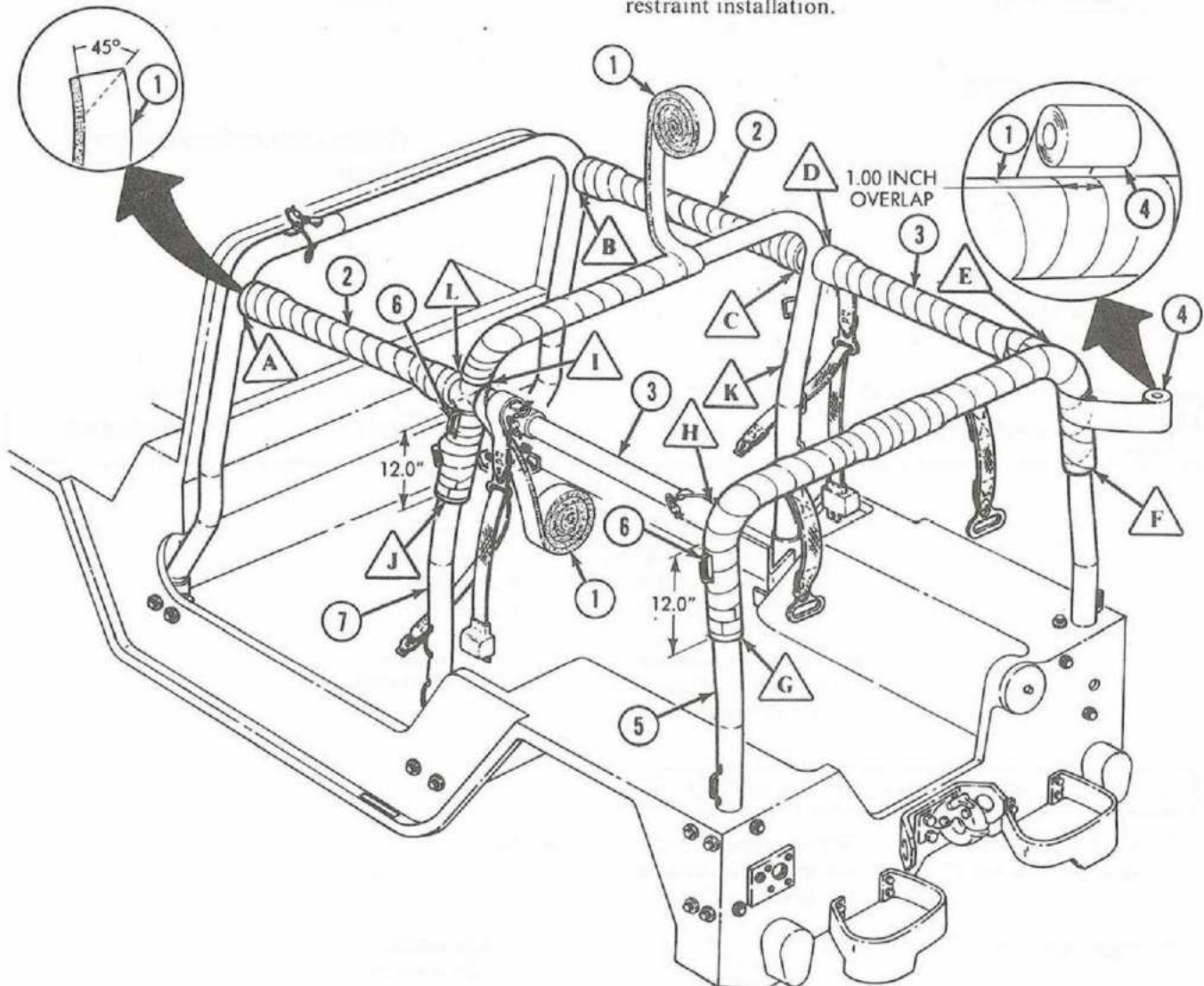
- |    |                                  |   |
|----|----------------------------------|---|
| 5. | Padding (1) (212 inch roll)      | Install on rear rollbar (5) by wrapping from point (G) to point (F). Use additional padding until point (G) is reached. |
| 6. | Padding (1) (212 inch roll)      | Install on intermediate rollbar (7) by wrapping from point (J) to point (K).  |
| 7. | Padding (1) (two 106 inch rolls) | Install on two crossbars (3) by wrapping from point (I) to (H) and from point (D) to (E).                               |
| 8. | Padding (1) (two 106 inch rolls) | Install on two crossbars (2) by wrapping from point (A) to (L) and from point (B) to (C).                               |

**NOTE**

Use additional padding around underside of intermediate rollbar and crossbars junction if required.

## 11-97. Rollbar Impact Padding Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.		All padding (1)	Cover with PPP-T-60 tape, spiral wrapped at right angles to padding (1). Allow 1.00 inch overlap, starting at points (F), (K), (E), (C), (H), and (L).	
10.		Padding (1)	Cut and remove from outside rollbar areas to allow access to all footman loops (6) for front and rear restraint installation.	



END OF TASK!

TA 484714

**11-98. Rollbar Bracket Maintenance**

This task covers:

- |  |   |
|--|---|
| a. <i>Rear Rollbar Bracket Removal</i>         | d. <i>Intermediate Rollbar Bracket Installation</i> |
| b. <i>Rear Rollbar Bracket Installation</i>    | e. <i>Front Rollbar Bracket Removal</i>             |
| c. <i>Intermediate Rollbar Bracket Removal</i> | f. <i>Front Rollbar Bracket Installation</i>        |

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2 (w/ROPS)	TM 9-2320-218-10 Para. 11-96	Parking brake set. Rollbar assembly removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		
None		
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic One assistant		None
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20-1-2		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

- Left side and right side rear rollbar brackets are removed and installed the same. This procedure covers left side rollbar bracket.
- For travel without rollbar assembly, rollbar bracket hardware must be tightened 30-40 lb-ft (41-54 N·m).

**a. REAR ROLLBAR BRACKET REMOVAL**

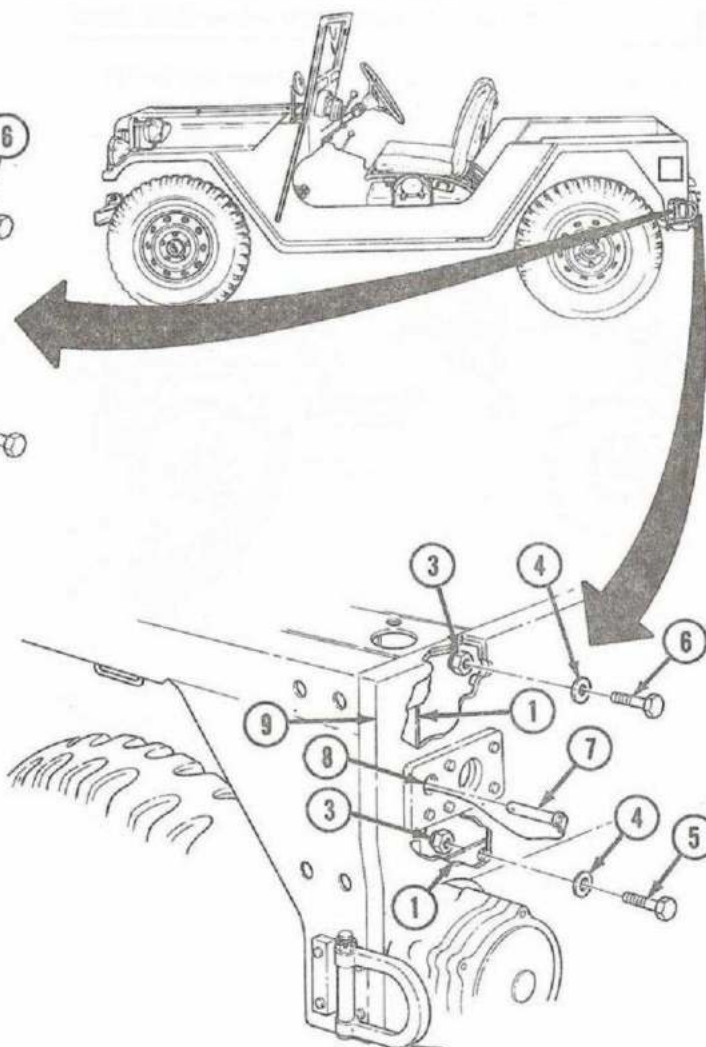
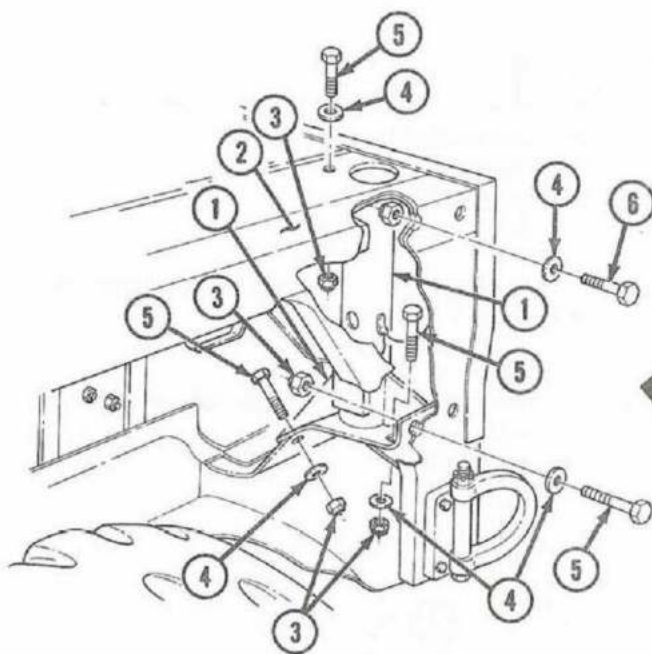
- |   |  |  |
|---|--|--|
| 1. Rollbar bracket (1)<br>to wheelhousing (2) | Three screws (6), six<br>screws (5), nine washers<br>(4), and nuts (3) | Remove.  |
| 2. Body panel (9)                             | Pin (7)  | Push inside wheel-<br>housing (2) through<br>hole (8). |
| 3. Wheelhousing (2)                           | Rollbar bracket (1)  | Remove.  |

## 11-98. Rollbar Bracket Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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*b. REAR ROLLBAR BRACKET INSTALLATION*

- |    |                     |  |                          |
|----|---------------------|--|--------------------------|
| 4. | Rollbar bracket (1) | Position to wheel-housing (2) and align holes.   |                          |
| 5. | Pin (7)             | Position through outside hole (8) in body panel (9).   |                          |
| 6. | Rollbar bracket (1) | Secure to wheel-housing (2) with three screws (6), six screws (5), nine washers (4), and nuts (3). | Finger tighten nuts (3). |



TA 484715



## 11-98. Rollbar Bracket Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

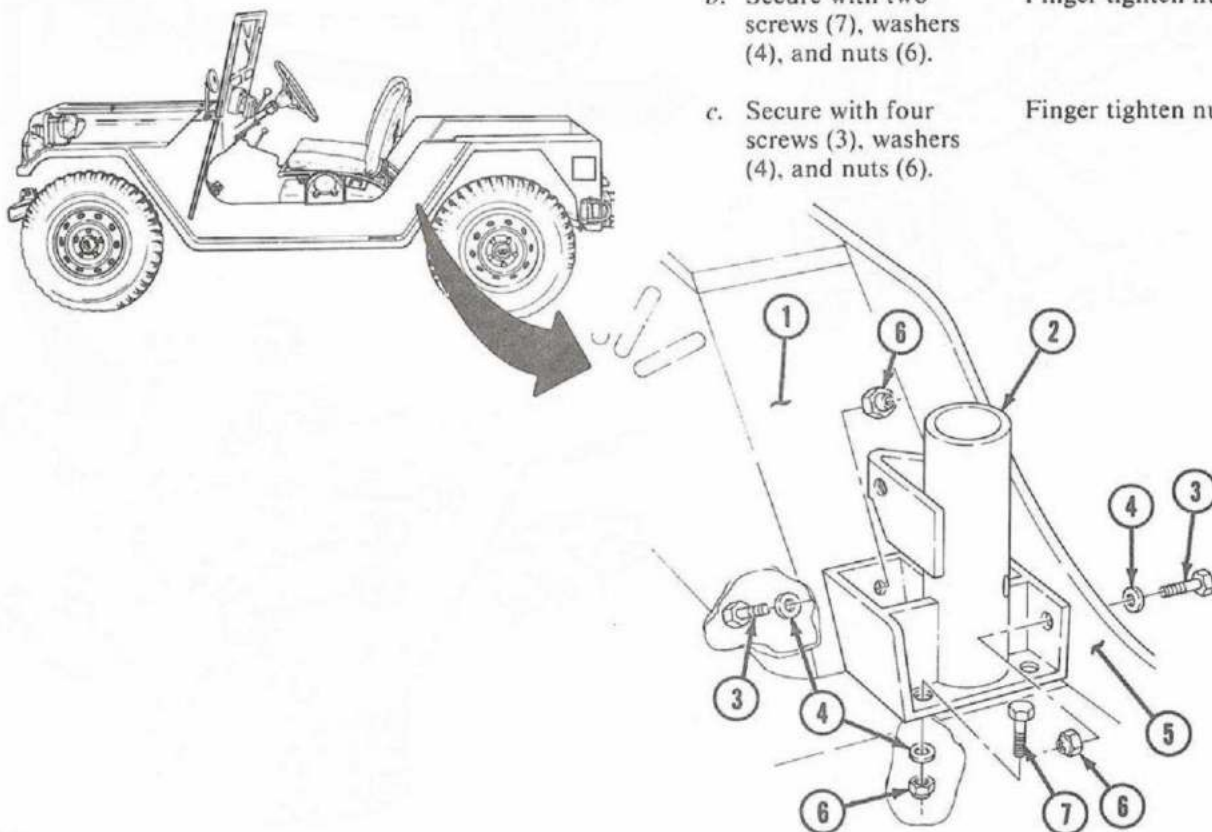
Left side and right side intermediate rollbar brackets are removed and installed the same. This procedure covers left side rollbar bracket.

*c. INTERMEDIATE ROLLBAR BRACKET REMOVAL*

- |    |   |  |         |
|----|---|--|---------|
| 7. | Rollbar bracket (2) to wheelhousing (1) and body side panel (5) | Six nuts (6), washers (4), four screws (3), and two screws (7) | Remove. |
| 8. | Rollbar bracket (2)   |  | Remove. |

*d. INTERMEDIATE ROLLBAR BRACKET INSTALLATION*

- |    |                     |  |
|----|---------------------|--|
| 9. | Rollbar bracket (2) | <p>a. Position to wheelhousing (1) and body side panel (5) and align holes.</p> <p>b. Secure with two screws (7), washers (4), and nuts (6). Finger tighten nuts (6).</p> <p>c. Secure with four screws (3), washers (4), and nuts (6). Finger tighten nuts (6).</p> |
|----|---------------------|--|



TA 484716

## 11-98. Rollbar Bracket Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

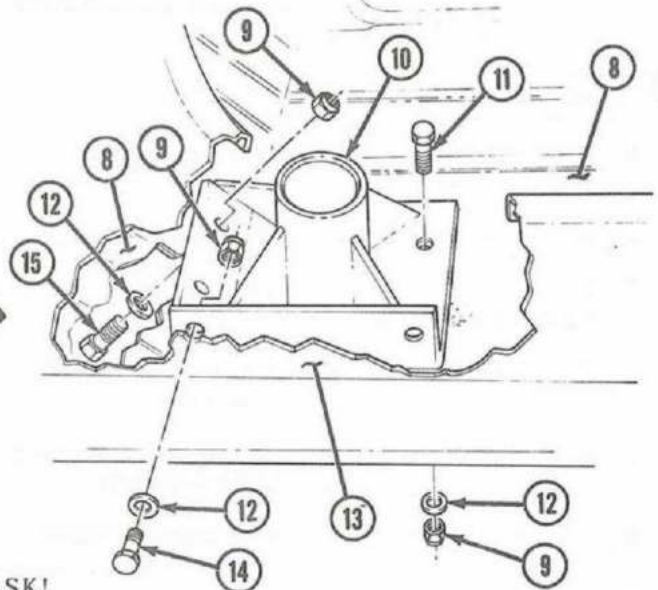
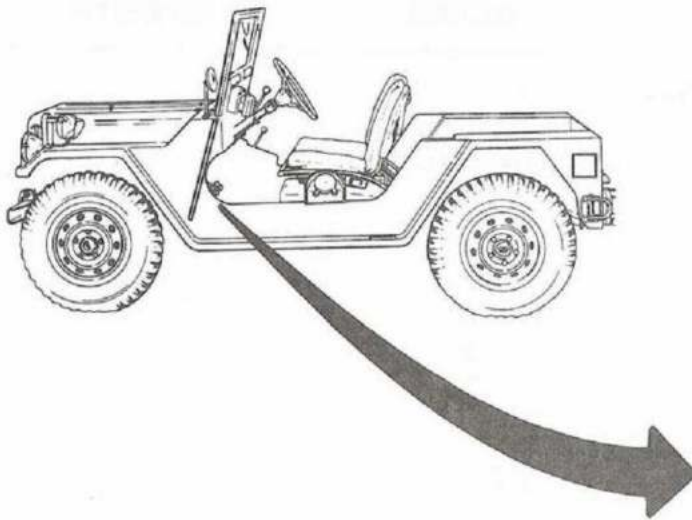
Left side and right side front rollbar brackets are removed and installed the same. This procedure covers left side rollbar bracket.

*e. FRONT ROLLBAR BRACKET REMOVAL*

- |  |   |         |
|--|---|---------|
| 10. Rollbar bracket (10) to front floor panel (8) and body side panel (13) | Six nuts (9), washers (12), two screws (11), screws (14), and screws (15) | Remove. |
| 11. Front floor panel (8) and side body panel (13)                         | Rollbar bracket (10)  | Remove. |

*f. FRONT ROLLBAR BRACKET INSTALLATION*

- |     |                      |  |                          |
|-----|----------------------|--|--------------------------|
| 12. | Rollbar bracket (10) | <p>a. Position to front floor panel (8) and body side panel (13) and align holes.</p> <p>b. Secure with two screws (11), screws (14), screws (15), six washers (12), and nuts (9).</p> | Finger tighten nuts (9). |
|-----|----------------------|--|--------------------------|



END OF TASK!

FOLLOW-ON TASK: Install rollbar assembly (para. 11-96).

TA 484717

**11-99. Front Restraint Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2 (w/ROPS)

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**One mechanic  
One assistant**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**NOTE**

Left side and right side restraints are installed and removed the same. This procedure covers the left side restraint.

***a. REMOVAL***

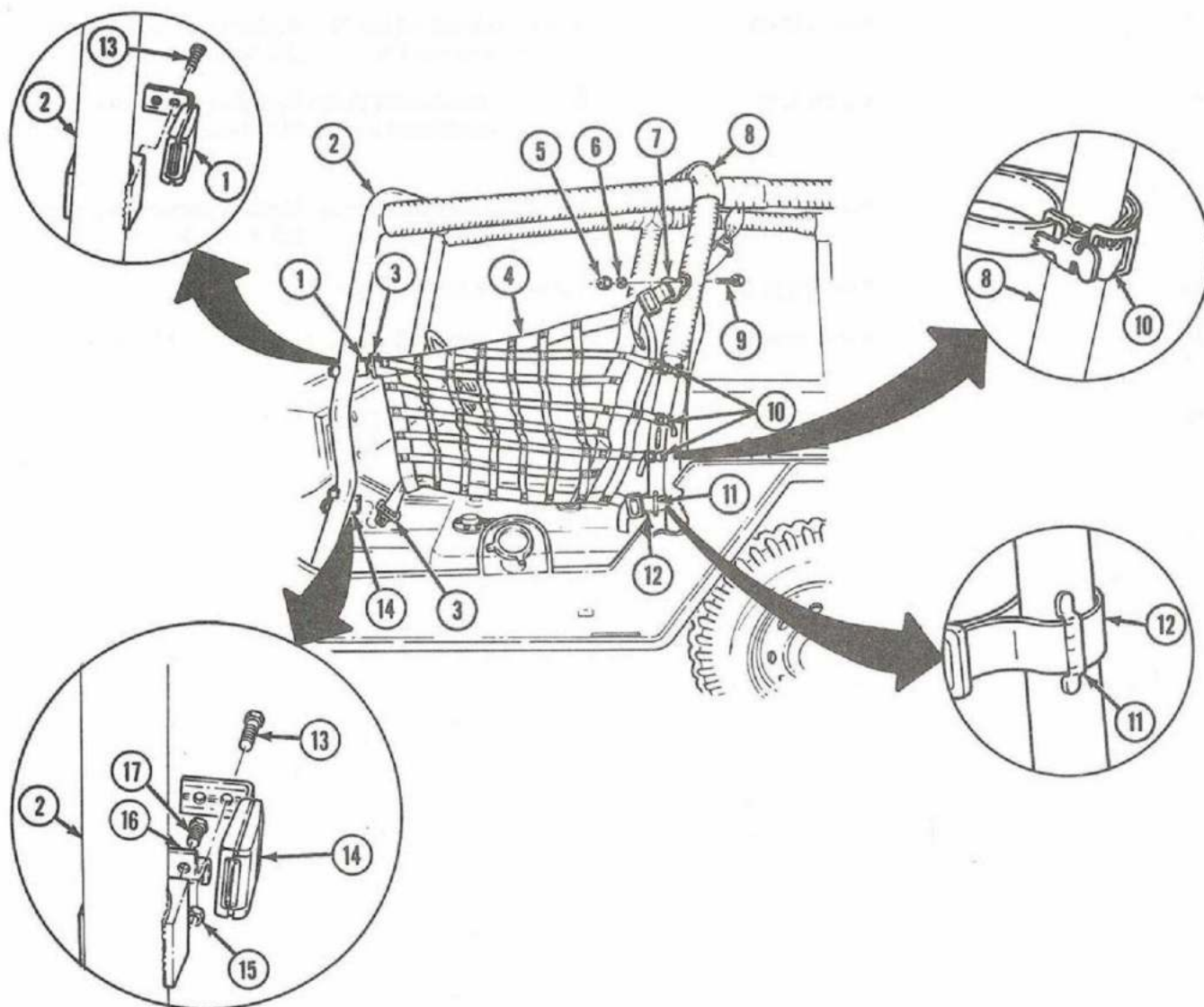
- |  |  |             |
|--|--|-------------|
| 1. Intermediate rollbar (8)<br>footman loop (11) | Bottom strap (12)                              | Remove.     |
| 2. Intermediate rollbar (8)                      | Three straps (10)                              | Remove.     |
| 3. Front rollbar (2)<br>buckles (1) and (14)     | Two straps (3)                                 | Disconnect. |
| 4. Front rollbar (2)                             | Two screws (13) and<br>buckle (1)              | Remove.     |
| 5. Bracket (16)                                  | Two nuts (15), screws (13),<br>and buckle (14) | Remove.     |
| 6. Front rollbar (2)                             | Two screws (17) and<br>bracket (16)            | Remove.     |

## 11-99. Front Restraint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Intermediate rollbar (8)	Flanged nut (5), washer (6), and top strap with buckle (7)	Remove.	
8.	Vehicle	Restraint (4)	Remove.	

## NOTE

Reinstall washer (6) and flanged nut (5) to screw (9).



TA 484718



## 11-99. Front Restraint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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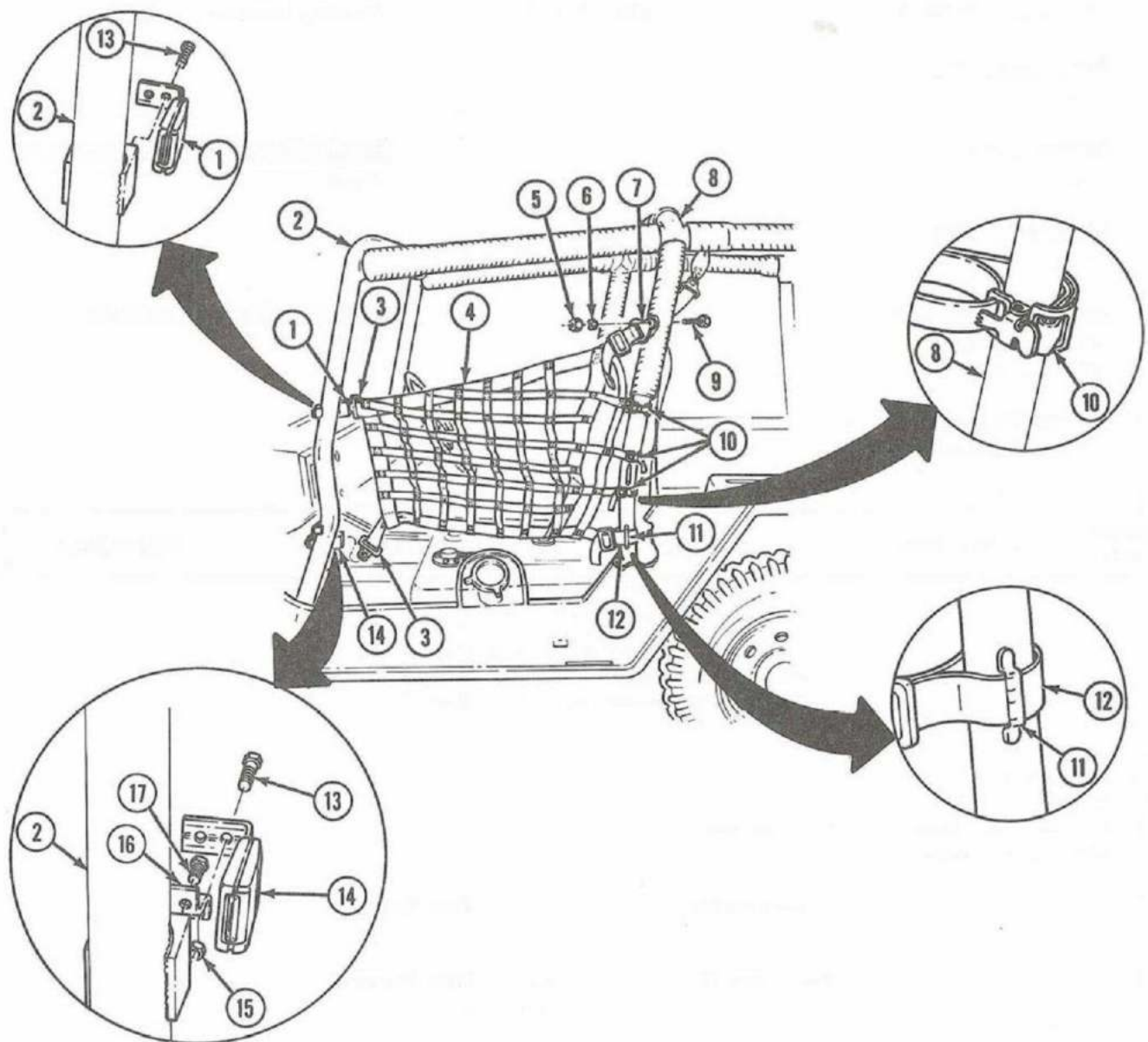
*b. INSTALLATION***NOTE**

Remove flanged nut (5) and washer (6) from screw (9).

9.	Restraint (4)	Install top strap with buckle (7) to intermediate rollbar (8) with screw (9), washer (6), and existing flanged nut (5).	Tighten nut (5) 90 lb-ft (122 N·m).
10.	Bracket (16)	Install on front rollbar (2) with two screws (17).	Tighten screws (17) 24 lb-ft (32 N·m).
11.	Buckle (14)	Install on bracket (16) with two screws (13) and nuts (15).	Tighten nuts (15) 24 lb-ft (32 N·m).
12.	Buckle (1)	Install on front rollbar (2) with two screws (13).	Tighten screws (13) 24 lb-ft (32 N·m).
13.	Two straps (3)	Connect to buckles (1).	
14.	Three straps (10)	Install on intermediate rollbar (8).	
15.	Bottom strap (12)	Install through footman loop (11) on intermediate rollbar (8).	

11-99. Front Restraint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

TA 484719

Change 2

11-241

**11-100. Rear Restraint Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2 (w/ROPS)

**Equipment  
Condition  
Reference**

TM 9-2320-218-10

**Condition Description**

Parking brake set.

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**One mechanic  
One assistant**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

Left side and right side restraints are installed and removed the same. This procedure covers the left side restraint.

***a. REMOVAL***

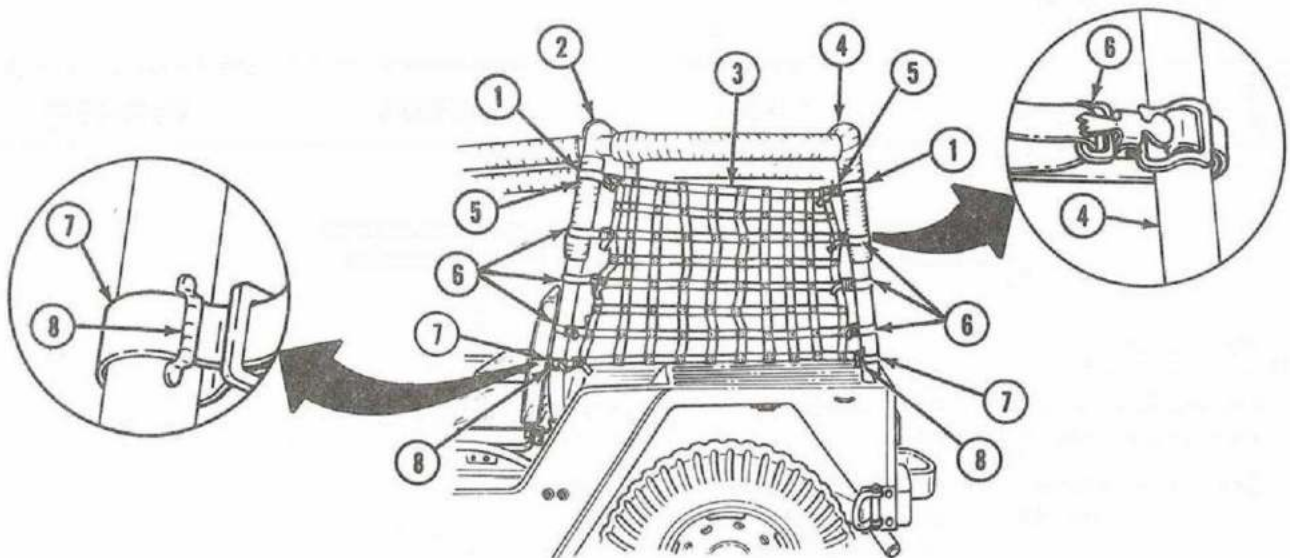
- |  |                |                                   |
|--|----------------|-----------------------------------|
| 1. Intermediate rollbar (2),<br>and rear (4) rollbar | Six straps (6) | Remove.                           |
| 2.   | Two straps (7) | Remove from footman<br>loops (8). |
| 3.   | Two straps (1) | Remove from footman<br>loops (5). |
| 4. Vehicle   | Restraint (3)  | Remove.                           |

## 11-100. Rear Restraint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

*b. INSTALLATION*

- |    |                |  |
|----|----------------|--|
| 5. | Two straps (1) | Install through footman loops (5) on intermediate (2) and rear (4) rollbars. |
| 6. | Two straps (7) | Install through footman loops (8) on intermediate (2) and rear (4) rollbars. |
| 7. | Six straps (6) | Install on intermediate (2) and rear (4) rollbars.                           |



END OF TASK!

TA 484720



**11-101. Front Seat Belt Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:****Applicable Models**

M151A2 (/ROPS)

**Equipment  
Condition  
Reference**TM 9-2320-218-10  
Para 10-10**Condition Description**Parking brake set.  
Front seat frames removed.**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

None

**Personnel Required**One mechanic  
One assistant**General Safety Instructions**

None

**Manual References**

TM 9-2320-218-10

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

**NOTE**

Left and right side front seat belts are installed and removed the same. This procedure covers the left side belt assembly.

***a. REMOVAL***

- |  |  |   |
|--|--|---|
| 1. Intermediate rollbar mounting bracket (1) | Front seat belt assembly (2)   | Remove (refer to para 11-96).   |
| 2. Intermediate rollbar mounting bracket (5) | Screw (12), washer (11), seat belt retractor (10), and retractor bracket (9) | Remove.   |
| 3. Retractor bracket (9)                     | Nut (4), screw (13), washer (14), and shoulder strap retractor (3)           | Remove.   |
| 4.   | Locking ring (8)   | Remove, and disconnect shoulder strap buckle (6) from seat belt buckle (7). |
| 5. Floor anchor bracket (17)                 | Nut (19), screw (24), washer (15), and seat belt buckle (18)                 | Remove.   |

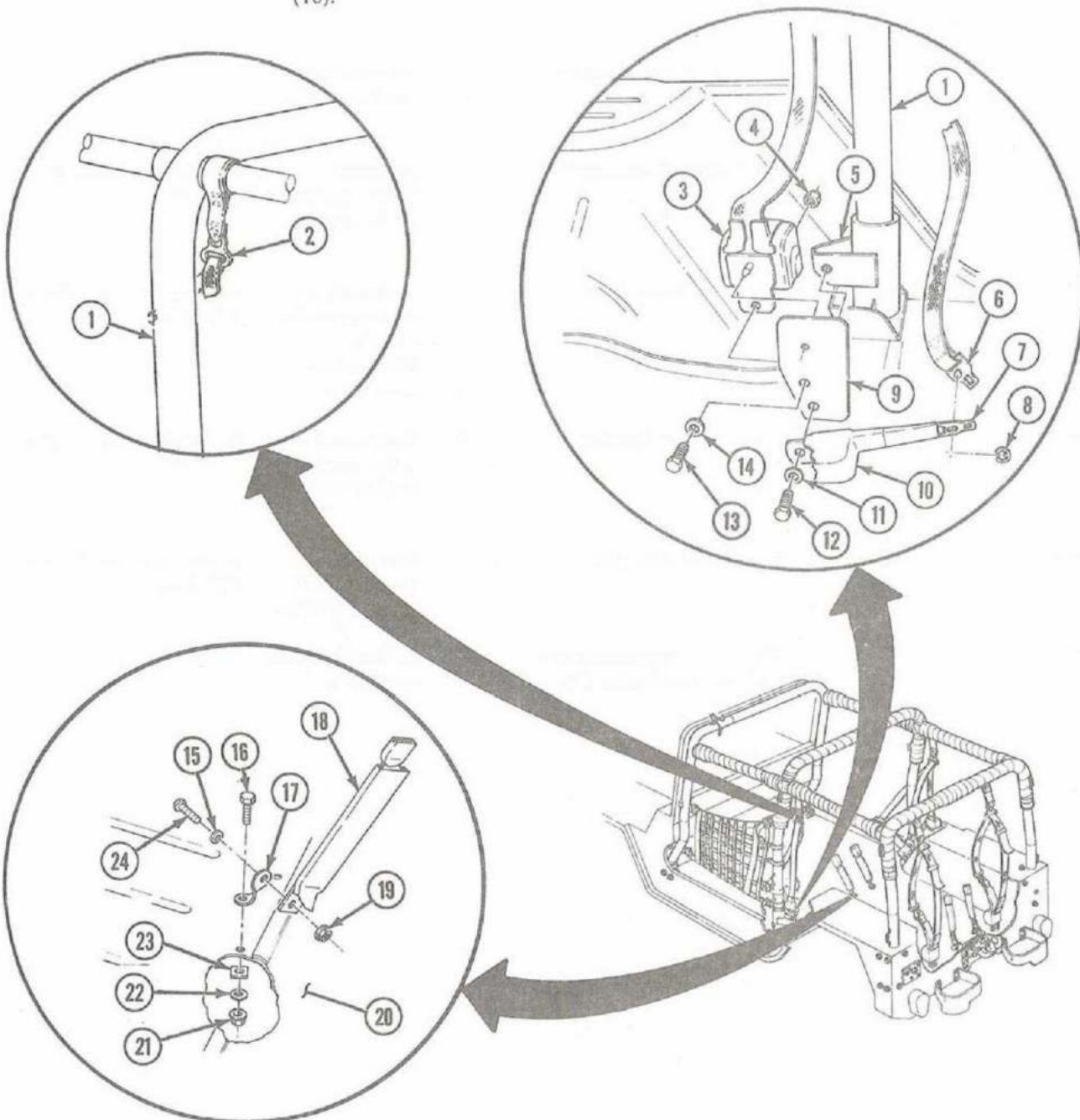
## 11-101. Front Seat Belt Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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6. Floor panel (20)

Nut (21), washer (22), anchor (23), floor anchor bracket (17), and screw (16).

Remove.



TA 484721

Change 2

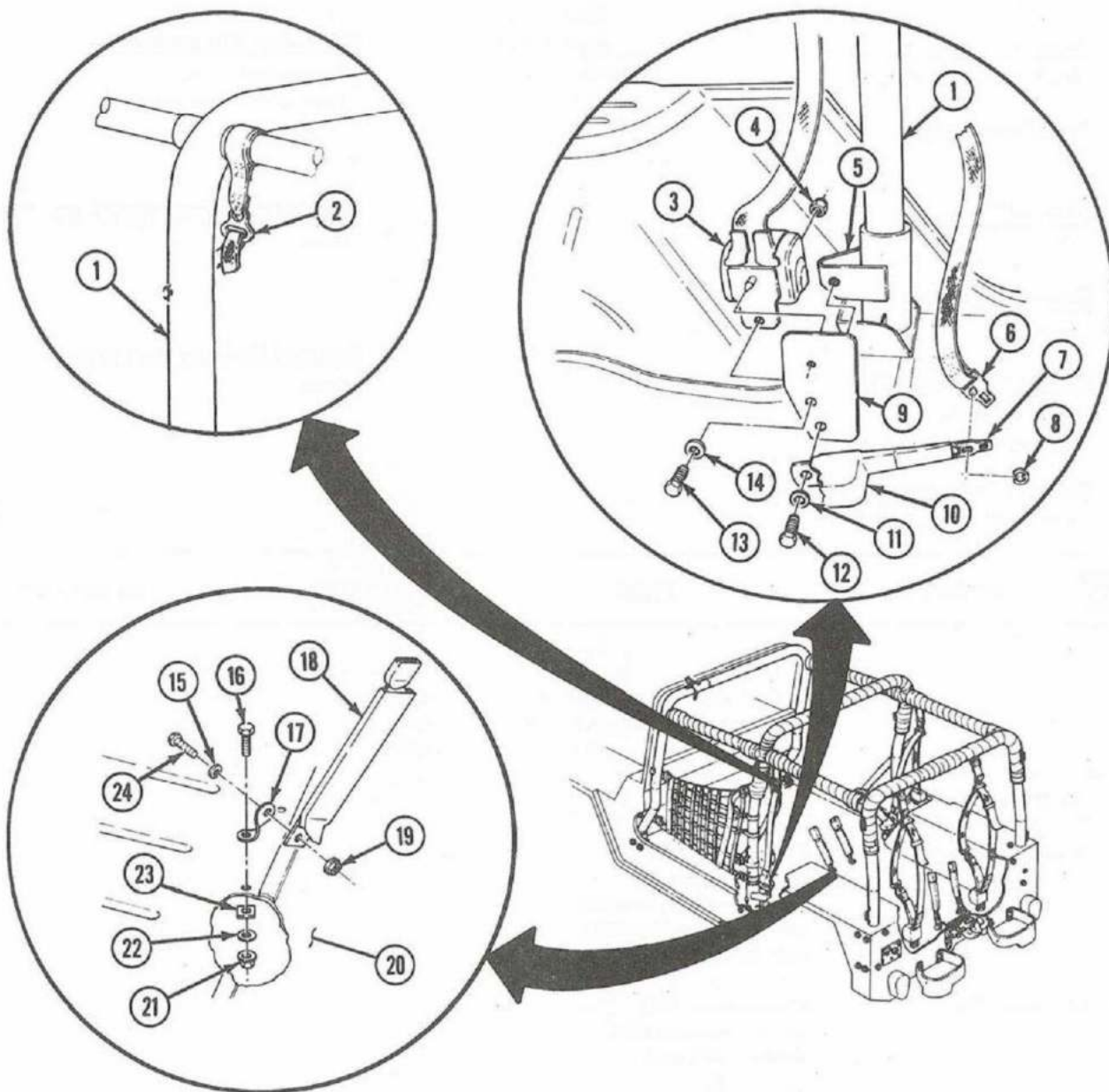
11-245

## 11-101. Front Seat Belt Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. INSTALLATION</b>				
7.		Front seat belt assembly (2)	Install on intermediate rollbar (1) (refer to para 11-96).	
8.		Shoulder belt retractor (3)	Install on retractor bracket (9) with washer (14), screw (13), and nut (4).	Tighten nut (4) 60 lb-ft (81 N·m).
9.		Retractor bracket (9)	Install on intermediate rollbar mounting bracket (5) with seat belt retractor (10), washer (11), and screw (12).	Tighten screw (12) 90 lb-ft (122 N·m).
10.		Floor anchor bracket (17)	Install on floor panel (20) with screw (16), anchor (23), washer (22), and nut (21).	Tighten nut (21) 60 lb-ft (81 N·m).
11.		Seat belt buckle (18)	Install on floor anchor bracket with screw (24), washer (15), and nut (19).	Tighten nut (19) 90 lb-ft (122 N·m).
12.		Shoulder strap buckle (6) and seat belt buckle (7)	Connect, and lock in place with locking ring (8).	

## 11-101. Front Seat Belt Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK: Install front seat frames (para 10-10).

TA 484722

Change 2

11-247



**11-102. Rear Seat Belt Assembly Maintenance**

This task covers:

*a. Removal**b. Installation***INITIAL SETUP:**Applicable Models

M151A2 (w/ROPS)

Equipment  
Condition  
ReferenceTM 9-2320-218-10  
Para. 10-12Condition DescriptionParking brake set.  
Rear seat frame removed.Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

None

General Safety Instructions

None

Personnel RequiredOne mechanic  
One assistantManual References

TM 9-2320-218-10

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**NOTE**

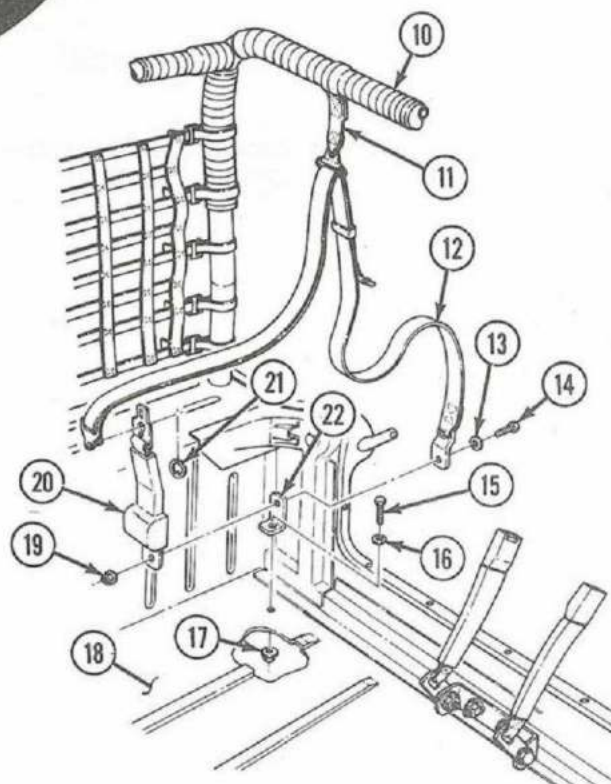
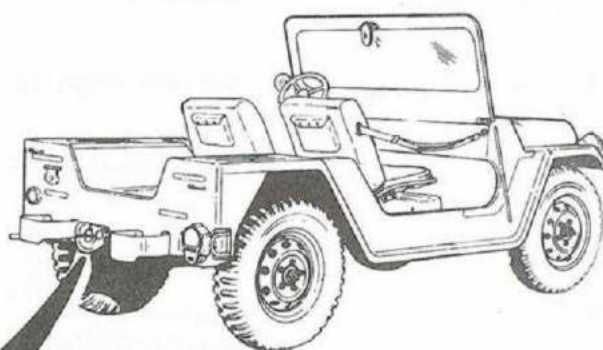
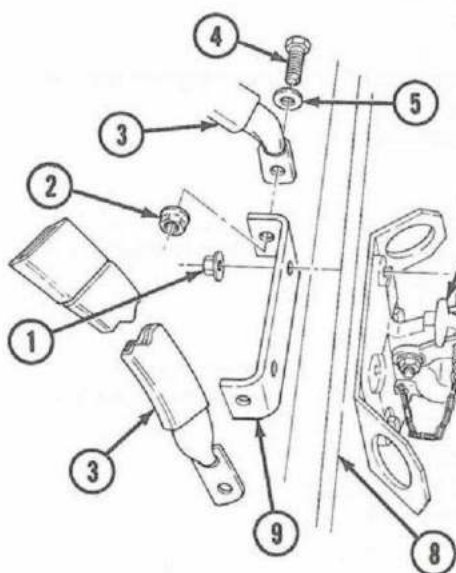
Left side and right side rear seat belts are installed and removed the same. This procedure covers the right rear seat belt assembly.

***a. REMOVAL***

- |                               |   |  |
|-------------------------------|---|--|
| 1. Anchor bracket (22)        | Flanged nut (19), seat belt with retractor (20), shoulder strap (12), washer (13), and screw (14) | Remove.  |
| 2. Floor panel (18)           | Flanged nut (17), anchor bracket (22), washer (16), and screw (15)                                | Remove.  |
| 3. Rear rollbar assembly (10) | Shoulder strap (12)   | <i>a.</i> Remove locking ring (21) and disconnect from seat belt with retractor (13).<br><br>Remove from belt assembly (11). |

## 11-102. Rear Seat Belt Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Bracket (9)	Flanged nut (2), belt assembly with buckle (3), washer (5), and screw (4)	Remove.	
5.	Vehicle body (8) and pintle assembly (6)	Two flanged nuts (1), bracket (9), and two screws (7)	Remove.	



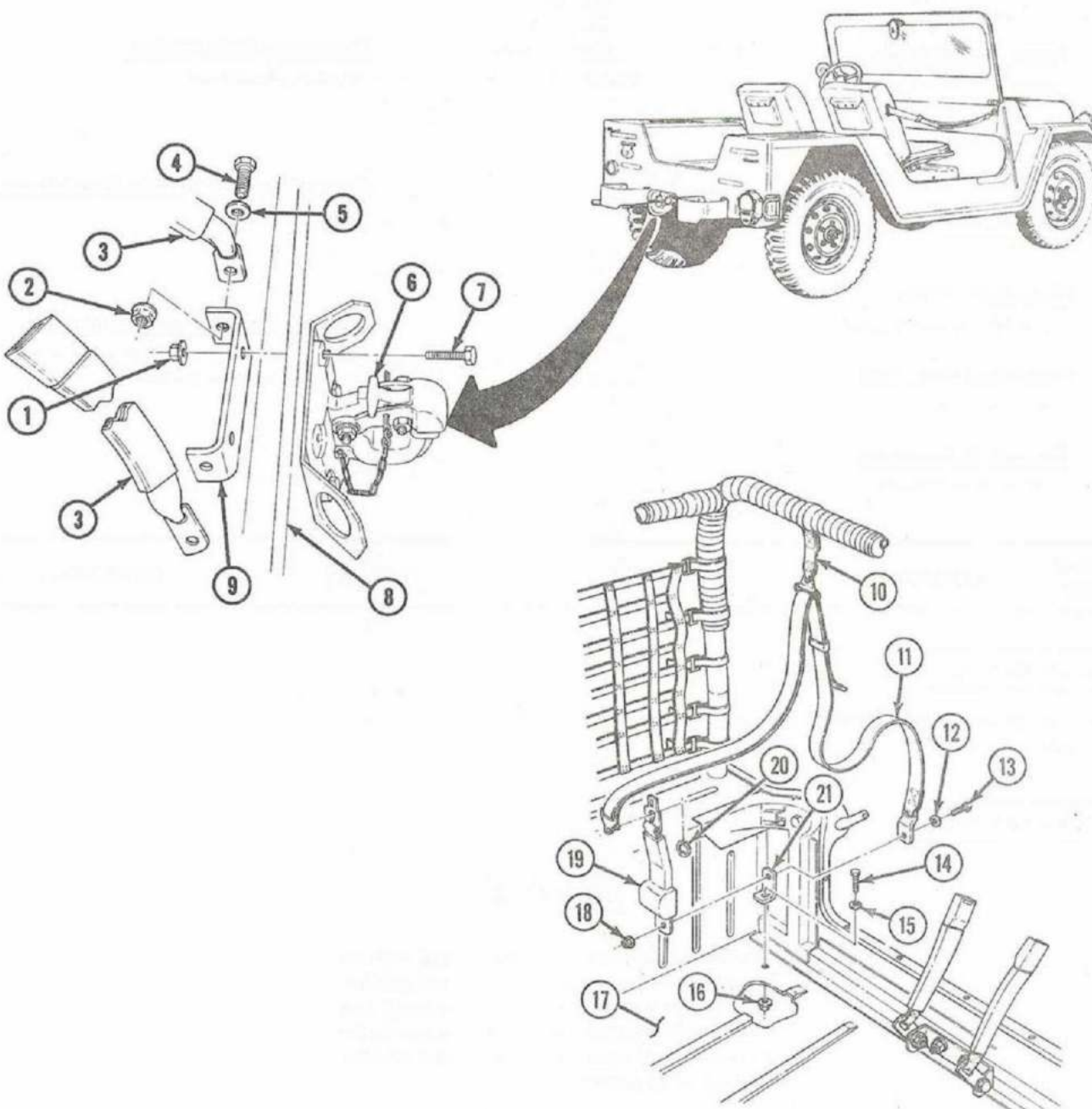
TA 484723

## 11-102. Rear Seat Belt Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>b. INSTALLATION</i>				
6.		Bracket (9)	Install on vehicle body (8) and pintle assembly (6) with two screws (7) and nuts (1).	Tighten nuts (1) 30-40 lb-ft (41-54 N·m).
7.		Belt assembly with buckle (3)	Install on bracket (9) with screw (4), washer (5), and nut (2).	Tighten nut (2) 30-40 lb-ft (41-54 N·m).
8.		Shoulder strap (11)	Loop through belt assembly (10).	
9.		Anchor bracket (21)	Install on floor panel (17) with screw (14), washer (15), and flanged nut (16).	Finger tighten nut (16).
10.		Belt assembly with retractor (19) and shoulder strap (11)	Install on anchor bracket (21) with screw (13), washer (12), and flanged nut (18).	Tighten nut (18) 30-40 lb-ft (41-54 N·m).
11.		Anchor bracket (21)	Position for tightening.	Tighten nut (16) 30-40 lb-ft (41-54 N·m).
12.		Seat belt with retractor (19)	Connect with shoulder strap (11) and lock in place with locking ring (20).	

## 11-102. Rear Seat Belt Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK; Install rear seat frame (para. 10-12).

TA 484724



### 11-103. Seat Belt Warning Label Maintenance

This task covers:

- a. Removal  
b. Cleaning  
c. Installation

### INITIAL SETUP:

<b><u>Applicable Models</u></b> M151A2 (w/ROPS)	<b><u>Equipment Condition Reference</u></b> TM 9-2320-218-10	<b><u>Condition Description</u></b> Parking brake set.
<b><u>Test Equipment</u></b> None		
<b><u>Special Tools</u></b> None		<b><u>Special Environmental Conditions</u></b> None
<b><u>Materials/Parts</u></b> Seat belt warning label		<b><u>General Safety Instructions</u></b> Keep fire extinguisher nearby when using drycleaning solvent.
<b><u>Personnel Required</u></b> One mechanic		
<b><u>Manual References</u></b> TM 9-2320-218-10		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

### a. REMOVAL

- |                               |                       |         |
|-------------------------------|-----------------------|---------|
| 1. Lower windshield frame (2) | Old warning label (1) | Remove. |
|-------------------------------|-----------------------|---------|

### *b. CLEANING*

**WARNING**

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when solvent is used. Use only in well-ventilated work area. Failure to do this may result in injury to personnel and/or damage to equipment.

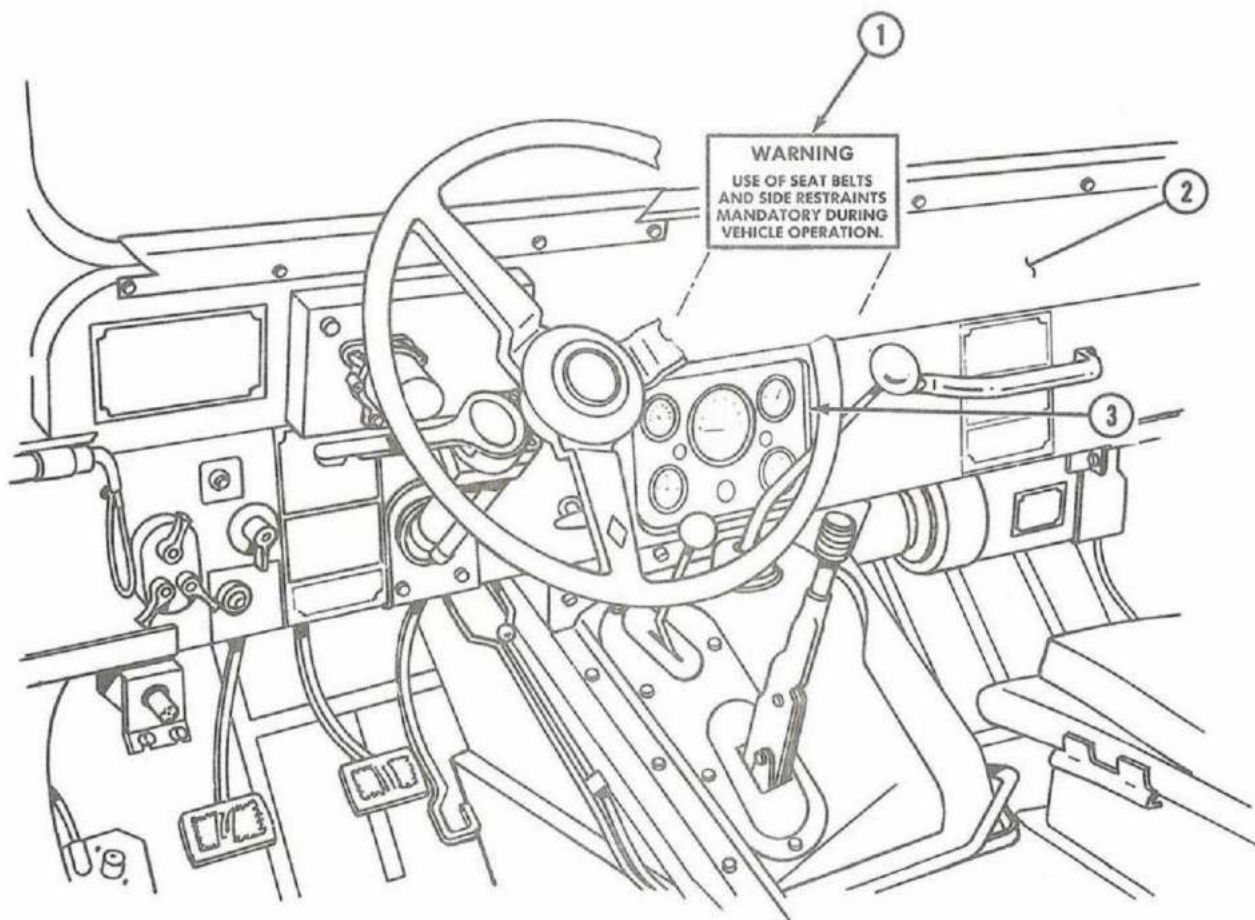
2. Old warning label (1)
  - a. Scrape remains from windshield frame (2).
  - b. Clean frame (2) surface with drycleaning solvent.

## 11-103. Seat Belt Warning Label Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

*c. INSTALLATION*

- |    |                       |   |
|----|-----------------------|---|
| 3. | New warning label (1) | <p><i>a.</i> Remove peel-off liner.</p> <p><i>b.</i> Center adhesive-backed label (1) above instrument panel (3) and apply to windshield frame (2).</p> |
|----|-----------------------|---|



END OF TASK!

TA 484725



## CHAPTER 12 SHIPMENT AND LIMITED STORAGE

### 12-1. Overview

a. This chapter covers preparation of 1/4-ton vehicles for shipment and limited storage within the interior of the United States.

b. This information is covered in the following sections:

- Section I. General Preparation of Vehicle for Shipment (page 12-1)
- Section II. Loading and Blocking of Vehicle On Or In Railroad Cars (page 12-3)
- Section III. Limited Storage (page 12-8)

## Section I. GENERAL PREPARATION OF VEHICLE FOR SHIPMENT

### 12-2. General

a. This section provides preservation instructions and other protective measures taken in the preparation of vehicles to be shipped.

b. Protection for vehicles, accompanying tools, and equipment during shipment must be sufficient to protect the materiel against deterioration and physical damage.

### 12-3. Cleaning

Prior to application of preservatives, surfaces must be cleaned to ensure removal of corrosion, soil, grease, or other acid and alkali residues.

a. *Interior of Vehicle.* Remove all dirt and other foreign matter from all unpainted metal surfaces of the vehicle by scrubbing with cloths soaked in drycleaning solvent (NSN 6850-00-285-8012). Do not apply solvent to electrical equipment or rubber parts of any nature; use trichlorethylene (NSN 6810-00-664-0388) to clean electrical parts and electrical contact points. Use warm water for cleaning rubber parts.

### WARNING

Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.

### CAUTION

Do not use liquids under pressure for cleaning interior of vehicle.

b. *Exterior of Vehicle.* Exterior surfaces of the vehicle will be cleaned in a manner which will ensure removal of all foreign matter including excess cleaning material.

### NOTE

After cleaning, immediately dry parts to remove cleaning solutions or residual moisture. Let parts air dry or wipe with clean, dry, lint-free cloths.



#### 12-4. Lubrication

After cleaning has been accomplished, all grease fittings must be wiped clean with solvent (NSN 6850-00-285-8012) and the vehicle lubricated in accordance with LO 9-2320-218-12. Excess grease must be removed after lubrication and before processing.

#### 12-5. Preservation

All critical unpainted metal surfaces must be protected during shipment. Use procedures and materials listed in *a* and *b* below. If the preservatives listed below are not available, oil or grease covered in LO 9-2320-218-12 may be used for this purpose, but it is effective for only a few days; therefore, equipment so protected must be closely watched for signs of corrosion. Selection of preservatives shall be such that their application, use, or removal will not damage the surface to which they are applied.

*a. Battery Leads.* Each battery lead terminal, including the jumper lead ends, shall be cleaned, coated with type P-11 automotive and artillery grease (NSN 9150-00-985-7245), and wrapped with type I, class I, pressure-sensitive adhesive tape (NSN 7150-00-266-5016). Jumper leads shall then be taped to the battery-to-ground lead to avoid loss.

*b. Miscellaneous Preservation.* All unpainted, machined metal surfaces on the inside of the vehicle shall be coated with type P-11 automotive and artillery grease (NSN 9150-00-985-7245). All unpainted, exposed, machined metal surfaces on the exterior of the vehicle shall be coated with type P-4 corrosion-preventive compound (NSN 8030-00-231-2354).

#### 12-6. Packaging

*a. Lenses.* Cover all vehicle lamp lenses with grade A, class I, grease-proof barrier-material (NSN 8315-00-171-0934), and secure with type I, class I pressure-sensitive adhesive tape (NSN 7510-00-266-5016).

*b. Electrical Openings.* Cover all open electrical receptacles with type I, class I pressure-sensitive adhesive tape (NSN 7510-00-266-5016), or with plastic caps which will afford the same degree of protection.

#### 12-7. Packing

*a.* All spare parts, tools, equipment, and other loose items will be packaged and packed to prevent mechanical damage.

*b.* For shipment, battery ground terminal should be disconnected and taped.

#### 12-8. Marking

Provide any necessary identification and precautionary markings in accordance with instructions contained in MIL-STD-129.

#### 12-9. Shipment of Army Documents

Prepare all army shipping documents accompanying freight in accordance with TM 38-750.

## Section II. LOADING AND BLOCKING OF VEHICLE ON OR IN RAILROAD CARS

### 12-10. General

This section provides general and specific information for loading and blocking 1/4-ton vehicles on or in railroad cars.

### 12-11. General Rail Loading Instructions

#### WARNING

The height and width of vehicles prepared for rail transportation must not exceed the limitations indicated by the loading table in AR 700-15. Whenever possible, local transportation officers must be consulted about the limitations of the particular railroad lines to be used for the movement in order to avoid delays, dangerous conditions, or damage to equipment.

- a. When vehicles are shipped by rail, every precaution must be taken to see that they are properly loaded and securely fastened and blocked to floor of flatcar.
- b. Load vehicles on flatcars so they will not form an unbalanced load.
- c. After each vehicle has been finally spotted on flatcar, apply parking brakes and wire or block lever.
- d. When suitable hoisting equipment is not applicable, and other methods of loading and pivoting materiel into balanced position on flatcar are necessary, refer to flatcar loading in TM 55-601.

#### NOTE

The spare tire for the utility truck is attached to the rear of the vehicle. If these vehicles are to be lifted rather than driven onto the flatcar, the attached spare tires may interfere with lifting devices, and they should be removed and secured with metal strapping at some other suitable location on the vehicle.

### 12-12. Specific Rail Loading and Blocking Requirement

All blocking instructions specified herein are minimum and are in accordance with pamphlet no. MD-7, Rules Governing the Loading of Defense Materiel on Open-Top Cars of Association of American Railroads. Additional blocking may be added, as required, at the discretion of the officer in charge. Doubleheaded nails may be used, except in the lower piece of two-piece cleats. The number of vehicles to be loaded will depend upon the length of flatcar.

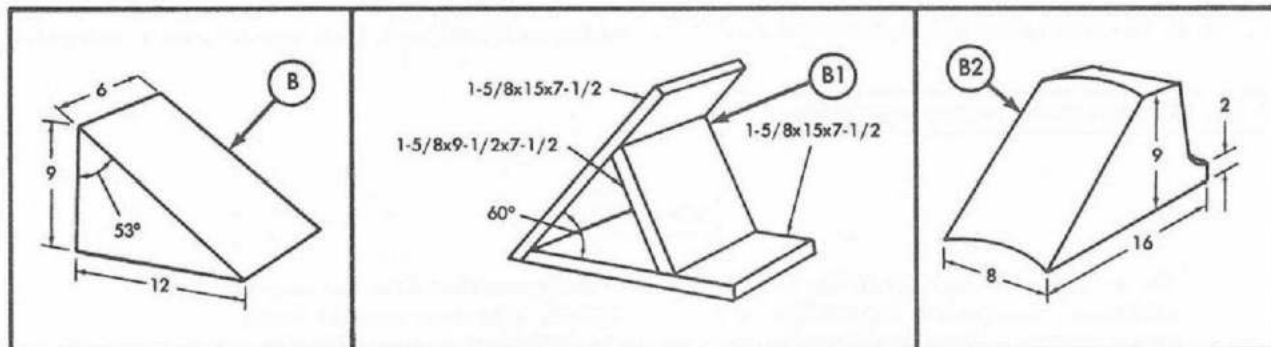
- a. *Brake Wheel Clearance.* Load vehicles on flatcars with a minimum clearance of at least 4 inches below and 6 inches above, behind, and to each side of the brake wheel. Any increase in clearance must be consistent with proper location of load.
- b. *Specific Blocking Methods.*

#### NOTE

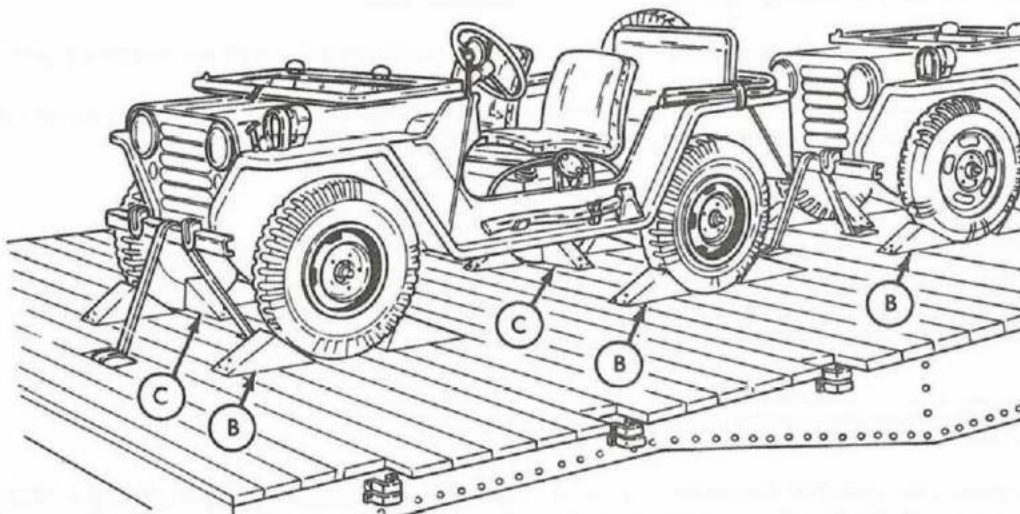
Three methods of blocking are given herein; the method to be used will depend on dimensions of flatcars and availability of required blocking materials. These instructions are for vehicles single-loaded.

(1) Chocking Method I.

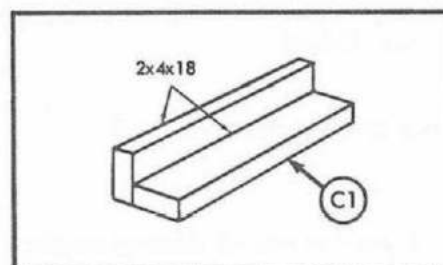
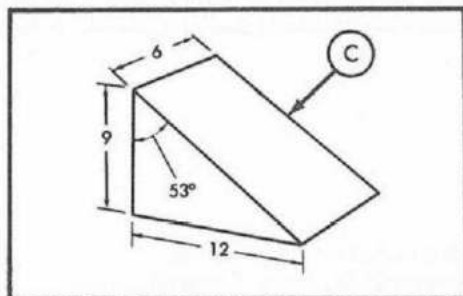
(a) Six outside wheel chock blocks (6x9x12, callout "B") are required for each vehicle constructed as shown below. Alternate types (callouts "B-1" and "B-2") can be used, and are also shown.



(b) Locate the 53-degree surface of blocks against the front and rear of each outside wheel, against the front of each inside wheel and against the rear of each inside rear wheel. Nail heel of each block to car floor with three forty penny nails, and toenail both sides of blocks to car floor with one forty penny nail each as shown below.



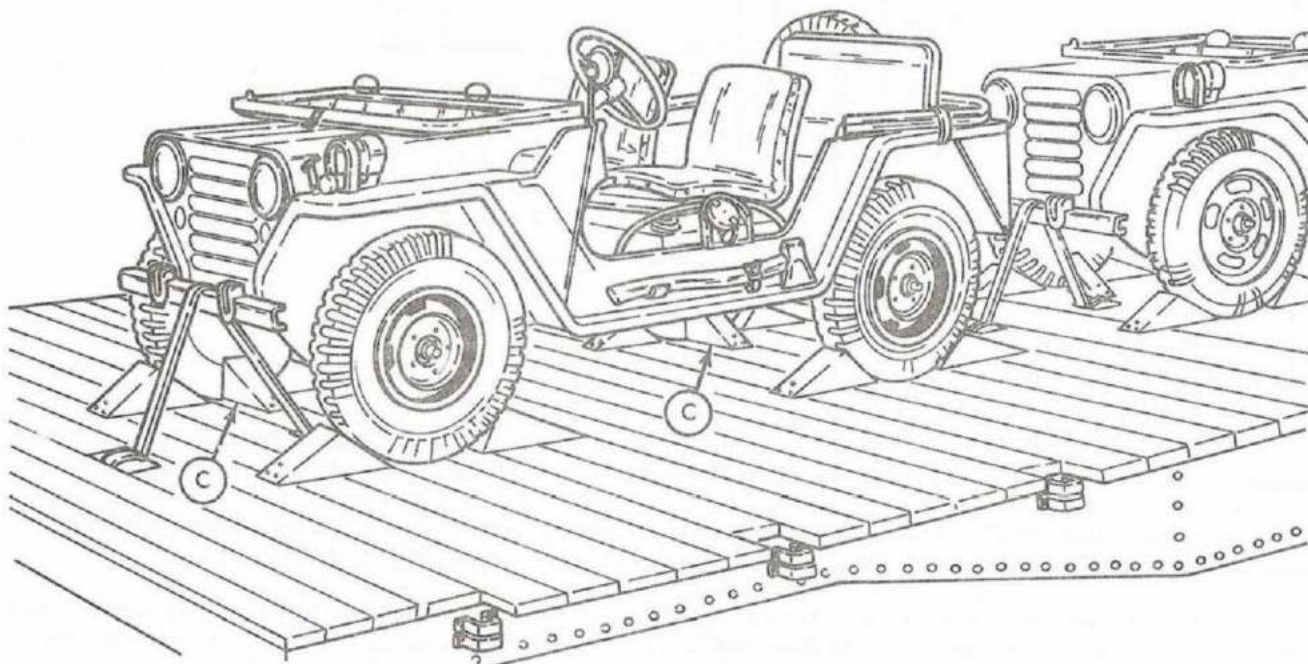
(c) Four inside wheel blocks (6x9x12, callout "C") are required for each vehicle and are constructed as shown below. An alternate type, callout "C-1", can be used and is also shown.



TA 155632



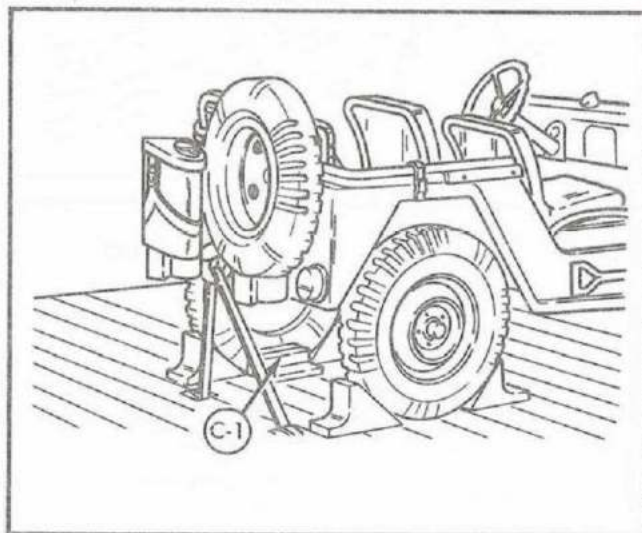
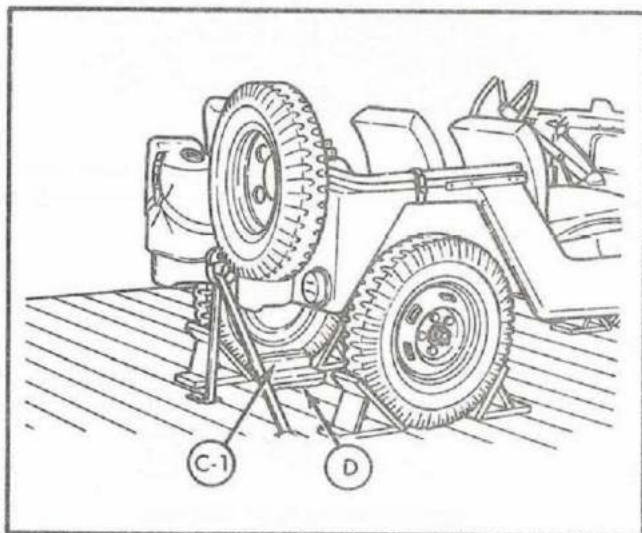
(d) If callout "C" inside wheel blocks are used, locate the 6x9 surface of block flush against the inside of each wheel. Nail heel of each block to car floor with forty penny nails, and toenail each side of floor with one forty penny nail as shown.



#### NOTE

When inside wheel blocks "C-1" are used, cushioning material "D" (waterproof paper or burlap) will be placed between blocks "C-1" and inside of tire. The material should extend 2 inches beyond block on car floor and 2 inches above block against side of tire.

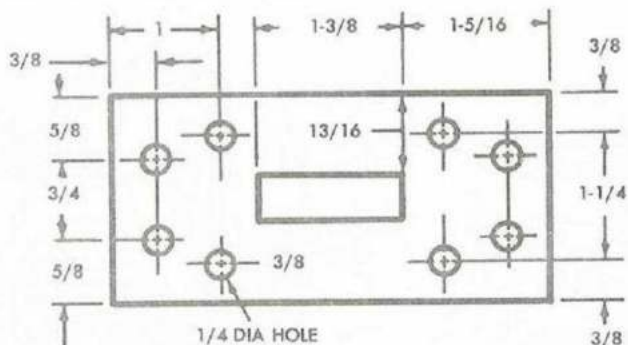
e. If callout "C-1" inside wheel blocks are used, locate the 2x4 surface of block flush against the inside of each wheel. Nail heel of each block to car floor with forty penny nails, and toenail each side of floor with one forty penny nail as shown.



TA 155633



(f) Four anchor plates are needed for each vehicle and are shown below with drilling dimensions.

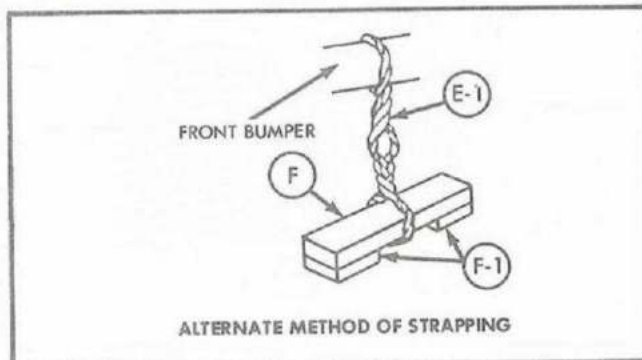
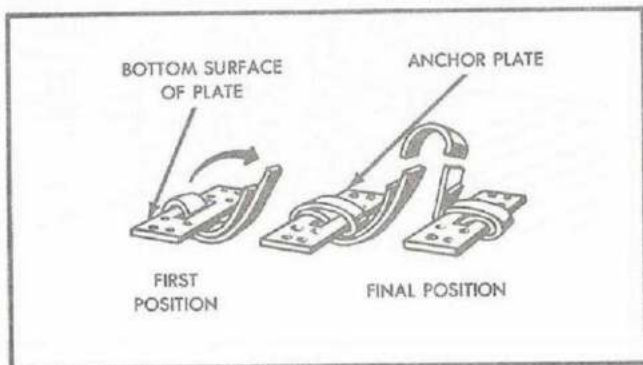
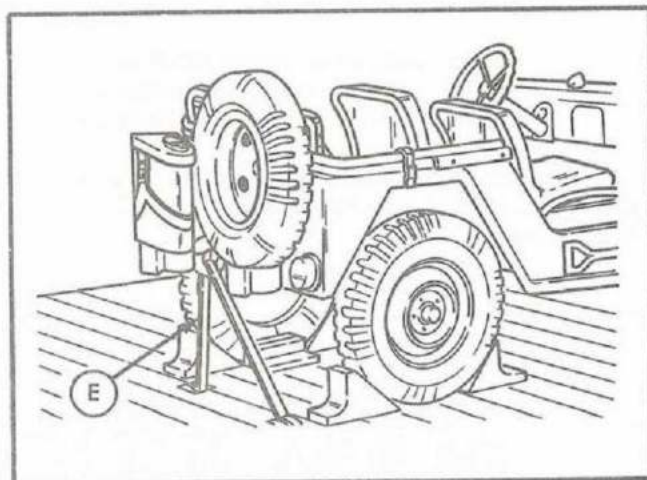
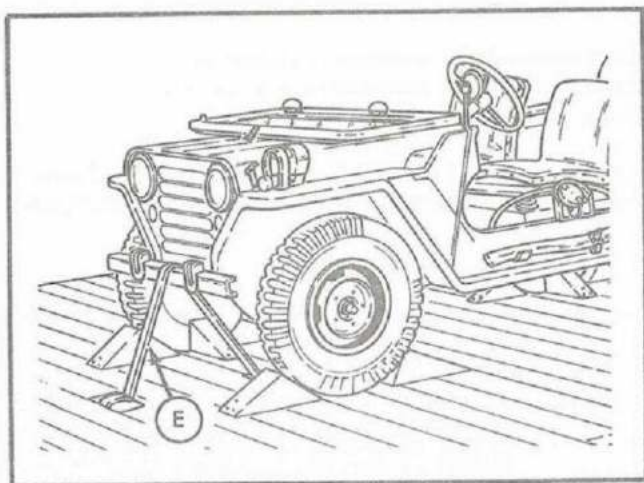


STEEL ANCHOR PLATE DETAIL  
(2x4x1/8)

(g) Vehicle strapping, callout "E" (1-in. no. 14 BW gage, hot rolled steel, length to suit, four required per vehicle). A substitute wire, callout "E-1", with four strands of no. 8 gage, black annealed, is also shown.

(h) Locate strapping "E" over front bumper and rear pintle hook of vehicle. Thread strapping through anchor plate as shown and nail anchor plates to car floor with eight twenty penny nails.

(i) If substitute cable "E-1" is used, pass the cable over the bumper or through the pulling hook underneath and around random 2x4x18 cleat "F" with shim "F-1". Nail cleat lengthwise to car floor and twist-tighten cables to remove all slack.



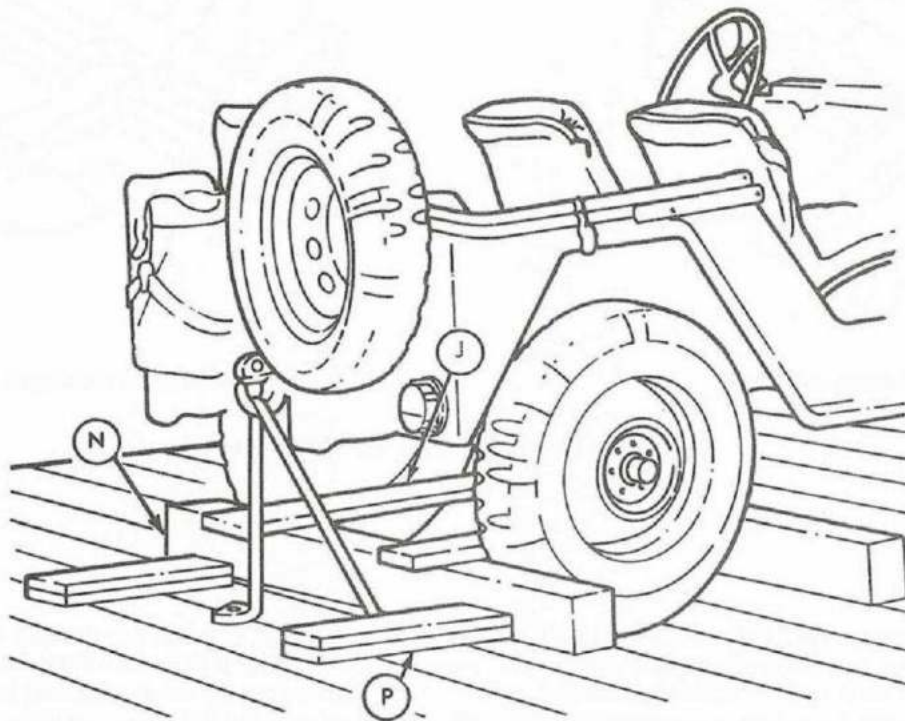
TA 155634

*(2) Method II.*

(a) Wheel cleats "N" (4 in. wide, 6 in. high, 8 inches longer than width of truck, four required for every truck). Locate a cleat "N" across the front and rear of front and rear wheels as shown, and toenail each to car floor with four thirtypenny nails.

(b) Wheel cleats "J" (2x4 in., 4 inches longer than distance between front and rear faces of cleats "N", four required per truck). Locate cleat "J" across top cleats "N" with sides of cleats "J" flush against inside of tires, as shown. Nail end of each cleat "J" to cleats "N" with three twentypenny nails.

c. Support cleats "P" (2x4x18 in., eight required per truck). Locate four cleats "P" 24 inches from ends of "N" with ends flush against cleats "N" as shown. Nail cleat to car floor with four thirtypenny nails. Locate one cleat on top of each lower cleat, and nail with four thirtypenny nails.



## (3) Method III.

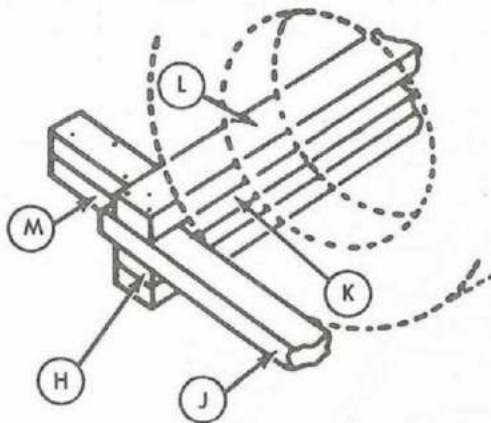
(a) Wheel cleats "H" (2x4 in. length to suit, eight required for every truck). Locate a cleat "H" across flatcar close to front and rear of front and rear wheels, and nail to car floor with ten thirtypenny nails as shown.

(b) Wheel side cleats "J" (2x4 in. length 4 inches longer than distance between front and rear faces of cleats "H", four required per vehicle). Locate a cleat "J" against inside or outside of wheels as shown, and nail each end to cleats "H" with three twentypenny nails.

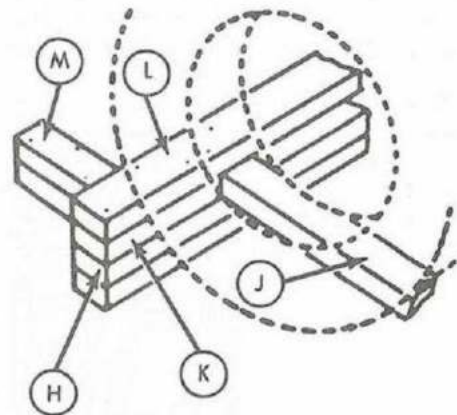
(c) Intermediate cleats "K" (2x4 in., eight required per vehicle). Locate a cleat "K" on top of cleats "H" with end flush against cleat "J", and nail to cleats "H" with two twentypenny nails as shown. Cleats "J" will be on the outside of wheels, and cleats "K" will be on the inside of cleats "J".

(d) Upper cleats "L" (2x4 in. length to equal cleats "H", four required per truck). Locate cleat "L" across cleats "J", and nail to cleats "J" and "K" with three twentypenny nails at each end as shown.

(e) End cleats "M" (2x4x18 in., total of eight required). Locate a cleat "M" on car floor near each end of "H" with end flush against cleat "H" near each side of car, and secure with four thirtypenny nails. Locate one cleat "M" on top of each lower cleat and secure with four thirtypenny nails as shown.



OUTSIDE WHEEL BLOCKING



INSIDE WHEEL BLOCKING

## Section III. LIMITED STORAGE

## 12-13. General

Commanders are responsible for ensuring that all vehicles issued or assigned to their command are maintained in a serviceable condition and properly cared for, and that personnel under their command comply with technical instructions. Lack of time, lack of trained personnel, or lack of proper tools may result in a unit being incapable of performing maintenance for which it is responsible. In such cases, unit commanders may, with the approval of major commanders, place vehicle that is beyond the maintenance capability of the unit in administrative storage or return it to supply agencies.

## 12-14. Limited Storage Instructions

a. *Time Limitations.* Administrative storage is restricted to a period of 90 days and must not be extended unless the vehicle is reprocessed in accordance with *b* below.

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*b. Storage Procedure.* Disassembly will be limited to that necessary to clean and preserve exposed surfaces. Except as otherwise noted, and to the maximum extent consistent with safe storage, the vehicle will be placed in administrative storage in as nearly a completely assembled condition as practicable. Equipment will be installed and adjustments made so that the vehicle may be placed in service and operated with minimum delay.

(1) The vehicle should be stored on level ground in the most favorable location available, preferably one which affords protection from exposure to the elements and from pilferage.

(2) Perform an "S" semiannual preventive maintenance service on vehicles intended for administrative storage. This maintenance will consist of inspecting, cleaning, servicing, preserving, lubricating, adjusting, and replacement of minor repair parts if required.

(3) Remove storage batteries and place in covered storage, maintaining a charged condition.

(4) Provide access to the vehicle to permit inspection, servicing, and subsequent removal from storage.

*c. Inspection in Storage.*

(1) Visual inspection of vehicles in administrative storage must be conducted at least once each month, and immediately following hard rain, heavy snowstorm, windstorm, or other severe weather conditions. Disassembly will be performed as necessary to ascertain fully the extent of any deterioration or damage found. A record of these inspections will be maintained for each vehicle in administrative storage, attached to the vehicle in such a manner as to protect the record from the elements.

(2) When rust or deterioration is found on any unpainted area, necessary reprocessing for administrative storage will be immediately accomplished. Damage caused to the vehicle by severe weather conditions will be promptly repaired. Deterioration or damage to on-equipment materiel (OEM) will be repaired as necessary. Painted surfaces showing evidence of deterioration will be thoroughly cleaned, dried, and repainted, using paint of the same quality and color as the original paint.



## APPENDIX A

### REFERENCES

#### A-1. Indexes

The following indexes should be consulted frequently for latest changes to or revisions of references given in this appendix and for new publications or instructions relating to material covered in this manual.

##### *a. Military Publication Indexes.*

Index of Army Motion Pictures and Related Audio-Visual Aids .....	DA Pam 108-1
Index of Administrative Publications .....	DA Pam 310-1
Index of Blank Forms .....	DA Pam 310-2
Index of Technical Manuals, Supply Manuals, (type 7, 8, and 9), Technical Bulletins, Supply Bulletins, and Lubrication Orders .....	DA Pam 310-4
Index of Doctrinal, Training, and Organization Publications .....	DA Pam 310-3

##### *b. General References.*

Authorized Abbreviations and Brevity Codes .....	AR 310-50
Dictionary of United States Army Terms .....	AR 310-25
Military Symbols .....	FM 21-30
How to Prepare and Conduct Military Training .....	FM 21-6

#### A-2. Supply Manuals

The following Department of the Army Supply Manuals pertain to this material:

##### *a. Demolition of Materiel to Prevent Enemy Use.*

Explosives, Bulk, Propellants, and Explosive Devices .....	SM 9-5-1375
Land Mines and Components .....	SM 9-5-1345
Pyrotechnics, Military, All Types .....	SM 9-5-1370

##### *b. Maintenance and Repair.*

Tool Kit, Automotive, Maintenance, Organizational: (2d echelon), Set No. 2, Common (NSN 4910-00-754-0650) .....	SC 4910-95-CL-A72
Tool Kit, Automotive Maintenance, Organizational: (2d echelon), Set No. 2, Supplemental (NSN 4940-00-754-0743) (line item W65747) .....	SC 4940-95-CL-A08
Tool Kit, Organizational Maintenance: (2d echelon), No. 1., Common (NSN 4910-00-754-0654), Hard Receipt .....	SC 4910-95-CL-A74HR

#### A-3. Forms

Refer to DA pamphlet 310-1 for index of blank forms. Refer to DA PAM 738-750 for pertinent maintenance forms and for an explanation on use.

DA Form 2400, Equipment Utilization Record

## APPENDIX A (Cont'd)

**A-3. Forms (Cont'd)**

DA Form 2401, Organizational Control Record for Equipment  
 DA Form 2402, Exchange Tag  
 DA Form 2404, Equipment Inspection and Maintenance Worksheet  
 DA Form 2405, Maintenance Request Register  
 DA Form 2406, Materiel Readiness Report  
 DA Form 2407, Maintenance Request  
 DA Form 2407-1, Maintenance Request—Continuation Sheet  
 DA Form 2408, Equipment Log Assembly (Records)  
 DA Form 2408-1, Equipment Daily or Monthly Log  
 DA Form 2408-9, Equipment Transfer Record  
 DA Form 2408-10, Equipment Component Register  
 DA Form 2409, Equipment Control Record  
 DA Form 348, Driver Qualification Record  
 DA Form 285, Accident Report  
 DA Form 1089, Claim for Personal Property  
 DD Form 6, Packaging and Improvement Report  
 DD Form 314, Preventive Maintenance Schedule and Record  
 DD Form 518, Accident—Identification Card  
 Standard Form 46, U. S. Government Motor Vehicle Operator's Identification Card  
 Standard Form 91, Operator Report on Motor Vehicle Accidents

**A-4. Other Publications**

The following publications contain information pertinent to major items, materiel, and associated equipment.

*a. Vehicle.*

Lubrication—Truck, Utility, 1/4 Ton, 4x4, M151 Series ..... LO 9-2320-218-12  
 Operation—Truck, Utility, 1/4 Ton, 4x4, M151 Series ..... TM 9-2320-218-10  
 Organizational Parts—Truck, Utility, 1/4 Ton, 4x4, M151 Series ..... TM 9-2320-218-20P

*b. Camouflage.*

Camouflage, Basic Principles, and Field Camouflage ..... FM 5-20  
 Camouflage of Vehicles ..... FM 5-20B

*c. Decontamination.*

Chemical, Biologic, and Radiological (CBR) Decontamination ..... TM 3-220  
 Defense Against CBR Attack ..... FM 21-40  
 NBC (Nuclear, Biological, and Chemical) Decontamination ..... FM 3-5

*d. General.*

Cooling Systems: Tactical Vehicles ..... TM 750-254  
 Accident Reporting and Records ..... AR 385-40  
 Basic Cold-Weather Manual ..... FM 31-70  
 Operation and Maintenance of Ordnance Materiel in Cold Weather (0° to -65° F) ..... FM 9-207  
 Cooling Systems: Vehicles and Powered Ground Equipment ..... TM 9-2858  
 Driver Selection and Training (Wheeled Vehicles) ..... TM 21-300  
 Deep-Water Fording of Ordnance Materiel ..... TM 9-238  
 Command Maintenance Management Inspections ..... AR 750-8  
 Mountain Operations ..... FM 31-72  
 Northern Operations ..... FM 31-71



## APPENDIX A (Cont'd)

**A-4. Other Publications (Cont'd)**

Petroleum Handling Equipment & Operations .....	FM 10-69
Preservation, Methods of .....	MIL-P-116
Principles of Automotive Vehicles .....	TM 9-8000
Prevention of Motor Vehicle Accidents .....	AR 385-55
Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use .....	TM 750-244-6

*e. Maintenance and Repair.*

Care and Maintenance of Pneumatic Tires .....	TM 9-2610-200-24
Description, Use, Bonding Techniques, and Properties of Adhesives .....	TB ORD 1032
General Supply:	
Winterization Kits for Army Tank-Automotive Materiel .....	SB 9-16
Inspection, Care, and Maintenance of Antifriction Bearings .....	TM 9-214
Operation and Organizational, Field and Depot Maintenance:	
Storage Batteries, Lead-Acid Type .....	TM 9-6140-200-14
Elastic, Natural Rubber, or Synthetic	
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems .....	TB 750-651
Organizational, DS,GS, and Depot Maintenance:	
Installation of Searchlight, Visible-Infrared AN/GSS-14 .....	TM 11-2320-351-15-3
Operator's and Organizational Maintenance:	
Rifle, Recoilless, 106-MM .....	TM 9-1000-205-12
Operator's Manual:	
Welding Theory and Application .....	TM 9-237
Metal Body Repair and Related Operations .....	FM 43-2
Simplified Test Equipment for Internal Combustion Engines	
(STE/ICE) NSN 4910-00-124-2554 .....	TM 9-4910-571-12&P

*f. Shipment and Limited Storage.*

Color and Marking of Army Materiel .....	TB 43-0209
Preservation, Packaging, and Packing of Military Supplies and Equipment .....	TM 38-230-1
Standards for Overseas Shipment and Domestic Issue of Combat, Tactical, and Special Purpose Vehicles .....	TB 9-2300-281-35
Preservation, Packaging and Packing Materials, Supplies and Equipment Used by the Army .....	SB 38-100
The Army Maintenance Management System (TAMMS) .....	DA PAM 738-750
Packaging of Materiel .....	AR 700-15
Rail Car Loading Procedures .....	TM 55-601 (paras 6-1/6-4)
Marking for Shipping and Storage .....	MIL-STD-129
Security of Tactical Wheeled Vehicles .....	TB 9-2300-422-20
Decontamination Apparatus, Portable, DS2 .....	TM 3-4230-204-12 & P

## APPENDIX B

### MAINTENANCE ALLOCATION CHART

#### Section I. INTRODUCTION

##### **B-1. General**

The maintenance allocation chart designates overall responsibility for the maintenance function of an end item or assembly. Allocation of maintenance operations is made on the basis of time, tools, and skills normally available to the various levels in a combat situation and influenced by maintenance policy and sound maintenance practices. Deviation from maintenance allocation chart is authorized only upon approval of the Army commander.

##### **B-2. Maintenance Functions**

Maintenance functions will be limited to and defined as follows:

- a. Inspect.* To determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards.
- b. Test.* To verify serviceability and to detect electrical or mechanical failure by use of test equipment.
- c. Service.* To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.
- d. Adjust.* To rectify to the extent necessary to bring into proper operating range.
- e. Align.* To adjust specified variable elements of an item to bring to optimum performance.
- f. Calibrate.* To determine corrections to be made in readings of instruments or test equipment used in precise measurement. Consists of comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in accuracy of the instrument being compared with the certified standard.
- g. Install.* The act of emplacing, seating, or fixing into position an item, part, component, or assembly in a manner to allow the proper functioning of an equipment or system.
- h. Replace.* To replace unserviceable items with serviceable like items.
- i. Repair.* Those maintenance operations necessary to restore an item to serviceable condition through correction of material damage or a specified failure.
- j. Overhaul.* Normally, the highest degree of maintenance performed by the Army. It consists of that maintenance effort/action necessary to restore an item to completely serviceable/operational condition as prescribed by maintenance standards in appropriate technical publications (DMWR) for each item of equipment. Overhaul normally does not return an item to like new, zero mileage, or zero hour condition.
- k. Rebuild.* The very highest degree of material maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards. Rebuild is performed only when required by operational considerations or paramount factors and then only at depot maintenance category. Rebuild reduces to zero those age measurements (the hour or miles) considered in classifying Army equipment/components.
- l. Symbols.* The uppercase letter placed in the appropriate column indicates lowest level at which that particular maintenance function is to be performed.



## APPENDIX B (Cont'd)

**B-3. Explanation of Columns**

Purpose and use of the format are as follows:

- a. Column 1, Group Number.* Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with next higher assembly.
- b. Column 2, Functional Group.* Column 2 lists the noun names of components, assemblies, subassemblies, and modules on which maintenance is authorized.
- c. Column 3, Maintenance Functions.* Column 3 lists various maintenance functions to be performed and indicates by symbols the lowest maintenance level authorized to perform these operations. The symbol designation for the various maintenance levels is as follows:

<i>Code</i>	<i>Explanation</i>
C	Crew or Operator Maintenance
O	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance
AR	As Required

- d. Column 4, Maintenance Category.* Level by service requirements.
- e. Column 5, Tools and Equipment.* This column is used to specify, by code, those tools and test equipment required to perform the designated procedure.
- f. Column 6, Remarks.*

**B-4. Work Measurement Time**

To obtain work time measurements, refer to the time allowances in the maintenance allocation chart.

## APPENDIX B (Cont'd)

## Section II. MAINTENANCE ALLOCATION CHART

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
<b>01</b>	<b>ENGINE</b>								
0100	Engine	Inspect Service Replace Repair Overhaul Rebuild		0.2 1.5	6.0 8.0	10.3	28.0		
0101	Cylinder Head Assembly, Engine	Inspect Adjust Install Replace Repair Overhaul Rebuild		0.2 0.6	1.5 2.5 4.5 6.0		8.0		Valve rock- er arms adjustment
	Head Gasket	Test		1.0					
0106	Pump, Oil	Inspect Test Replace Repair Overhaul Rebuild			1.0 .5 1.6 1.6 1.6		1.6		
<b>02</b>	<b>CLUTCH</b>								
0200	Clutch Assembly Hub and Bearing	Test Adjust Replace Rebuild		0.1 0.2	6.5		7.5		
<b>03</b>	<b>FUEL SYSTEM</b>								
0301	Carburetor	Inspect Adjust Install Replace Overhaul		0.1 0.2 1.0 1.0	1.5				
0302	Pump, Fuel	Inspect Test Replace		0.1 0.2 0.5					
0306	Tank, Fuel	Inspect Test Service Replace Repair	0.3	0.2 1.0	0.2 1.2				

## APPENDIX B (Cont'd)

(1) Group Num- ber	(2) Component/Assembly	(3) Main- tenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
0306	Filter, Fuel	Inspect Replace		0.1 0.3					
	Canister	Inspect Replace		0.5 1.0					
	Lines and Fittings	Inspect Replace Fabrication		0.5 1.3 0.7					
<b>04</b>	<b>EXHAUST SYSTEM</b>								
0401	Muffler and Pipes	Inspect Replace	0.2	0.2 1.5					
<b>05</b>	<b>COOLING SYSTEM</b>								
0501	Radiator, Engine	Inspect Test Service Replace Repair	0.2 0.1	0.2 0.3 1.3	1.5				
0504	Pump, Water	Inspect Test Replace Rebuild		0.2 1.0	0.3		2.0		
0505	Belts	Inspect Test Adjust Replace	0.1	0.1 0.1 0.1 0.2					
<b>06</b>	<b>ELECTRICAL SYSTEM</b>								
0601	Generator (60 amp)	Inspect Test Adjust Replace Repair		0.1 0.2 0.3 0.7	1.5				
0603	Starter	Inspect Test Replace Repair Rebuild		0.1 0.2 0.5	1.0		1.5		
0605	Distributor, Ignition (Standard)	Adjust Replace Repair Overhaul		0.7 0.7 1.4	1.5				

## APPENDIX B (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
0609	Distributor, Ignition (Solid State)	Repair		1.4					
		Replace		0.7					
		Overhaul			1.5				
	Lamps and Lamp Units	Inspect		0.1					
		Test		0.1					
0611	Horn	Adjust		0.5					
		Replace		0.1					
		Repair		0.2					
		Test	0.1						
		Adjust		0.1					
0612	Batteries	Replace		0.3					
		Inspect		0.1					
		Test		0.1					
		Service		0.2					
		Replace		0.2					
<b>07</b>	<b>TRANSMISSION</b>								
0700	Transmission Transfer	Inspect		0.1					
		Service		0.2					
		Replace			6.0				
		Repair			2.0				
		Overhaul				7.5			
08	TRANSFER	Rebuild					8.5		
		Inspect		0.1					
		Service		0.2					
		Replace			4.5				
		Repair			2.0				
0801	Transfer, Transmission	Overhaul				6.5			
		Rebuild					7.0		
		Inspect		0.1					
		Service		0.2					
		Replace			4.5				
09	PROPELLER SHAFTS	Repair			2.0				
		Overhaul				6.5			
		Rebuild					7.0		
		Inspect		0.1					
		Service		0.2					
0900	Shaft Assembly	Replace			4.5				
		Repair			2.0				
		Overhaul				6.5			
		Rebuild					7.0		
		Inspect		0.1					
0900	Shaft Assembly	Service		0.2					
		Replace		0.3					
		Repair		0.7					
		Overhaul		0.7					
		Rebuild							



## APPENDIX B (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
<b>10</b>	<b>FRONT AXLE</b>								
1002	Carrier, Differential	Inspect Service Replace Repair Overhaul Rebuild		0.2 0.3 0.5 3.0			6.0 6.0		
<b>11</b>	<b>REAR AXLE</b>								
1102	Carrier, Differential	Inspect Service Replace Repair Overhaul Rebuild		0.2 0.3 0.5 3.0		0 6.0	6.0		
1104	Sleeve, Shaft and Cross Wheel Drive Seals, Flange and Spindle	Inspect Service Replace Repair		0.3 0.5 0.7 1.0					
<b>12</b>	<b>BRAKE SYSTEM</b>								
1201	Band Assembly, Parking Brake	Inspect Adjust Replace Rebuild		1.0 0.2 2.0			2.5		
1202	Brakeshoes	Inspect Adjust Replace		0.2 1.0 3.5					
	Service Brakedrum	Inspect Replace Repair		0.1 1.0	2.0				
1204	Cylinder, Master	Inspect Test Adjust Replace Rebuild		0.1 0.2 1.0 2.0			2.8		
	Cylinder, Wheel	Inspect Test Replace		0.2 0.2 1.0					
	Brake Lines and Fittings	Inspect Replace Fabrication		0.5 1.3	0.7				

## APPENDIX B (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
<b>13</b>	<b>WHEELS, HUBS, DRUMS</b>								
1301	Suspension Assembly, Front and Rear	Inspect Test Adjust Align Replace Repair Rebuild		0.2 0.3 0.5  1.0 1.3	3.0		2.0		
	Suspension Arm	Inspect Replace	0.1	2.0					
	Suspension Arm Bushings	Replace			3.0				
1311	Wheel Bearings	Service Replace Adjust Repair		0.5 1.0 0.2	1.3				
1313	Wheel and Tire Assembly	Inspect Service Replace Repair	0.1	0.2 0.5 0.5					
<b>14</b>	<b>STEERING SYSTEM</b>								
1401	Steering Gear Assembly	Inspect Test Service Adjust Replace Overhaul		0.1 0.1 0.5	0.5 2.0 2.5				
	Column Assembly	Inspect Adjust Replace Repair		0.1 0.3 0.5	3.5				
	Linkage Assembly	Inspect Test Adjust Replace		0.1 0.1 0.2 0.3					
<b>16</b>	<b>SPRINGS AND SHOCK ABSORBERS</b>								
1604	Shock Absorbers	Inspect Replace	0.1	1.0					

## APPENDIX B (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
<b>18</b>	<b>BODY, CAB, HOOD, HULL</b>								
1801	Radiator, Guard	Inspect Replace	0.2	0.5					
	Hood	Inspect Replace Repair	0.2	0.5	1.0				
1802	Windshield Assembly	Inspect Replace Repair	0.1	0.3	0.5				
1806	Cushions, Seat	Inspect Replace Repair	0.1	0.3	0.5				
<b>22</b>	<b>BODY ACCESSORIES</b>								
2201	Canvas Curtain	Inspect Install Replace Repair	0.1 0.3	0.4	0.8				
2202	Windshield Washer	Adjust Repair		0.1 0.2					
	Windshield Wipers	Inspect Test Service Adjust Replace Repair	0.1 0.1	0.2 0.1 0.2 0.3					
	Windshield Wiper Motor	Replace Repair		0.3	0.5				
<b>33</b>	<b>SPECIAL PURPOSE KITS</b>								
3303	Winterization Kit (-65°F)	Test Service Install Replace Repair		0.2 0.5 4.5	6.0 3.0				
	Heater Assembly (-65°F)	Test Service Replace Repair	0.2	1.5	1.0 1.8				
	Pump, Fuel (-65°F)	Replace		0.8					

## APPENDIX B (Cont'd)

(1) Group Num- ber	(2) Component/Assembly	(3) Main- tenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
3305	Winterization Kit (-25°F)	Test Service Install Replace Repair	0.2	0.3 2.0 2.5	3.0				
	Heater Assembly (-25°F)	Test Replace Repair	0.2	1.2	1.6				
	Door and Side Curtain	Inspect Install Replace Repair	0.1 0.5	0.5	1.0				
	Deep Water Fording Kit	Test Install Replace Repair	0.3	3.5 3.0					
	Hardtop Kit	Inspect Adjust Install Repair	0.1	0.1 3.0	4.0				
	Sheet Metal	Repair			3.5				
	100 AMP Generator Kit	Test Adjust Install Replace		0.1 0.2 2.5	3.0				
	M16 Rifle Mount Kit	Inspect Install Replace	0.1	1.5	2.0				
	M4 Gun Mount Kit	Inspect Install Replace	0.1	2.5	3.5				
	Rear Spring Suspension Kit	Inspect Install Replace	0.1	3.0 2.5					
	Decontamination Kit	Inspect Install Replace	0.1	1.5 1.0					
47	<b>GAGES (NON-ELECTRICAL)</b>								
4701	Speedometer	Test Replace	0.1	0.8					



## **APPENDIX C**

### **REPAIR PARTS AND SPECIAL TOOLS LIST**

Repair parts and special tools for organizational maintenance are listed in TM 9-2320-218-20P, which is the authority for requesting replacements.

## **APPENDIX D**

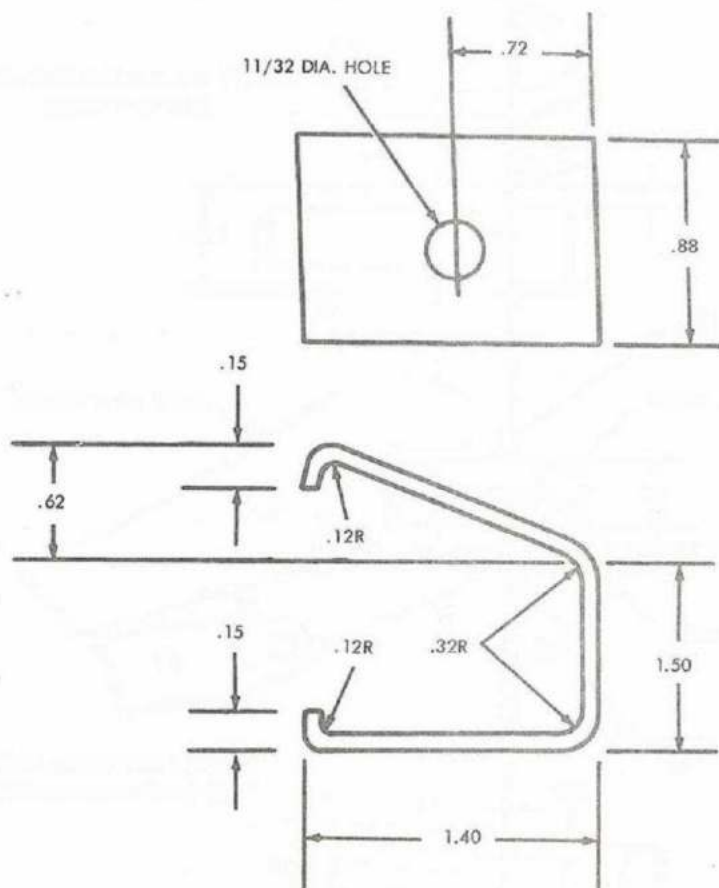
### **EXPENDABLE SUPPLIES AND MATERIALS LIST**

Expendable supplies and materials designated for the organizational maintenance level for the vehicles covered in this manual can be found in TM 9-2320-218-10.

## APPENDIX E

## ILLUSTRATED LIST OF MANUFACTURED ITEMS

This appendix includes complete instructions for making items authorized to be manufactured or fabricated for use at the organizational maintenance level.



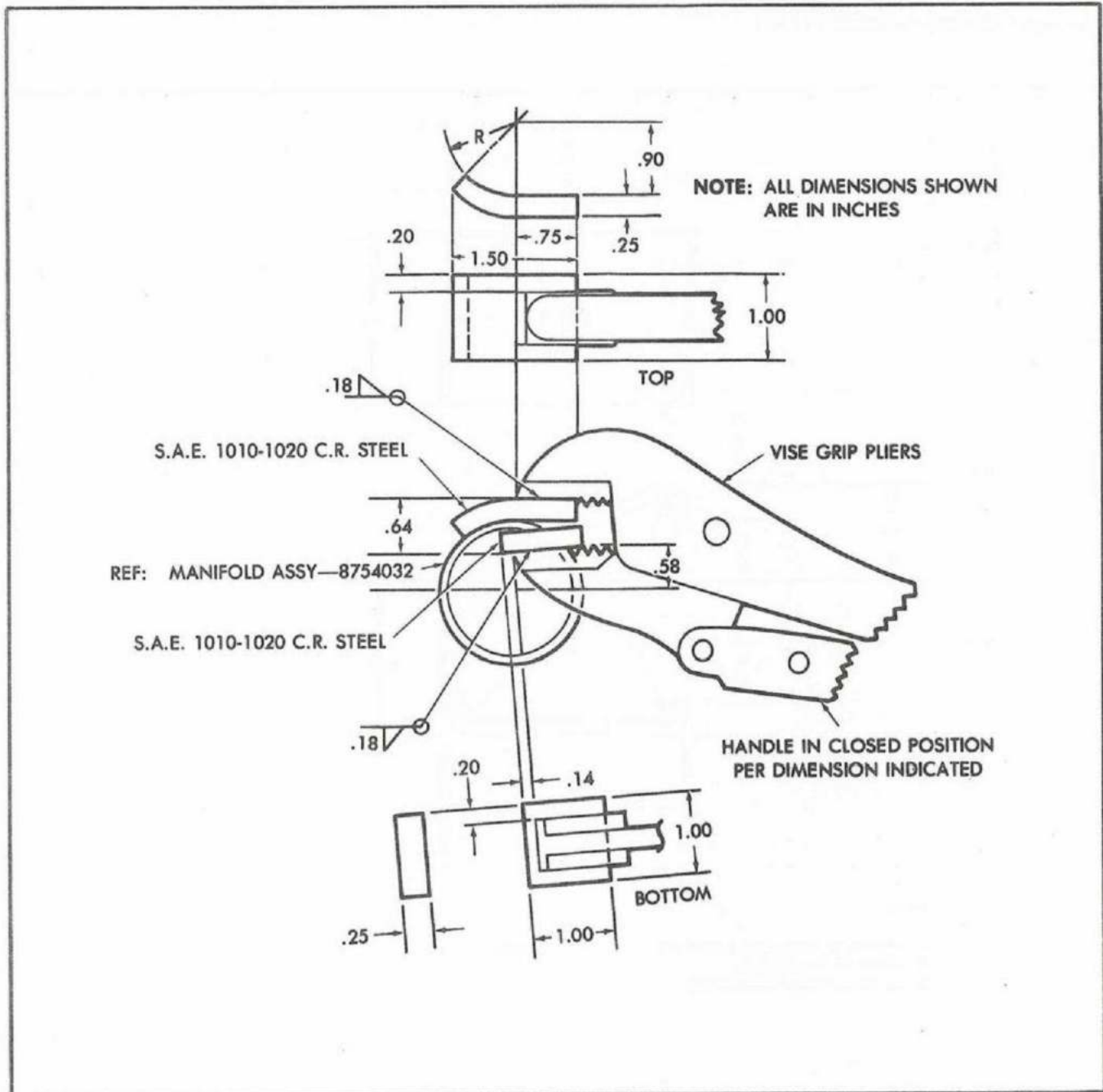
## NOTE:

1. FABRICATE FROM .090 X .88 X 4.95 STEEL H.R.P. AND O.
2. FORM TO DIMENSIONS.
3. ALL DIMENSIONS ARE INCHES.

*Muffler Exhaust Pipe Rear Hanger (12275132-1).*

TA 155637

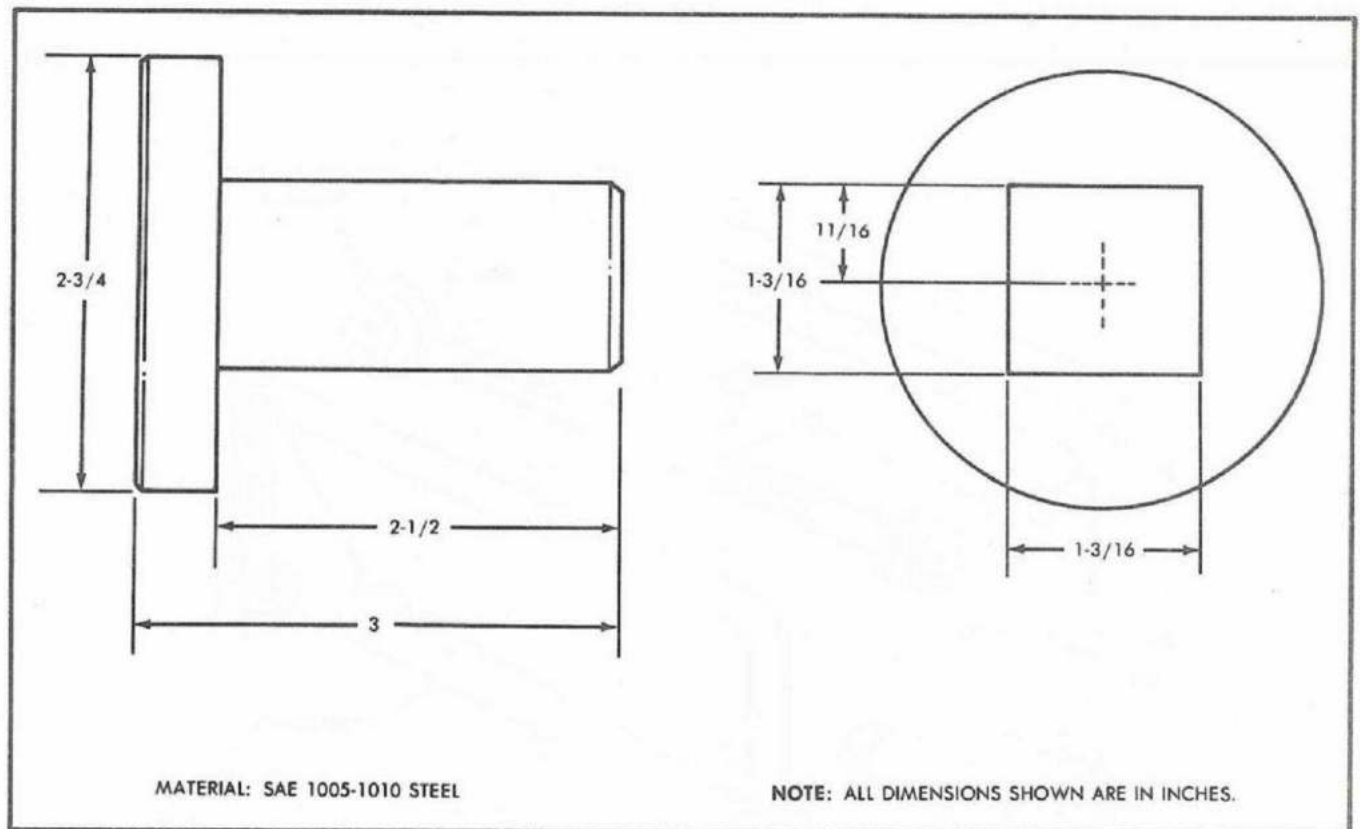
# APPENDIX E (Cont'd)



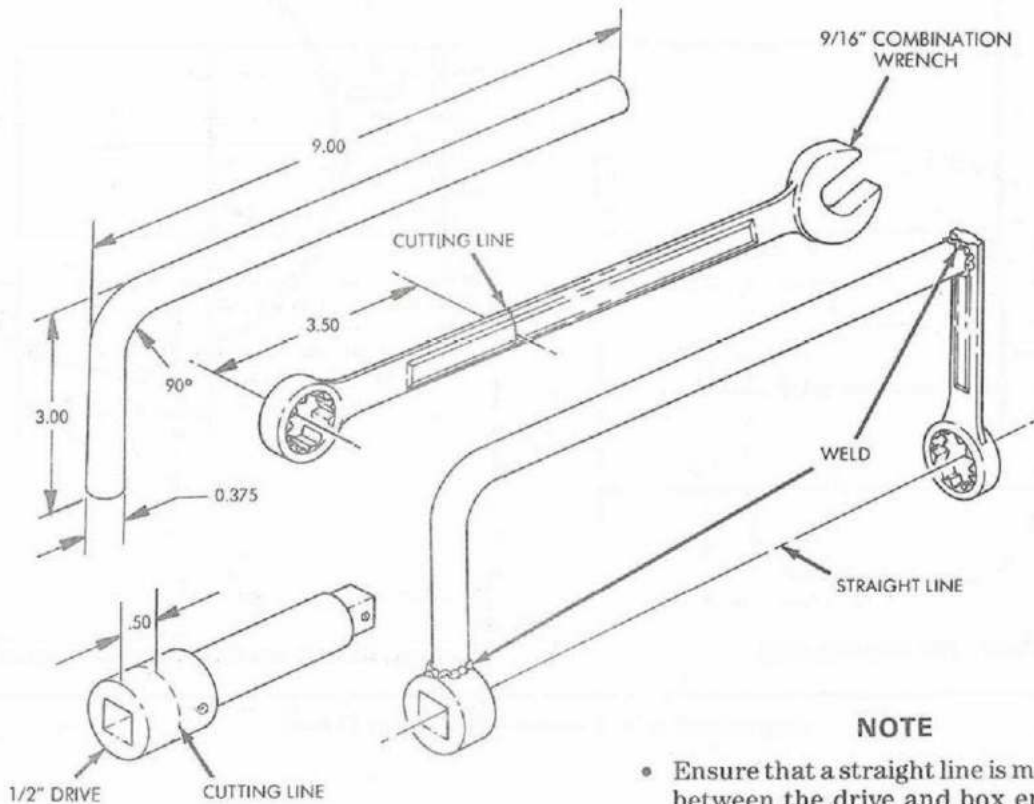
Special Form Die (Exhaust Manifold)



## APPENDIX E (Cont'd)

*Improvised Wheel Bearing Inner Cup Driver.*

# APPENDIX E (Cont'd)



**NOTE:**

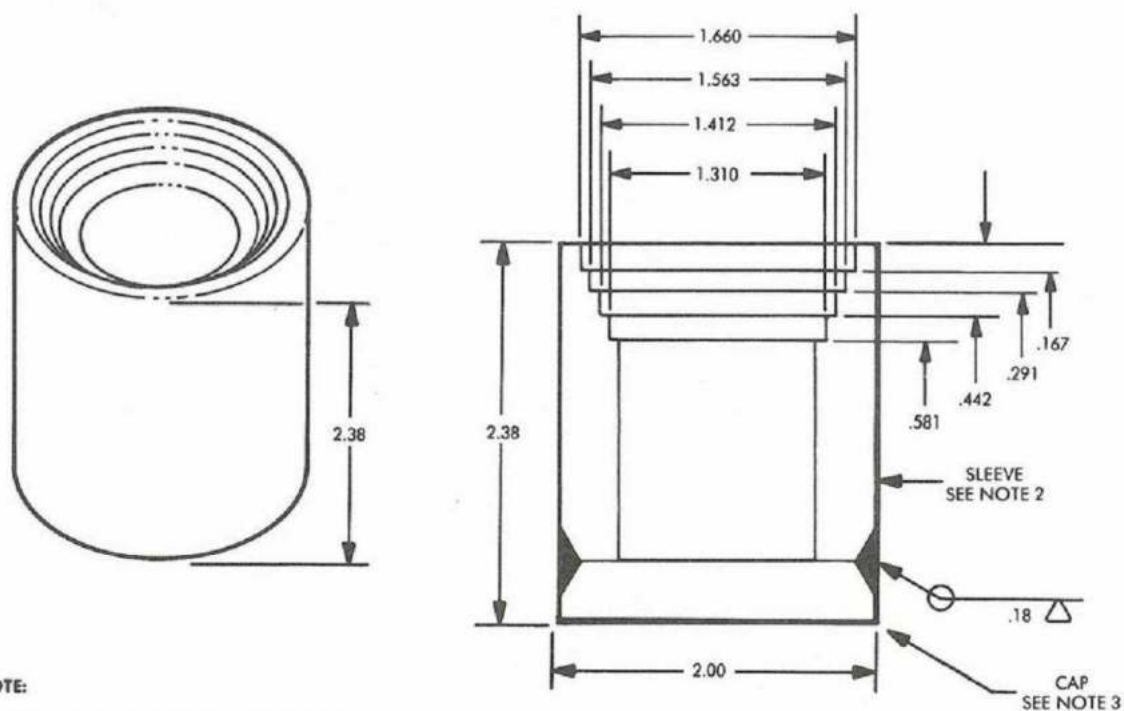
1. CUT AND FORM 0.375 INCH DIAMETER (9.52) STEEL ROD.
2. FORM TO DIMENSIONS.
3. ALL DIMENSIONS ARE INCHES.

**NOTE**

- Ensure that a straight line is maintained between the drive and box end during welding.
- Remove all burrs and sharp edges.

*Carburator Torque Adapter*

## APPENDIX E (Cont'd)

**NOTE:**

1. ALL DIMENSIONS ARE SHOWN IN INCHES.
2. MATERIAL:  
STEEL, CARBON, SEAMLESS TUBING  
1026  
COLD DRAWN  
SPEC ASTM A519  
2.00 O.D. X .375 WALL
3. MATERIAL:  
STEEL, CARBON  
1020  
H. R. C. Q., P. & O.  
SPEC ASTM A635  
.375 THICK
4. REMOVE ALL BURRS AND SHARP EDGES
5. TOLERANCES ON:  
2 PLACES  $\pm .02$   
3 PLACES  $\pm .005$

*Wear Sleeve Driver*






## APPENDIX F

### TORQUE LIMITS

Unless otherwise specified in the individual installation procedures, all tightening operations should be performed with sufficient wrench torque (force on the wrench handle) to tighten a unit according to good mechanical practice. Use a torque indicating wrench where specified. Do not overtighten; this may strip threads or cause distortion. Tightening will always be understood to include the correct installation of lockwashers, locknuts, lock wire, or cotter pins to secure the tightened nut.

#### *Standard Torque Specifications*

USAGE	MUCH USED	MUCH USED	USED AT TIMES	USED AT TIMES
CAPSCREW DIAMETER AND MINIMUM TENSILE STRENGTH psi (kPa)	To 1/2-69,000 (475,755)  To 3/4-64,000 (441,280)  To 1-55,000 (379,225)	To 3/4-120,000 (527,400)  To 1-115,000 (792,925)	To 5/8-140,000 (965,300)  To 3/4-133,000 (917,035)	150,000 (1,034,250)

QUALITY OF MATERIAL	INDETERMINATE	MINIMUM COMMERCIAL	MEDIUM COMMERCIAL	BEST COMMERCIAL
SAE GRADE NUMBER	1 or 2	5	6 or 7	8
<b>CAPSCREW HEAD MARKINGS:</b> Manufacturer's marks may vary. These are all SAE Grade 5 (3-line). 				



**APPENDIX F (Cont'd)***Standard Torque Specifications (Cont'd)*

CAPSCREW BODY SIZE (INCHES)—(THREAD)	TORQUE lb-ft (N•m)		TORQUE lb-ft (N•m)		TORQUE lb-ft (N•m)		TORQUE lb-ft (N•m)	
1/4—20	5	6.78	8	10.8	10	13.6	12	16.3
—28	6	8.13	10	13.6			14	18.9
5/16—18	11	14.9	17	23.1	19	25.8	24	32.5
—24	13	17.6	19	25.8			27	36.6
3/8—16	18	24.5	31	42.0	34	46.1	44	59.7
—24	20	27.1	35	47.5			49	66.4
7/16—14	28	37.9	49	66.4	55	74.6	70	94.9
—20	30	40.7	55	74.6			78	105.8
1/2—13	39	52.9	75	101.7	85	115.3	105	142.3
—20	41	55.6	85	115.3			120	162.7
9/16—12	51	69.2	110	149.1	120	162.7	155	210.0
—18	55	74.6	120	162.7			170	230.5
5/8—11	83	112.5	150	203.4	167	226.4	210	284.7
—18	95	128.8	170	230.5			240	325.4
3/4—10	105	142.3	270	366.1	280	379.6	375	508.5
—16	115	155.9	295	400.1			420	569.5
7/8—9	160	216.9	395	535.6	440	596.6	605	820.3
—14	175	237.3	435	589.8			675	915.3
1—8	235	318.6	590	800.0	660	894.9	910	1233.9
—14	250	339.1	660	894.9			990	1342.4

1. Always use the torque values listed above when specific specifications are not available.

**NOTE**

Do not use above values in place of those specified in the engine groups of this manual; special attention should be observed in case of SAE Grade 6, 7 and 8 capscrews.

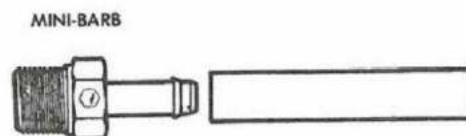
2. The above is based on use of clean and dry threads.
3. Reduce torque by 10% when engine oil is used as a lubricant.
4. Reduce torque by 20% if new plated capscrews are used.

**CAUTION**

Capscrews threaded into aluminum may require reductions in torque of 30% or more, unless inserts are used.

*Tubing Application Tightening Assembly Instructions*

Slide tubing over barbed insert until bottomed on fitting.



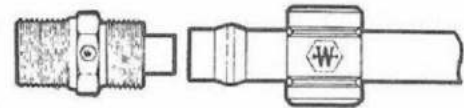
TA 156143

## APPENDIX F (Cont'd)

## Tubing Application Tightening Assembly Instructions (Cont'd)

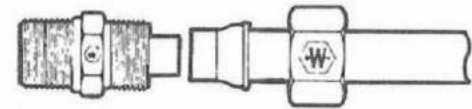
1. Slide nut and then sleeve on tubing.
2. Slide I.D. of tubing onto fitting insert until it bottoms.
3. Assemble nut to fitting body.
4. Tighten assembly finger tight to cover body threads.

KNURL-ON



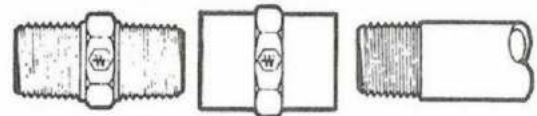
1. Slide nut and then sleeve on tubing.
2. Slide I.D. of tubing onto fitting insert until it bottoms.
3. Assemble nut to fitting body.
4. Tighten nut finger tight. From that point, tighten with a wrench two complete turns.

SELF-ALINE-PTF

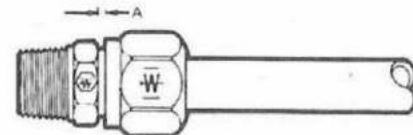


It is recommended that all pipe threads be tightened a minimum of 2 1/2 full turns past hand tight.

BRASS PIPE



1. Cut tubing to desired length. Make sure that the ends are cut reasonably square.
2. Slide Tubing into the preassembled fitting and push until tube bottoms.
3. Tighten nut as indicated in chart. Another check on proper assembly is dimension "A" when nut is fully tightened.

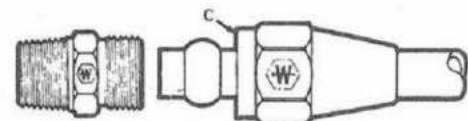
NYLON TUBING  
FOR AIR BRAKE

**DISASSEMBLY** — Remove nut and pull tubing out of fitting body. Insert will remain in tubing.

**REASSEMBLY** — Push tubing and insert into fitting body until it bottoms. Thread nut onto fitting body and tighten as in step 3.

TUBE O.D.	TIGHTEN NUT TO:	A
1/4	85 - 115 lb-in (9.6-12.9 N•m)	.085/.105
3/8	12 - 17 lb-ft (16.3-23.1 N•m)	.125/.145
1/2	25 - 33 lb-ft (33.9-44.7 N•m)	.100/.120
5/8	26 - 35 lb-ft (35.3-47.5 N•m)	.115/.135
3/4	38 - 50 lb-ft (51.5-67.8 N•m)	.180/.200

1. Slide nut and then sleeve on tubing. Threaded end of nut (C) must face out.
2. Insert tubing into fitting. Be sure tubing is bottomed on fitting shoulder.
3. Thread nut onto fitting body until it is hard tight.
4. From that point, tighten with a wrench the number of turns indicated right.

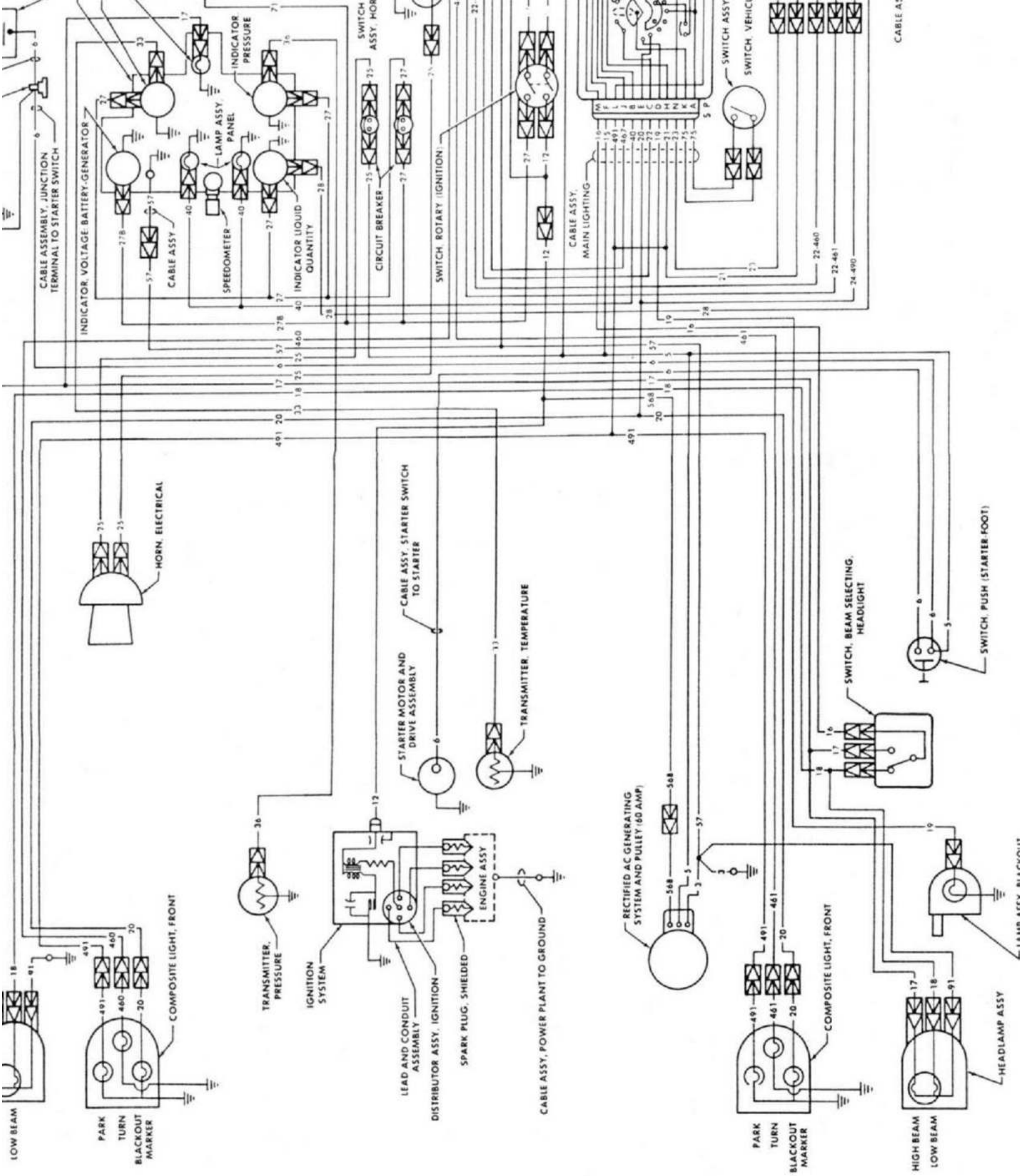
COPPER TUBING  
FOR AIR BRAKE

TUBE SIZE	ADDITIONAL NUMBER OF TURNS FROM HAND TIGHT
1/4, 3/8	1 3/4
1/2, 5/8, 3/4	3 1/4

TA 156144

# APPENDIX G

## SCHEMATIC AND WIRING DIAGRAMS





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## THE METRIC SYSTEM AND EQUIVALENTS

### LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
 1 Meter = 100 Centimeters = 1,000 Millimeters = 39.37 Inches  
 1 Kilometer = 1,000 Meters = 0.621 Miles

### WEIGHTS

1 Gram = 0.001 Kilograms = 1,000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1,000 Grams = 2.2 Lb  
 1 Metric Ton = 1,000 Kilograms = 1 Megagram = 1.1 Short Tons

### LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1,000 Milliliters = 33.82 Fluid Ounces

### SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches  
 1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet  
 1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

### CUBIC MEASURE

1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches  
 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

### TEMPERATURE

5 9 (°F - 32) = °C  
 212° Fahrenheit is equivalent to 100° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 9 5 C° + 32 = F°

## APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds Per Square Inch	Kilopascals	6.895
Miles Per Gallon	Kilometers Per Liter	0.425
Miles Per Hour	Kilometers Per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds Per Square Inch	0.145
Kilometers Per Liter	Miles Per Gallon	2.354
Kilometers Per Hour	Miles Per Hour	0.621



TA 089991

