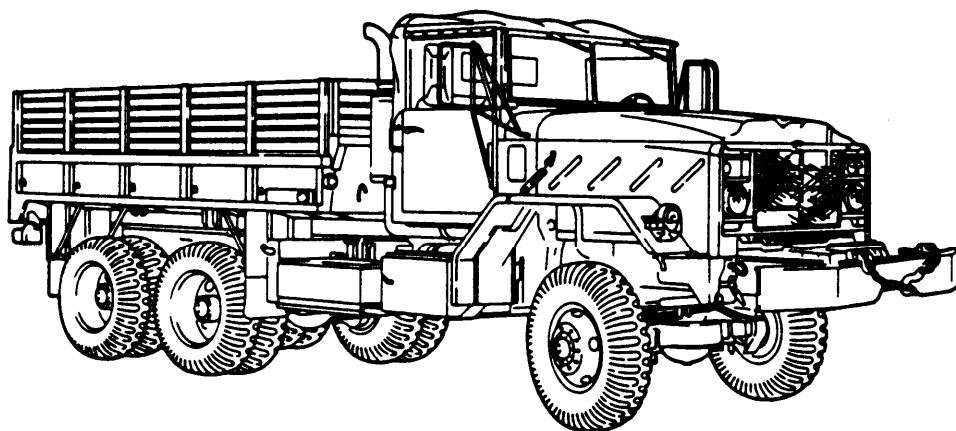


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ARMY TM 9-2320-272-20-2  
AIR FORCE TO 36A12-1C-442-2

TECHNICAL MANUAL  
ORGANIZATIONAL MAINTENANCE

TRUCK, 5-TON, 6X6, M939 AND  
M939A1 SERIES (DIESEL)



TRUCK, CARGO: 5-TON, 6X6, DROPSIDE,  
M923 (2320-01 -050-2084), M923A1 (2320-01 -206-4087),  
M925 (2320-01 -047-8769), M925A1 (2320-01 -206-4088);

TRUCK, CARGO: 5-TON, 6X6,  
M924 (2320-01 -047-8773), M924A1 (2320-01 -205-2692),  
M926 (2320-01 -047-8772), M926A1 (2320-01 -205-2693);

TRUCK, CARGO: 5-TON, 6X6, XLWB,  
M927 (2320-01 -047-8771), M927A1 (2320-01 -206-4089),  
M928 (2320-01 -047-8770), M928A1 (2320-01 -206-4090);

TRUCK, DUMP: 5-TON, 6X6,  
M929 (2320-01 -047-8756), M929A1 (2320-01 -206-4079),  
M930 (2320-01 -047-8755), M930A1 (2320-01 -206-4080);

TRUCK, TRACTOR: 5-TON, 6X6,  
M931 (2320-01 -047-8753), M931A1 (2320-01 -206-4077),  
M932 (2320-01 -047-8752), M932A1 (2320-01 -205-2684);

TRUCK, VAN, EXPANSIBLE: 5-TON, 6x6,  
M934 (2320-01 -047-8750), M934A1 (2320-01 -205-2682),  
M935 (2320-01 -047-8751), M935A1 (2320-01 -205-2683);

TRUCK, MEDIUM WRECKER: 5-TON, 6x6,  
M936 (2320-01 -047-8754), M936A1 (2320-01 -206-4078)

MECHANICAL BRAKE AND  
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BRAKE MAINTENANCE

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CHANGE  
NO.3

DEPARTMENTS OF THE ARMY  
AND THE AIR FORCE  
WASHINGTON, D.C. ,12 May 1991

TECHNICAL MANUAL  
ORGANIZATIONAL MAINTENANCE

TRUCK, 5-TON, 6X6, M939,  
M939A1 AND M939A2 SERIES (DIESEL)

TRUCK, CARGO, DROPSIDE: 5-TON, 6X6,  
M923 (2320-01 -050-2084), M923A1 (2320-01 -206-4087), M923A2 (2320-01 -230-0307),  
M923 (2320-01 -047-8769), M925A1 (2320-01 -206-4088), M925A2 (2320-01 -230-0308);  
TRUCK, CARGO: 5-TON, 6X6,  
M924 (2320-01 -047-8773), M924A1 (2320-01 -205-2692),  
M926 (2320-01 -047-8772), M926A1 (2320-01 -205-2693);  
TRUCK, CARGO XLWB: 5-TON, 6X6,  
M927 (2320-01 -047-8771), M927A1 (2320-01 -206-4089), M927A2 (2320-01 -230-0309),  
M928 (2320-01 -047-8770), M928A1 (2320-01 -206-4090), M928A2 [2320-01 -230-031 O];  
TRUCK, DUMP: 5-TON, 6X6,  
M929 (2320-01 -047-8756), M929A1 (2320-01 -206-4079), M929A2 (2320-01 -230-0305),  
M930 (2320-01 -047-8755), M930A1 (2320-01 -206-4080), M930A2 (2320-01 -230-0306);  
TRUCK, TRACTOR: 5-TON, 6X6,  
M931 (2320-01 -047-8753), M931A1 (2320-01 -206-4077), M931A2 (2320-01 -230-0302),  
M932 (2320-01 -047-8752), M932A1 (2320-01 -205-2684), M932A2 (2320-01 -230-0303);  
TRUCK, VAN, EXPANSIBLE: 5-TON, 6X6,  
M934 (2320-01 -047-8750), M934A1 (2320-01 -205-2682), M934A2 (2320-01 -230-0300),  
M935 (2320-01 -047-8751), M935A1 (2320-01 -205-2683), M935A2 (2320-01 -230-0301);  
TRUCK, MEDIUM WRECKER: 5-TON, 6X6,  
M936 (2320-01 -047-8754), M936A1 (2320-01 -206-4078), M936A2 (2320-01 -230-0304)

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authorization page	authorization page	7-63 through 7-74	7-63 through 7-72
i through iii	i through iii	7-89 through 7-92	7-89 through 7-92
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Index 17 (Index 18  
blank)

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Index 22

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*The Adjutant General*

CARL E. VUONO  
*General, United States Army*  
*Chief of Staff*

By Order of the Secretary of the Air Force;

official;

CHARLES C. McDONALD  
*General, United States Air Force*  
*Commander, Air Force Logistics Command*

MERRILL A. McPEAK  
*General, United States Air Force*  
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CHANGE  
NO. 2

TM 9-2320-272-20-2  
TO 36A12-IC-442-2

DEPARTMENTS OF THE ARMY  
AND THE AIR FORCE  
Washington D. C., 26 April 1990

**TECHNICAL MANUAL**  
**VOLUME 2 OF 2**  
**ORGANIZATIONAL MAINTENANCE**  
**TRUCK, 5-TON, 6X6, M939, M939A1 AND M939A2 SERIES**  
**(DIESEL)**

TRUCK, CARGO, DROPSIDE: 5-TON, 6X6,  
M923 (2320-01-050-2084), M923A1 (2320-01-206-4087), M923A2 (2320-01-230-0307),  
M925 (2320-01-047-8769), M925A1 (2320-01-206-4088); M925A2 (2320-01-230-0308),  
TRUCK, CARGO: 5-TON, 6X6,  
M924 (2320-01-047-8773), M924A1 (2320-01-205-2692),  
M926 (2320-01-047-8772), M926A1 (2320-01-205-2693);  
TRUCK, CARGO, XLWB: 5-TON, 6X6,  
M927 (2320-01-047-8771), M927A1 (2320-01-206-4089), M927A2 (2320-01-230-0309),  
M928 (2320-01-047-8770), M928A1 (2320-01-206-4090); M928A2 (2320-01-230-0310),  
TRUCK, DUMP: 5-TON, 6X6,  
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M930 (2320-01-047-8755), M930A1 (2320-01-206-4080); M930A2 (2320-01-230-0306),  
TRUCK, TRACTOR: 5-TON, 6X6,  
M931 (2320-01-047-8753), M931A1 (2320-01-206-4077), M931A2 (2320-01-230-0302),  
M932 (2320-01-047-8752), M932A1 (2320-01-205-2684); M932A2 (2320-01-230-0303),  
TRUCK, VAN, EXPANSIBLE: 5-TON, 6X6,  
M934 (2320-01-047-8750), M934A1 (2320-01-205-2682), M934A2 (2320-01-230-0300),  
M935 (2320-01-047-8751), M935A1 (2320-01-205-2683); M935A2 (2320-01-230-0301),  
TRUCK, MEDIUM WRECKER: 5-TON, 6X6,  
M936 (2320-01-047-8754), M936A1 (2320-01-206-4078) M936A2 (2320-01-230-0304),

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**Chief of Staff**

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Unit maintenance requirements for M939 5-TON Vehicles**

CHANGE  
NO. 1

TM 9-2320-272-20-2  
TO 36A12-1C-442-2  
C1  
DEPARTMENTS OF THE ARMY  
AND THE AIR FORCE  
WASHINGTON, DC 13 Dec 1985

**TECHNICAL MANUAL**  
**ORGANIZATIONAL MAINTENANCE**

**TRUCK, 5-TON, 6X6, M939 AND  
M939A1 SERIES (DIESEL)**

**TRUCK, CARGO: 5-TON, 6X6, DROPSIDE,**  
**M923 (2320-01 -050-2084), M923A1 (2320-01 -206-4087),**  
**M925 (2320-01 -047-8769), M925A1 (2320-01 -206-4088);**  
**TRUCK, CARGO: 5-TON, 6X6,**  
**M924 (2320-01 -047-8773), M924A1 (2320-01 -205-2692),**  
**M926 (2320-01 -047-8772), M926A1 (2320-01 -205-2693);**  
**TRUCK, CARGO: 5-TON, 6X6, XLWB,**  
**M927 (2320-01 -047-8771), M927A1 (2320-01 -206-4089),**  
**M928 (2320-01 -047-8770), M928A1 (2320-01 -206-4090);**  
**TRUCK, DUMP: 5-TON, 6X6,**  
**M929 (2320-01 -047-8756), M929A1 (2320-01 -206-4079),**  
**M930 (2320-01 -047-8755), M930A1 (2320-01 -206-4080);**  
**TRUCK, TRACTOR: 5-TON, 6X6,**  
**M931 (2320-01 -047-8753), M931 AI (2320-01 -206-4077),**  
**M932 (2320-01 -047-8752), M932A1 (2320-01 -205-2684);**  
**TRUCK, VAN, EXPANSIBLE: 5-TON, 6X6,**  
**M934 (2320-01 -047-8750), M934A1 (2320-01 -205-2682),**  
**M935 (2320-01 -047-8751), M935A1 (2320-01 -205-2683);**  
**TRUCK, MEDIUM WRECKER: 5-TON, 6X6,**  
**M936 (2320-01 -047-8754), M936A1 (2320-01 -206-4078)**

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Front cover	Front cover	10-47 (10-48 blank)	10-46.1 through 10-47 ( 10-48 blank)
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<b>Remove page</b>	<b>Insert page,</b>	<b>Remove pages</b>	<b>Insert pages</b>
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By Order of the Secretaries of the Army and the Air Force:

**JOHN A. WICKHAM, JR.**  
*General, United States Army*  
*Chief of Staff*

Official:

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*Brigadier General United States Army*  
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*Logistics Command*

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To be distributed in accordance with DA Form 12-38. Organizational Maintenance for Truck. Diesel. 5-ton. 6x6, M939-series (TM 9-2320-272-series).

## **W A R N I N G**

### **EXHAUST GASES CAN KILL**

1. DO NOT operate your vehicle engine in enclosed area
2. DO NOT idle vehicle engine with cab windows closed.
3. DO NOT drive vehicle with inspection plates or cover plates removed.
4. BE ALERT at all times for exhaust odors.
5. BE ALERT for exhaust poisoning symptoms, they are
  - . Headache
  - . Dizziness
  - . Sleepiness
  - . Loss of muscular control
6. If YOU SEE another person with exhaust poisoning symptoms:
  - ! Remove person from area
  - . Expose to open air
  - . Keep person warm
  - . Do not permit person to move
  - . Administer artificial respiration, if necessary\*

\* For artificial respiration, refer to FM21-11.

### **WARNING SUMMARY**

- Compressed air source will not exceed 30 psi (207 kpa). When cleaning with compressed air, eyeshields must be worn. Failure to wear eyeshields may result in injury to personnel.
- Do not disconnect air lines, remove safety valve, or perform brake chamber repairs before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.
- Do not touch hot exhaust system components with bare hands. Injury to personnel may result.
- Do not smoke when removing alcohol evaporator. Injury may result from improper handling of alcohol evaporator.
- Tire lockring must be properly seated when installed, and must never be removed without first deflating tire. If lockring is not correctly installed, it may pop off when tire is inflated causing injury to personnel.
- Never inflate a tire without a tire inflation cage, or injury to personnel may result.
- Do not start engine when steering hoses are disconnected. Pressure may whip hoses, causing injury to personnel.

### WARNING SUMMARY (Cont'd)

- Drycleaning fluid is flammable and will not be used near open flame. Use only in well-ventilated places. Failure to do this may result in injury to personnel.
- Hood must be supported during installation of hood support bar mounting bracket, or injury to personnel may result.
- Cab seat base has sharp edges. Use extreme caution when removing or installing seat or injury to personnel may result.
- Never stand between vehicles. Assistant must remain in secondary vehicle to engage service brake if cable snaps or automatic brake fails while towing vehicle. Failure to do this may result in injury to personnel.
- Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.
- All personnel must stand clear of crane during boom hoisting and lowering operations. A shifting or swinging load may cause injury to personnel.
- Remove and replace snubber valve and lift cylinder adapter cap as one assembly. Do not disconnect adapter cap from snubber valve. Valve and cap are locked together against spring tension. Injury to personnel may result from improper removal of valve from adapter cap.
- Hydraulic filter assembly is under great pressure and oil will spurt out from housing during removal and installation. Wear eyeshields during removal and installation of assembly. Failure to do this may result in injury to personnel.
- The tailgate is heavy. Be prepared to support tailgate weight as soon as retaining pins are removed. Failure to do this may result in injury to personnel.
- Diesel fuel is highly flammable. Do not perform fuel system procedures near open flame. Injury to personnel may result.
- Vehicle will become charged with electricity if A-frame contact or breaks high voltage wire. Do not leave vehicle while high voltage line is in contact with A-frame or vehicle. Failure to do so may result in injury to personnel.
- Cleaning fluids are flammable and toxic. Keep them away from open flame, and wear protective clothing or injury to personnel may result.

TECHNICAL MANUAL  
No. 9-2320-272-20-1

DEPARTMENTS OF THE ARMY  
AND THE AIR FORCE

Washington D. C., 12 May 1991

TECHNICAL ORDER  
No. 36A12-1C-442-1

# TECHNICAL MANUAL

## VOLUME 2 OF 2

### ORGANIZATIONAL MAINTENANCE TRUCK, 5-TON, 6X6, M939, M939A1 AND M939A2 SERIES (DIESEL)

Model		NSN without Winch	NSN With Winch
Truck, Cargo, Dropside	M923	2320-01-050-2084	
Truck, Cargo, Dropside	M923A1	2320-01-206-4087	
Truck, Cargo, Dropside	M923A2	2320-01-230-0307	
Truck, Cargo, Dropside	M925		2320-01-047-8769
Truck, Cargo, Dropside	M925A1		2320-01-206-4088
Truck, Cargo, Dropside	M925A2		2320-01-230-0308
Truck, Cargo	M924	2320-01-047-8773	
Truck, Cargo	M924A1	2320-01-205-2692	
Truck, Cargo	M926		2320-01-047-8772
Truck, Cargo	M926A1		2320-01-205-2693
Truck, Cargo, XLWB	M927	2320-01-047-8771	
Truck, Cargo, XLWB	M927A1	2320-01-206-4089	
Truck, Cargo, XLWB	M927A2	2320-01-230-0309	
Truck, Cargo, XLWB	M928		2320-01-247-8770
Truck, Cargo, XLWB	M928A1		2320-01-206-4090
Truck, Cargo, XLWB	M928A2		2320-01-230-0310
Truck, Dump	M929	2320-01-047-8756	
Truck, Dump	M929A1	2320-01-206-4079	
Truck, Dump	M929A2	2320-01-230-0305	
Truck, Dump	M930		2320-01-047-8755
Truck, Dump	M930A1		2320-01-206-4080
Truck, Dump	M930A2		2320-01-230-0306
Truck, Tractor	M931	2320-01-047-8753	
Truck, Tractor	M931A1	2320-01-206-4077	
Truck, Tractor	M931A2	2320-01-230-0302	
Truck, Tractor	M932		2320-01-047-8752
Truck, Tractor	M932A1		2320-01-205-2684
Truck, Tractor	M932A2		2320-01-230-0303
Truck, Van, Expansible	M934	2320-01-047-8750	
Truck, Van, Expansible	M934A1	2320-01-205-2682	
Truck, Van, Expansible	M934A2	2320-01-230-0300	
Truck, Van, Expansible, W/HLG	M935	2320-01-047-8751	
Truck, Van, Expansible, W/HLG	M935A1	2320-01-205-2683	
Truck, Van, Expansible, W/HLG	M935A2	2320-01-230-0301	
Truck, Medium Wrecker	M936		2320-01-047-8754
Truck, Medium Wrecker	M936A1		2320-01-206-4078
Truck, Medium Wrecker	M936A2		2320-01-230-0304

This manual is published in two parts. TM 9-2320 -272-20-1 contains chapters 1 through 6, and TM 9-2320-272-20-2 contains chapters 7 through 12, appendices A, B, C, D, E, F, and G.

This manual contains a table of contents and alphabetized index for chapters 7 through 12.

## ORGANIZATIONAL MAINTENANCE TRUCK, 5-TON, 6X6, M939, M939A1 , AND M939A2 SERIES (DIESEL)

### REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, Michigan 48397-5000. A reply will be furnished to you.

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## CHAPTER 7

### MECHANICAL BRAKE AND COMPRESSED AIR AND BRAKE MAINTENANCE

Refer to TM 9-2320-358-24&P for unique M939A2 maintenance procedures.

#### Section I. MECHANICAL BRAKE SYSTEM

##### **7-1. GENERAL**

This section provides maintenance procedures assigned to the organizational level for the mechanical parking brake. To find a specific procedure, see the maintenance task summary below:

##### **7-2. MECHANICAL PARKING BRAKE SYSTEM MAINTENANCE TASK SUMMARY**

<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>Page No.</b>
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## 7-3. PARKING BRAKE ADJUSTMENT

This task covers:

a. Test

b. Minor Adjustment

c. Major Adjustment

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10 Para, 6-4 or 6-8	Wheels chocked (task c. only). Parking brake disengaged. Transfer case shift lever in neutral. Transmission in "N" (neutral). Transfer to forward-rear axle propeller shaft removed (task c. only).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		Vehicle on level surface.
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

Step No.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

### a. Test

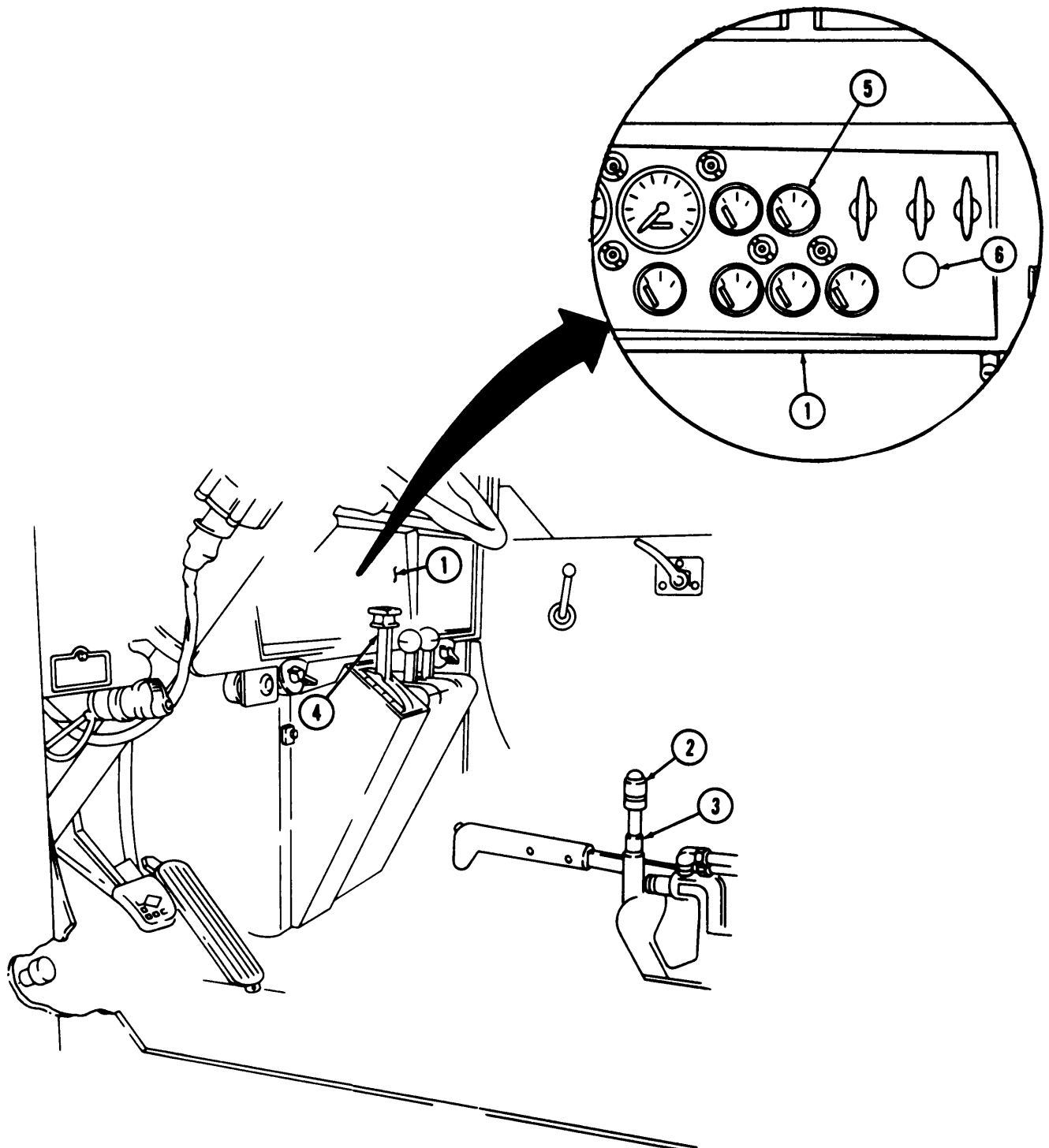
- |    |                      |                                  |   |                                   |
|----|----------------------|----------------------------------|---|-----------------------------------|
| 1. | Inside vehicle cab   | Air pressure gage (5)            | Start engine and allow air pressure to build to 90 psi (621 kPa). | Refer to TM 9-2320-272-10.        |
| 2. |                      | Parking brake lever (3)          | Pull up to engage.  |                                   |
| 3. | Instrument panel (1) | Spring brake release control (6) | Push in to release spring brakes.                                 |                                   |
| 4. | Vehicle cab          | Transmission selector lever (4)  | Place in "I-5" (drive).   | If vehicle moves, perform task c. |

### b. Minor Adjustment

- |    |                    |                                 |   |                    |
|----|--------------------|---------------------------------|---|--------------------|
| 5. | Inside vehicle cab | Parking brake adjusting cap (2) | a. Turn clockwise to increase braking action of brake.<br>b. Turn counterclockwise to decrease braking action of brake. | Proceed to task a. |
|----|--------------------|---------------------------------|---|--------------------|

7-3. PARKING BRAKE ADJUSTMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 7-3. PARKING BRAKE ADJUSTMENT (Cont'd)

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

## c. Major Adjustment

- |    |                         |                         |  |  |
|----|-------------------------|-------------------------|--|--|
| 6. | Parking brake cable (1) | Adjusting nut (4)       | Loosen until parking brake lever (3) has free travel.                          |  |
| 7. |                         | Parking brake lever (3) | Push clockwise with one hand while turning drum (2) clockwise with other hand. | If brakedrum (2) turns freely when parking brake lever (3) is pushed clockwise, replace parking brake-shoes (para 7-6).<br>If brakedrum stops, go to step 8. |

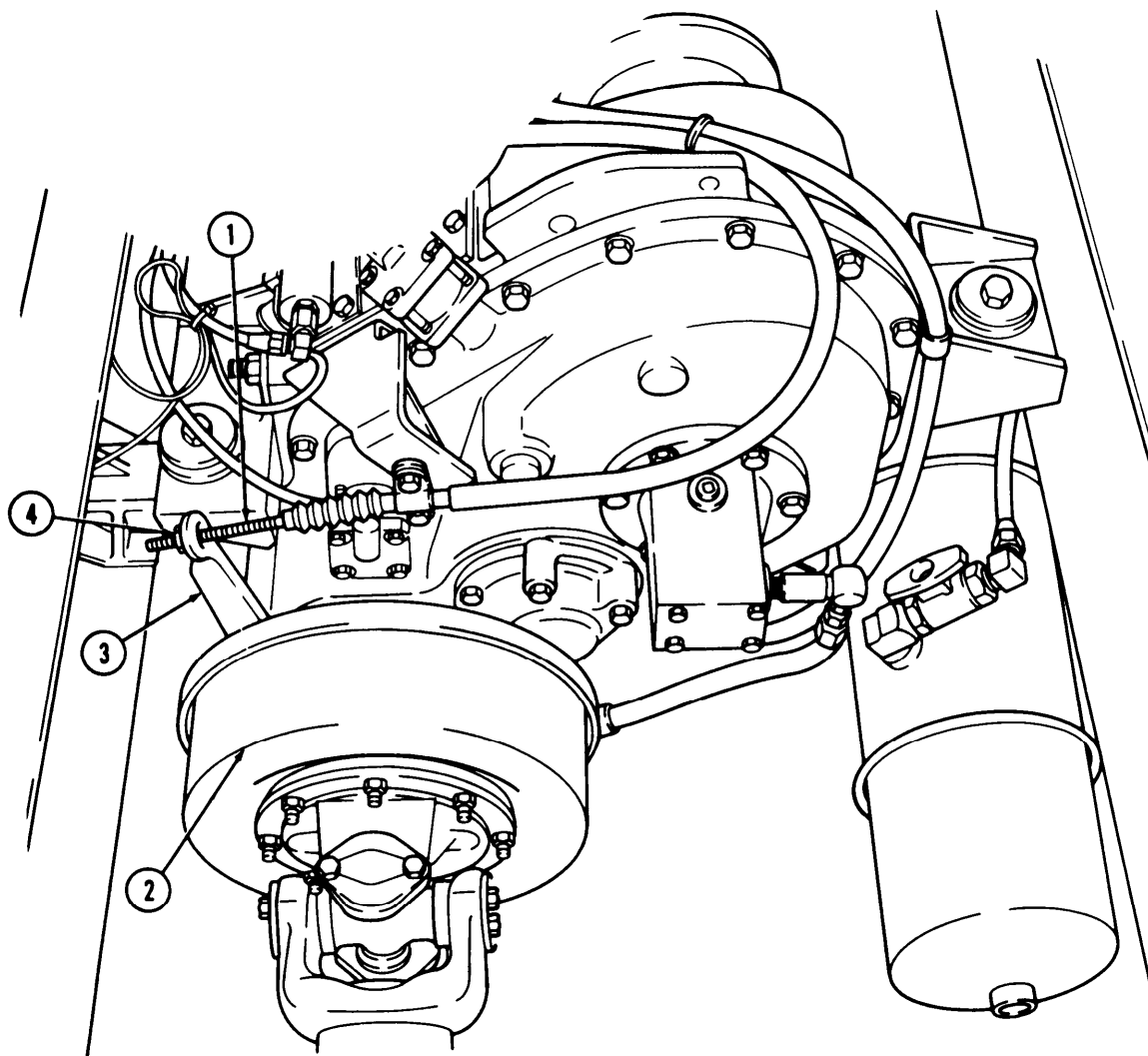
**NOTE**

Assistant will help with step 8.

- |    |                         |                     |   |  |
|----|-------------------------|---------------------|---|--|
| 8. | Inside vehicle cab      | Parking brake lever | Pull up to engage.  | Refer to TM 9-2320-272-10.   |
| 9. | Parking brake cable (1) | Adjusting nut (4)   | a. Tighten against parking brake lever (3) until drum (2) does not move.<br>b. Back off counter-clockwise 1/2 turn. | Repeat step 6 until slight drag of brake-shoes against drum (2) is observed and repeat test (task a.). |

### 7-3. PARKING BRAKE ADJUSTMENT (Cont'd)

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



END OF TASK!

FOLLOW-ON TASK: Remove chocks and road test vehicle (TM 9-2320-272- 10).

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Change 2 7-5

### 7-3.1. SPRING BRAKE VALVE ADJUSTMENT/REPLACEMENT

This task covers:

- a. Removal
- b. Adjustment

c. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Wheels chocked. Drain air reservoirs.
<u>Test Equipment</u>		
None		
<u>Special Tool</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Two locknuts Sealant (Appendix D, Item 14)		Do not disconnect air lines before draining air reservoirs.
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### a. Removal

- Vehicle cab                      Parking brake lever (9)      Release.

#### **WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### **NOTE**

Tag air lines for installation.

- Adapter assemblies (3), (6), and (5)                      Three air lines (4)                      Disconnect.
- Valve body (1)                      Adapter assemblies (3), (5), and (6).                      Remove.
- Parking brake bracket (7)                      No locknuts (10), washers (11), screws (2), and valve body (1)                      Remove.                      Discard locknuts (10).

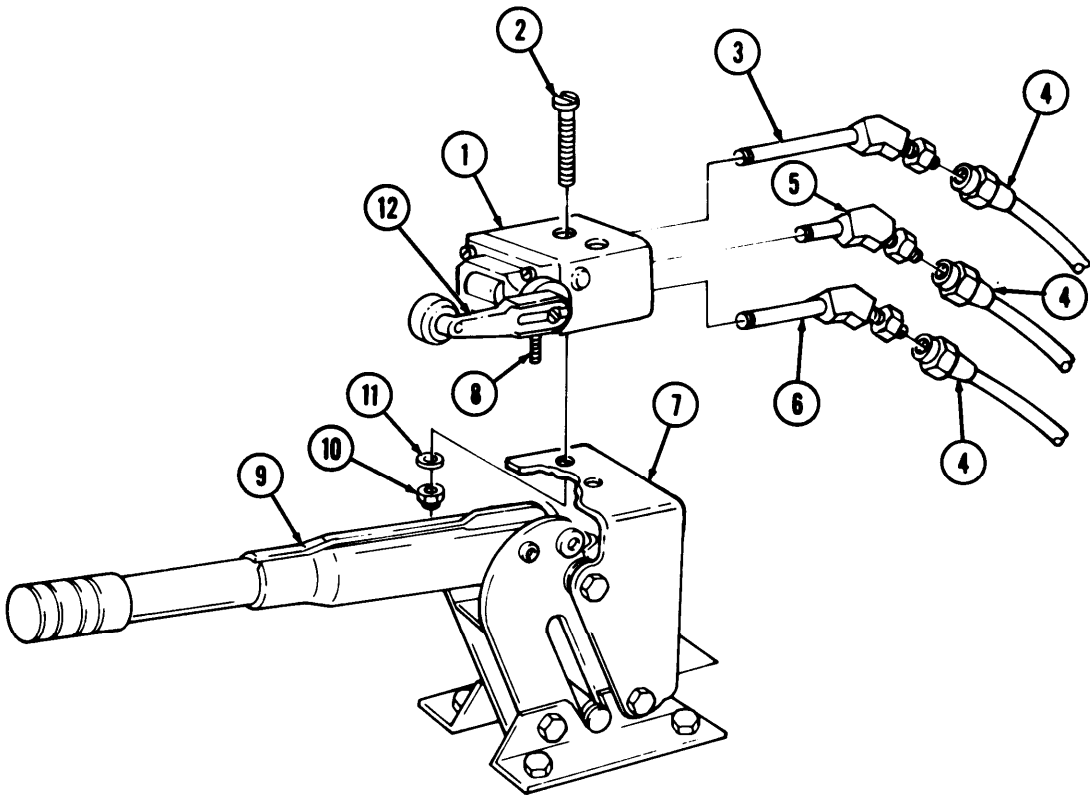


I 7-3.1. SPRING BRAKE VALW ADJUSTMENT/REPIACEMENT (Co.t'd)

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

b. Adjustment

5.	Valve body (1)	Valve lever (12)	a. Loosen setscrew (8). b. Position parallel with valve body (1). c. Tighten setscrew (8).	
6.	Valve body (1)		Position on parking brake bracket (7).	Valve lever (12) must be parallel with cab floor. If no\$ repeat step 5.

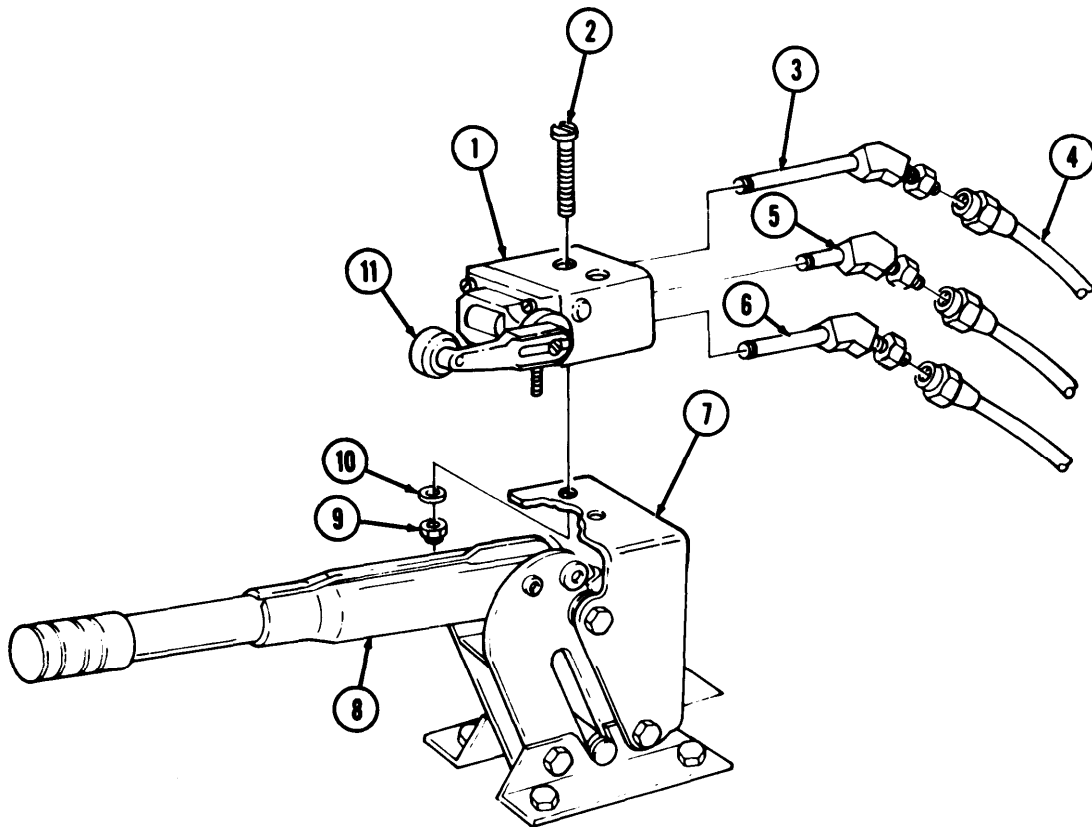


**7-3.1. SPRING BRAKE VALVE ADJUSTMENT/REPIACEMENT (Cent'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>c. Installation</b>				
7.		Valve body (1)	Install on parking brake bracket (7) with two screws (2), washers (10), and new locknuts (9).	Valve lever roller (11) must be alined with parking brake lever (8).
8.		Parking brake lever (8)	a. Lift up. b. Release.	Ensure parking brake lever (8) contacts valve lever roller (11) properly.
<p style="text-align: center;"><b>NOTE</b></p> <p>Male pipe threads must be coated with sealant before installation.</p>				
9.		Adapter assemblies (6), (5), and (3).	Install on valve body (1).	
<p style="text-align: center;"><b>CAUTION</b></p> <p>Do not twist air lines. Tkisted air lines will restrict air flow.</p>				
10.		Three air lines (4)	Connect tn adapter assemblies (3), (6), and (5).	

### 7-3.1 SPRING BRAKE VALVE ADJUSTMENT/REPLACEMENT (Cont'd)

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



#### END OF TASK!

- FOLLOW-ON TASKS:
- Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at spring brake valve.
  - Set parking brake (TM 9-2320-272-10) and ensure spring brakes engage properly.

## 7-4. PARKING BRAKE LEVER AND SWITCH REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
ALL	TM 9-2320-272-10 Para. 4-25	Wheels chocked. Battery ground cables disconnected.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Cotter pin Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Vehicle cab	Parking brake actuating lever (2)	Push down.	
2.	Parking brake lever (2)	Adjusting cap (1)	Turn completely out.	
3.	Cable clevis (15)	Cotter pin (5), washer (6), and clevis pin (7)	Remove.	Discard cotter pin (5).
4.	Parking brake housing (4) and brackets (14)	Three locknuts (3) and screws (9), spacer washer (10), and spring parking brake valve and bracket (8)	Remove.	Carefully set valve and bracket (8) aside. Discard locknuts (3).
5.	Parking brake brackets (14)	Parking brake housing (4)	Remove.	
6.	Wire (13) under vehicle cab	Wire (12)	Disconnect.	
<b>NOTE</b>				
Assistant will help with step 7.				
7.	Cab floor (19)	Locknut (18), wire (17), and screw (16)	Remove.	Discard locknut (18).
8.		Parking brake switch (11)	Remove.	

7-4. PARKING BRAKE LEVER AND SWITCH REPLACEMENT (Cont'd)

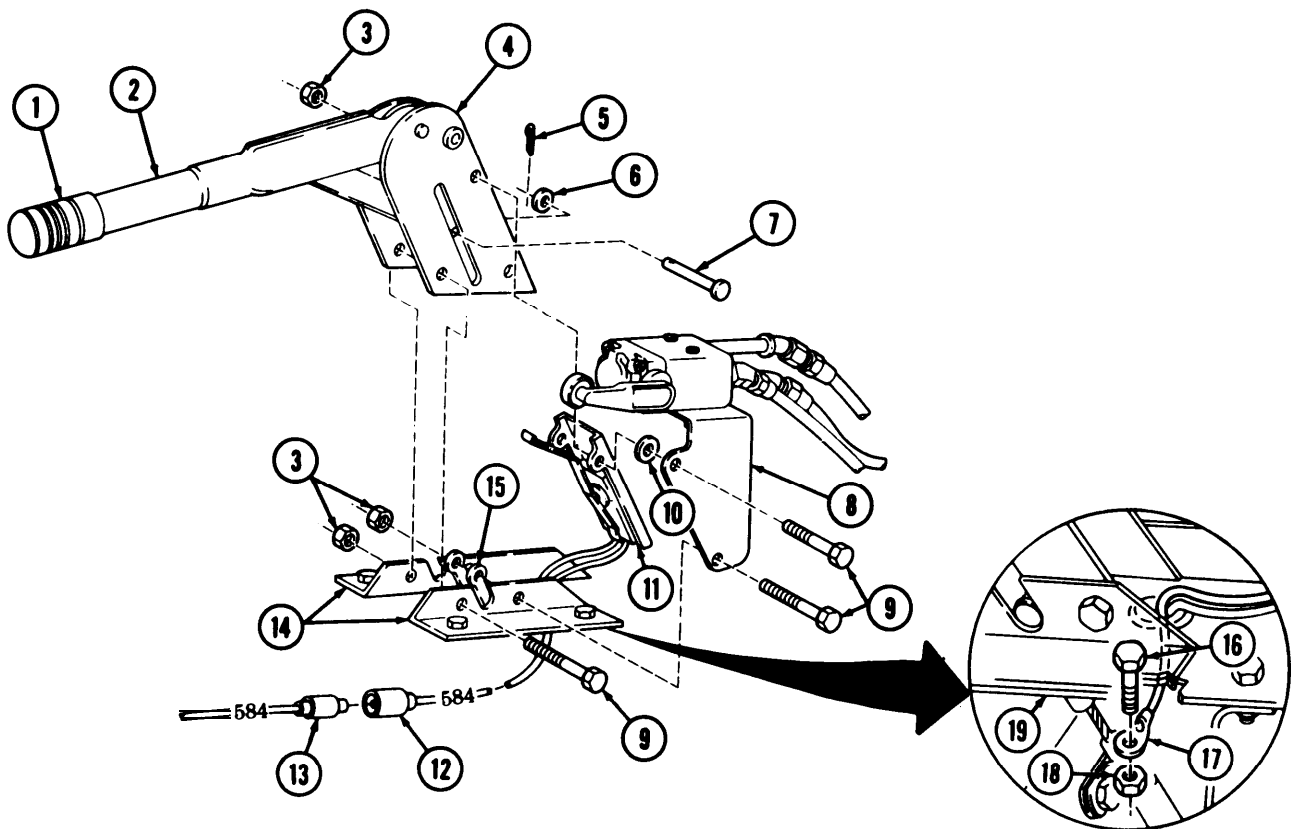
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. Installation**

**Note**

Assistant will help with step 9.

- |     |  |  |
|-----|--|--|
| 9.  | Wire (17)  | Install with screw (16) and new locknut (18).                                  |
| 10. | Wire (12)  | Connect.   |
| 11. | Cable clevis (15)  | Connect with clevis pin (7), washer (6), and new cotter pin (5).               |
| 12. | Parking brake housing (4), spring parking brake valve and bracket (8), and parking brake switch (11) | Install with three screws (9), spacer washer (10), and three new locknuts (3). |



**END OF TASK!**

FOLLOW-ON TASKS: . Adjust parking brake (para. 7-3).  
 . Connect battery ground cables (para. 4-25).  
 I Remove chocks and road test vehicle (TM 9-2320-272-10),

7-5. PARKING BRAKE CABLE LEVER AND BRACKET REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Wheels chocked.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Cotter pin Eight locknuts Four tiedown straps (Appendix D, Item 19)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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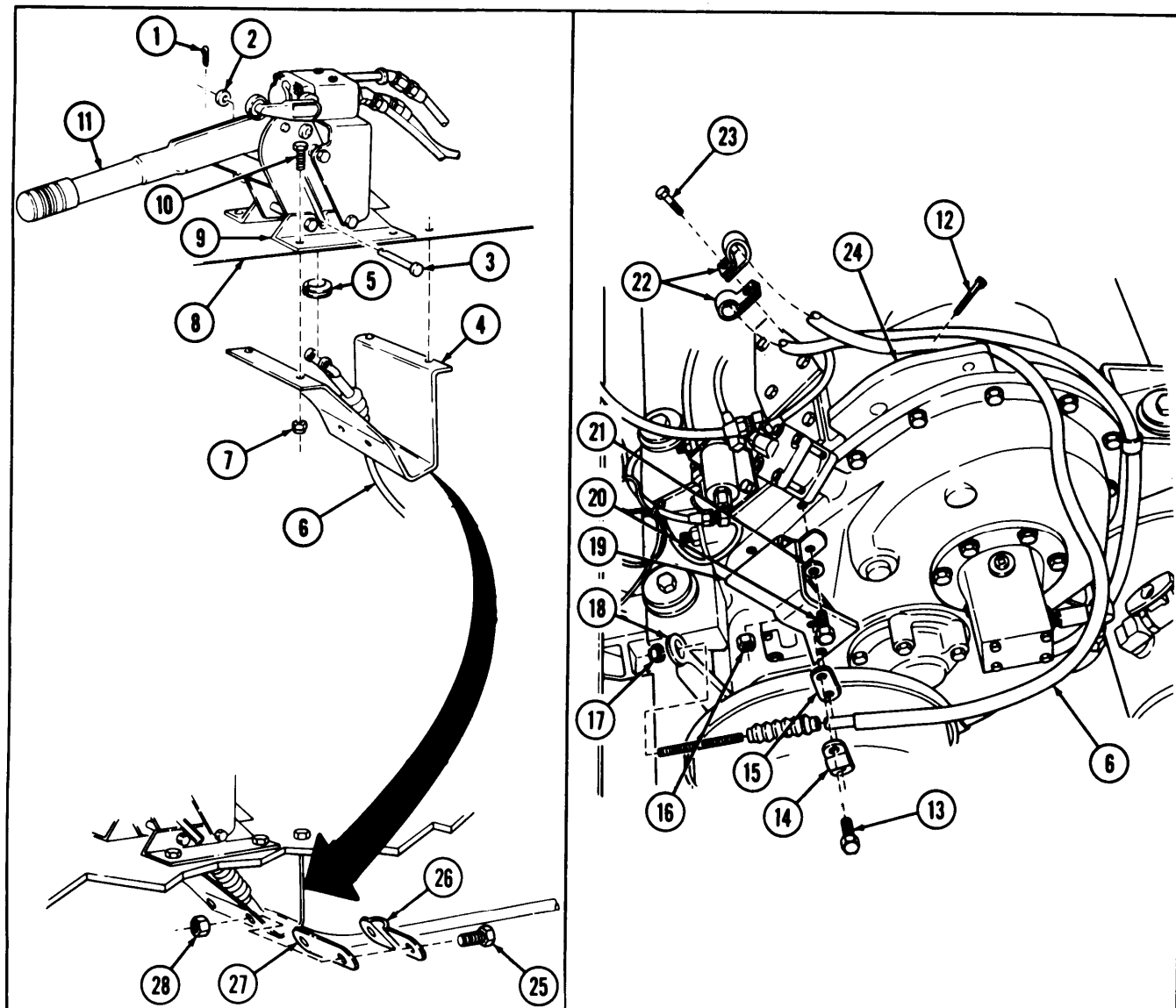
a. Removal

- |   |   |  |         |                         |
|---|---|--|---------|-------------------------|
| 1.  | Parking brake cable (6) to parking brake lever (11)                     | Cotter pin (1), washer (2), and clevis pin (3)                       | Remove. | Discard cotter pin (1), |
| <b>NOTE</b><br>Assistant will help with step 2. |   |  |         |                         |
| 2.  | Cable clamp bracket (4) to cab floor (8) and parking lever brackets (9) | Four screws (10) and locknuts (7)                                    | Remove. | Discard locknuts (7).   |
| 3.  | Parking brake cable (6) to cab floor (8)                                | Grommet (5)  | Remove. |                         |
| 4.  | Cable clamp bracket (4)   | Two locknuts (28) and screws (25), cable clamp (26), and spacer (27) | Remove, | Discard locknuts (28).  |
| 5.  | Parking brake cable (6)   | Four straps (12), screw (23), and two clamps (22)                    | Remove. | Discard straps (12).    |

# 7-5. PARKING BRAKE CABLE AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Transfer case bracket (19) and parking brake cable (6)	Two locknuts (16) and screws (13), cable clamp (14), and spacer (15)	Remove.	Discard locknuts (16).
7.	Brake drum lever (18)	Nut (17) and parking brake cable (6)	Remove.	
8.	Transfer case (24)	Two screws (20) and washers (21), and transfer case bracket (19)		

Remove.



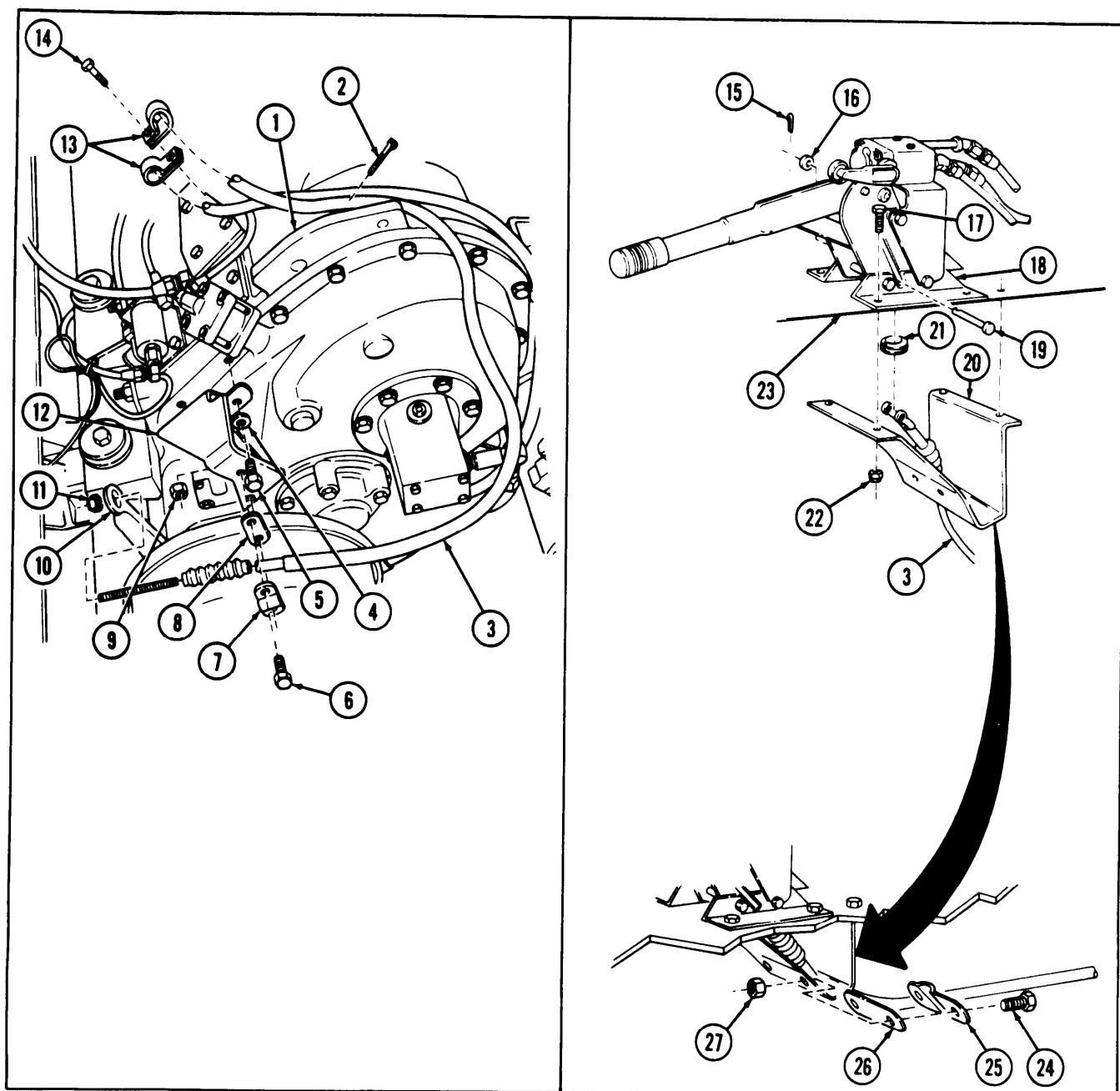
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## 7-5. PARKING BRAKE CABLE AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
9		Transfer case bracket (12)	Install with two washers (4) and screws (5).	
10.		Parking brake cable (3)	a. Install threaded end to brakedrum lever (10) with nut (11). b. Install to transfer case bracket (12) with spacer (8), clamp (7), two screws (6), and new locknuts (9). c. Install to cable clamp bracket (20) with two new locknuts (27), screws (24), and spacer (26), and clamp (25).	Spacer (8) to be positioned between transfer case bracket (12) and clamp (7).
11.		Grommet (21)	Install around cable (3) and in cab floor (23).	
<p style="text-align: center;"><b>Note</b></p> <p style="text-align: center;">Assistant will help with step 12.</p>				
12.		Cable clamp bracket (20) and parking lever brackets (18)	Install through cab floor (23) with four screws (17) and new locknuts (22).	
13.		Parking brake cable (3)	a. Install clevis pin (19). b. Install washer ( 16) and cotter pin (15).	
14.		Four tiedown straps (2), two clamps (13), and screw (14)	Install to transfer case (1).	



## 7-5. PARKING BRAKE CABLE AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				

### END OF TASK!

FOLLOW-ON TASKS: • Adjust parking brake (para. 7-3).  
 • Remove chocks and road test vehicle (TM 9-2320-272-10).

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**7-6. PARKING BRAKESHOES REPLACEMENT**

This task covers:

**a. Removal****b. Installation**

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 6-8	Wheels chocked. Transfer case to forward-rear axle propeller shaft removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Condition</u>
Brake spring pliers J-331 11		None
<u>Materials/Parts</u>		
Two brakeshoes		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-12		

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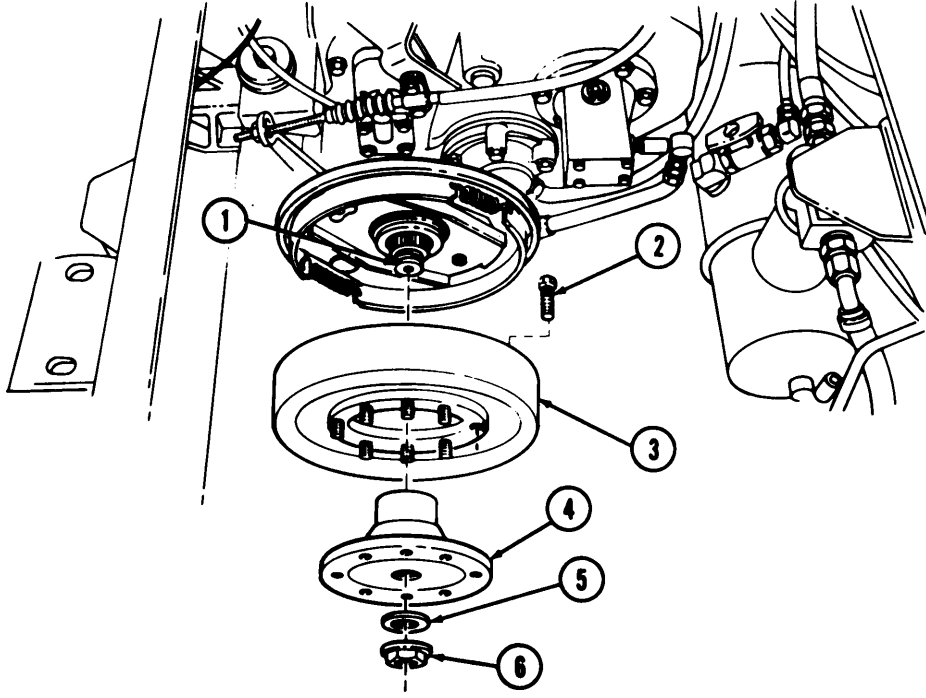
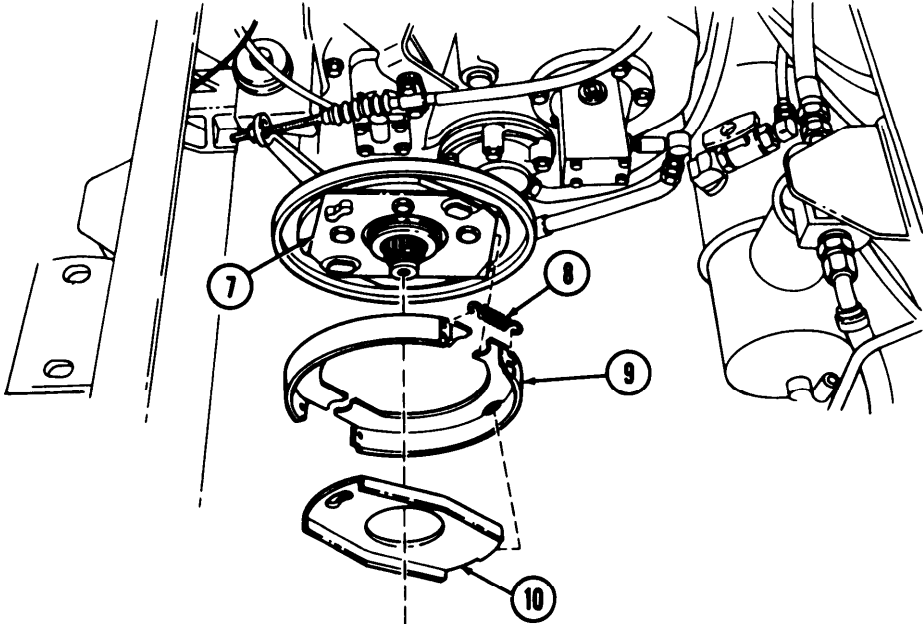
**NOTE**

Parking brakeshoes should be replaced when parking brake lever full travel is over 2.0 in. (5.1 cm).

**a. Removal**

- |    |                             |   |         |                          |
|----|-----------------------------|---|---------|--------------------------|
| 1. | Transfer output shaft (1)   | Thrust nut (6) and flat washer (5)                  | Remove. |                          |
| 2. |                             | Parking brakedrum (3)                               | Remove. |                          |
| 3. | Brakedrum studs (2)         | Transfer output shaft flange (4)                    | Remove. |                          |
| 4. | Parking brakedrum (3)       | Eight studs (2)                                     | Remove. |                          |
| 5. | Parking brakeshoes (9)      | 'WO shoe return springs (8)                         | Remove. | Use brake spring pliers. |
| 6. | Brakeshoe backing plate (7) | 'ho parking brakeshoes (9) and actuating plate (10) | Remove. |                          |

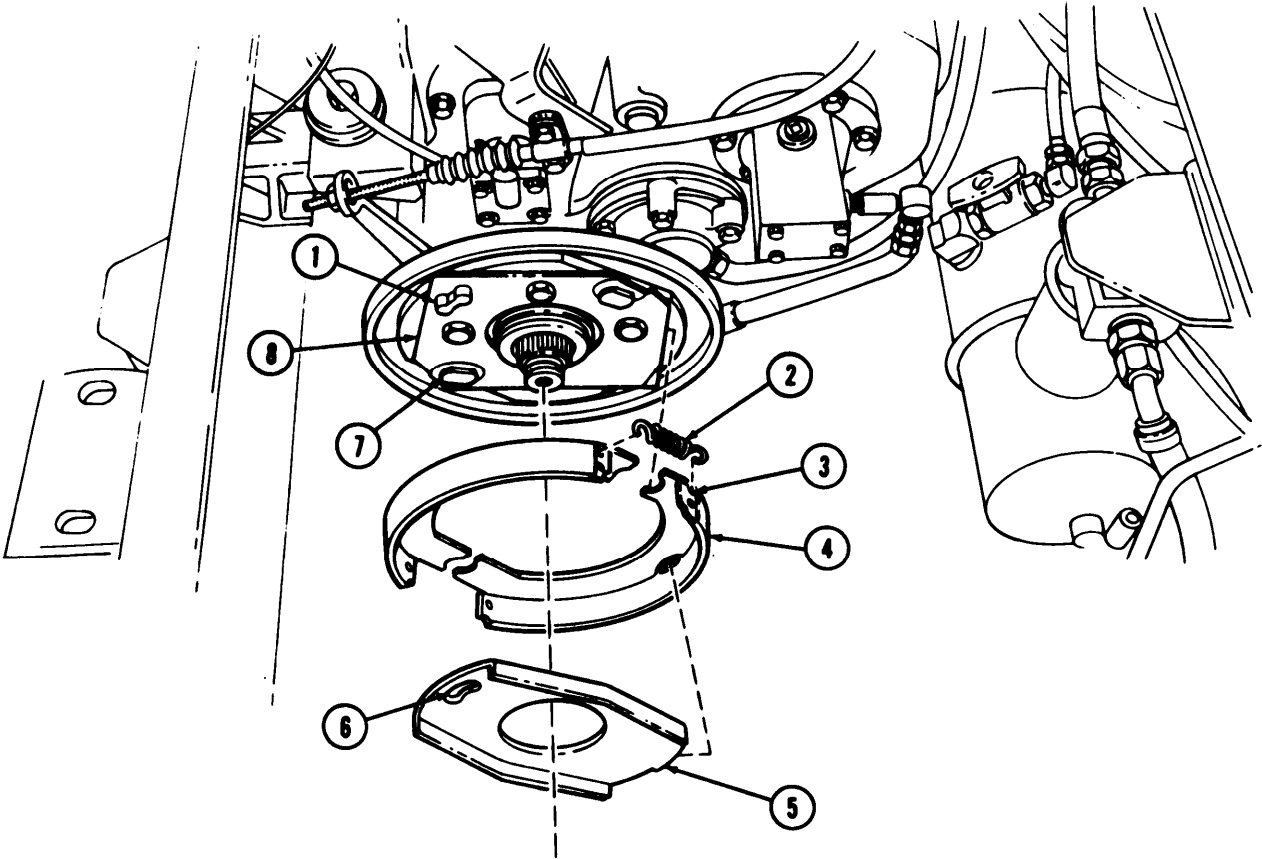
7-6. PARKING BRAKESHOES REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

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7-6. PARKING BRAKESHOES REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
b. Installation				
7.		Actuating plate (5)	Install against backing plate (8) so retainer opening (6) fits over retaining stud (1) of backing plate (8).	
8.		Two new brakeshoes (4)	a Position to two backing plate shoe studs (7). b. Install with two shoe return springs (2).	Make sure springs (2) are attached to inside holes (3) of brakeshoes (4).

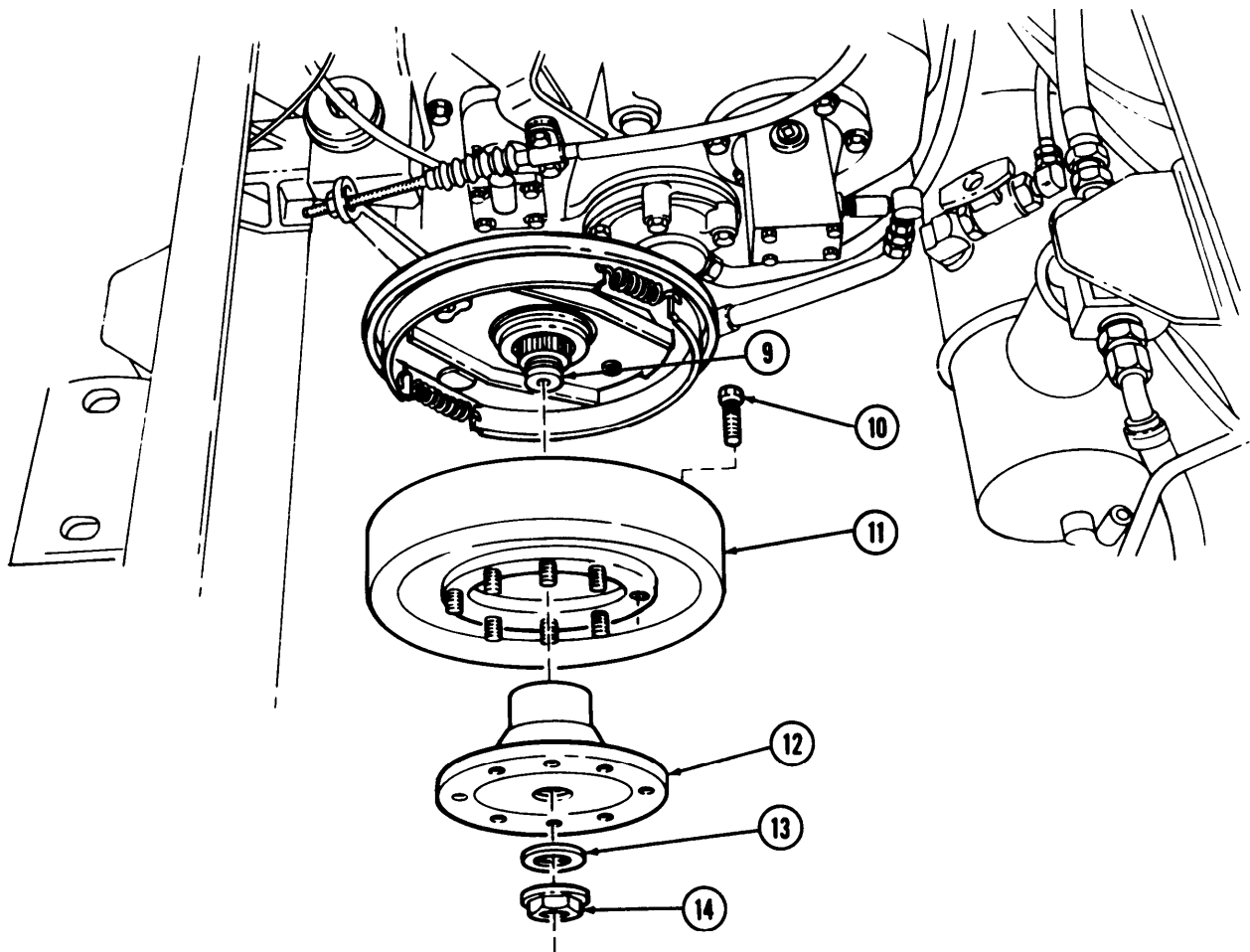


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**7-6. PARKING BRAKESHOES REPLACEMENT (Cont'd)**


---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.		Eight studs (10)	Install.	
10.		Brakedrum (11) and transfer output flange (12)	a. Position to transfer output shaft (9).  b. Install with washer (13) and thrust nut (14).	Tighten 450-600 lb-ft (610-813 N•m).

**END OF TASK!**

FOLLOW-ON TASKS: . Perform major parking brake adjustment (para. 7-3).  
 . Install transfer case to forward-rear axle propeller shaft (para. 6-8).  
 I Remove chocks and road test vehicle (TM 9-2320-272-10).

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## 7-7. PARKING BRAKEDRUM DUSTCOVER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 7-6	Wheels chocked. Parking brakeshoes removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Locknut		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual Reference</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### a. Removal

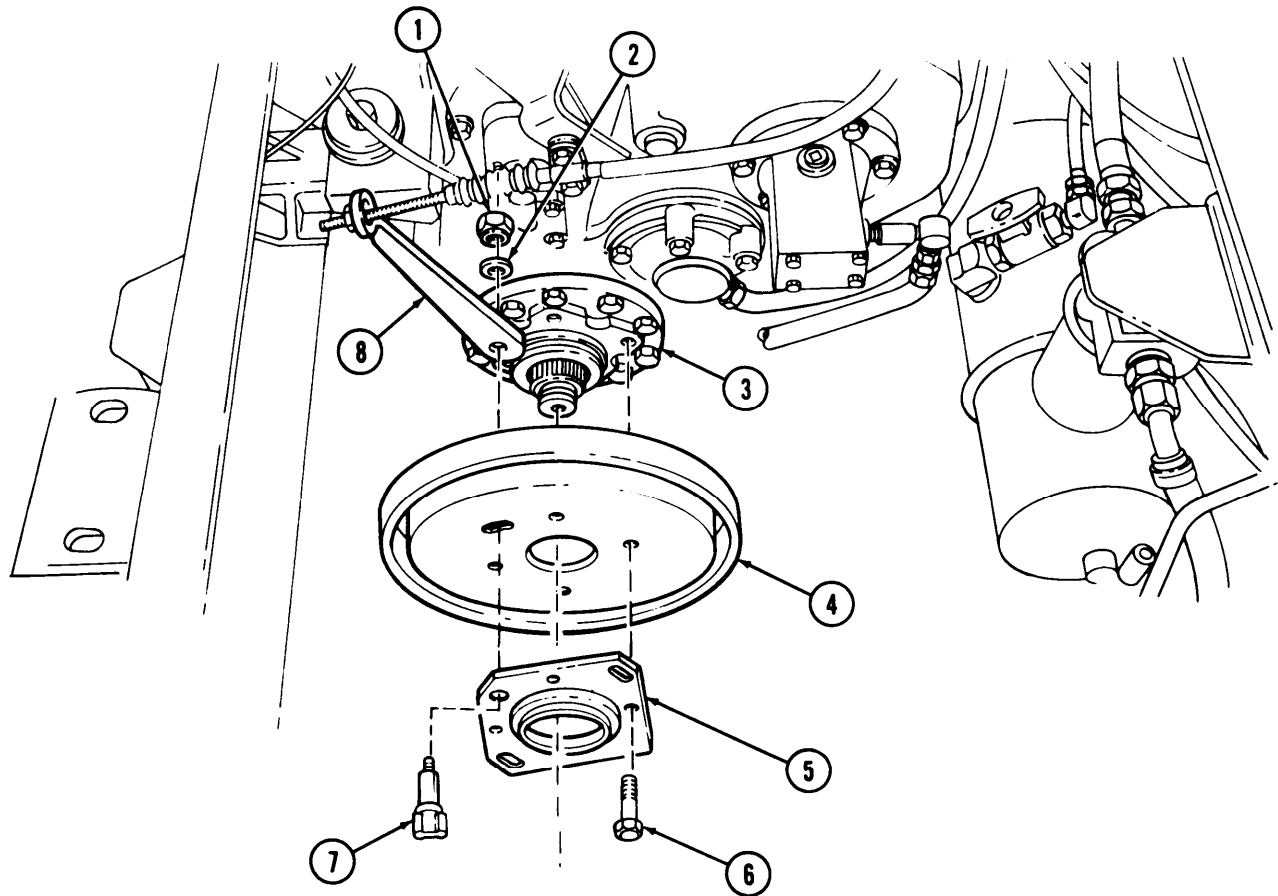
- |    |                                    |   |         |                      |
|----|------------------------------------|---|---------|----------------------|
| 1. | Parking brakedrum dustcover (4)    | Locknut (1), washer (2), brake lever (8), and brake lever cam (7)       | Remove. | Discard locknut (1). |
| 2. | Backing plate companion flange (3) | Four screws (6), backing plate (5), and parking brakedrum dustcover (4) | Remove. |                      |

#### b. Installation

- |    |   |   |                                      |
|----|---|---|--------------------------------------|
| 3. | Parking brakedrum dustcover (4) and backing plate (5) | Install with four screws (6).                                       | Tighten 180-230 lb-ft (244-312 NŹm). |
| 4. | Brake lever (8)                                       | Install with brake lever cam (7), washer (2), and new locknut ( 1). |                                      |

## 7-7. PARKING BRAKEDRUM DUSTCOVER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASKS:**

- Install parking brakeshoes (para. 7-6).
- Adjust parking brake (para. 7-3).
- Remove chocks and road test vehicle (TM 9-2320-272-10).

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## Section II. COMPRESSED AIR AND BRAKE SYSTEM

### 7-8. GENERAL

- a. This section provides maintenance procedures assigned to the organizational maintenance level for the compressed air and brake system. To find a specific procedure, see the maintenance task summary below.
- b. For fabrication instructions of air lines, refer to TM 9-243.
- c. For schematic representation of air line locations and routing, see Appendix G of this manual.

### 7-9. COMPRESSED AIR AND BRAKE SYSTEM MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
7-10.	Wheel Brakedrum Dustcovers Replacement	7-20
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7-12.	Brakeshoe Replacement	7-26
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<b>7-9. COMPRESSED AIR AND BRAKE SYSTEM MAINTENANCE TASK SUMMARY (Cent'd)</b>
---

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**7-11. BRAKE MECHANISM CHECKS AND ADJUSTMENTS (FRONT AND REAR)**

This task covers:

- a. Brakeshoe Check and Adjustment
- b. Checking Brakeshoe Wear

c. Mechanism Inspection

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 8-5  Para. 8-6	Spring brake caged. Front hub and drum removed (task c. only). Rear hub and drum removed (task c. only).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Brakeshoe adjusting tool J-34061		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-20P		

STEP	LOCATION	ITEM	ACTION	REMARKS
------	----------	------	--------	---------

**a. Brakeshoe Check and Adjustment**

- |    |                         |  |  |   |
|----|-------------------------|--|--|---|
| 1. | Brakedrum dustcover (4) | Two rubber inspection hole covers (1)  | Remove.                                    |   |
| 2. | Inspection hole (5)     | Brakeshoe lining (7) to brakedrum (6)  | Check clearance.                           | Clearance should be between 0.020 to 0.040 in. (0.508 to 1.016 mm). |
| 3. | Brakedrum dustcover (4) | Two rubber adjusting hole dustcovers (2)   | Remove.                                    |   |
| 4. | Adjusting holes (3)     | Star wheel (8)   | Rotate until proper clearance is obtained. | Use brakeshoe adjusting tool.                                       |
| 5. | Brakedrum dustcover (4) | Two rubber inspection hole dustcovers (1) and two rubber adjusting hole dustcovers (2) | Install,                                   |   |

# 7-11. BRAKE MECHANISM CHECKS AND ADJUSTMENTS (FRONT AND REAR) (Cont'd)

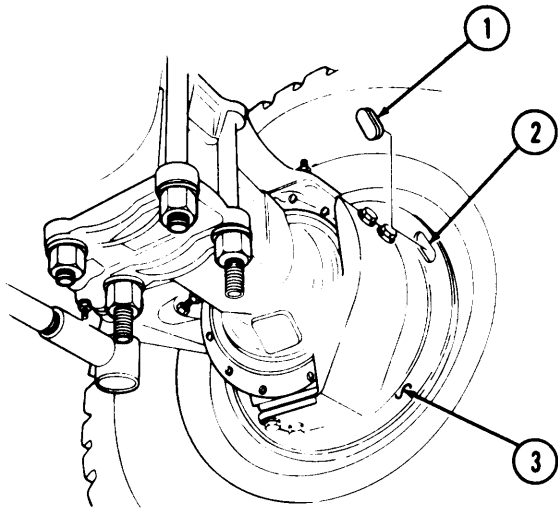
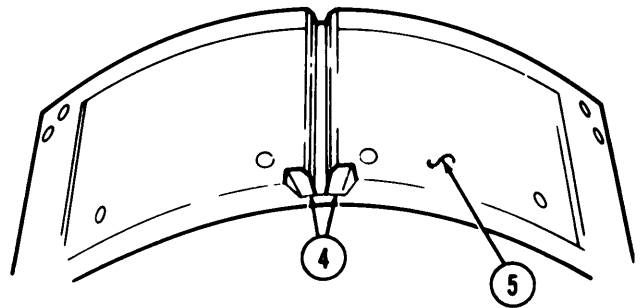
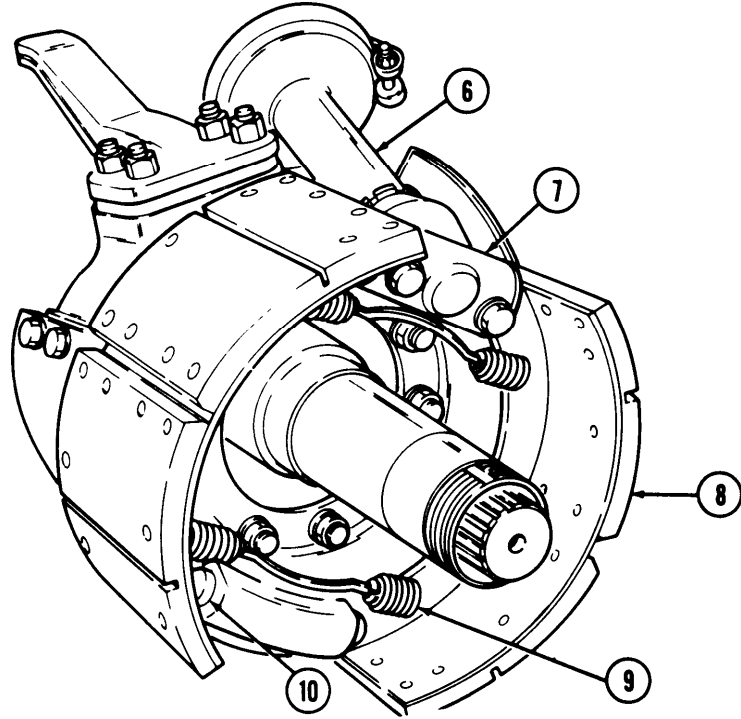
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
	FRONT			
	REAR			
	LEFT FRONT			
	LEFT REAR			
	RIGHT FRONT			
	RIGHT REAR			

TA 348944

<b>7-11. BRAKE MECHANISM CHECKS AND ADJUSTMENTS (FRONT AND REAR) (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Checking Brakeshoe Wear</b>				
6.	Brakedrum dustcover (3)	Two rubber inspection hole dustcovers (1)	Remove.	If brakeshoe lining (5) is worn to depth of chamfer (4), replace brakeshoe. Refer to para. 7-12.
7.	Inspection hole (2)	Chamfer (4) on brake-shoe lining (5)	Inspect.	
8.	Brakedrum dustcover (3)	Two rubber inspection hole dustcovers (3)	Install.	
<b>c. Mechanism Inspection</b>				
9.		Brakeshoe linings (5)	a. Inspect for cracks and chips.  b. Inspect for oil contamination,	Replace brakeshoes (8) if cracked or chipped. Refer to para. 7-12, Replace contaminated shoes. Refer to para. 7-12,
10.		Plunger seals ( 10)	Inspect for rotting and tears,	Notify DS maintenance if rotten or torn.
11.		Shoe return springs (9)	Inspect for stretching, bluing, cracks, and uneven coils.	Replace return springs (9) showing any of these defects.
12.		Brake chambers (6)	Inspect for cracks and bends at point where chamber (6) enters plunger (7).	Replace chamber(s) (6) if cracked or bent.

# 7-11. BRAKE MECHANISM CHECKS AND ADJUSTMENTS (FRONT AND REAR) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

END OF TASK!

FOLLOW-ON TASKS: . Install front hub and drum assemblies (para. 8-5).  
 . Install rear hub and drum assemblies (para. 8-6).

TA 340945

7-12. BRAKESHOE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para 8-5 Para 8-6	Spring (emergency) brakes caged. Front hub and drum removed. Rear hub and drum removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Brake spring pliers J-33111		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.

Brakeshoes ( 1 )

Two return springs (3)

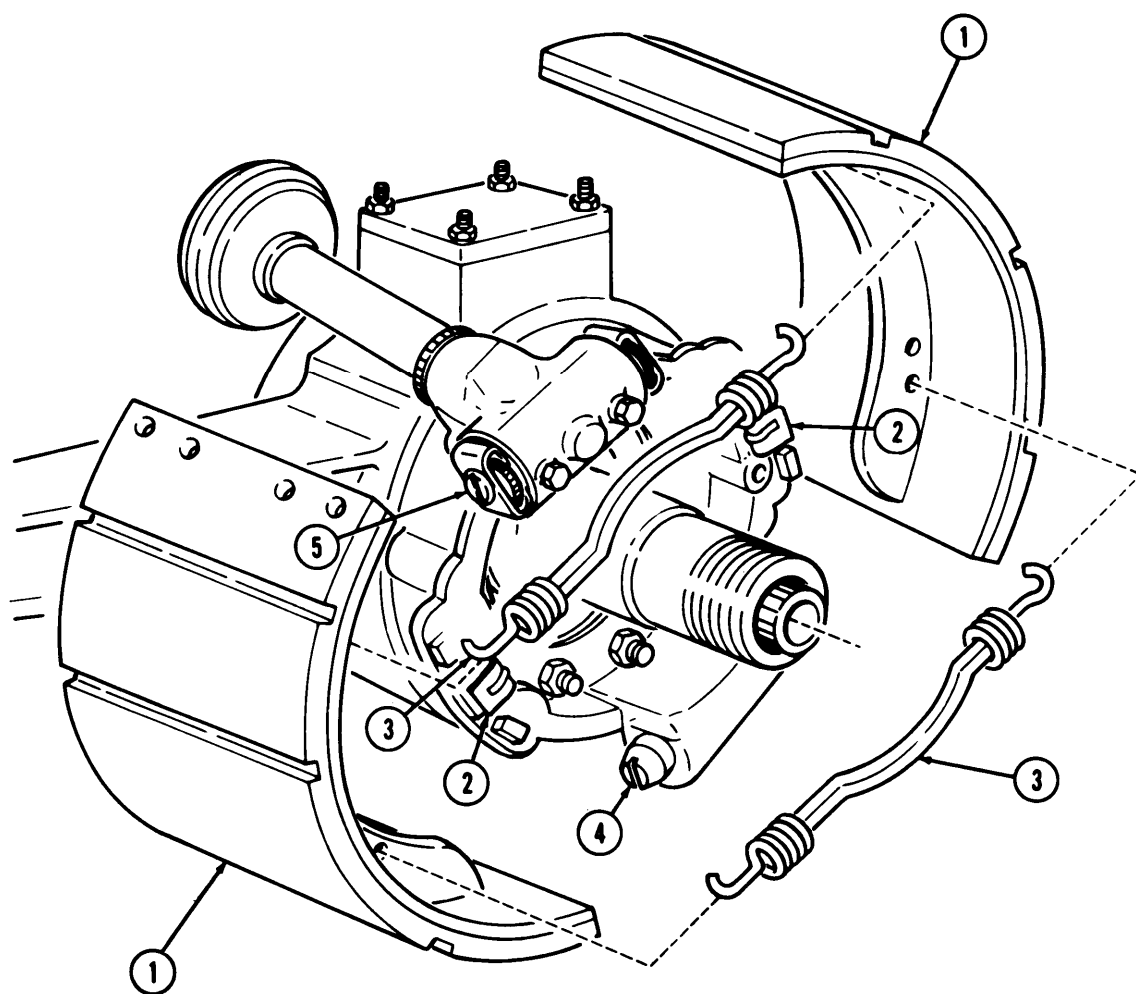
Remove.
2.

Two brakeshoes (1)

Remove each from anchor plunger (4) and adjustable plunger (5) and brakeshoe retaining clips (2).

7-12. BRAKESHOE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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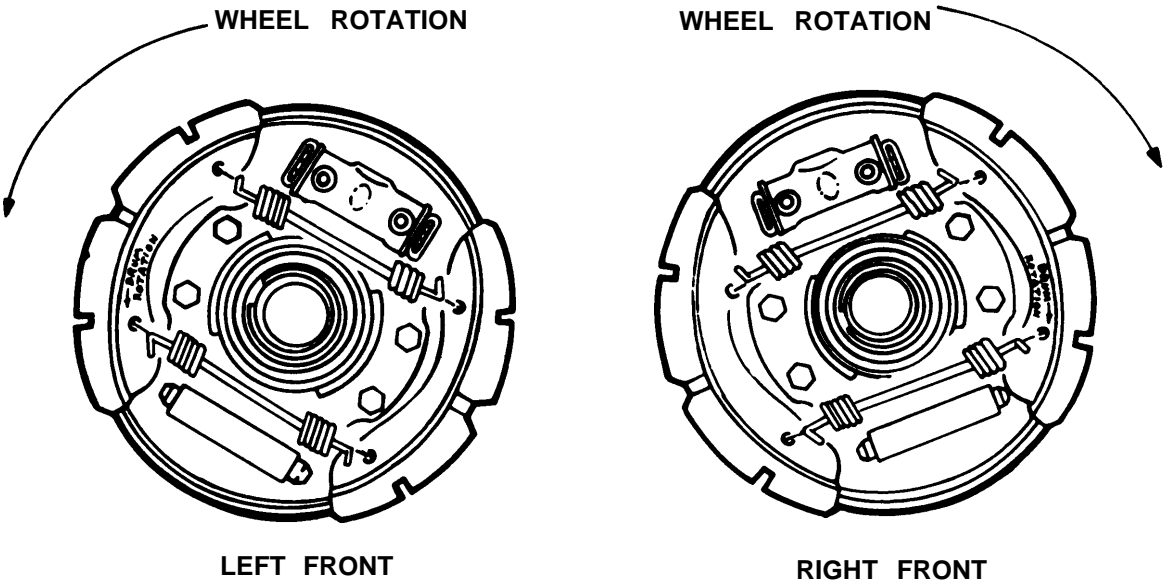
7-12. BRAKESHOE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

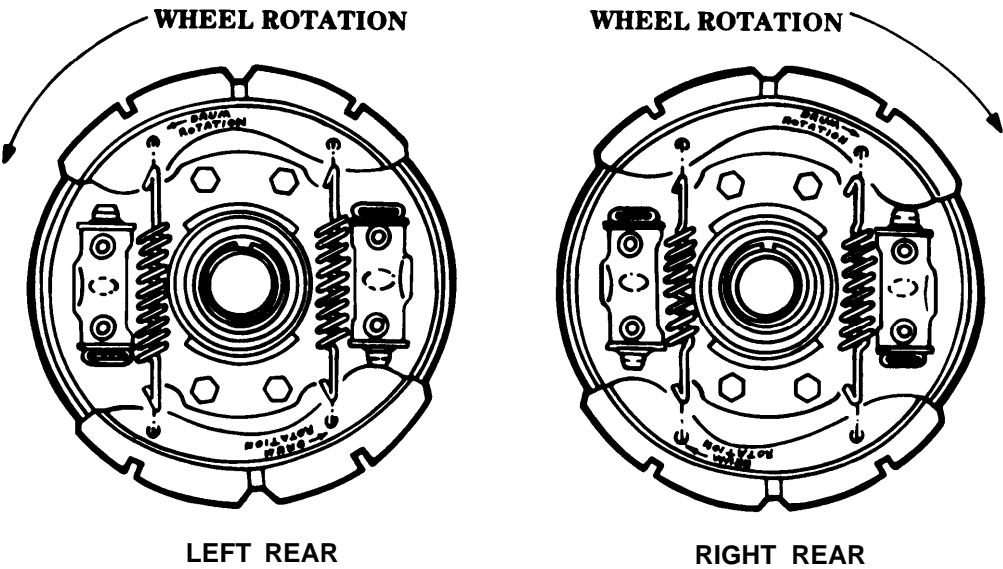
CAUTION

The long radius of the brakeshoe web must ride on the adjustable plunger.



CAUTION

Make sure arrow stamped on shoe web points to anchor plunger.





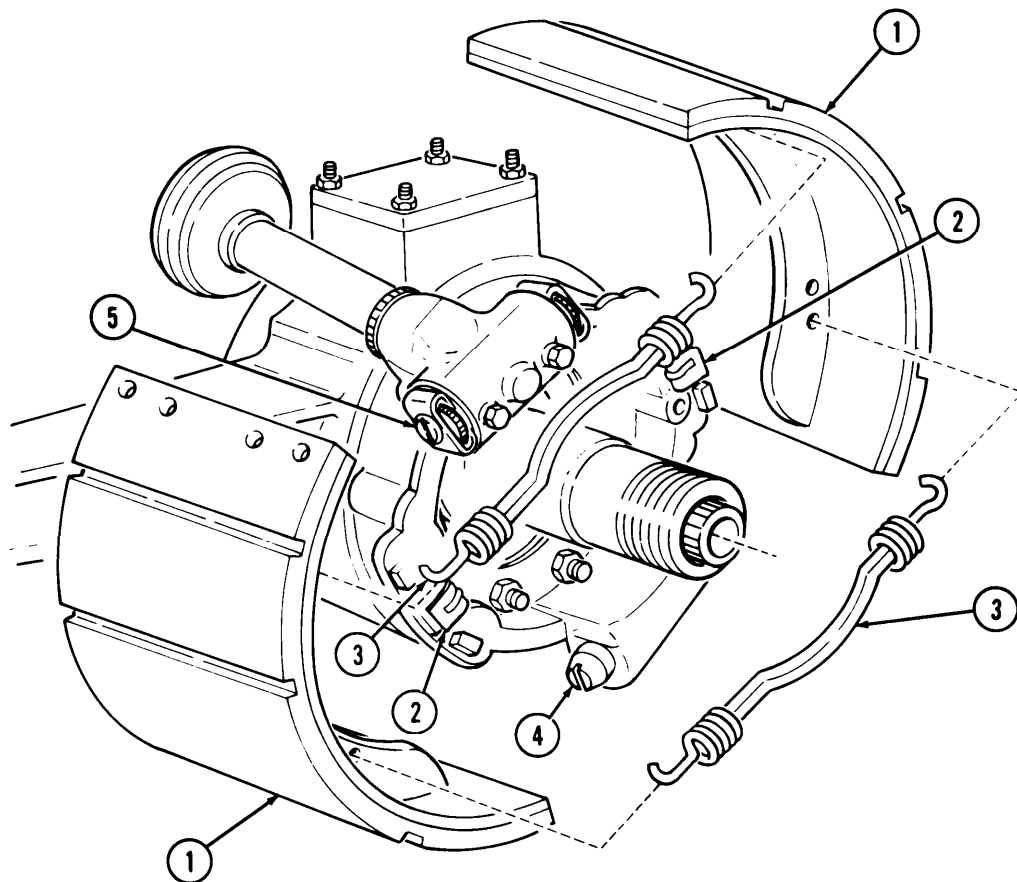
**7-12. BRAKESHOE REPLACEMENT (Cont'd)**

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

Rear brake mechanisms have one adjusting plunger in each plunger housing. Front brake mechanisms have two adjusting plungers in rear of plunger housing.

- |    |                    |   |
|----|--------------------|---|
| 3. | Two brakeshoes (1) | <p>a. Position each into slots of anchor plunger (4) and adjustable plunger (5) and brakeshoe retaining clips (2).</p> <p>b. Install with two return springs (3).</p> |
|----|--------------------|---|

**END OF TASK!**

**FOLLOW-ON TASKS:**

- Install front hub and drum assembly (para. 8-5).
- Install rear hub and drum assembly (para. 8-6).
- Check brakeshoe to drum clearance and adjust if necessary (para. 7-11).

TA 348948

## 7-13. SERVICE BRAKE CHAMBER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10	Air reservoirs drained.
None	Para. 7-10	Wheel brakedrum dustcovers removed.
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Brake spring pliers J-33111		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Two lockwashers		Do not disconnect air lines before draining air reservoirs.
Sealing tape (Appendix D, Item 26)		
<u>Personnel Rewired</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### a. Removal

- |    |                             |                                |             |                       |
|----|-----------------------------|--------------------------------|-------------|-----------------------|
| 1. | Brakes adapter fitting (7)  | Service brake control line (6) | Disconnect. | Tag for installation. |
| 2. | Service brake chamber (3)   | Brake adapter fitting (7)      | Remove.     |                       |
| 3. | 45 degree adapter elbow (4) | Vent line (5)                  | Disconnect. | Tag for installation. |
| 4. | Service brake chamber (3)   | Adapter elbow (4)              | Remove.     |                       |

#### NOTE

Perform step 5 for rear service brake only.

- |    |                                |  |         |                                   |
|----|--------------------------------|--|---------|-----------------------------------|
| 5. | Rear service brake chamber (3) | 'ho nuts (9) and lockwashers (10), U-bolt (12), and clamp (11) | Remove. | Discard lockwashers (10).         |
| 6. |                                | Collet nut (2)   | Loosen. |                                   |
| 7. | Actuator housing (8)           | Service brake chamber (3)                                      | Remove. | Record position for installation. |
| 8. | Service brake chamber (3)      | Collet nut (2)   | Remove. |                                   |

**7-13. SERVICE BRAKE CHAMBER REPLACEMENT (Cont'd)**

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

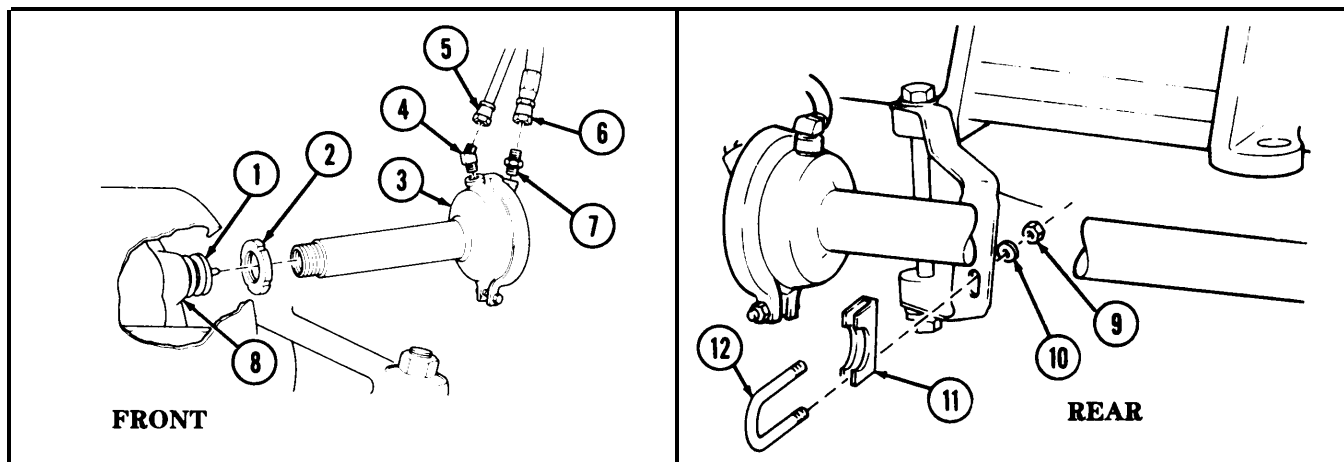
Wrap all male pipe threads with sealing tape before installation.

9.		Collet nut (2)	Install to brake chamber (3).	
10.		Service brake chamber (3)	Install over wedge assembly (1) and screw into actuator housing (8).	Make sure collet nut (2) is loose and chamber (3) is positioned for air line connection.
11.		Collet nut (2)	Thread to bottom of service brake chamber (3) and tighten 1-1/2 teeth.	

**NOTE**

Perform step 12 for rear service brake only.

12.		U-bolt (12) and clamp (11)	Install with two new lockwashers (10) and nuts (9).	
13.		Adapter elbow (4)	Install on service brake chamber (3).	
14.		Vent line (5)	Connect to adapter elbow (4).	
15.		Brake adapter fitting (7)	Install on brake chamber (3).	
16.		Service brake control line (6)	Connect to adapter fitting (7).	



END OF TASK!

- FOLLOW-ON TASKS:**
- Start engine (TM 9-2320-272-10) and allow air pressure to buildup to normal operating range. Check for air leaks at service brake chamber.
  - Install wheel brakedrum dustcovers (para. 7-10). Road test vehicle.

TA 348949

## 7-14. COMBINATION SPRING (EMERGENCY) AND SERVICE BRAKE CHAMBER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Air reservoirs drained.
	TM 9-2320-272-10	Spring (emergency) brake caged.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Two lockwashers		
Sealing tape (Append x D, Item 26)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not disconnect air lines before draining air reservoirs.	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

#### WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### a. Removal

- |    |   |  |             |                          |
|----|---|--|-------------|--------------------------|
| 1. | Combination chamber tee (5)                       | Two vent lines (4)   | Disconnect. | Tag for installation.    |
| 2. | Combination chamber elbow (3)                     | Supply line (1)  | Disconnect. | Tag for installation.    |
| 3. | Combination chamber elbow (13)                    | Control line (2)   | Disconnect. | Tag for installation.    |
| 4. | Combination spring and service brake chamber (12) | Collet nut (10)  | Loosen.     |                          |
| 5. |   | Two nuts (6) and lockwashers (7), U-bolt (11), and bracket (8) | Remove.     | Discard lockwashers (7), |

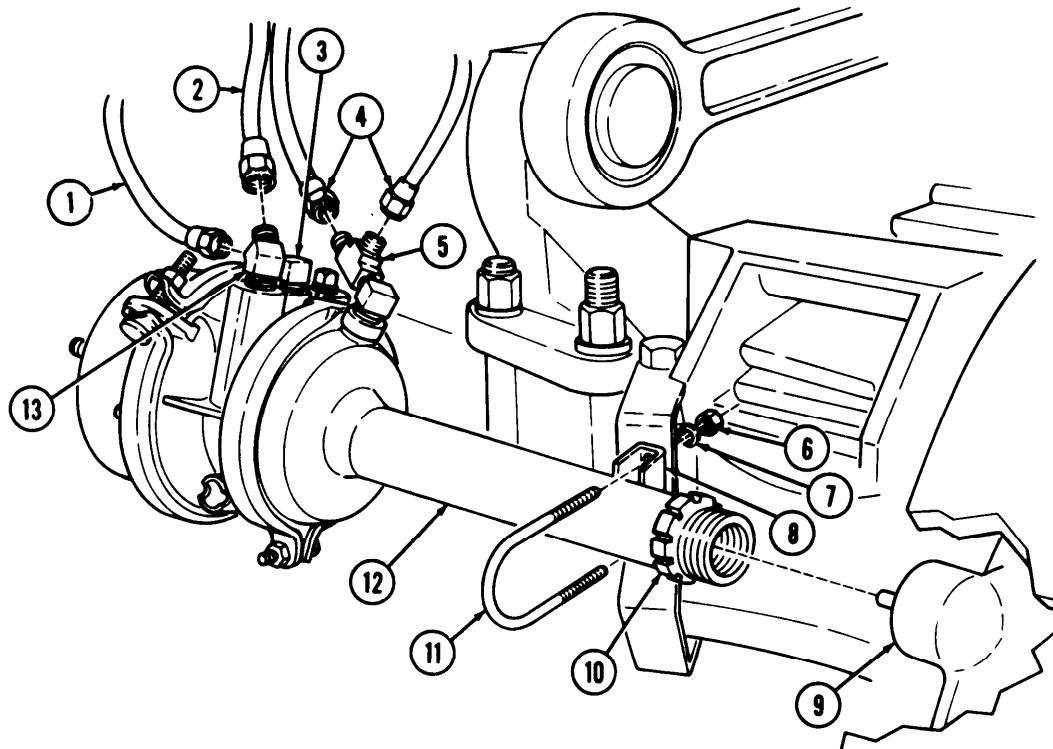
# 7-14. COMBINATION SPRING (EMERGENCY) AND SERVICE BRAKE CHAMBER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## CAUTION

Make sure wedge assembly does not fall out of plunger housing.

- |    |   |  |
|----|---|--|
| 6. | Combination spring and service brake chamber (12) | Unscrew and pull straight away from plunger housing (9). |
|----|---|--|



7-14. COMBINATION SPRING (EMERGENCY) AND SERVICE BRAKE CHAMBER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

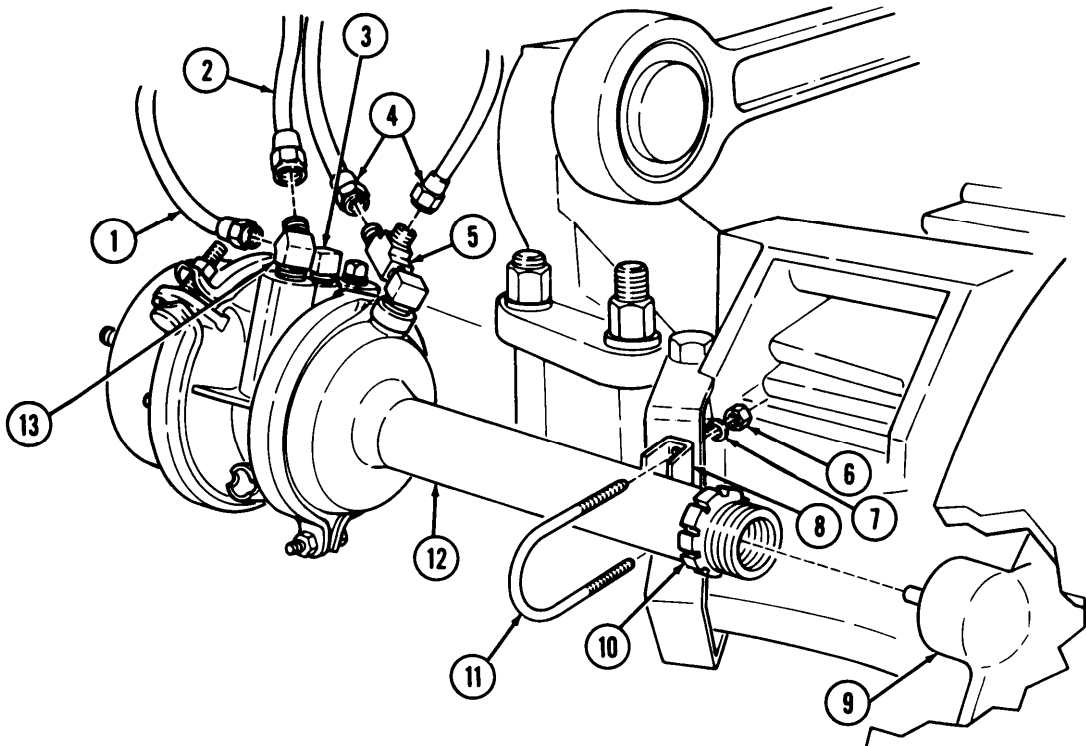
NOTE

Wrap all male pipe threads with sealing tape before installation.

7.		Combination spring and service brake non-pressure housing (12 )	Screw into plunger housing (9) until secure.	Make sure collet nut (10) is loose and housing ( 12) is positioned for air line connections.
8.		Collet nut (10)	Thread to bottom of combination spring and service brake chamber and tighten 3/16 in, (4.8 mm) or 1-1/2 teeth.	
9.		Control line (2)	Connect to combination chamber elbow (13).	
10.		Supply line (1)	Connect to combination chamber elbow (13).	
11.		Two vent lines (4)	Connect to combination chamber tee (5).	
12.		U-bolt (11 )	Install with bracket (8), two new lockwashers (7), and nuts (6).	

7-14. COMBINATION SPRING (EMERGENCY) AND SERVICE BRAKE CHAMBER REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Uncage spring brake chamber (TM 9-2320-272-10).
  - Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at combination spring brake chamber. Road test vehicle.

TA 348951

7-15. FRONT BRAKE SPIDER REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 7-12 Para. 7-13 Para. 7-10	Brakeshoes removed. Service brake chamber removed. Front wheel dustcovers removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Material/Parts</u>		
Two lockwashers Gasket sealant (Appendix D, Item 14) Wiping rag (Appendix D, Item 21)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

a. Removal

1.	Brake spider slinger (4)	Nine nuts (6) and washers (5)	Remove.	
2.		Brake spider slinger (4) and brake spider (2)	Pull away from spindle (11) and remove.	
3.	Brake spider (2)	Two screws (7), lock-washers (9), nuts (10), and clips (8)	Remove,	Discard lockwashers (9).
4.		Spindle (11) and brake spider (2)	a. Scrape sealant remains off mating surfaces. b. Wipe mating surfaces with clean, dry rag.	

b. Installation

5.		Two clips (8), screws (7), new lockwashers (9), and nuts (10)	Install on spider (2).	
----	--	---	------------------------	--



# 7-15. FRONT BRAKE SPIDER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Spindle (11) and brake spider (2)	Apply silicone sealant to mating surfaces.	
7.		Brake spider (2) and brake spider slinger (4)	Position over nine studs (12) on spindle (11). Anchor plunger (3) is at 5 o'clock position (right side) and anchor plunger (1) at 7 o'clock position (left side).	See illustration below.

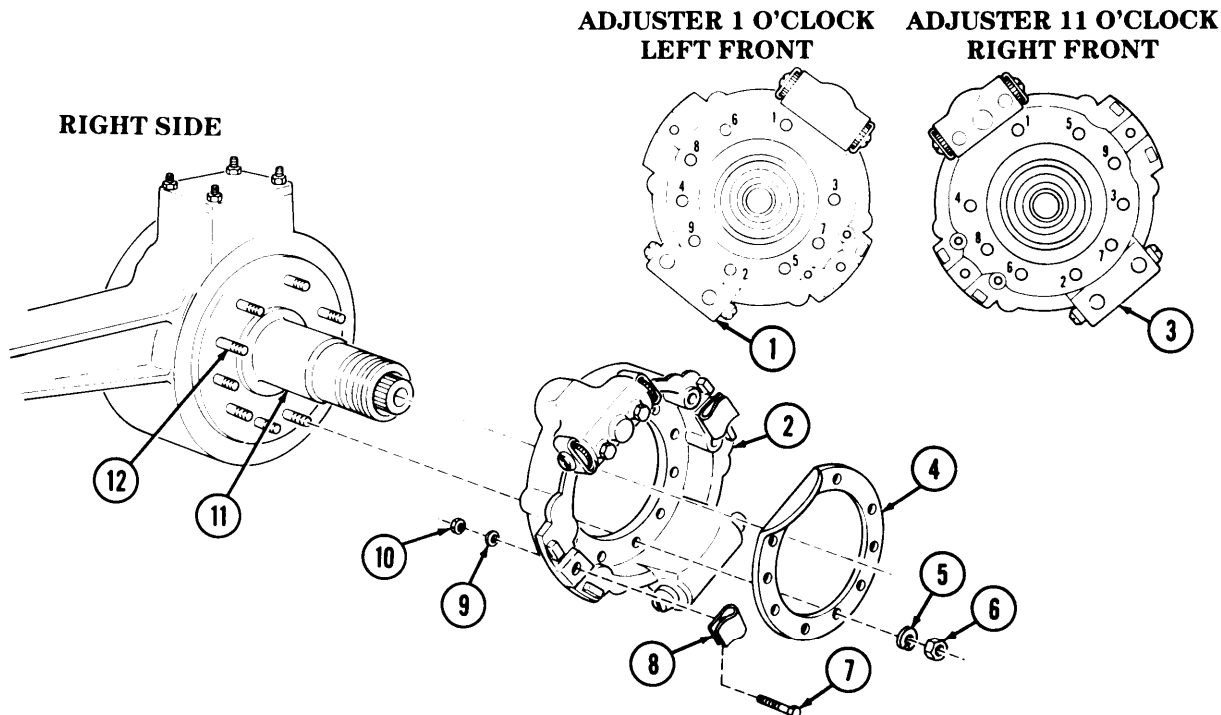
## CAUTION

Failure to tighten nuts in proper sequence can crack brake spider.

## NOTE

Tighten front brake spider after installing front wheel brake dustcovers.

8.	Nine washers (5) and nuts (6)	Install on studs (12) on spindle (11).	Tighten 110-145 lb-ft (149-196 N-m) in sequence shown.
----	-------------------------------	--	--



END OF TASK!

FOLLOW-ON TASKS: . Install front wheel dustcover (para. 7-10).  
 • Install brake chamber (para. 7-13).  
 • Install brakeshoes (Para. 7-12).  
 • Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check brake system for proper operation. Road test vehicle.

TA 348952

## 7-16. REAR BRAKE SPIDER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 7-12 Para. 7-13 Para. 7-14  Para. 7-10	Brakeshoes removed. Service brake chamber removed. Combination spring and service brake chamber removed. Wheel brakedrum dustcovers removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two lockwashers Gasket sealant (Appendix D, Item 14) Wiping rag (Appendix D, Item 21)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

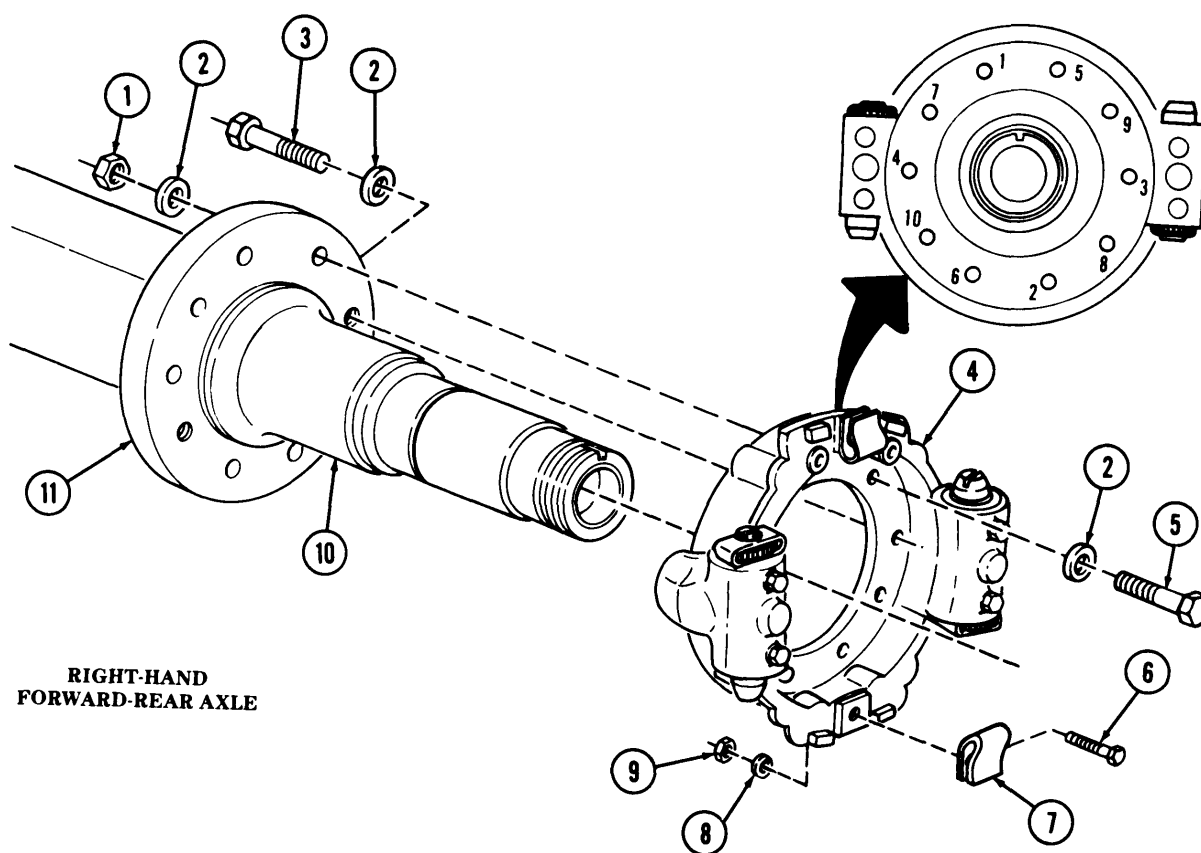
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

### I a. Removal I

- |    |   |   |  |                          |
|----|---|---|--|--------------------------|
| 1. | Brake spider (4)                            | Eight screws (5), sixteen washers (2), and eight nuts (1) | Remove.  |                          |
| 2. | Inner side of rear axle housing flange (11) | Two screws (3) and washers (2)                            | Remove.  |                          |
| 3. |   | Brake spider (4)  | Remove from axle housing assembly (10).  |                          |
| 4. | Brake spider (4)                            | Two screws (6), lockwashers (8), nuts (9), and clips (7)  | Remove.  | Discard lockwashers (8). |
| 5. |   | Rear axle housing (10) and brake spider (4)               | a. Scrape sealant remains off mating surfaces.<br>b. Wipe mating surfaces with clean, dry rag. |                          |

# 7-16. REAR BRAKE SPIDER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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7-16. REAR BRAKE SPIDER REPLACEMENT (Cont'd)

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

b. Installation

CAUTION

Failure to tighten screws in proper sequence can crack brake spider.

6.		Two clips (7)	Install to brake spider (4) with two screws (6), new lockwashers (8), and nuts (9).
7.		Rear axle housing (10) and brake spider (4)	Apply gasket sealant on mating surfaces.

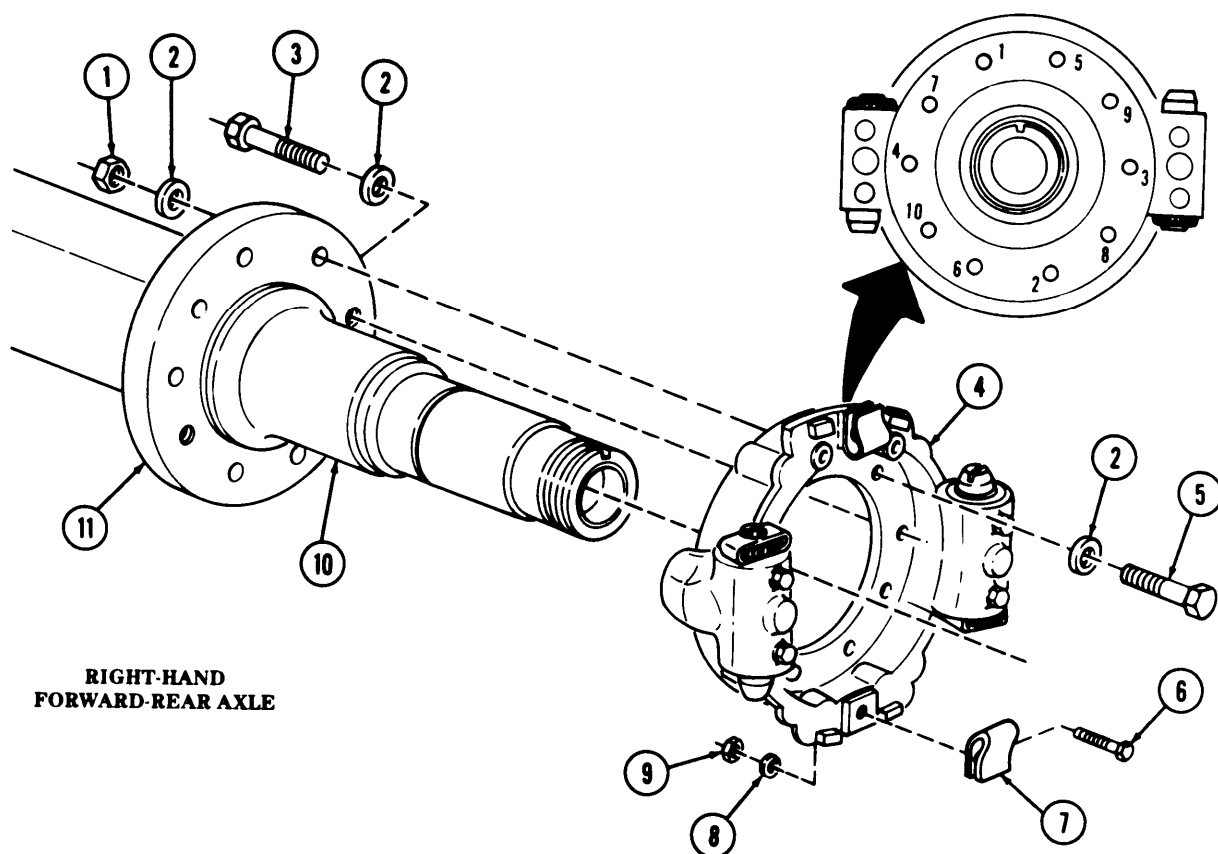
NOTE

Assistant will help with step 8.

8.		Brake spider (4)	<div>a. Position threaded holes 3 and 4 of brake spider (4) on axle housing mating surface at 3 and 9 o'clock positions.</div> <div>b. Install two washers (z) and screws (3) through back of flange (11) into threaded holes 3 and 4 of spider (4).</div> <div>c. Install sixteen washers (2), eight screws (5) and nuts (1) through spider (4) and flange (11).</div>	<div>See illustration.</div> <div>Tighten 110-145 lb-ft (149-196 N·m) in sequence shown.</div>
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## 7-16. REAR BRAKE SPIDER REPLACEMENT (Cont'd)

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



**RIGHT-HAND  
FORWARD-REAR AXLE**

**END OF TASK!**

- FOLLOW-ON TASKS:**
- Install dustcovers (para. 7-10).
  - Install combination spring and service brake chamber (para. 7-14).
  - Install service brake chamber (para. 7-13).
  - Install brakeshoes (para. 7-12).
  - Check and adjust brakes (para. 7-11).
  - Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check brake system for proper operation. Road test vehicle.

**TA 348954**

7-17. WET RESERVOIR (SUPPLY TANK) SAFETY VALVE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not remove safety valve before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not remove safety valve before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

a. Removal

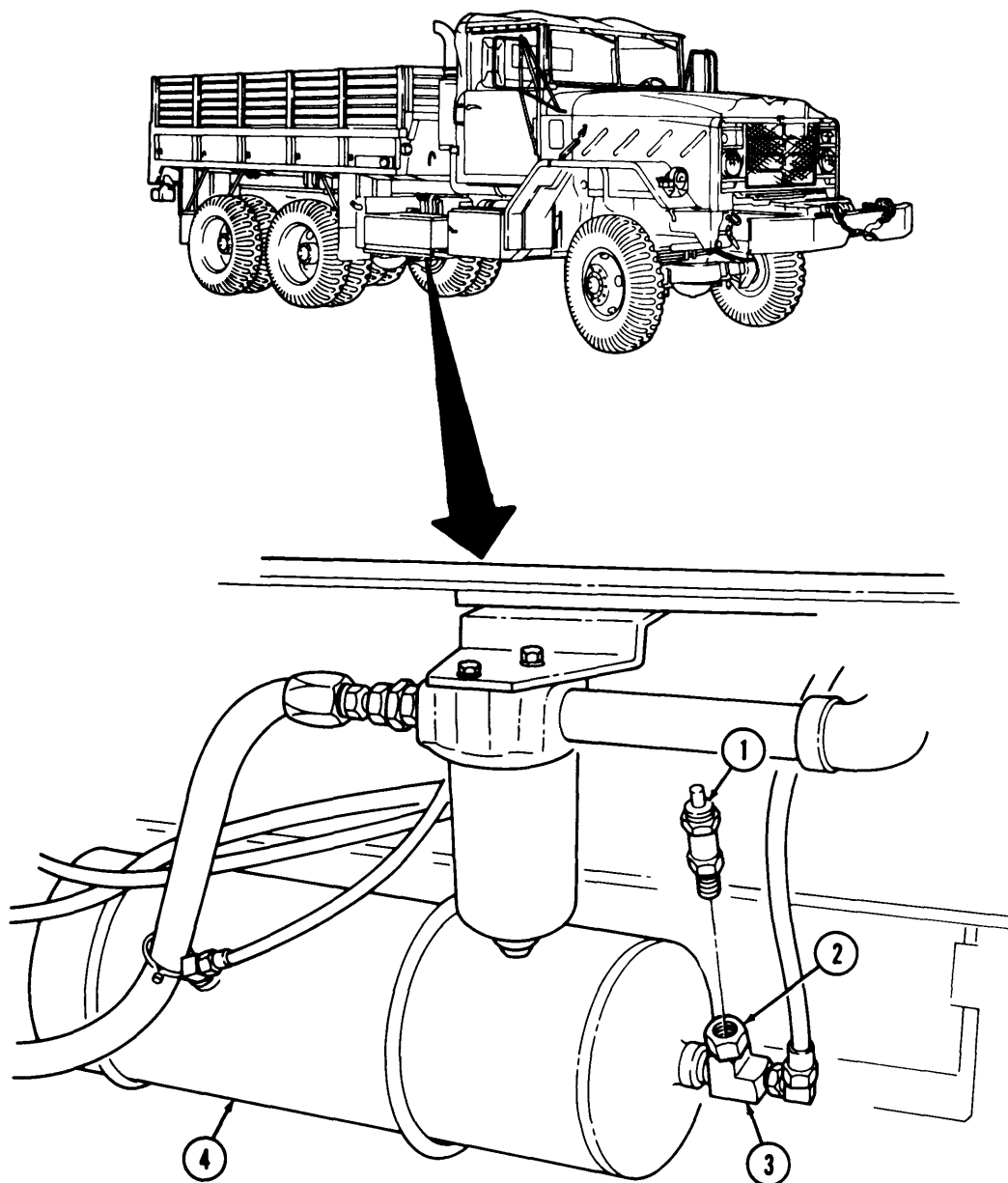
- |    |                             |                  |   |
|----|-----------------------------|------------------|---|
| 1. | Inlet side of reservoir (4) | Safety valve (1) | Unscrew from bushing (2) connected to tee (3) and remove. |
|----|-----------------------------|------------------|---|

b. Installation

- |    |  |                  |   |
|----|--|------------------|---|
| 2. |  | Safety valve (1) | a. Wrap male pipe threads with sealing tape.<br>b. Install to bushing (2) at tee (3). |
|----|--|------------------|---|

# 7-17. WET RESERVOIR (SUPPLY TANK) SAFETY VALVE REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Start vehicle (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at safety valve. Road test vehicle.

TA 348955

## 7-18. AIR RESERVOIR ONE-WAY CHECK VALVE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoir drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Do not disconnect air lines before draining air reservoirs, Small parts under pressure may shoot out with high velocity, causing injury to personnel.

### a. Removal

### NOTE

There is a one-way check valve mounted at the inlet side of each reservoir, Because removal is the same for all three check valves, only the spring brake one-way check valve is covered in this procedure.

- |    |                                 |                                 |             |
|----|---------------------------------|---------------------------------|-------------|
| 1. | Check valve adapter fitting (2) | Air line (1)                    | Disconnect. |
| 2. | Check valve (3)                 | Check valve adapter fitting (2) | Remove.     |
| 3. | Adapter fitting tee (4)         | Check valve (3)                 | Remove.     |



## 7-18. AIR RESERVOIR ONE-WAY CHECK VALVE REPLACEMENT (Cont'd)

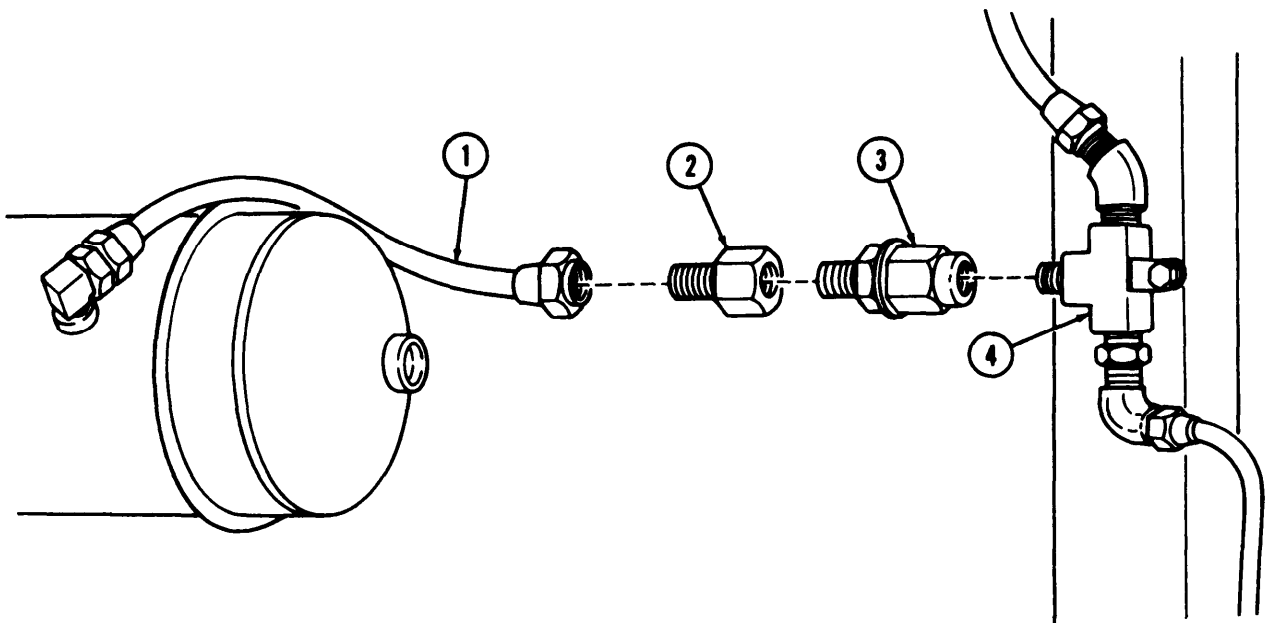
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### I b. Installation I

#### NOTE

Wrap all male pipe threads with sealing tape before installation.

- |    |                                 |   |
|----|---------------------------------|---|
| 4. | Check valve (3)                 | Connect to adapter fitting tee (4).         |
| 5. | Check valve adapter fitting (2) | Connect to check valve (3).                 |
| 6. | Air line (1)                    | Connect to check valve adapter fitting (2). |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at check valve. Road test vehicle.

TA 348956

## 7-19. FRONT RELAY VALVE REPLACEMENT

This task covers:

- a. Removal

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

## NOTE

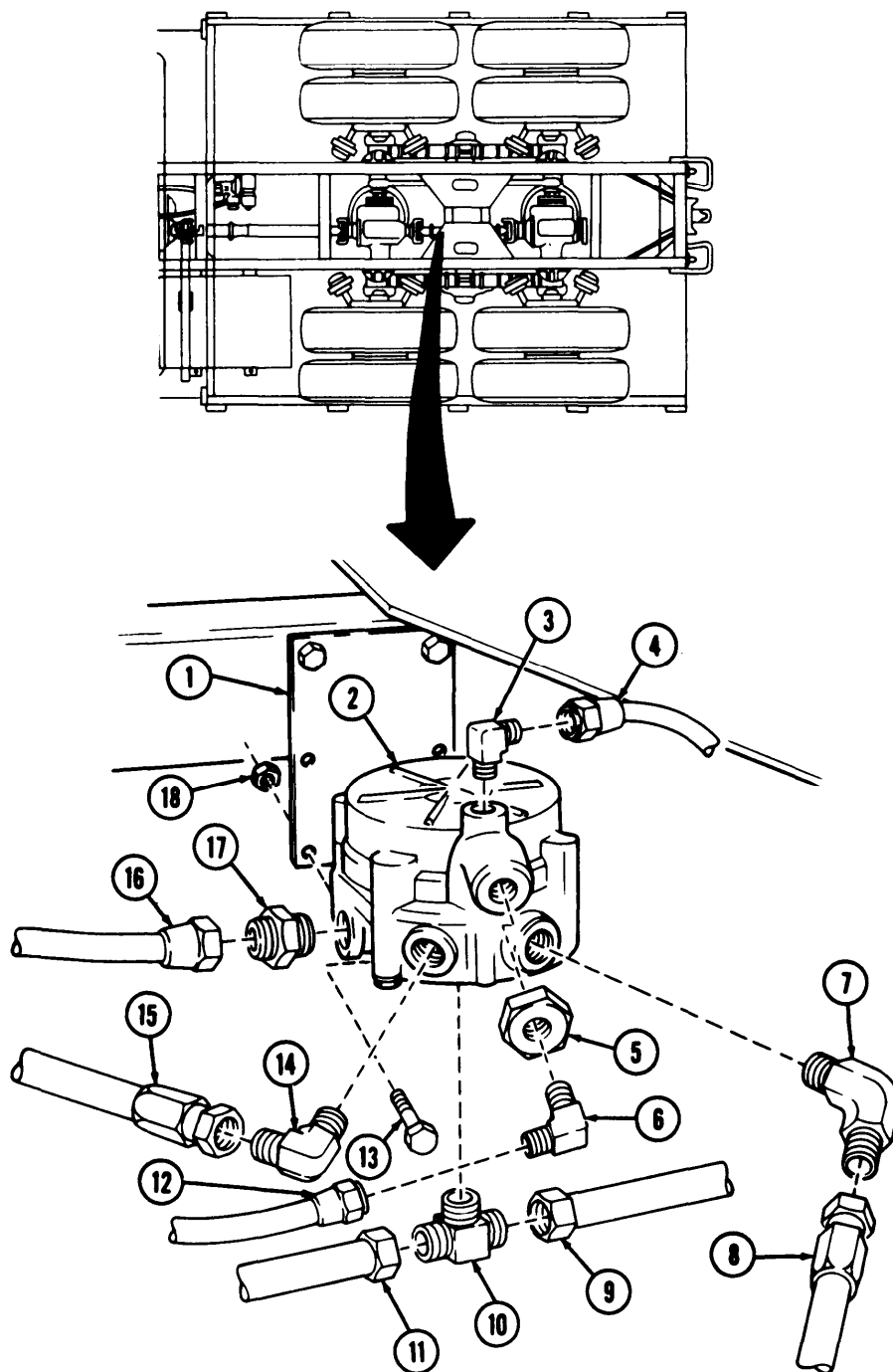
- Tag lines and fittings for installation.
- Scribe fitting directions for installation.

I a. Removal I

1.	Elbow (3) and tee (10)	Vent lines (4), (9), and (11)	Disconnect.	
2.	Elbows (7) and (14)	Delivery lines (8) and (15)	Disconnect.	
3.	Elbow (6)	Control line (12)	Disconnect.	
4.	Adapter (17)	Supply line (16)	Disconnect.	
5.	Bracket (1)	Two screws (13) and locknuts (18), and front relay valve (2)	Remove.	Discard locknuts (18).
6.	Front relay valve (2)	Elbow (3), adapter elbow (7), elbow (14), tee (10), elbow (6), and adapters (5) and (17)	Remove.	Make sure direction of each elbow is scribed for installation.

# 7-19. FRONT RELAY VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 348957

## 7-19. FRONT RELAY VALVE REPLACEMENT (Cont'd)

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

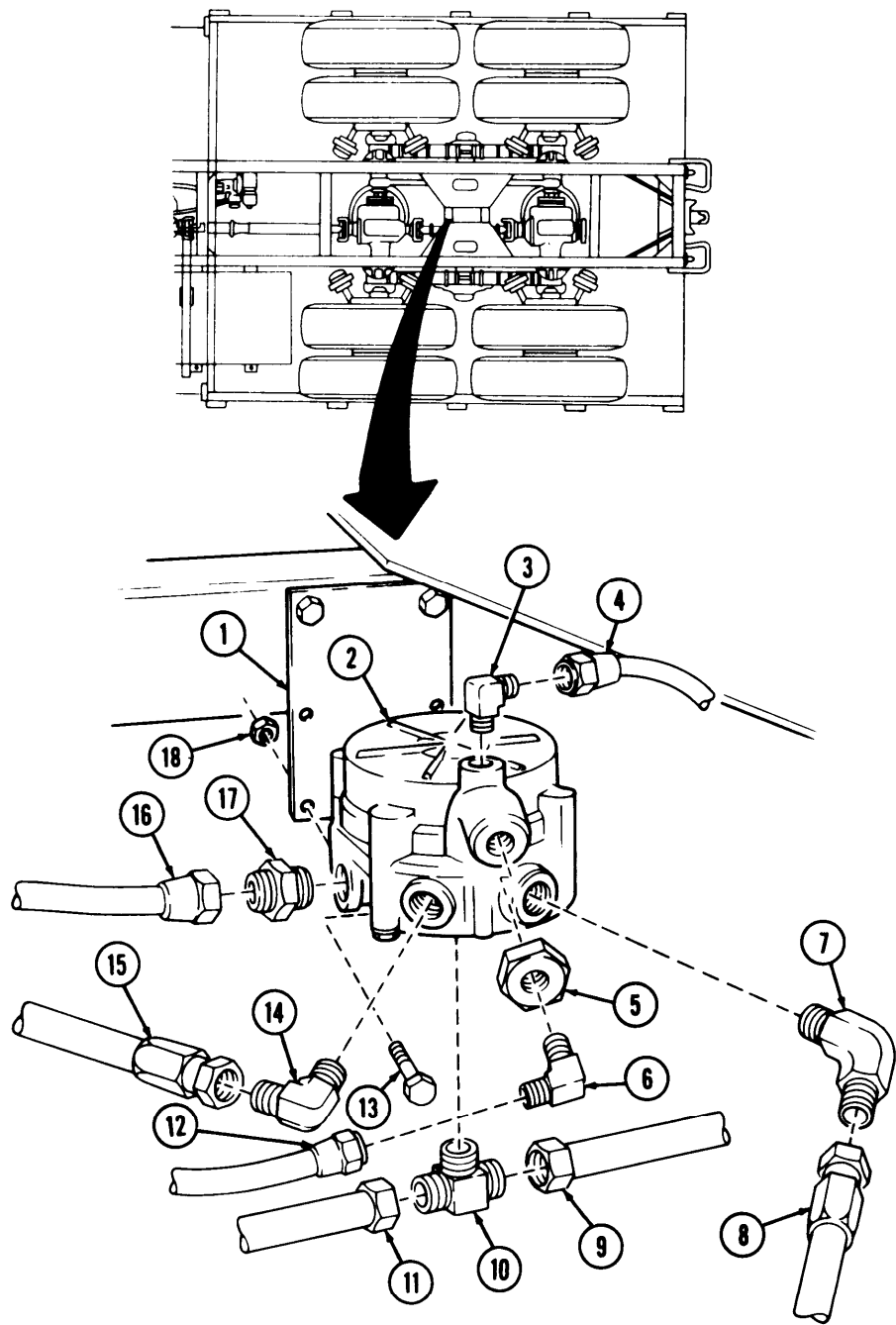
#### NOTE

Use fittings from old valve. Clean all male pipe threads and wrap with sealing tape before installation.

7.		Adapters (5) and (17), elbow (6), tee (10), and elbows (3), (7), and (14)	Install on front relay valve (2).	Use scribed marks for correct alinement.
8.		Front relay valve (2)	Install on bracket (1) with two screws (13) and new locknuts (18).	
9.		Supply line (16)	Connect to adapter (17).	
10.		Control line (12)	Connect to elbow (6).	
11.		Delivery lines (8) and (15)	Connect to elbows (7) and (14).	
12.		Vent lines (4), (9), and (11)	Connect to elbow (3) and tee (10).	

7-19. FRONT RELAY VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at front relay valve. Road test vehicle.

TA 348958

7-20. REAR RELAY VALVE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
Two locknuts Sealing tape (Appendix D, Item 26)		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

NOTE

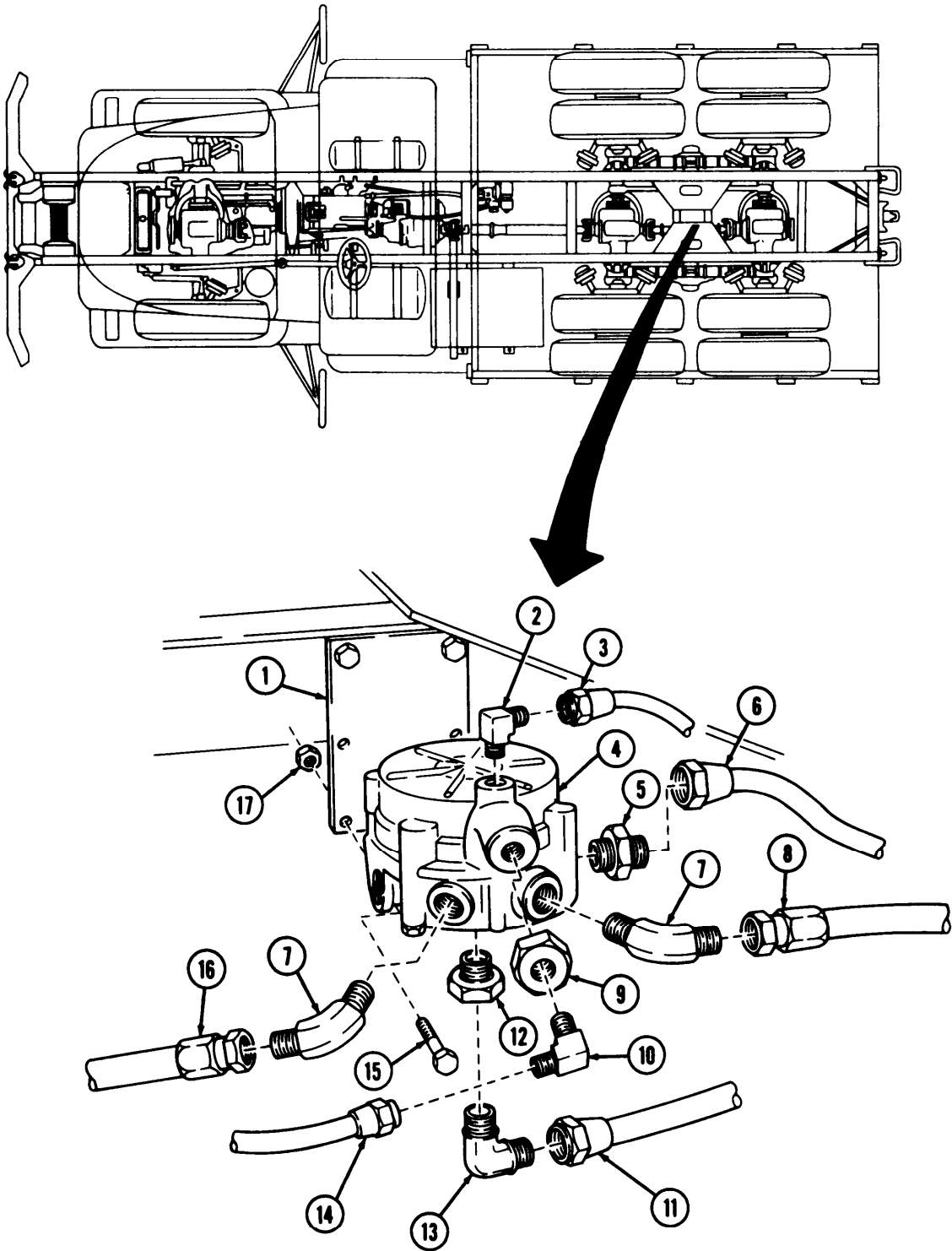
- Tag air lines and fittings for installation.
- Scribe fitting directions for installation.

a. Removal

1.	Elbows (2) and (13)	Vent lines (3) and (11)	Disconnect.	
2.	Two elbows (7)	Delivery lines (8) and (16)	Disconnect.	
3.	Adapter fitting (5)	Supply line (6)	Disconnect.	
4.	Elbow (10)	Control line (14)	Disconnect.	
5.	Bracket (1)	Two screws (15) and locknuts (17), and rear relay valve (4)	Remove.	Discard locknuts (17).
6.	Rear relay valve (4)	Elbow (2), two elbows (7), elbow (13), adapters (5), (9), and (12)	Remove.	Make sure direction of each elbow is scribed for installation.

7-20. REAR RELAY VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 7-20. REAR RELAY VALVE REPLACEMENT (Cont'd)

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

#### NOTE

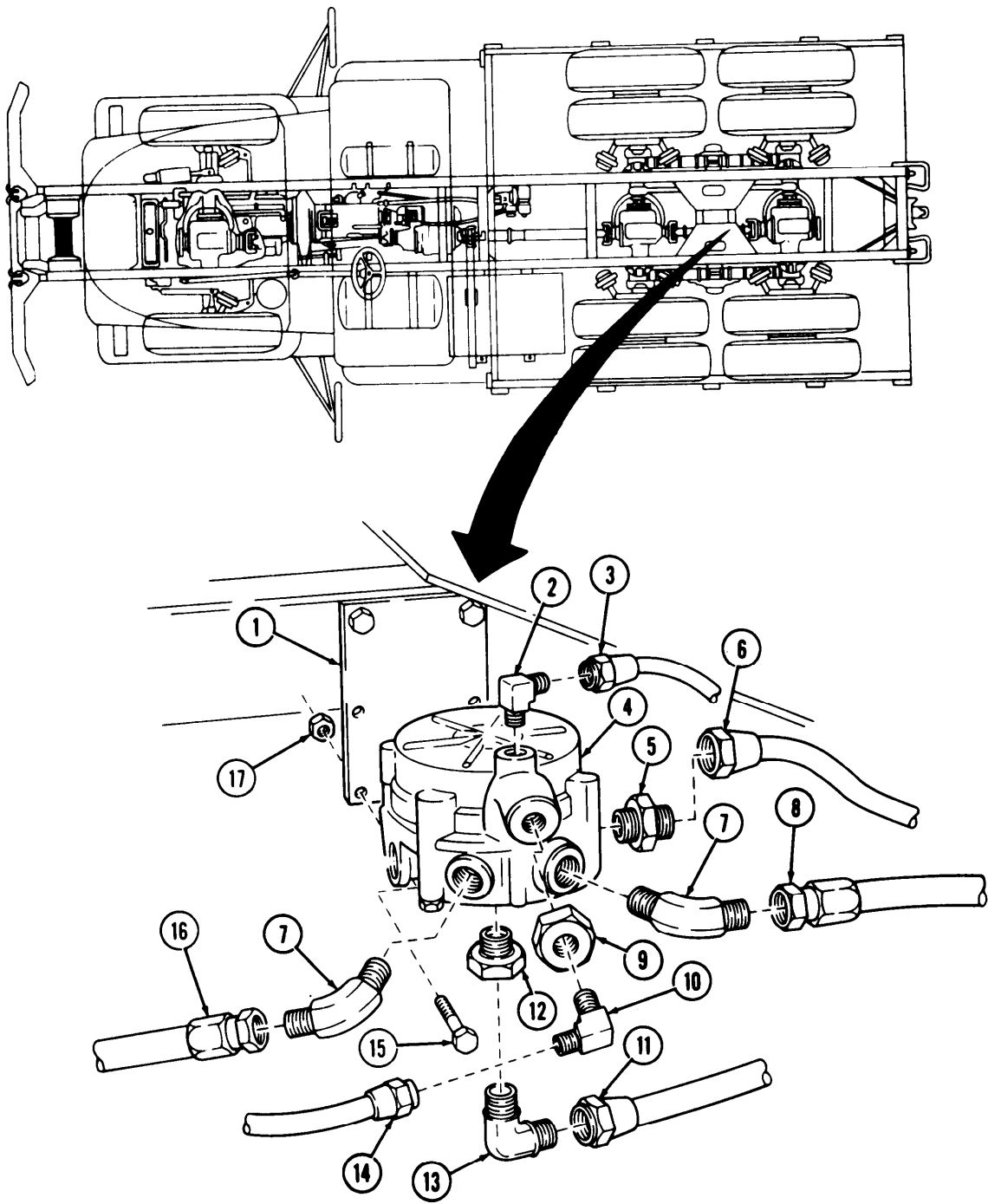
Use fittings from old valve. Clean all male pipe threads and wrap with sealing tape before installation.

7.		Adapters (12), (9), and (5), elbow (13), two elbows (7), elbows (10) and (2)	Install on rear relay valve (4).	Use scribed marks for correct alinement.
8.		Rear relay valve (4)	Install on bracket(1) with two screws (15) and new locknuts (17).	
9.		Supply line (6)	Connect to adapter (5).	
10.		Control line (14)	Connect to elbow (10).	
11.		Delivery lines (8) and (16)	Connect to two elbows (7).	
12.		Vent lines (3) and (11)	Connect to elbows (2) and (13).	



7-20. REAR RELAY VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at rear relay valve. Road test vehicle.

TA 348960

**7-21. BRAKE CHAMBER AIR MANIFOLD TEE REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Lockwasher Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not disconnect air lines before draining air reservoirs.	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**NOTE**

- All air manifold tees are removed and installed the same. This procedure covers the rear primary relay tee only. Notice that only the two primary relay tees use a 45 degree elbow in addition to a 90 degree elbow.
- Tag air lines for installation.

**a. Removal**

- |    |                      |   |             |                         |
|----|----------------------|---|-------------|-------------------------|
| 1. | Elbow (9)            | Right service brake chamber air line (10)           | Disconnect. |                         |
| 2. | Adapter (2)          | Relay valve line (1)                                | Disconnect. |                         |
| 3. | Adapter (3)          | Left service brake chamber air line (4)             | Disconnect. |                         |
| 4. | Mounting bracket (5) | Screw (6), lockwasher (7), and air manifold tee (8) | Remove.     | Discard lockwasher (7). |

7-21. BRAKE CHAMBER AIR MANIFOLD TEE REPLACEMENT (Cont'd)

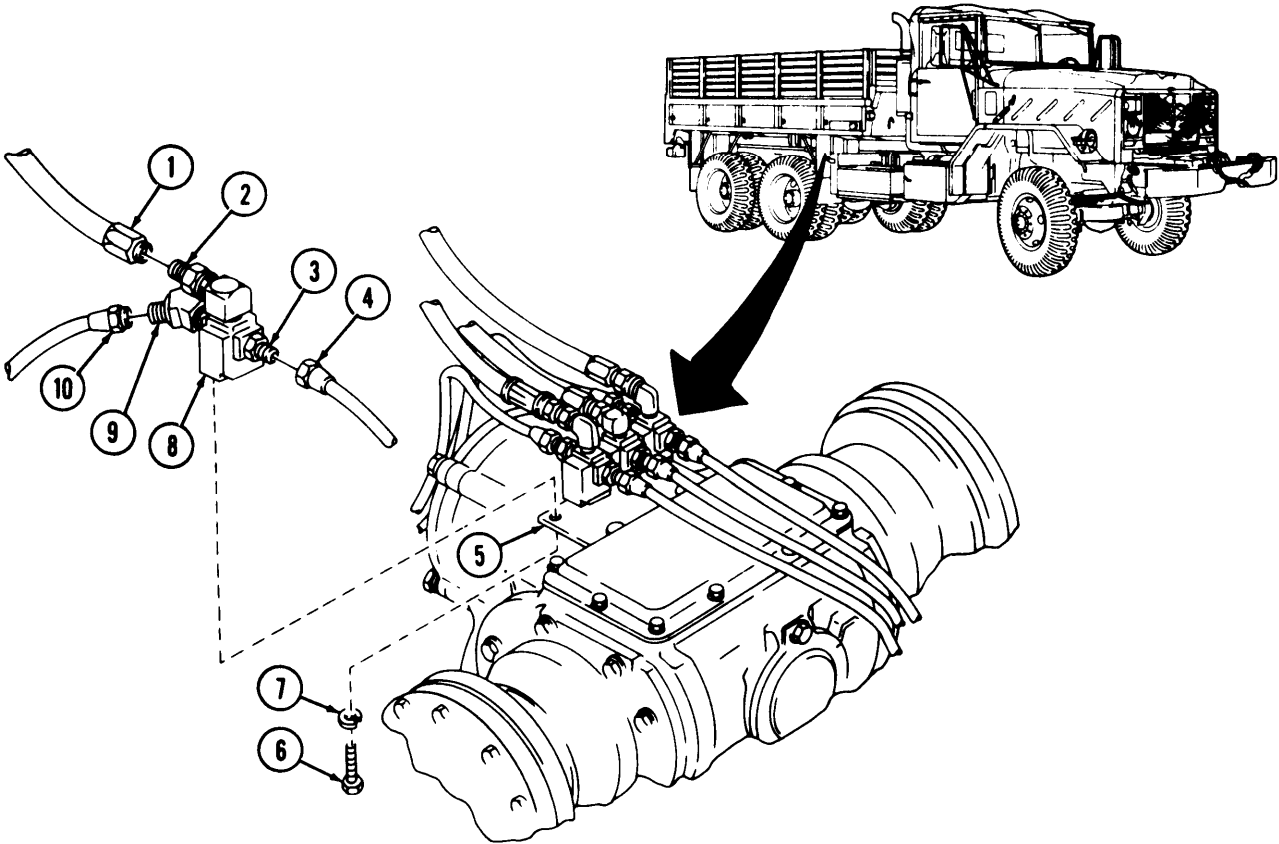
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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I b. Installation I

NOTE

If new tee is being installed, use fittings from old tee. Clean all male pipe threads and wrap with sealing tape before installation.

- |    |   |   |
|----|---|---|
| 5. | Air manifold tee (8)                      | Position to mounting bracket (5) and install with screw (6) and new lockwasher (7). |
| 6. | Left service brake chamber air line (4)   | Connect to adapter (3).   |
| 7. | Relay valve line (1)                      | Connect to adapter (2).   |
| 8. | Right service brake chamber air line (10) | Connect to elbow (9).   |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at tee. Road test vehicle.

TA 348961

## 7-22. FRONT LIMITING VALVE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### I a. Removal I

1.	Limiting valve tee adapter (5)	Two front service brake control lines (4)	Disconnect.	Tag for installation.
2.	Limiting valve adapter fitting (2)	Doublecheck valve #1 control line (1)	Disconnect.	Tag for installation.
3.	Limiting valve elbow (6)	Vent line ( 11)	Disconnect.	Tag for installation.
4.	Mounting bracket (8)	Two screws (7) and locknuts (9), and limiting valve ( 10)	Remove.	Discard locknuts (9).
5.	Limiting valve (10)	Fittings (2), (5), (6), and adapter (3)	Remove.	Scribe fitting directions for installation.

## 7-22. FRONT LIMITING VALVE REPLACEMENT (Cont'd)

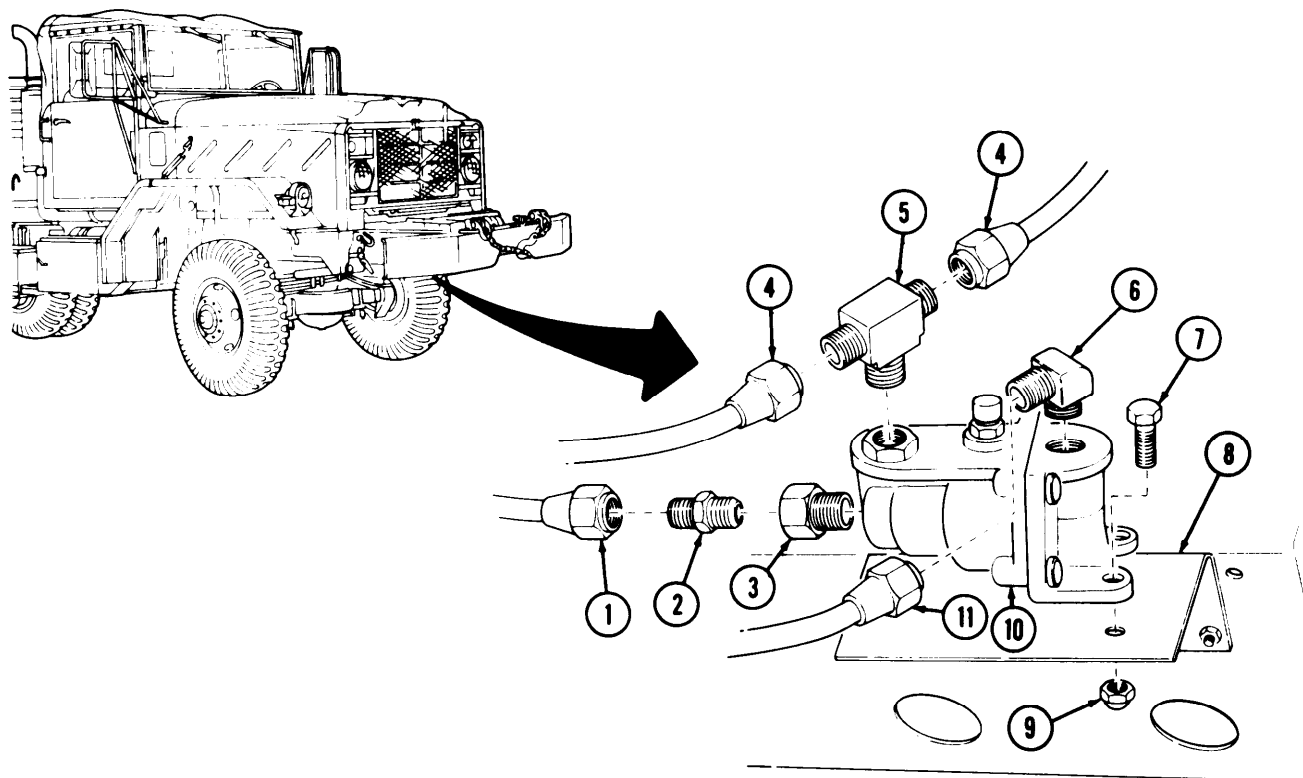
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### b. Installation

#### NOTE

Clean all male pipe threads and wrap with sealing tape before installation.

6.		Adapter (3) and fittings (2), (5), and (6)	Install on limiting valve	Use scribed marks for correct alignment.
7.		Limiting valve (10)	Install on bracket (8) with two screws (7) and new locknuts (9).	
8.		Vent line (11)	Connect to elbow (6).	
9.		Doublecheck valve #1 control line (1)	Connect to adapter fitting (2).	
10.		Two front service brake control lines (4)	Connect to tee adapter (5).	



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272- 10) and allow air pressure to build up to normal operating range. Check for air leaks at front limiting valve. Road test vehicle.

TA 340962

## 7-23. FRONT AXLE LOCK-IN CONTROL VALVE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-66 Para 4-41	Air reservoirs drained. Front axle lock-in switch removed. Fuel selector valve switch removed (if so equipped).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

### NOTE

Tag air lines for installation.

### a. Removal

- |    |  |  |             |
|----|--|--|-------------|
| 1. | Front axle lock-in control valve elbow (7) | Control line (8)   | Disconnect. |
| 2. | Adapter fitting (2)                        | Manifold tee supply line (1)                                 | Disconnect. |
| 3. | Instrument panel (6)                       | Two screws (4), instruction plate (5), and control valve (3) | Remove.     |

7-23. FRONT AXLE LOCK-IN CONTROL VALVE REPLACEMENT (Cont'd)

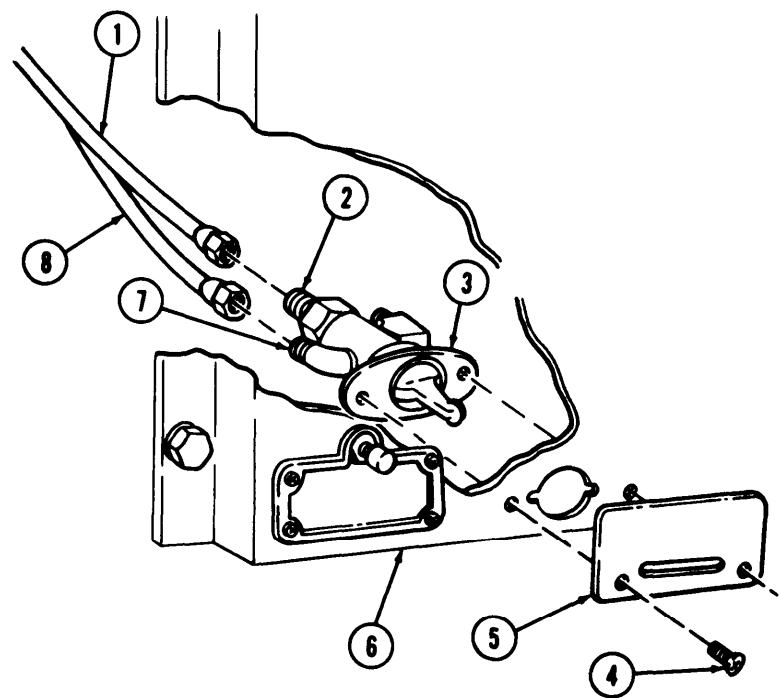
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

If new axle lock-in valve is being installed, use fitting from old valve. Clean all male pipe threads and wrap with sealing tape before installation.

4.		Front axle lock-in control valve (3)	Install with instruction plate (5) and two screws (4).
5.		Supply line (1)	Connect to adapter fitting (2).
6.		Control line (8)	Connect to elbow (7).



END OF TASK!

- FOLLOW-ON TASKS:
- Install front axle lock-in switch (para. 4-66).
  - Install fuel selector valve switch (para 4-41).
  - Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at axle lock-in valve. Road test vehicle.
  - Check front axle lock-in valve for proper operation (TM 9-2320-272-10).

TA 348963

## 7-24. WASHER CONTROL VALVE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

INITIAL SETUP:

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
All	TM 9-2320-272-10	Air reservoirs drained.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Sealing tape (Appendix D, Item 26)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

### a. Removal

- |    |                          |   |         |
|----|--------------------------|---|---------|
| 1. | Control valve shaft (9)  | Screw (6) and washer control knob (7)           | Remove. |
| 2. |                          | Nut (5) and washer (4)                          | Remove. |
| 3. | Instrument panel (8)     | Washer control valve (3)                        | Remove. |
| 4. | Washer control valve (3) | Clamp (10) and washer bottle delivery line (11) | Remove. |
| 5. | Elbow (2)                | Manifold tee supply line (1)                    | Remove. |



7-24. WASHER CONTROL VALVE REPLACEMENT (Cont'd)

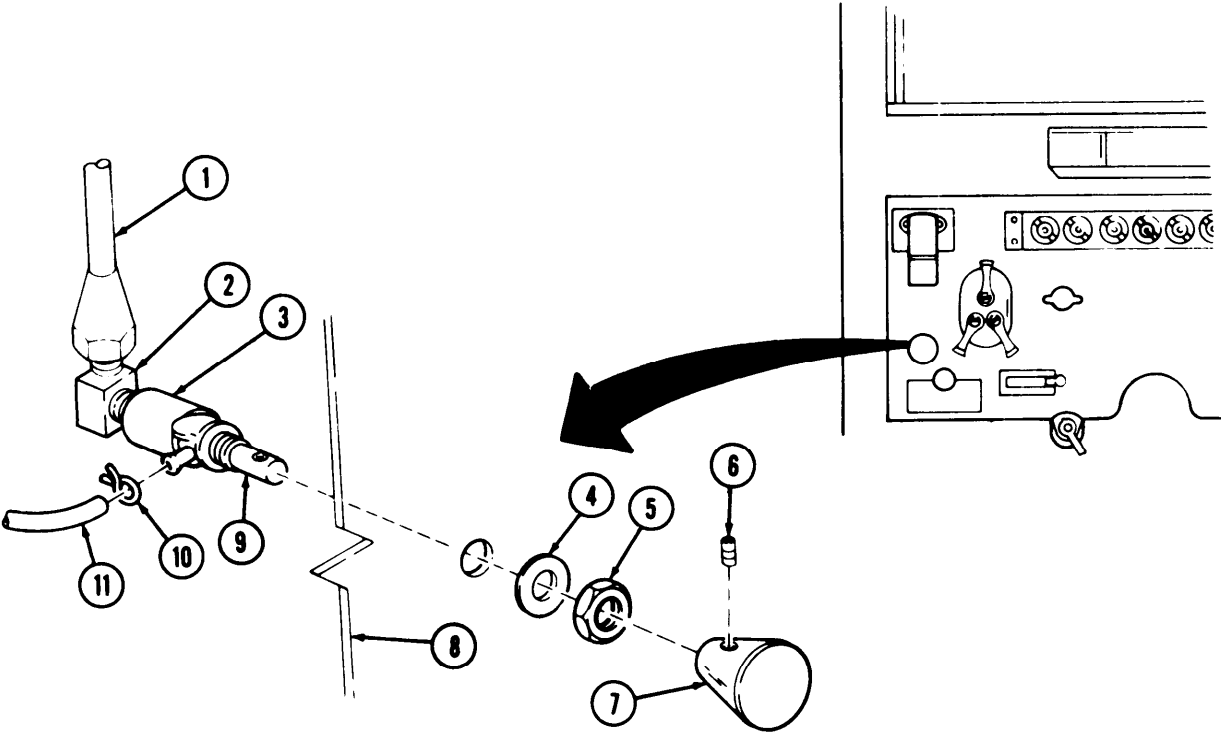
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

If installing new valve, use fittings from old valve. Clean all male pipe threads and wrap with sealing tape before installation.

- |    |                          |   |
|----|--------------------------|---|
| 6. | Delivery line (11)       | Install to washer control valve (3) with clamp (10).                                |
| 7. | Supply line (1)          | Install to elbow (2).   |
| 8. | Washer control valve (3) | Place through rear of instrument panel (8) and install with washer (4) and nut (5). |
| 9. | Washer control knob (7)  | Install to control valve shaft (9) with screw (6).                                  |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10), Check for leaks and proper washer control valve operation.

7-25. WINDSHIELD WIPER CONTROL VALVE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Lockwasher Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

NOTE

Tag air lines for installation.

a. Removal

1.	Control valve shaft (1)	Setscrew (3) and control valve knob (2)	Loosen setscrew (3) and remove knob (2).	
2.	Instrument panel (6)	Nut (4), lockwasher (5), and control valve (7)	Remove.	Discard lockwasher (5).
3.	Adapter (15)	Wiper motor run delivery line (13)	Loosen clamp (14) and disconnect.	
4.	Adapter (12)	Manifold tee supply line(n)	Disconnect.	
5.	Adapter (8)	Motor park delivery line (10)	Loosen clamp (9) and disconnect.	

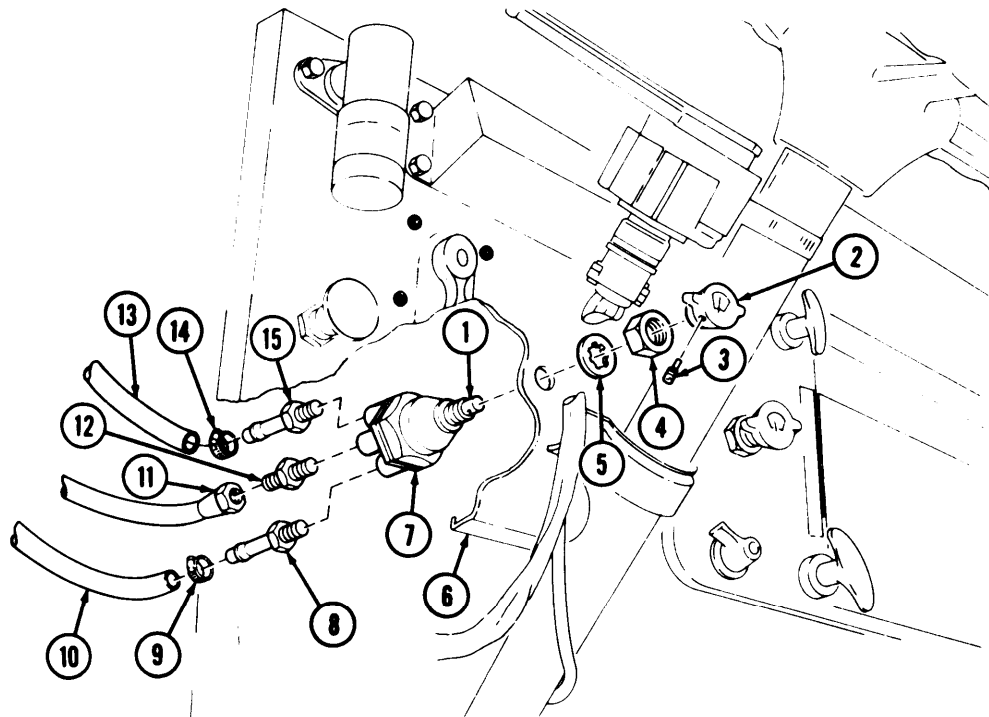
**7-25. WINDSHIELD WIPER CONTROL VALVE REPLACEMENT (Cont'd)**

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

- If new wiper control valve is being installed, use fittings from old valve.
- Clean all male pipe threads and wrap with sealing tape before installation.

6.	Delivery line (10)	Connect to adapter(8) with clamp (9).
7.	Supply line (11)	Connect to adapter (12).
8.	Delivery line (13)	Connect to adapter (15) with clamp (14).
9.	Wiper control valve (7)	Install to instrument panel (6) with new lockwasher (5) and nut (4).
10.	Control valve knob (2)	Position on shaft (1) and install with set-screw (3).

**END OF TASK!**

**FOLLOW-ON TASK:** Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at wiper control valve. Road test vehicle.

TA 348965

7-26. SPRING (EMERGENCY) BRAKE CHAMBER REPAIR

This task covers:

a. Disassembly

b. Inspection

c. Reassembly

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
None		Do not perform brake chamber repair before draining reservoirs.
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not perform brake chamber repair before draining air reservoirs. Small parts under pressure may shoot out with high-velocity, causing injury to personnel.

I a. Disassembly I

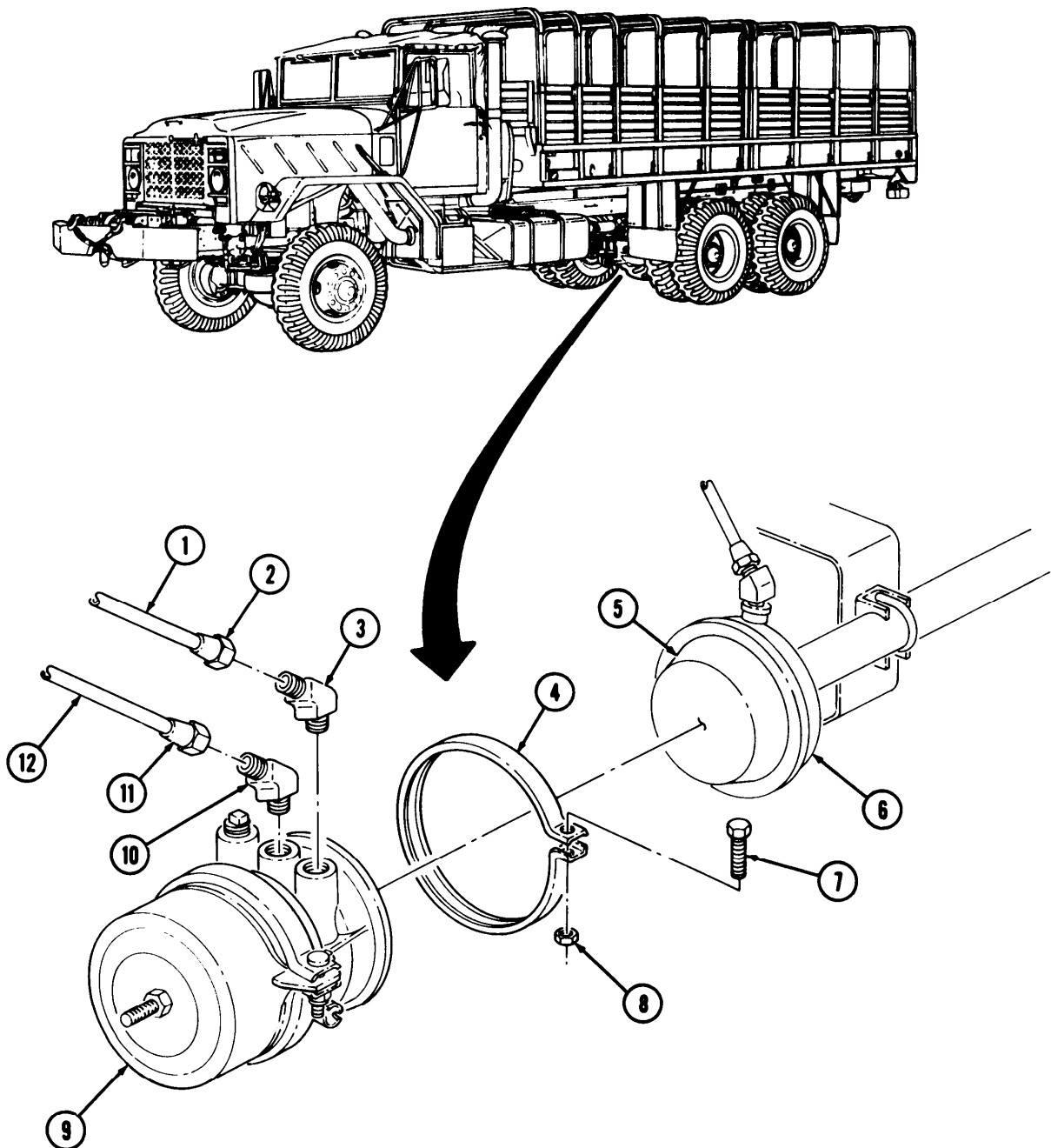
1. Elbow (3)	Nut (2) and tube (1)	Remove.
2. Elbow (10)	Nut (11) and tube (12)	Remove.
3. Housing assembly (9)	Elbows (3) and (10)	Remove.
4. Nonpressure housing (6)	Screw (7), clamp (4), nut (8), and housing assembly (9)	Remove.

b. Inspection

5. Nonpressure housing (6)	Spring brake chamber diaphragm (5)	Inspect for cracks, tears, and splits. Replace service brake chamber if cracked, torn, or split.
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17-26. SPRING (EMERGENCY) BRAKE CHAMBER REPAIR (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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7-26. SPRING (EMERGENCY) BRAKE CHAMBER REPAIR (Cont'd)

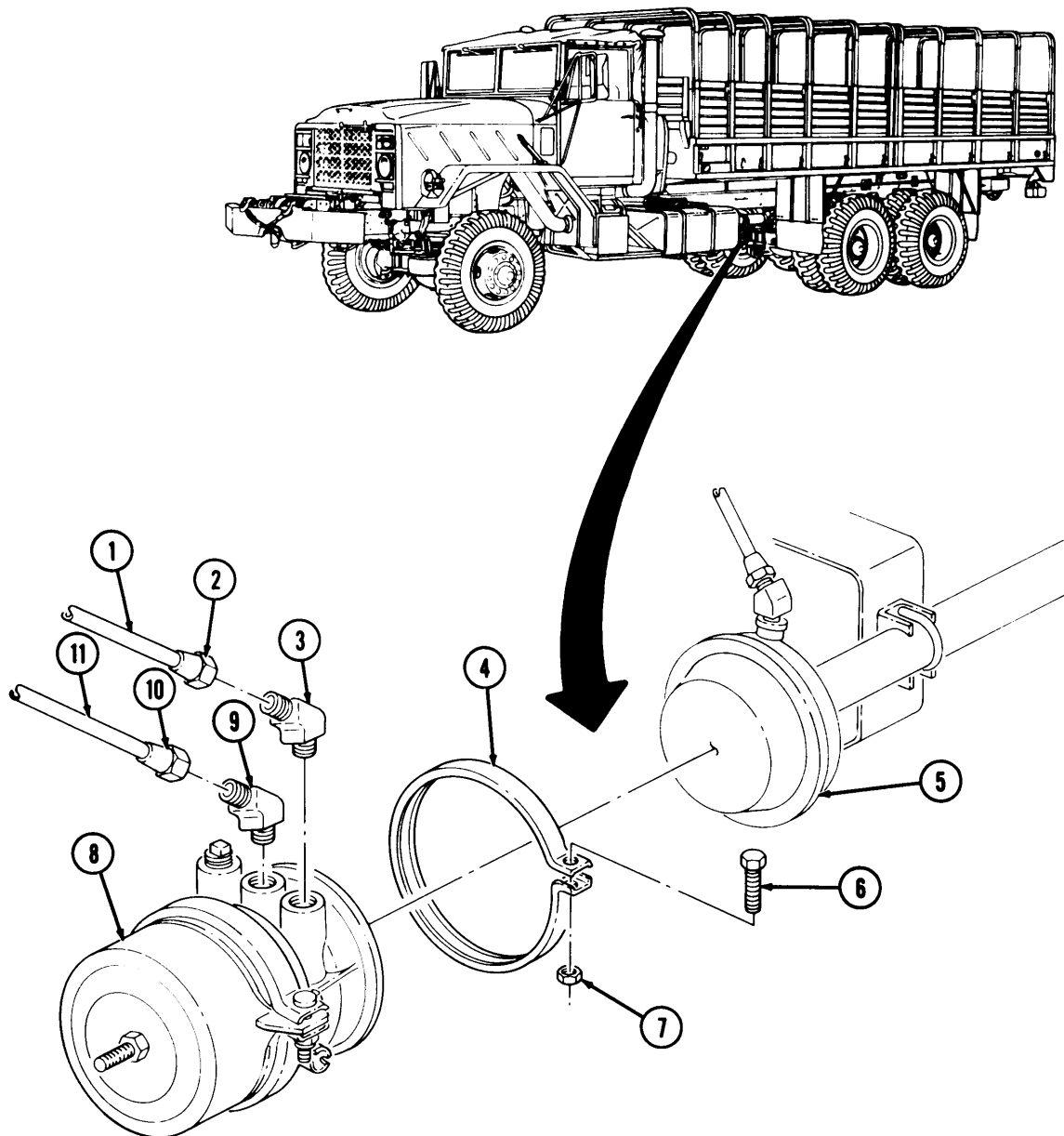
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. Reassembly

6.		Housing assembly (8)	Install on nonpressure housing (5) with clamp (4), screw (6), and nut (7).	Tighten 18-25 lb-ft (24-34 N-m).
7.		Elbows (3) and (9)	Install on housing assembly (8).	
8.		Tube (1)	Install on elbow (3) with nut (2).	
9.		Tube (11)	Install on elbow (9) with nut (10).	

# 7-26. SPRING (EMERGENCY BRAKE CHAMBER REPAIR (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to buildup to normal operating range. Check for air leaks at spring brake chamber. Road test vehicle.





## 7-29. SPRING BRAKE DASH CONTROL VALVE REPLACEMENT (Cont'd)

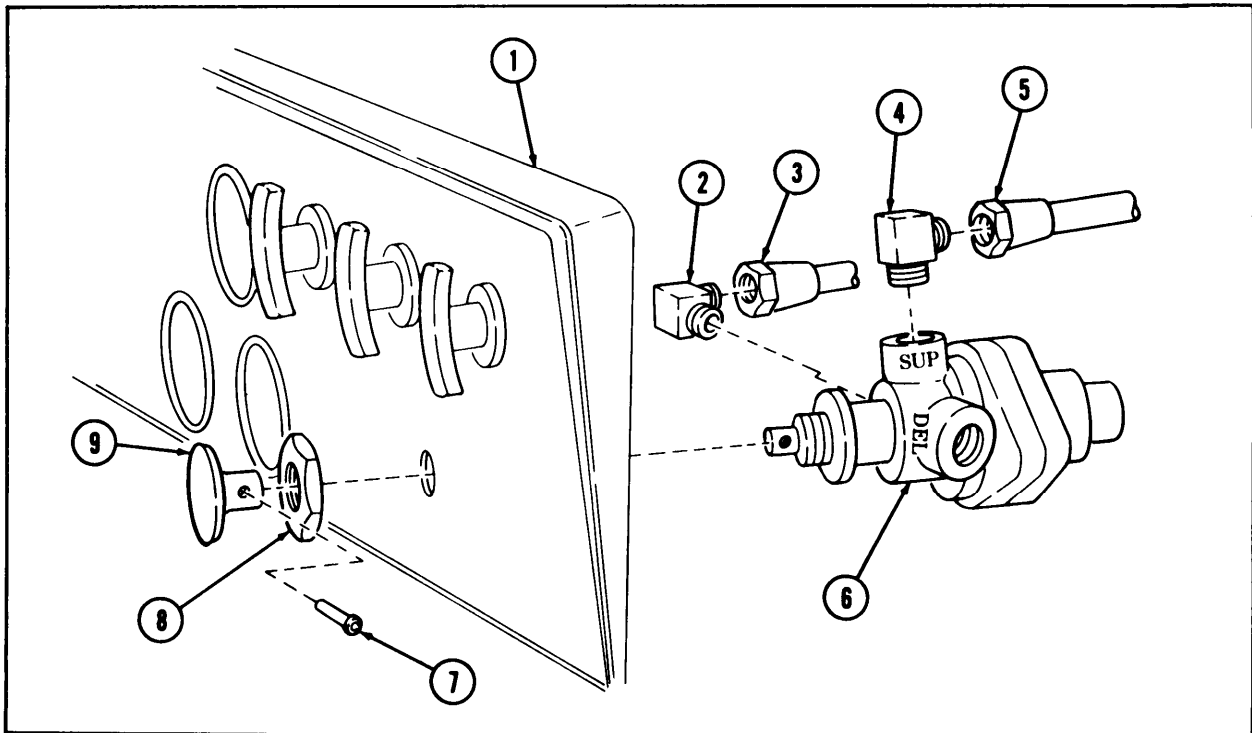
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### b. Installation

#### NOTE

Male pipe threads must be wrapped with sealing tape before installation.

- |     |                                  |                       |
|-----|----------------------------------|-----------------------|
| 7.  | Elbows (2) and (4)               | Install.              |
| 8.  | Dash control valve assembly (6)  | Install with nut (8). |
| 9.  | Spring brake supply air line (3) | Connect.              |
| 10. | Doublecheck valve air line (5)   | Connect.              |
| 11. | Dash control valve knob (9)      | Install with pin (7). |



END OF TASK!

- FOLLOW-ON TASKS:
- Install spring brake pressure switch (para. 4-65).
  - Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at dash control valve. Check valve for proper operation. Road test vehicle.

TA 340972

## 7-30. BRAKE PEDAL REPLACEMENT

This task covers:

a. Removal

b. Installation

c. Adjustment

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Two cotter pins		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

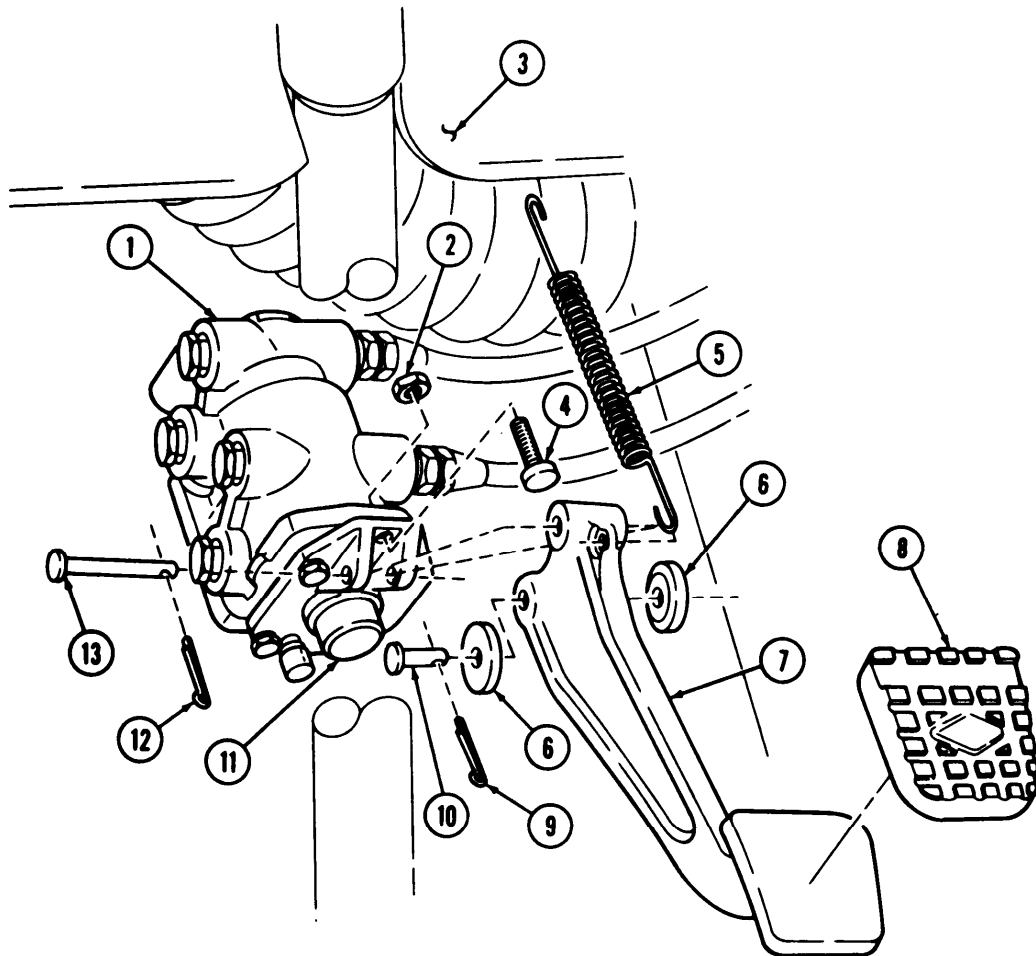
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Brake pedal (7) and cab (3)	Return spring (5)	Remove.	
2.	Brake pedal valve (1)	Cotter pin (12), fulcrum pin (13), and brake pedal (7)	Remove.	Discard cotter pin (12).
3.		Jam nut (2) and pedal stop (4)	Remove.	
4.	Brake pedal (7)	Cotter pin (9), roller pin (10), and two rollers (6)	Remove.	Discard cotter pin (9).
5.		Rubber pad (8)	Remove.	
<b>b. Installation</b>				
6.		Rubber pad (8)	Install to brake pedal (7).	
7.		Two rollers (6)	Install with roller pin (10) and new cotter pin (9).	
8.		Pedal stop (4) and jam nut (2)	Install.	Do not tighten.
9.		Brake pedal (7)	Install with fulcrum pin (13) and new cotter pin (12).	
10.		Return spring (5)	Install.	

## 7-30. BRAKE PEDAL REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### I c. Adjustment I

- |     |                 |   |                         |
|-----|-----------------|---|-------------------------|
| 11. | Brake pedal (7) | <p>a. Depress until rollers (6) contact plunger (11).</p> <p>b. Position pedal stop (4) against pedal (7).</p> <p>c. Tighten jam nut (2).</p> | Use only hand pressure. |
|-----|-----------------|---|-------------------------|



END OF TASK!

FOLLOW-ON TASK: Road test vehicle (TM 9-2320-272-10).

TA 348973

7-31. BRAKE PEDAL (TREADLE) VALVE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Applicable Models	Equipment Condition Reference	Condition Description
All except M936	TM 9-2320-272-10 Para. 7-30 Para 4-11	Air reservoirs drained. Brake pedal removed. Protective control box removed.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
Three locknuts Sealing tape (Appendix D, Item 26)		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

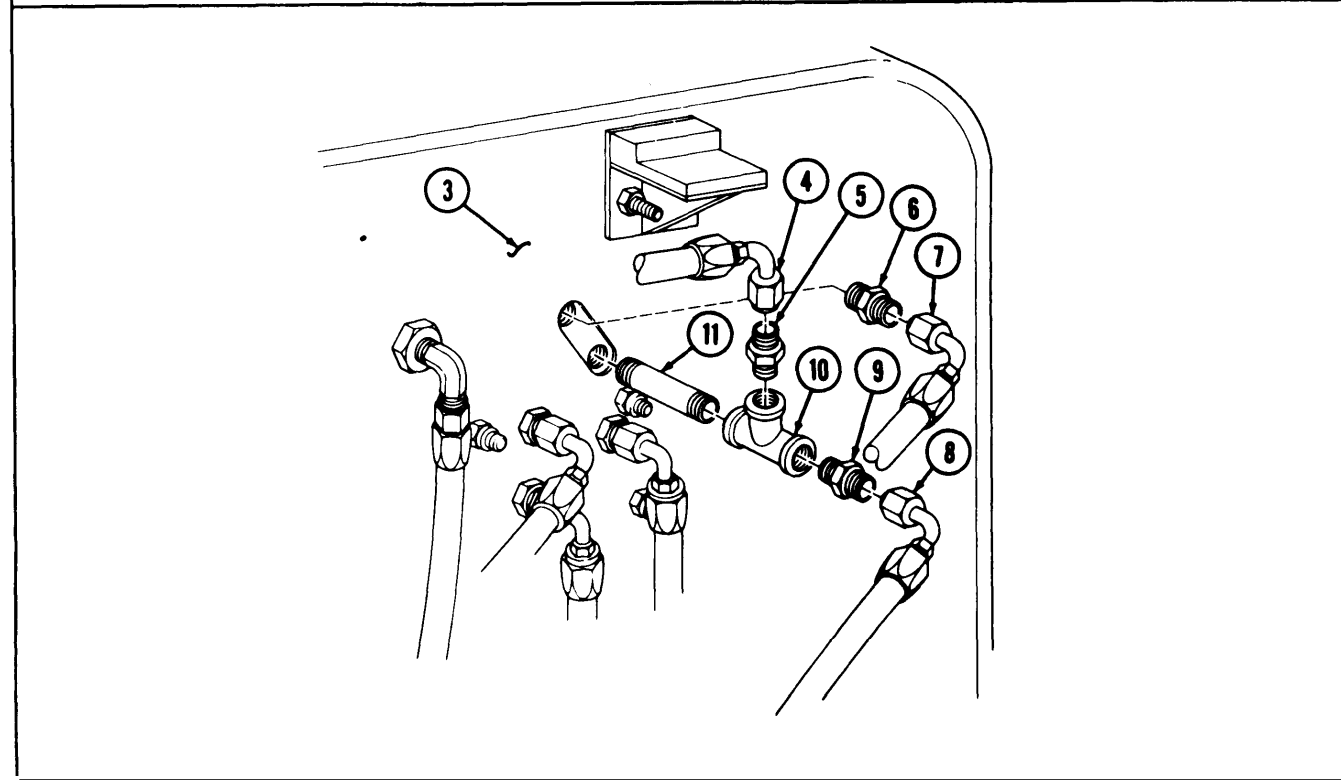
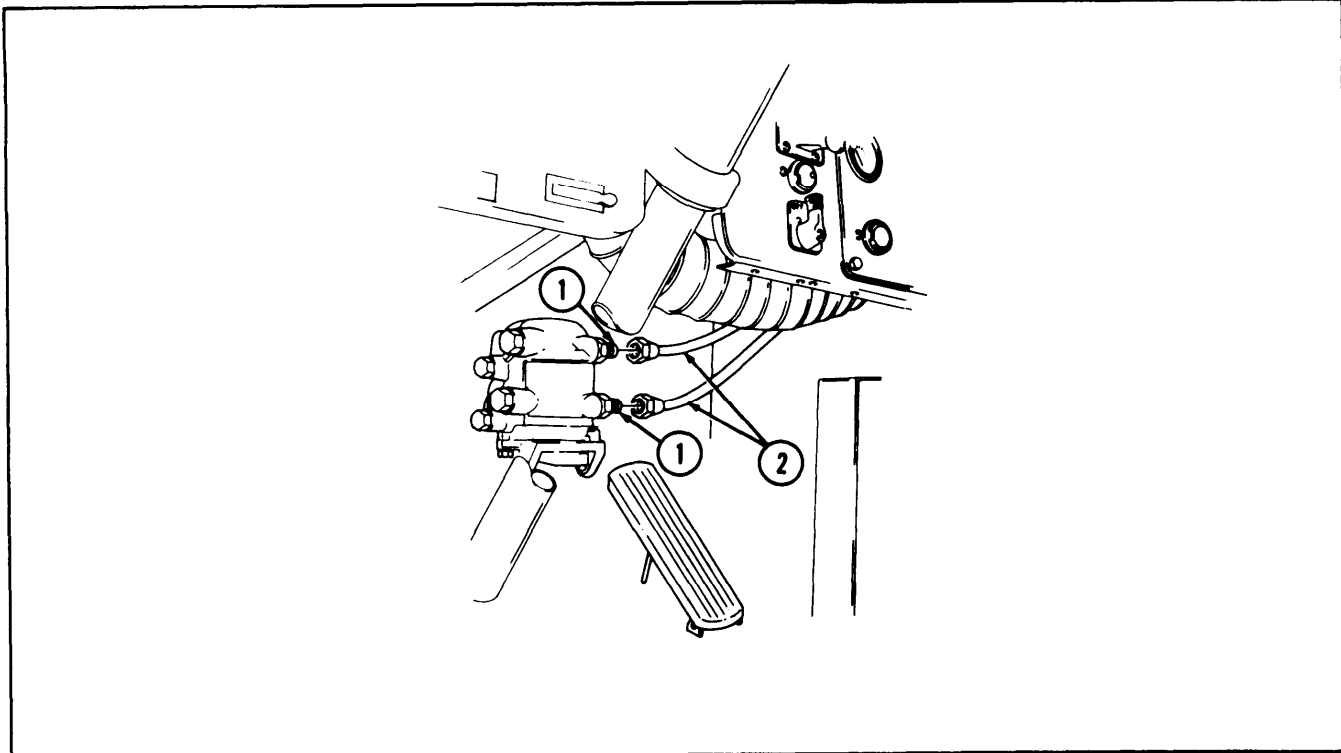
NOTE

Tag air lines and hoses for installation.

- |    |                                    |                        |             |
|----|------------------------------------|------------------------|-------------|
| 1. | Two brake pedal valve adapters (1) | Two air lines (2)      | Disconnect. |
| 2. | Adapters (5) and (9)               | Air hoses (4) and (8)  | Disconnect. |
| 3. | Tee (10)                           | Adapters (5) and (9)   | Remove.     |
| 4. | Adapter (6)                        | Air hose (7)           | Disconnect. |
| 5. | Firewall (3)                       | Adapter (6)            | Remove.     |
| 6. |                                    | Tee (10) and pipe (11) | Remove.     |

7-31. BRAKE PEDAL (TREADLE) VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 7-31. BRAKE PEDAL (TREADLE) VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Firewall (8)	Air hose (3) and adapter (2)	Remove.	
8.		Air hose (4) and adapter (5)	Remove.	
9.		Air hose (6) and adapter (7)	Remove.	
10.		Three locknuts (1) and brake pedal valve (9)	Remove.	Discard locknuts (1).
11.	Brake pedal valve (9)	Three studs (10)	Remove.	
12.		Two brake pedal valve adapters (12)	Remove.	
13.		Pressure relief valve (11)	Remove.	

### **I b. Installation I**

#### **NOTE**

- When new brake pedal valve is installed, use attaching parts and fittings from old brake pedal valve.
- Fittings must be cleaned and inspected for cracks and stripped threads.
- Male pipe threads must be wrapped with sealing tape before installation.

14.		Pressure relief valve (11)	Install in brake pedal valve (9).
15.		Two brake pedal valve adapters (12)	Install.
16.		Three studs (10)	Install.
17.		Brake pedal valve (9)	Install to cab side of firewall (8) with three new locknuts (1).
18.		Adapter (7) and air hose (6)	Install.
19.		Adapter (5) and air hose (4)	Install.
20.		Adapter (2) and air hose (3)	Install.
21.		Pipe (20) and tee (19)	Install.
22.		Adapter (15) and air hose (16)	Install.
23.		Adapters (14) and (18)	Install.
24.		Air hoses (13) and (17)	Connect.
25.		Two air lines (21)	Connect.

# 7-31. BRAKE PEDAL (TREADLE) VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS

END OF TASK!

FOLLOW-ON TASKS:

- Install protective control box (para. 4-11).
- Install brake pedal (para. 7-30).
- Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks and proper brake operation. Road test vehicle.

TA 348975

## 7-32. BRAKE PEDAL (TREADLE) VALVE (M936) REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 TM 9-2320-272-10 Para 7-30 Para4-11	Parking brake set. Air reservoirs drained. Brake pedal removed. Protective control box removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### I a. Removal I

#### WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### NOTE

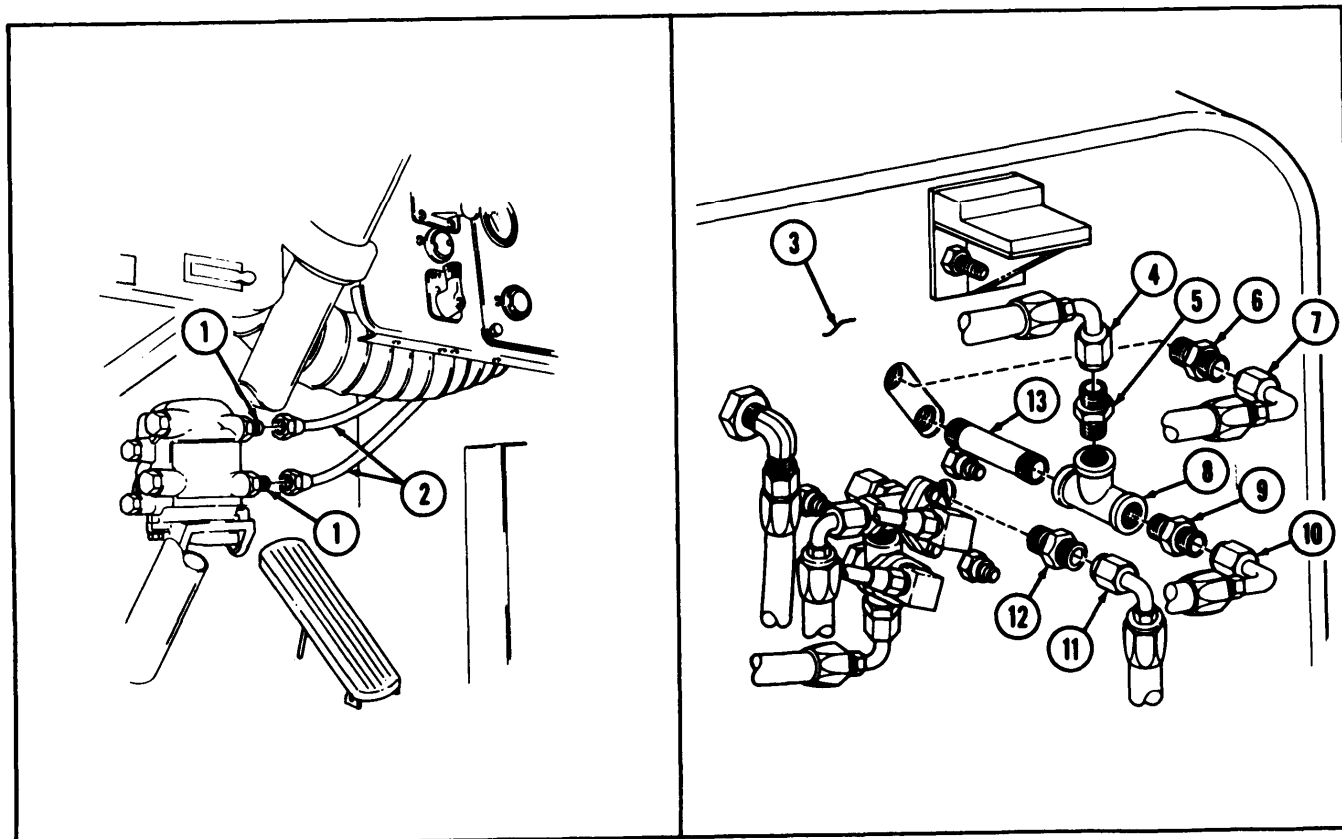
Tag air lines and hoses for installation.

- |    |                                    |                               |             |
|----|------------------------------------|-------------------------------|-------------|
| 1. | Two brake pedal valve adapters (1) | Two air lines (2)             | Disconnect. |
| 2. | Adapters (5) and (9)               | Air hoses (4) and (10)        | Disconnect. |
| 3. | Tee (8)                            | Adapters (5) and (9)          | Remove.     |
| 4. | Firewall (3)                       | Air hose (7) and adapter (6)  | Remove.     |
| 5. |                                    | Tee (8) and pipe (13)         | Remove.     |
| 6. |                                    | Airhose (11) and adapter (12) | Remove,     |



# 7-32. BRAKE PEDAL (TREADLE) VALVE (M936) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 7-32. BRAKE PEDAL (TREADLE) VALVE (M936) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Two elbows (5)	Two air lines (4)	Disconnect.	
8.	Two control valves (3)	Two elbows (5)	Remove.	
9.	Two adapters (6)	Air hoses (7) and (8)	Disconnect.	
10.	Two control valves (3)	Two adapters (6)	Remove.	
11.	Firewall (9)	Two control valves (3) and adapter (2)	Remove.	Scribe position for installation.
12.		Three locknuts (1) and brake pedal valve (10)	Remove.	Discard locknuts (1).
13.	Brake pedal valve (10)	Three studs (11)	Remove.	
14.		Two brake pedal valve adapters (13)	Remove.	
15.		Pressure relief valve (12)	Remove.	

### b. Installation

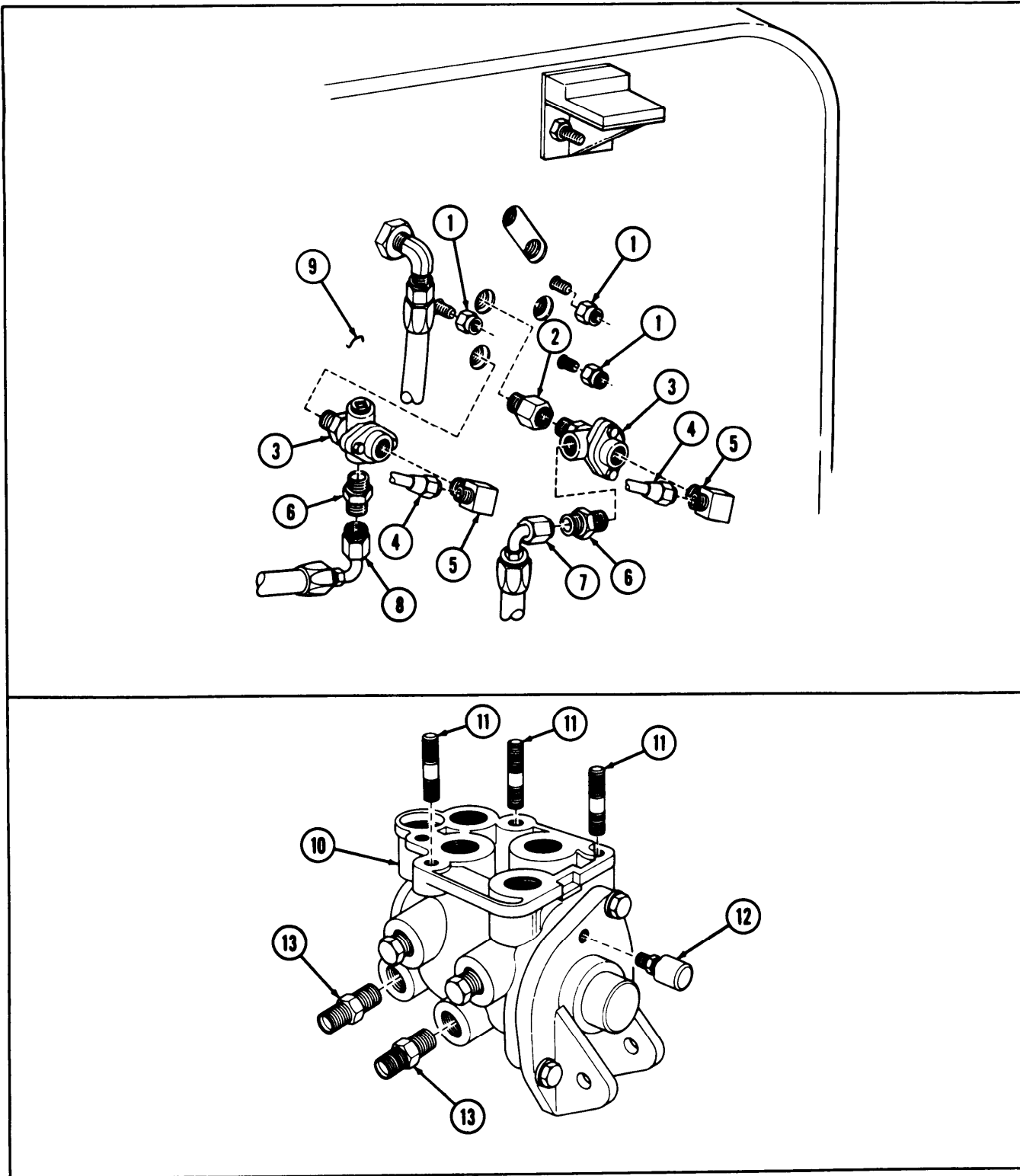
#### NOTE

- When new brake pedal valve is installed, use attaching parts and fittings from old brake pedal valve.
- Fittings must be cleaned and inspected for cracks and stripped threads.
- Male pipe threads must be wrapped with sealing tape before installation.

16.		Pressure relief valve (12)	Install in brake pedal valve (10).
17.		Two brake pedal valve adapters (13)	Install.
18.		Three studs (11)	Install.
19.		Brake pedal valve (10)	Install to cab side of firewall (9) with three new locknuts (1).
20.		Adapter (2) and two control valves (3)	Install.
21.		Two adapters (6)	Install.
22.		Air hoses (8) and (7)	Connect.
23.		Two elbows (5)	Install.
24.		Two air lines (4)	Connect.

7-32. BRAKE PEDAL (TREADLE) VALVE (M936) REPLACEMENT (Cont'd)

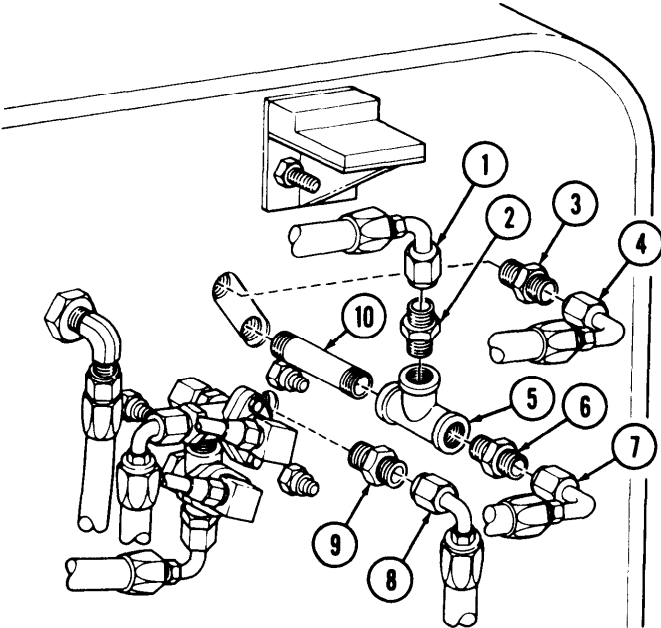
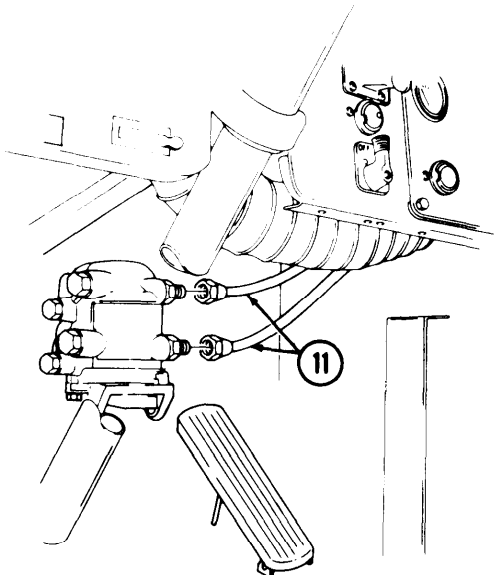
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**7-32. BRAKE PEDAL (TREADLE) VALVE (M936) REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
25.		Adapter (9) and air hose (8)	Install.	
26.		Pipe (10) and tee (5)	Install.	
27.		Adapter (3) and air hose (4)	Install.	
28.		Adapters (2) and (6)	Install.	
29.		Air hoses (7) and (1)	Connect.	
30.		Two air lines (11)	Connect.	

# 7-32. BRAKE PEDAL (TREADLE) VALVE (M936) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

END OF TASK!

- FOLLOW-ON TASKS:
- Install protective control box (para. 4-11).
  - Install brake pedal (para. 7-30).
  - Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks and proper brake operation. Road test vehicle.

TA 348978

### 7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT

This task covers:

a. Removal

b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All except M936	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Eight locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not disconnect air lines before draining air reservoirs.	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### a. Removal

#### NOTE

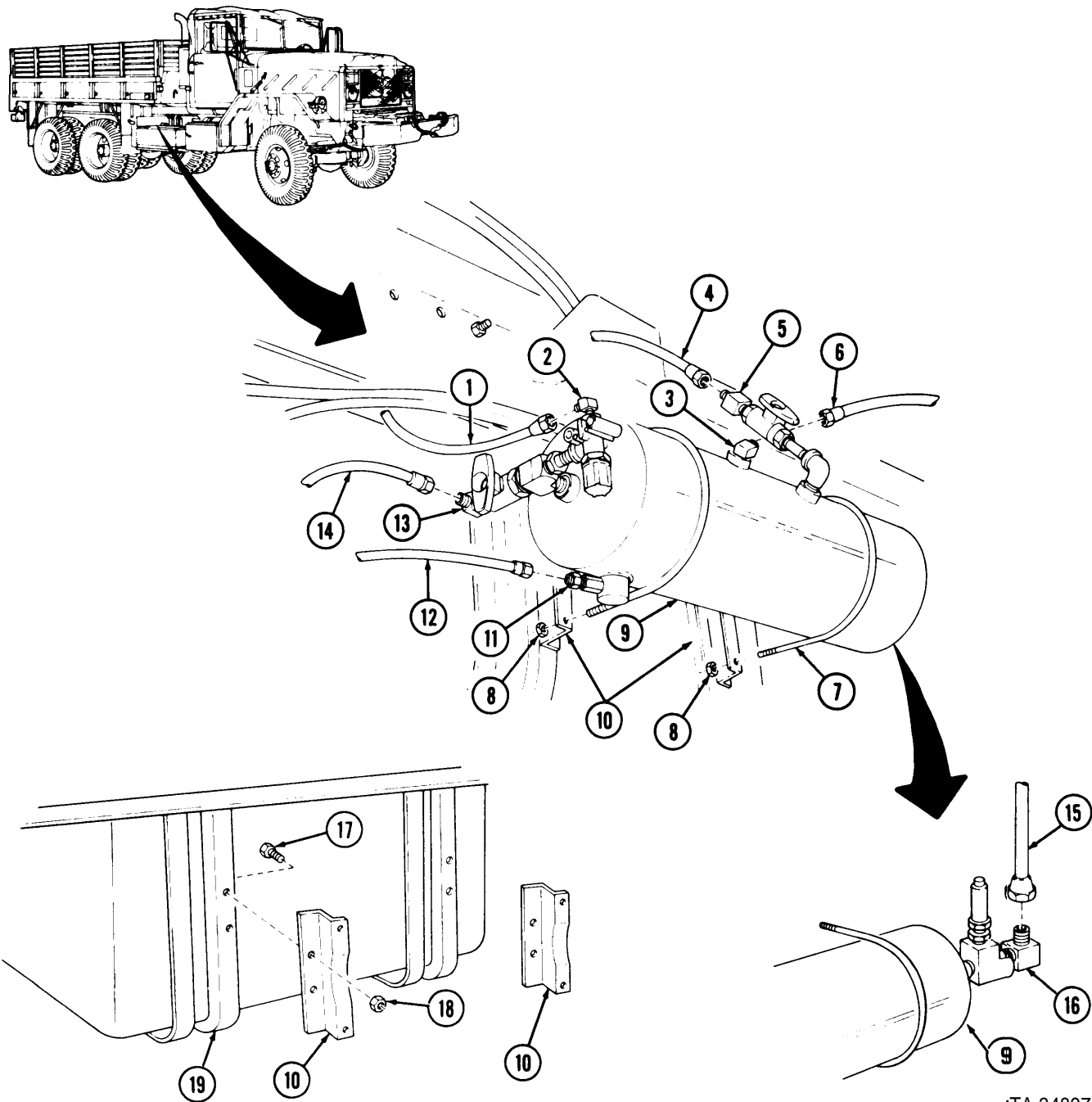
Tag air lines for installation.

1.	Adapter (11)	Drain line (12)	Disconnect.	
2.	Elbow (13)	Primary tank air line (14)	Disconnect.	
3.	Elbow (2)	Auxiliary air line (1)	Disconnect.	
4.	Elbow (3)	Trailer emergency air line (6)	Disconnect.	For all models except M934 and M935.
5.	Adapter (5)	Secondary tank air line (4)	Disconnect.	For all models except M934 and M935.
6.	Elbow (16)	Supply tank input air line (15)	Disconnect.	
7.	Two support brackets (10)	Four locknuts (8), two U-bolts (7), and supply tank (9)	Remove.	Discard locknuts (8). For all models except M934 and M935.

7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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8.	Frame brace (19)	Four locknuts (18) and Remove. screws (17), and two support brackets (10)		Discard locknuts (18). For all models except M934 and M935.
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### 7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

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

Steps 9 through 14 apply to van models M934 and M935.

9.	Adapter (2)	Secondary tank air line (1)	Disconnect.	
10.	Elbow (6)	Trailer emergency air line (5)	Disconnect.	
11.	Frame (12)	Four screws (11) and support plate (9)	Remove.	
12.	Support plate (9)	Four locknuts (10), two U-bolts (8), and supply tank (7)	Remove.	Discard locknuts (10).

#### CAUTION

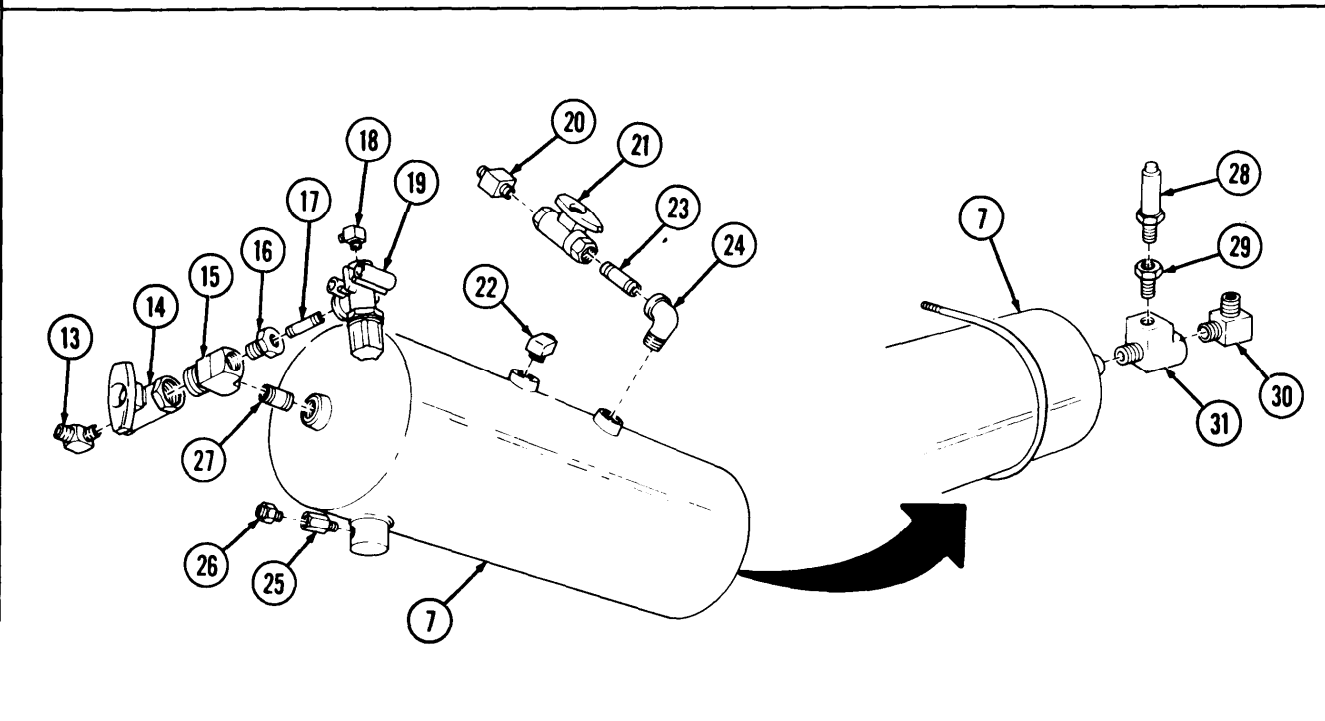
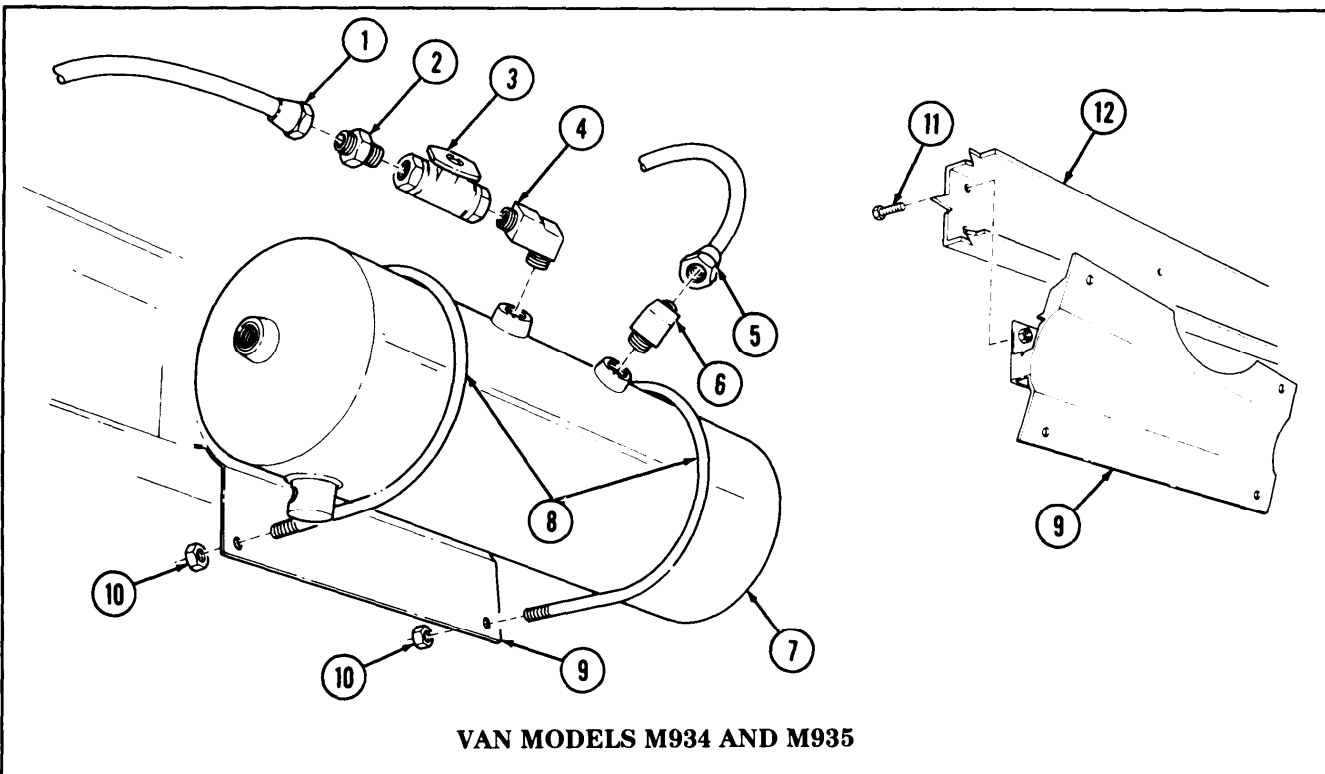
Open-end wrench must be used to anchor tank boss fittings when connecting or disconnecting associated fittings. Damage to tank bosses will result if open-end wrench is not used.

13.	Supply tank (7)	Adapter (2), shutoff valve (3), and elbow (4)	Remove.	
14.		Elbow (6)	Remove.	
15.	Supply tank (7)	Adapters (26) and (25)	Remove.	
16.	Tee (15)	Elbow (18), relief valve (19), nipple (17), and reducer (16)	Remove.	
17.	Supply tank (7)	Elbow (13), shutoff valve (14), tee (15), and nipple (27)	Remove.	
18.		Adapter (20), shutoff valve (21), nipple (23), and elbow (24)		
19.		Elbow (22)	Remove.	
20.		Elbow (30), safety valve (28), reducer (29), and tee (31)	Remove.	



7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 348980

## 7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

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

Open-end wrench must be used to anchor tank boss fittings when connecting or disconnecting associated fittings. Damage to tank bosses will result if open-end wrench is not used.

**NOTE**

When new reservoir is being installed, fittings from old reservoir may be used. Fittings must be cleaned and inspected for cracks and stripped threads. Male pipe threads must be wrapped with sealing tape before installation.

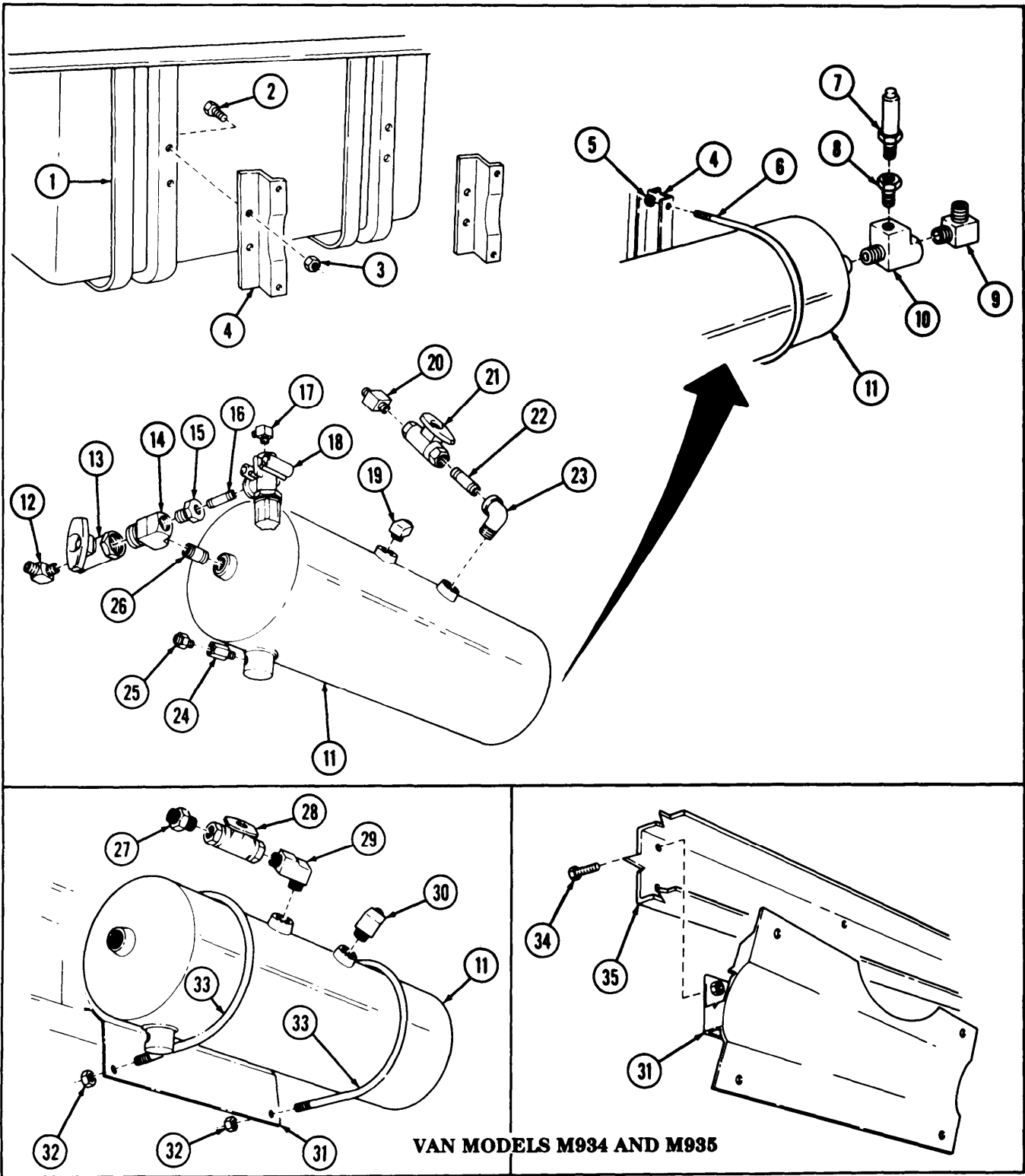
21.		Adapter (24) and (25)	Install.	
22.		Nipple (26), tee (14), reducer (15), nipple (16), relief valve (18), elbow (17), shutoff valve (13), and elbow (12)		
23.		Elbow (23), nipple (22), shutoff valve (21), and adapter (20)	Install.	For all models except M934 and M935.
24.		Elbow (19)	Install.	For all models except M934 and M935.
25.		Tee (10), reducer (8), safety valve (7), and elbow (9)	Install.	

**NOTE**

Steps 26 through 29 apply to van models M934 and M935.

26.		Elbow (30)	Install.	
27.		Elbow (29), shutoff valve (28), and adapter (27)	Install.	
28.		Support plate (31)	Install on frame (35) with four screws (34).	
29.		Supply tank (11)	Install on support plate (31) with four new locknuts (32) and two u-bolts (33).	
30.		Two support brackets (4)	Install on frame braces (1) with four new locknuts (3) and screws (2).	
31.		Supply tank (11)	Install on support brackets (4) with two U-bolts (6) and four new locknuts (5).	

7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
VAN MODELS M934 AND M935				

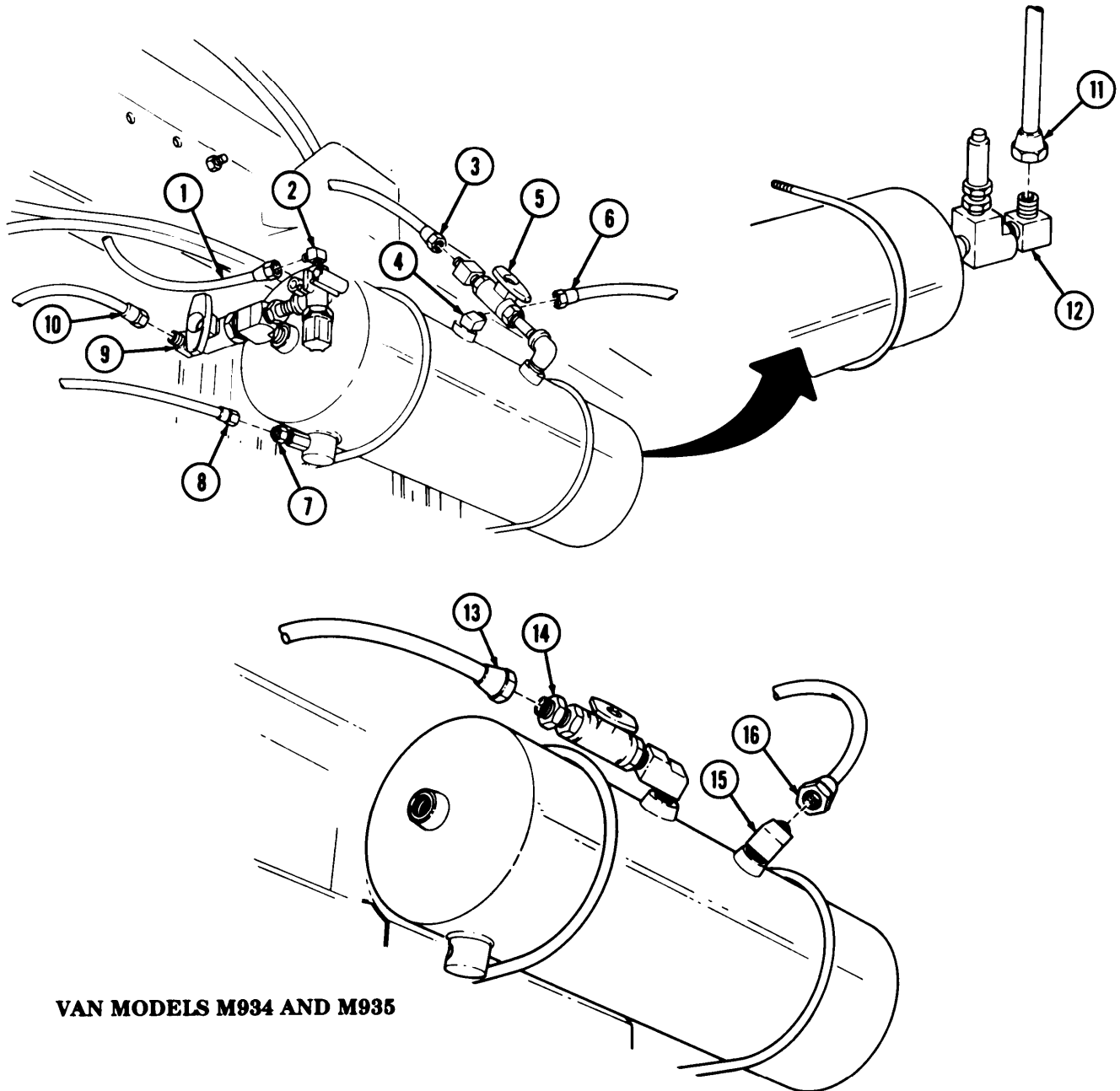
TA 340981

## 7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
32.		Supply tank input air line (11)	Connect to elbow (12).	
33.		Secondary tank air line (3)	Connect to adapter (5).	For all models except M934 and M935.
34.		Trailer emergency air line (6)	Connect to elbow (4).	For all models except M934 and M935.
35.		Auxiliary air line (1)	Connect to elbow (2).	
36.		Primary tank air line (1o)	Connect to elbow (9).	
37.		Drain line (8)	Connect to adapter (7).	
<b>NOTE</b>				
Steps 38 through 39 apply to van models M934 and M935.				
38.		Trailer emergency air line (16)	Connect to elbow (15).	
39.		Secondary tank air line (13)	Connect to adapter (14).	

7-33. WET AIR RESERVOIR (SUPPLY TANK) AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASK:** Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks. Road test vehicle.

TA 348982

## 7-34. M936 WET AIR RESERVOIR (SUPPLY TANK) AND MOUNTING PLATE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Four locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Rewired</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not disconnect air lines before draining air reservoirs	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

### a. Removal

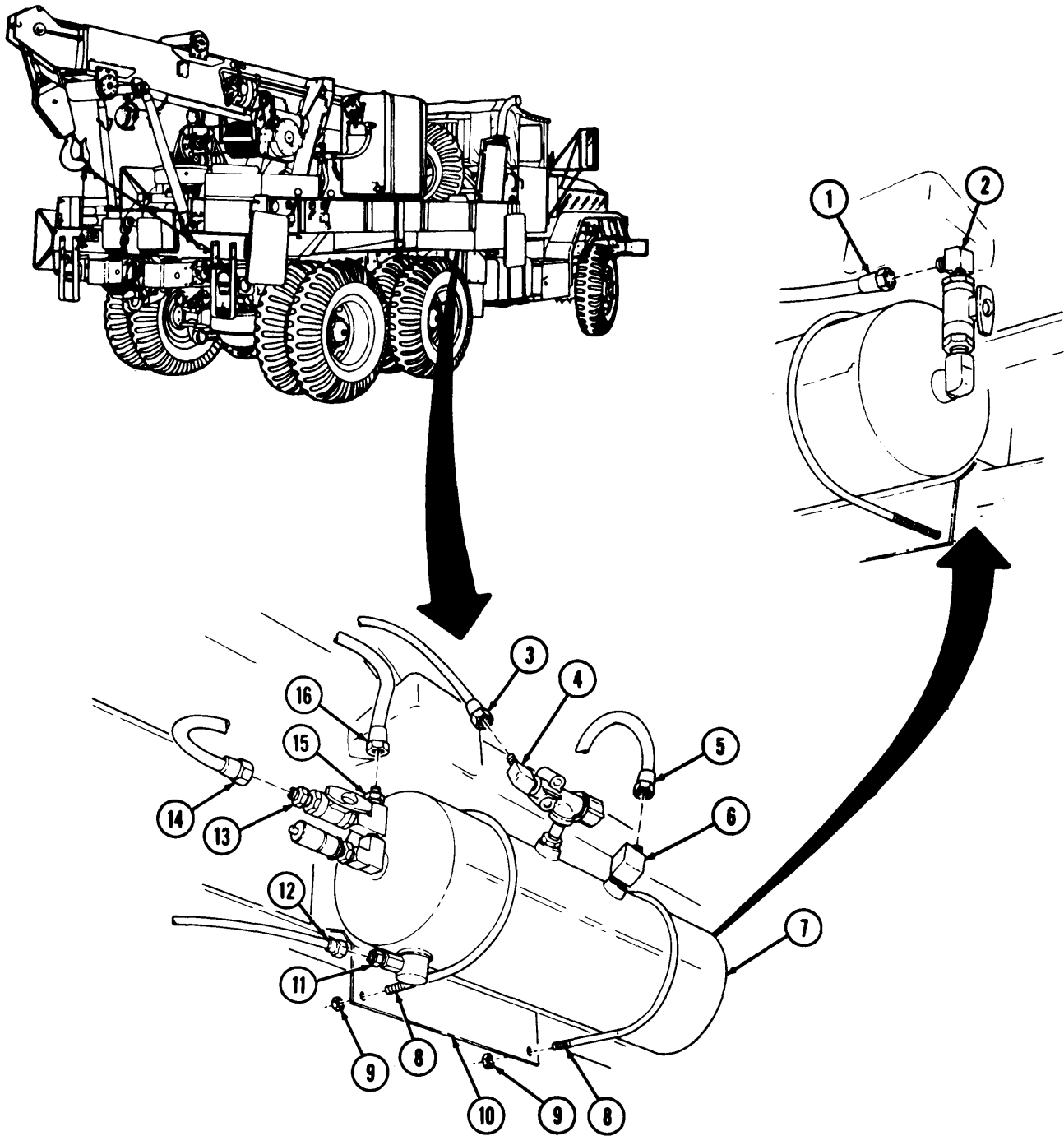
#### NOTE

Tag air lines for installation.

1.	Elbow (2)	Primary tank input air line (1)	Disconnect.	
2.	Elbow (6)	Trailer emergency air line (5)	Disconnect.	
3.	Elbow (4)	Auxiliary air line (3)	Disconnect.	
4.	Adapter (15)	Supply tank input air line (16)	Disconnect.	
5.	Adapter (13)	Secondary tank input air line (14)	Disconnect.	
6.	Adapter (11)	Drain line (12)	Disconnect.	
7.	Support plate (10)	Four locknuts (9), two U-bolts (8), and supply tank (7)	Remove.	Discard locknuts (9).

7-34. M936 WET AIR RESERVOIR (SUPPLY TANK) AND MOUNTING PLATE  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**7-34. M936 WET AIR RESERVOIR (SUPPLY TANK) AND MOUNTING PLATE  
REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
8.	Frame (2)	Four screws (1) and support plate (4)	Remove from weldnuts (3).	
9.	Supply tank (8)	Elbow (5), shutoff valve (6), and elbow (7)	Remove.	
10.		Elbow (13)	Remove.	
11.		Elbow (9), relief valve (10), nipple (11), and reducer (12)	Remove.	
12.		Adapters (14) and (15)	Remove.	
13.		Adapters (22) and (19), safety valve (18), reducer (17), shutoff valve (20), tees (23) and (16), and nipple (21)	Remove.	

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**b. Installation**


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**NOTE**

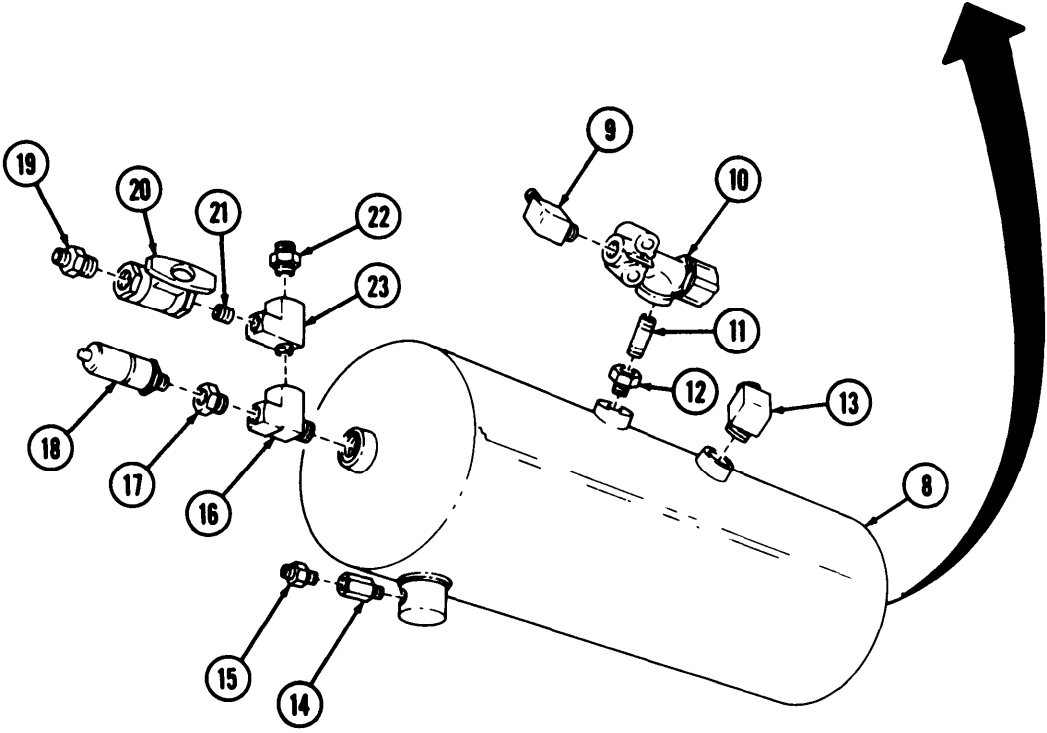
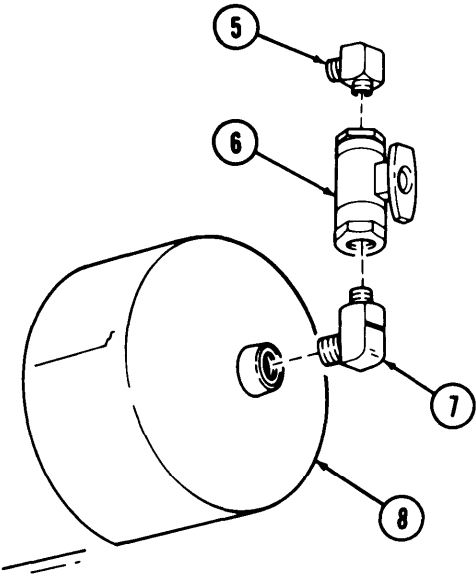
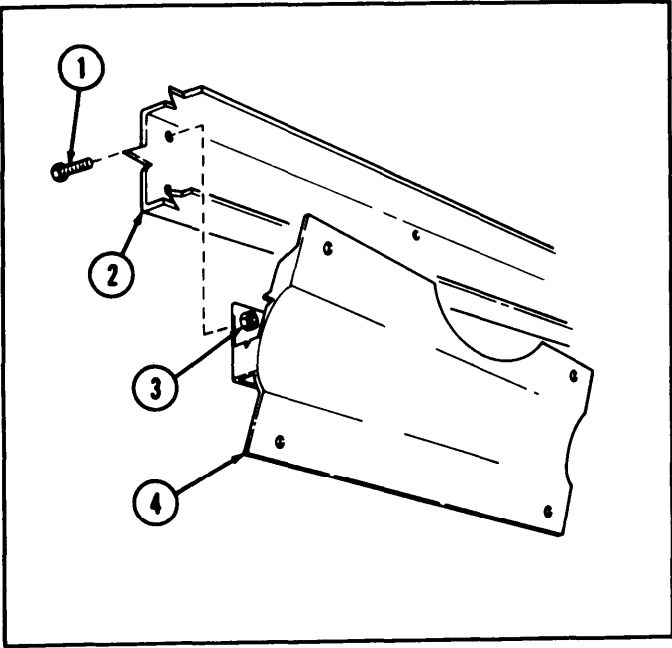
When new reservoir is being installed, fittings from old reservoir may be used. Fittings must be cleaned and inspected for cracks and stripped threads. Male pipe threads must be wrapped with sealing tape before installation.

14.		Tees (16) and (23), shutoff valve (20), reducer (17), safety valve (18), adapters (19) and (22), and nipple (21)	Install.	
15.		Adapters (14) and (15)	Install.	
16.		Reducer (12), nipple (11), relief valve (10), and elbow (9)	Install.	
17.		Elbow (13)	Install.	
18.		Elbow (7), shutoff valve (6), and elbow (5)	Install.	
19.		Support plate (4)	Install to frame (2) with four screws (1).	



7-34. M936 WET AIR RESERVOIR (SUPPLY TANK) AND MOUNTING PLATE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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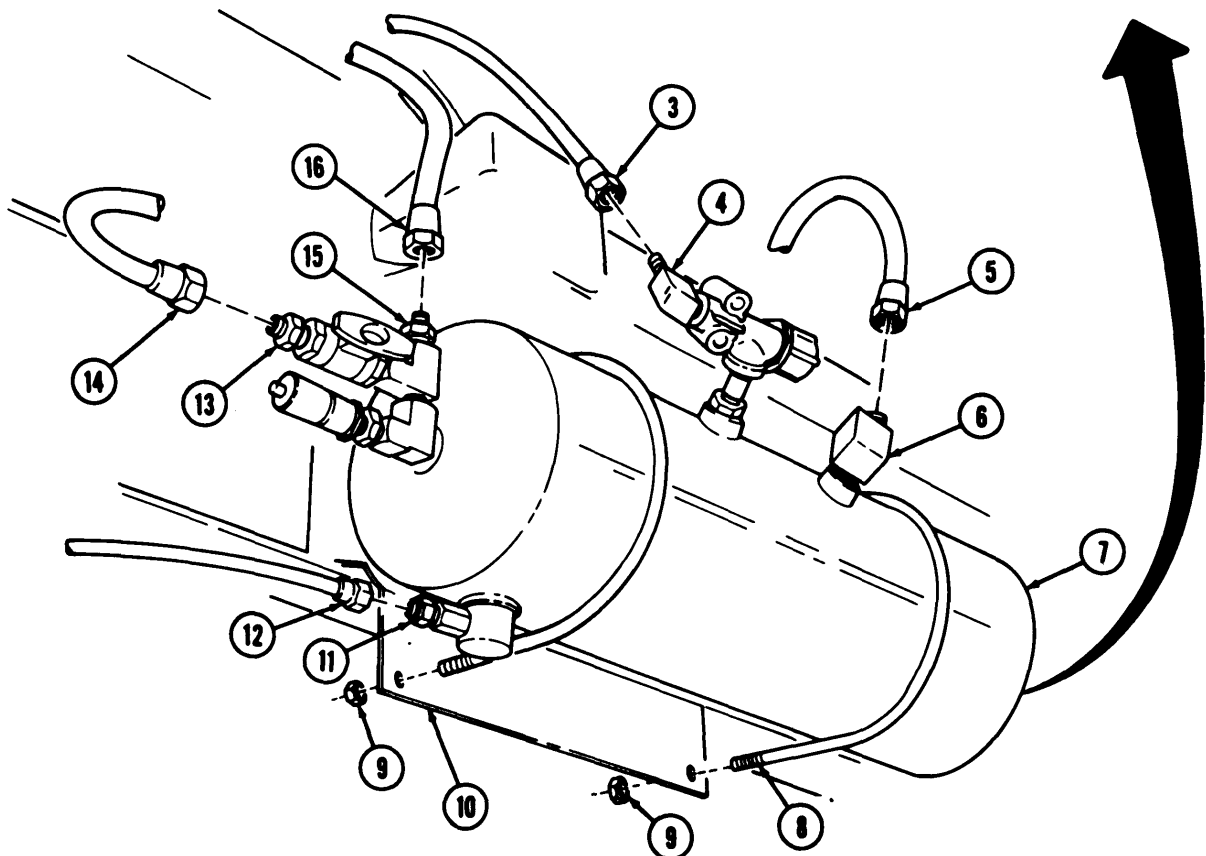
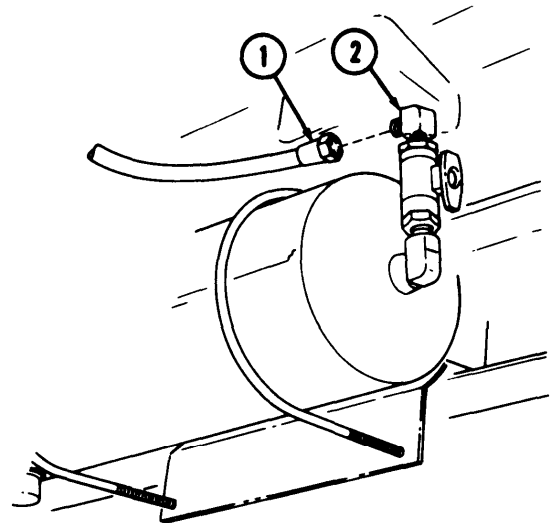


<b>7-34. M936 WET AIR RESERVOIR (SUPPLY TANK) AND MOUNTING PLATE REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
20.		supply tank (7)	Install to support plate (10) with two U-bolts (8), and four new locknuts (9).	
21.		Drain line (12)	Connect to adapter (11).	
22.		Secondary tank input air line (14)	Connect to adapter (13).	
23.		Supply tank input air line (16)	Connect to adapter (15).	
24.		Auxiliary air line (3)	Connect to elbow (4).	
25.		Trailer emergency air line (5)	Connect to elbow (6).	
26.		Primary tank input air line (1)	Connect to elbow (2).	

# 7-34. M936 WET AIR RESERVOIR (SUPPLY TANK) AND MOUNTING PLATE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASK:** Start engine (TM 9-2320-272-10) and allow air pressure to buildup to normal operating range. Check for air leaks. Road test vehicle.

TA 348985

**7-35. PRIMARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All except M936	TM 9-2320-272-10 TM 9-2320-272-10 Para. 9-45 Para. 4-64	Parking brake set. Air reservoirs drained. Toolbox and step removed. Primary low air pressure switch removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		<ul style="list-style-type: none"> <li>Do not disconnect air lines before draining air reservoirs.</li> <li>Do not touch hot exhaust system components with bare hands.</li> </ul>
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**WARNING**

- Ž Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.
- Do not touch hot exhaust system components with bare hands. Injury to personnel may result.

**NOTE**

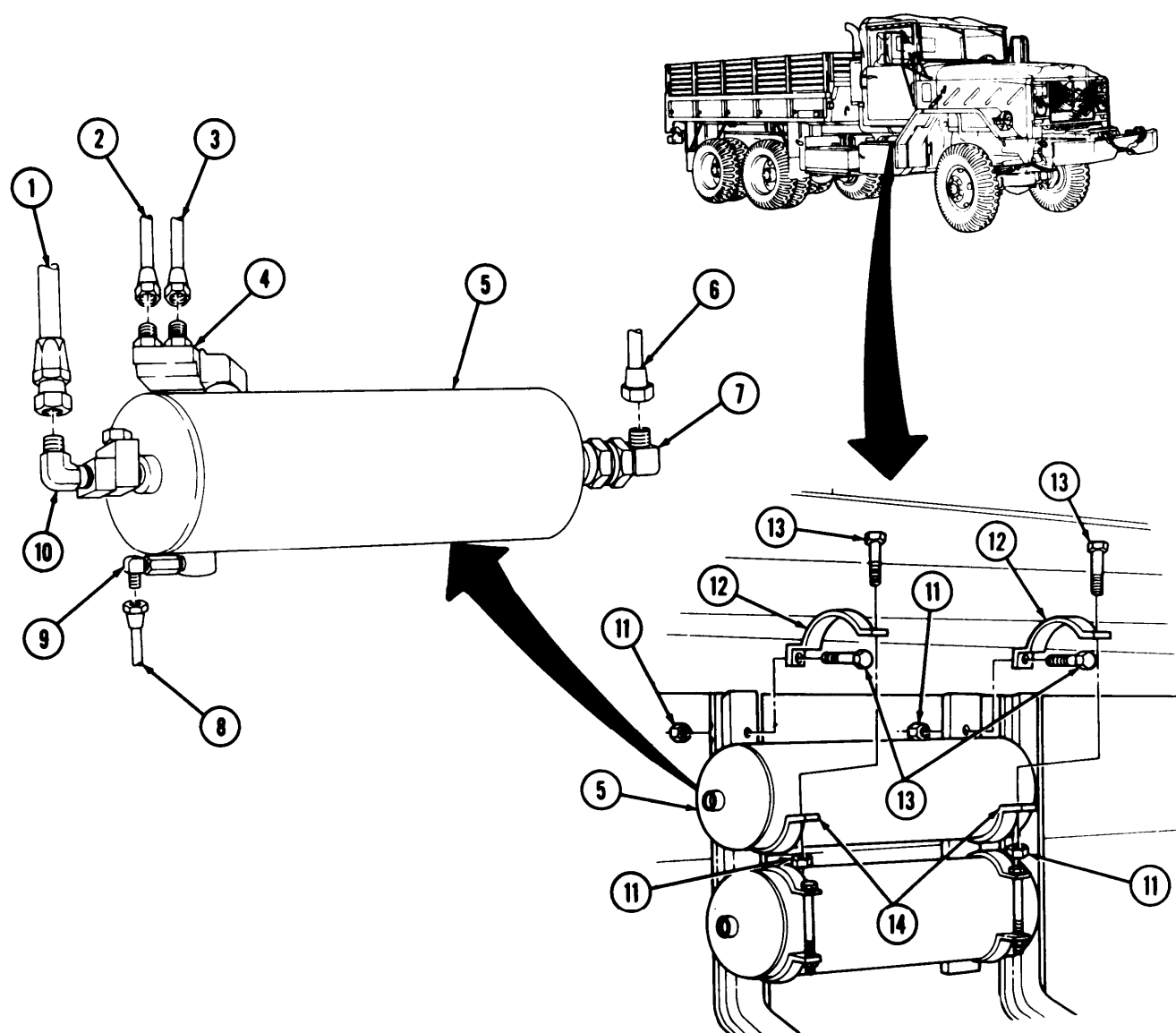
- Primary reservoir is located below the cab on right side frame rail above secondary reservoir.
- Ž Tag air lines for installation.

**a. Removal**

- |    |             |                                     |             |
|----|-------------|-------------------------------------|-------------|
| 1. | Elbow (7)   | Wet reservoir supply line (6)       | Disconnect. |
| 2. | Elbow (9)   | Draincock line (8)                  | Disconnect. |
| 3. | Elbow (10)  | Primary relay valve supply line (1) | Disconnect. |
| 4. | Adapter (4) | Supply line (2)                     | Disconnect. |

## 7-35. PRIMARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Treadle <b>valve</b> supply line (3)	Disconnect.	
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>Assistant</b> will help with steps 6 and 7.</p>				
6.	Primary reservoir support clamps (14)	Four bolts (13), locknuts (11), and clamps (12)	Remove.	Discard locknuts (11).
7.		Reservoir (5)	Remove.	



TA 340986

7-35. PRIMARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

If installing new reservoir, use old reservoir fittings. Clean all male pipe threads and wrap with sealing tape before installation.

8.		Primary reservoir (5)	Position to support clamps (14), and install with two clamps (12), four bolts (11), and new locknuts (13).	
9.	Treadle valve supply line (3)	Connect to adapter (4)		
10.		Supply line (2)	Connect to adapter (4).	
11.		Primary relay valve supply line (1)	Connect to elbow (10).	
12.		Draincock line (8)	Connect to elbow (9).	
13.		Wet reservoir supply line (6)	Connect to elbow (7),	



**7-36. SECONDARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All except M936	TM 9-2320-272-10 TM 9-2320-272-10 Para. 9-45	Parking brake set. Air reservoirs drained. Toolbox and step removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		<ul style="list-style-type: none"> <li>• Do not disconnect air lines before draining air reservoirs.</li> <li>• Do not touch hot exhaust system components with bare hands.</li> </ul>
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**WARNING**

- Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.
- Ž Do not touch hot exhaust system components with bare hands. Injury to personnel may result.

**NOTE**

- Ž Secondary reservoir is located below the cab on the right side frame rail below primary reservoir.
- Ž Tag air lines for installation.

**a. Removal**

1.	Elbow (7)	Wet reservoir supply line (8)	Disconnect.	
2.	Adapter (10)	Draincock line (11)	Disconnect.	
3.	Elbow (13)	Supply line (14)	Disconnect.	
4.	Adapter (16)	Supply line (15)	Disconnect.	
5.	Secondary low air pressure switch (2)	Two wires (1)	Disconnect.	Tag for installation.



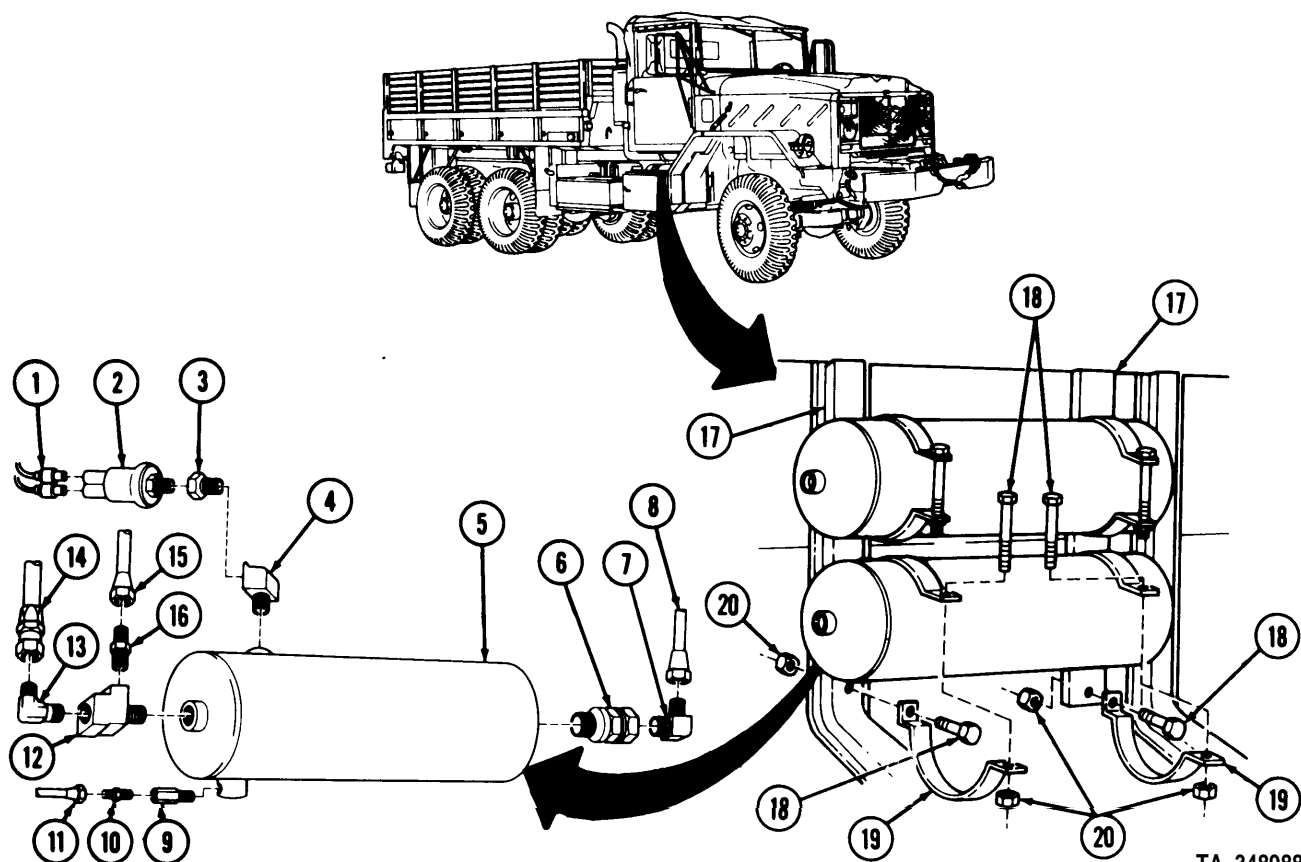
## 7-36. SECONDARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Assistant will support reservoir during steps 6 and 7.

6.	IWO hangers (17)	Four screws (18) and locknuts (20), and two support clamps (19)	Remove.	Discard locknuts (20).
7.		Secondary reservoir (5)	Remove.	Place in soft-jawed vise.
8.	Secondary reservoir (5)	Pressure protection valve (2), adapter (3), and fitting (4)	Remove.	
9.		Elbow (7) and check valve (6)	Remove.	
10.		Two adapters (10) and (9)	Remove.	
11.		Elbow (13), adapter (16), and fitting (12)	Remove.	
12.		Secondary reservoir (5)	Remove from vise.	



TA 348988

## 7-36. SECONDARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT (Cont'd)

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

**NOTE**

If new reservoir is being installed, use fittings from old reservoir. Clean all male pipe threads and wrap with sealing tape before installation.

13.		Secondary reservoir (5)	Place in soft-jawed vise.
14.		Fitting (12), adapter (16), and elbow (13)	Install in secondary reservoir (5).
15.		Two adapters (9) and (10)	Install.
16.		Check valve (6) and elbow (8)	Install.
17.		Fitting (4), adapter (3), and low air pressure switch (2)	Install.
18.		Secondary reservoir (5)	Remove from vise.

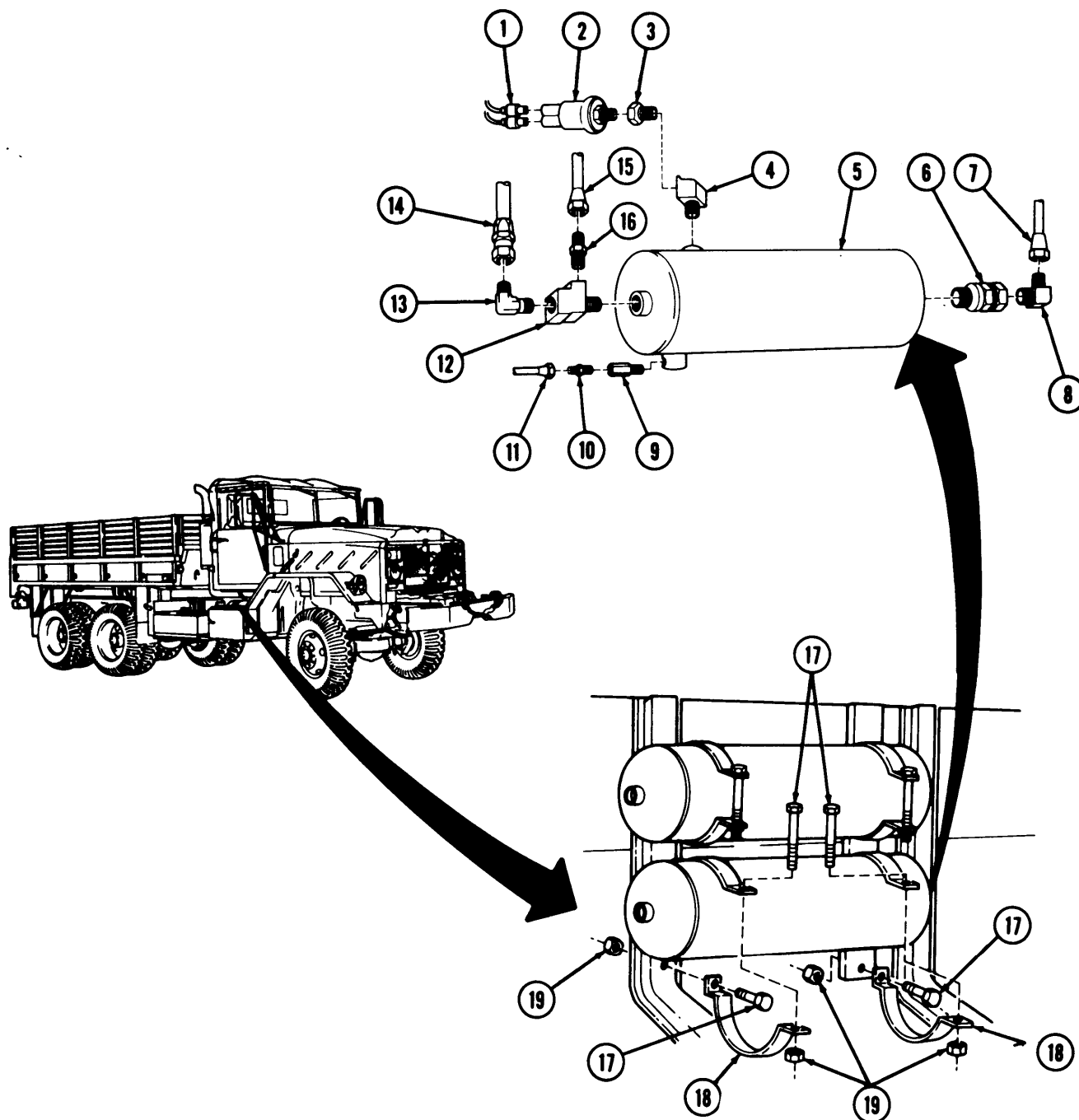
**NOTE**

Assistant will support reservoir during step 19,

19.		Secondary reservoir (5)	Install with two support clamps ( 18), four screws (17) and new locknuts (19),
20.		Two wires (1)	Connect.
21.		Supply lines (15) and (14), draincock line (11), and wet reservoir supply line (7)	Connect.

## 7-36. SECONDARY (SUPPLY TANK) AIR RESERVOIR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

FOLLOW-ON TASKS: Ž Install toolbox and step (para. 9-45).

Ž Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at secondary air reservoir. Road test vehicle.

TA 348989

7-37. EMERGENCY SPRING BRAKE (SUPPLY TANK) AIR RESERVOIR REPLACEMENT

This task covers:		
a. Removal		b. Installation
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 Para. 9-46	Parking brake set. Air reservoirs drained. Toolbox and step removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

NOTE

- The spring brake air reservoir is located on the left frame rail next to the air cleaner.
- Tag air lines for installation.

a. Removal				
1.	Elbow ( 10)	Air line (5)	Disconnect.	
2.	Elbow (8)	Air line (6)	Disconnect.	
3.	Elbow (9)	Air line (7)	Disconnect.	
4.	Two support brackets (2)	Four locknuts (4) and washers (3), and two U-bolts ( 11)	Remove.	Discard locknuts (4).
5.		Emergency reservoir (1)	Remove.	

# 7-37. EMERGENCY SPRING BRAKE (SUPPLY TANK) AIR RESERVOIR REPLACEMENT (Cont'd)

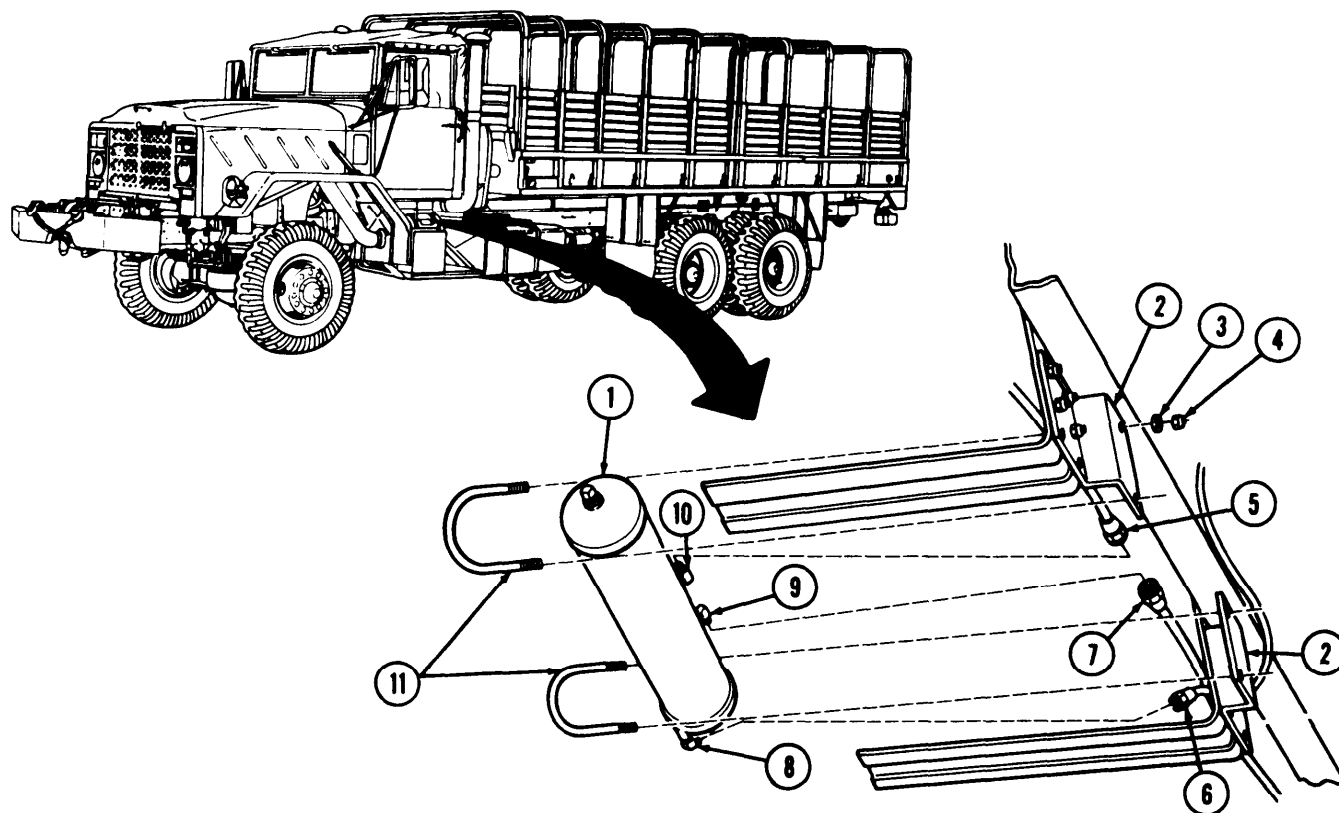
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

### NOTE

- If new reservoir is being installed, use fittings from old reservoir. Clean all male pipe threads and wrap with sealing tape before installation.
- When installing emergency tank, make sure emergency tank draincock port faces downward and toward front of vehicle.

- |    |  |   |
|----|--|---|
| 6. | Emergency reservoir (1) and two U-bolts (11) | Install to two support brackets (2) with four new locknuts (4) and washers (3). |
| 7. | Air line (7)                                 | Connect to elbow (9).   |
| 8. | Air line (6)                                 | Connect to elbow (8).   |
| 9. | Air line (5)                                 | Connect to elbow (10).  |



END OF TASK!

- FOLLOW-ON TASKS:
- Install toolbox and step (para 9-45).
  - Start engine (TM 9-2320-272- 10) and allow air pressure to build up to normal operating range. Check for air leaks. Road test vehicle.

TA 348990

7-38. AIR RESERVOIR DRAINCOCKS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**NOTE**

If removing more than one draincock, tag air lines for installation.

a. Removal

- |    |                                   |  |             |                       |
|----|-----------------------------------|--|-------------|-----------------------|
| 1. | Coupling adapter (7)              | Air drain line (8)                                       | Disconnect. |                       |
| 2. | Rear of right cab access step (4) | Two locknuts (3), U-bolt (6), and draincock coupling (5) | Remove.     | Discard locknuts (3). |
| 3. | Draincock coupling (5)            | Coupling adapter (7) and draincock (2)                   | Remove.     |                       |

7-38. AIR RESERVOIR DRAINCOCKS REPLACEMENT (Cont'd)

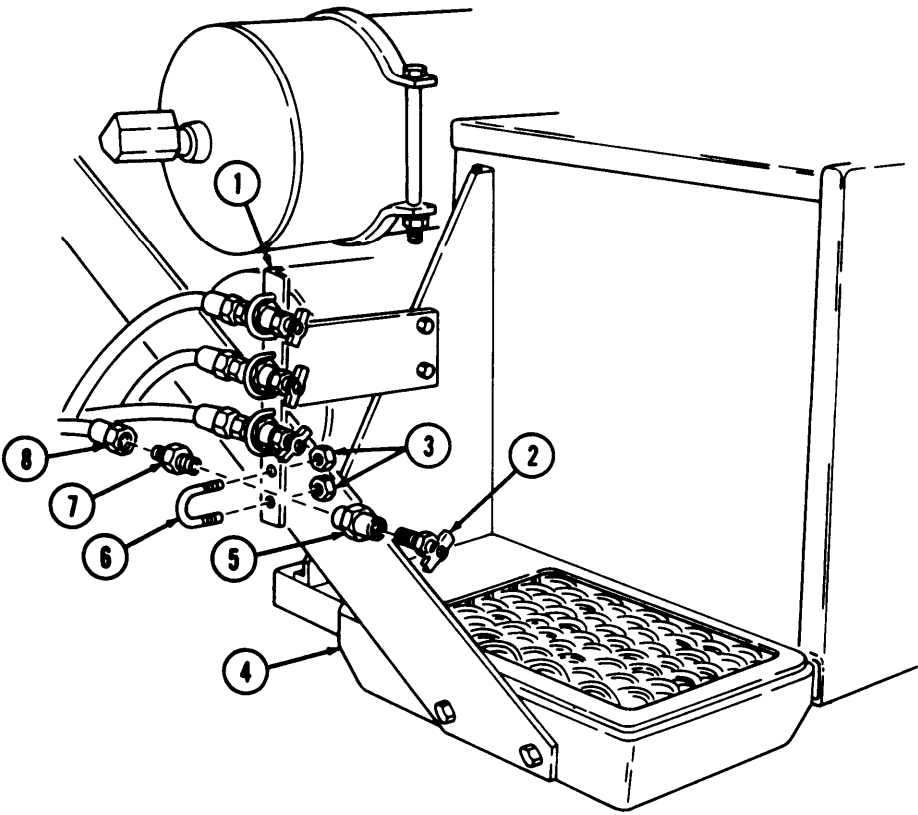
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

Clean all male pipe threads and wrap with sealing tape before installation.

- |    |  |  |
|----|--|--|
| 4. | Draincock (2) and coupling adapter (7) | Install in draincock coupling (5).                               |
| 5. | Draincock coupling (5)                 | Install on bracket (1) with U-bolt (6) and two new locknuts (3). |
| 6. | Air drain line (8)                     | Connect to coupling adapter (7).                                 |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10). Allow air pressure to build up to normal. Check for air leaks at draincock. Road test vehicle.

7-39. COMPRESSOR AIR INTAKE HOSES REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Left splash shield 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

- |    |   |  |         |                       |
|----|---|--|---------|-----------------------|
| 1. | Air compressor hose (6) and manifold hose (3) | Four hose clamps (4)                   | Loosen. |                       |
| 2. |   | Tube (5)                               | Remove. | Tag for installation. |
| 3. |   | Hoses (6) and (3), and four clamps (4) | Remove. |                       |

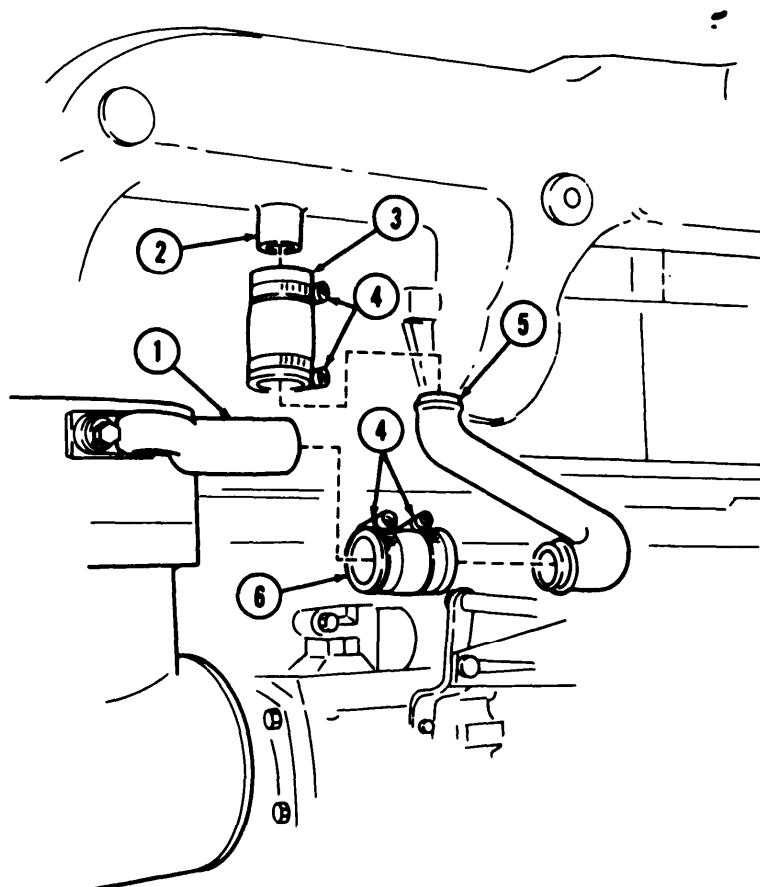
b. Installation

- |    |  |  |   |  |
|----|--|--|---|--|
| 4. |  | Hoses (6) and (3)                              | a. Position each on end of compressor tube (5).<br>b. Secure each with two hose clamps (4). |  |
| 5. |  | Compressor tube (5), and two hoses (6) and (3) | a. Position on air compressor (1) and manifold (2).<br>b. Secure with two hose clamps (4).  |  |



## 7-39. COMPRESSOR AIR INTAKE HOSES REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install left splash shield (TM 9-2320-272- 10).

TA 348992

**7-40. AIR GOVERNOR MAINTENANCE**

This task covers:

- a. Removal
- b. Installation

**c. Test and Adjustment****INITIAL SETUP**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained. Right splash shield removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**a. Removal**

- |    |                              |   |             |
|----|------------------------------|---|-------------|
| 1. | Governor adapter tee (7)     | Governor supply air line (2) and governor to horn supply line (8) | Disconnect. |
| 2. | Governor adapter fitting (3) | Governor to compressor unloader line (4)                          | Disconnect. |
| 3. | Cab cowl (9)                 | Two screws (6) and washers (5), and governor (1)                  | Remove.     |

## 7-40. AIR GOVERNOR MAINTENANCE (Cont'd)

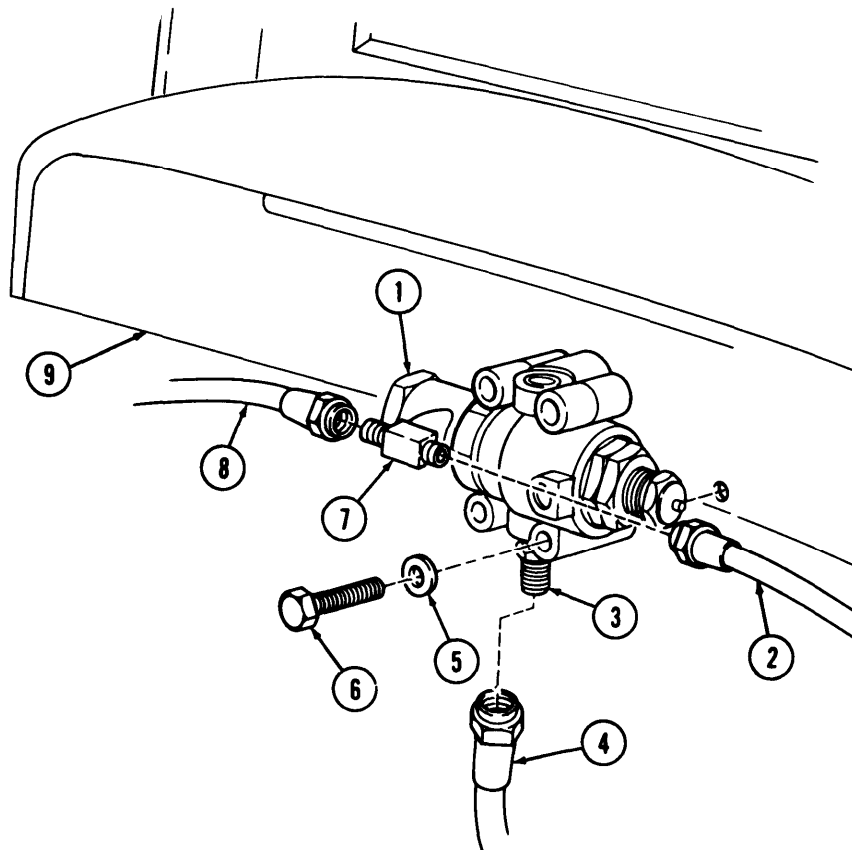
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

## NOTE

When installing new governor, use fitting from old governor. Clean all male pipe threads and wrap with sealing tape before installation.

- |    |  |  |
|----|--|--|
| 4. | Governor (1)                             | Install with two washers (5) and screws (6).       |
| 5. | Governor to compressor unloader line (4) | Connect to governor adapter fitting (3).           |
| 6. | Governor to horn supply air line (8)     | Connect to right side of governor adapter tee (7). |
| 7. | Governor supply air line (2)             | Connect to left side of governor adapter tee (7).  |



## 7-40. AIR GOVERNOR MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## c. Test and Adjustment

**NOTE**

- Whenever the governor is tested and adjusted, the instrument panel primary air gage is used.
- Adjust engine speed to 1275 rpm before proceeding to step 8b.

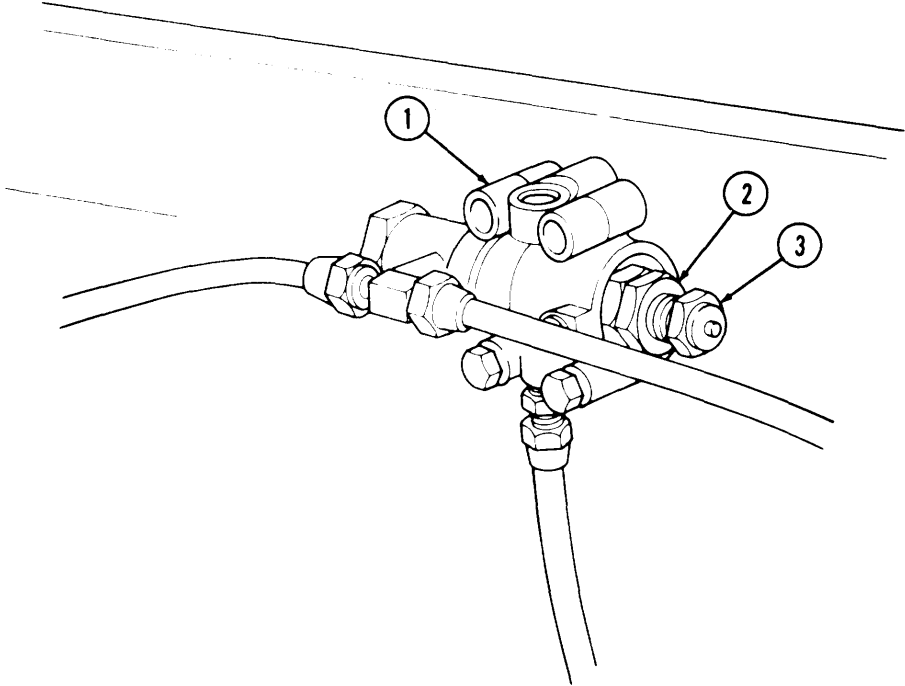
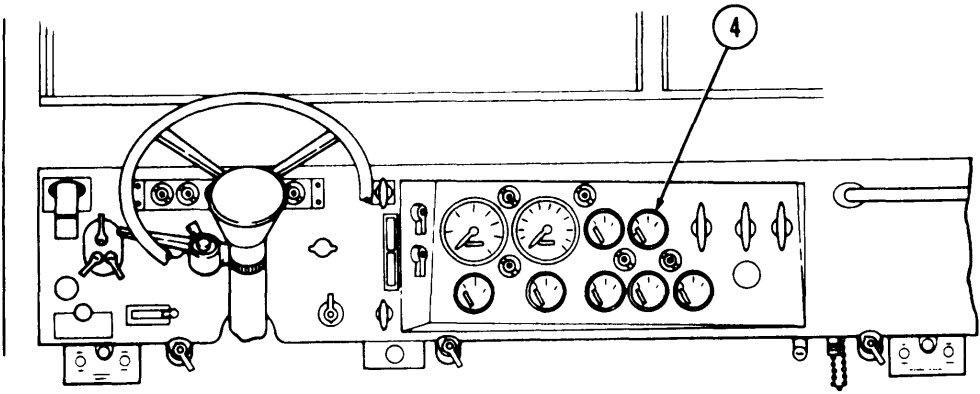
8.	Engine	a. Start and allow air pressure to build. b. Check air pressure gage (4) for air compressor cutout pressure.	Refer to TM 9-2320-272-10. Air governor should stop pressure buildup at 130 psi (896 kPa). If not, perform step 9.
9.	Governor (1)	Adjust as follows: a. Loosen locknut (2). b. Turn adapter (3) clockwise to raise pressure or counter-clockwise to lower pressure. c. Depress brake pedal until pressure drops and air compression starts to build up pressure. d. Tighten locknut (2) when correct air pressure is reached.	Air governor should stop pressure buildup at 130 psi (896 kPa). If not, repeat step 9b.

**NOTE**

After air compression cutout pressure is adjusted, perform step 10.

10.	Air pressure gage (4)	Check for air compressor cut-in pressure by depressing brake pedal repeatedly.	Air governor should start pressure buildup above 80 psi (552 kPa). If not, replace air governor.
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## 7-40. AIR GOVERNOR MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

END OF TASK!

FOLLOW-ON TASKS:

- Install right splash shield (TM 9-2320-272-10).
- Road test vehicle (TM 9-2320-272-10).

TA 348994

**7-41. AIR COUPLINGS REPLACEMENT**

This task covers:

- |  |   |
|--|---|
| a. Front Air Couplings Removal                         | d. Front Air Couplings Installation                         |
| b. Rear Air Couplings Removal (M923, M924)             | e. Rear Air Couplings Installation (M923, M924)             |
| c. Rear Air Couplings Removal (M929, M931, M934, M936) | f. Rear Air Couplings Installation (M929, M931, M934, M936) |

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained. Right and left splash shields removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Six lockwashers Twelve locknuts Sealing tape (Appendix D, Item 26)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**a. Front Air Couplings Removal**

- |    |                                  |  |         |  |
|----|----------------------------------|--|---------|--|
| 1. | Air coupling (2) and bracket (5) | Dummy coupling (1) and (15), and S-hook (12) | Remove. | Service dummy coupling (1) has a built-in check valve, |
|----|----------------------------------|--|---------|--|

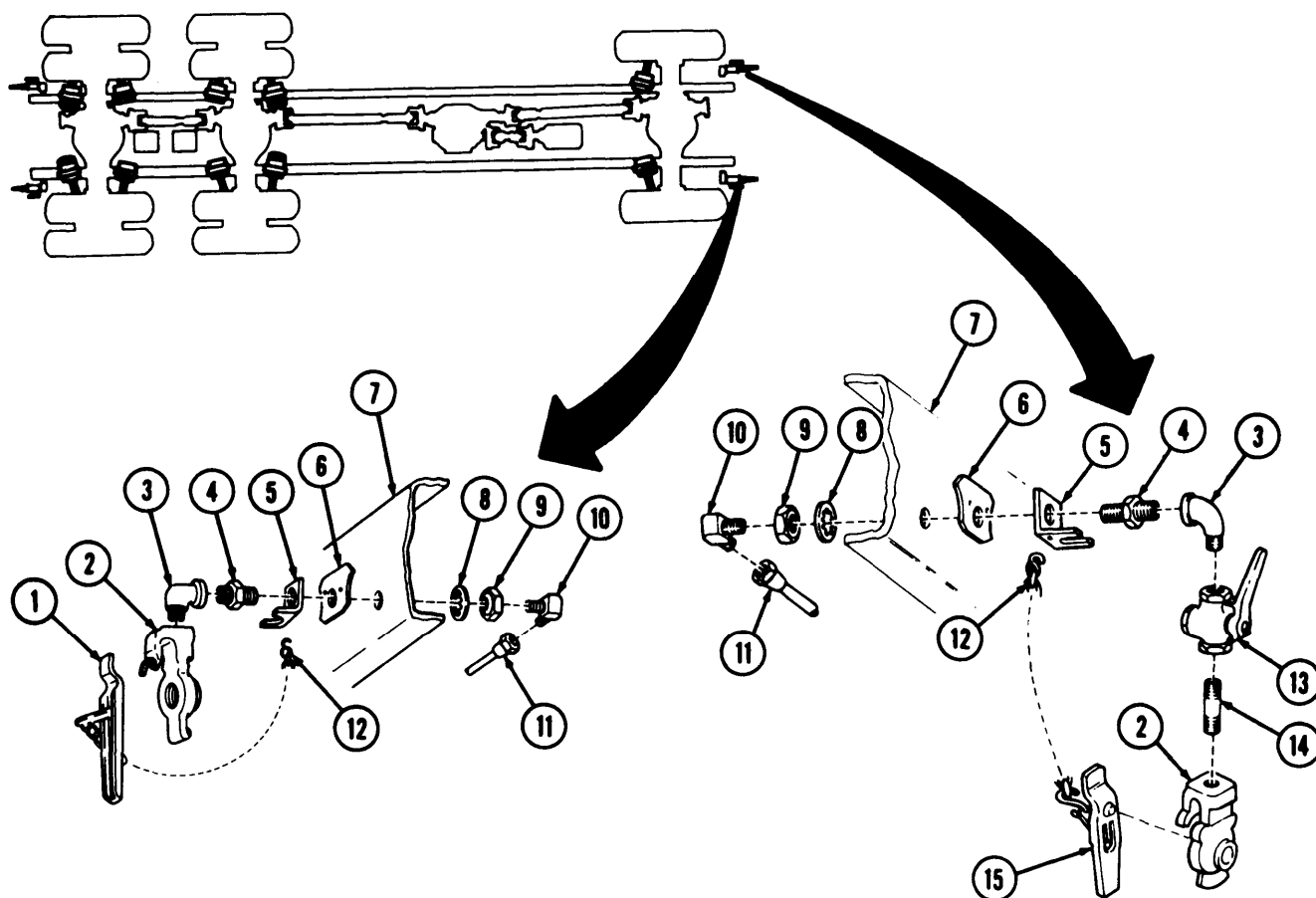
**NOTE**

Perform steps 2 and 3 for emergency coupling on left side of vehicle.

- |    |                  |                  |             |
|----|------------------|------------------|-------------|
| 2. | Pipe nipple (14) | Air coupling (2) | Remove.     |
| 3. | Valve (13)       | Pipe nipple (14) | Remove,     |
| 4. | Elbow (10)       | Air line (11)    | Disconnect. |
| 5. | Adapter (4)      | Elbow (10)       | Remove.     |

## 7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Frame rail (7)	Nut (9), lockwasher (8), adapter (4), identification plate (6), and bracket (5)	Remove.	Discard lockwasher (8).
7.	Elbow (3)	Adapter (4)	Remove.	
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Perform step 8 for service coupling on right side of vehicle.</p>				
8.	Air coupling (2)	Elbow (3)	Remove.	
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Perform step 9 for emergency coupling on left side of vehicle.</p>				
9.	Valve (13)	Elbow (3)	Remove.	



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**7-41. AIR COUPLINGS REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**b. Rear Air Couplings Removal (M923, M924)**


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10. Air coupling (10) and bracket (11)	Dummy coupling (9) and S-hook (8)	Remove.	
11. Valve (12)	Air coupling (10) and pipe nipple (7)	Remove.	
12. Elbow (2)	Airline(1)	Disconnect.	
13. Pipe coupling (3)	Elbow (2)	Remove.	
14. Adapter (4)	Pipe coupling (3)	Remove.	
15. Frame rail (5)	Four locknuts (15), washers (14) and screws (6), bracket (11), and plate (13)	Remove.	Discard locknuts (15).

**NOTE**

Perform step 16 for emergency coupling on right side of vehicle.

16. Adapter (4)	Nut (18)	Loosen.	
17. Elbow (16)	Valve (12)	Remove.	

**NOTE**

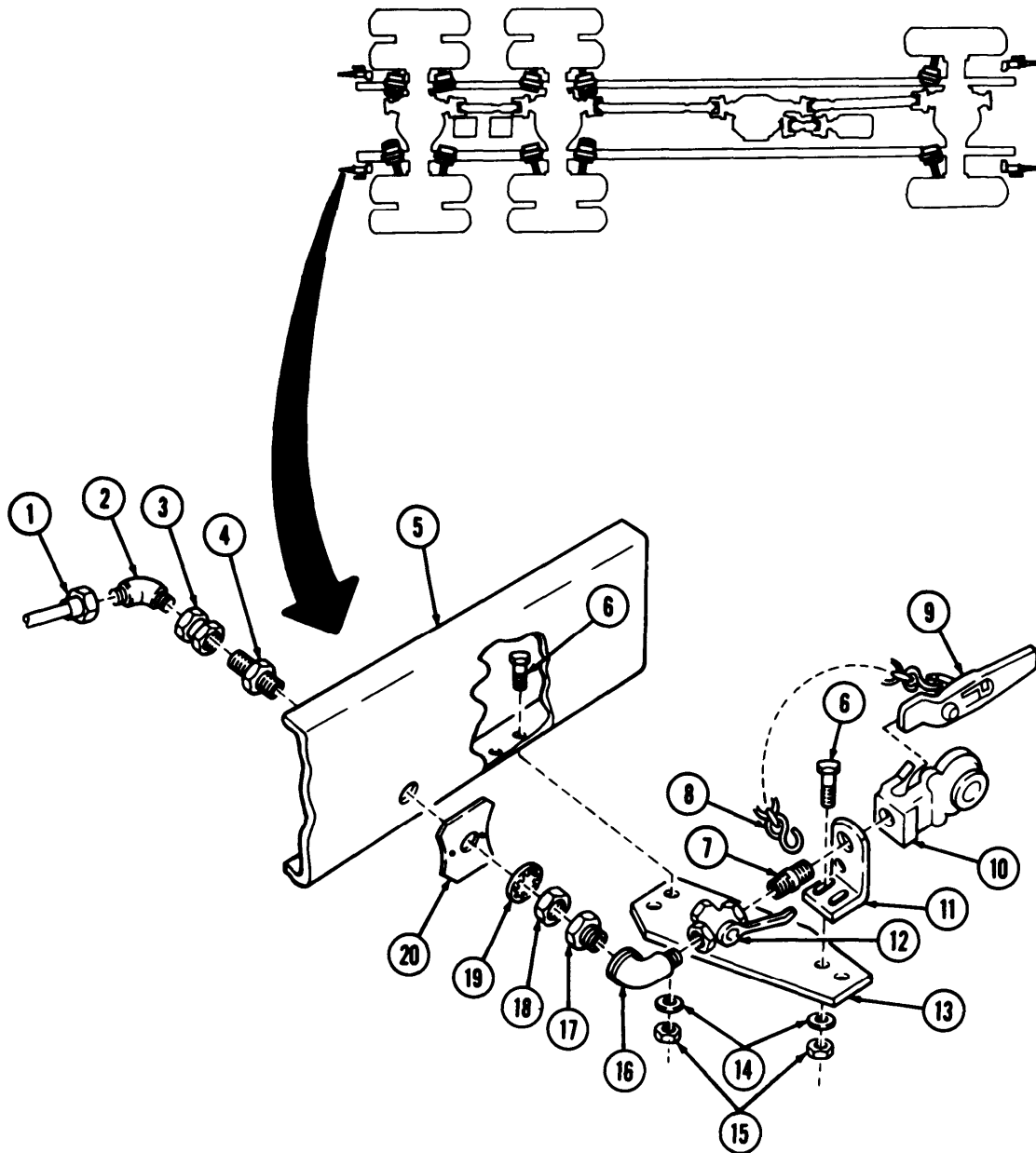
Perform step 18 for service coupling on left side of vehicle.

18. Adapter (4)	Elbow (16) and pipe coupling (17)	Remove.	
19. Adapter (4)	Elbow (16)	Remove.	
20. Frame rail (5)	Nut (18), lockwasher (19), identification plate (20), and adapter (4)	Remove.	Discard lockwasher (19).



7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**7-41. AIR COUPLINGS REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**c. Rear Air Couplings Removal (M929, M931, M934, M936)**


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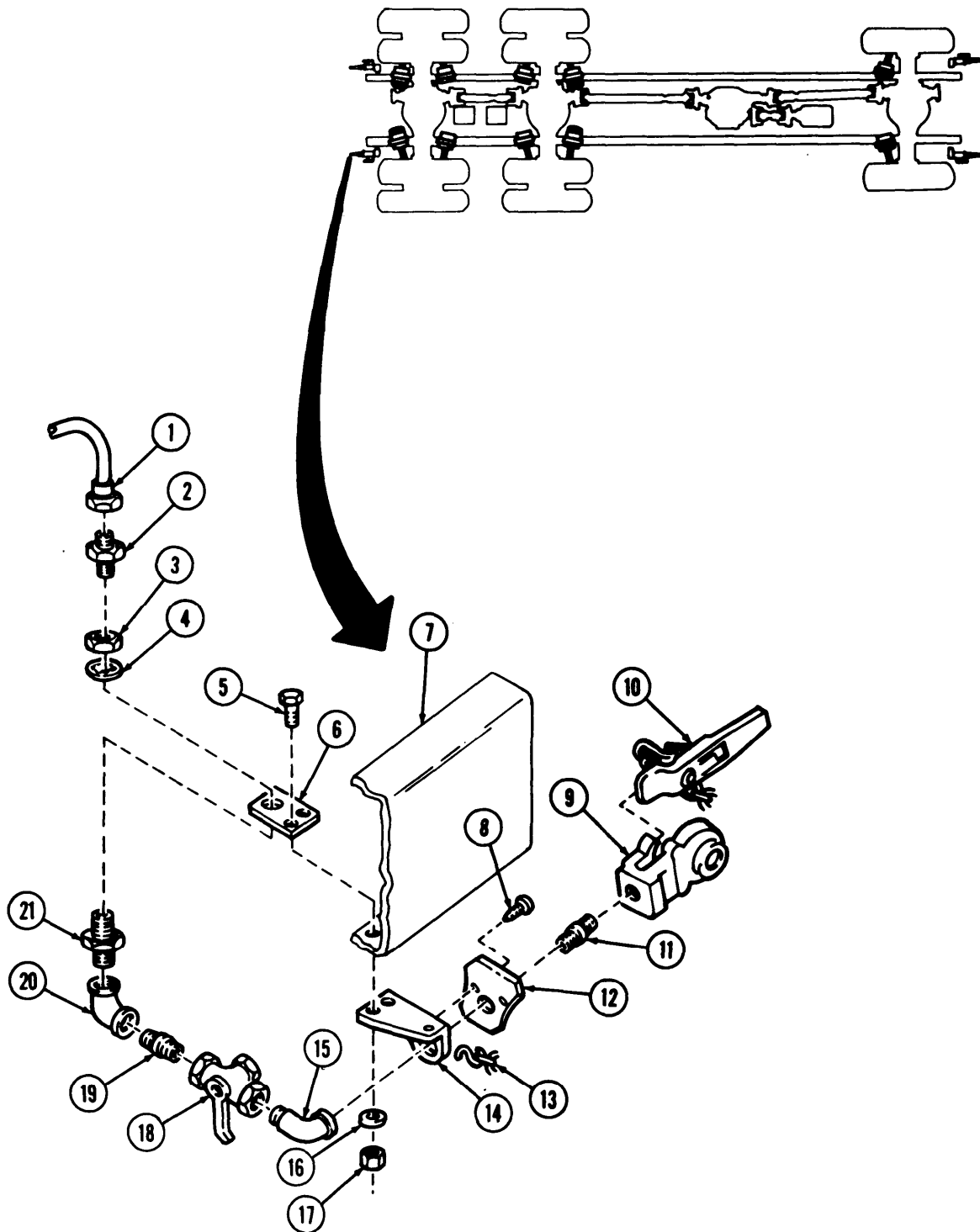
**NOTE**

Left and right (service and emergency) rear couplings are removed the same way.

21.	Air coupling (9) and bracket (14)	Dummy coupling (10) and S-hook (13)	Remove.	
22.	Pipe nipple (11)	Air coupling (9)	Remove.	
23.	Adapter (2)	Air line (1)	Disconnect.	
24.	Connector (21)	Adapter (2)	Remove.	
25.		Nut (3) and lockwasher (4)	Remove.	Discard lockwasher (4).
26.	Bracket (14)	Two screws (8) and identification plate (12)	Remove.	
27.	Frame rail (7)	'IWO locknuts (17), washers (16), and screws (5), plate (6), and bracket (14)	Remove.	Discard locknuts (17).
28.	Elbow (15)	Pipe nipple (11)	Remove.	Place valve (18) in soft-jawed vise.
29.	Valve (18)	Elbow (15)	Remove.	
30.	Elbow (20)	Connector (21)	Remove.	
31.	Pipe nipple (19)	Elbow (20)	Remove.	
32.	Valve (18)	Pipe nipple (19)	Remove.	Remove valve (18) from soft-jawed vise.

## 7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 348997

## 7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## d. Front Air Couplings Installation

**NOTE**

- Fittings must be cleaned and inspected for cracks and stripped threads,
- Male pipe threads must be wrapped with sealing tape before installation.
- Perform step 33 for emergency air coupling on left side of vehicle,

33. Elbow (3) Install in valve (13).

**NOTE**

Perform step 34 for service coupling on right side of vehicle.

34. Elbow (3) Install in air coupling (2). Place in soft-jawed vise.

35. Adapter (4) Install in elbow (3), Remove from vise.

36. Identification plate (6),  
bracket (5), adapter (4), new lockwasher (8), and nut (9) Install in frame rail (7).

37. Elbow (10) Install on adapter (4).

38. Air line (11) Connect to elbow (10).

**NOTE**

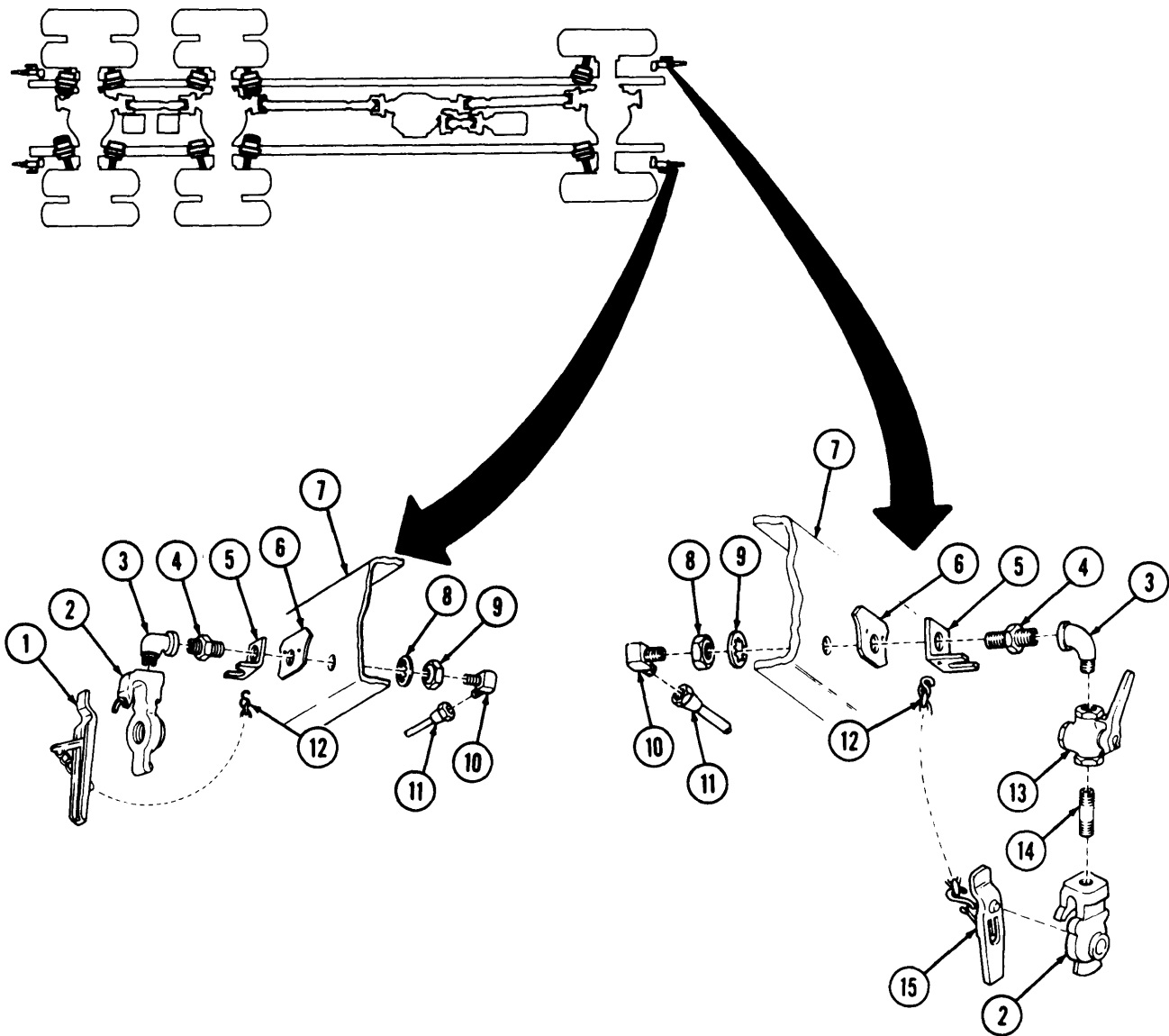
Perform steps 39 and 40 for emergency coupling on left side of vehicle.

39. Pipe nipple (14) Install in valve (13).

40. Air coupling (2) Install on pipe nipple (14).

41. Dummy couplings (15) and (1) and S-hook (12) Install on air coupling (12) and bracket (5).

7-41. AIR COUPLINGS REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



## 7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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e. Rear Air Couplings Installation (M923, M924)**NOTE**

- Fittings must be cleaned and inspected for cracks and stripped threads.
- Male pipe threads must be wrapped with sealing tape before installation.

42.		Adapter (4), identification plate (20), new lockwasher (19), and nut (18)	Install in frame rail (5).	Do not tighten nut (18) for emergency coupling on right side of vehicle yet.
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**NOTE**

Perform steps 43 and 44 for service coupling on left side of vehicle.

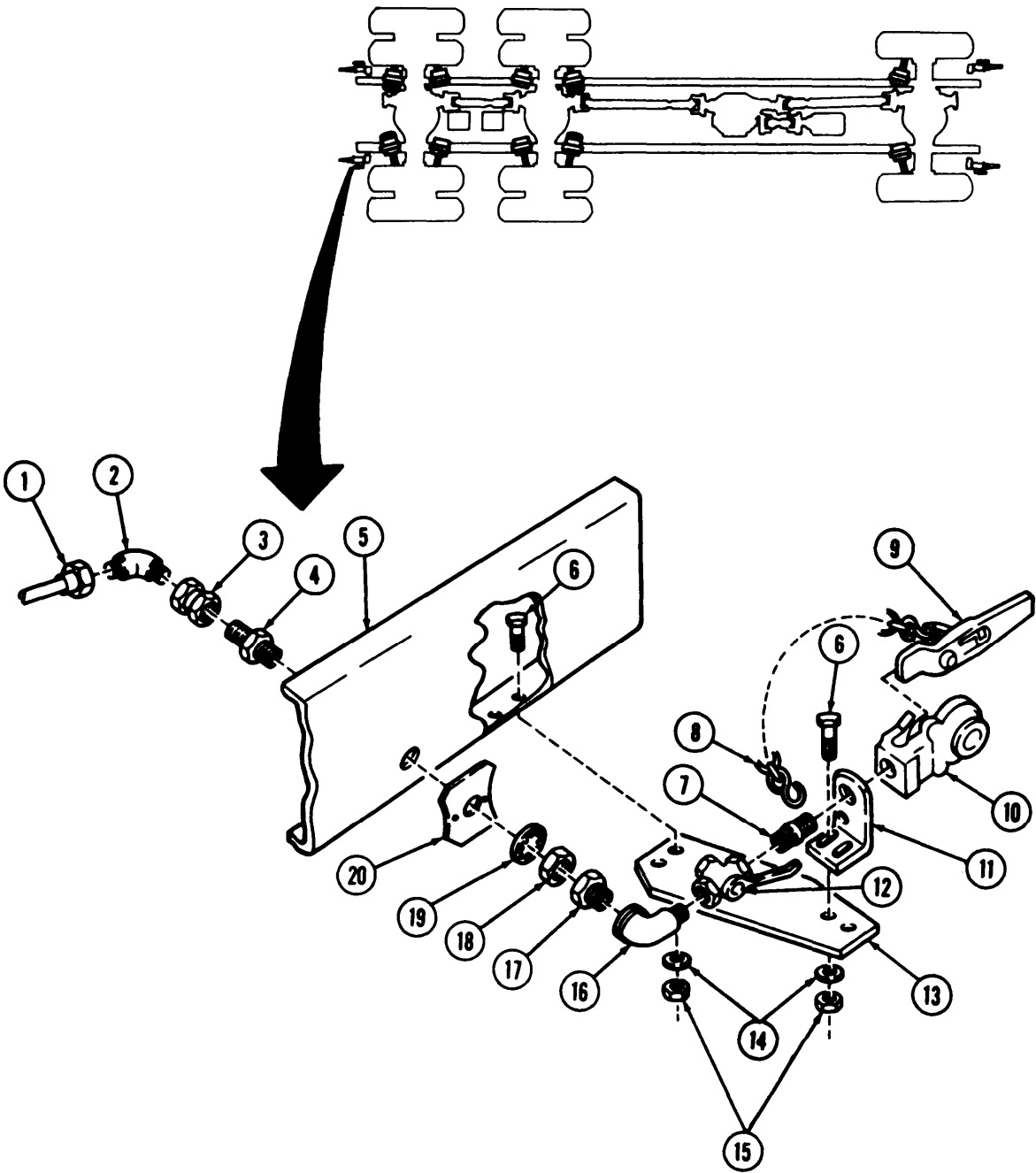
43.		Pipe coupling (17)	Install on adapter (4).	
44.		Elbow (16)	Install on pipe coupling (17).	
45.		Valve (12) and pipe nipple (7)	Install on elbow (16).	
46.		Plate (13) and bracket (11)	Install to frame rail (5) with four screws (6), washers (14), and new locknuts (15).	

**NOTE**

Perform step 47 for emergency coupling on right side of vehicle.

47.		Nut (18)	Tighten.	
48.		Pipe coupling (3)	Install on adapter (4).	
49.		Elbow (2)	Install in pipe coupling (3).	
50.		Airline(1)	Connect to elbow (2).	
51.		Air coupling (10)	Install on pipe nipple (7).	
52.		Dummy coupling (9) and S-hook (8)	Install on air coupling (10) and bracket (11).	

7-41. AIR COUPLINGS REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



## 7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## f. Rear Air Couplings Installation (M929, M931, M934, M936)

## NOTE

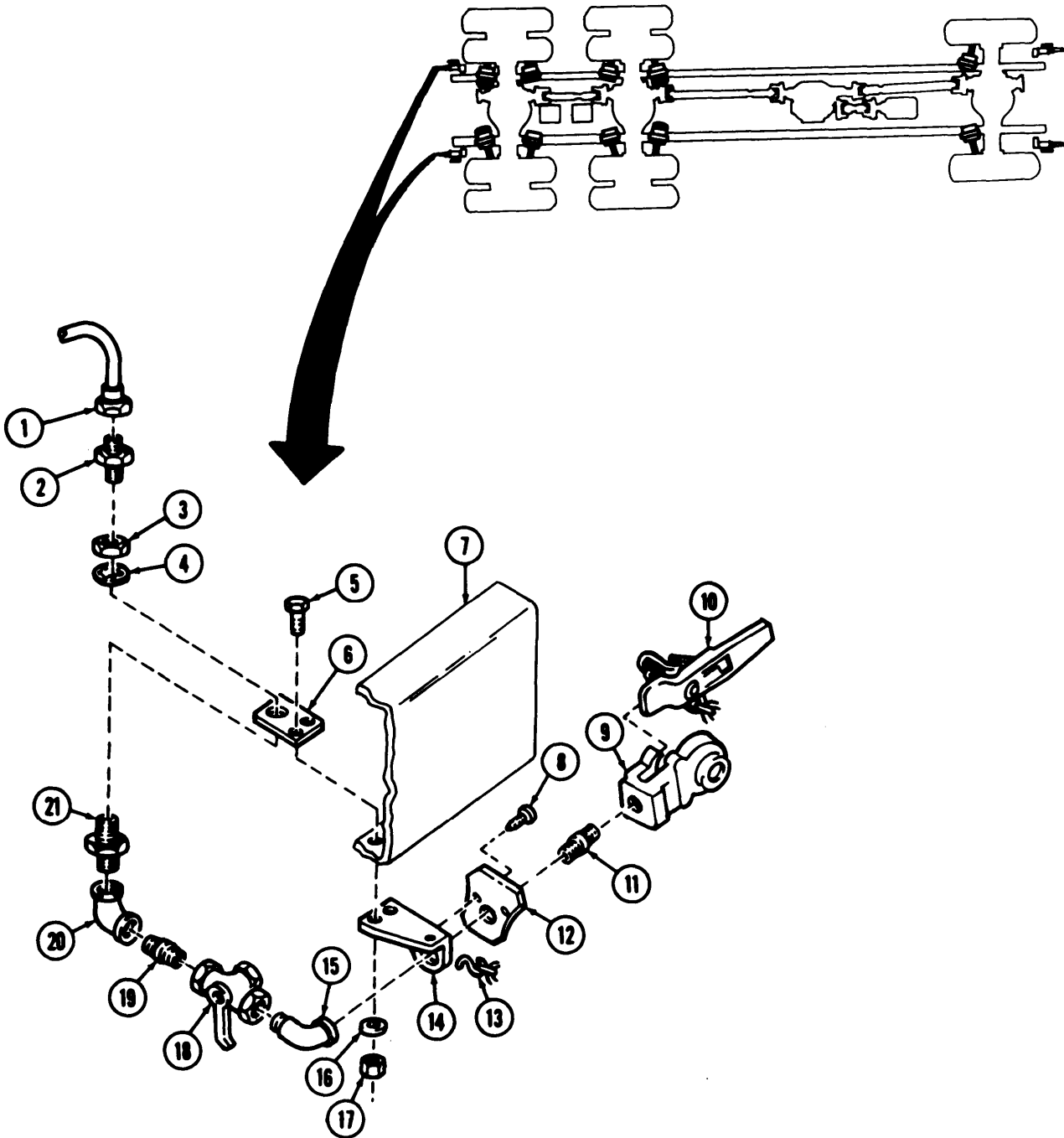
- Left and right (service and emergency) rear couplings are installed the same way.
- Fittings must be cleaned and inspected for cracks and stripped threads.
- Male pipe threads must be wrapped with sealing tape before installation.

53.		Bracket (14) and plate (6)	Install to frame rail (7) with two screws (5), washers (16) and new locknuts (17).
54.		Identification plate (12)	Install to bracket (14) with two screws (8).
55.		Valve (18), pipe nipple (19), elbow (20), connector (21), elbow (15), and pipe nipple (11)	Install on bracket (14) and plate (6) with new lockwasher (4) and nut (3).
56.		Adapter (2)	Install in connector (21).
57.		Airline(1)	Connect to adapter (2).
68.		Air coupling (9)	Install on pipe nipple (11).
59.		Dummy coupling (10) and S-hook (13)	Install on air coupling (9) and bracket (14).



7-41. AIR COUPLINGS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS

Install right and left splash shields (TM 9-2320-272-10)  
Start engine (TM 9-2320-272- 10) and allow air pressure to build up to normal  
operating range. Check for air leaks. Road test vehicle.

TA 349000

## 7-42. EMERGENCY AND TRAILER COUPLING HOSES (M931 AND M932) REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Lockwasher Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### a. Removal

1.	Adapter (2)	Coupling (1)	Remove.	
2.	Coupling hose (3)	Adapter (2)	Remove.	
3.	Adapter (12)	Coupling hose (3)	Remove.	
4.	Cutoff valve (4)	Adapter (12)	Remove.	
5.	Adapter (11)	Cutoff valve (4)	Remove.	
6.	Elbow (8)	Air line (9)	Remove.	
7.	Adapter (11)	Elbow (8)	Remove.	
8.	Frame hole (10)	Nut (7), lockwasher (6), adapter (11), and identification plate (5)	Remove.	Discard lockwasher (6).

**7-42. EMERGENCY AND TRAILER COUPLING HOSES (M931 AND M932)  
REPLACEMENT (Cont'd)**

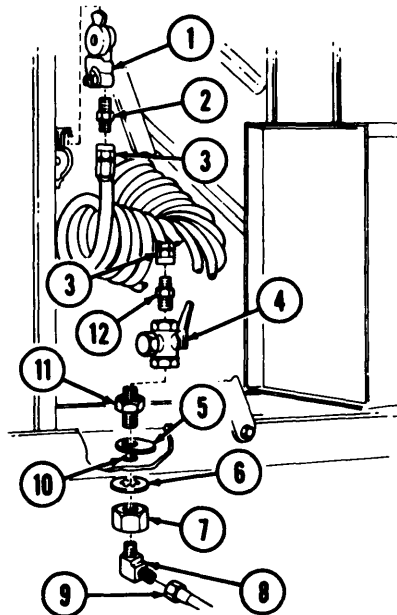
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**b. Installation**

**NOTE**

Male pipe threads must be wrapped with sealing tape before installation.

- |     |                                   |   |
|-----|-----------------------------------|---|
| 9.  | Adapter fitting (11)              | Install to cutoff valve (4).  |
| 10. | Cutoff valve (4) and adapter (11) | Insert through identification plate (5) and frame hole (10) and install with new lock-washer (6) and nut (7). |
| 11. | Elbow (8)                         | Install to adapter (11).  |
| 12. | Air line (9)                      | Connect to elbow (8).   |
| 13. | Adapter (12)                      | Install to cutoff valve (4).  |
| 14. | Coupling hose (3)                 | Install to adapter (12).  |
| 15. | Adapter (2)                       | Install to coupling hose (3).   |
| 16. | Coupling (1)                      | Install to adapter (2).   |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks. Road test vehicle.

TA 349001

7-133

7-43. TRAILER AIRBRAKE HAND CONTROL VALVE (M931 AND M932)  
REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931 and M932 only	TM 9-2320-272-10 TM 9-2320-272-10 Para. 9-45	Parking brake set. Air reservoirs drained. Toolbox and step removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two lockwashers Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**NOTE**

- The airbrake hand control valve is mounted on the upper steering column opposite the turn signal control (M931 and M932 vehicles only).
- Tag air lines for installation.

a. Removal

1.	Airbrake hand control valve adapter fitting (9)	Vent line (10)	Disconnect.	
2.	Adapter fitting (12)	Delivery line (11)	Disconnect.	
3.	Airbrake hand control valve (1) to upper steering column (6)	Two screws (4) and lockwashers (3), tab (2), and clamp (5)	Remove and detach valve (1).	Discard lockwashers (3).
4.	Adapter fitting (7)	Manifold tee supply line (8)	Disconnect.	

7-43. TRAILER AIRBRAKE HAND CONTROL VALVE (M931 AND M932)  
REPLACEMENT (Cont'd)

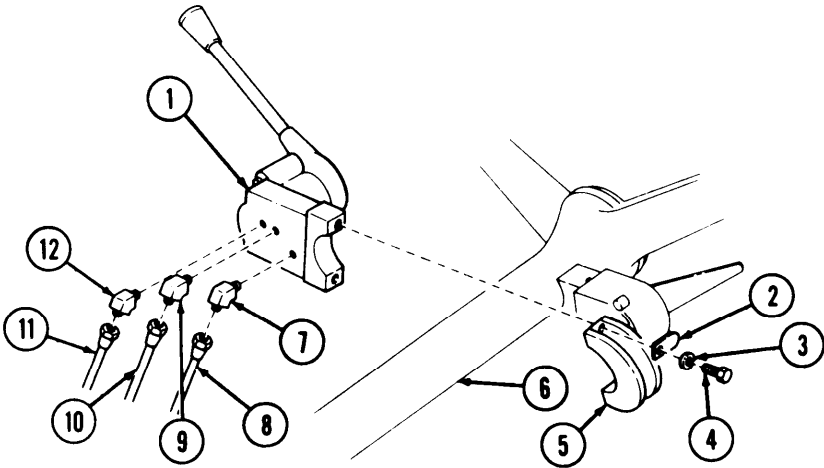
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Airbrake hand control valve ( 1 )	Three adapter fittings (7), (9), and (12)	Remove.	Mark direction of fittings (7), (9), and (12) for installation.

b. Installation

NOTE

If new valve is being installed, use fittings from old valve. Clean all male pipe threads and wrap with sealing tape before installation.

6.	Adapter fitting (7)	Install.
7.	Airbrake hand control valve ( 1 )	Position to steering column (6) and install with clamp (5), two screws (4) and new lockwashers (3) and tab (2).
8.	Two adapter fittings (12) and (9)	Install.
9.	Supply line (8)	Connect to adapter fitting (7).
10.	Delivery line (11)	Connect to adapter fitting (12).
11.	Vent line (10)	Connect to adapter fitting (9).



END OF TASK!

- FOLLOW-ON TASKS:
- Install toolbox and step (para. 9-45).
  - Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at hand control valve. Road test vehicle.

7-44. ALCOHOL EVAPORATOR REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not smoke during removal of alcohol evaporator container.
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Do not smoke when removing alcohol evaporator. Injury may result from improper handling of alcohol evaporator.

a. Removal

1.	Left side of engine	Alcohol evaporator container (7)	Remove.	
2.		Tube adapter (6)	Hold firmly in place.	
3.		Tube fitting (5)	Disconnect from tube adapter (6).	
4.	Engine mounted bracket (2)	Three locknuts (1) and screws (4), and cap (3)	Remove.	Discard locknuts (1).

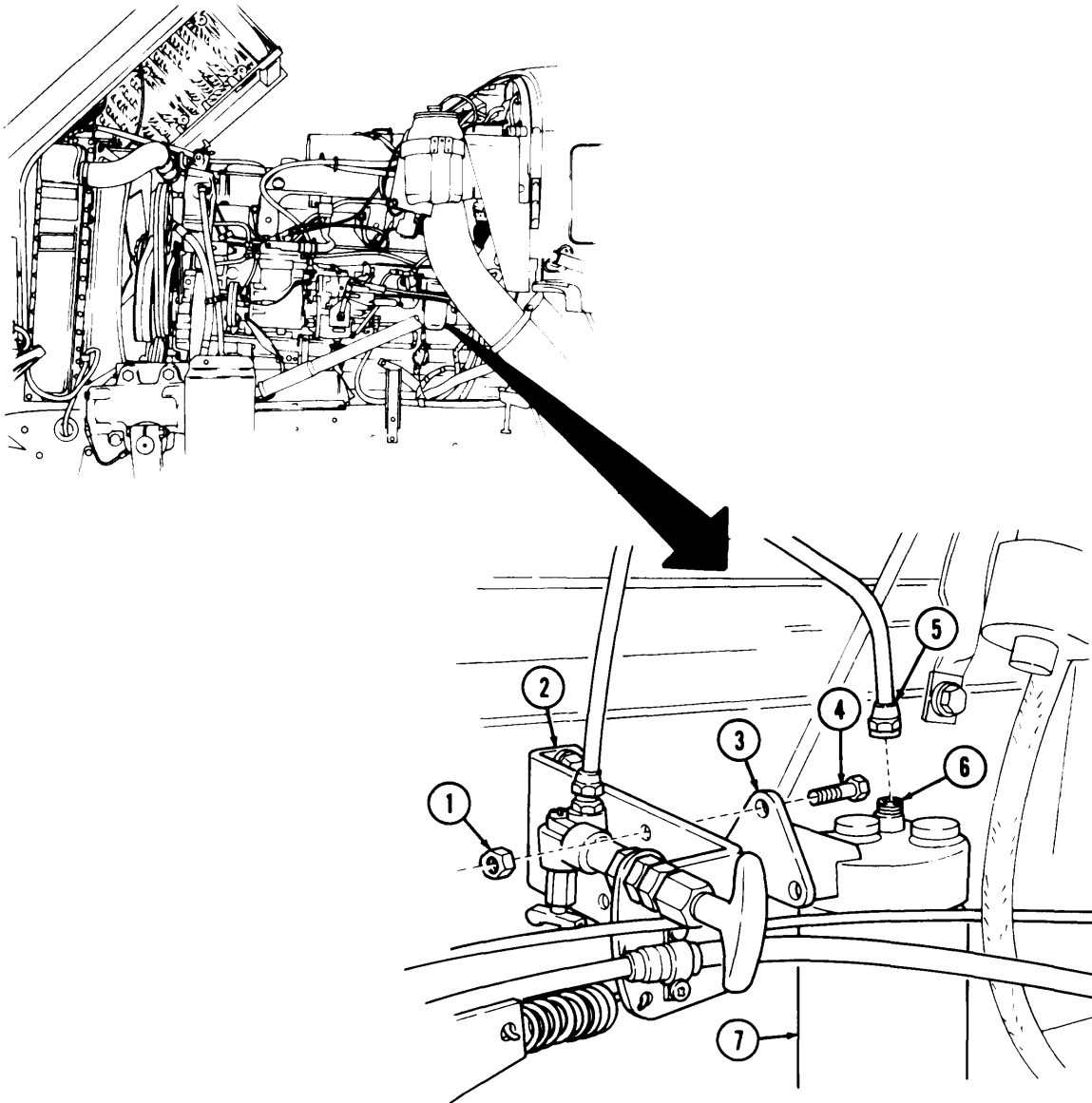
b. Installation

5.		Cap (3)	Install to engine-mounted bracket (2) with three screws (4) and new locknuts (1).	
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## 7-44. ALCOHOL EVAPORATOR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- |    |  |                                  |                              |  |
|----|--|----------------------------------|------------------------------|--|
| 6. |  | Tube adapter (6)                 |                              |  |
| 7. |  | Tube fitting (5)                 | Install on tube adapter (6). |  |
| 8. |  | Alcohol evaporator container (7) | Install to cap (3).          |  |



END OF TASK!

FOLLOW-ON TASK: Fill alcohol evaporator as required (TM 9-2320-272-10).

TA 349003

## 7-45. DOUBLECHECK VALVE #1 REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Locknut Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not disconnect air lines before draining air reservoirs.	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### NOTE

- Doublecheck valve #1 is located inside the front left frame rail and left of the front axle differential.
- Tag air lines for installation.

### a. Removal

1.	Doublecheck valve #1 adapter (2)	Line (1)	Disconnect.	
2.	Valve adapter (11)	Line (12)	Disconnect.	
3.	Tee (10)	Line (9)	Disconnect.	
4.	Doublecheck valve #1 (3)	Tee (10)	Remove.	
5.	Valve adapter (7)	Line (5)	Disconnect.	
6.	Frame rail (6)	Screw (4), locknut (8), and doublecheck valve #1 (3)	Remove.	Discard locknut (8).



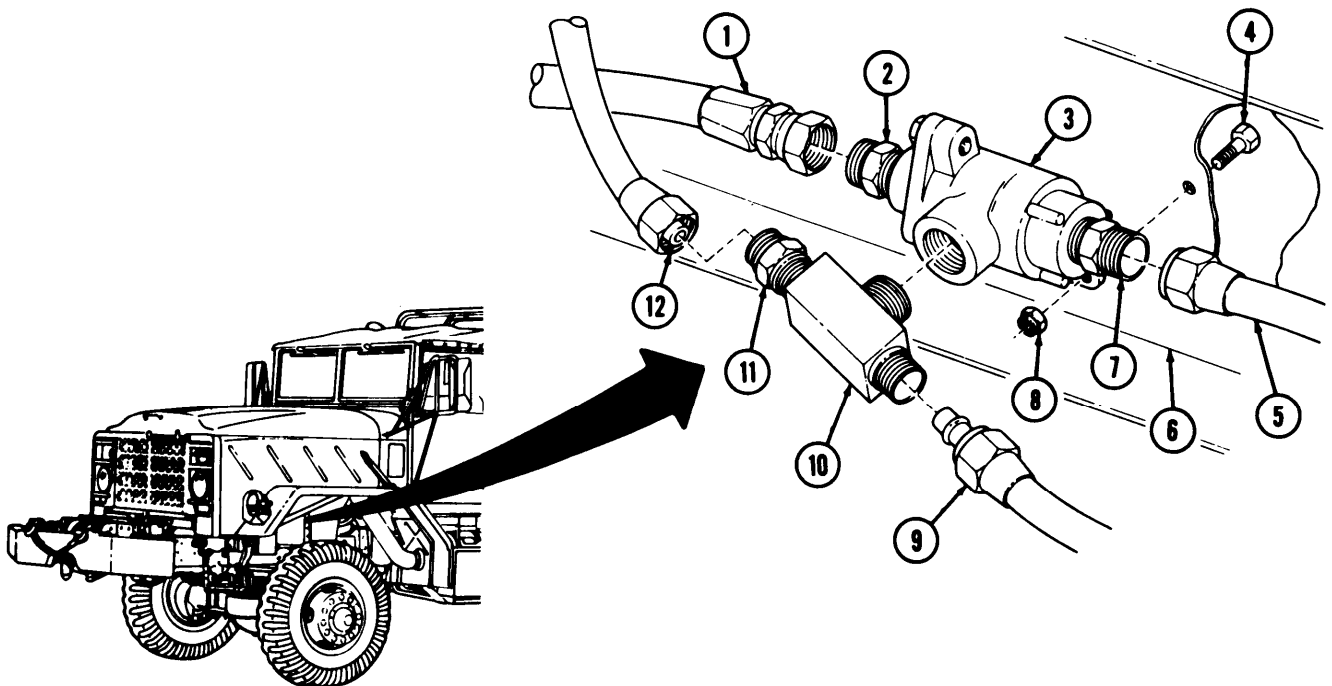
## 7-45. DOUBCHECK VALVE #1 REPLACEMENT (Cont'd)

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

If new check valve is being installed, use fittings from old check valve. Wrap all male pipe threads with sealing tape before installation.

- |     |                       |  |
|-----|-----------------------|--|
| 7.  | Doublecheck valve (3) | Position against left frame rail (6) and install with screw (4) and new locknut (8). |
| 8.  | Line (5)              | Connect to valve adapter (7).  |
| 9.  | Tee (10)              | Install on valve (3).  |
| 10. | Line (9)              | Connect to tee (10).   |
| 11. | Line (12)             | Connect to valve adapter (11).   |
| 12. | Line (1)              | Connect to valve adapter (2).  |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272- 10) and allow air pressure to build up to normal operating range. Check for air leaks at doublecheck valve #1. Road test vehicle.

TA 349004

**7-46. DOUBLECHECK VALVE #2 REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All (except M931 and M932)	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**NOTE**

Ž Doublecheck valve #2 is located left of the transfer case parking brakedrum inside the left frame rail.

Ž Tag air lines for installation.

**a. Removal**

1.	Stoplight switch (5)	Two wires (6)	Disconnect.	
2.	Doublecheck valve (3)	Treadle valve control line (7)	Disconnect.	
3.	Doublecheck valve elbow (8)	Secondary relay valve control line (9)	Disconnect.	
4.	Doublecheck valve elbow (11)	Doublecheck valve #1 output line (10)	Disconnect.	
5.	Valve adapter tee (12)	Primary relay valve control line (13)	Disconnect.	
6.	Left frame rail (4)	Locknut (2), screw (1), and doublecheck valve (3)	Remove.	Discard locknut (2).

# 7-46. DOUBLECHECK VALVE #2 REPLACEMENT (Cont'd)

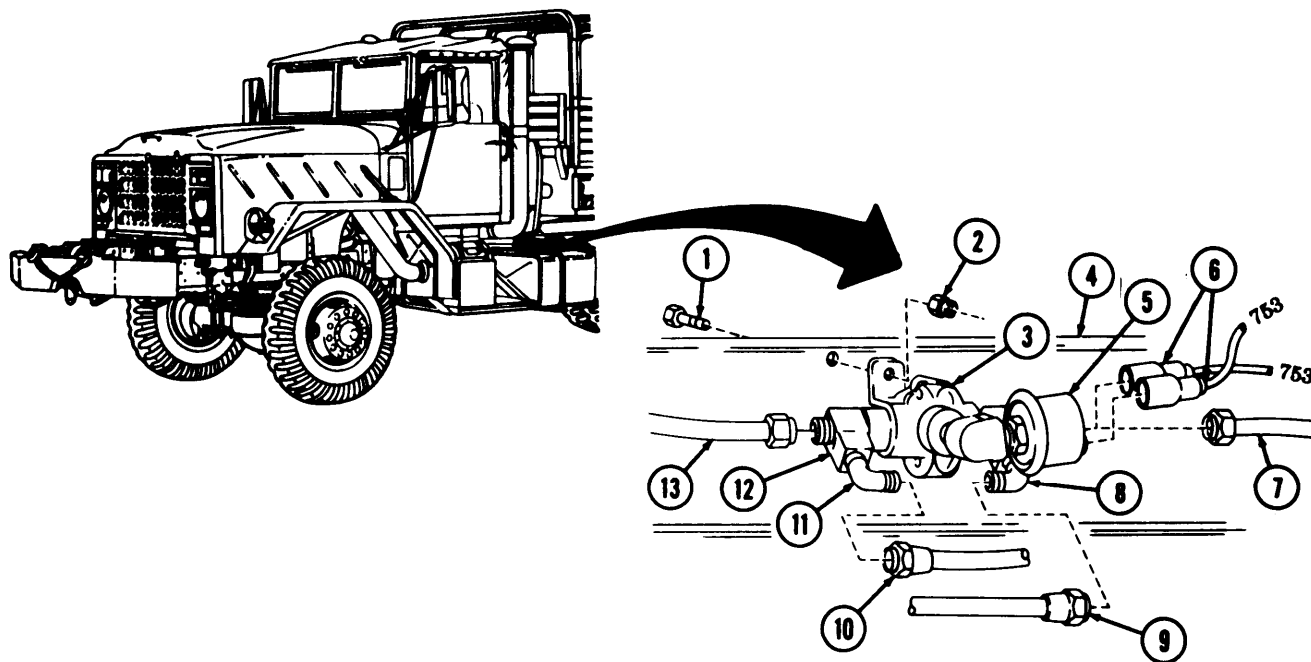
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

### NOTE

If new check valve is being installed, use fittings from old check valve. Wrap all male pipe threads with sealing tape before installation.

- |     |  |  |
|-----|--|--|
| 7.  | Doublecheck valve #2 (3)               | Position against left frame rail (4) and install with screw (1) and new locknut (2). |
| 8.  | Treadle valve control line (7)         | Connect to double-check valve (3).   |
| 9.  | Secondary relay valve control line (9) | Connect to elbow (8).  |
| 10. | Doublecheck valve #1 output line (10)  | Connect to elbow (11).   |
| 11. | Primary relay valve control line (13)  | Connect to adapter tee (12).   |
| 12. | Two wires (6)                          | Connect to stoplight switch (5).   |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to buildup to normal operating range. Check for air leaks at doublecheck valve #2. Road test vehicle.

TA 349005

## 7-47. DOUBLECHECK VALVE #2 (M931 AND M932 ONLY) REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931 and M932 only	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Locknut Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### NOTE

- Doublecheck valve #5 is used with airbrake kits, M931 and M932 models. It is located inside the left frame rail in back of the stoplight switch.
- Tag air lines for installation.

#### a. Removal

- |    |                          |   |             |                      |
|----|--------------------------|---|-------------|----------------------|
| 1. | Stoplight switch (5)     | Two wires (6)   | Disconnect. |                      |
| 2. | Adapter tee (9)          | Doublecheck valve #5 control line (8)                                     | Disconnect. |                      |
| 3. | Doublecheck valve #2 (3) | Protection valve control line (10) and trailer handbrake control line (7) | Disconnect. |                      |
| 4. | Left frame rail (4)      | Screw (1), locknut (2), and doublecheck valve #2 (3)                      | Remove.     | Discard locknut (2). |

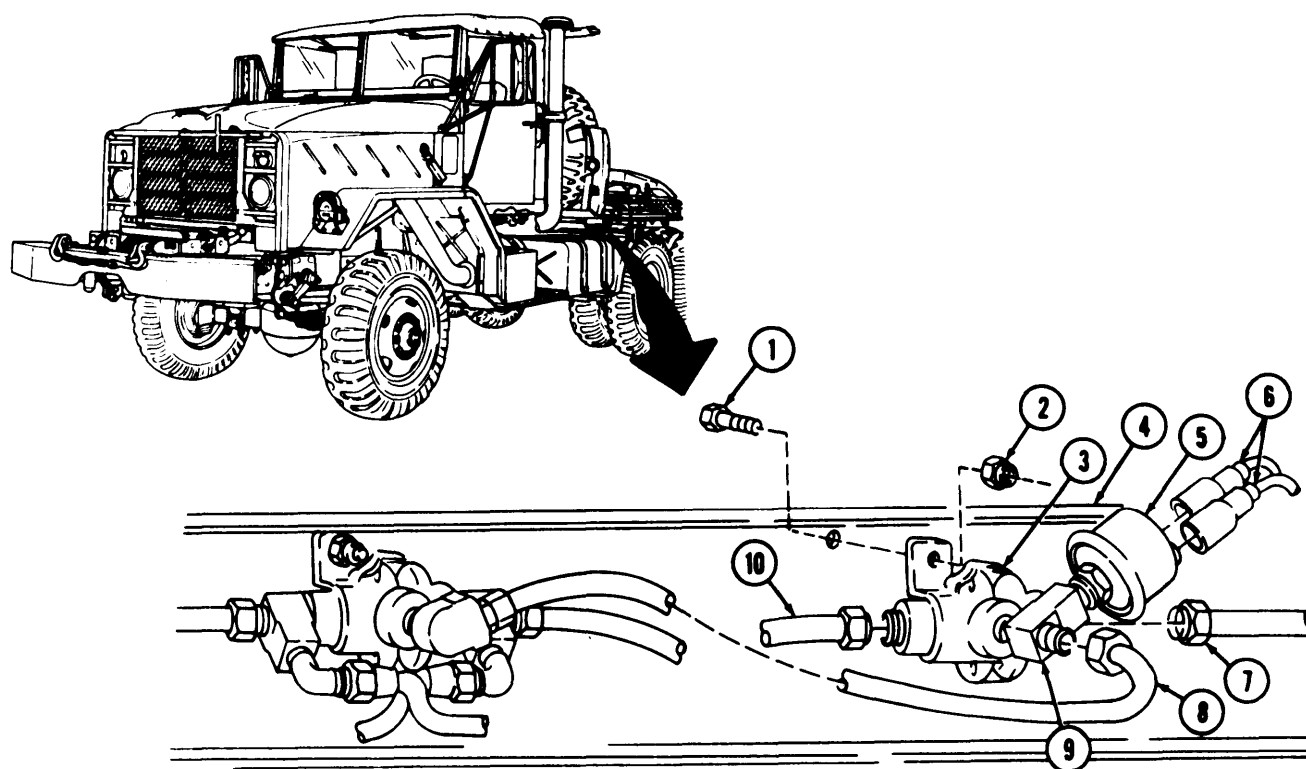
**7-47. DOUBLECHECK VALVE #2 (M931 AND M932 ONLY) REPLACEMENT (Cent'd)**

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

If new check valve is being installed, use fittings from old check valve. Clean all male pipe threads and wrap with sealing tape before installation.

- |    |   |  |
|----|---|--|
| 5. | Doublecheck valve #2 (3)  | Position against left frame rail (4) and install with screw (1) and new locknut (2). |
| 6. | Trailer handbrake control line (7) and protection valve control line (10) | Connect to double-check valve #2 (3).  |
| 7. | Doublecheck valve #5 control line (8)                                     | Connect to adapter tee (9).  |
| 8. | Two wires (6)   | Connect to stoplight switch (5).   |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and allow air pressure to build up to normal operating range. Check for air leaks at doublecheck valve #2. Road test vehicle.

TA 349006

**7-48. DOUBLECHECK VALVE #5 (M931 AND M932 ONLY) REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931 and M932 only	TM 9-2320-2.72-10	Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Locknut Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not disconnect air lines before draining air reservoirs.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**NOTE**

- Doublecheck valve #5 is used with airbrake kits, M931 and M932 models. It is located inside the left frame rail in back of the stoplight switch.
- Tag air lines for installation.

**a. Removal**

1.	Valve adapter tee (13)	Primary relay valve control line (14)	Disconnect.	
2.	Doublecheck valve elbow (12)	Doublecheck valve #1 output line (11)	Disconnect.	
3.	Doublecheck valve elbow (9)	Secondary relay valve control line (10)	Disconnect.	
4.	Bushing (5)	Doublecheck valve #2 control line (6)	Disconnect.	
5.	Valve adapter tee (8)	Treadle valve control line (7)	Disconnect.	
6.	Frame rail (2)	Locknut (3), screw (1), and doublecheck valve #5 (4)	Remove.	Discard locknut (3).

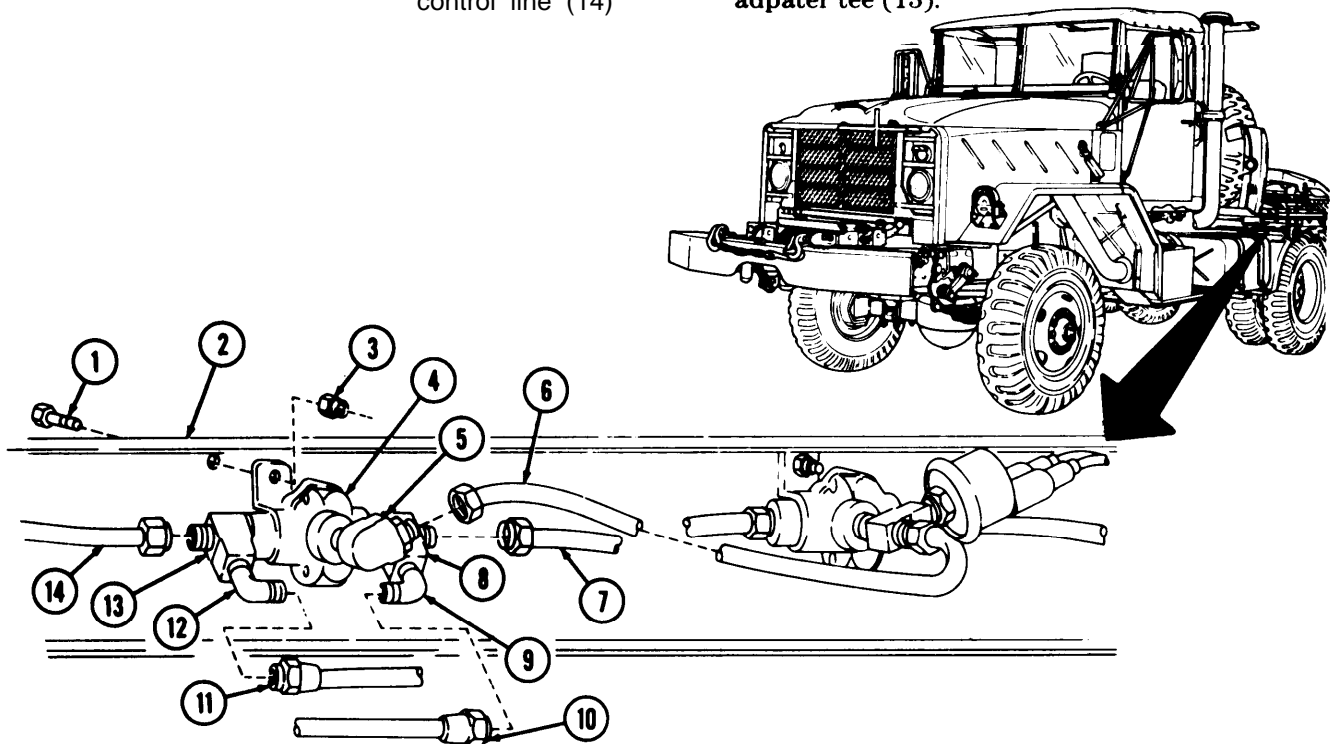
**7-48. DOUBLECHECK VALVE #5 (M931 AND M932 ONLY) REPLACEMENT (Cont'd)**

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

**b. Installation****NOTE**

If new valve is being installed, use fittings from replaced valve. Clean all male pipe threads and wrap with sealing tape before installation.

- |     |   |   |
|-----|---|---|
| 7.  | Doublecheck valve #5 (4)                | Position to left frame rail (2) and install with screw (1) and new locknut (3). |
| 8.  | Treadle valve control line (7)          | Connect to valve adapter tee (8).   |
| 9.  | Doublecheck valve #2 control line (6)   | Connect to busing (5).  |
| 10. | Secondary relay valve control line (10) | Connect to 90 degree elbow (9).   |
| 11. | Doublecheck valve #1 output line (11)   | Connect to 90 degree elbow (12).  |
| 12. | Primary relay valve control line (14)   | Connect to valve adapter tee (13).  |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272- 10) and allow air pressure to build up to normal operating range. Check for, air leaks at doublecheck valve #5. Road test vehicle.

TA 349007

## 7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE 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 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Five locknuts Eight lockwashers Tiedown strap (Appendix D, Item 18) Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not disconnect air lines before draining air reservoirs.	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

#### NOTE

Tag air lines for installation.

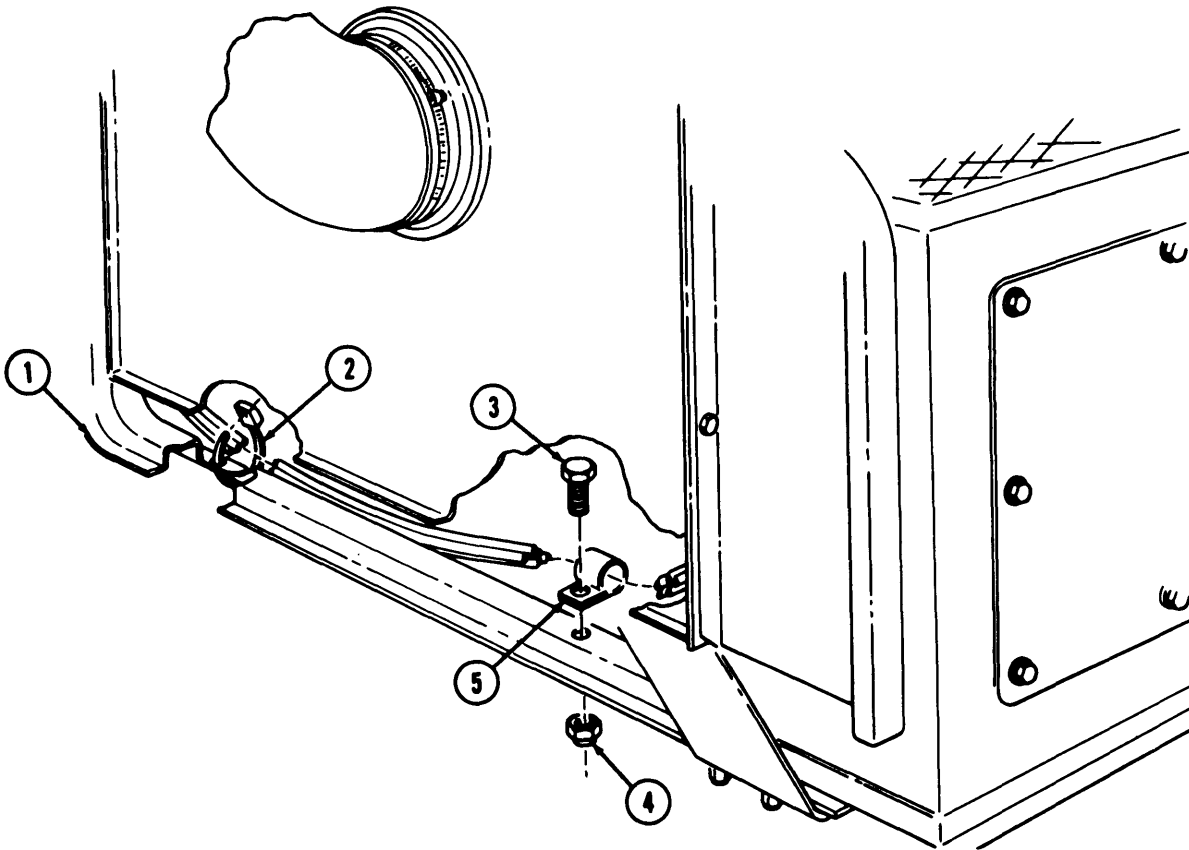
#### a. Removal

1.	Front step brace (1)	Clamp (5), screw (3), and locknut (4)	Remove.	Discard locknut (4).
2.		Tiedown strap (2)	cut.	Discard tiedown strap (2).



**7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE  
MAINTENANCE (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE MAINTENANCE (Cont'd)</b>
--

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Step box access (11 )	Eight screws (19) and lockwashers (18), and access box cover (16)	Remove and pull cover (16) away from step box (11).	Discard eight lockwashers (18).
4.	Doublecheck valve #4 (12)	Air lines (8), (9), and (10)	Disconnect.	
5.	Doublecheck valve #3 (15)	Air lines (3), (7), and (8)	Disconnect.	
6.	Quick-release valve (1)	Air lines (4), (6), and (7)	Disconnect.	
7.	Access box cover (16)	Screw (17), washer (14), locknut (13), and doublecheck valve #4 (12)	Remove.	Discard locknut (13).
8.		Screw (17), washer (14), locknut (13), and doublecheck valve #3 (15)	Remove.	Discard locknut (13).
9.		Two screws (17) and locknuts (13), and quick-release valve (1)	Remove.	Discard locknuts (13).

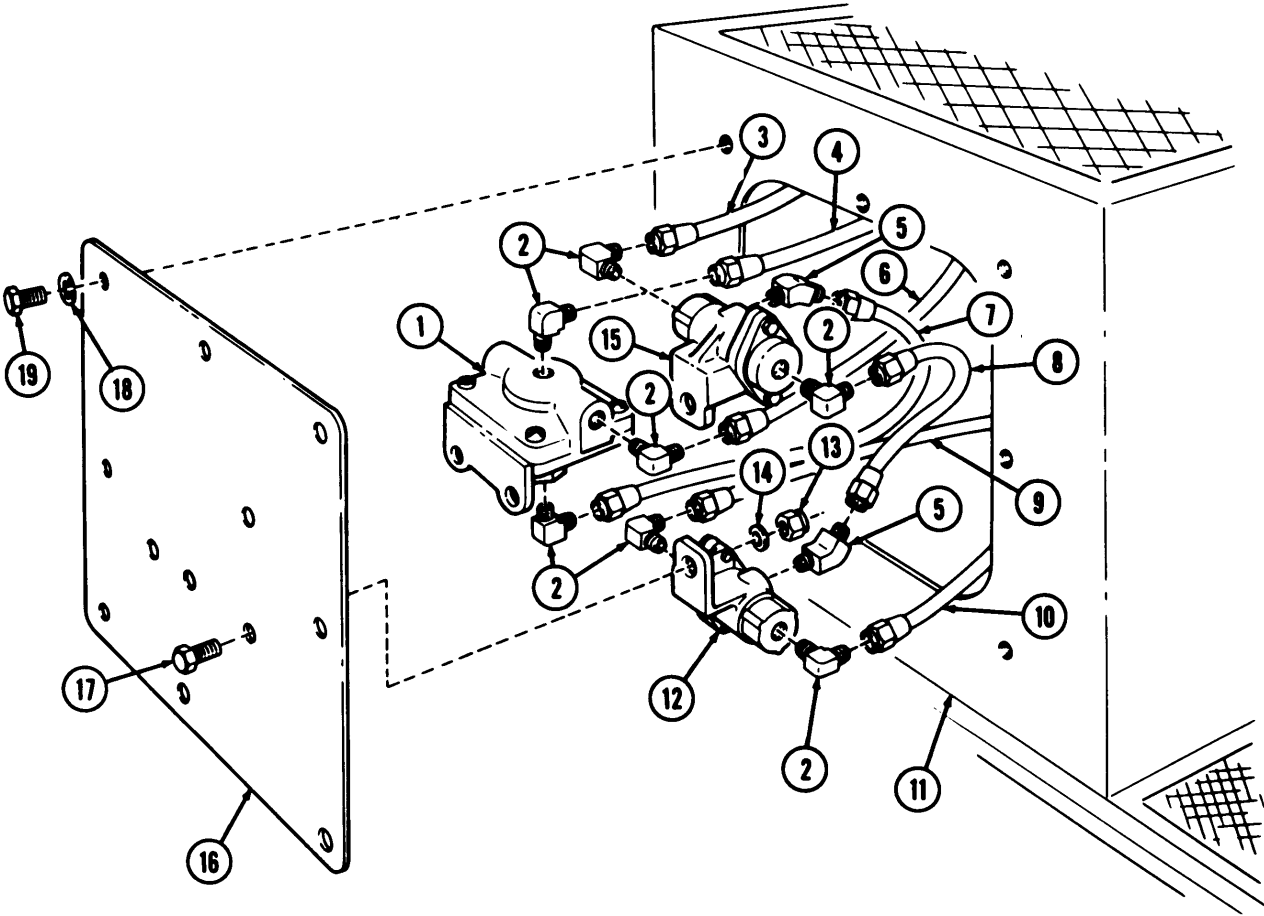
**NOTE**

Position valves in soft-jawed vise to remove fittings.

10.	Doublecheck valve #4 (12)	Two fittings (2) and one fitting (5)	Remove.
11.	Doublecheck valve #3 (15)	Two fittings (2) and one fitting (5)	Remove.
12.	Quick-release valve (1)	Three fittings (2)	Remove.

7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE  
MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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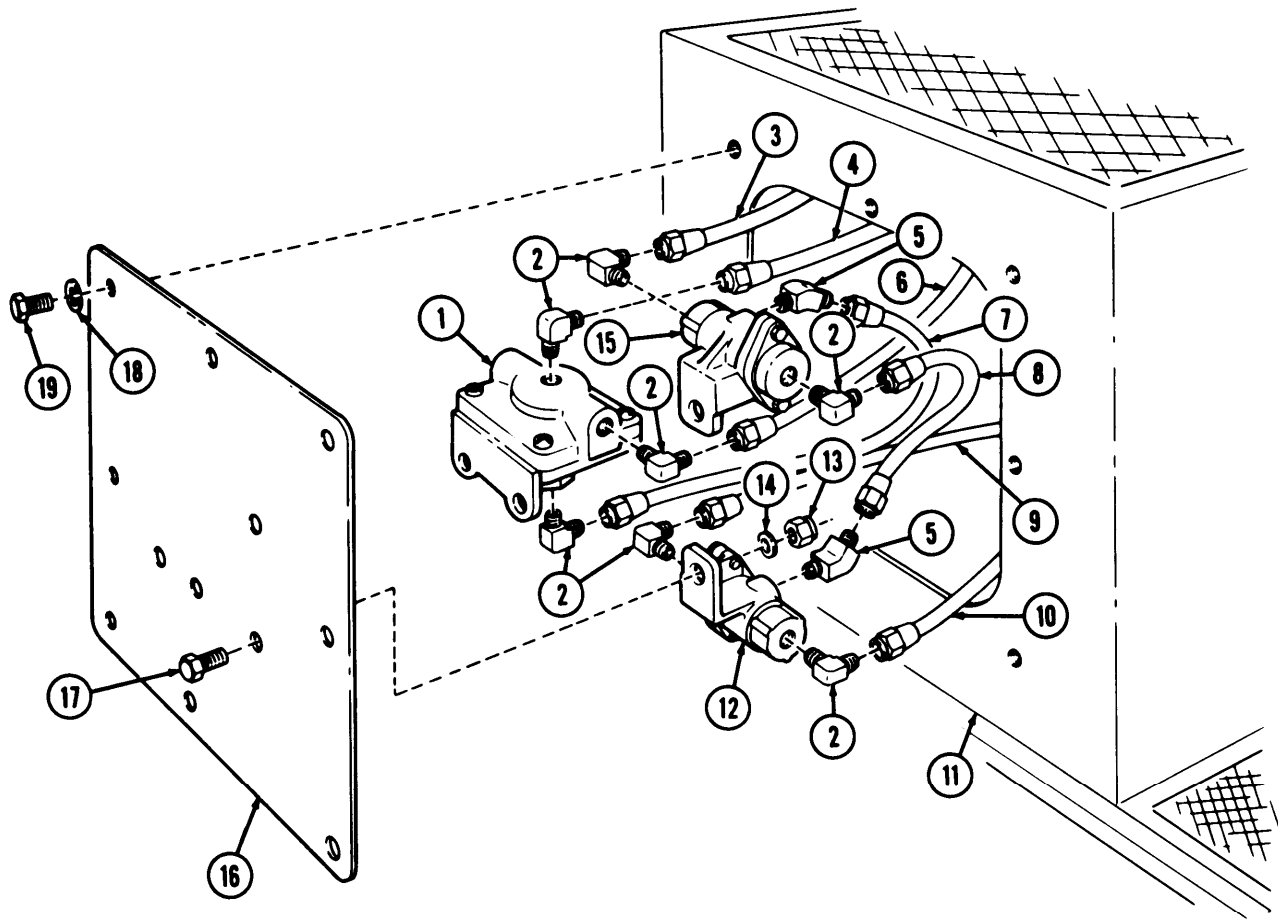


# 7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
<p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Position valves in soft-jawed vise to install fittings.</li> </ul> <p>Ž Clean all male pipe threads and wrap with sealing tape before installation.</p>				
13.		Three fittings (2)	Install in quick-release valve (1).	
14.		Two fittings (2) and one fitting (5)	Install in double-check valve #3 (15).	
15.		Two fittings (2) and one fitting (5)	Install in double-check valve #4 (12).	
16.		Two screws (17) and new locknuts (13), and quick-release valve (1)	Install on access box cover (16).	
17.		Screw (17), washer (14), new locknut (13), and doublecheck valve #3 (15)	Install onto access box cover (16).	
18.		Screw (17), washer (14), new locknut (13), and doublecheck valve #4 (12)	Install on access box cover (16).	
19.		Air lines (4), (6), and (7)	Connect.	
20.		Air lines (3), (7), and (8)	Connect.	
21.		Air lines (8), (9), and (10)	Connect.	
22.		Eight screws (19) and new lockwashers (18), and access box cover (16)	Install on step box access (11).	

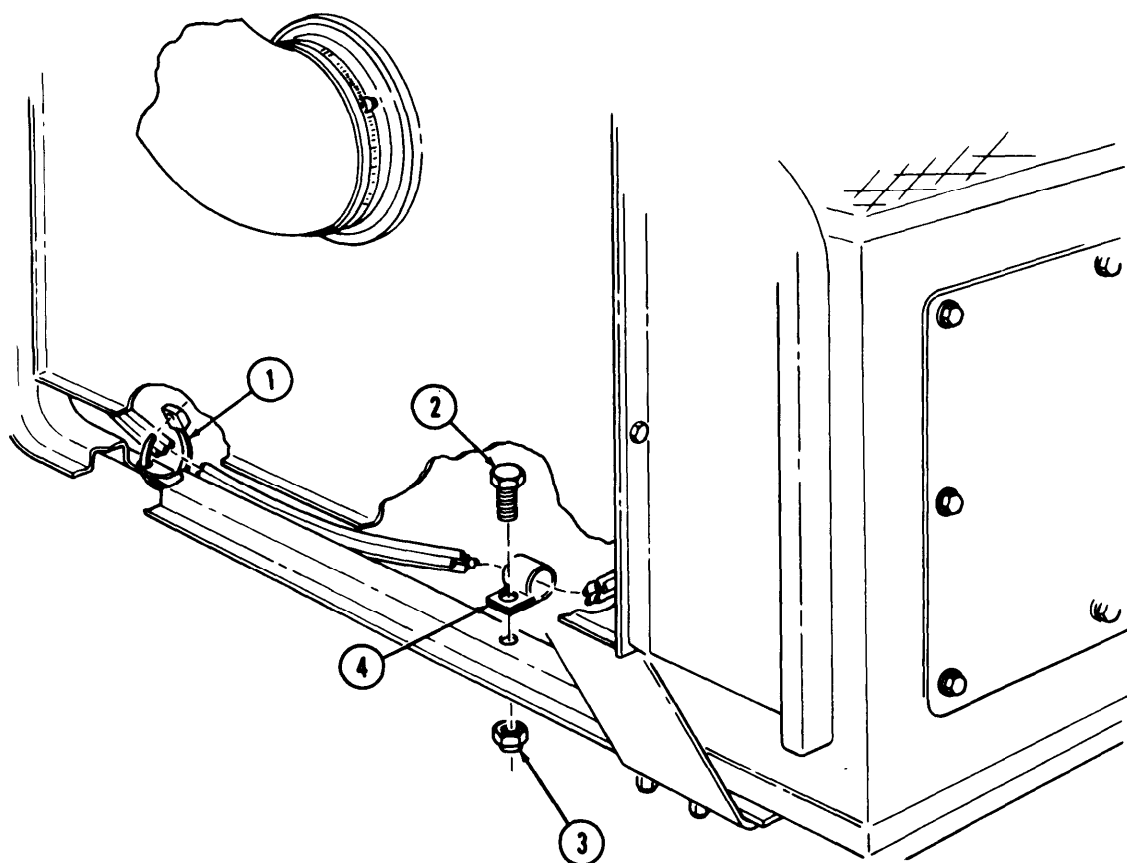
7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE  
MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**7-49. DOUBLECHECK VALVES #3, #4, AND QUICK-RELEASE VALVE  
MAINTENANCE (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
23.		Tiedown strap (1)	Install.	
24.		Clamp (4), screw (2), and new locknut (3)	Install.	



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272- 10) and allow air pressure to build up to normal operating range. Check for air leaks. Road test vehicle.

TA 349011

## CHAPTER 8

### WHEELS, HUBS, DRUMS, AND STEERING MAINTENANCE

#### Section I. WHEELS, HUBS, AND DRUM MAINTENANCE

##### **8-1. GENERAL**

This section provides maintenance procedures assigned to the organizational level for wheels, hubs, and drums. To find a specific procedure, see the maintenance task summary below:

<b>8-2. WHEELS, HUBS, AND DRUMS MAINTENANCE TASK SUMMARY</b>
--

TASK PARA.	PROCEDURES	PAGE NO.
8-3.	Wheel and Tire Rotation	8-2
8-4.	Tire and Tube Replacement	8-8
8-4.1.	Tire and Wheel Replacement (M939A1 Series)	8-10.2
8-4.2.	Wheel Rim Stud Replacement (M939A1 Series)	8-10.6
8-5.	Front Hub and Drum Maintenance	8-12
8-6.	Rear Hub and Drum Maintenance	8-18
8-7.	Wheel Bearing Adjustment	8-24

8-3. WHEEL AND TIRE ROTATION

This task covers:

- a. Wheel and Tire Removal  
b. Inspection  
c. Wheel and Tire Rotation
- d. Inner Rear Wheel Installation  
e. Outer Rear Wheel Installation  
f. Front Wheel Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Inner wheel socket NSN 5120-00-430-1687		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P TM 9-2610-200-20		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Wheel and Tire Removal

1.	Four outside rear wheels (1) and two front wheels (4)	Sixty stud nuts (5)	Loosen only.	
2.	Vehicle		Raise and place two jack stands (8) under rear-rear axle (9), two jack stands (7) under forward-rear axle (6), and two jack stands (3) under front axle (2).	Use hydraulic jack to raise vehicle.
3.	Vehicle	Sixty stud nuts (5), two front wheels (4), and four outside rear wheels (1)	Remove.	Tag wheels for rotation.
4.		Forty inner wheel spacer nuts (11) and four inside rear wheels (10)	Remove.	Use inner wheel socket. Tag wheels for rotation.

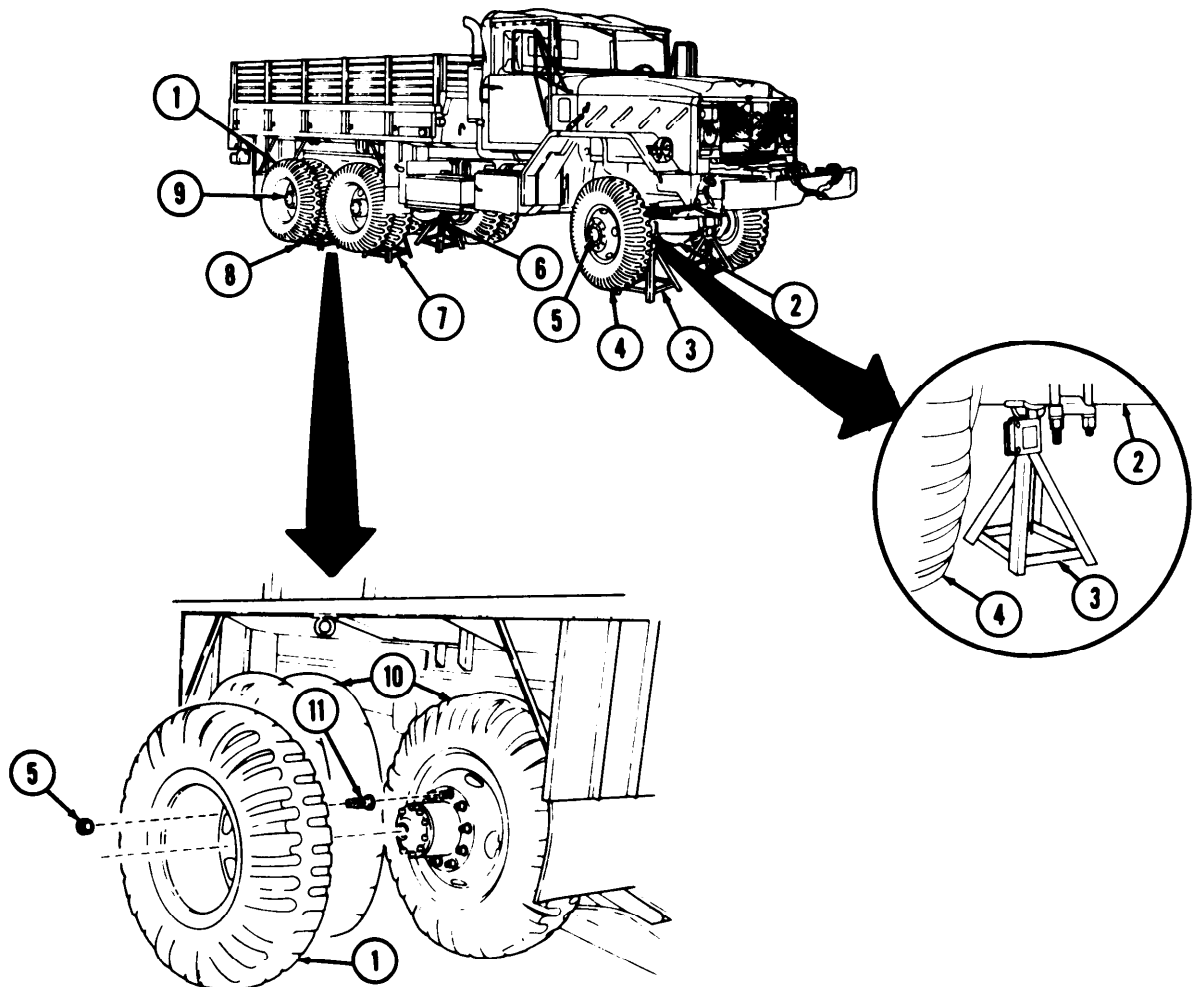


### 8-3. WHEEL AND TIRE ROTATION (Cont'd)

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

#### b. Inspection

- |    |                      |  |   |
|----|----------------------|--|---|
| 5. | All wheels and tires | <p>a. Inspect wheels for cracks, stud hole damage and bends.</p> <p>b. Check tires for tread wear.</p> | <p>Replace wheels if cracked, stud holes damaged or bent.</p> <p>Refer to TM 9-2610-200-20.</p> |
|----|----------------------|--|---|



8-3. WHEEL AND TIRE ROTATION (Cont'd)

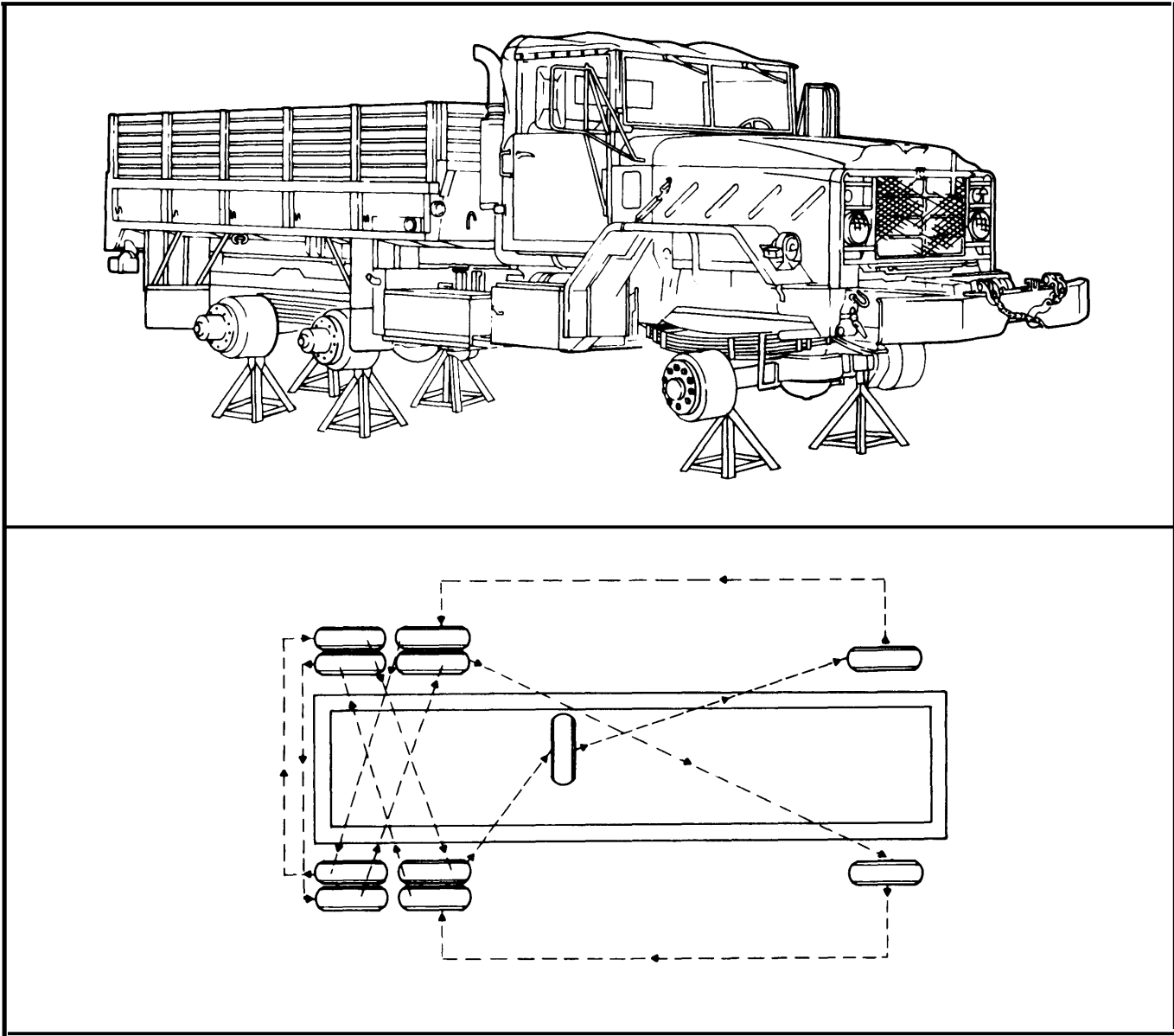
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. Wheel and Tire Rotation

NOTE

- Ž Wheels and tires are rotated the same for all M939 series vehicles.
- To maintain tread depth and pattern of dual tires, tires must be rotated to match tread wear as closely as possible. Refer to TM 9-2610-200-20.

6. All wheels and tires Rotate as shown.



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8-3. WHEEL AND TIRE ROTATION (Cont'd)

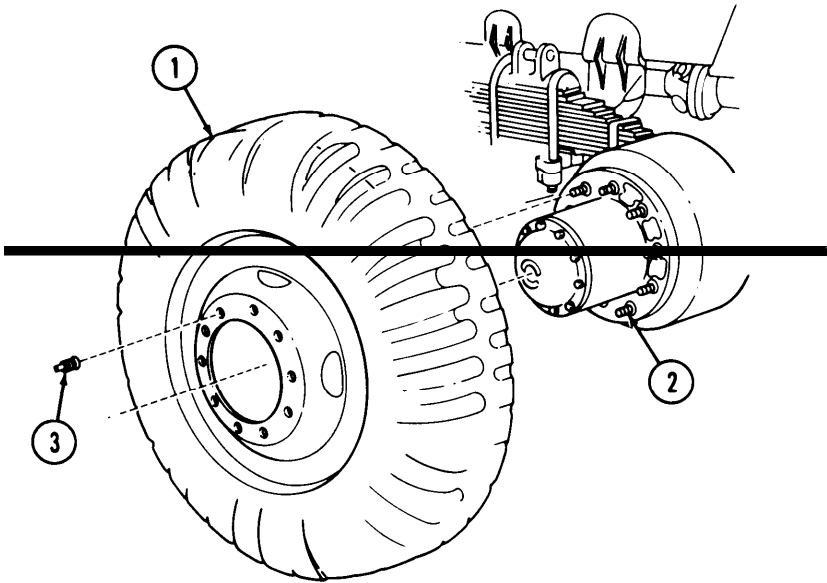
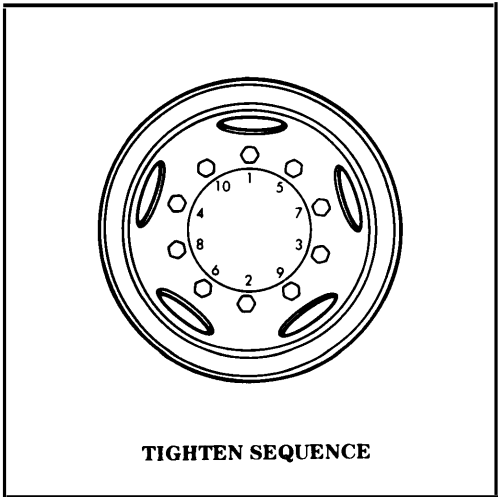
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. Inner Rear Wheel Installation

NOTE

- Make sure inner rear wheels are installed so valve stems to both rear wheels are accessible.
- Start all threaded nuts by hand to prevent cross-threading. Left wheels have left-hand threaded wheel studs and right wheels have right-hand threaded wheel studs.

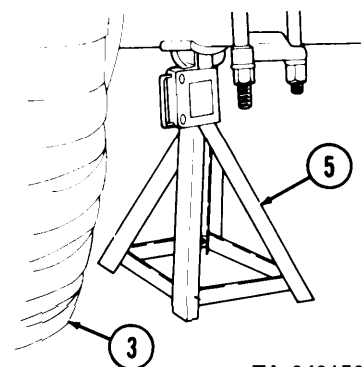
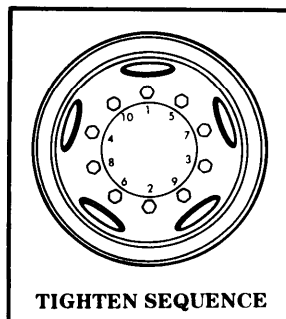
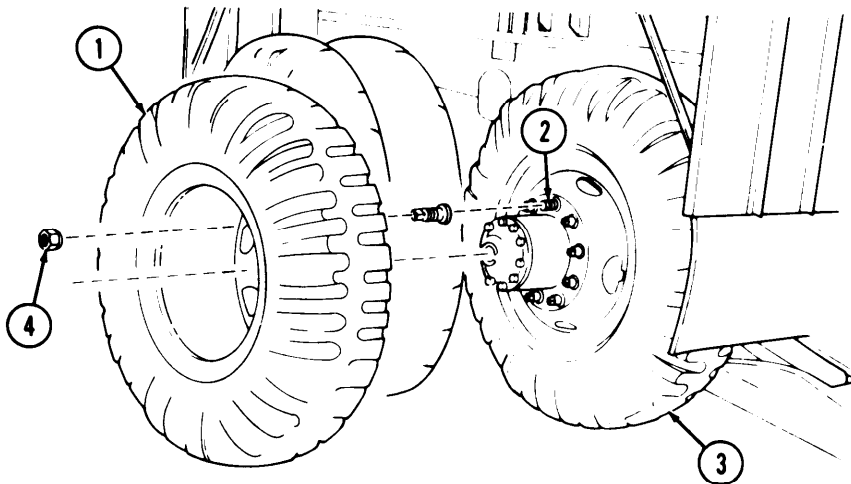
7.	Right forward-rear inner dual wheel (1)	Position over wheel hub studs (2).	
8.	Ten inner wheel spacer nuts (3)	a. Install.  b. Tighten using sequence shown.	Hand tighten spacer nuts (3). <b>Tighten 450-500 lb-ft (610-678 N.m).</b> Use inner wheel socket.
9.	Three remaining inner dual wheels (1)	Repeat steps 7 and 8.	



TA 349155

### 8-3. WHEEL AND TIRE ROTATION (Cont'd)

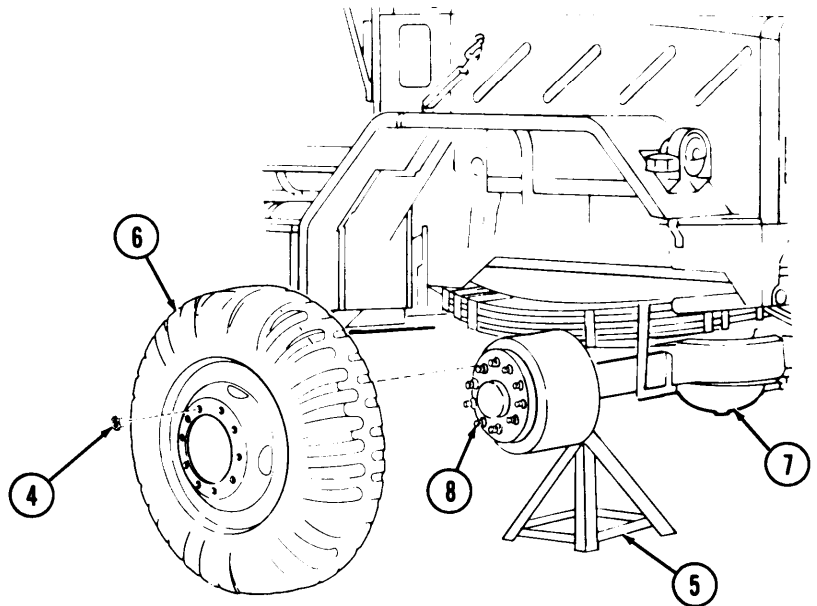
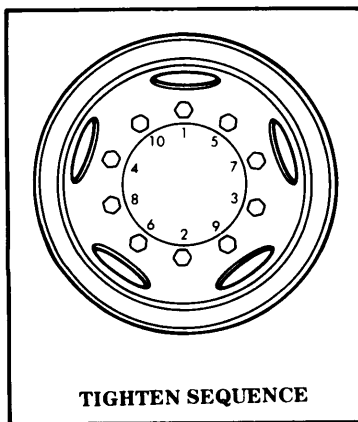
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>e. Outer Rear Wheel Installation</b>				
10.		Right forward-rear outer dual wheel (1)	Position to inner wheel adapter spacer nuts (2).	
11.		Ten stud nuts (4)	a. Install.  b. Tighten using sequence shown.	Hand tighten stud nuts (4).  Tighten 450-500 lb-ft (610-678 N.m).
12.		Three remaining outer dual wheels {1}	Repeat steps 10 and 11.	
13.		Hydraulic jack	a. Raise inner and outer dual wheels (3) and (1) until clear of jack stands (5).  b. Remove jack stands (5) and lower until rear tires contact ground.	



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**8-3. WHEEL AND TIRE ROTATION (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>f. Front Wheels Installation</b>				
14.		Right front wheel (6)	Position over wheel hub studs (8).	
15.		Ten wheel stud nuts (4)	Install.	Hand tighten stud nuts (4).
16.		Remaining front wheel (6)	Repeat steps 14 and 15.	
17.		Hydraulic jack	Raise front axle housing (7).	
18.		Jack stand (5)	Remove.	
19.		Hydraulic jack	Lower until wheel (6) contacts ground.	
20.		Ten wheel stud nuts (4)	Tighten using sequence	<b>Tighten 400-425 lb-ft (542-576 N-m).</b>



END OF TASK!

TA 349157



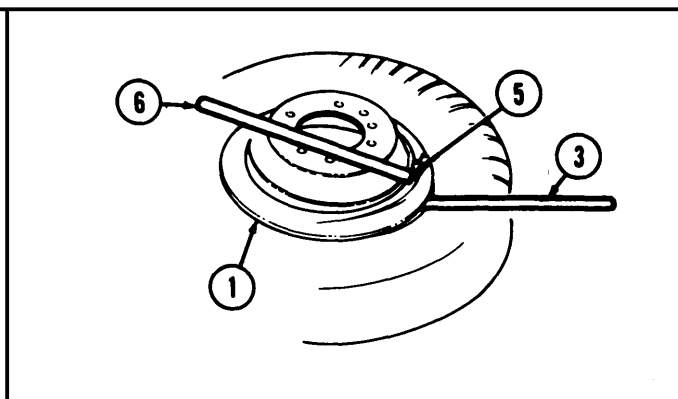
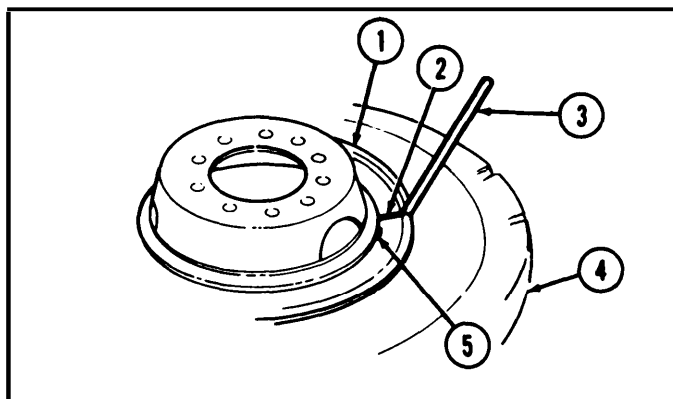
# 8-4. TIRE AND TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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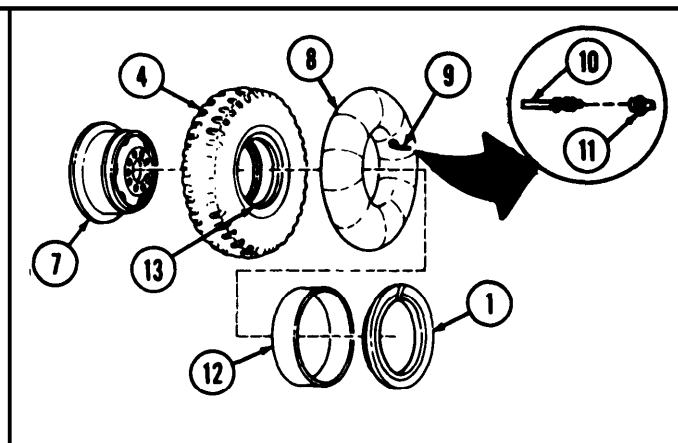
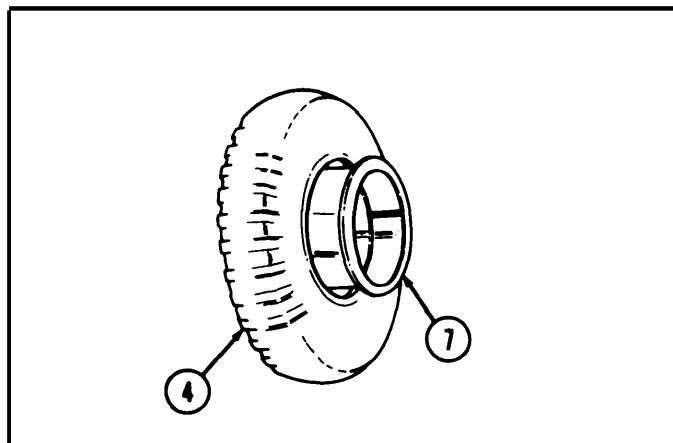
## NOTE

Assistant will help with step 3.

- |    |              |  |
|----|--------------|--|
| 3. | Lockring (1) | <p>a. Insert first tire iron (3) between lockring slit (2) and pry upward until slot (5) is exposed.</p> <p>b. Insert second tire iron (6) into locking slot (5) and pry upward.</p> |
|----|--------------|--|

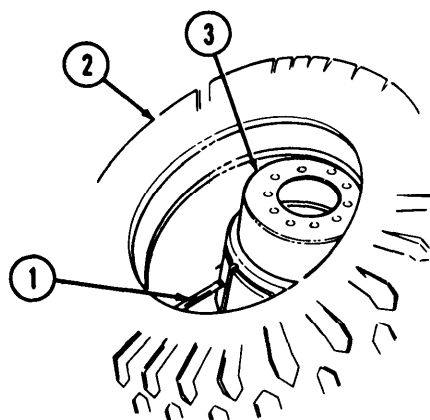


- |    |                                    |  |
|----|------------------------------------|--|
| 4. | Tire (4)                           | <p>c. Run first tire iron (3) completely around and remove lockring (1).<br/>Break tire bead (13) on opposite side of wheel (7).</p> |
| 5. | Wheel (7)                          | Remove from tire (4).  |
| 6. | Tire (4)                           | Remove.  |
|    | Tire liner (12) and inner tube (8) |  |



## 8-4. TIRE AND TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
7.		Inner tube (6) and tire liner (9)	Install inside tire (2).	
8.		Valve core (7)	a. Install in inner tube valve stem (1). b. Inflate tube (6) just enough to prevent puncture when wheel (3) is installed.	
9.		Wheel (3)	Place rim (5) end flat on ground.	
10.		Tire (2)	Install over wheel (3) and guide stem (1) through hole in wheel (3).	



### **WARNING**

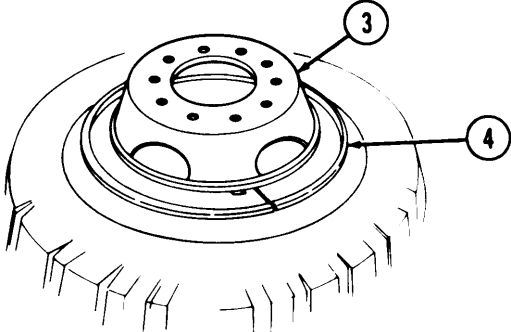
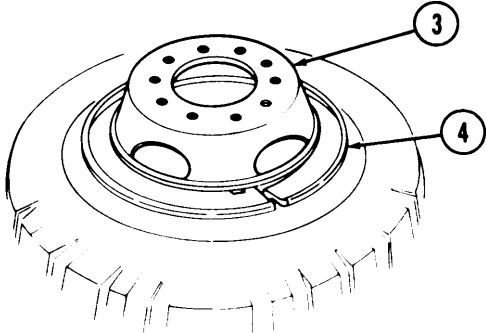
Lockring must be properly seated around wheel when installed. If lockring is not correctly installed, it may pop off when tire is inflated, causing injury to personnel.

11.	Lockring (4)	a. Force onto wheel (3) opposite rim (5). b. Observe lockring (4) for proper seating on wheel (3).
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TA 349159



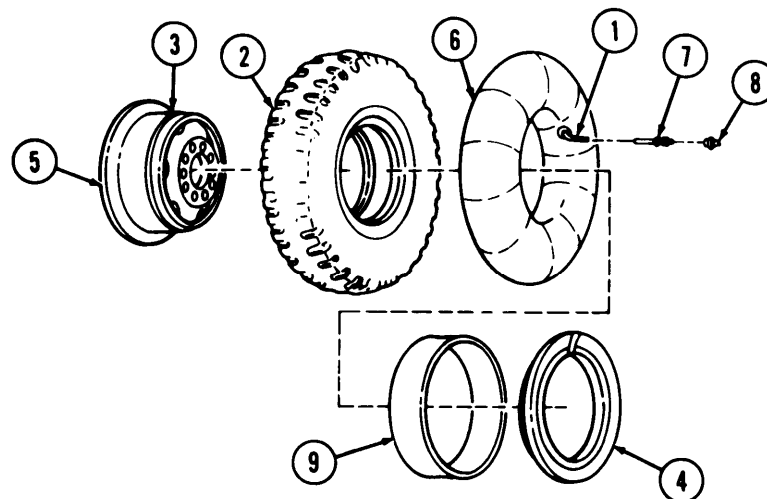
# 8-4. TIRE AND TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p><b>PROPERLY SEATED LOCKRING</b></p> </div> <div style="text-align: center;">  <p><b>IMPROPERLY SEATED LOCKRING</b></p> </div> </div>				

## **WARNING**

Never inflate a tire without a tire inflation cage, or injury to personnel may result.

- |     |               |  |                       |
|-----|---------------|--|-----------------------|
| 12. | Tire (2)      | Inflate to proper pressure.            | See TM 9-2320-272-10. |
| 13. | Valve cap (8) | Install on inner tube valve stem ( 1). |                       |



END OF TASK!

FOLLOW-ON TASK: Install wheel(s) (TM 9-2320-272- 10).

TA 351036

Change 1 8-10.1

8-4.1. TIRE AND WHEEL REPLACEMENT (M939A1 SERIES)

This task covers:		
a. Disassembly		b. Reassembly
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All M939A1 series models	TM 9-2320-272-10	Wheel(s) removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Wheel assembly tool Kent-Moore X-35193		None
<u>Materials/Parts</u>		
Ten locknuts		
"O" ring		
Lubricant, MIL-L-8362C (Appendix D, Item 16.1)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		Never remove tire locknuts before deflating tire.
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		
TM 9-2610-200-20		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>NOTE</b>				
a. Disassembly Assistant will help when required.				
1.	Valve stem (9)	Valve cap (11) and valve core (10)	Remove, and allow tire (2) to completely deflate.	Use valve core remover tool to remove valve core (10).
<b>WARNING</b>				
Never remove tire locknuts before deflating tire. Injury to personnel may result from tire clamp ring.				
<b>CAUTION</b>				
Remove locknuts no more than 1/2 in. (12 mm) at a time. Uneven beadlock pressure on clamp ring may result in damage to wheel rim studs.				
2.	Wheel rim studs (4)	Ten locknuts (7)	Remove.	Discard locknuts (7).
3.	Tire (2)	Clamp ring (6) and wheel rim (3)	Remove.	
<b>NOTE</b>				
Perform step 4 only if wheel rim is being replaced.				
4.	Wheel rim (3)	Nut (13), grommet (12), and turret valve (8)	Remove.	
5.		"O" ring (1)	Remove.	Discard "O" ring (1).

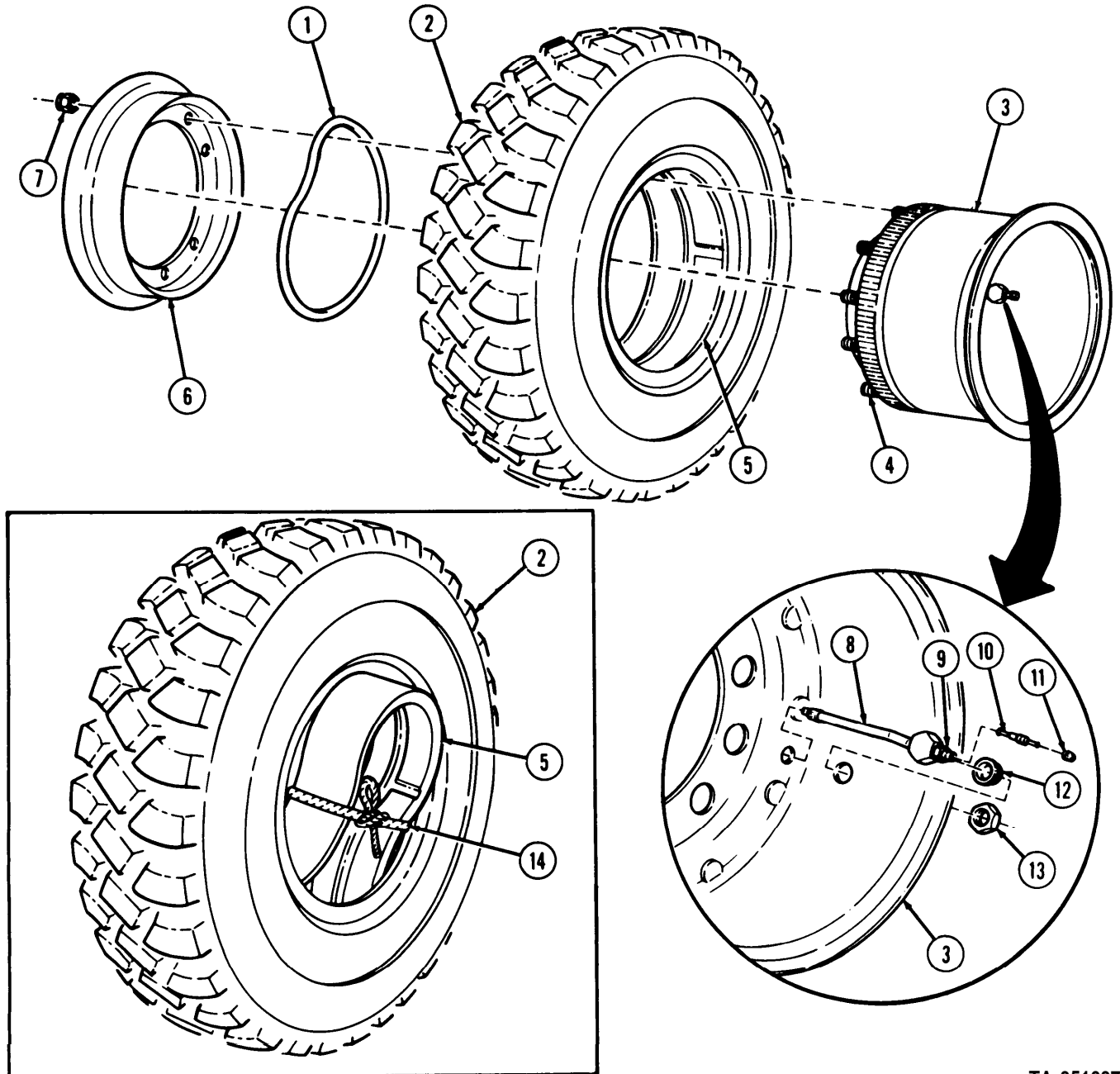
## 8-4.1. TIRE AND WHEEL REPLACEMENT (M939A1 SERIES) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### NOTE

Use tire iron in step 6 to obtain clearance between beadlock and tire for installation of rope.

- |    |          |              |   |                   |
|----|----------|--------------|---|-------------------|
| 6. |          | Rope (14)    | Install on beadlock (5). Compress enough to perform step 7. |                   |
| 7. | Tire (2) | Beadlock (5) | Remove.   | Remove rope (14). |



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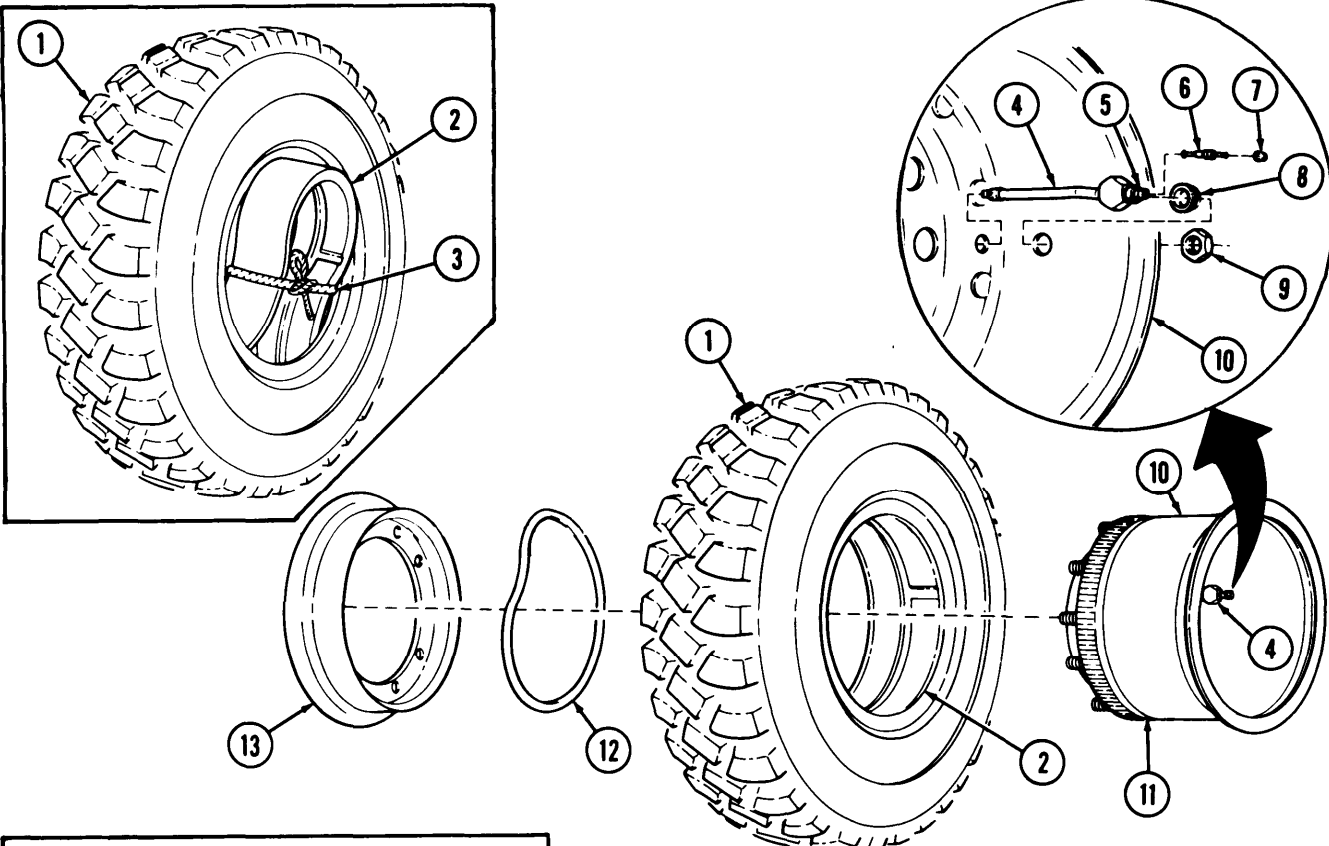
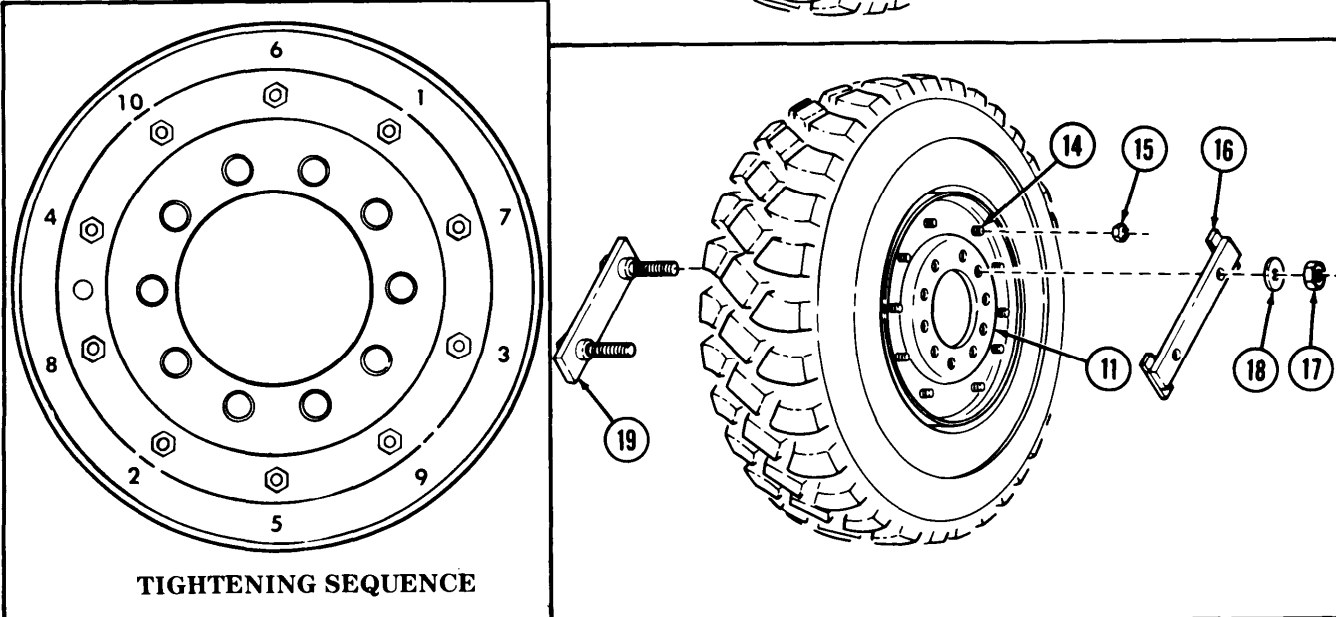
Change 3

8-10.3

### 8-4.1. TIRE AND WHEEL REPLACEMENT (M939A1 SERIES) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Reassembly</b>				
<p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Assistant will help when required.</li> <li>• When new wheel rim is installed, use attaching parts from old wheel rim.</li> <li>• Ensure that O-ring groove, wheel rim, and clamp ring are free of rust, dirt, and other foreign material that might prevent tire from sealing when assembled and inflated.</li> </ul>				
8.		Rope (3)	Install on beadlock (2).	Compress enough to perform step 9.
9.		Beadlock (2)	Install in tire (1).	Remove rope (3). Make sure that beadlock (2) is centered in tire (1).
10.		Grommet (8)	Install on turret valve (4).	
11.		Valve (4) assembly	Install on wheel rim (10) with nut (9).	Tighten nut (9) 40-65 lb-in. (5-7 N-m).
12.		Wheel rim (10)	Install on tire (1).	
13.		New "O" ring (12)	Install on "O" ring groove (11).	Lubricate. Do not stretch or twist "O" ring (12).
14.		Clamp ring (13)	Install on wheel rim (10) with valve hole aligned to valve (4).	
15.		Wheel assembly tool base (19)	Install on wheel rim (11).	
16.		Wheel assembly tool plate (16), two washers (18) and nuts (17)	Install on wheel assembly tool base (19).	Tighten nuts (17) enough to perform step 17.
17.		Ten new locknuts (15)	Install on wheel rim studs (14).	Finger tighten. Remove two nuts (17) and washers (18), plate (16), and base (19). Tighten locknuts (15) 210-240 lb-ft (285-325 N-m) in sequence shown.
18.		Valve core (6)	Install on valve stem (5).	
19.		Tire (1)	Inflate to proper pressure.	Refer to TM 9-2320-272-10.
20.		Valve cap (7)	Install on valve stem (5).	

## 8-4.1. TIRE AND WHEEL REPLACEMENT (M939A1 SERIES) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
 <p><b>TIGHTENING SEQUENCE</b></p>				

END OF TASK!

FOLLOW-ON TASK: Install wheel(s) (TM 9-2320-272-10).

TA 351038

Change 3

8-10.5

8-4.2. WHEEL RIM STUD REPLACEMENT (M939A1 SERIES)

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All M939A1 series models	TM 9-2320-272-10 Para. 8-4.1	Wheel(s) removed. Wheel(s) disassembled.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Bolt inserting tool 089489 or J-35198		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.

Wheel rim (3)

Place on flat surface with wheel studs (2) facing upward.
2.

Nut (1)

a. Install on wheel stud (2) six turns.

b. Strike with hammer until wheel stud (2) is loose.

c. Remove.
3.

Wheel rim (3)

Wheel rim stud (2)

Remove.

b. Installation

4.

Wheel rim stud (2)

Place through hole in wheel rim (3).

Make sure flat side of wheel rim stud head (5) is flat to inside wheel rim (3).
5.

Bolt inserting tool (4)

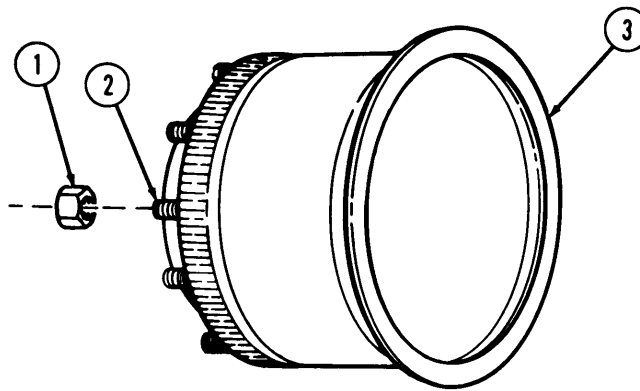
Place over wheel rim stud (2).
6.

Nut (1)

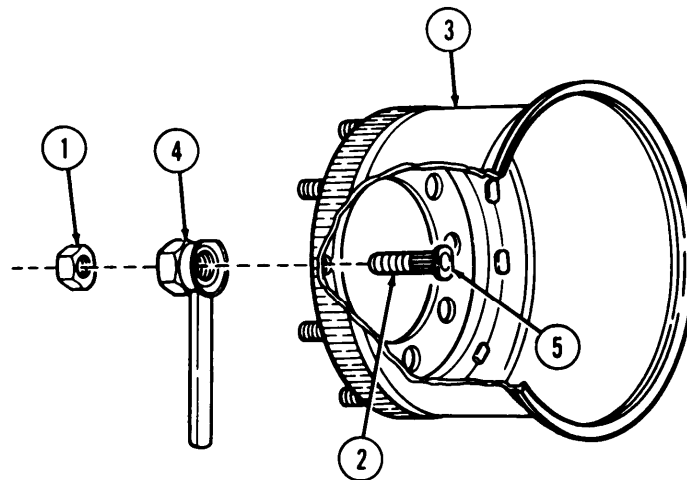
Tighten onto wheel rim stud (2) until wheel rim stud (2) properly seats on wheel rim (3).

# 8-4.2. WHEEL RIM STUD REPLACEMENT (M939A1 SERIES) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	wheel rim stud (2)	Nut (1) and bolt inserting tool (4)	Remove.	



REMOVAL



INSTALLATION

END OF TASK!

FOLLOW-ON TASKS: • Reassemble wheel(s) (para. 8-4.1).  
 • Install wheel(s) (TM 9-2320-272-10).

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## 8-5. FRONT HUB AND DRUM MAINTENANCE

This task covers:

- |                            |                 |
|----------------------------|-----------------|
| a. Removal                 | c. Lubrication  |
| b. Cleaning and Inspection | d. Installation |

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Wheels chocked. Wheel(s) removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Inner oil seal Drive flange gasket GAA grease (Appendix D, Item 13) Gasket sealant (Appendix D, Item 14)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		Keep fire extinguisher nearby when using drycleaning solvent.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P TM 9-214		

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

- |    |                   |   |                                     |  |
|----|-------------------|---|-------------------------------------|--|
| 1. | Drive flange (10) | Ten screws (11) and washers (12)  | Remove.                             |  |
| 2. |                   | Two screws (11)   | Install in two threaded holes (13). | Flange (10) will separate from hub (2).  |
| 3. | Hub (2)           | Drive flange (10) and gasket (9), if present  | Remove.                             | Discard gasket (9).<br><br>Clean gasket or sealant remains from mating surfaces. |
| 4. | Drive flange (10) | Two screws (11)   | Remove.                             |  |
| 5. | Spindle (4)       | Outer bearing locknut (8), bearing nut washer (7), bearing adjusting nut (6), and outer bearing (5) | Remove.                             |  |



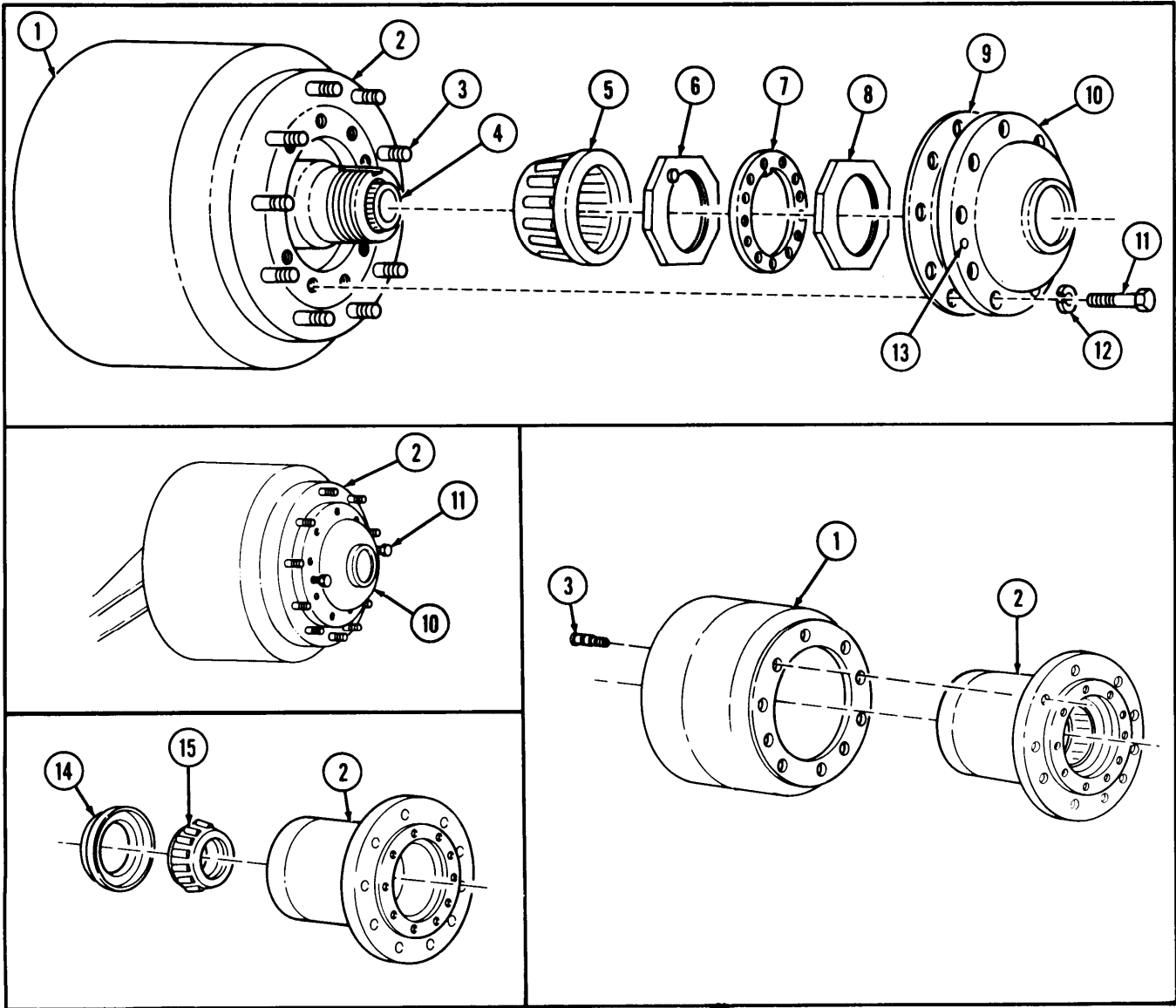
8-5. FRONT HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Assistant will help with step 6.

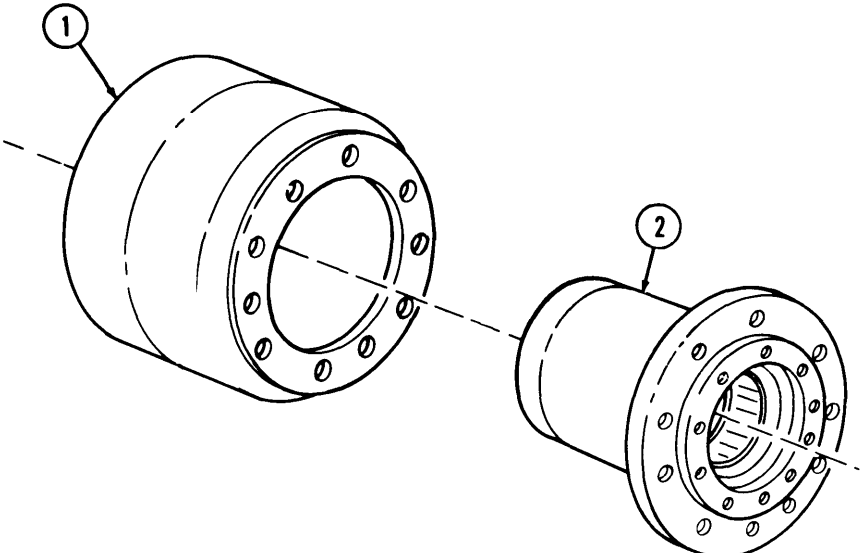
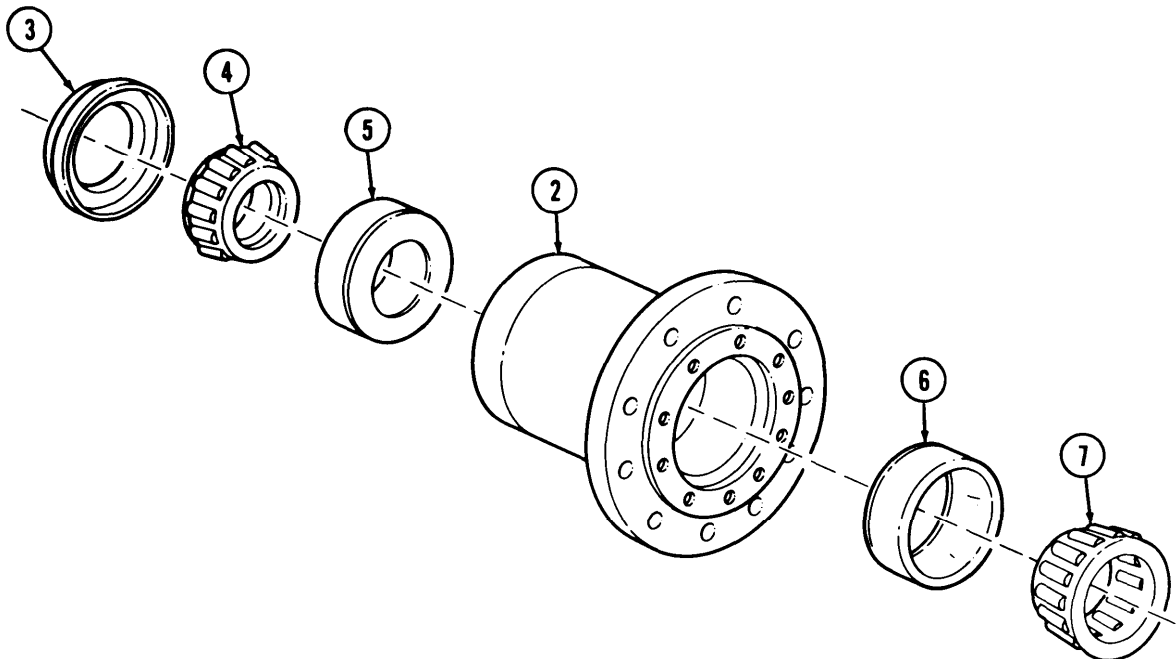
6.	Spindle (4)	Hub (2) and drum (1)	Remove.	May be necessary to back off brake adjustment to remove drum (1). Refer to para. 7-11.
7.	Hub (2)	Inner bearing oil seal (14) and inner bearing (15)	Remove.	Discard oil seal (14).
8.	Drum (1)	Ten wheel studs (3) and hub (2)	Remove.	



## 8-5. FRONT HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Cleaning and Inspection</b>				
<p style="text-align: center;"><b>WARNING</b></p> <p>Drycleaning solvent is flammable and will not be used near open flame. Use only in well-ventilated places. Failure to do this may result in injury to personnel.</p>				
9.		All hub (2) and drum (1) components	Clean in drycleaning solvent and allow to air dry.	Do not use compressed air to dry bearings.
10.		Hub (2)	Inspect for cracks and breaks.	
11.		Inner bearing (4) and outer bearing (7)	Inspect.	Refer to TM 9-214. If damaged, replace.
12.		Inner bearing cup (5) and outer bearing cup (a)	a. Inspect.	Refer to TM 9-214. If damaged, replace.
<p style="text-align: center;"><b>NOTE</b></p> <p>Steps 12b and 13 are performed only if bearings or bearing cups are to be replaced.</p>				
			b. Remove by tapping alternately on outer edge.	
13.		New inner bearing cup (5) and new outer bearing cup (6)	Press in hub (2).	Make sure bearing cups (5) and (6) are seated.
14.		Drum (1)	Inspect for deep grooves.	Replace drum (1) if grooves are deeper than 1/32 in.(0.79 mm).
<b>c. Lubrication</b>				
15.		Inner bearing (4) and outer bearing (7)	Pack with GAA grease.	Refer to TM 9-214.
16.		Inner bearing oil seal (3)	Pack inner rubber section with GAA grease.	

# 8-5. FRONT HUB AND DRUM MAINTENANCE (Cont'd)

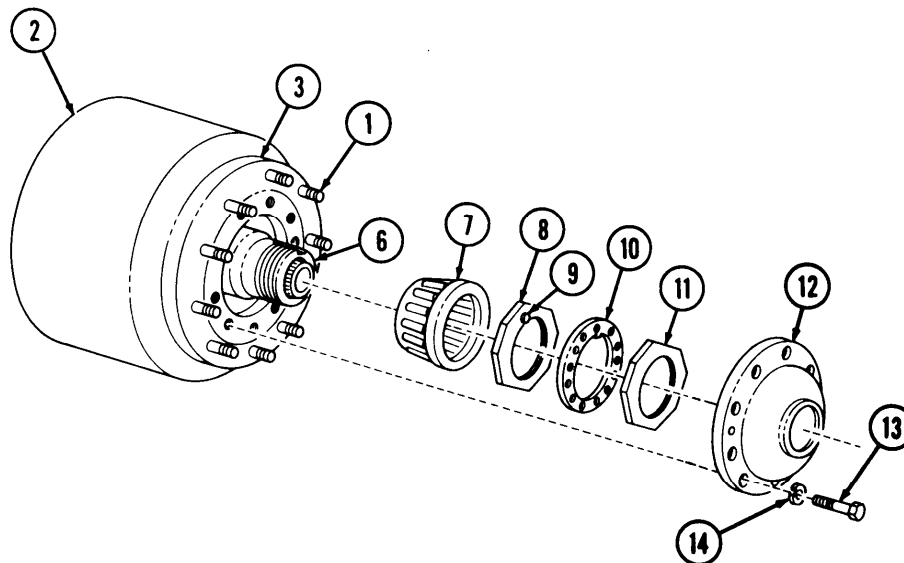
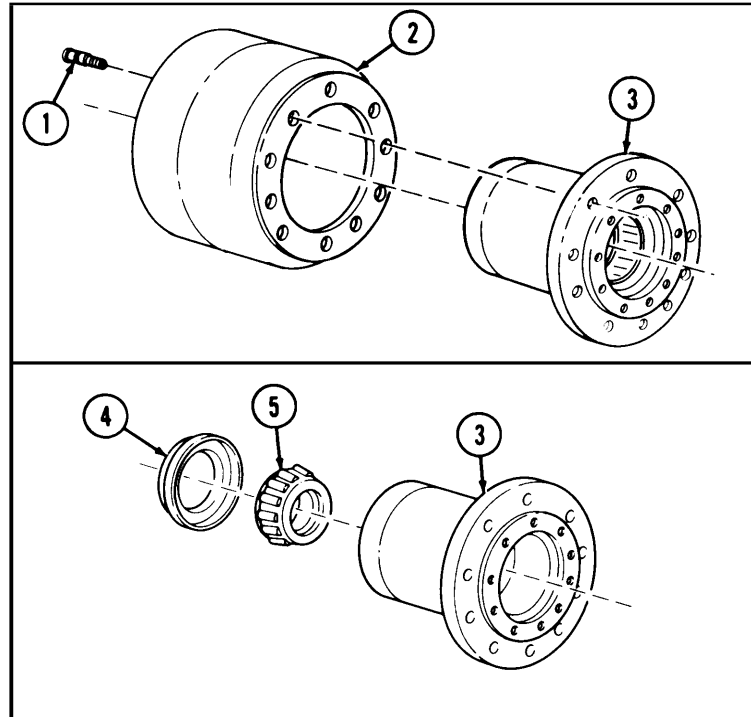
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

## 8-5. FRONT HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>d. Installation</b>				
17.		Hub (3)	Install in drum (2).	
18.		Wheel studs (1)	Press through drum (2) and into hub (3).	Make sure studs (1) are seated.
19.		Inner bearing (5) and new inner bearing oil seal (4)	Install.	Make sure oil seal (4) is seated.
<b>NOTE</b>				
Assistant will help with step 20.				
20.		Hub (3) and drum (2)	Install on spindle (6).	
21.		Outer bearing (7)	Install on spindle (6) with bearing adjusting nut (8).	
22.		Bearing adjusting nut (8)	a. Tighten while rotating hub (3).  b. Back out 1/6 to 1/4 turn so washer (10) can be positioned to spindle (6) and adjusting nut pin (9).	Tighten 50 lb-ft (68 N-m) to set preload.
23.		Bearing adjusting nut washer (10) and outer bearing locknut (11)	Install.	Tighten 250-400 lb-ft (339-542 N-m).
24.		Drive shaft flange (12)	Install with ten washers (14) and screws (13).	Tighten 60-100 lb-ft (81-136 N-m).

# 8-5. FRONT HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: • Install wheel(s) (TM 9-2320-272-10).

- Remove wheel chocks and road test vehicle (TM 9-2320-272-10).

## 8-6. REAR HUB AND DRUM MAINTENANCE

This task covers:

- a. Removal  
b. Cleaning and Inspection

- c. Lubrication  
d. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Wheels chocked. Spring brake(s) caged. Wheel(s) removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
Wiper replacer 7950136		None
<b><u>Materials/Parts</u></b>		
Keyway insert Wiper (seal wear sleeve) Inner and outer oil seal Axle flange gasket GAA grease (Appendix D, Item 13) Gasket sealant (Appendix D, Item 14)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63R (2)		Keep fire extinguisher nearby when using drycleaning solvent.
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P TM 9-214		

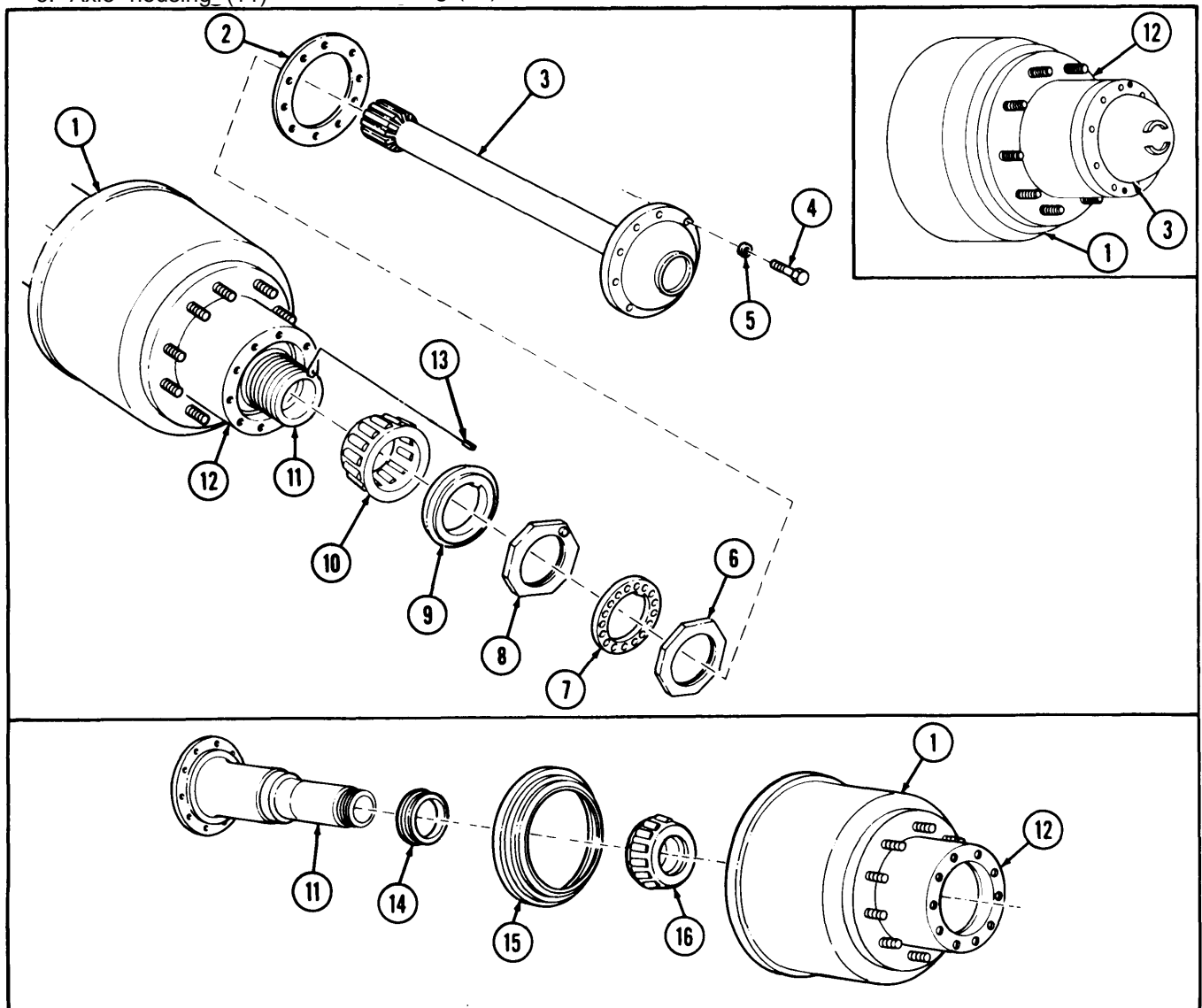
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### a. Removal

- |    |                   |  |         |   |
|----|-------------------|--|---------|---|
| 1. | Axle shaft (3)    | Ten screws (4) and washers (5)   | Remove. |   |
| 2. | Hub (12)          | Axle shaft (3) and gasket (2), if present.                             | Remove. | Discard gasket (2) if present.<br>Clean gasket or sealant remains from mating surfaces. |
| 3. | Axle housing (11) | Outer bearing locknut (6) bearing nut washer (7) and adjusting nut (8) | Remove. |   |

## 8-6. REAR HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<p align="center"><b>NOTE</b></p> <p align="center">Assistant will help with step 4.</p>				
4.		a. Hub (12) and drum (1)	Remove.	May be necessary to back off brake adjustment to remove drum (1). Discard oil seal (9).
		b. Outer bearing oil seal (9) and outer bearing (10).	Remove.	
		c. Keyway insert (13)	Remove.	Discard insert (13).
5. Hub (12)		Inner bearing oil seal (15) and inner bearing (16)	Remove.	Discard oil seal (15).
6. Axle housing (11)		Bearing (14)	Remove.	Discard bearing (14).



## 8-6. REAR HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Drum (1)	Ten wheel studs (3) and hub (2)	Remove.	
8.	Inside drum (1)	Five screws (6) and washers (5), and dust shield (4)	Remove.	

### b. Cleaning and Inspection

#### **WARNING**

Drycleaning solvent is flammable and will not be used near open flame. Use only in well-ventilated places. Failure to do this may result in injury to personnel.

9.		All hub (2) and drum (1) components	Clean in drycleaning solvent and allow to air dry.	Do not use compressed air to dry bearings.
10.		Inner bearing (8) and outer bearing (11)	Inspect.	Refer to TM 9-214. If damaged, replace.
11.	Hub (2)	Inner bearing cup (9) and outer bearing cup (10)	a. Inspect.	Refer to TM 9-214. If damaged, replace.

#### **NOTE**

Steps 11b and 12 are performed only if bearings or bearing cups are to be replaced.

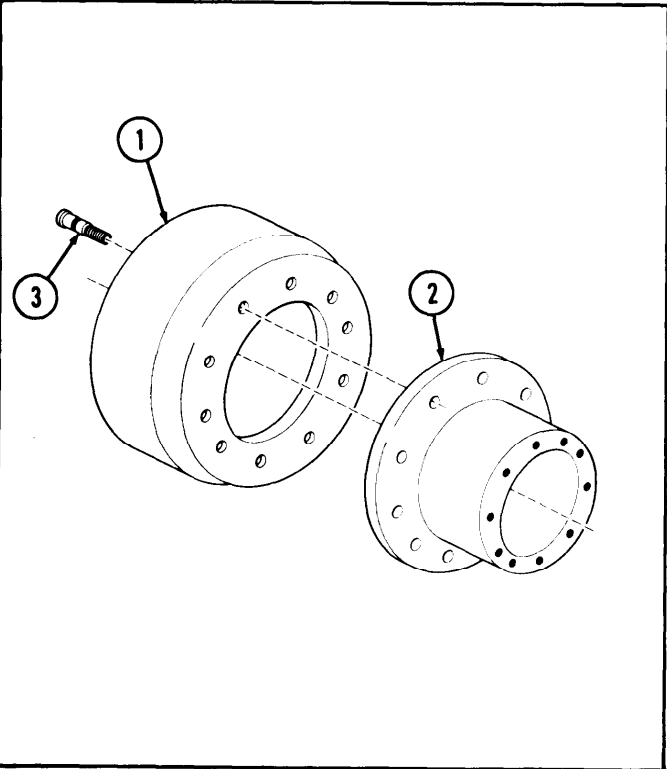
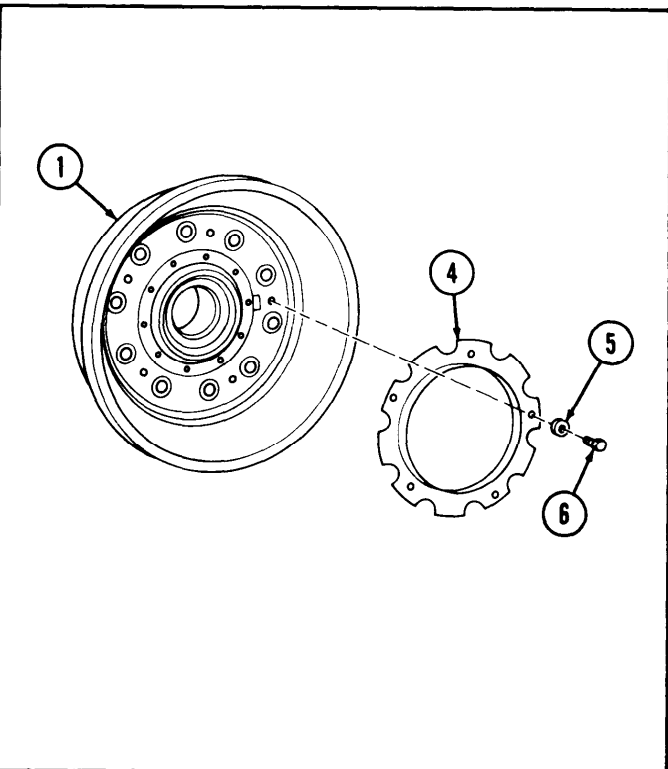
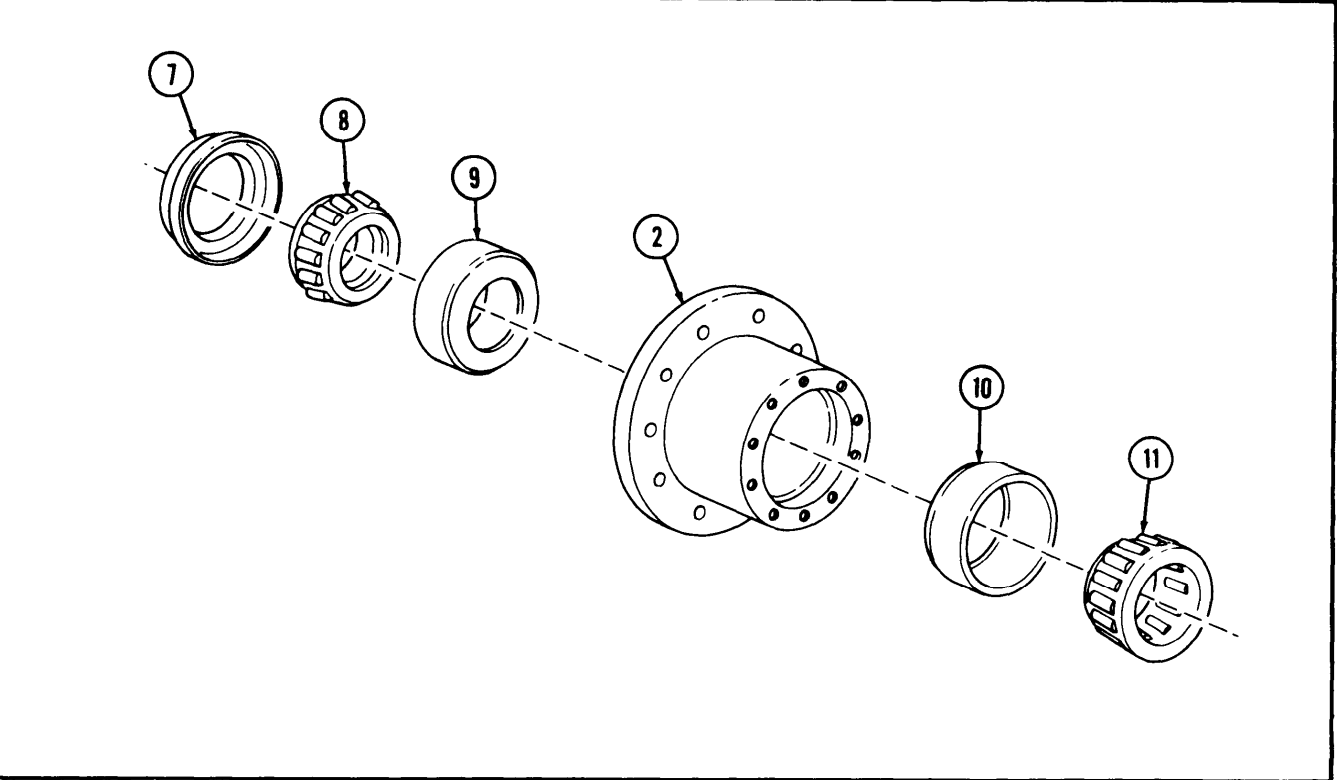
			b. Remove by tapping alternately on outer edge.	
12.		New inner bearing cup (9) and new outer bearing cup (10)	Press in hub (2).	Make sure bearing cups (9) and (10) are seated.
13.		Hub (2)	Inspect for cracks and breaks.	
14.		Drum (1)	Inspect for deep grooves.	Replace drum (1) if grooves are deeper than 1/32 in. (0.79 mm).

### c. Lubrication

15.		Inner bearing (8) and outer bearing (11)	Pack with GAA grease.	Refer to TM 9-214.
16.		Inner bearing oil seal (7)	Pack inner rubber section with GAA grease,	



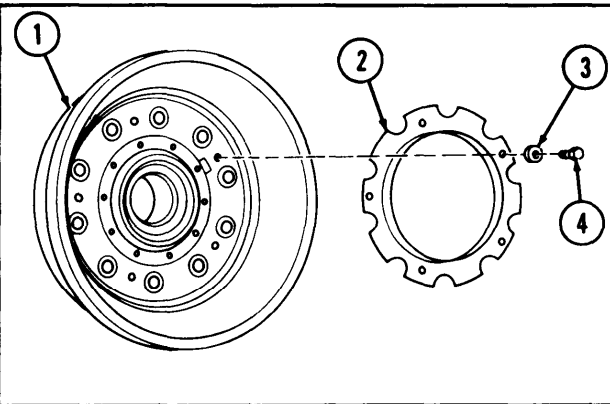
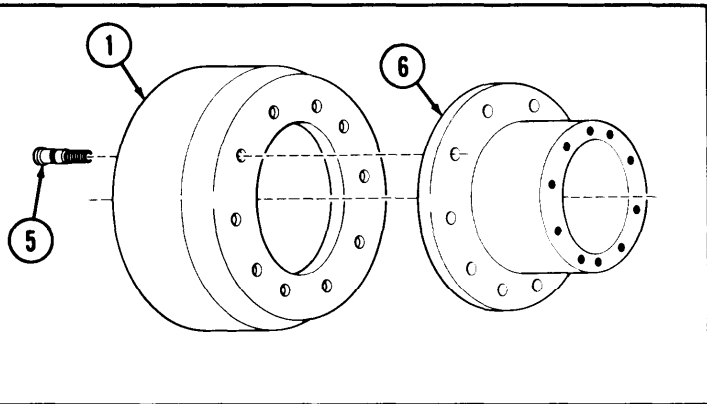
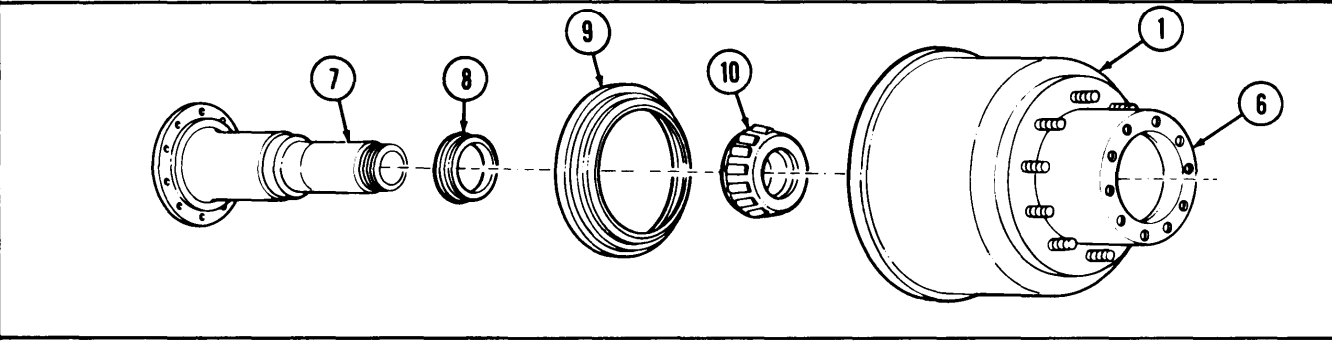
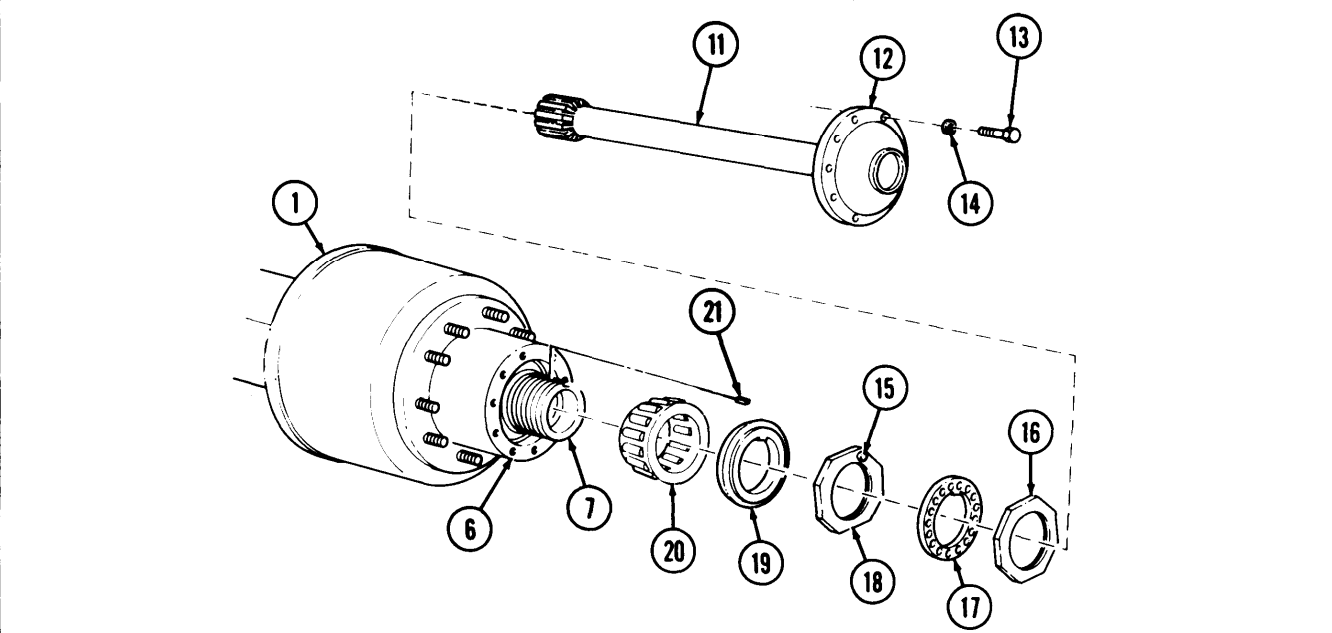
8-6. REAR HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				
				

## 8-6. REAR HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>d. Installation</b>				
17.		Dust shield (2)	Install on inside of drum (1) with five washers (3) and screws (4).	
18.		Hub (6)	Position on drum (1).	
19.		Wheel studs (5)	Press through drum (1) and in hub (6).	Make sure studs (5) are seated.
20.		Inner bearing (10) and new inner bearing oil seal (9)	Install.	Make sure oil seal (9) is seated.
21.		New bearing (8)	Install on axle housing (7).	Use bearing replacer.
<b>NOTE</b>				
Assistant will help with step 22.				
22.		Hub (6), drum (1), new keyway insert (21), outer bearing (20), and new outer bearing oil seal (19)	Install on axle housing (7) with bearing adjusting nut (18).	
23.		Bearing adjusting nut (18)	a. Tighten while rotating hub (6).  b. Back out 1/6 to 1/4 turn so washer (17) can be positioned to axle housing (7) and adjusting nut pin (15).	Tighten 50 lb-ft (68 N-m) to set preload.
24.		Outer bearing locknut (16)	Install.	Tighten 250-400 lb-ft (339-542 N-m).
25.		Axle shaft flange (12)	Apply sealant to mating surfaces.	
26.		Axle shaft (11)	Install with ten washers (14) and screws (13).	Tighten 60-100 lb-ft (81-136 N-m).

## 8-6. REAR HUB AND DRUM MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				
				

END OF TASK!

FOLLOW-ON TASKS: ŽRelease caged spring brake(s) (TM 9-2320-272-10).

- Install wheel(s) (TM 9-2320-272-10).
- Remove wheel chocks and road test vehicle (TM 9-2320-272-10).

8-7. WHEEL BEARING ADJUSTMENT

This task covers:

- a. Front Wheel Bearing Adjustment
- b. Rear Wheel Bearing Adjustment

INITIAL SETUP:

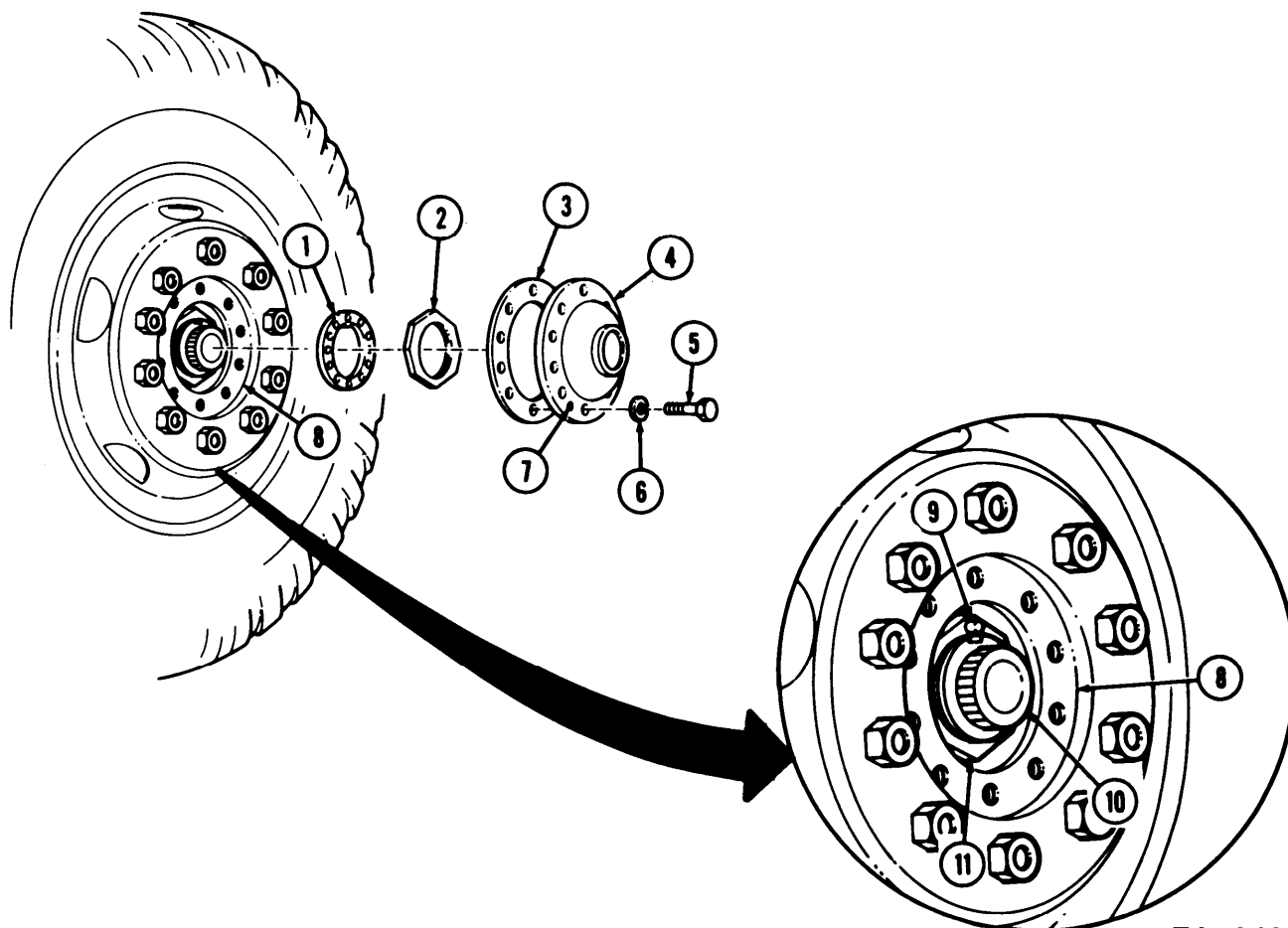
Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10 TM 9-2320-272-10	Wheels chocked. Spring brake(s) caged.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
Drive flange gasket Axle shaft gasket		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B		None
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Front Wheel Bearing Adjustment				
1.		Vehicle	Raise until tire is off ground.	
2.	Drive flange (4)	Ten screws (5) and washers (6)	Remove.	
3.		Two screws (5)	Install in two threaded holes (7).	Frees drive flange (4).
4.	Hub (8)	Drive flange (4) and gasket (3)	Remove.	Discard gasket (3). Clean gasket remains from mating surfaces.
5.	Drive flange (4)	Two screws (5)	Remove.	
6.	Spindle (10)	Outer bearing locknut (2) and bearing nut washer (1)	Remove.	

# 8-7. WHEEL BEARING ADJUSTMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.		Bearing adjusting nut (11)	a. Tighten while rotating hub (8).  b. Back out 1/6 to 1/4 turn so washer(1) can be positioned to spindle (10) and adjusting nut insert (9).	Tighten 50 lb-ft (68 N-m) to set preload.
8.		Bearing adjusting nut washer (1) and outer bearing locknut (2)	Install.	Tighten 250-400 lb-ft (339-642 N-m).
9.		New gasket (3) and drive flange (4)	Install with ten washers (6) and screws (5).	Tighten 60-100 lb-ft (81-136 N-m).
10.	Vehicle		Lower until tire is on ground.	



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**8-7. WHEEL BEARING ADJUSTMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Rear Wheel Bearing Adjustment</b>				
11.		Vehicle	Raise until tire is off ground.	
12.	Axle shaft (3)	Ten screws (5) and washers (4)	Remove.	
13.		Two screws (5)	Install in two threaded holes (6).	Frees axle shaft (3).
14.		Axle shaft (3) and gasket (2)	Remove.	Discard gasket (2). Clean gasket remains from mating surfaces.
15.	Axle shaft (3)	Two screws (5)	Remove.	
16.	Axle housing (9)	Outer bearing locknut (7) and outer bearing washer (8)	Remove.	
17.		Bearing adjusting nut (11)	a Tighten while rotating hub ( 10).  b. Back out 1/6 to 1/4 turn so washer (8) can be positioned to axle housing (9) and adjusting nut insert (1).	Tighten 50 lb-ft (68 N-m) to set preload.
18.		Bearing adjusting nut washer (8) and outer bearing locknut (7)	Install.	Tighten 250-400 lb-ft (339-642 N-m).
19.		New gasket (2) and axle shaft (3)	Install with ten washers (4) and screws (5).	Tighten 60-100 lb-ft (81-136 N-m).
20.		Vehicle	Lower until tire is on ground.	

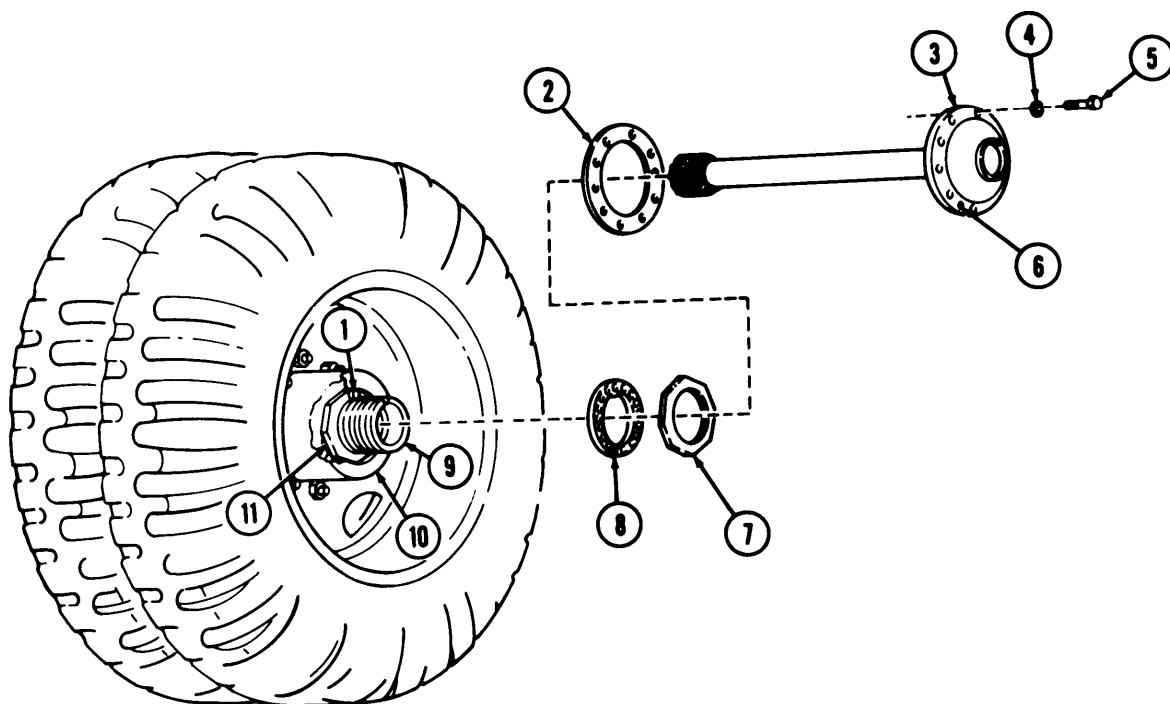
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**8-7. WHEEL BEARING ADJUSTMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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---



END OF TASK!

FOLLOW-ON TASKS   ZRelease caged spring brake(s) (TM 9-2320-272-10).  
                           ZRemove wheel chocks and road test vehicle (TM 9-2320-272-10).

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## Section II. STEERING SYSTEM MAINTENANCE

### 8-8. GENERAL

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

### 8-9. STEERING SYSTEM MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
8-10.	Steering Wheel Replacement	8-30
8-11.	Pitman Arm Replacement (Ross)	8-34
8-11.1.	Pitman Arm Replacement (Sheppard)	8-35.1
8-12.	Drag Link Replacement	8-36
8-13.	Steering Pump Drivebelts Maintenance	8-38
8-14.	Steering Assist Cylinder Stone Shield Replacement	8-42
8-15.	Steering Assist Cylinder Hoses Replacement	8-44
8-16.	Steering Assist Cylinder Replacement	8-46
8-17.	Steering Pump Pressure and Return Hoses Replacement (Ross)	8-52
8-17.1.	Steering Pump Pressure and Return Hoses Replacement (Sheppard)	8-55.1
8-18.	Steering Gear Stone Shield Replacement	8-56
8-19.	Steering Gear to Assist Cylinder Pressure Lines Replacement	8-58

## 8-10. STEERING WHEEL REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10	Wheels in straight-ahead position.
None	Para. 4-70	Horn switch removed.
<u>Special Tool</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>	<u>General Safety Instructions</u>	
None	None	
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

### a. Removal

- |                        |           |  |
|------------------------|-----------|--|
| 1. Steering column (7) | Clamp (6) | Loosen and slide turn signal control (8) down steering column (7). |
|------------------------|-----------|--|

#### NOTE

Perform step 2 only if vehicle is equipped with hand airbrake control lever.

- |                             |                            |  |
|-----------------------------|----------------------------|--|
| 2. Steering column (7)      | Two screws (5)             | Loosen and slide hand airbrake control lever (4) down steering column (7).                           |
| 3. Steering wheel shaft (3) | Nut (2)                    | Unscrew until flush with top of shaft (3).   |
| 4.                          | Two adapters (11) and (12) | Install adapters (11) and (12) on steering wheel shaft (3) and steering column (7).                  |
| 5. Steering column (7)      | Puller (9)                 | Install on adapters (11) and (12) and tighten puller screw (10) until steering wheel (1) pops loose. |

# 8-10. STEERING WHEEL REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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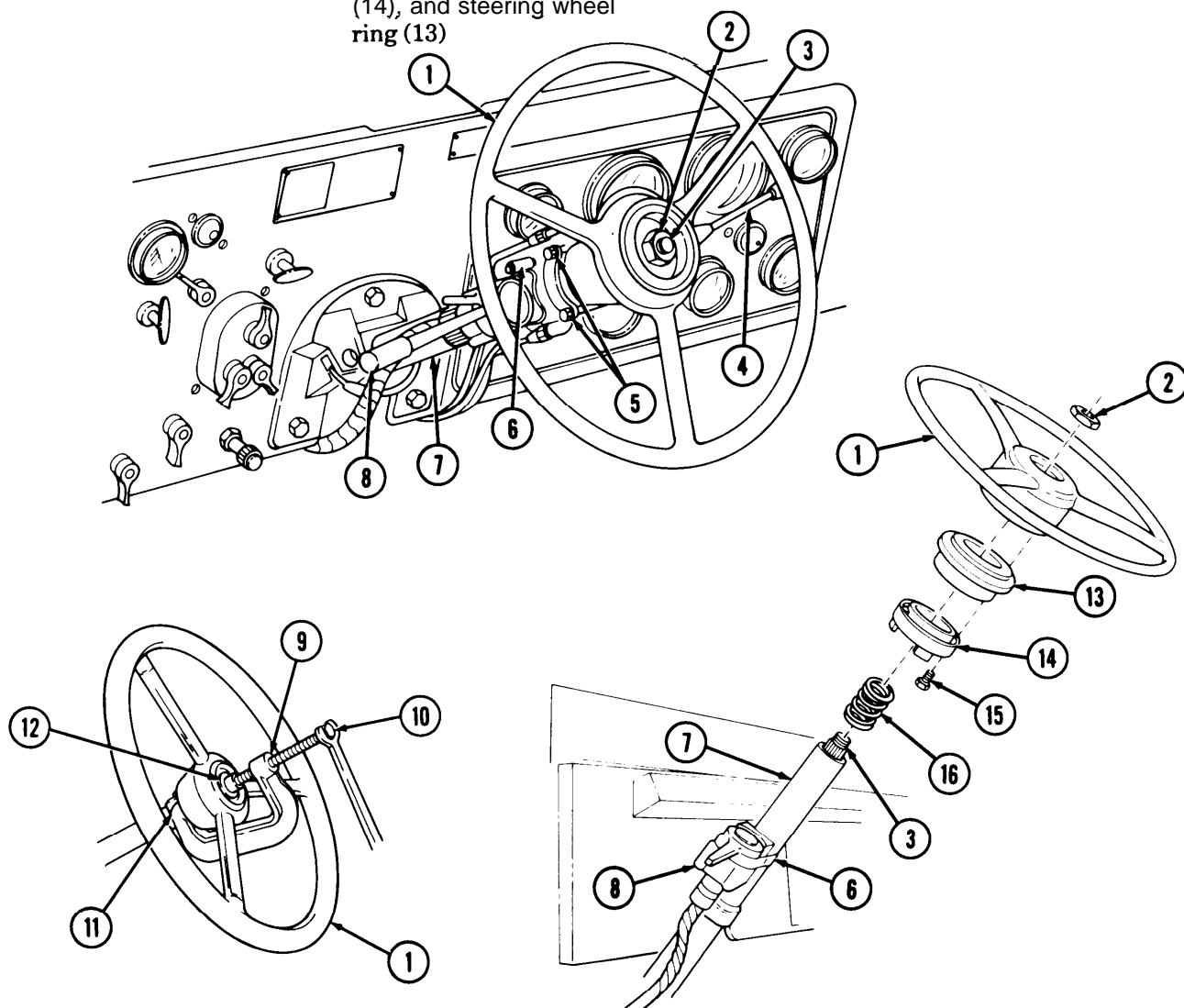
- |                        |  |   |                                  |  |
|------------------------|--|---|----------------------------------|--|
| 6. Steering column (7) |  | Puller (9), nut (2), two adapters (11) and (12), and steering wheel (1) | Remove from steering column (7). |  |
|------------------------|--|---|----------------------------------|--|

## NOTE

Perform steps 7 and 8 on vehicles with turn signal canceling ring only.

- |                             |             |         |
|-----------------------------|-------------|---------|
| 7. Steering wheel shaft (3) | Spring (16) | Remove. |
|-----------------------------|-------------|---------|

- |                       |  |         |
|-----------------------|--|---------|
| 8. Steering wheel (1) | Three screws (15), turn signal canceling ring (14), and steering wheel ring (13) | Remove. |
|-----------------------|--|---------|



CONE SHAPE TYPE HUB

ROUND SHAPE TYPE HUB

## 8-10. STEERING WHEEL REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
<p style="text-align: center;"><b>NOTE</b></p> <p>Perform steps 9 and 10 on vehicles with turn signal canceling ring only.</p>				
9.		Spring (16)	Install on steering column (7).	
10.		Turn signal canceling ring (14) and steering wheel ring (13)	Install on steering wheel (1) with three screws (15).	
11.		Steering wheel (1)	Install on steering column (7) and tap steering wheel (1) evenly until nut (2) can be installed.	
12.		Nut (2)	Install on steering wheel shaft (3)	Tighten nut (2) 55-60 lb-ft (75-81 N-m).
<p style="text-align: center;"><b>NOTE</b></p> <p>Perform step 13 only if vehicle is equipped with hand airbrake control lever.</p>				
13.		Hand airbrake control lever (4)	Slide up steering column (7) and tighten two screws (5).	
14.		Turn signal control (8)	Slide up steering column (7) and tighten clamp (6).	

## 8-10. STEERING WHEEL REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS

**END OF TASK!**

**FOLLOW-ON TASK:** Install horn switch (para. 4-70).

8-11. PITMAN ARM REPLACEMENT (ROSS)

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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		
Locknut		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

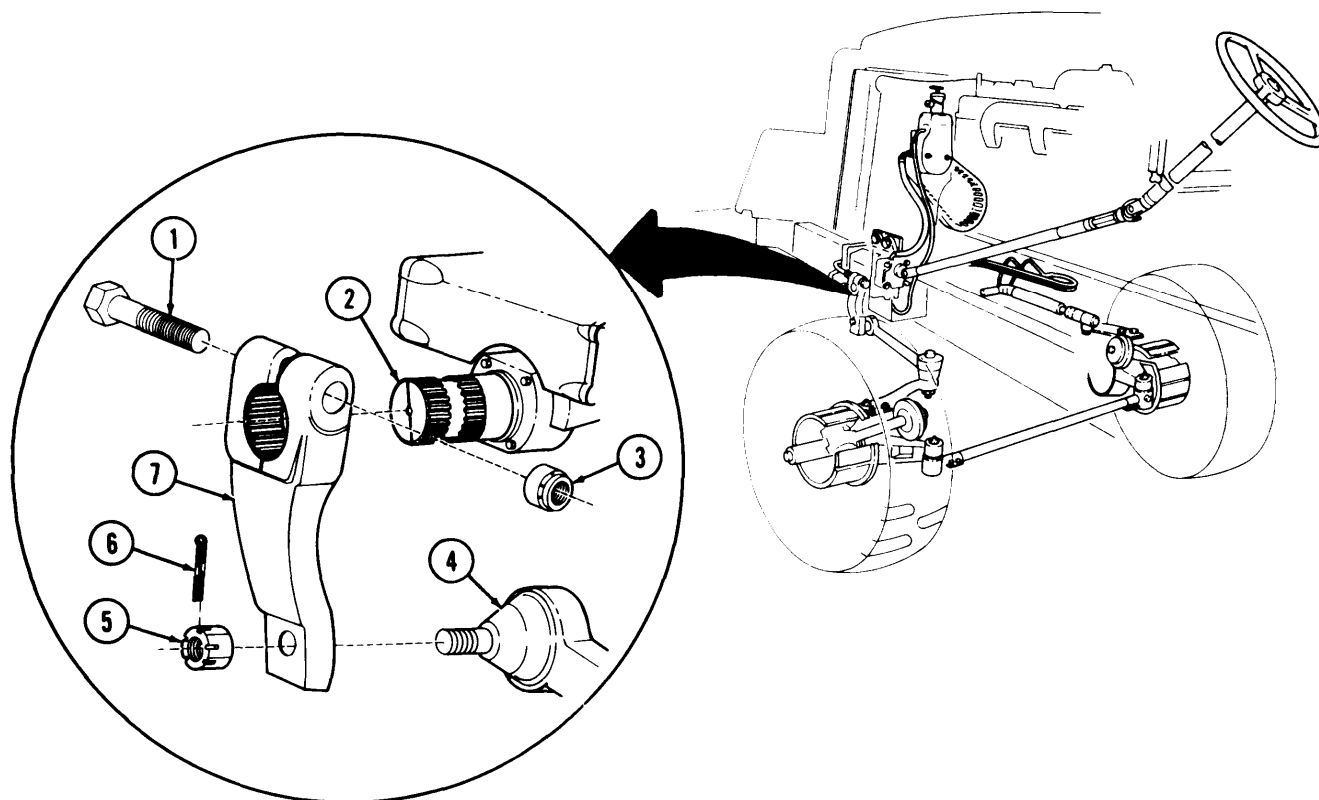
STEP .NO.	LOCATION	ITEM	ACTION	REMARKS
-----------	----------	------	--------	---------

a. Removal

- |    |   |                             |  |                         |
|----|---|-----------------------------|--|-------------------------|
| 1. | Pitman arm (7) to drag link (4)           | Cotter pin (6)              | Remove from slotted nut (5).                           | Discard cotter pin (6). |
| 2. |   | Slotted nut (5)             | Remove.  |                         |
| 3. | Pitman arm (7) to steering gear shaft (2) | Screw ( 1 ) and locknut (3) | Remove, and slightly open slit in pitman arm (7).      | Discard locknut (3).    |
| 4. |   | Pitman arm (7)              | Remove from steering gear shaft (2) and drag link (4). |                         |

# 8-11. PITMAN ARM REPLACEMENT (ROSS) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
5.		Pitman arm (7)	<p>a. Install on steering gear shaft (2) and drag link (4).</p> <p>b. Install on steering gear shaft (2) with screw (1) and new locknut (3).</p> <p>c. Install on drag link (4) with slotted nut (5).</p>	<p>Make sure pitman arm (7) to shaft (2) alignment marks meet.</p> <p>Tighten new locknut (3) 300-320 lb-ft (407-434 N•m).</p> <p>Tighten slotted nut (5), 140 lb-ft (190 N•m). Once tightened, continue to tighten until cotter pin (6) holes are aligned.</p>
6.		Slotted nut (5)	Secure with new cotter pin (6).	Bend pin (6) ends in opposite directions.



END OF TASK!

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8-11.1. PITMAN ARM REPLACEMENT (SHEPPARD)

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
Test Equipment	TM 9-2320-272-10	Left splash shield removed.
None	Para. 8-12	Drag link disconnected.
Special Tools		Special Environmental Conditions
None		
Materials/Parts		
None		None
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B (2)		None
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

a. Removal

1. Steering gear (1) and pitman arm (11)

Retainer (5)

a. Bend two long tabs (10) out of notches in pitman arm (11).  
b. Bend two short tabs (9) out of notches in retainer (5).  
c. Remove retainer (5).
2.

Pitman arm (11)

Remove.

b. Installation

NOTE

Perform steps 3 and 4 if a new retainer assembly is installed.

3.

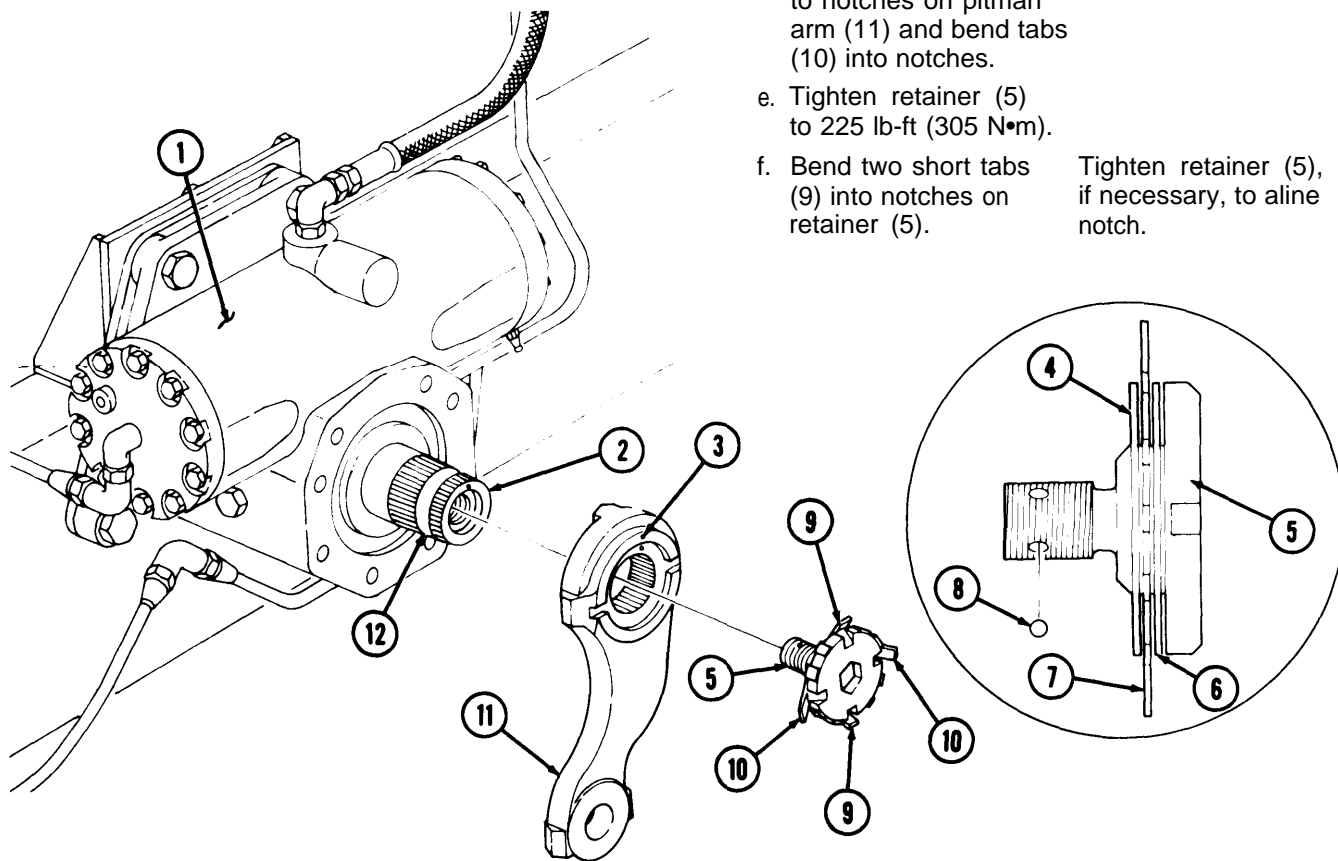
Friction washer (4), tab lockwasher (7), and friction washer (6)

Press into slot on retainer (5).



### 8-11.1. PITMAN ARM REPLACEMENT (SHEPPARD) (Cont'd)

p&P	LOCATION	ITEM	ACTION	REMARKS
4.		Three nylon balls (8)	Press into indentations on retainer (5).	
5.		Pitman arm (11)	a. Aline marks (2) and (3). b. Position pitman arm (11) on output shaft (12). c. Screw retainer (5) into output shaft (12) until friction washer (4) drag is felt. d. Aline long tabs (10) to notches on pitman arm (11) and bend tabs (10) into notches. e. Tighten retainer (5) to 225 lb-ft (305 N•m). f. Bend two short tabs (9) into notches on retainer (5).	Tighten retainer (5), if necessary, to aline notch.



**END OF TASK!**

**FOLLOW-ON TASKS:**  $\checkmark$  Install drag link (para. 8-12).  
 • Install left splash shield (TM 9-2320-272-10).

8-12. DRAG LINK REPLACEMENT

This task covers:

a. Removal

b. Installation

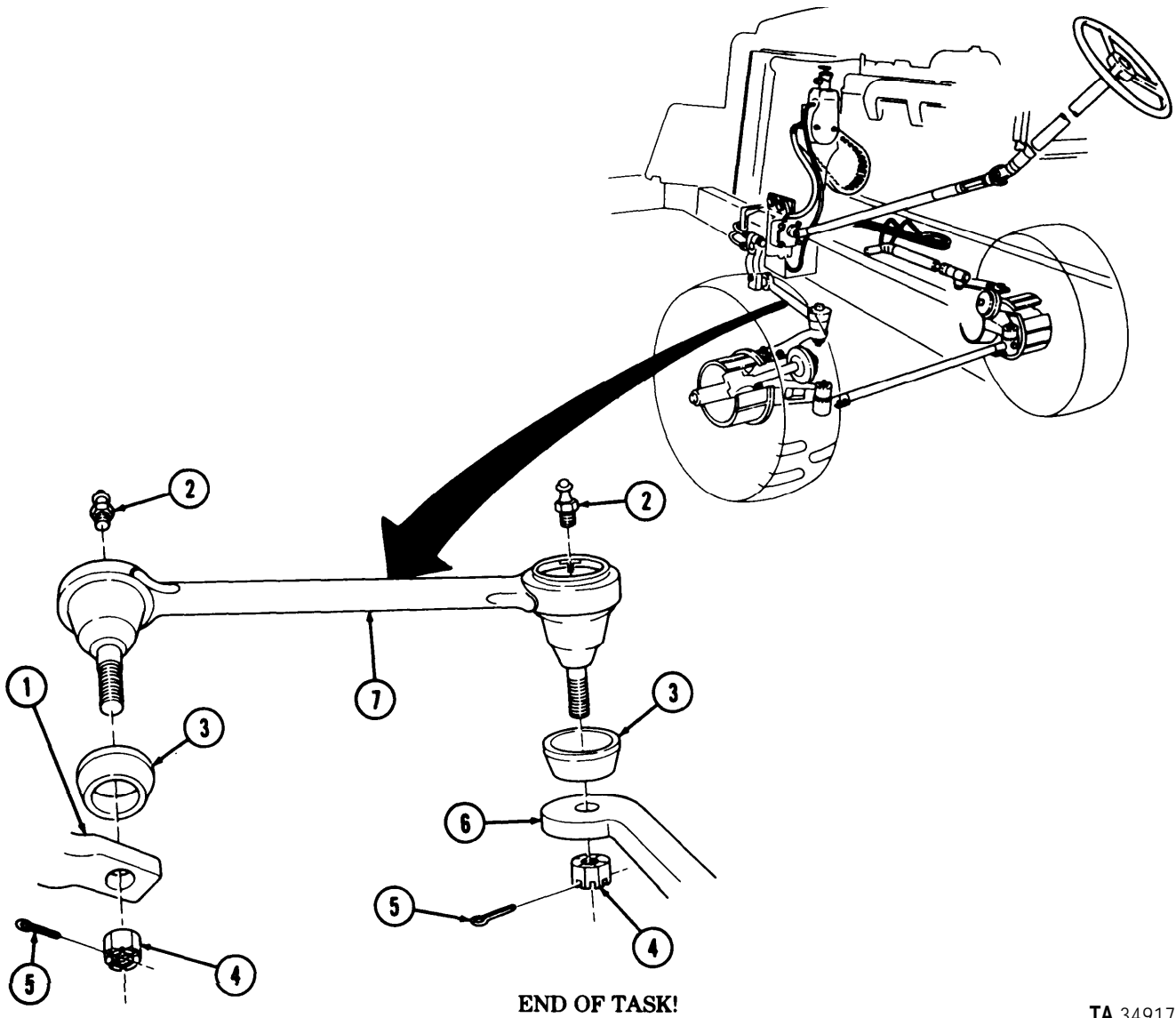
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

a. Removal				
1.	Drag link (7) to pitman arm ( 1 ) and steering knuckle arm (6)	Two cotter pins (5)	Remove from slotted nuts (4).	Discard cotter pins (5).
2.		Two slotted nuts (4)	Remove.	
3.		Drag link (7)	Remove from pitman arm ( 1 ) and steering knuckle arm (6).	
4.		Two rubber boots (3)	Remove from drag link (7).	
5.		Two grease fittings (2)	Remove from drag link (7).	
b. Installation				
6.		Two grease fittings (2)	Install on drag link (7).	
7.		Two rubber boots (3)	Install on 'drag link (7).	

8-12. DRAG LINK REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
8.	Drag link (7)	a Position on steering knuckle arm (6) and pitman arm (1). b. Install each end with slotted nuts (4).	Tighten slotted nuts (4) 140 lb-it (190 N•m). Tighten until cotter pins (5) can be installed.
9.	Two new cotter pins (5)	Install in slotted nuts (4).	



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## 8-13. STEERING PUMP DRIVEBELTS MAINTENANCE

This task covers:

- |               |                 |
|---------------|-----------------|
| a. Adjustment | c. Inspection   |
| b. Removal    | d. Installation |

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 Para 3-54	Parking brake set. Left splash shield removed. Fan belts removed (b, c, and d only).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Belt tension gage J 23600-B		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
None		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

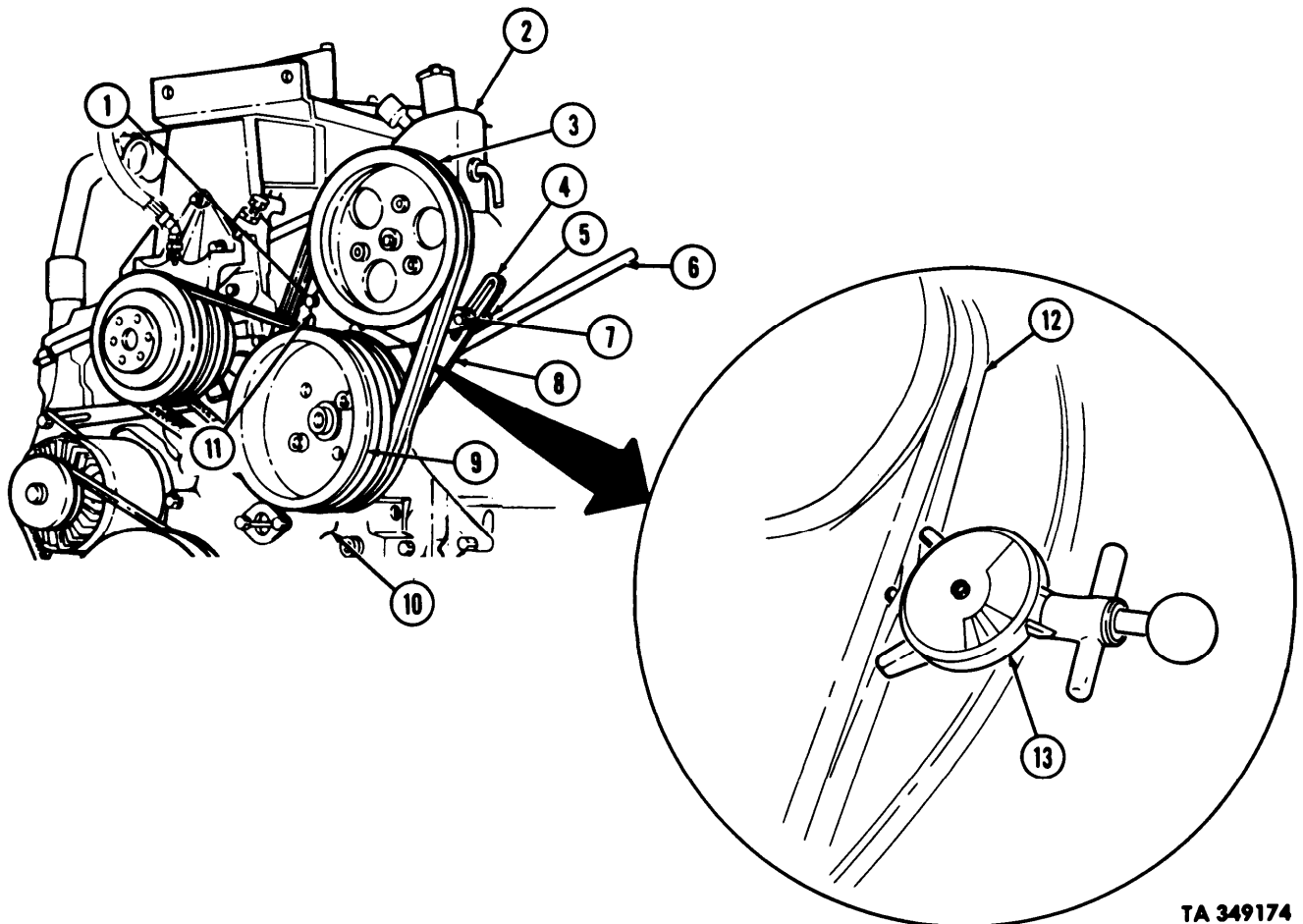
STEP N O .	LOCATION	ITEM	ACTION	REMARKS
---------------	----------	------	--------	---------

### a. Adjustment

- |    |   |                       |   |                |
|----|---|-----------------------|---|----------------|
| 1. | Pump adjusting link (4) to pump bracket (8) | Screw (7) and nut (5) | Loosen.   | Do not remove. |
| 2. | Pump bracket (8) to mounting bracket (11 )  | 'IWO screws (1)       | Loosen.   | Do not remove. |
| 3. |   | Pry bar (6)           | a Place beneath steering pump (2) so end rests on engine (10).<br>b. Using engine (10) for leverage, push pry bar (6) upward until belts (12) appear tight. |                |
| 4. | Pump adjusting link (4) to pump bracket (8) | Screw (7) and nut (5) | Tighten.  |                |

# 8-13. STEERING PUMP DRIVEBELTS MAINTENANCE (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Pump bracket (8) to mounting bracket (11)	Two screws (1)	Tighten.	Tighten screws (1) 30-40 lb-ft (41-54 N•m).
6.		Two pump drivebelts (12)	Position belt tension gage (13) on drivebelt (12) between pump pulley (3) and accessory drive pulley (9).	<p>New belt (12) tension should be <math>100 \pm 5</math> pounds (440* 22 newtons).</p> <p>Used belt (12) tension should be <math>90 \pm 5</math> pounds (400± 22 newtons),</p> <p>If belt (12) tension cannot be properly adjusted, replace belts (12).</p>



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### 8-13. STEERING PUMP DRIVEBELTS MAINTENANCE (Cont'd)

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

#### b. Removal

7.	Pump adjusting link (6) to pump bracket (9)	screw (8) and nut (7)	Loosen.	Do not remove.
8.	Pump bracket (9) to mounting bracket (2)	Two screws (3)	Loosen.	Do not remove.
9.		Power steering pump (5)	Push downward and remove two pump drivebelts ( 1).	

#### c. Inspection

##### NOTE

Pump drivebelts must be replaced in matched sets.

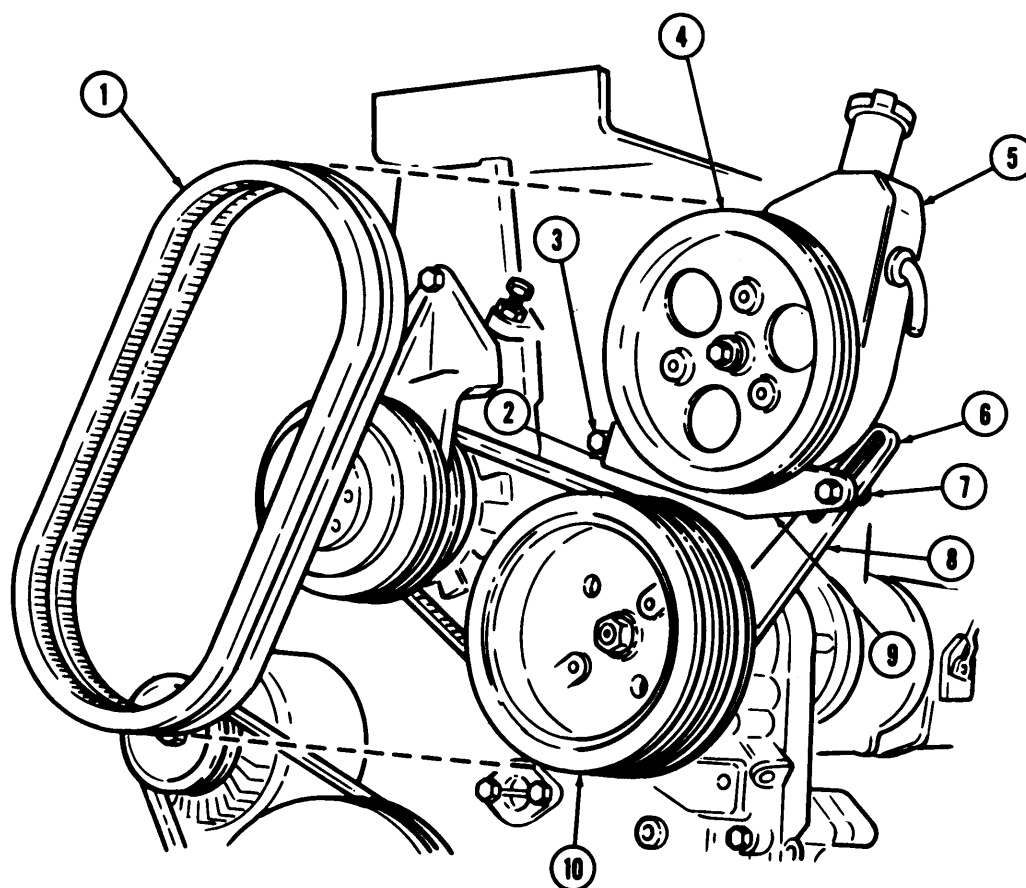
10.	Two pump drivebelts (1)	Inspect for cracks, splits, breaks, and wear.	Replace both belts (1) if either is cracked, split, broken, or worn.
-----	-------------------------	---	--

#### d. Installation

11.	Two pump drivebelts (1)	Place over pump pulley (4) and third and fourth dots of accessory drive pulley (10).	
12.		Complete installation with adjustment.	Refer to task a

# 8-13. STEERING PUMP DRIVEBELTS MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

**FOLLOW-ON TASKS** • If removed, install fan belts (para. 3-64).  
 Z Install left splash shield (TM 9-2320-272-10).

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## 8-14. STEERING ASSIST CYLINDER STONE SHIELD REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Right splash shield removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Five locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### a. Removal

- |    |                                       |   |         |  |
|----|---------------------------------------|---|---------|--|
| 1. | Stone shield (11)                     | Three locknuts (5), washer (2), and screws (1)                | Remove. | Discard locknuts (5).                                      |
| 2. |                                       | Locknut (4), cable clamp (3), washer (9), and screw (8)       | Remove. | Leave cable clamp (3) in position.<br>Discard locknut (4). |
| 3. |                                       | Locknut (4), washer (6), and screw (7)                        | Remove. | Discard locknut (4).                                       |
| 4. |                                       | Two washers (6), and screws (7), and splash shield guide (10) | Remove. |  |
| 5. | Transmission oil cooler support ( 12) | Stone shield (11 )  | Remove. |  |

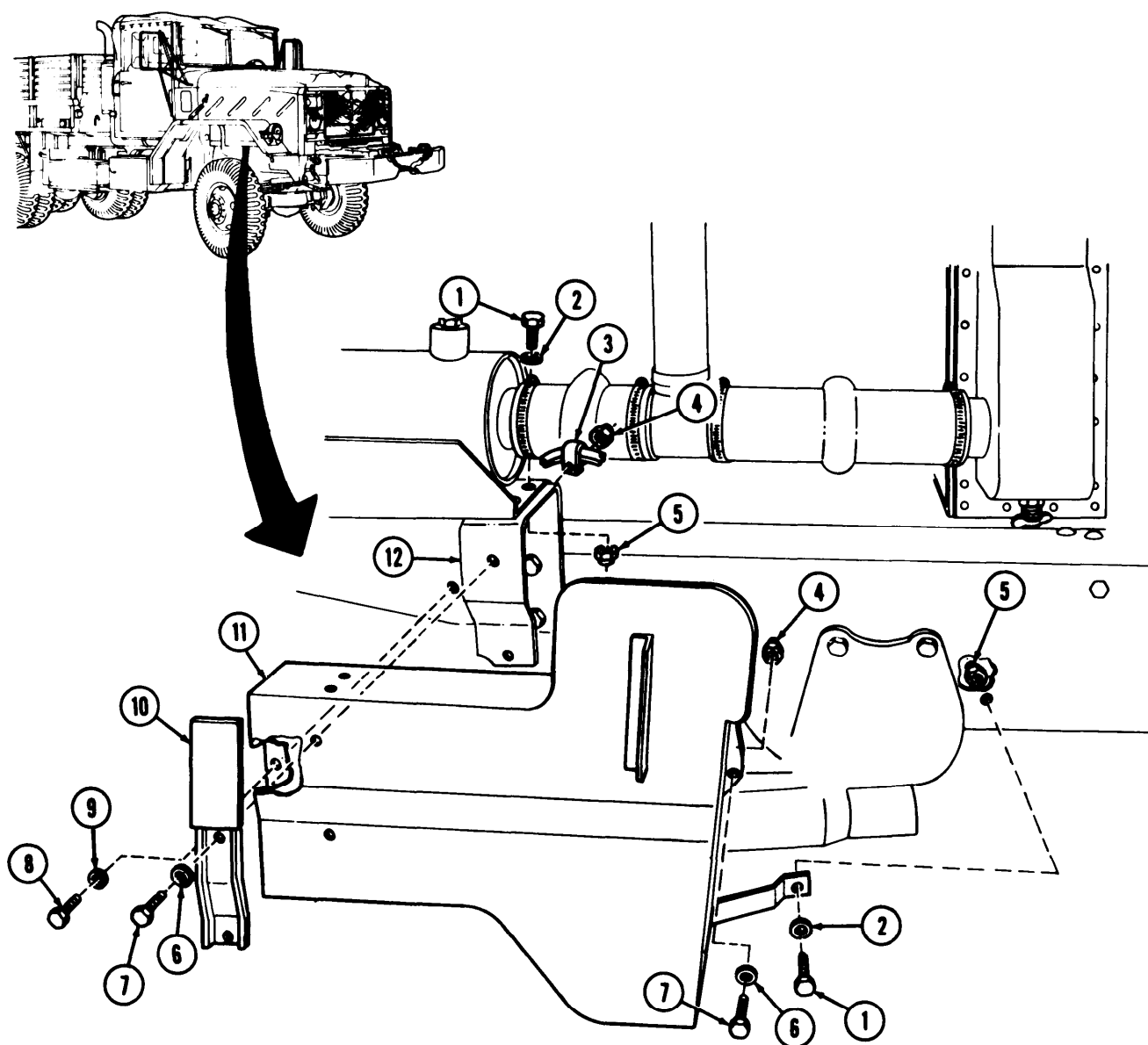
#### b. Installation

- |    |                   |   |
|----|-------------------|---|
| 6. | Stone shield (11) | Install with three screws (1), washers (2), and new locknuts (5). |
| 7. | Cable clamp (3)   | Install with screw (8), washer (9), and new locknut (4).          |



**8-14. STEERING ASSIST CYLINDER STONE SHIELD REPLACEMENT (Cent'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.		New locknut (4), washer (6), and screw (7)	Install.	
9.		Splash shield guide (10)	Install with two screws (7) and washers (6).	



END OF TASK!

FOLLOW-ON **TASK:** Install right splash shield (TM 9-2320-272- 10)..

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8-15. STEERING ASSIST CYLINDER HOSES REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 8-14	Steering cylinder stone shield removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Protective cap-plugs (Appendix D, Item 5)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not start engine when steering hoses are disconnected.
<u>Manual References</u>		
TM 9-2320-2+72-10		
TM 9-2320-272-20P		
LO 9-2320-272-12		

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

a. Removal

**WARNING**

Do not start engine when steering hoses are disconnected. Pressure may whip hoses, causing injury to personnel.

**NOTE**

Have container ready to catch hydraulic oil.

# 8-15 STEERING ASSIST CYLINDER HOSES REPLACEMENT (CONT)

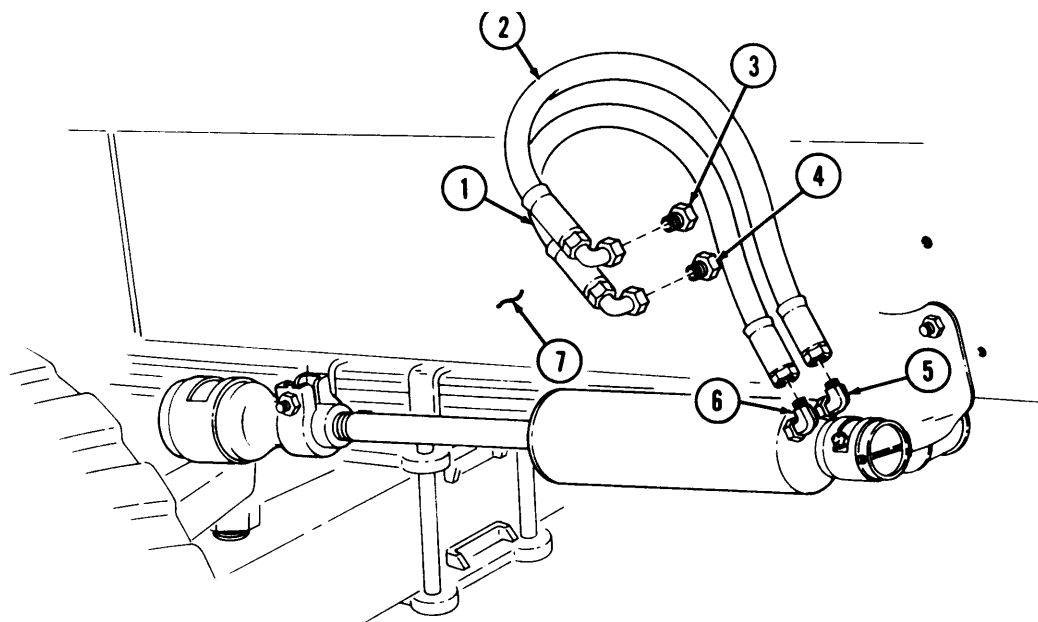
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
1.		Two steering cylinder pressure/return hoses (1) and (2)	a. Disconnect each from steering cylinder adapter elbows (5) and (6). b. Disconnect each from adapter fittings (3) and (4) on right frame rail (7).	Tag for installation. Install plugs.  Tag for installation. Install plugs.

## b. Installation

### NOTE

Do not reuse hydraulic oil.

2.	Two steering cylinder pressure/return hoses (1) and (2)	a. Connect to adapter fittings (3) and (4) on frame rail (7) and tighten. b. Connect to steering cylinder adapter elbows (5) and (6) and tighten.	Remove plugs.  Remove plugs.
----	---	--	------------------------------------



### END OF TASK!

**FOLLOW-ON TASKS:**

- Fill power steering reservoir to proper level (LO 9-2320-272-12).
- Ž Start engine (TM 9-2320-272-10) and check for leaks.
- Ž Install steering cylinder stone shield (para. 8-14).

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## 8-16. STEERING ASSIST CYLINDER REPLACEMENT

This task covers:

- a. Removal
- b. Disassembly
- c. Reassembly

- d. Installation
- e. Travel Adjustment

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 8-14	Parking brake set. Steering cylinder stone shield removed.
<u>Test Equipment</u> None		
<u>Special Tool</u> None		<u>Special Environmental Conditions</u> None
<u>Materials/Parts</u> Three cotter pins Two "O" rings Protective cap-plugs (Appendix D, Item 5)		<u>General Safety Instructions</u> Do not start engine when steering hoses are disconnected.
<u>Personnel Required</u> Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u> TM 9-2320-272-10 LO 9-2320-272-12 TM 9-2320-272-20P		

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

### a. Removal

### WARNING

Do not start engine when steering hoses are disconnected. Pressure may whip hoses, causing injury to personnel.

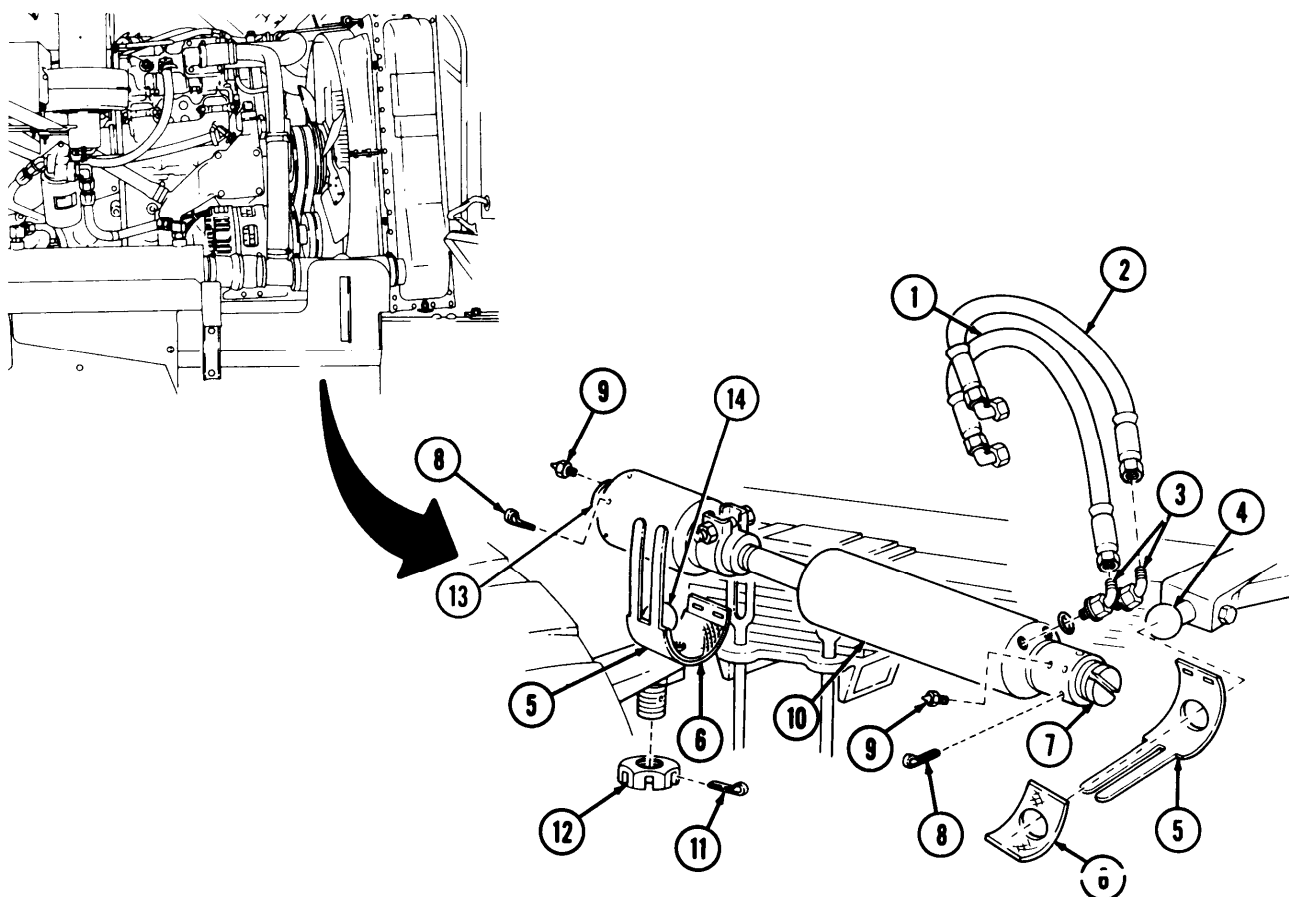
### NOTE

Have container ready to catch hydraulic oil.

- |    |                                     |   |  |                                       |
|----|-------------------------------------|---|--|---------------------------------------|
| 1. | Power steering assist cylinder (10) | Two steering cylinder pressure return hoses (1) and (2) | Disconnect from two elbows (3)   | Tag for installation. Plug oil ports. |
| 2. |                                     | Two grease fittings (9)                                 | Remove.  |                                       |
| 3. |                                     | Adjustable plugs (7) and (14)                           | a. Remove two cotter pins (8).<br>b. Loosen as far as possible without removing.<br>c. Loosen two dust covers (5). | Discard cotter pins (8).              |

# 8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			d. Tap adjustable plugs (7) and (13) to loosen steering assist cylinder (10) from spring shackle ball stud (4) and steering knuckle ball stud (14).	
4.	Ball studs (4) and (14)	Steering assist cylinder (10)	Remove.	
5.		Two dust covers (5) and felt pads (6)	Remove.	
6.	Power steering knuckle ball stud (14)	Cotter pin (11) and nut (12)	<b>Remove.</b>	Discard cotter pin (11).

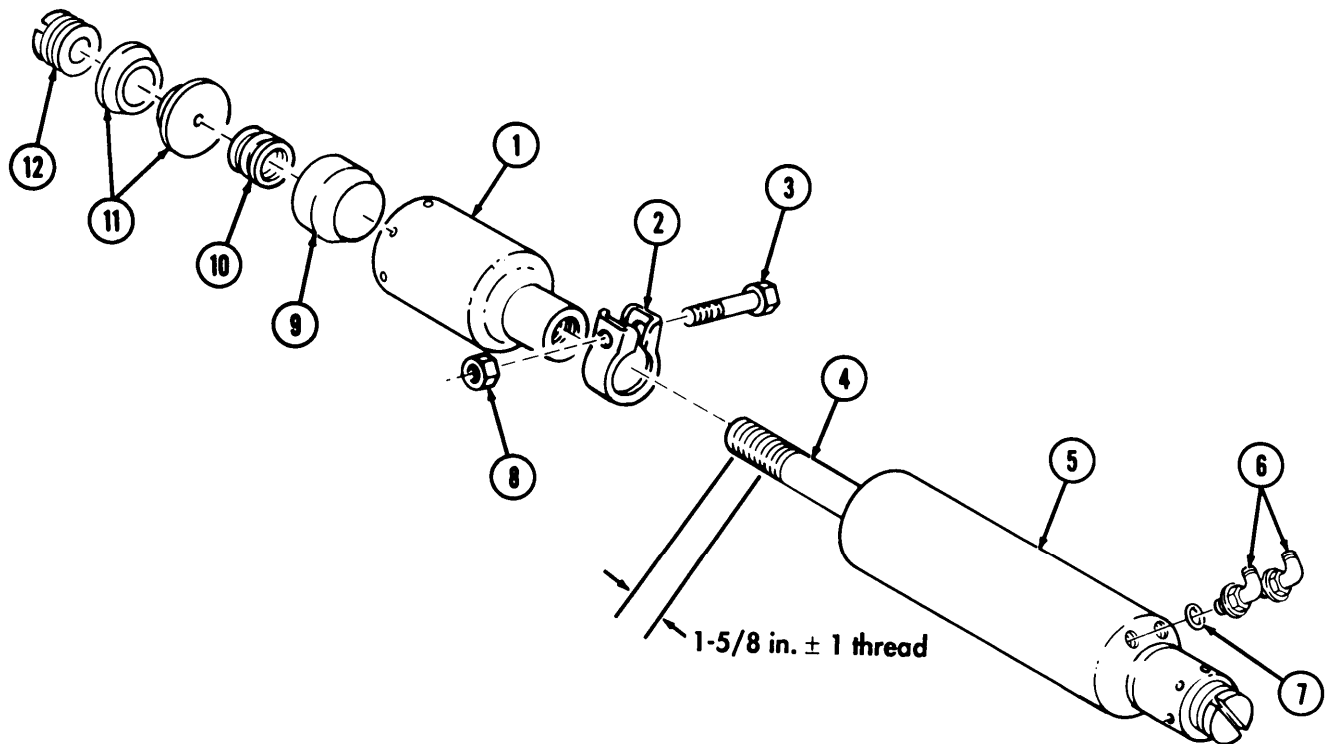


# 8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Disassembly</b>				
<p style="text-align: center;"><b>NOTE</b> Mark direction of adapter elbows (6).</p>				
7.	Steering assist cylinder (5)	Two adapter elbows (6) and "O" rings (7)	Remove.	<b>Discard "O" rings (7).</b>
<p style="text-align: center;"><b>NOTE</b> Mark direction of seat valves (11).</p>				
8.	Socket assembly (1)	Adjustable plug (12), two seat valves (11), spring (10), and ring (9)	Remove.	
<p style="text-align: center;"><b>NOTE</b> Mark socket assembly location on shaft with chalk before removing.</p>				
9.	Shaft (4)	Nut (8), screw (3), clamp (2), and socket assembly (1)	Remove.	
<b>c. Reassembly</b>				
10.	Socket assembly (1)	Nut (8), screw (3), and clamp (2)	Install loosely.	
11.	Shaft (4)	Socket assembly (1)	Install.	Measure shaft (4) thread 1-5/8 in. (41 mm), mark, and install socket assembly (1) on steering assist cylinder (5).
12.	Clamp (2)	Nut (8) and screw (3)	Tighten.	Tighten to 30-40 lb-ft (41-54 NŹm).

# 8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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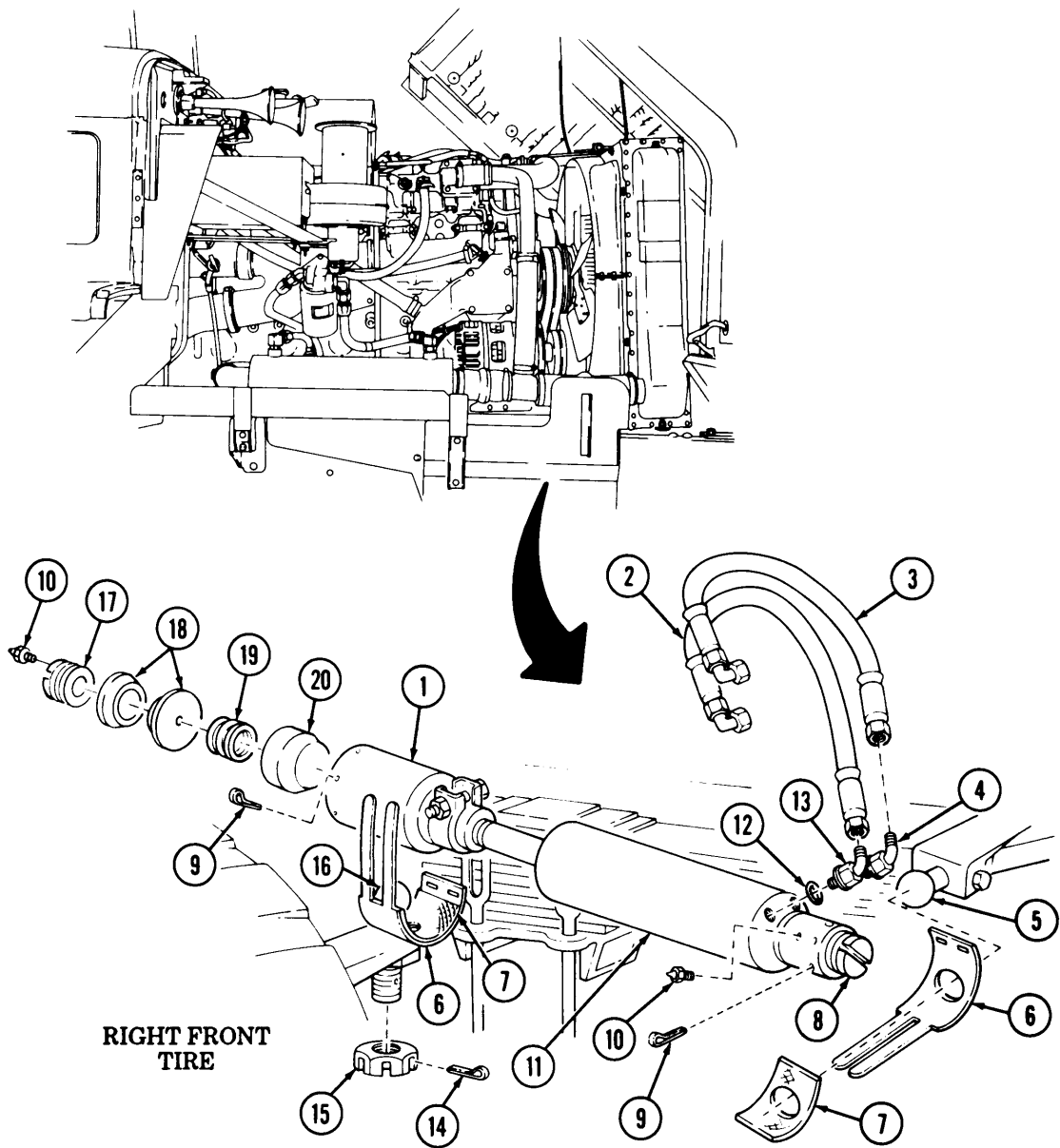
# 8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.	Socket assembly (1)	Ring (20), spring (19), and two seat valves (18)	Install in socket assembly (1).	
14.	Power steering assist cylinder (11) and socket assembly (1)	Two adjustable plugs (17) and (8)	Install loosely	
15.	Steering assist cylinder (11)	Two grease fittings (10)	Install	
16.		Two new "O" rings (12)	Install on adapter elbows (4) and (13).	
17.		Two adapter elbows (4) and (13)	Install.	Tighten jamnuts with elbows aligned to marks on power steering assist cylinder (11).
<b>d. Installation</b>				
18.		Nut (15) and new cotter pin (14)	Install on ball stud (16).	
19.		Two dust covers (6) and felt pads (7)	Install on ball studs (5) and (16).	
20.		Power steering assist cylinder (11) and socket assembly (1)	Position on steering knuckle ball stud (16) and spring shackle ball stud (5).	
21.		Adjustable plugs (8) and (17)	a. Tighten until cylinder (11) does not move on ball studs (5) and (16). b. Loosen one complete turn then continue loosening until slots are aligned with holes in socket assembly (1) and steering assist cylinder (11). c. Install new cotter Pin (9).	
22.		Two pressure return hoses (2) and (3)	Install on elbows (4) and (13).	Remove plugs.
23.		Two dust covers (6)	Fasten around steering assist cylinder (11) and socket assembly (1).	



8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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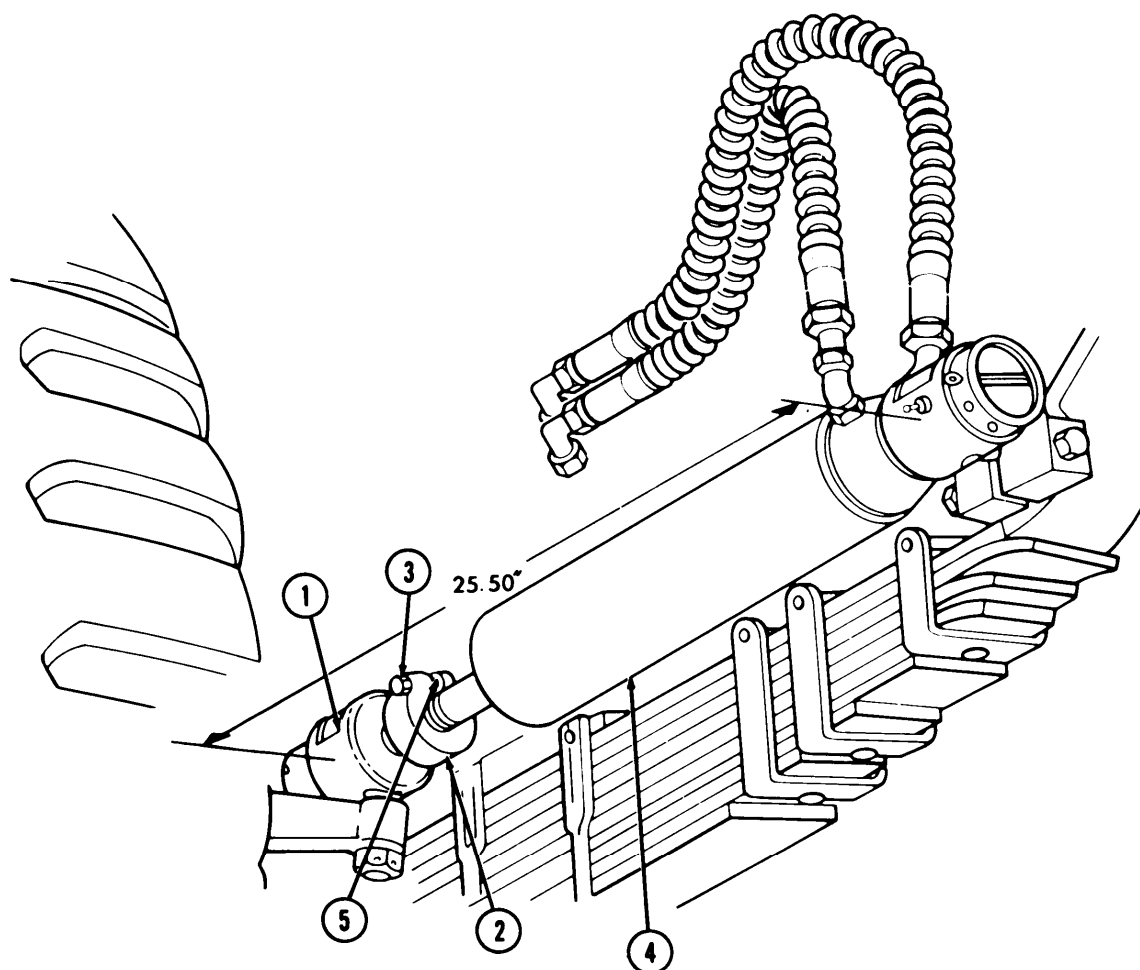


<b>8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>e. Travel Adjustment</b>				
<p style="text-align: center;"><b>NOTE</b></p> <p>To check for proper travel adjustment, measure the distance from center of ball stud to center of ball stud for a distance of <b>25.50</b> in. (64.8 cm) If adjustment is incorrect, the front wheels must be raised prior to performing the following steps.</p>				
24.	Socket assembly (1)	Nut (5), screw (3), and clamp (2)	Loosen.	
25.		Socket assembly (1)	a. Turn counterclockwise to increase steering assist cylinder (4) travel. b. Turn clockwise to decrease steering assist cylinder (4) travel.	
26.	Clamp (2)	Nut (5) and screw (3)	Tighten.	Tighten to 30-40 lb-ft (41-54 N•m).

**8-16. STEERING ASSIST CYLINDER REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASKS:**

- Fill power steering reservoir to proper level (LO 9-2320-272-12).
- Ž Start engine (TM 9-2320-272-10) and check hoses for leaks and for proper steering operation.
- Ž Install steering cylinder stone shield (para. 8-14).

8-17. STEERING PUMP PRESSURE AND RETURN HOSES REPLACEMENT (ROSS)

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 8-18	Steering gear stone shield removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
“O” ring Locknut Protective cap-plugs (Appendix D, Item 5) Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	Do not start engine when steering hoses are disconnected.	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

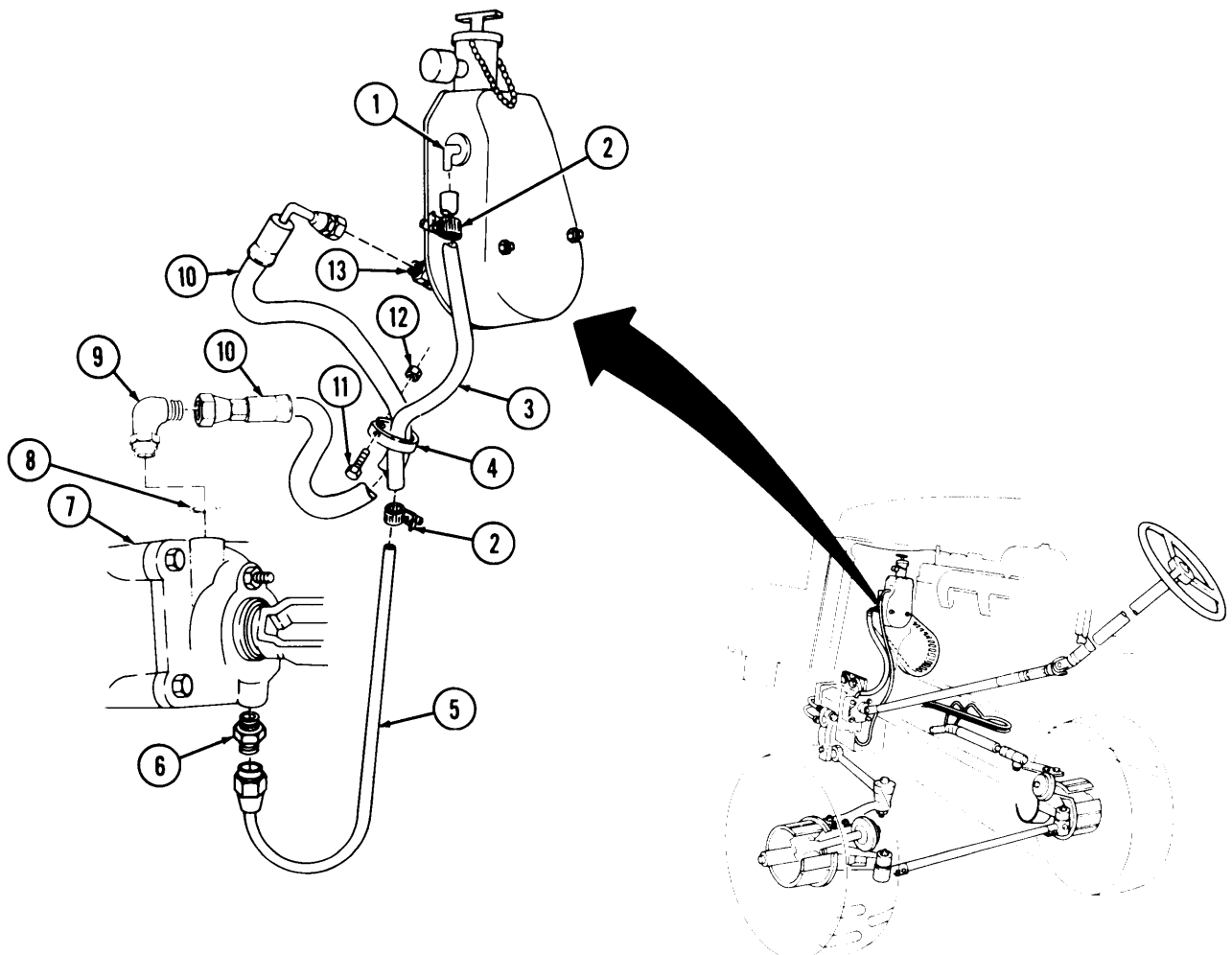
Do not start engine when steering hoses are disconnected. Pressure may whip hoses, causing injury to personnel.

a. Removal

- |    |  |   |         |                       |
|----|--|---|---------|-----------------------|
| 1. | Pump return hose (3) and return tube (5) | Screw ( 11), locknut ( 12), and retaining strap (4) | Remove. | Discard locknut (12). |
| 2. |  | Two hose clamps (2)                                 | Loosen. |                       |
- NOTE**
- Have container ready to catch hydraulic oil.
- |    |                                       |                      |         |  |
|----|---------------------------------------|----------------------|---------|--|
| 3. | Pump nozzle ( 1 ) and return tube (5) | Pump return hose (3) | Remove. |  |
|----|---------------------------------------|----------------------|---------|--|

# 8-17. STEERING PUMP PRESSURE AND RETURN HOSES REPLACEMENT (Ross) (cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Steering gear adapter (6)	Pump return tube (5)	Disconnect.	
5.	Pump adapter (13) and steering gear adapter elbow (9)	Pump pressure hose (10)	Disconnect.	Tag for installation.
6.	Steering gear (7)	Adapter (6)	Remove.	Plug opening.
7.		Elbow (9) and "O" ring (8)	Remove.	Discard "O" ring (8). Plug opening.



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<b>8-17. STEERING PUMP PRESSURE AND RETURN HOSES REPLACEMENT (ROSS) (Cent'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
------------------------

**NOTE**

Do not reuse hydraulic oil.

8.	New "O" ring (8) and elbow ( 10)	Install on steering gear (7) as follows: a. Install new "O" ring (8) on elbow assembly (10). b. Install elbow assembly ( 10) until aligned and jamnut (9) seats. c. Tighten jamnut (9) until new "O" ring (8) is seated.
9.	Adapter (6)	Wrap with sealing tape and install on steering gear (7).
10.	Pump return tube (5)	Install on adapter (6).

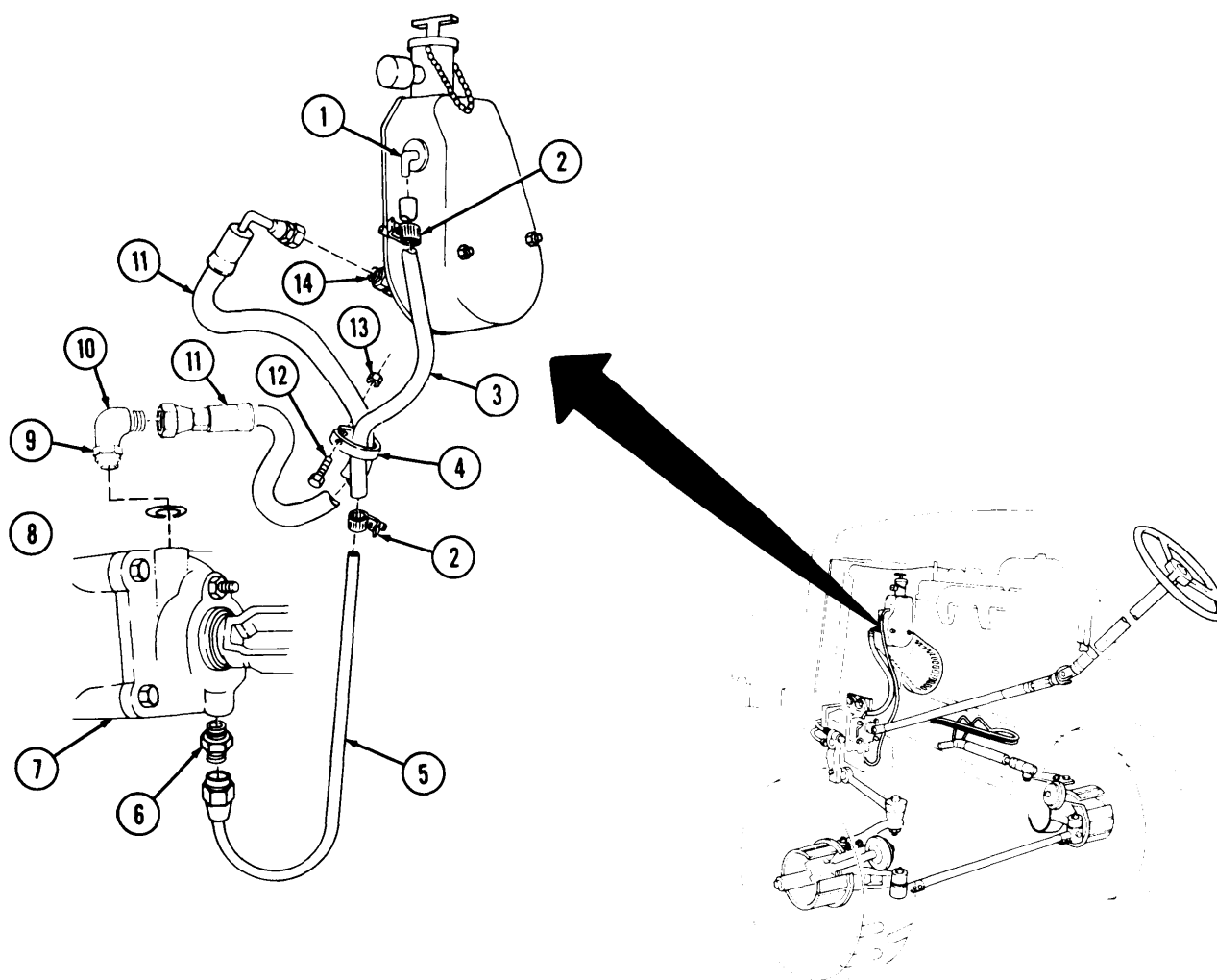
**NOTE**

Do not slide more than 1 in. (25.4 mm) of return hose onto return tube.

11.	Pump return hose (3)	a. Install on pump nozzle ( 1 ) with hose clamp (2). b. Install on return tube (5) with hose clamp (2).
12.	Pump pressure hose (11)	a. Install on pump adapter ( 14). b. Install on steering gear adapter elbow ( 10).
13.	Hose retaining strap (4)	Install on hoses (3) and (11) with screw (12) and new locknut (13).

# 8-17. STEERING PUMP PRESSURE AND RETURN HOSES REPLACEMENT (ROSS) (cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Fill power steering reservoir to proper level (LO 9-2320-272-12).
  - Start engine (TM 9-2320-272-10), check hoses for leaks, and steering for proper operation.
  - Install steering gear stone shield (para. 8-18).

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8-17.1. STEERING PUMP PRESSURE AND RETURN HOSES REPLACEMENT (SHEPPARD)

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 8-18	Parking brake set. Steering gear stone shield removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Sealing 'tape (Appendix D, Item 26) Four O-rings Cap and plug set (Appendix D, Item 5)		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

CAUTION

Cap or plug all openings immediately after disconnecting lines and hoses to prevent contamination. Failure to do so may result in steering system damage.

NOTE

- Have container ready to catch oil from disconnected lines.
- 'Tag all hydraulic lines and hoses for installation.

1.	Adapter elbow (3) and adapter (10)	Oil pressure line (4) and return line (9)	Disconnect.	
2.	Adapter (11) and adapter elbow (13)	Assist cylinder pressure lines (12) and (14)	Disconnect.	
3.	Steering gear housing (6)	Adapter elbow (3) and two adapters (10) and (11)	Remove.	
4.	Elbows (3) and adapters (10) and (11)	Three O-rings (5), (7), and (8)	Remove.	Discard O-rings (5), (7), and (8).
5.	Elbow (16)	Assist cylinder pressure line (15)	Disconnect.	



# 8-17.1. STEERING PUMP PRESSURE AND RETURN HOSES REPLACEMENT (SHEPPARD] (Cent'd)

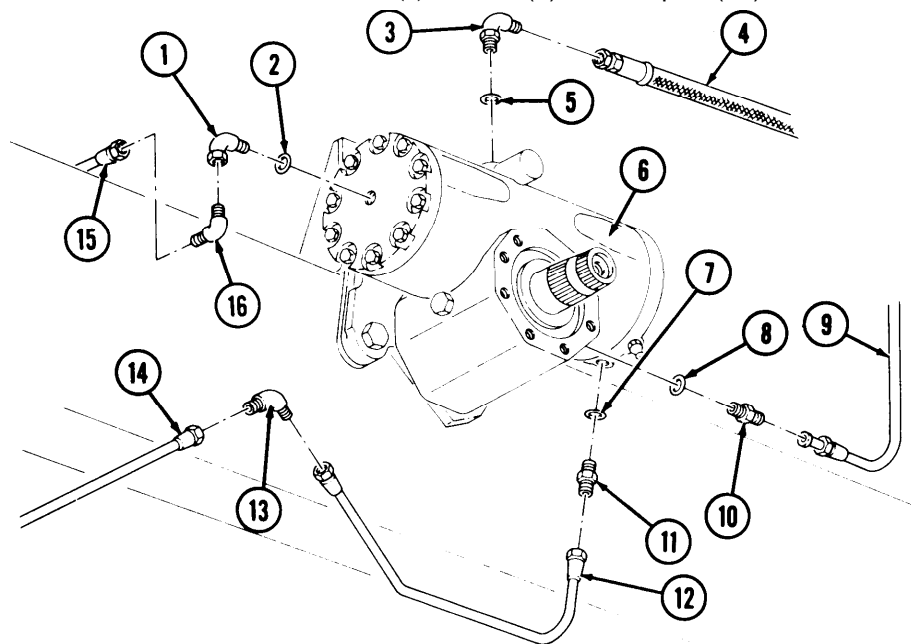
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Elbow (1)	Elbow (16)	Remove.	
7.	Steering gear housing (6)	Elbow (1) and O-ring (2)	Remove.	Discard O-ring (2).

## b. Installation

### NOTE

Wrap all male pipe threads with sealing tape before installation.

- |     |  |  |
|-----|--|--|
| 8.  | Steering gear housing (6)                    | Install new O-ring (2) and elbow (1).            |
| 9.  | Elbow (16)                                   | Install on elbow (1).                            |
| 10. | Assist cylinder pressure line (15)           | Install on elbow (16).                           |
| 11. | Three new O-rings (5), (7), and (8)          | Install on elbow (3) and adapters (10) and (11). |
| 12. | Two adapters (10) and (11)                   | Install on steering gear housing (6).            |
| 13. | Assist cylinder pressure lines (12) and (14) | Install on adapter (11) and adapter elbow (13).  |
| 14. | Adapter elbow (3)                            | Install in steering gear housing (6).            |
| 15. | Oil pressure line (4) and return line (9)    | Install on adapter elbow (3) and adapter (10).   |



END OF TASK!

- FOLLOW-ON TASKS:**
- Install steering gear stone shield (para. 8-18).
  - Check oil level (TM 9-2320-272-10).
  - Check for leaks (TM 9-2320-272-10).

8-18. STEERING GEAR STONE SHIELD REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Left splash shield removed.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		General Safety Instructions
Two locknuts		None
Lockwasher		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B		
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

- |   |  |         |   |
|---|--|---------|---|
| 1. Stone shield (8)                     | Two locknuts (4), three screws (7), washer (5), and lockwasher (1) | Remove. | Discard locknuts (4) and lockwasher ( 1). |
| 2. Splash shield (3) and frame rail (6) | Stone shield (8)   | Remove. |   |

b. Installation

- |    |                  |  |
|----|------------------|--|
| 3. | Stone shield (8) | a. Aline with holes in frame rail (6) and splash shield bracket (2). |
|----|------------------|--|

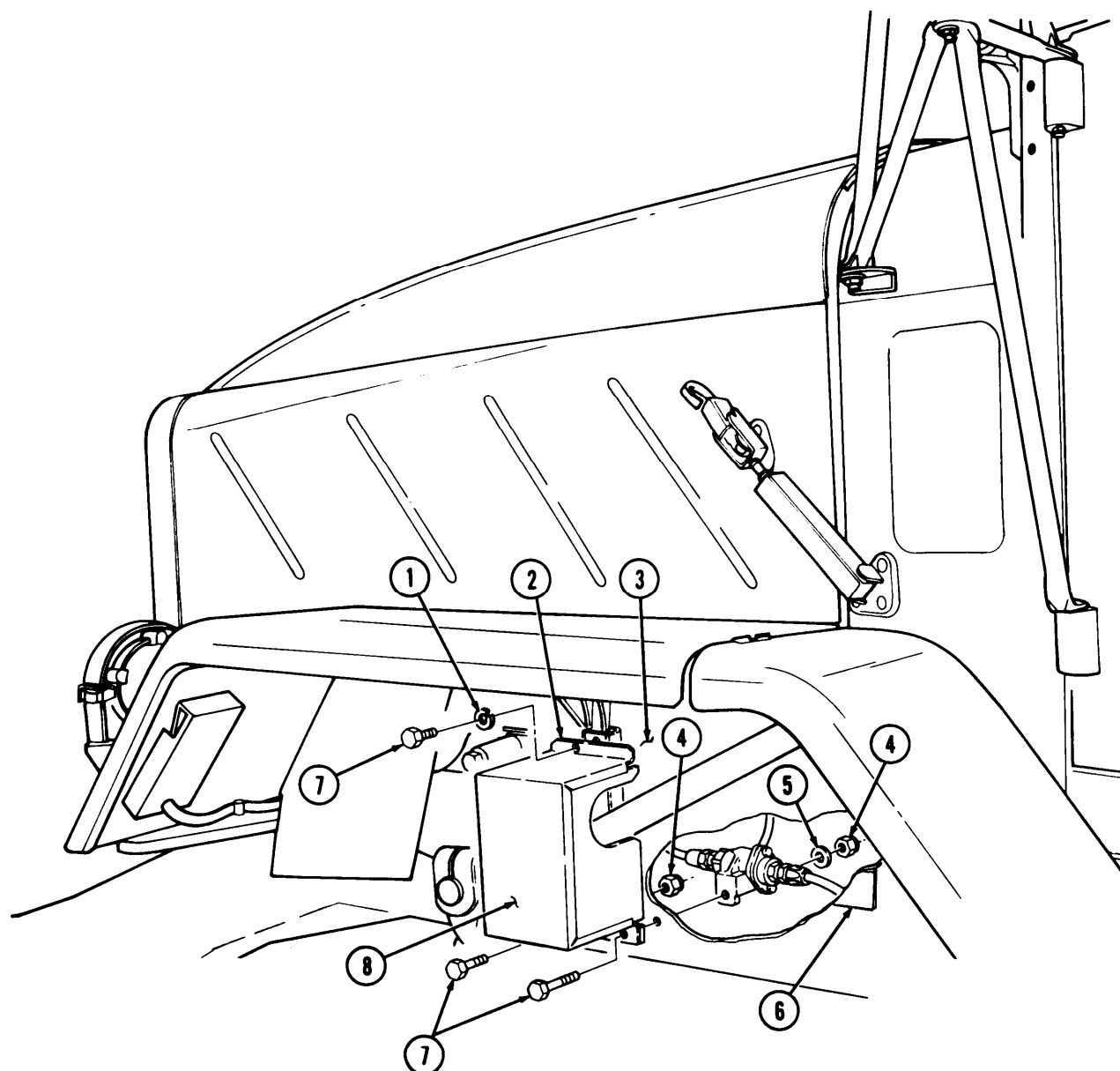
NOTE

Long screw also secures air check valve mounted on inside of frame rail.

- b. Install with three screws (7), washer (5), new lockwasher (1), and two new locknuts (4).

# 8-18. STEERING GEAR STONE SHIELD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install left splash shield (TM 9-2320-272-10).

## 8-19. STEERING GEAR TO ASSIST CYLINDER PRESSURE LINES REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Splash shields removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Two "O" rings Two locknuts Protective cap-plugs (Appendix D, Item 5) Tiedown strap (Appendix D, Item 19) Sealing tape (Appendix D, Item 26)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10 LO 9-2320-272-12 TM 9-2320-272-20P		

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

- |    |                  |   |         |                         |
|----|------------------|---|---------|-------------------------|
| 1. | Crossmember (14) | Two locknuts (15), screws (4), and spacers (5), and four clamps (6) | Remove. | Discard locknuts ( 15). |
|----|------------------|---|---------|-------------------------|

#### NOTE

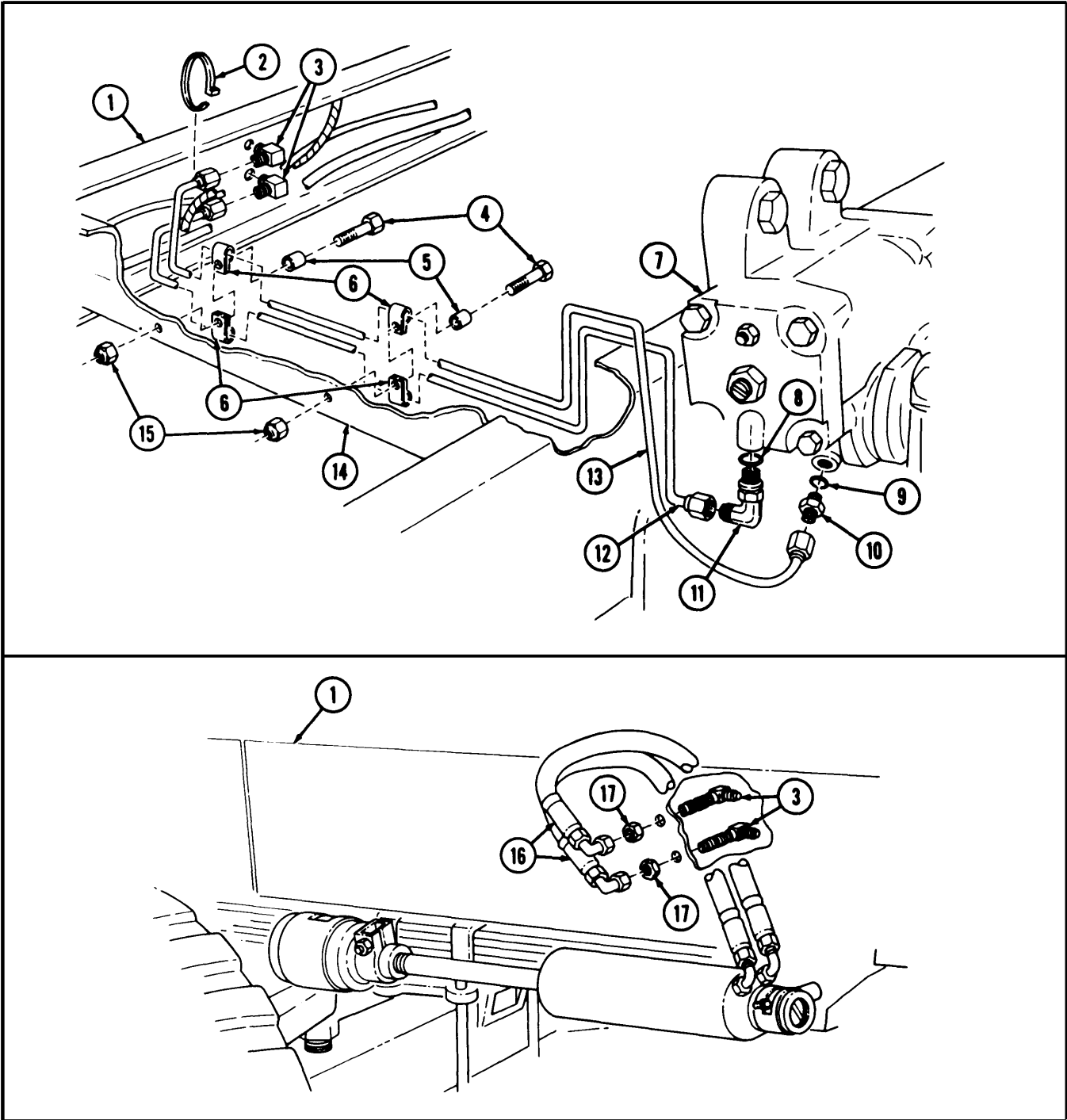
Have drainage container ready to catch hydraulic oil.

- |    |                              |                               |             |   |
|----|------------------------------|-------------------------------|-------------|---|
| 2. | Elbow (11) and adapter ( 10) | Pressure lines (12) and (13)  | Disconnect. |   |
| 3. | Steering gear (7)            | Adapter (10) and "O" ring (9) | Remove.     | Discard "O" ring (9).<br>Plug opening in steering gear (7). |
| 4. |                              | Elbow (11 ) and "O" ring (8)  | Remove.     | Discard "O" ring (8).<br>Plug opening in steering gear (7). |
| 5. | Pressure lines (12) and (13) | Tiedown strap (2)             | Remove.     | Discard tiedown strap (2).                                  |
| 6. | Two elbows (3)               | Pressure lines (12) and (13)  | Disconnect. | Tag for installation.                                       |
| 7. |                              | Two hoses ( 16)               | Disconnect. | Tag for installation,                                       |

8-19. STEERING GEAR TO ASSIST CYLINDER PRESSURE LINES  
REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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8.	Frame rail (1)	Two nuts (17) and elbows (3)	Remove.	
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8-19. STEERING GEAR TO ASSIST CYLINDER PRESSURE LINES  
REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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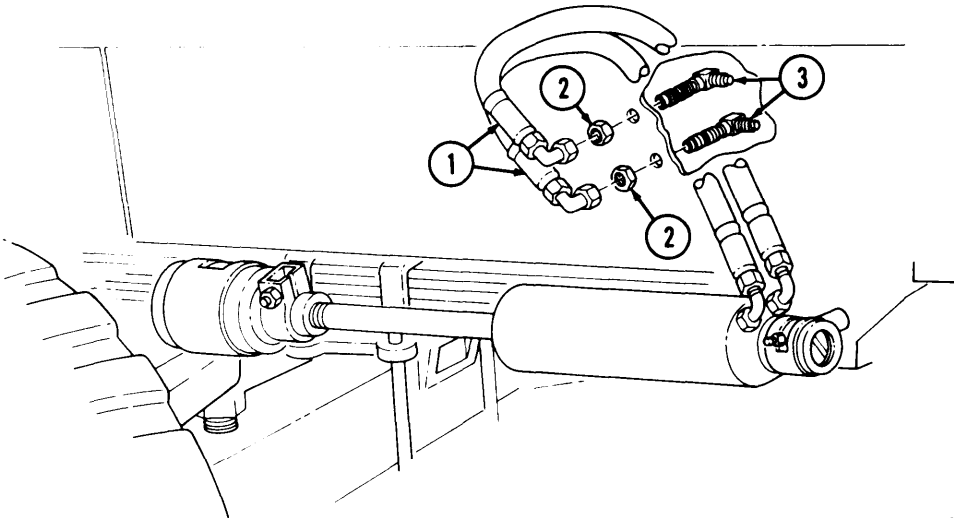
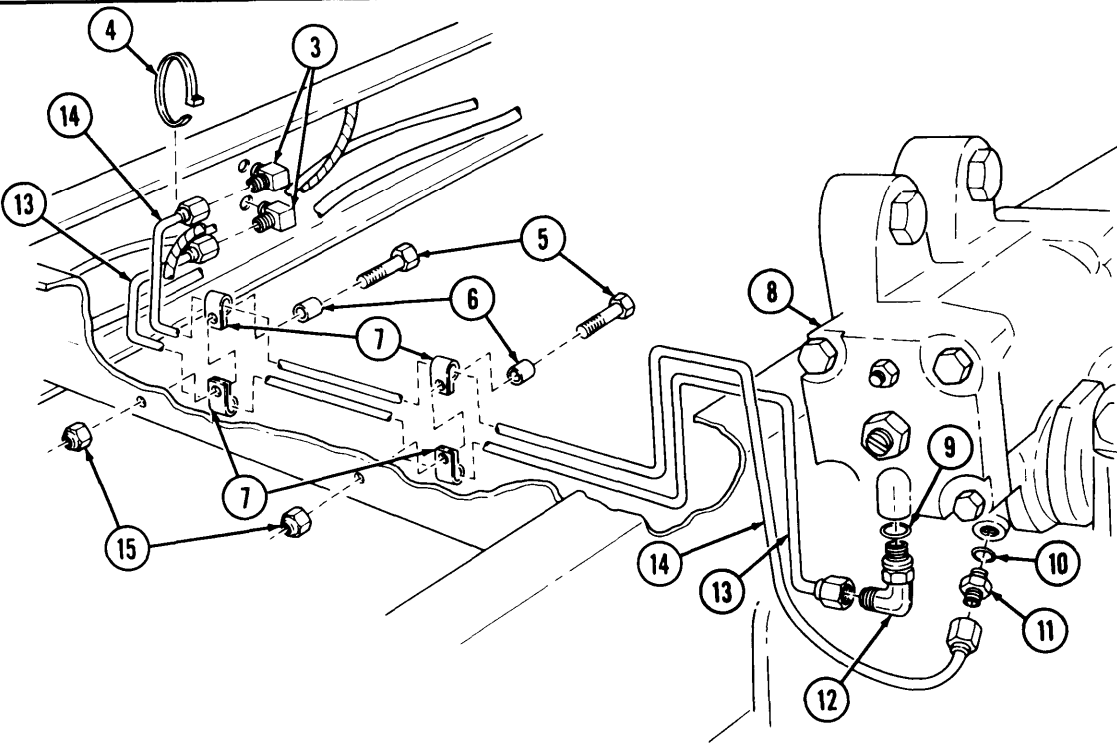
b. Installation

NOTE

- Fittings must be cleaned and inspected for cracks or stripped threads.
- Male pipe threads must be **wrapped with sealing tape before** installation.
- Do not reuse hydraulic oil.

9.		Two elbows (3)	Install with two nuts (2).	
10.		Two hoses (1)	Connect to elbows (3).	
11.		Pressure lines (13) and (14)	Connect to elbows (3).	
12.		Elbow (12) and new "O" ring (9)	Install to steering gear (8).	Remove plugs
13.		Adapter (11 ) and new "O" ring (10)	Install to steering gear (8).	Remove plugs.
14.		Pressure lines (13) and (14)	Connect.	
15.		New tiedown strap (4)	Install to pressure lines (13) and (14).	
16.		Four clamps (7), two screws (5), spacers (6), and new locknuts (15)	Install.	

# 8-19. STEERING GEAR TO ASSIST CYLINDER PRESSURE LINES REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

END OF TASK!

**FOLLOW-ON TASKS:**

- Fill power steering reservoir to proper level (LO 9-2320-272-12).
- Start engine (TM 9-2320-272-10) and check for oil leakage.
- Install splash shields (TM 9-2320-272-10).

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Change 3

8-61 (8-62 Blank)





## CHAPTER 9

### FRAME BRACKETS, HOOD, AND CAB MAINTENANCE

#### Section 1. FRAME BRACKETS

##### **9-1. GENERAL**

This section provides maintenance procedures assigned to the organizational level for frame brackets. find a specific maintenance procedure, see the task summary below:

##### **9-2. FRAME BRACKETS MAINTENANCE TASK SUMMARY**

PARA. NO.	TITLE	PAGE NO.
9-3.	Front and Rear Lifting Shackle and Bracket Replacement	9-2
9-4.	Pintle Hook Maintenance	9-4
9-5.	Front Bumper and Plates Replacement	9-8
9-6.	Hood Retaining Bracket Replacement	9-10
9-7.	Winch Frame Extension Replacement	9-12
9-7.1	Bumperette Replacement	9-15.1

**9-3. FRONT AND REAR LIFTING SHACKLE AND BRACKET REPLACEMENT**

This task covers:

a. Removal

b. Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Six locknuts		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63R	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |                     |   |         |
|----|---------------------|---|---------|
| 1. | Shackle pin (2)     | Retaining clip (11 ), S-hook (12), chain (13), and S-hook (1) | Remove, |
| 2. | Shackle (3)         | Shackle pin (2)   | Remove. |
| 3. | Shackle bracket (6) | Shackle (3)   | Remove. |

**NOTE**

Step 4 is performed on front shackle brackets.

- |    |                                    |  |         |                               |
|----|------------------------------------|--|---------|-------------------------------|
| 4. | Shackle bracket (6) to frame ( 10) | Two screws (4), screw (5), two locknuts (9), locknut (8), and washer (7) | Remove, | Discard locknuts (9) and (8). |
|----|------------------------------------|--|---------|-------------------------------|

**NOTE**

Step 5 is performed on rear shackle brackets.

- |    |                                   |                                      |         |                        |
|----|-----------------------------------|--------------------------------------|---------|------------------------|
| 5. | Shackle bracket (6) to frame (10) | Three screws (15) and locknuts ( 14) | Remove. | Discard locknuts (14). |
| 6. | Frame (10)                        | Shackle bracket (6)                  | Remove. |                        |

9-3, FRONT AND REAR LIFTING SHACKLE AND BRACKET REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

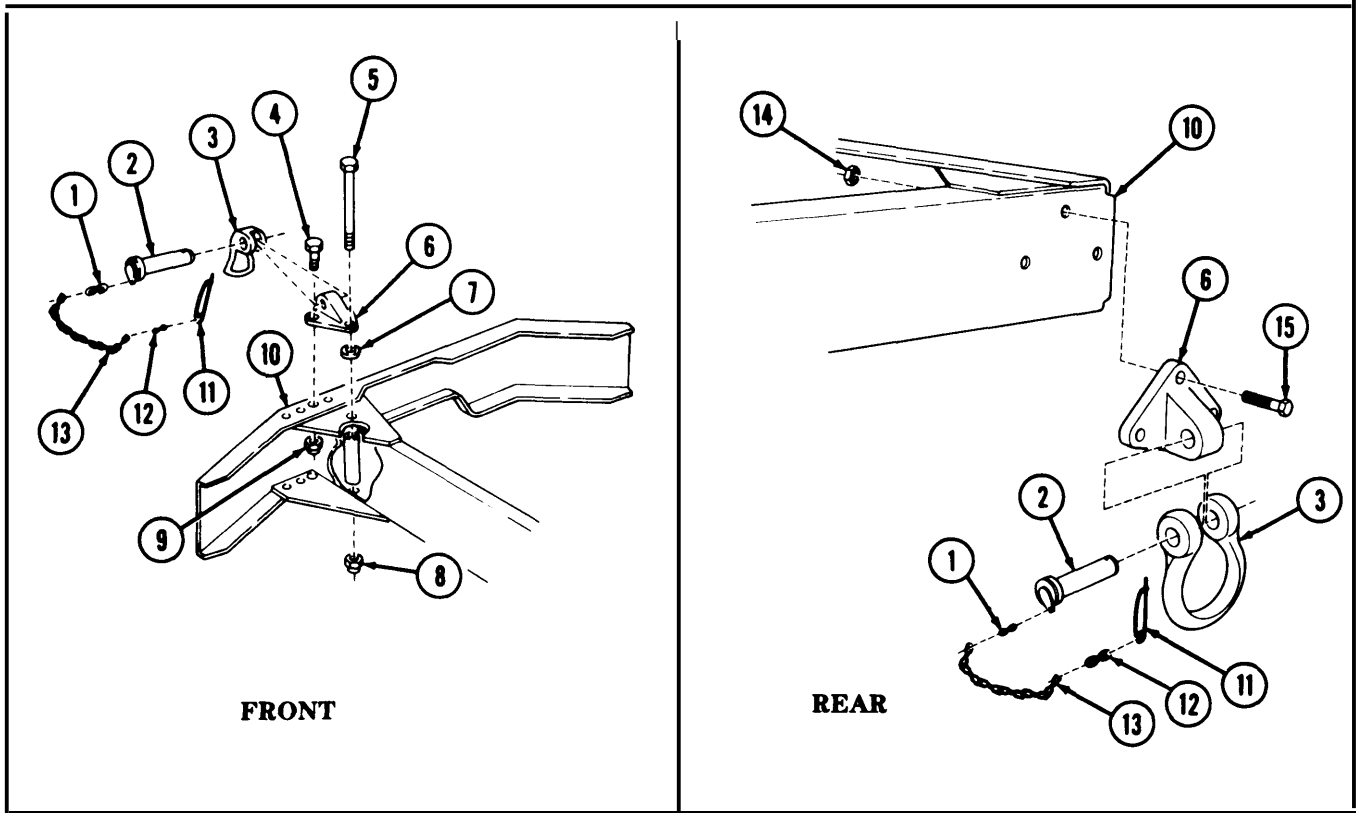
Step 7 is performed on front shackle bracket.

- |    |                                    |  |
|----|------------------------------------|--|
| 7. | Washer (7) and shackle bracket (6) | Install on frame (10) with two screws (4), screw (5), two new locknuts (9), and new locknut (8). |
|----|------------------------------------|--|

NOTE

Step 8 is performed on rear shackle brackets.

- |     |   |   |
|-----|---|---|
| 8.  | Shackle bracket (6)   | Install on frame (10) with three screws (15) and new locknuts (14). |
| 9.  | Shackle (3)   | Install on shackle bracket (6) with shackle pin (2),                |
| 10. | Retaining clip (11 ), S-hook (12), chain (13), and S-hook (1) | Install to shackle pin (2).   |



END OF TASK!

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## 9-4. PINTLE HOOK MAINTENANCE

This task covers:

- |                            |                 |
|----------------------------|-----------------|
| a. Removal                 | d. Reassembly   |
| b. Disassembly             | e. Installation |
| c. Cleaning and Inspection |                 |

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Referent.</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three cotter pins		
GAA grease (Appendix D, Item 13)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Keep fire extinguisher nearby when using drycleaning solvent.
<u>Manual References</u>		
TM 9-2320-272-10		
LO 9-2320-272-12		
TM 9-2320-272-20P		

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

- |    |   |                                |         |                         |
|----|---|--------------------------------|---------|-------------------------|
| 1. | Slotted nut (3)                         | Cotter pin (2)                 | Remove. | Discard cotter pin (2). |
| 2. | Pintle hook (1) to mounting bracket (5) | Slotted nut (3) and washer (4) | Remove. |                         |
| 3. |   | Pintle hook(1)                 | Remove. |                         |

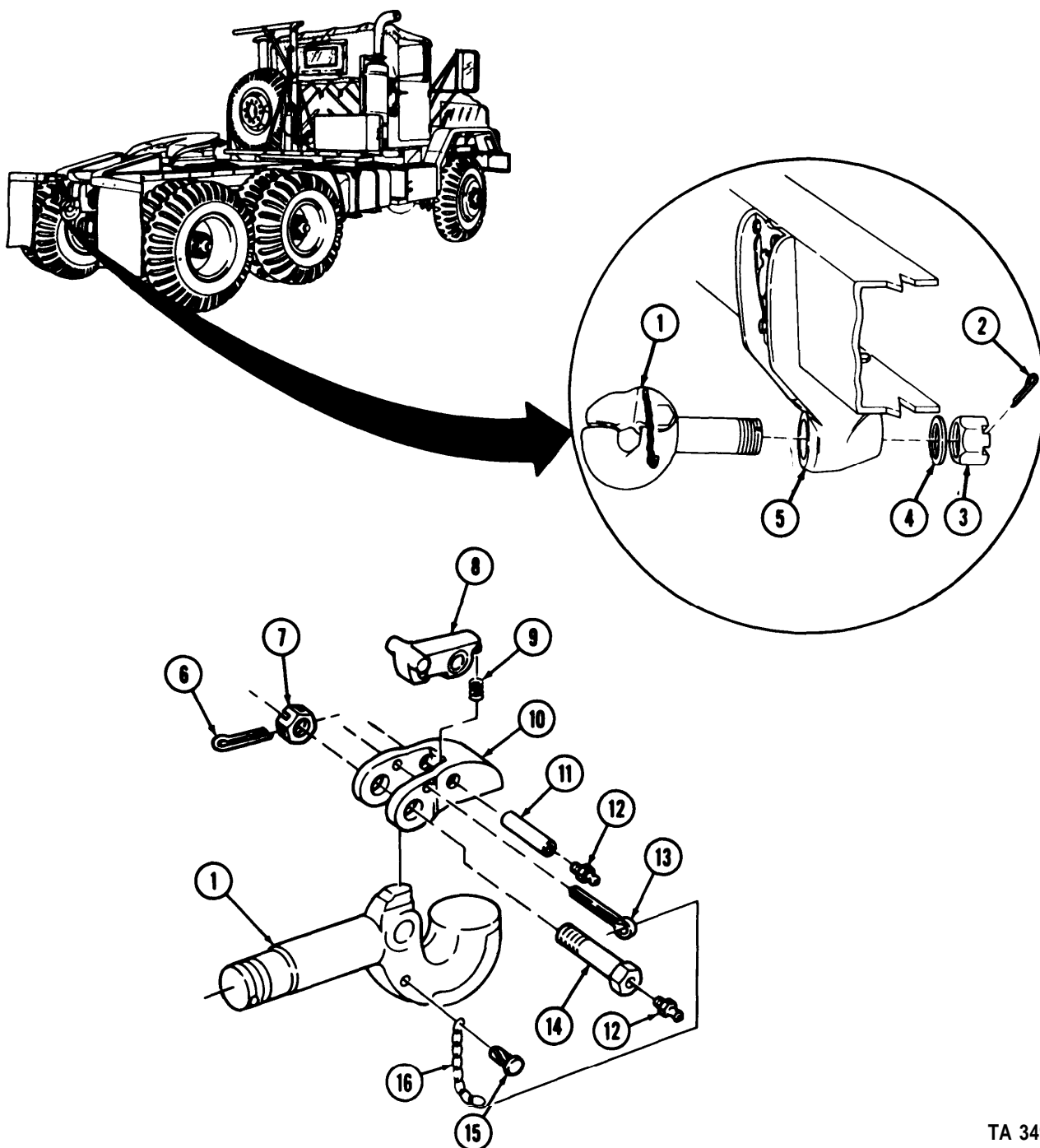
### b. Disassembly

- |    |   |   |         |                          |
|----|---|---|---------|--------------------------|
| 4. | Pintle hook screw (14) and pintle hook latch shaft (11) | Two grease fittings (12)  | Remove. |                          |
| 5. | Pintle hook(1)  | Drive pin (15), chain (16) and cotter pin (13)                                    | Remove. | Discard cotter pin (13). |
| 6. |   | Cotter pin (6) slotted nut (7), pintle hook screw (14) and pintle hook latch (10) | Remove. | Discard cotter pin (6).  |

## 9-4. PINTLE HOOK MAINTENANCE (Cent'd)

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

- |    |                         |  |         |  |
|----|-------------------------|--|---------|--|
| 7. | Pintle hook latch ( 10) | Pintle hook latch shaft (11), pintle hook latch lock (8), and spring (9) | Remove. |  |
|----|-------------------------|--|---------|--|



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9-4. PINTLE HOOK MAINTENANCE (Cont'd)

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

c. Cleaning and Inspection

WARNING

Drycleaning solvent is flammable and will not be used near open flame. Use only in well-ventilated places. Failure to do this may result in injury to personnel.

8.		Pintle hook (12), pintle hook latch (5), pintle hook lock (3), pintle hook latch shaft (6), and pintle hook screw (9)	a. Clean with dry-cleaning solvent.  b. Inspect for bends, cracks, and breaks.	Replace pintle hook (12), pintle hook latch (5), pintle hook lock (3), pintle hook latch shaft (6), or pintle hook screw (9) if cracked, broken, or bent.
----	--	---	--	---

d. Reassembly

9.		Spring (4) and pintle hook latch lock (3)	Install on pintle hook latch (5) with pintle hook latch shaft (6).	
10.		Pintle hook latch (5)	Install on pintle hook (12) with pintle hook screw (9), slotted nut (2) and new cotter pin (1).	
11.		Drive pin (10), chain (11), and new cotter pin (8).	Install on pintle hook (12).	
12.		Two grease fittings (7)	Install on pintle hook screw (9) and pintle hook latch shaft (6).	

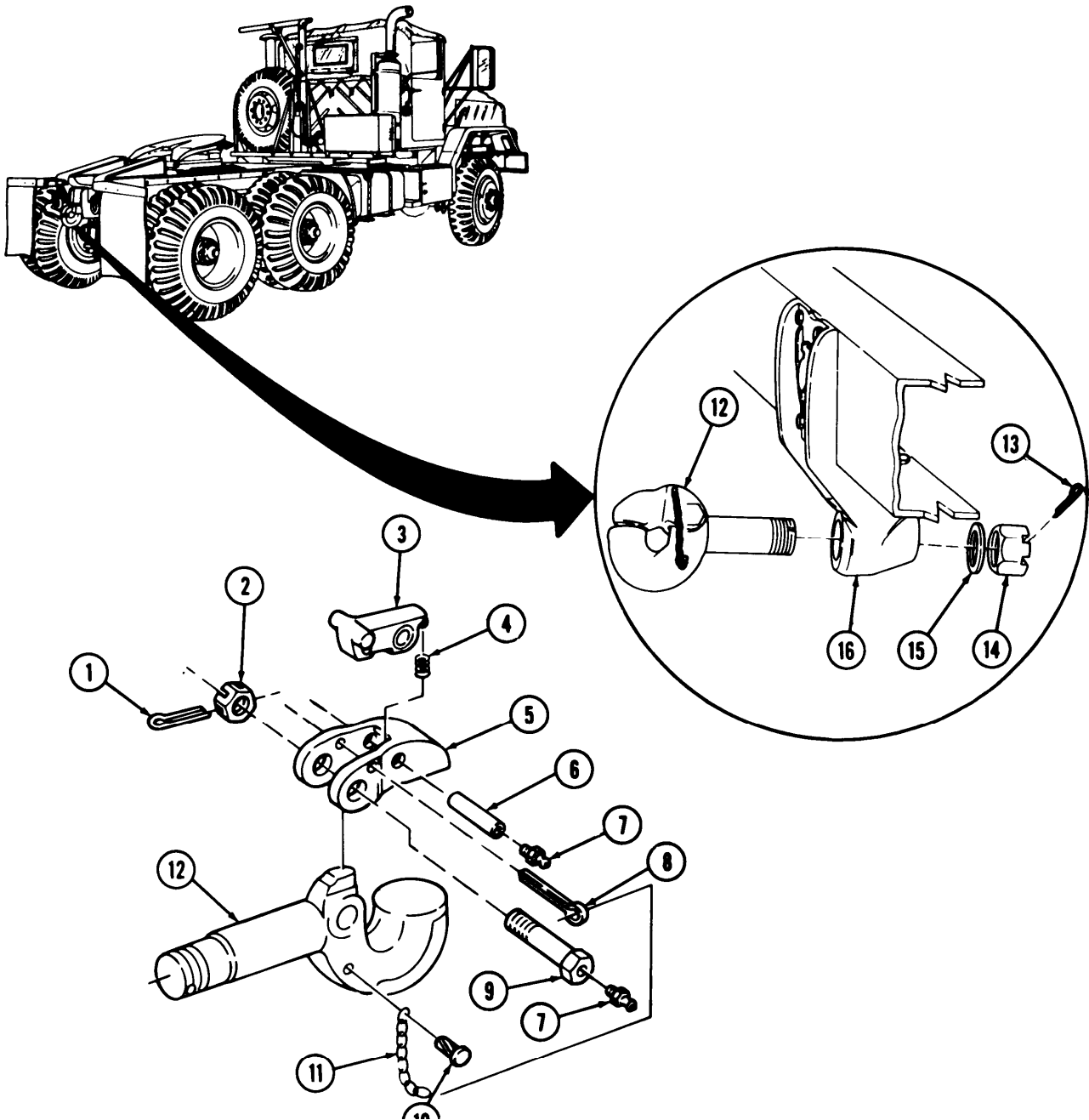
e. Installation

13.		Pintle hook (12)	Install on mounting bracket (16) with washer (15) and slotted nut (14),	Tighten nut (14) until clearance between washer (15) and mounting bracket (16) is .010 ± .007 in, (.25 ± .18 mm),
-----	--	------------------	---	---

# 9-4. PINTLE HOOK MAINTENANCE (Cont'd)

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

- |     |                     |   |
|-----|---------------------|---|
| 14. | New cotter pin (13) | Install through pintle hook (12) and nut (14) and bend end. |
|-----|---------------------|---|



END OF TASK!

**FOLLOW-ON TASK:** Lubricate pintle hook (LO 9-2320-272-12).

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## 9-5. FRONT BUMPER AND PLATES REPLACEMENT

This task covers:

- a. Removal

## INITIAL SETUP:

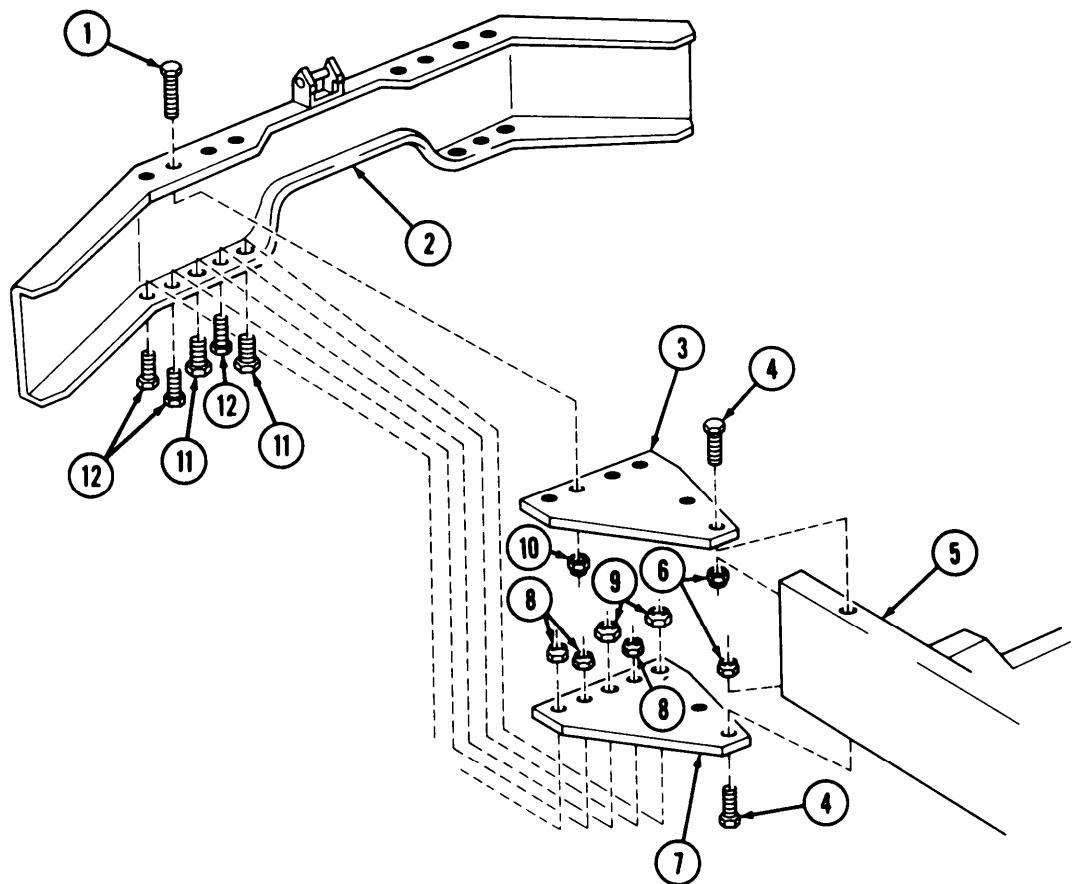
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 9-3 Para. 9-6	Front lifting shackle brackets removed. Hood retaining bracket removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Eleven locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Front bumper (2) to lower plate (7)	Five locknuts (8) and (9), and screws (11) and (12)	Remove from each end of bumper (2).	Discard locknuts (8) and (9).
2.	Front bumper (2) to upper plate (3)	Two locknuts (10) and screws (1)	Remove from each end of bumper (2).	Discard locknuts (10).
3.		Front bumper (2)	Remove from upper and lower plates (3) and (7).	
4.	Frame rail (5)	Four screws (4), and locknuts (6), front bumper upper plates (3) and front bumper lower plates (7)	Remove.	Discard locknuts (6).
<b>b. Installation</b>				
5.		Front bumper upper plates (3) and lower plates (7)	Install on frame rail (5) with four screws (4) and new locknuts (6).	



9-5. FRONT BUMPER AND PLATES REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
6.	Front bumper (2)	<p>a. Aline to holes in upper plates (3) and lower plates (7).</p> <p>b. Install to outer two holes in each upper plate (3) with two screws (1) and new locknuts (10).</p> <p>c. Install to lower plates (7) with five screws (11 ) and (12) and new lock-nuts (8) and (9).</p>	



END OF TASK!

**FOLLOW-ON TASKS:** • Install front lifting shackle brackets (para. 9-3).  
 Ž Install hood retaining bracket (para. 9-6).

TA 349194

## 9-6. HOOD RETAINING BRACKET REPLACEMENT

This task covers:

a. Removal

b. Installation

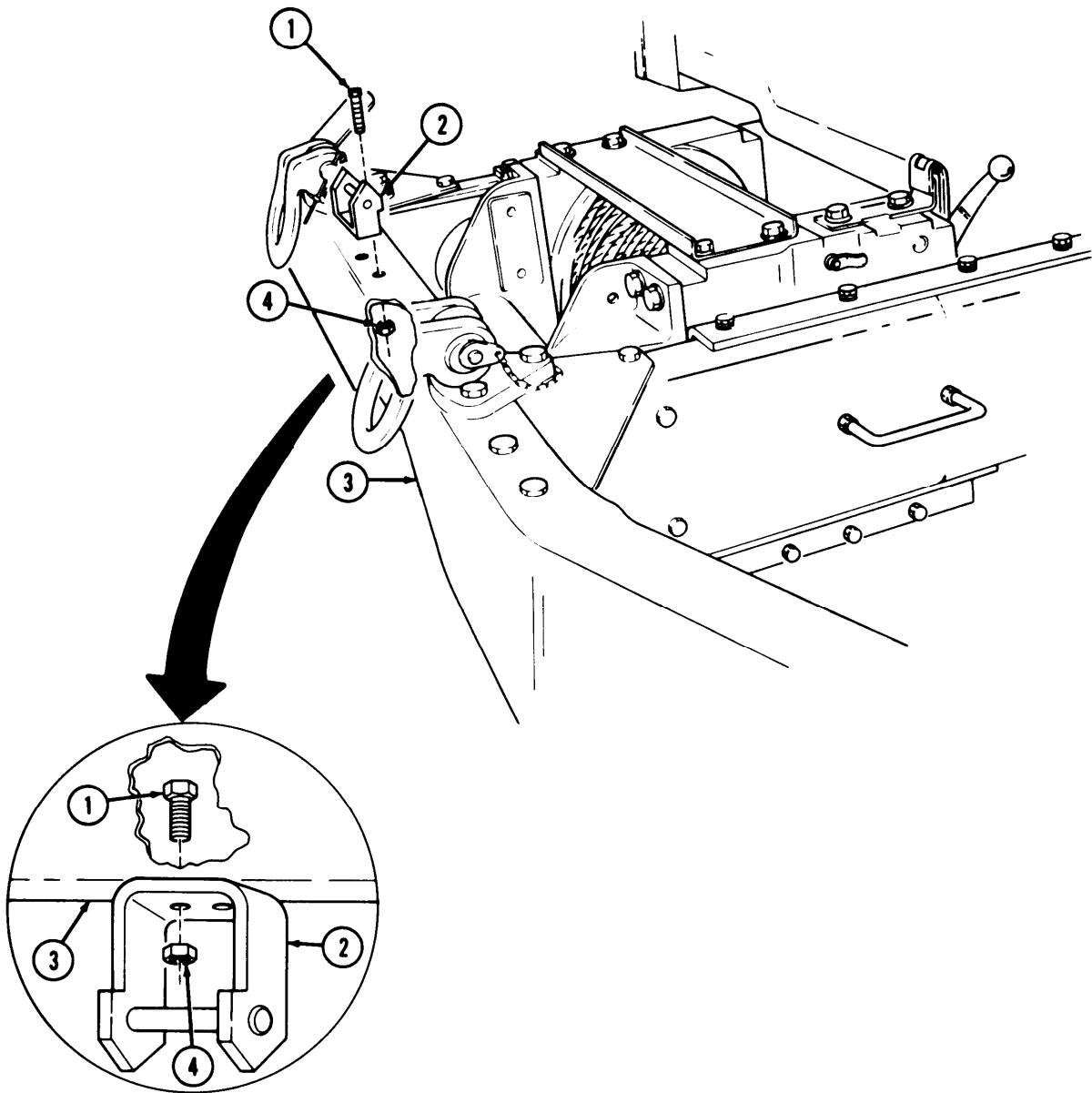
### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
a. Removal				
1.	Hood latch retaining bracket (2) to front bumper (3)	Two screws (1) and locknuts (4), and retaining bracket (2)	Remove.	Discard locknuts (4).
b. Installation				
2.		Hood latch retaining bracket (2)	Position to holes in center of front bumper (3) and install with two screws (1) and new locknuts (4).	

9-6. HOOD RETAINING BRACKET REPLACEMENT (Cent'd)

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



W/O FRONT WINCH

END OF TASK!

FOLLOW-ON TASK: Check bracket placement with hood retaining latch.

TA 349195

## 9-7. WINCH FRAME EXTENSION REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M925, M926, M928 M930, M932, M936	Para. 9-17 Para. 10-9	Hood removed. Front winch removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Six lockwashers Twenty-eight locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

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

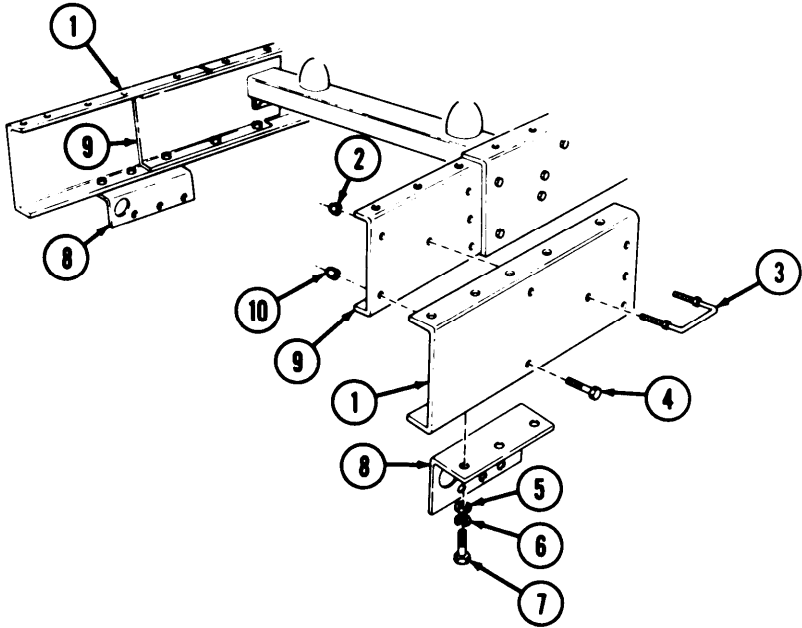
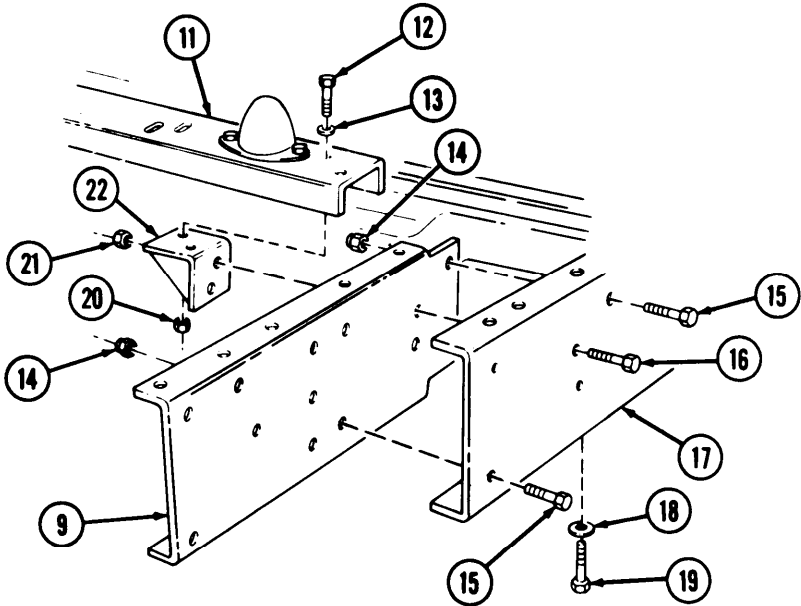
### NOTE

The left and right front winch frame extensions are removed and installed the same way.

### a. REMOVAL

1.	Winch frame <b>extension</b> (1)	Three screws (7), lockwashers (6), and washers (5), and bracket (8)	Remove.	Discard lockwashers (6).
2.		Four screws (4) and locknuts (10)	Remove.	Discard locknuts (10).
3.		Two locknuts (2) and U-bolt (3)	Remove.	Discard locknuts (2).
4.	Channel reinforcement (9)	Winch frame extension (1)	Remove,	
5.	Crossmember end support (22) to cross-member (11)	Two locknuts (20) washers (13) and screws (12)	Remove.	Discard locknuts (20).
6.	Channel reinforcement (9)	Two locknuts (21) and screws (16), and cross-member end support (22)	Remove.	Discard locknuts (21).

# 9-7. WINCH FRAME EXTENSION REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
7. Frame rail (17)	Four locknuts (14) and Remove. screws (15), screw (19), washer (18) and channel reinforcement (9)		Discard locknuts (14).
			
			

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## 9-7. WINCH FRAME EXTENSION REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
8.		Channel reinforcement (10)	Install on frame rail (7) with four screws (5) and new locknuts (4), washer (8), and screw (9).	Tighten locknuts (4) 85 lb-ft(115 N•m).
9.		Crossmember end support (13)	Install on channel reinforcement (10) with two screws (6) and new locknuts (12).	Tighten 120 lb-ft (163 N•m).
10.		Crossmember (1)	Install to crossmember end support (13) with two screws (2), washers (3), and new locknuts (11).	Tighten 120 lb-ft (163 N•m).
11.		Frame rail extension (14)	Install on channel reinforcement (10) with four screws (17) and new locknuts (22).	Tighten 85 lb-ft (115 N•m).
12.		U-bolt (16)	Install on frame rail extension (14) with two new locknuts (15).	
13.		Bracket (21)	Install on frame rail extension (14) with three washers (18), new lockwashers (19), and screws (20).	Tighten 85 lb-ft (115 N•m).

## 9-7. WINCH FRAME EXTENSION REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS

**END OF TASK!**

**FOLLOW-ON TASKS:**

- Install hood (para. 9-17).
- Install front winch (para. 10-9).

TA 349197

## 9-7.1. BUMPERETTE REPLACEMENT

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Six locknuts		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

**a. Removal****NOTE**

Left and right bumperettes are removed the same. This procedure covers the left bumperette.

- |                            |   |         |                       |
|----------------------------|---|---------|-----------------------|
| 1. Left hand framerail (1) | Four locknuts (2) and screws (7)                | Remove. | Discard locknuts (2). |
| 2. Rear crossmember (4)    | Two locknuts (3) screws (5), and bumperette (6) | Remove. | Discard locknuts (3). |

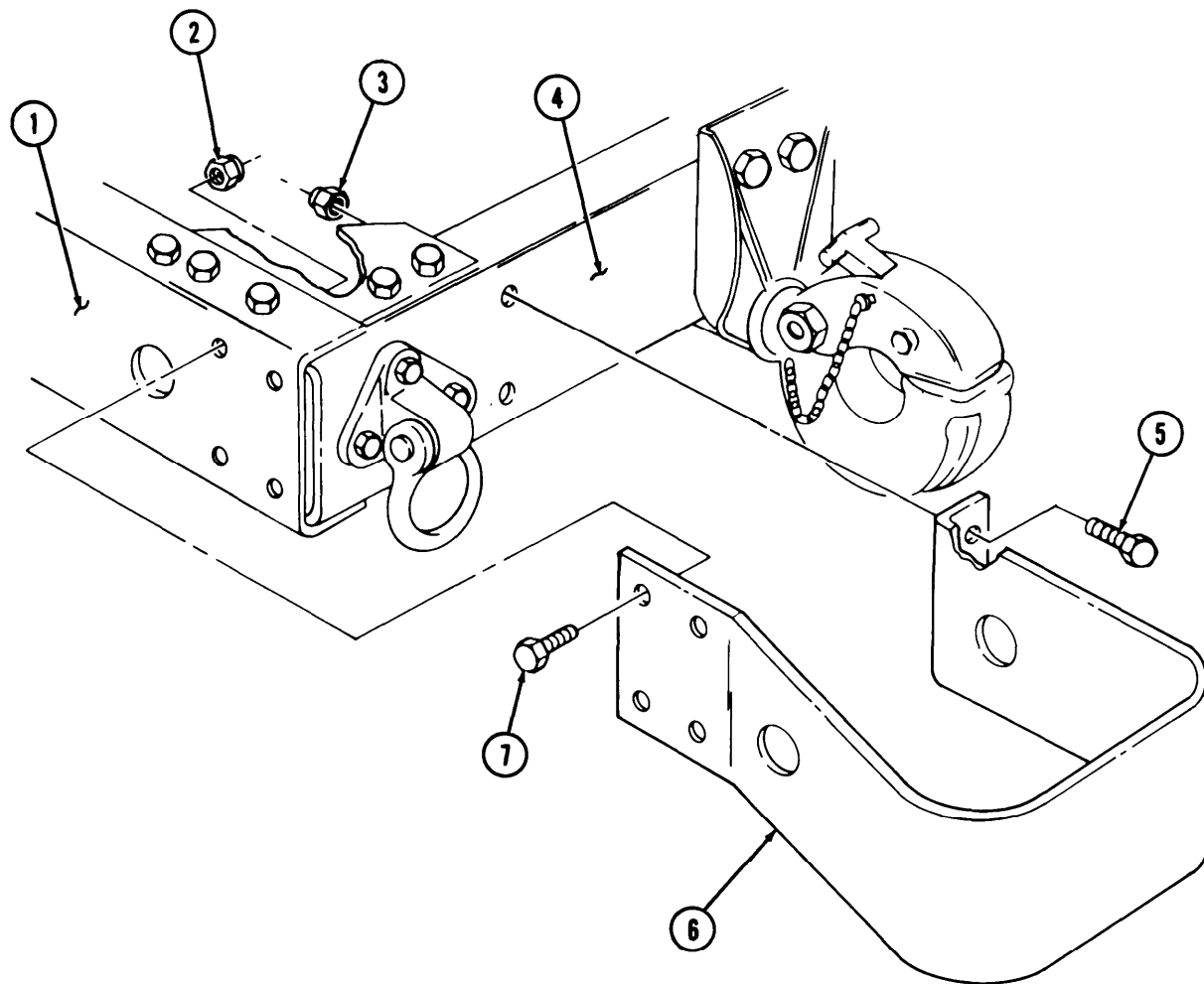
**b. Installation**

- |    |                |   |
|----|----------------|---|
| 3. | Bumperette (6) | Install on rear crossmember (4) with two screws (5) and new locknuts (3). |
|----|----------------|---|



**9-7.1. BUMPERETTE REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.		Bumperette (6)	Install on left hand framerail (1) with four screws (7) and new locknuts (2).	



## Section II. HOOD AND CAB MAINTENANCE

### 9-8. GENERAL

This section provides maintenance procedures assigned to the organizational level for the hood and cab. To find a specific maintenance procedure, see the maintenance task summary below:

### 9-9. HOOD AND CAB MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
9-10.	Hood Latch and Bracket Replacement	9-18
9-11.	Hood Support Bar and Bracket Replacement	9-20
9-12.	Hood Stop Cables Replacement	9-22
9-13.	Hood Grab Handle Replacement	9-24
9-14.	Radiator Baffles, Seals, and Plates Replacement	9-26
9-15.	Cab Hood Stop Bracket Replacement	9-28
9-16.	Hood Bumper Replacement	9-30
9-17.	Engine Hood Replacement	9-32
9-18.	Windshield Stop Bracket and Latch Replacement	9-38
9-19.	Windshield Wiper Blade, Wiper Arm, and Wiper Motor Replacement	9-40
9-20.	Windshield and Outer Frame Assembly Replacement	9-44
9-21.	Windshield Frame Assembly Replacement	9-48
9-22.	Cab Windshield Hinge Assembly Replacement	9-52
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9-24.	Windshield Washer Jet Replacement	9-56
9-25.	Windshield Washer Hoses Replacement	9-58
9-26.	Driver's Seat Replacement	9-62
9-27.	Driver's Seat Frame and Base Maintenance	9-64
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9-29.	Companion Seat Cushion, Backrest Cushion and Frame Replacement	9-72
9-30.	Map Compartment Replacement	9-74
9-31.	Cab Grab Handle Replacement	9-76
9-32.	Rearview Mirror and Mirror Brace Assembly	9-78

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**9-9. HOOD AND CAB MAINTENANCE TASK SUMMARY (Cont'd)**


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<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
9-33.	Personnel Heater Inlet Hose Replacement	9-82
9-34.	Personnel Heater Outlet Hose Replacement	9-84
9-35.	Personnel Hot Water Heater Replacement	9-86
9-36.	Fresh Air Vent Control Assembly Replacement	9-90
9-37.	Defrost and Heat Controls Replacement	9-94
9-38.	Diverter Assembly Replacement	9-98
9-39.	Fresh Air Inlet Ducting Replacement	9-102
9-40.	Cab Heat and Defrost Air Ducting Replacement	9-104
9-41.	Vent Door Weather Seal Replacement	9-106
9-42.	Cab Cowl Vent Screen and Door Replacement	9-108
9-43.	Front Fender Extension Replacement	9-110
9-44.	Fender Splash Shield Replacement	9-112
9-45.	Toolbox and Steps Replacement	9-114
9-46.	Cab Turnbuttons and Lashing Hooks Replacement	9-116
9-47.	Front Cab Mount Replacement	9-118
9-48.	Rear Cab Mount Replacement	9-120
9-49.	Cab Insulation Replacement	9-124
9-50.	Outside Door Handle Replacement	9-126
9-51.	Window Regulator Handles and Inside Door Handles Replacement	9-128
9-52.	Cab Door Dovetail Wedge Replacement	9-130
9-53.	Cab Door Dovetail Replacement	9-132
9-54.	Cab Door Weather seal Replacement	9-134
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9-56.	Cab Door Lock Replacement	9-138
9-57.	Cab Door Glass Maintenance	9-140
9-58.	Window Weatherstripping (Cab Door) Replacement	9-142
9-59.	Cab Top Seal and Retainer Replacement	9-144
9-60.	Cab Door Regulator Assembly Replacement	9-146
9-61.	Cab Door Check Rod Replacement	9-148
9-62.	Cab Door Replacement	9-150
9-63.	Cab Door Hinge Replacement	9-152
9-64.	Cab Door Catch Replacement	9-154

## 9-10. HOOD LATCH AND BRACKET REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

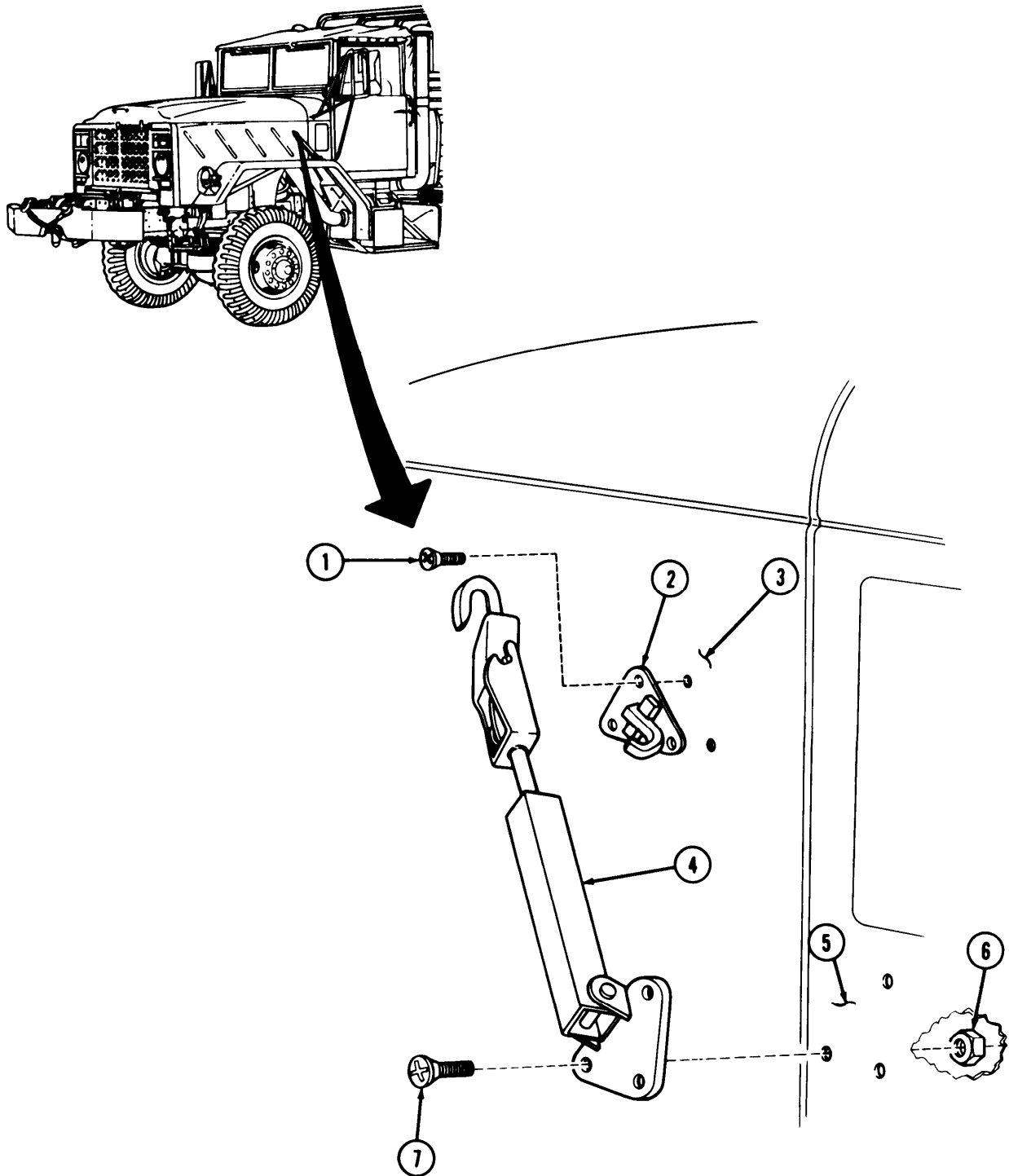
- |    |              |  |          |
|----|--------------|--|----------|
| 1. |              | Hood latch (4)   | Release. |
| 2. | Cab cowl (5) | Three screws (7), nut (6), and hood latch (4)            | Remove.  |
| 3. | Hood (3)     | Three screws ( 1 ) and upper latch retaining bracket (2) | Remove.  |

#### b. Installation

- |    |  |                                   |  |
|----|--|-----------------------------------|--|
| 4. |  | Upper latch retaining bracket (2) | Install on hood (3) with three screws (1).   |
| 5. |  | Hood latch (4)                    | a. Install on cab cowl (5) with three screws (7) and nut (6).<br>b. Latch top half to upper latch retaining bracket (2). |

# 9-10. HOOD LATCH AND BRACKET REPLACEMENT (Cont'd)

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



END OF TASK!

TA 349198

## 9-11. HOOD SUPPORT BAR AND BRACKET REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<b>INITIALS:</b>		
<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
All	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Cotter pin Locknut		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B (2)		Hood must be supported during replacement of hood support bar bracket.
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### a. Removal

- |    |                       |   |                                  |                          |
|----|-----------------------|---|----------------------------------|--------------------------|
| 1. | Front of hood (1)     | Bar support pin (10)  | Remove from stowage bracket (5). |                          |
| 2. | Mounting bracket (12) | Cotter pin (14), washer (13), pin (7), and hood support bar (11 ) | Remove.                          | Discard cotter pin (14). |

#### WARNING

Hood must be supported during replacement of hood support bar mounting bracket, or injury to personnel may result.

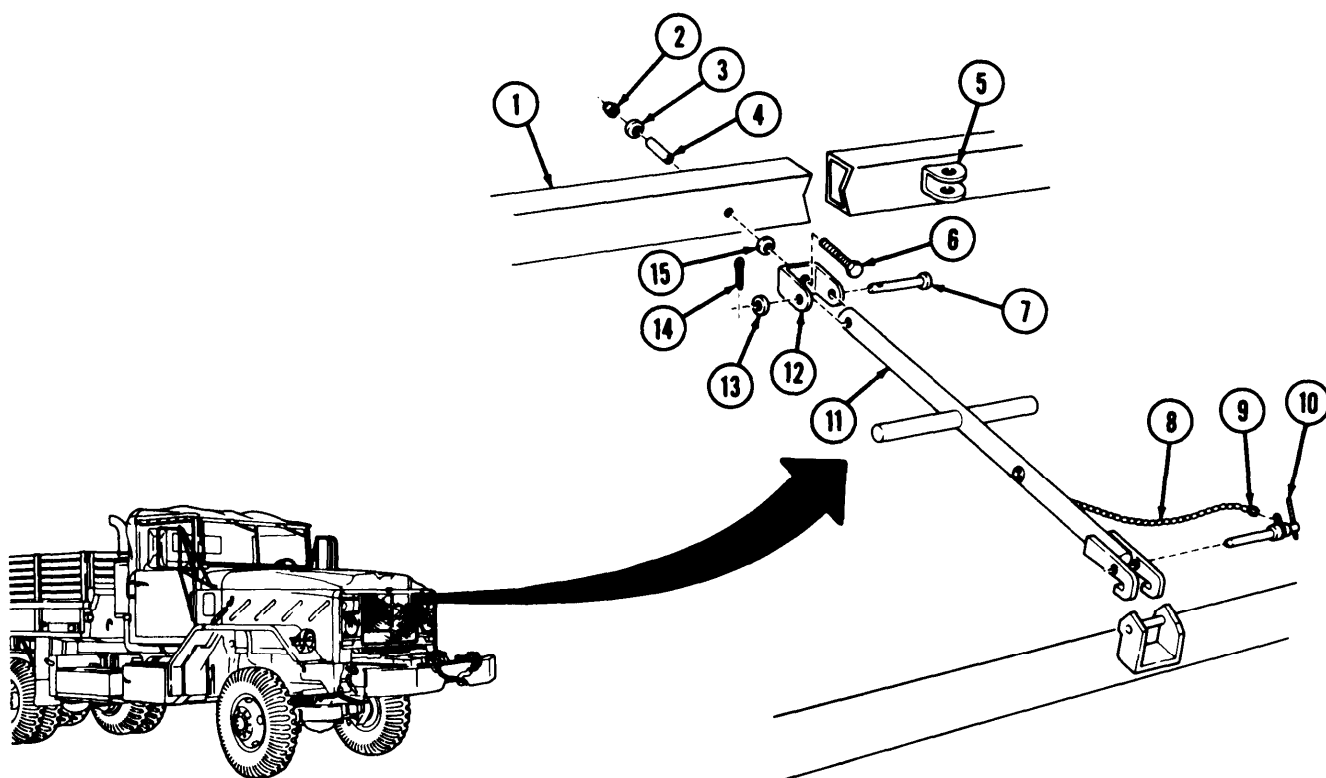
#### NOTE

- Assistant will help with step 3.
- Hood must be opened.

- |    |                   |  |         |                      |
|----|-------------------|--|---------|----------------------|
| 3. | Screw (6)         | Locknut (2), washer (3), and spacer (4)          | Remove. | Discard locknut (2). |
| 4. | Front of hood (1) | Screw (6), washer (15) and mounting bracket (12) | Remove. |                      |
| 5. | Chain (8)         | Loop link (9) and bar support pin (10)           | Remove. |                      |

# 9-11. HOOD SUPPORT BAR AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
6.		Loop link (9) and bar support pin (10)	Install to chain (8),	
7.		Mounting bracket (12)	Install on front of hood (1) with screw (6), washer (15), spacer (4), washer (3), and new locknut (2).	
8.		Hood Support bar (11)	a. Install on mounting bracket (12) with pin (7), washer (13), and new cotter pin (14). b. Position bar (11) to stowage bracket (5) and install with bar support pin (10).	



END OF TASK!

TA349199

## 9-12. HOOD STOP CABLES REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### a. Removal

- |    |   |  |         |                      |
|----|---|--|---------|----------------------|
| 1. | Hood stop cable (5) to radiator support bracket (8) | Locknut (9), washer (7), screw (6) and washer (7)          | Remove. | Discard locknut (9). |
| 2. | Hood bracket (3)                                    | Screw (1), washer (2), locknut (4) and hood stop cable (5) | Remove, | Discard locknut (4). |

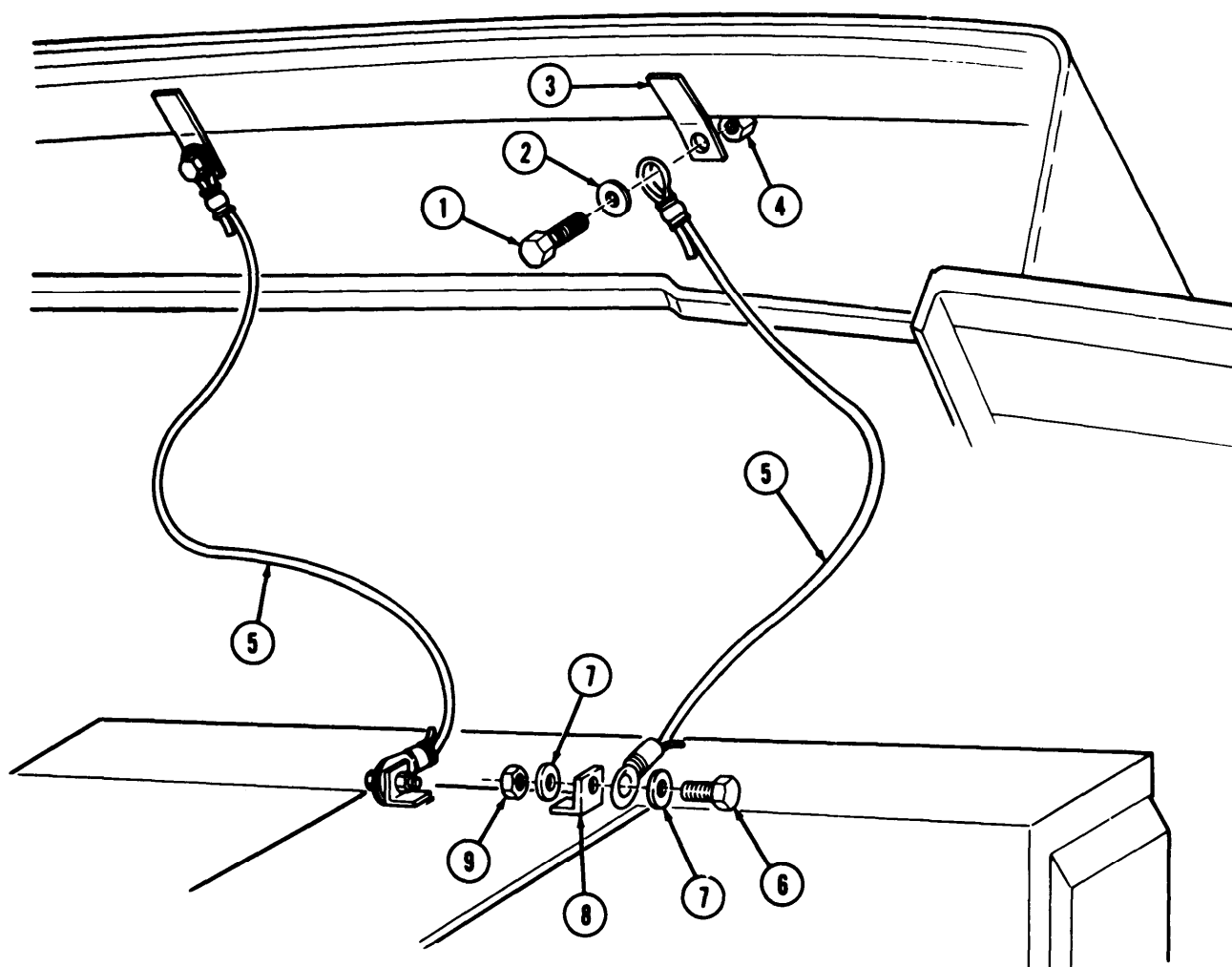
#### b. Installation

- |    |                     |   |
|----|---------------------|---|
| 3. | Hood stop cable (5) | a. Install on radiator support bracket (8) with screw (6), two washers (7), and new locknut (9).<br><br>b. Install on hood bracket (3) with screw (1), washer (2), and new locknut (4). |
|----|---------------------|---|



## 9-12. HOOD STOP CABLES REPLACEMENT (Cont'd)

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



END OF TASK!

TA349200

9-13. HOOD GRAB HANDLE REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

NOTE

Hood insulation must be pulled back to gain access to locknuts and plates.

a. Removal

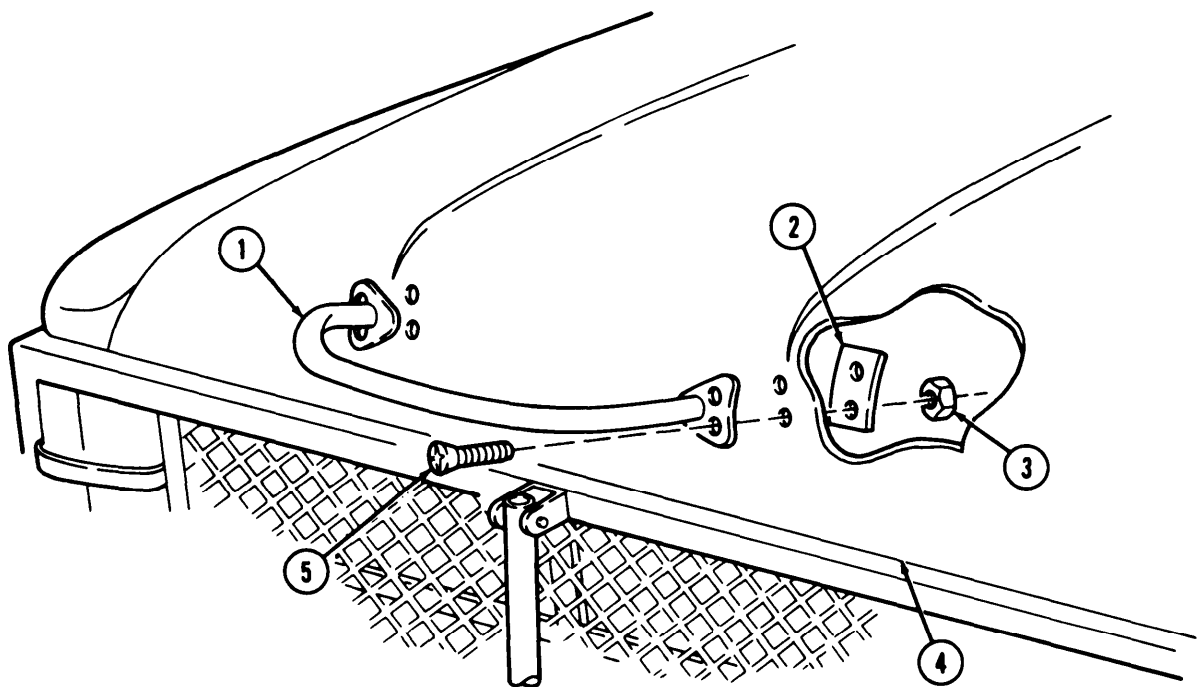
1.	Hood (4)	Four screws (5) and locknuts (3), two plates (2), and hood grab handle (1)	Remove.	Discard locknuts (3).
----	----------	--	---------	-----------------------

b. Installation

2.		Hood grab handle (1)	Install on hood (4) with four screws (5), two plates (2), and four new locknuts (3).	
----	--	----------------------	--	--

9-13. HOOD GRAB HANDLE REPLACEMENT (Cont'd)

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



END OF TASK!

TA349201

## 9-14. RADIATOR BAFFLES, SEALS, AND PLATES REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Twelve locknuts Twelve lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Upper baffle consists of a seal and plate as one unit. Side baffles consist of seals and plates as separate units.

#### a. Removal

- |    |  |  |                            |                           |
|----|--|--|----------------------------|---------------------------|
| 1. | Upper radiator baffle seal and plate (3) to brush guard (13) | Four screws (12) and lockwashers (11)                                  | Remove.                    | Discard lockwashers (11). |
| 2. | Left and right baffle plates (7)                             | Two screws (2) and lockwashers (1) and upper baffle seal and plate (3) | Twist downward and remove. | Discard lockwashers (1).  |

#### NOTE

Steps 3 and 4 apply to both left and right baffle seals and plates.

- |    |                           |  |         |                           |
|----|---------------------------|--|---------|---------------------------|
| 3. | Radiator baffle plate (7) | Six locknuts (5), washers (6), and screws (8), and baffle seal (4) | Remove. | Discard locknuts (5).     |
| 4. | Brush guard (13)          | Three screws (9) and lockwashers (10), and baffle plate (7)        | Remove. | Discard lockwashers (10). |

9-14. RADIATOR BAFFLES, SEALS, AND PLATES REPLACEMENT (Cont'd)

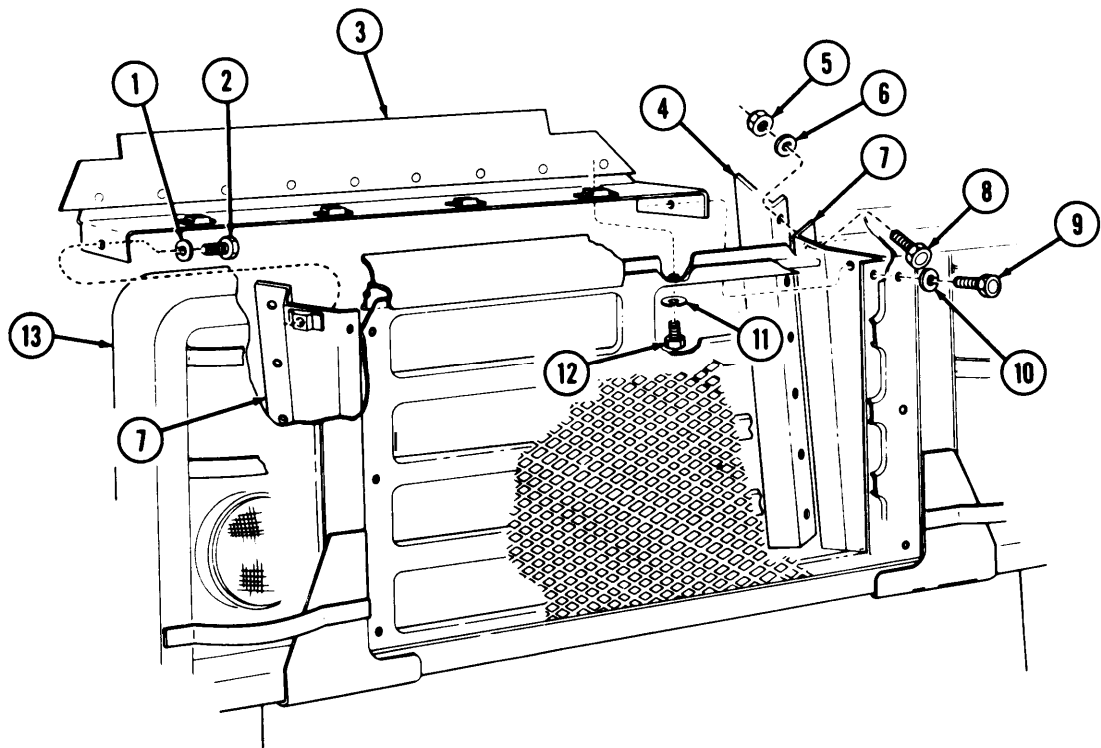
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

Steps 5 and 6 apply to both left and right baffle seals and plates.

- |    |  |   |
|----|--|---|
| 5. | Radiator baffle plate (7)                | Install on brush guard (13) with three new lockwashers (10) and screws (9).   |
| 6. | Radiator baffle seal (4)                 | Install on baffle plate (7) with six screws (8), washers (6), and new locknuts (6).   |
| 7. | Upper radiator baffle seal and plate (3) | a. Install on left and right baffle plates (7) with two new lockwashers (1) and screws (2).<br>b. Install on brush guard (13) with four new lockwashers (11) and screws (12). |



END OF TASK!

TA349202

## 9-15. CAB HOOD STOP BRACKET REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts Shims		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

This procedure applies to both left and right stop brackets.

#### a. Removal

- |    |                                       |                                  |   |                       |
|----|---------------------------------------|----------------------------------|---|-----------------------|
| 1. | Stop bracket (4) to fire-<br>wall (2) | Two locknuts (5)                 | Remove.                                   | Discard locknuts (5). |
| 2. |                                       | Stop bracket (4) and<br>shim (3) | Remove from reinforce-<br>ment plate (1). |                       |

#### b. Installation

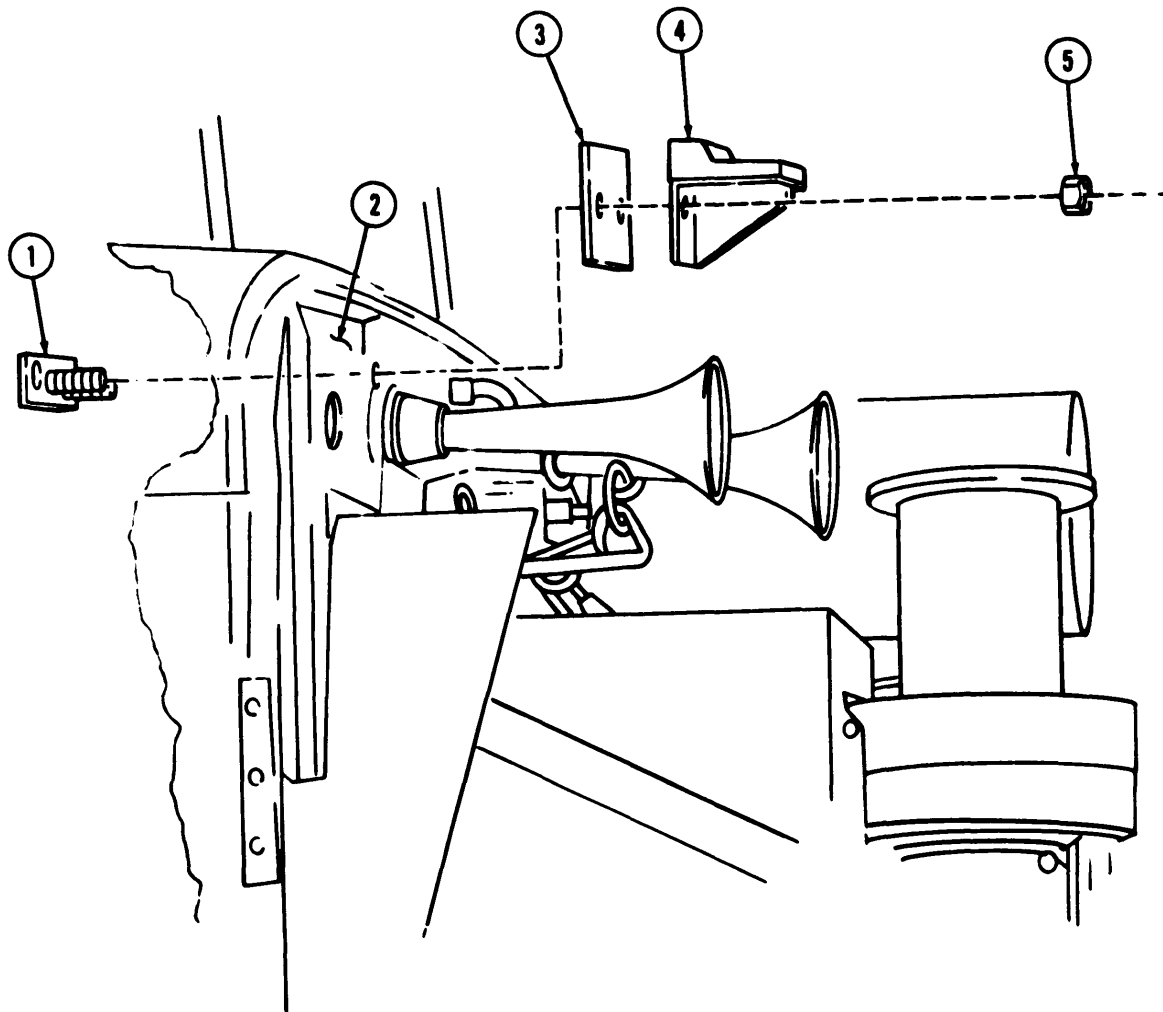
#### NOTE

Install original shim or new shims as required to establish proper alignment between vehicle hood and stop bracket.

- |    |                                  |   |
|----|----------------------------------|---|
| 3. | Stop bracket (4) and<br>shim (3) | Install on reinforce-<br>ment plate (1) with<br>two new locknuts (5). |
|----|----------------------------------|---|

**9-15 CAB HOOD STOP BRACKET REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!****TA 349203**

## 9-16. HOOD BUMPER REPLACEMENT

This task covers:

### a. Removal

### b. installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### NOTE

This procedure applies to left and right hood bumpers.

#### a. Removal

- |    |                 |   |         |                       |
|----|-----------------|---|---------|-----------------------|
| 1. | Hood bumper (3) | Three locknuts (5), screws (1), and washers (2) | Remove. | Discard locknuts (5). |
| 2. | Cab body (4)    | Hood bumper (3)                                 | Remove. |                       |

#### b. Installation

- |    |                 |   |
|----|-----------------|---|
| 3. | Hood bumper (3) | Install with three screws (1), washers (2), and new locknuts (5). |
|----|-----------------|---|



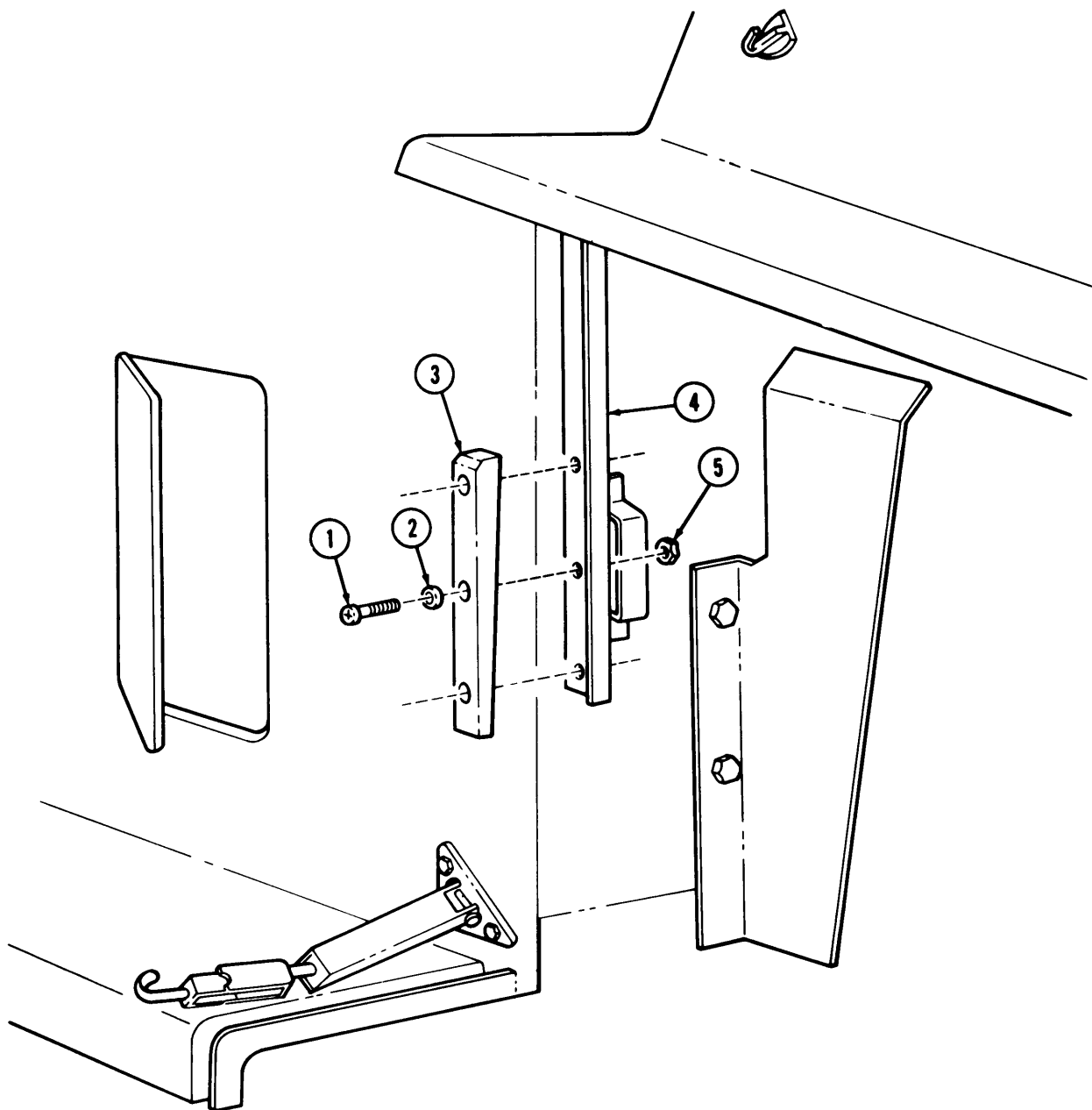
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**9-16. HOOD BUMPER REPLACEMENT (Cont'd)**

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STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA349204

9-17. ENGINE HOOD REPLACEMENT

This task covers:

- a. Removal
- b. Installation
- c. Adjustment

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Left and right splash shields removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three locknuts Five lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

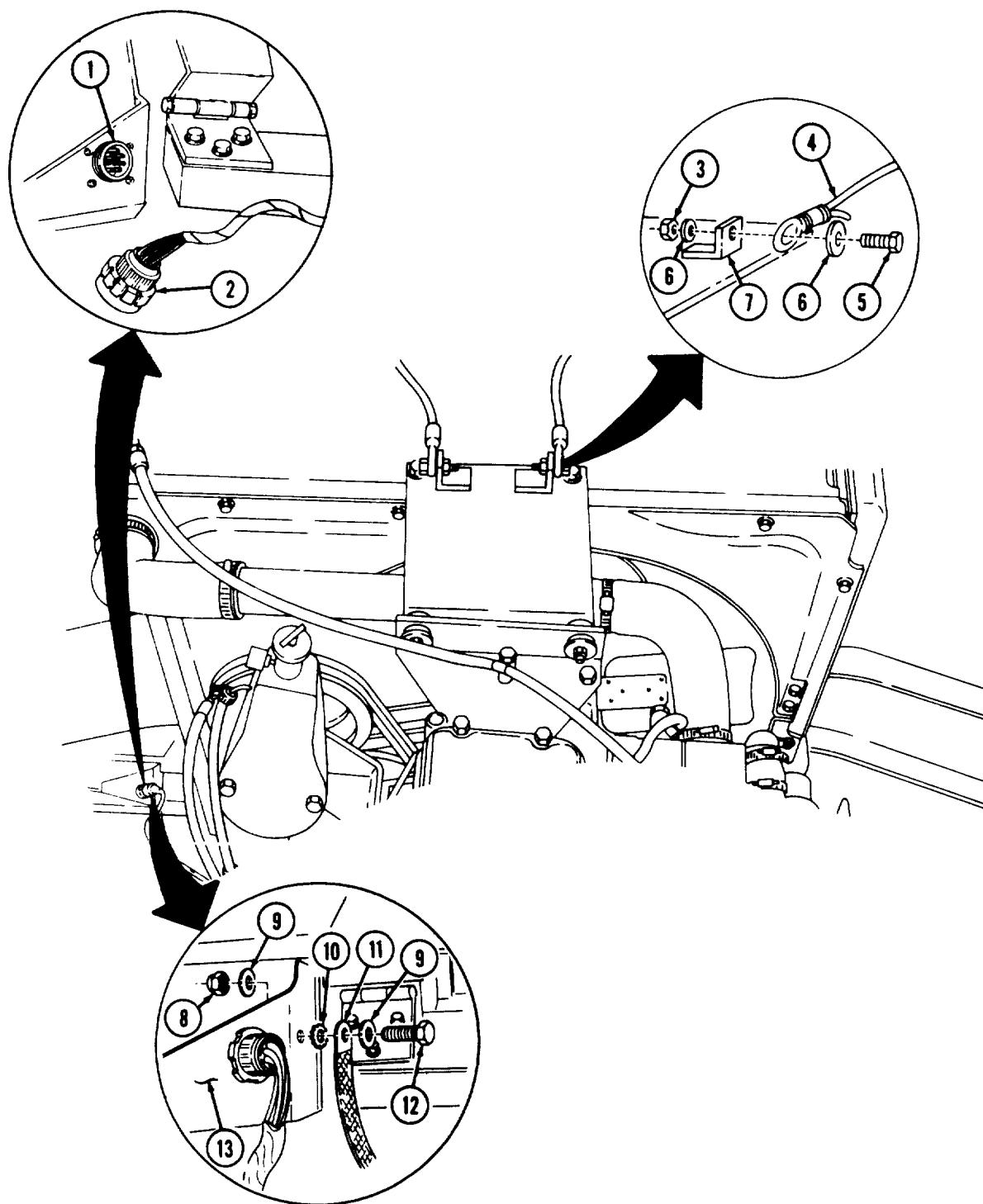
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

- |    |                                     |   |             |   |
|----|-------------------------------------|---|-------------|---|
| 1. | Upper radiator support brackets (7) | Two locknuts (3), washers (6), screws (5), washers (6), and hood stop cables (4)        | Remove.     | Discard locknuts (3).   |
| 2. | Harness plug (1)                    | Wiring harness quick disconnect (2)   | Disconnect. |   |
| 3. | Inside left fender (13)             | Locknut (8), washer (9), lockwasher (10), ground strap (11), washer (9), and screw (12) | Remove.     | Discard locknut (8) and lockwasher (10).<br>Leave ground strap connected at frame rail end. |

# 9-17. ENGINE HOOD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 349205

## 9-17. ENGINE HOOD REPLACEMENT (Cont'd)

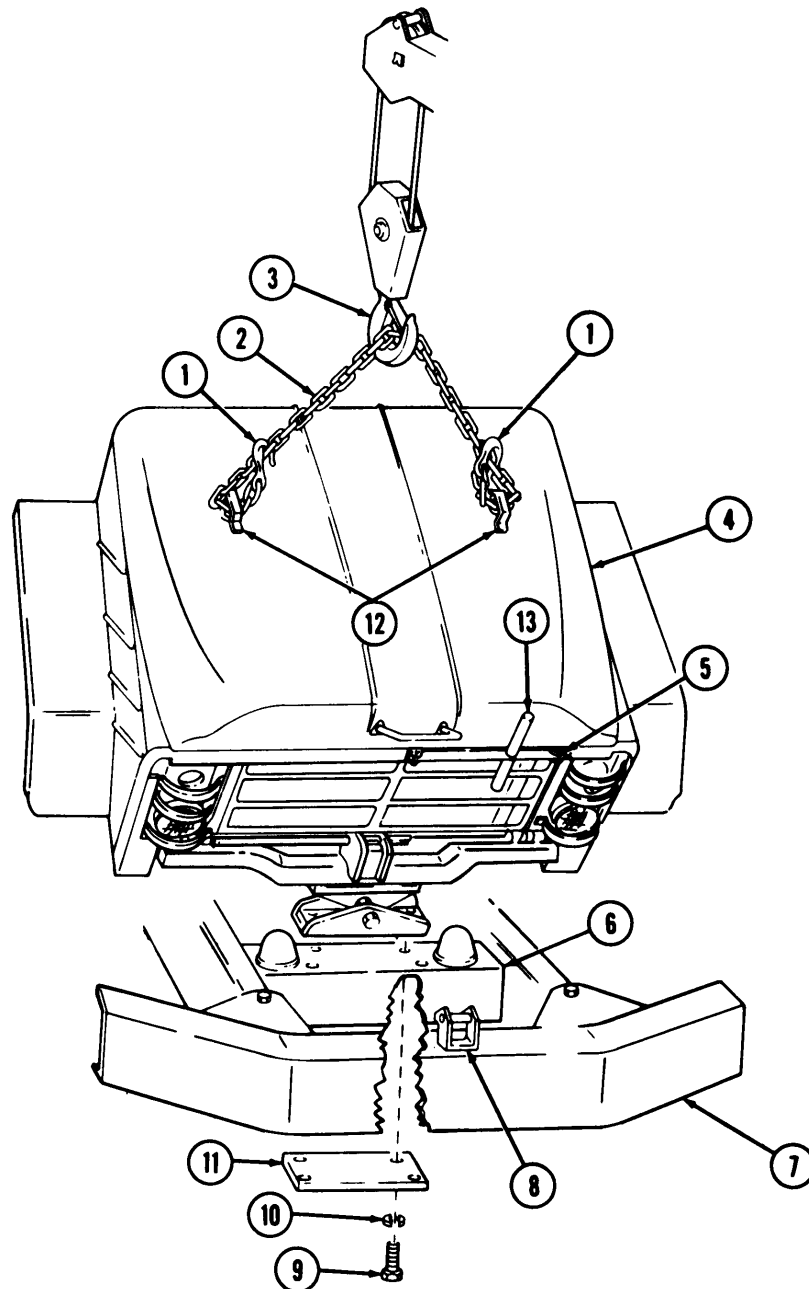
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.		Utility chain (2)	a. Thread through two window support brackets (12). b. Attach hooks (1) to chain (2).	
<b>NOTE</b> Assistant will help with steps 5 through 8.				
5.		Lifting device (3)	Connect to center of utility chain (2) and raise until slack is removed.	
6.		Hood retaining bar (13)	Remove from bumper bracket (8) and attach to stowage bracket (5).	Refer to TM 9-2320-272-10.
7.	Front crossmember (6)	Four screws (9), and lockwashers (10), and mounting plate (11 )	Remove.	Discard lockwashers (10).
8.		Hood assembly (4)	a. Hoist straight up over bumper (7), and away from vehicle. b. Lower, and remove chain (2) and lifting device (3).	

### b. Installation

9.		Utility chain (2)	a. Thread through two window support brackets (12). b. Attach hooks (1) to chain (2).	
10.		Lifting device (3)	Connect to center of utility chain (2) and raise until slack is removed.	
<b>NOTE</b> Assistant will help with steps 11 through 13.				
11.		Hood assembly (4)	Hoist onto front crossmember (6) and align holes.	
12.		Mounting plate (11 ) and hood assembly (4)	Install on front crossmember (6) with four new lockwashers (10) and screws (9).	Start all screws (9) by hand to prevent cross-threading.

# 9-17. ENGINE HOOD REPLACEMENT (Cont'd)

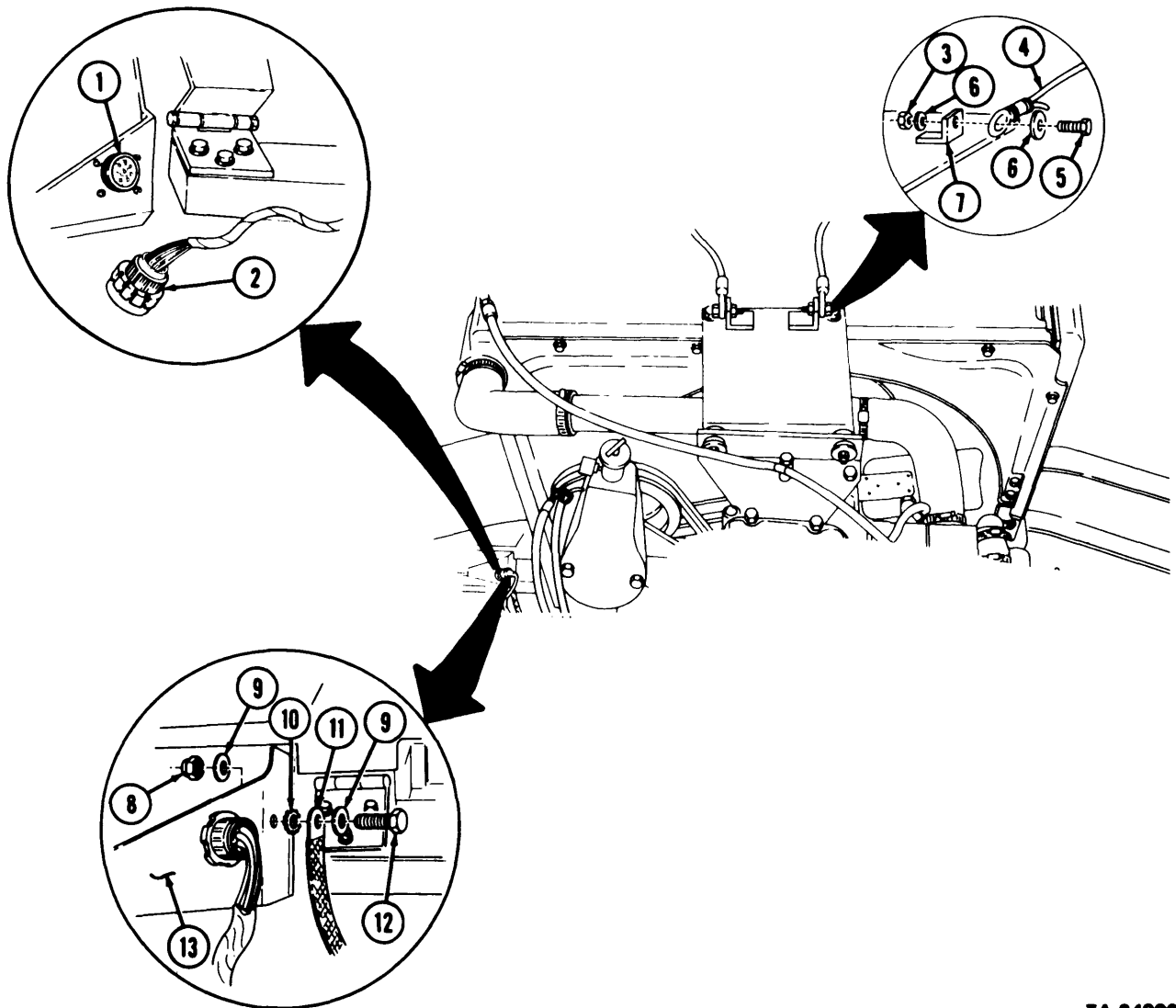
STEP N O .	LOCATION	ITEM	ACTION	REMARKS
13.		Hood retaining bar (13)	Remove From stowage bracket (5) and attach to bumper bracket (8).	Refer to TM 9-2320-272-10.
14.		Utility chain (2) and lifting device (3)	Remove from hood assembly (4).	



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9-17. ENGINE HOOD REPLACEMENT (Cont'd)

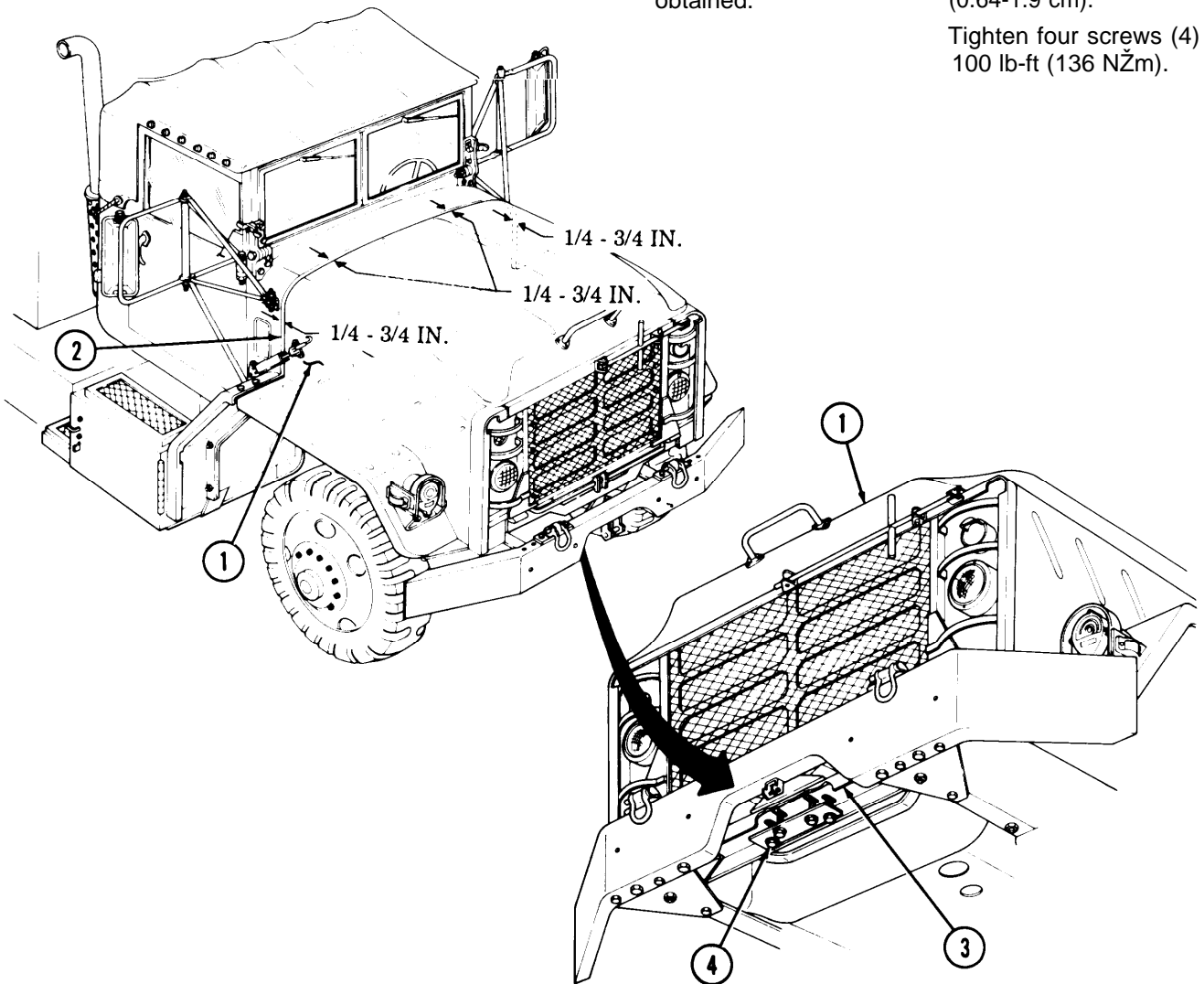
STEP N O .	LOCATION	ITEM	ACTION	REMARKS
15.		Wiring harness quick disconnect (2)	Connect to harness plug (1) and tighten.	
16.		Ground strap (11)	Install on left inside fender (13) with screw (12), two Washers (9), new lockwasher (10), and new locknut (8).	Make sure ground strap (11) is between lockwasher (10) and washer (9).
17.		Two hood cables (4)	Install on radiator support brackets (7) with two screws (5), four washers (6), and two new locknuts (3).	



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# 9-17. ENGINE HOOD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>c. Adjustment</b>				
18.		Hood (1) and cowl (2)	Check clearance at top and sides. Spacing should be approximately equal at top and both sides of hood.	Clearance should be 1/4 - 3/4 in. (0.64 -1.9 cm).
19.	Frame crossmember (3)	Four screws (4)	Loosen.	
20.		Hood (1) and cowl (2)	Position hood (1) until proper clearance is obtained.	Clearance should be 1/4 - 3/4 in. (0.64-1.9 cm). Tighten four screws (4) 100 lb-ft (136 NŽm).



END OF TASK!

FOLLOW-ON TASK: Install left and right splash shields (TM 9-2320-272-10).

## 9-18. WINDSHIELD STOP BRACKET AND LATCH REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Assistant is required to remove and install locknuts on engine side of hood.

#### a. Removal

- |    |          |   |         |                       |
|----|----------|---|---------|-----------------------|
| 1. | Hood (2) | Two screws (3) and locknuts (8), and windshield latch ( 1 ) | Remove. | Discard locknuts (8). |
|----|----------|---|---------|-----------------------|

#### NOTE

Hood insulation must be pulled back to gain access to nuts and reinforcement plates.

- |    |   |         |                       |
|----|---|---------|-----------------------|
| 2. | Two screws (4) and locknuts (7), reinforcement plate (6), and windshield stop bracket (5) | Remove. | Discard locknuts (7). |
|----|---|---------|-----------------------|

#### b. installation

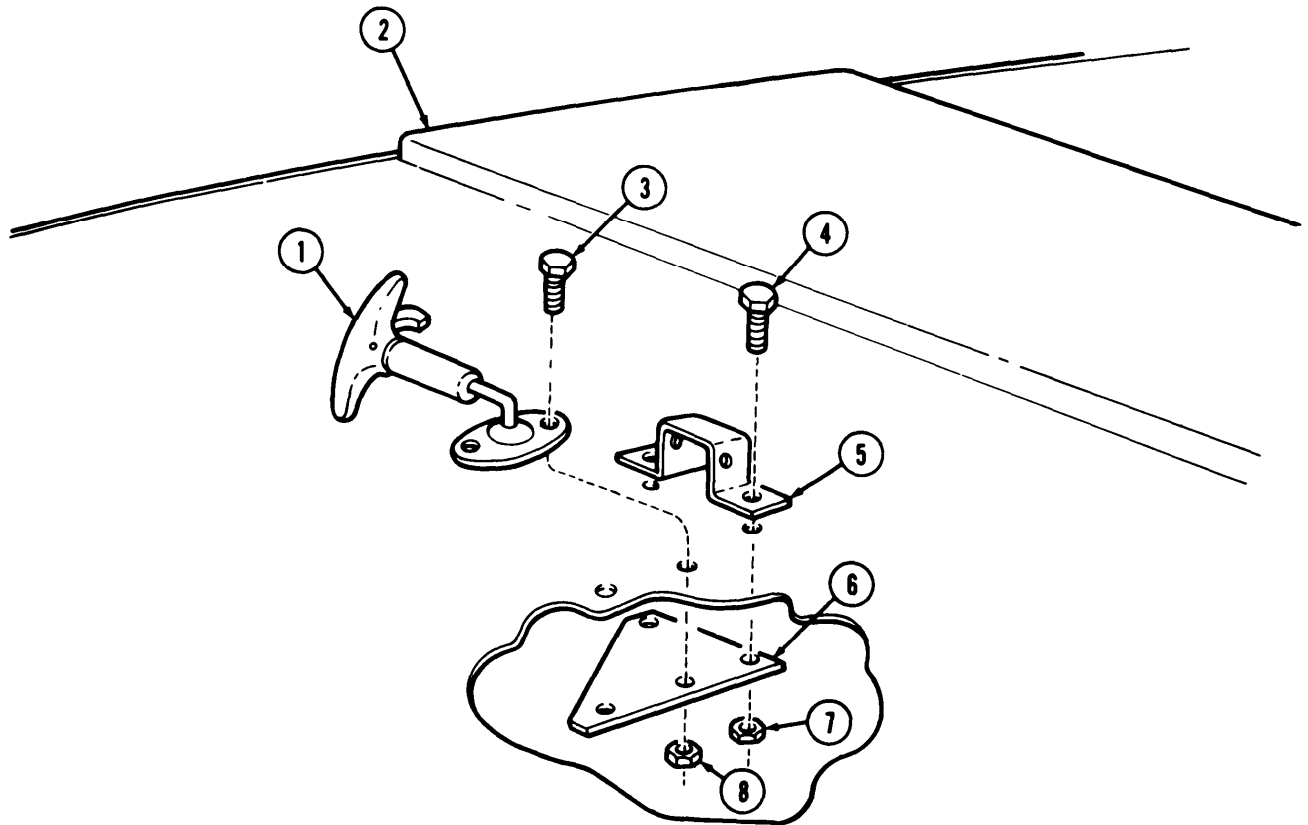
- |    |   |   |
|----|---|---|
| 3. | Windshield stop bracket (5) and reinforcement plate (6) | Install on hood (2) with two screws (4) and new locknuts ( 7 ). |
|----|---|---|



**9-18. WINDSHIELD STOP BRACKET AND LATCH REPLACEMENT (Cont'd)**

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

- |    |  |                      |   |  |
|----|--|----------------------|---|--|
| 4. |  | Windshield latch (1) | Install on hood (2) and reinforcement plate (6) with two screws (3) and new locknuts (8). |  |
|----|--|----------------------|---|--|



END OF TASK !

TA349209

## 9-19. WINDSHIELD WIPER BLADE, WIPER ARM AND WIPER MOTOR REPLACEMENT

This task covers:

### a. Removal

### b. Installation

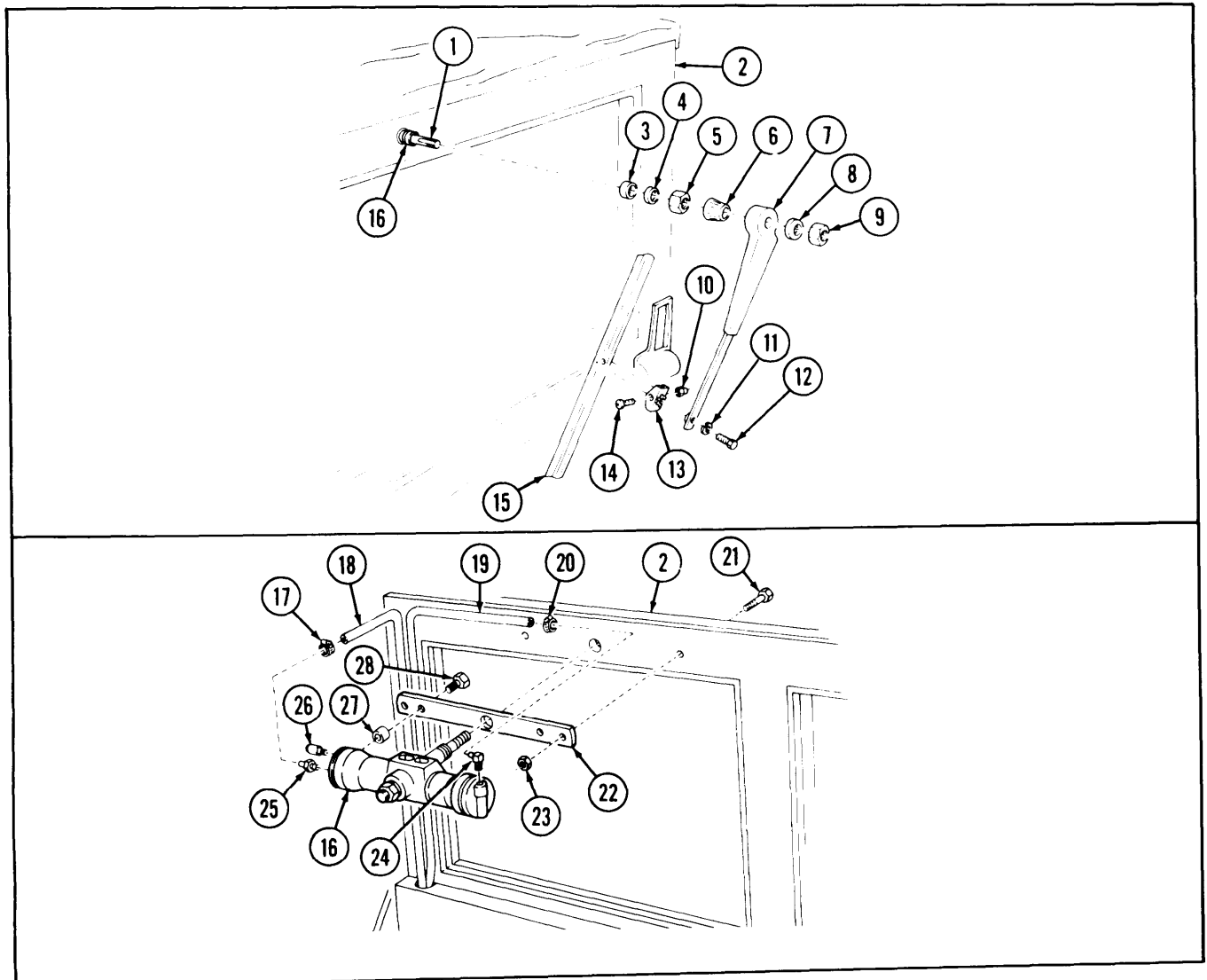
#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two lockwashers Three locknuts Leather washer Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Wiper arm (7)	Screw (12), lockwasher (11), screw (14), bracket (13), locknut (10), and wiper blade (15)	Remove.	Discard lockwasher (11) and locknut (10).
2.	Wiper motor shaft (1)	Nut (9) lockwasher (8) and wiper arm (7)	Remove.	Mark position of wiper arm (7) in park position and discard lockwasher (8).
3.	Wiper motor shaft (1)	Knurled drive (6)	Remove.	
4.	Wiper motor (16) to windshield frame (2)	Nut (5), washer (4), and leather washer (3)	Remove.	Discard leather washer (3).
5.	Wiper motor park adapter fitting (24)	Hose clamp (20)	Loosen and disconnect air line (19).	Windshield may be opened and locked.
6.	Wiper motor run adapter fitting (25)	Hose clamp (17)	Loosen and disconnect air line (18).	

# 9-19. WINDSHIELD WIPER BLADE, WIPER ARM, AND WIPER MOTOR REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
7.	Windshield frame (2)	Two screws (21) and locknuts (23), wiper motor ( 16), and wiper motor bracket (22)	Remove.	Discard locknuts (23).
8.	Wiper motor (16)	Two screws (28), bracket (22), and two spacers (27)	Remove.	
9.		Two adapter fittings (24) and (25)	Remove.	
10.		Muffler (26)	Remove.	



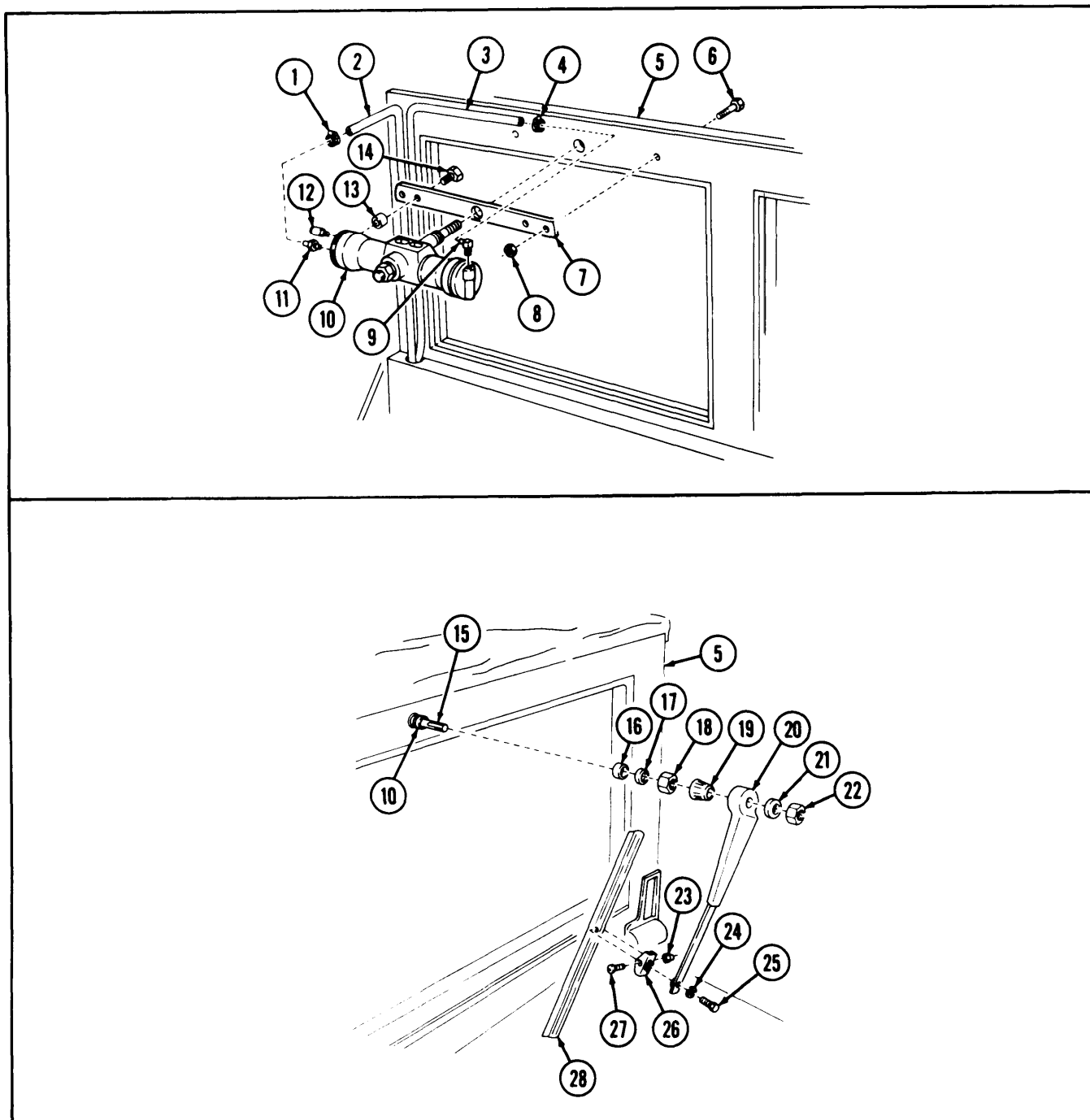
TA 349210

# 9-19. WINDSHIELD WIPER BLADE, WIPER ARM, AND WIPER MOTOR REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
<p style="text-align: center;"><b>NOTE</b></p> <p>Male pipe threads must be wrapped with sealing tape before installation.</p>				
11.		Muffler (12)	Install.	
12.		Adapter fitting (9) and adapter fitting (11)	Install.	
13.		Two spacers (13) and wiper motor bracket (7)	Install on wiper motor (10) with two screws (14).	
14.		Wiper motor (10) and wiper motor bracket (7)	Install on windshield frame (5) with two screws (6) and new locknuts (8).	
15.		Wiper motor run air line (2)	Install hose clamp (1) and connect to wiper motor fitting (11).	
16.		Wiper motor park air line (3)	Install hose clamp (4) and connect to wiper motor adapter fitting (9).	
17.		New leather washer (16), washer (17), and nut (18)	Install on wiper motor (10).	Windshield may be closed and locked. Tighten to 35-40 lb-in. (4-5 NŹm).
18.		Knurled driver (19)	Install on wiper motor shaft (15).	
19.		Windshield wiper (10)	Check operation and set to park position.	Refer to TM 9-2320-272-10.
20.		Wiper arm (20)	Install on wiper motor shaft (15) with new lockwasher (21) and nut (22).	Be sure arm (20) is installed in marked position. Tighten to 45-50 lb-in. (5-6 NŹm).
21.		Wiper blade (28)	Install on wiper arm (20) with bracket (26), screw (27), new lock-nut (23), new lockwasher (24), and screw (25).	Tighten to 15-20 lb-in. (2 NŹm).

# 9-19. WINDSHIELD WIPER BLADE, WIPER ARM, AND WIPER MOTOR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10). Check for air leaks and proper operation.

TA349211

## 9-20. WINDSHIELD AND OUTER FRAME ASSEMBLY REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Cab top removed from windshield.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Eight lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

### NOTE

Perform steps 1 and 2 only on vehicles with hard top kit.

- |    |   |                                    |   |                          |
|----|---|------------------------------------|---|--------------------------|
| 1. | Roof (7) to corner post (5)             | Two screws (3) and lockwashers (2) | Remove.   | Discard lockwashers (2). |
| 2. | Roof (7) to windshield frame (6)        | Four hook bolts (4) and nuts (1)   | Remove.   |                          |
| 3. | Wiper hose (8) to copper air line (1 O) | Hose clamp (9)                     | Remove and disconnect wiper hose (8) from copper air line (1o). |                          |

### NOTE

Assistant will help with steps 4 and 5.

- |    |  |                                       |         |                           |
|----|--|---------------------------------------|---------|---------------------------|
| 4. | Two windshield hinges (11) to windshield and outer frame (6) | Six screws (12) and lockwashers ( 13) | Remove. | Discard lockwashers (13). |
| 5. |  | Windshield and outer frame (6)        | Remove. |                           |

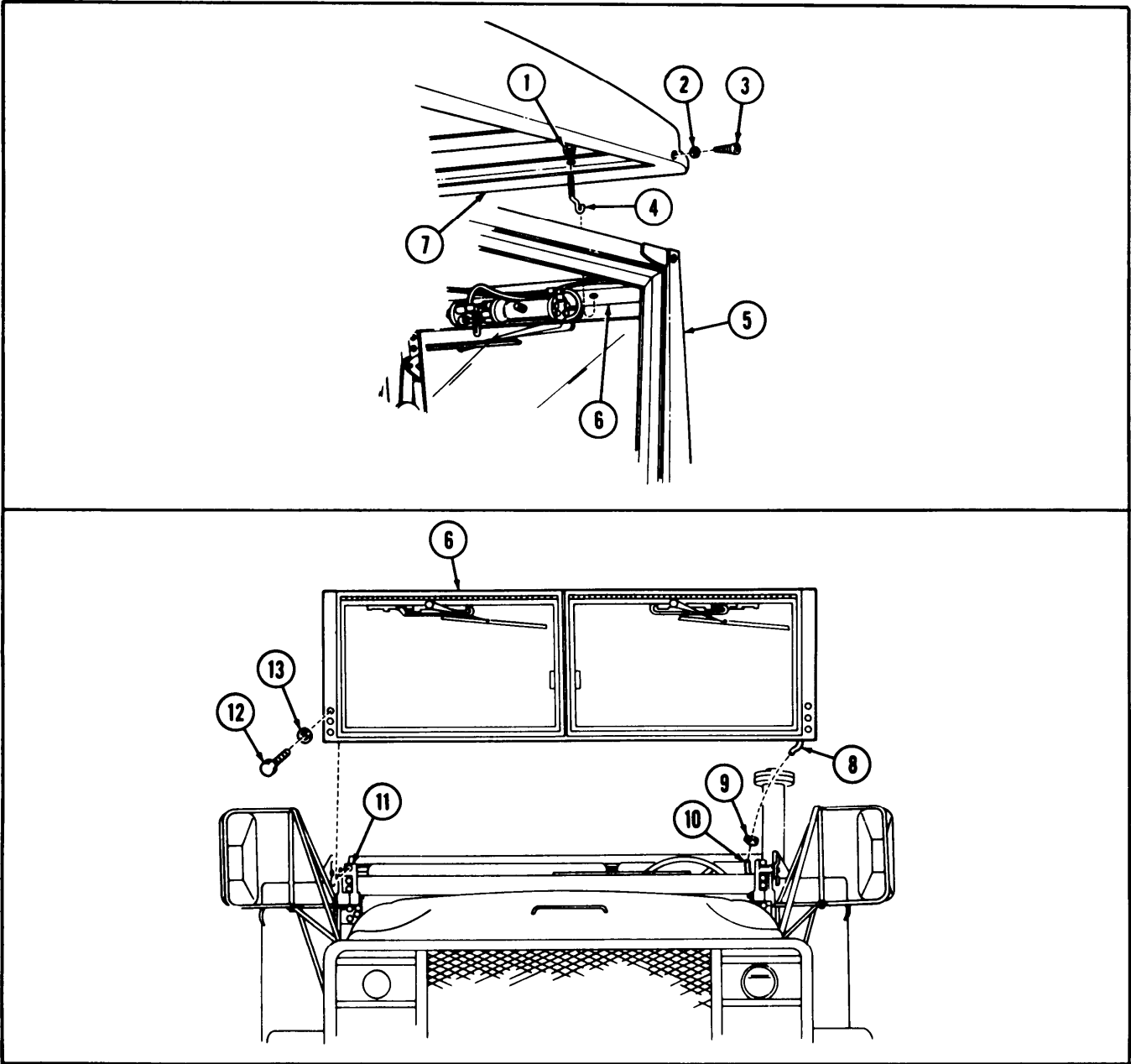
9-20. WINDSHIELD AND OUTER FRAME ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Perform step 6 only if new windshield and outer frame is being installed.

- |    |                      |   |         |                      |
|----|----------------------|---|---------|----------------------|
| 6. | Windshield frame (6) | Wiper blade, wiper arm, and wiper motor | Remove. | Refer to para. 9-19. |
|----|----------------------|---|---------|----------------------|



TA349212

9-20. WINDSHIELD AND OUTER FRAME ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

NOTE

Perform step 7 only if new windshield and outer frame are being installed.

7.		Wiper blade, wiper arm and wiper motor	Install.	Refer to para 9-19.
8.		Windshield and outer frame (1)	Aline on two hinges (5) and install with six new lockwashers (7) and screws (6).	Doors must be opened to allow windshield frame to drop in place.
9.		Wiper hose (2)	Connect to copper air line (4) with hose clamp (3).	

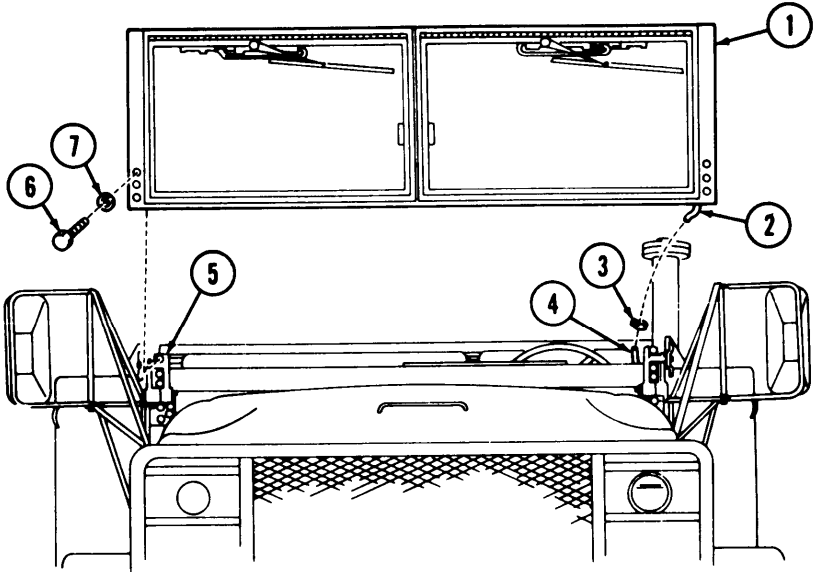
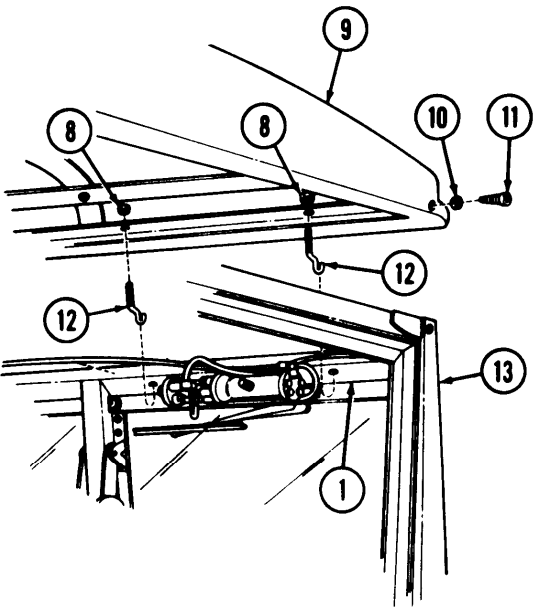
NOTE

Perform step 10 only on vehicles with hard top kit.

10.		Roof (9)	a. Install on windshield frame top (1) with four hook bolts (12) and nuts (8). b. Install on corner post ( 13) with two new lockwashers (10) and screws (11).	
-----	--	----------	--	--



# 9-20. WINDSHIELD AND OUTER FRAME ASSEMBLY REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
				
				

END OF TASK!

FOLLOW-ON TASK: Install cab top on windshield (TM 9-2320-272-10).

TA349213

## 9-21. WINDSHIELD FRAME ASSEMBLY REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para 9-19	Windshield wiper blade, wiper arm, and wiper motor removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Ten lockwashers		
Sealing compound (Appendix D, Item 22)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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### a. Removal

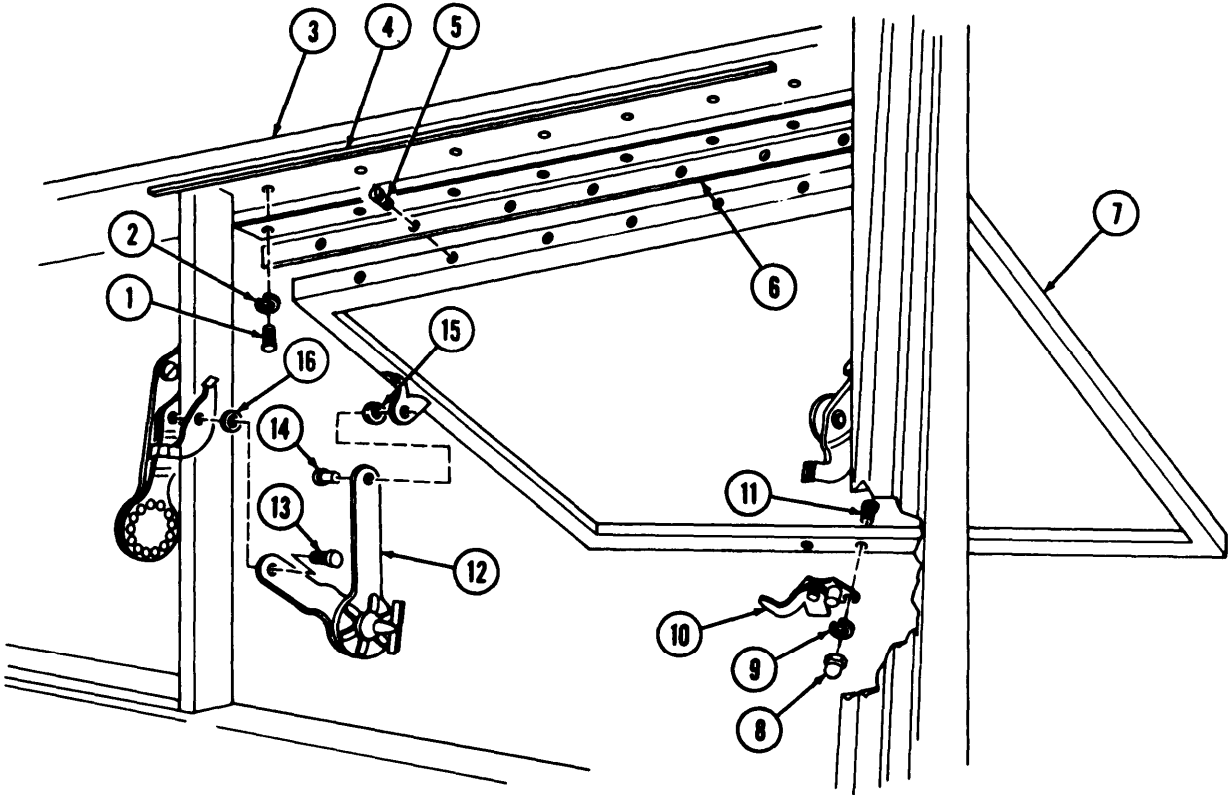
#### NOTE

Left and right windshield frame assemblies are removed the same way.

1.	Windshield outer frame (3)	Windshield frame assembly (7)	Secure in open position.	
2.	Windshield hinge (6) to outer frame (3)	Eight screws (1) and lockwashers (2)	Remove.	Discard lockwashers (2).
3.		Windshield frame assembly (7)	Lower.	
4.	Two friction lockarms (12)	Two screws (13) and spring washers (16)	Remove.	
5.	Windshield outer frame (3)	Windshield frame assembly (7)	Remove.	
6.	Windshield frame assembly (7)	Two capnuts (8), lockwashers (9), and screws (11 ), and lockhandle (10)	Remove.	Discard lockwashers (9).
7.		Seven screws (5), hinge (6), and hinge seal (4)	Remove.	
8.		Two screws (14), spring washers (15), and friction lockarms (12)	Remove.	

9-21. WINDSHIELD FRAME ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**9-21. WINDSHIELD FRAME ASSEMBLY REPLACEMENT (Cont'd)**


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


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**NOTE**

Left and right windshield frame assemblies are installed the same way.

9.		Two friction lockarms (12)	Install on windshield frame assembly (7) with two screws (14) and spring washers (15).	
10.		Hinge seal (4)	Install on hinge (6). Use sealing compound.	
11.		Hinge (6)	Install on windshield frame assembly (7) with seven screws (5).	
12.		Lockhandle (10)	Install with two screws (11), new lockwashers (9), and capnuts (8).	
13.		Two friction lockarms (12)	Install on windshield outer frame (3) with two screws (13) and spring washers (16).	

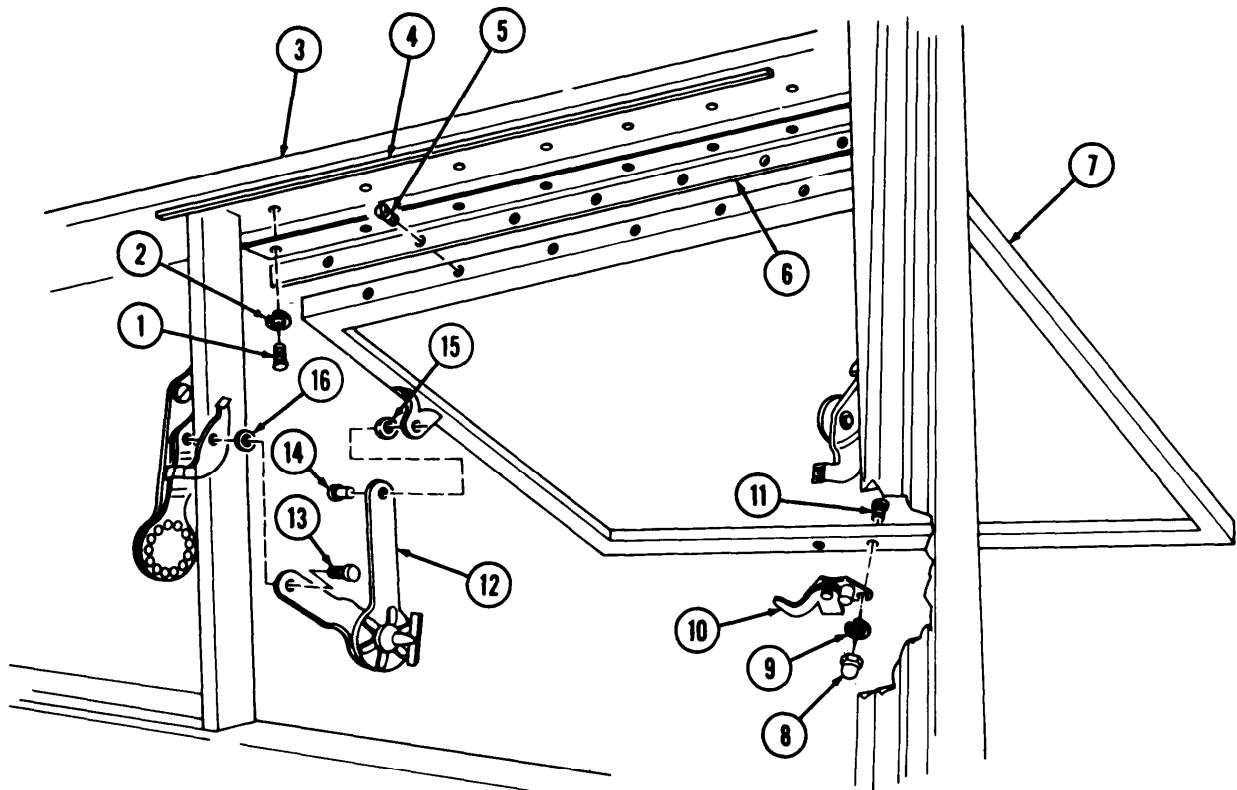
**NOTE**

Assistant will help with step 14.

14.		Hinge (6)	Install on windshield outer frame (3) with eight new lockwashers (2) and screws (1).	
15.		Windshield frame assembly (7)	Close and lock.	

# 9-21. WINDSHIELD FRAME ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install windshield wiper blade, wiper arm, and wiper motor (para. 9-19).

TA349215

## 9-22. CAB WINDSHIELD HINGE ASSEMBLY REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Seven lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

This procedure applies to both left and right hinge assemblies.

#### a. Removal

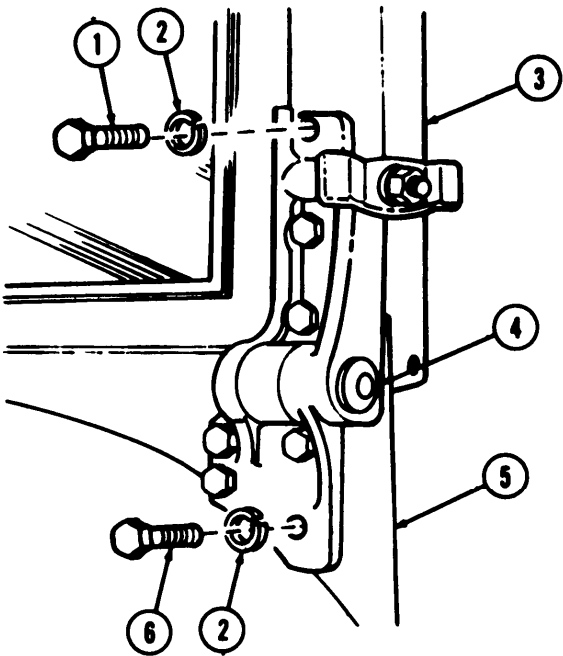
- |    |  |                                      |         |                          |
|----|--|--------------------------------------|---------|--------------------------|
| 1. | Windshield hinge (4) to windshield frame (3) | Three screws (1) and lockwashers (2) | Remove. | Discard lockwashers (2)  |
| 2. | Cab (5)                                      | Four screws (6) and lockwashers (2)  | Remove. | Discard lockwashers (2). |

#### b. Installation

- |    |                      |  |
|----|----------------------|--|
| 3. | Windshield hinge (4) | a. Install on cab (5) with four new lockwashers (2) and screws (6).<br>b. Install on windshield frame (3) with three new lockwashers (2) and screws (1). |
|----|----------------------|--|

9-22. CAB WINDSHIELD HINGE ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA349216

9-23. WASHER BOTTLE AND BRACKET REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-16	Parking brake set. Ether cylinder removed,
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

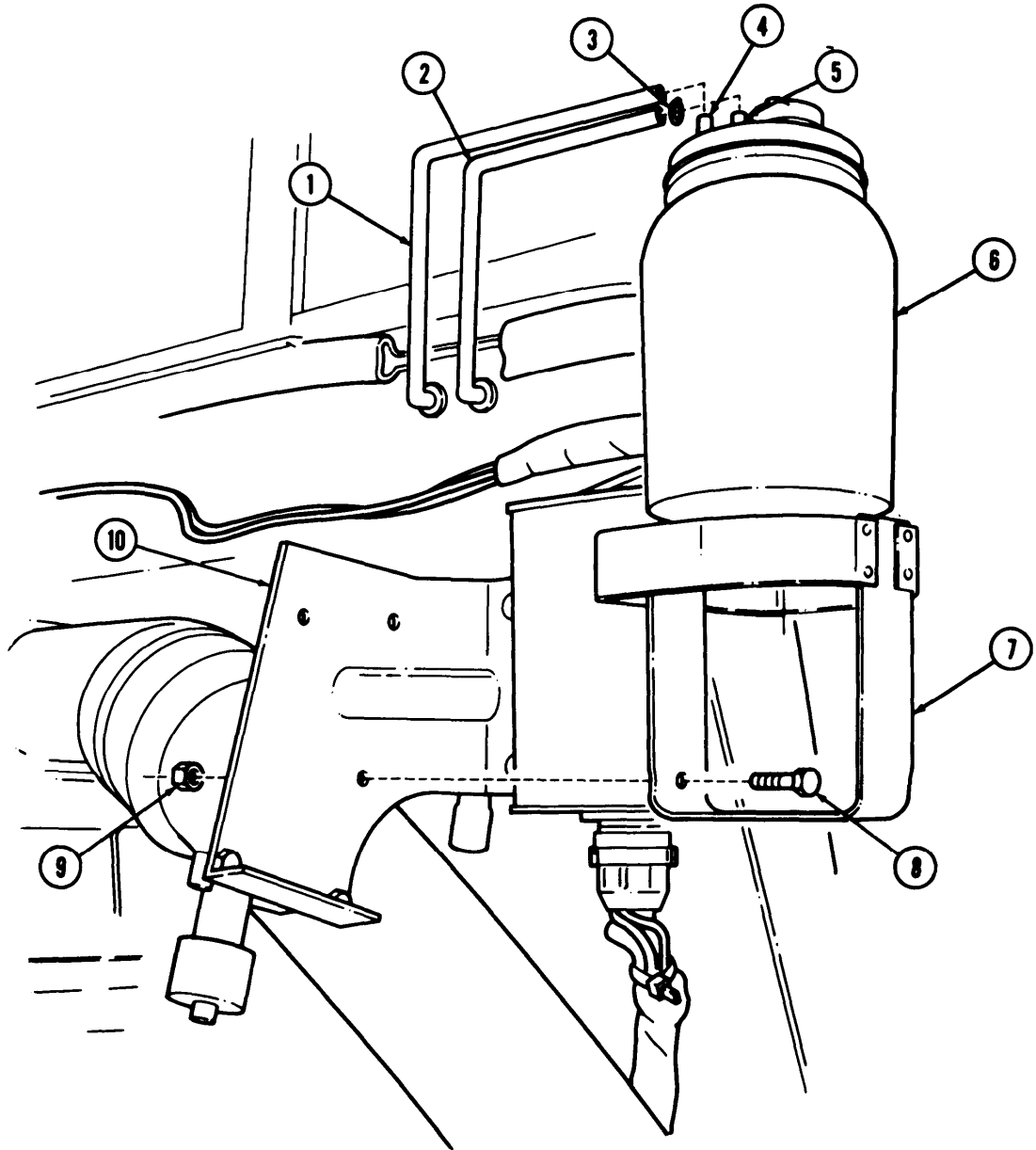
STEP NO .	LOCATION	ITEM	ACTION	REMARKS
a. Removal				
1.	Washer bottle inlet adapter (5)	Wire clamp (3)	Compress and disconnect washer bottle air supply line (2).	Tag line (2) for installation.
2.	Washer bottle outlet adapter (4)	Windshield washer jet supply tube (1)	Disconnect.	Tag tube (1) for installation.
3.	Washer bottle bracket (7)	Washer bottle (6)	Remove.	
4.	Mounting bracket (10)	Three locknuts (9) and screws (8), and washer bottle bracket (7)	Remove.	Discard locknuts (9).
b. Installation				
5.		Washer bottle bracket (7)	Install on mounting bracket (10) with three screws (8) and new locknuts (9).	
6.		Washer bottle (6)	Install in washer bottle bracket (7).	
7.		Windshield washer jet supply tube (1)	Connect to washer bottle outlet adapter (4).	



# 9-23. WASHER BOTTLE AND BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- |    |                                   |   |
|----|-----------------------------------|---|
| 8. | Washer bottle air supply line (2) | Compress wire clamp (3) and connect to washer bottle inlet adapter (5). |
|----|-----------------------------------|---|



END OF TASK!

FOLLOW-ON TASK: Install ether cylinder (para 4-15).

TA 349217

9-24. WINDSHIELD WASHER JET REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both windshield washer jets are removed and installed the same.

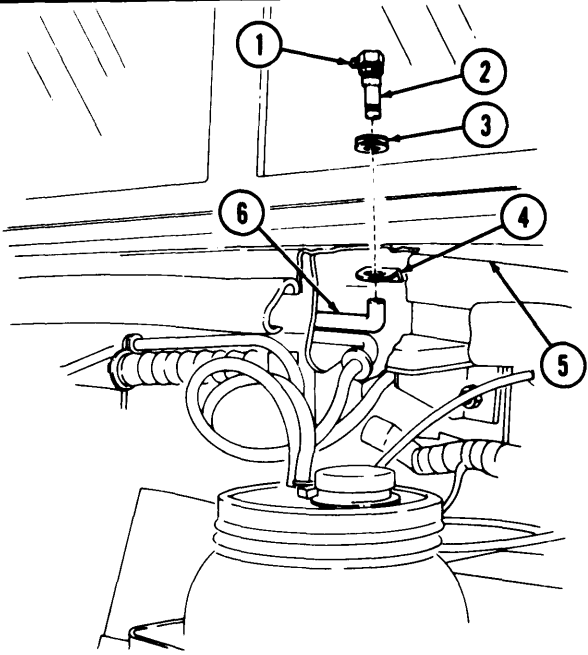
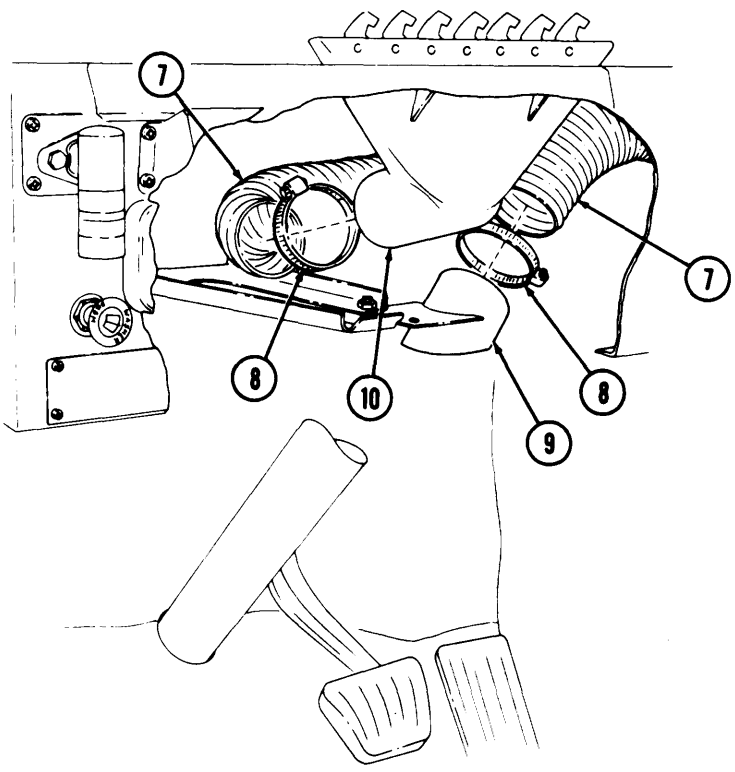
a. Removal

- |    |                            |   |   |
|----|----------------------------|---|---|
| 1. | Left underside of cowl (5) | Two hose clamps (8)                           | Loosen and disconnect two ducting hoses (7) from heat duct (9) and defrost duct (10). |
| 2. |                            | Windshield washer jet supply tube (6)         | Disconnect from windshield washer jet adapter (2).                                    |
| 3. | Top of Cowl (5)            | Wing nut (4), jet (1), and rubber grommet (3) | Remove.   |

b. Installation

- |    |  |  |  |
|----|--|--|--|
| 4. |  | Windshield washer jet (1) and rubber grommet (3) | Install on cowl (5) with wing nut (4).                                   |
| 5. |  | Windshield washer jet supply tube (6)            | Connect.   |
| 6. |  | Two ducting hoses (7)                            | Install on heat duct (9) and defrost duct (10) with two hose clamps (8). |

9-24. WINDSHIELD WASHER JET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
 <p>This diagram illustrates the first six steps of the windshield washer jet replacement process. It shows a close-up of the windshield area where the jet is located. A dashed line indicates the spray pattern of the jet. The components are labeled with circled numbers: 1 (jet), 2 (nut), 3 (washer), 4 (jet), 5 (jet), 6 (jet). The diagram shows the jet being removed and the new jet being installed.</p>				
 <p>This diagram illustrates the final four steps of the windshield washer jet replacement process. It shows the jet being secured with a nut and washer. The components are labeled with circled numbers: 7 (jet), 8 (nut), 9 (washer), 10 (jet). The diagram shows the jet being secured and the final assembly being completed.</p>				

END OF TASK!

TA349218

9-25. WINDSHIELD WASHER HOSES REPLACEMENT

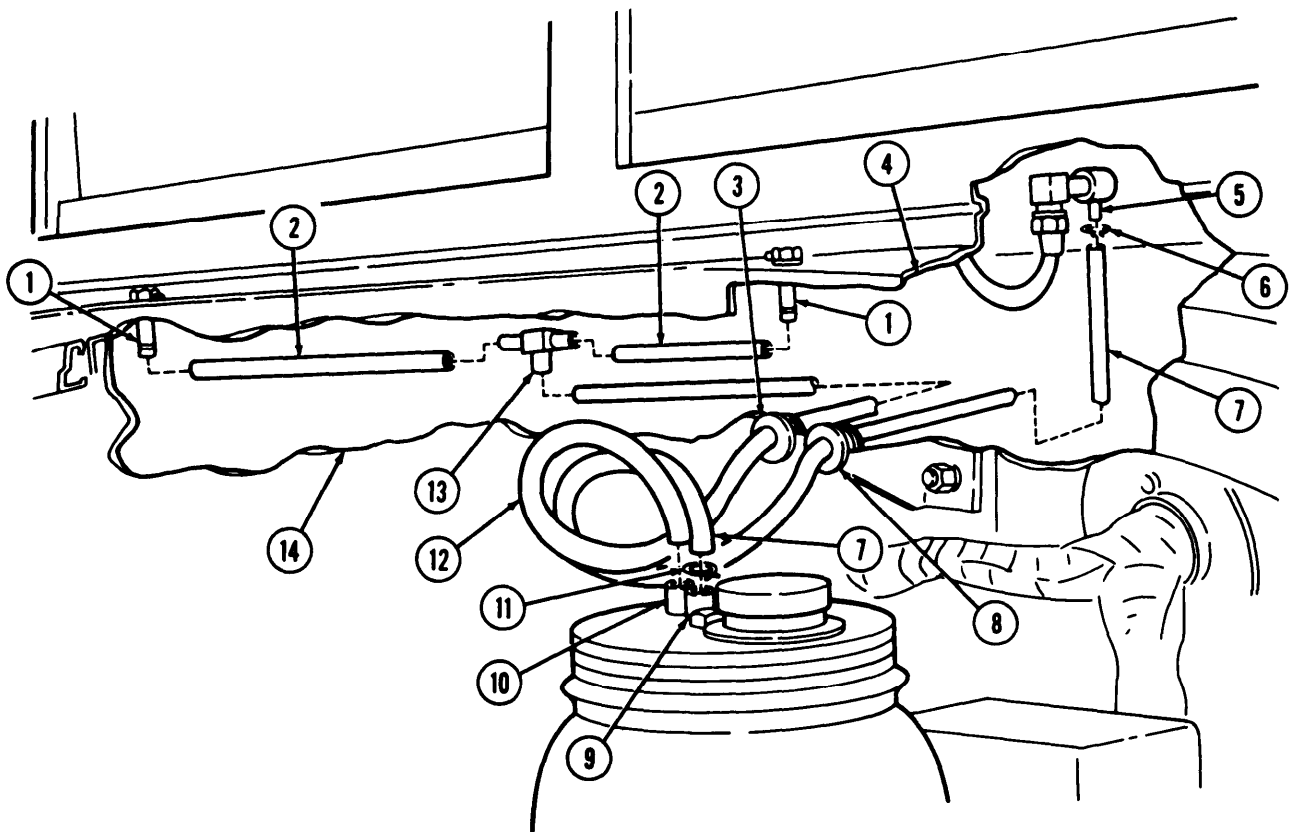
This task covers:  
a. Removal  
b. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-52	Hood raised and secured. Instrument cluster 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
a. Removal				
1.	Washer control valve outlet adapter (5)	Wire clamp (6)	Compress and disconnect washer bottle air supply line (7).	
2.	Washer bottle air inlet adapter (9)	Wire clamp (11)	Compress and disconnect washer bottle air supply line (7).	Tag line (7) for installation.
3.	Firewall (14)	Washer bottle air supply line (7)	Pull through grommet (8) and remove.	
4.	Windshield washer bottle outlet adapter (10)	Windshield washer jet supply tube (12)	Disconnect.	Tag tube (12) for installation.
5.	Windshield washer tube tee (13)	Windshield washer jet supply tube (12)	Disconnect and pull through grommet (3) in firewall (14).	
6.	Two windshield washer jet adapters (1)	Two windshield washer jet supply tubes (2)	Disconnect and remove from underside of cowl (4).	
7.		Two windshield washer jet supply tubes (2)	Separate from windshield washer tube tee (13).	

9-25. WINDSHIELD WASHER HOSES REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA349219

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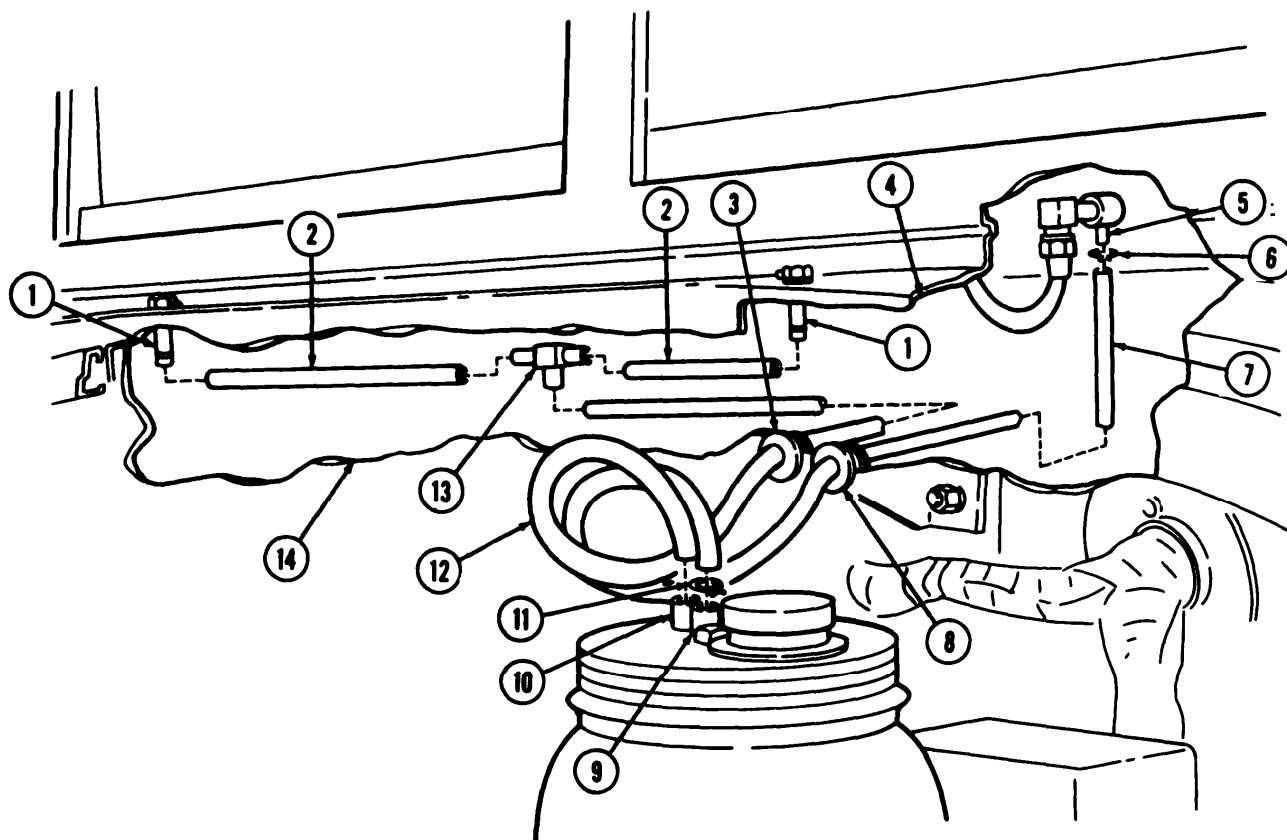
**9-25. WINDSHIELD WASHER HOSES REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>b. Installation</b>				
8.		Two windshield washer jet supply tubes (2)	a Connect to windshield washer tube tee (13) underside of cowl (4). b. Connect to two windshield washer jet adapters (1).	
9.		Windshield washer jet supply tube ( 12)	a. Guide through grommet (3) in firewall (14) and connect to windshield washer tube tee (13). b. Connect to windshield washer bottle outlet adapter (10).	
10.		Washer bottle air supply line (7)	a Compress wire clamp (11) and connect to washer bottle air inlet adapter (9). b. Guide through grommet (8) in firewall (14). c. Compress wire clamp (6) and connect to washer control valve outlet adapter (5).	

9-25. WINDSHIELD WASHER HOSES REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install instrument cluster (para 4-52).

TA349220

9-26. DRIVER’S SEAT REPLACEMENT

This task covers:

<b>a. Removal</b>	<b>b. Installation</b>	
<hr/>		
<b>INITIAL SETUP:</b>		
<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
All	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Six lockwashers		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B (2)		Use caution when removing or installing seat.
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
1.	Seat base (3)	Six screws (1) and lock-washers (2)	Remove.	Discard lockwashers (2).
2.		Driver's seat (4)	a. Slide close to door opening.	

WARNING

Cab seat base has sharp edges. Use extreme caution when removing or installing seat or injury to personnel may result.

NOTE

- Assistant will help with step 2b.
- b. Tilt seat (4) carefully out of door opening and remove.

b. Installation

NOTE

- Assistant will help with step 3a.
3. Driver's seat (4) Install as follows:
- a. Lift to cab so back faces rear of cab.

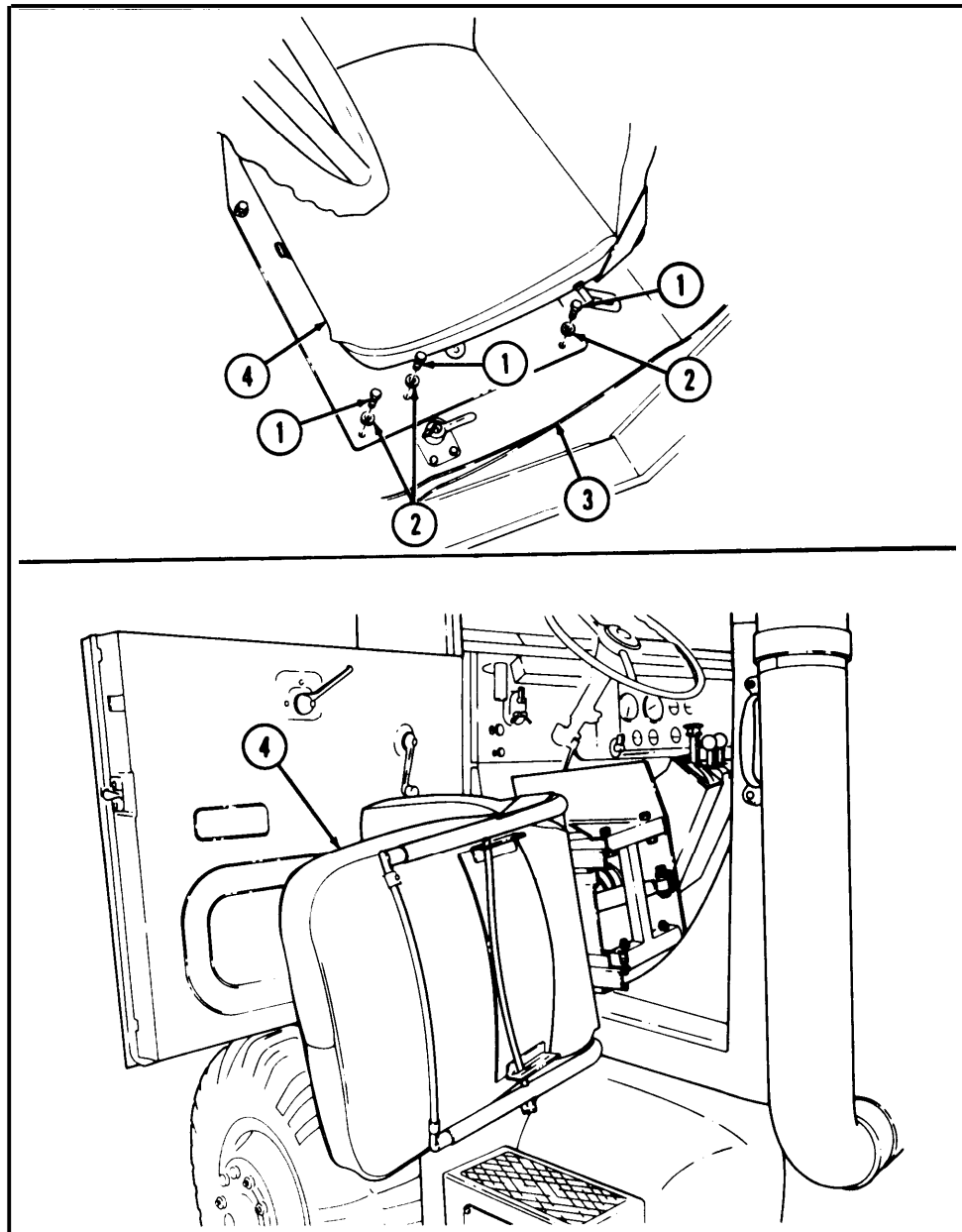


# 9-26. DRIVER'S SEAT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Position seat base  
(3) over holes in cab  
floor.

c. Install with six  
screws (1) and new  
lockwashers (2).



END OF TASK!

TA 349221

9-27. DRIVER’S SEAT FRAME AND BASE MAINTENANCE

This task covers:

- a. Removal
- b. Inspection and Repair
- c. Installation

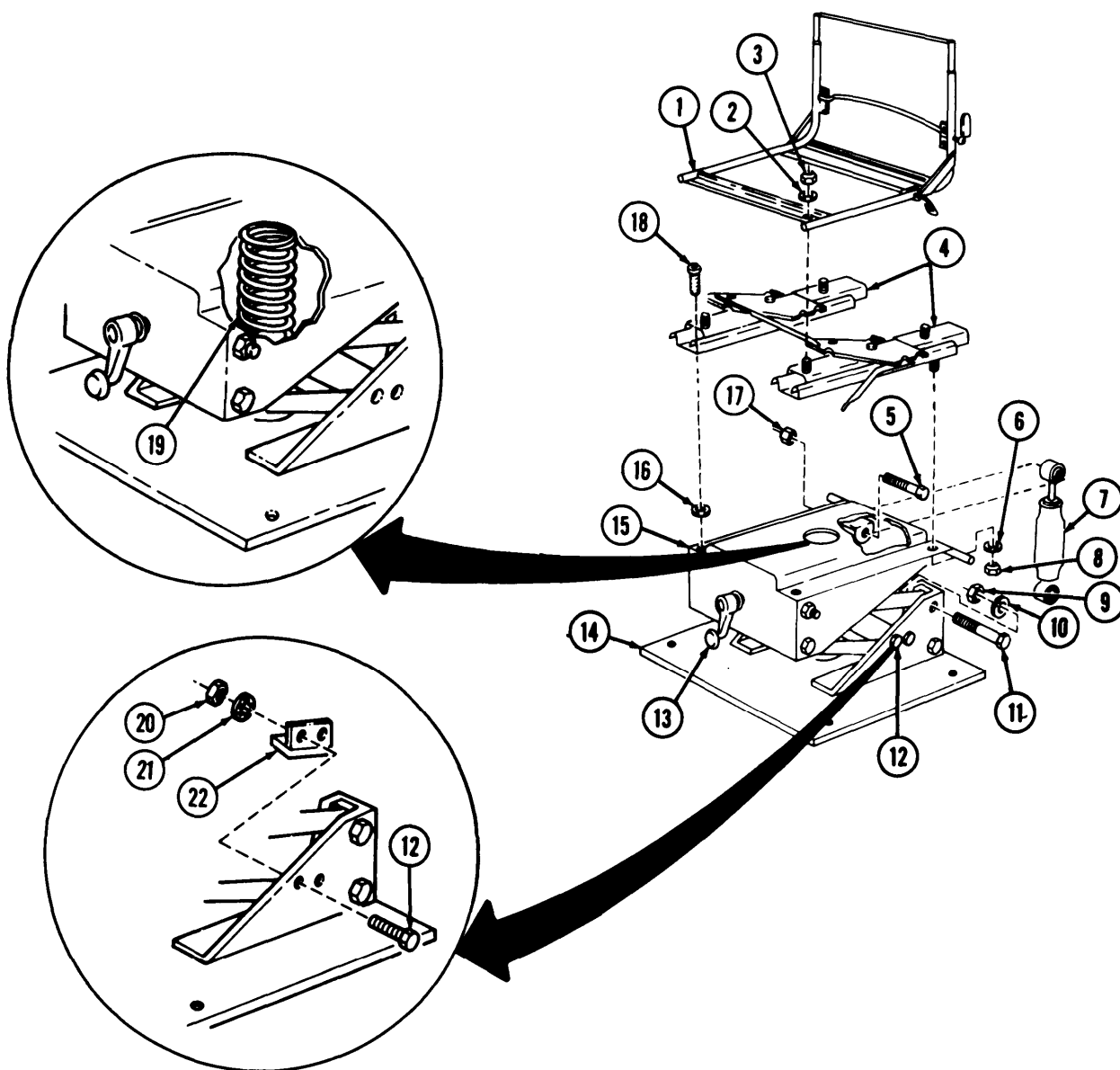
INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10 Para 9-26. Para 9-28.	Parking brake set. Driver's seat removed. Driver's seat cushion and backrest cushion removed.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
Eight locknuts Twelve lockwashers GAA grease (Appendix D, Item 13)		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B (2)		None
Manual References		
TM 9-2320-272-10 TM 9-237 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
a. Removal				
1.	Adjuster (4)	Four locknuts (3) and washers (2), and seat frame (1)	Remove.	Discard locknuts (3).
2.	Top frame (15)	Two screws (18) and washers (16), four locknuts (8) and washers (6), and adjuster (4)	Remove.	Discard locknuts (8).
NOTE				
Assistant will help with steps 3 and 4.				
3.	Seat base (14)	Two screws (5) and nuts (17), and shock absorber (7)	Remove.	
4.		Two brackets (22), four screws (12), lockwashers (21 ), and nuts (20)	Remove.	Discard lockwashers (21).
5.		Spring (19)	Remove.	

# 9-27. DRIVER'S SEAT FRAME AND BASE MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Crank (13)	Fully turn clockwise to remove tension from torque springs.	
7.		Four screws (11), lockwashers (10), and nuts (9)	Remove.	Discard lockwashers (10).
8.		Top frame (15)	Remove.	



TA 349222

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**9-27. DRIVER'S SEAT FRAME AND BASE MAINTENANCE (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
9.	Top frame (9)	Two nuts (11), lock-washers (10) and screws (5), and lower strut (4)	Remove.	Discard lockwashers (10). Tag strut (4) for installation.
10.		Two nuts (6) and lock-washers (7), torque rod (8), sleeve (12), two springs (2), and upper strut (1)	Remove.	Discard lockwashers (7).
11.		Crank (15) and washer (16)	a. Remove pin (18) from threaded part of crank (15). b. Remove from swivel nut (19) on bracket (17).	

---

**b. Inspection and Repair**


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12.		Sheet metal parts, springs, brackets, struts, and pins	Inspect for breaks, bends, and cracks.	If broken, bent, or cracked replace or repair. Refer to TM 9-237.
13.		Crank (15), crank adjuster swivel nut (19), torque rod (8), and screws	Inspect for damaged threads.	If damaged, replace.
14.		Shock absorber (13)	Inspect for damage.	If damaged replace.
15.		Adjusters (14) and crank (15)	Inspect for breaks, bends, and cracks.	Replace or repair if broken, bent or cracked. Refer to TM 9-237.

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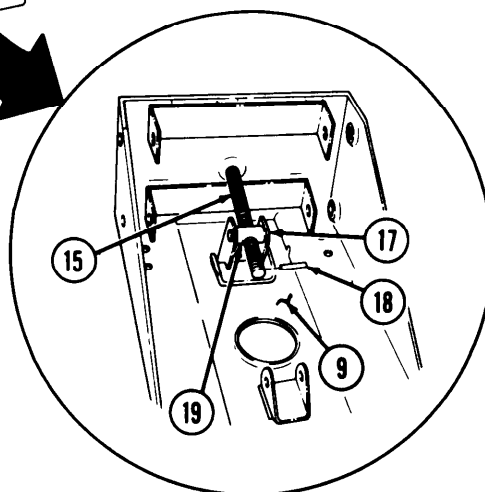
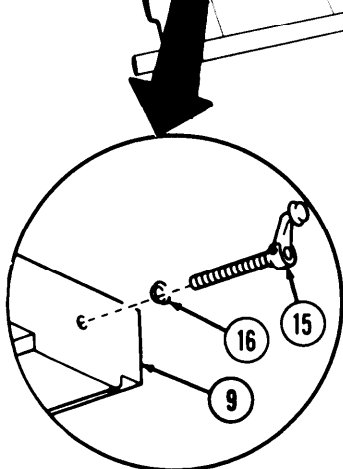
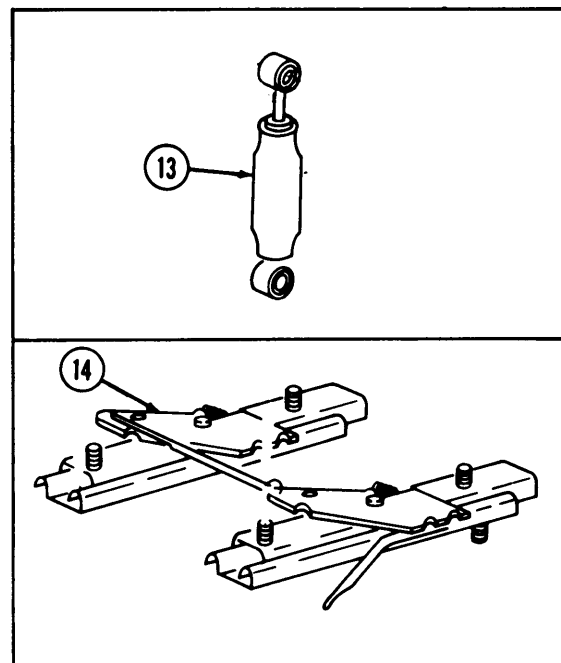
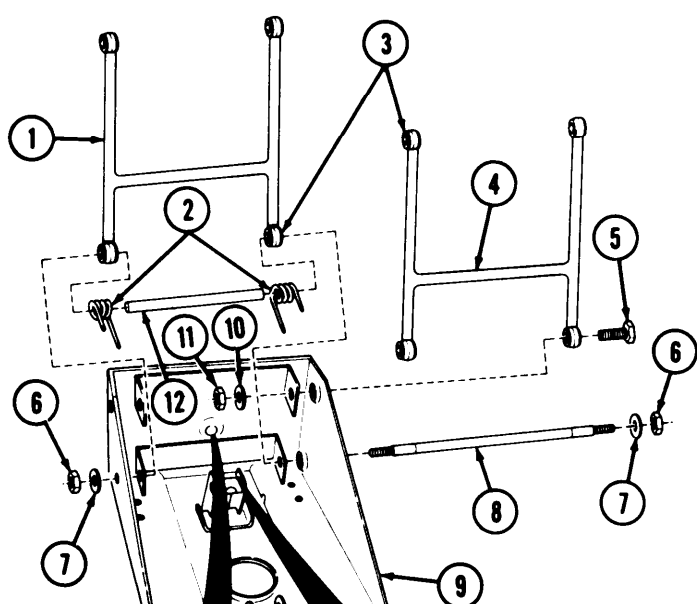
**c. Installation**


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16.		Crank (15) and washer (16)	a. Install in top frame (9) and into crank adjuster swivel nut (19). b. Install pin (18). c. Apply a light coat of GAA grease to threads.	
17.		Eight strut bushings (3) and torque rod (8)	Apply GAA grease.	

## 9-27. DRIVER'S SEAT FRAME AND BASE MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
18.		Lower strut (4)	Install on top frame (9) with two screws (5), new lockwashers (10), and nuts (11).	
19.		Sleeve (12), two springs (2), and upper strut (1)	Install on top frame (9) with torque rod (8), two new lockwashers (7) and nuts (6).	Torque rod (8) can be installed through one side only.



TA 349223

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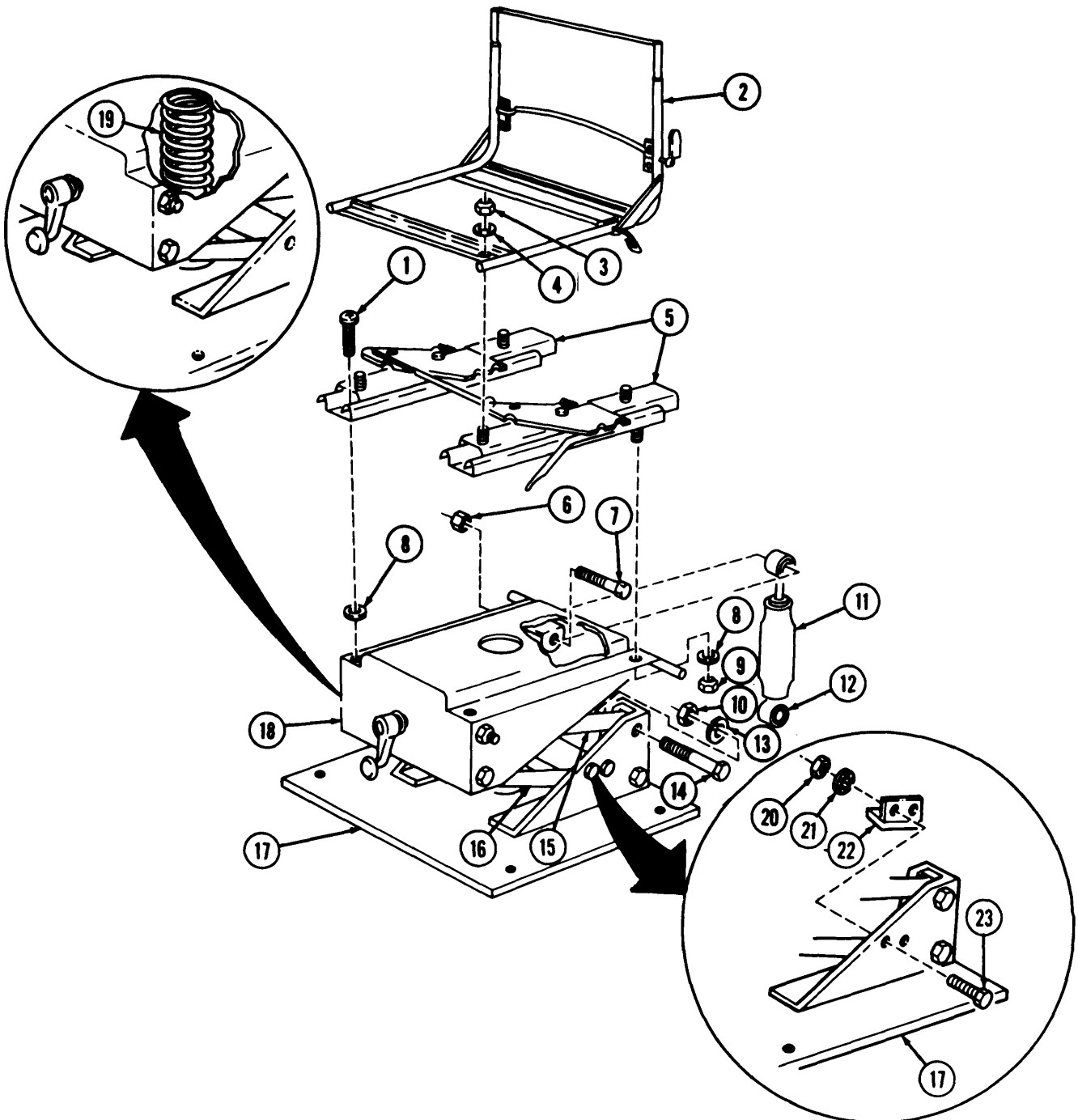
**9-27. DRIVER'S SEAT FRAME AND BASE MAINTENANCE (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>NOTE</b>				
An assistant will help with step 20.				
20.		Lower strut (16) and upper strut (15)	Install on seat base (17) with four screws (14), new lockwashers (13), and nuts (10).	
21.		Spring (19)	Install.	
<b>NOTE</b>				
An assistant will help with steps 22 and 23.				
22.		Two brackets (22)	Install on seat base (17) with four screws (23), new lockwashers (21), and nuts (20).	
23.		Shock absorber (11)	a. Install on top frame (18) with screw (7) and nut (6). b. Install fixed end (12) on seat base (17) with screw (7) and nut (6).	
24.		Adjuster (5)	Install on top frame (18) with two screws (1), four washers (8) and new locknuts (9).	
25.		Seat frame (2)	Install on adjuster (5) with four washers (4) and new locknuts (3).	

9-27. DRIVER'S SEAT FRAME AND BASE MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: • Install driver's seat (para. 9-26).  
• Install driver's seat cushion and backrest cushion (para 9-28).

TA 349224

**9-28. DRIVER'S SEAT CUSHION AND BACKREST CUSHION REPLACEMENT**

This task covers:

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

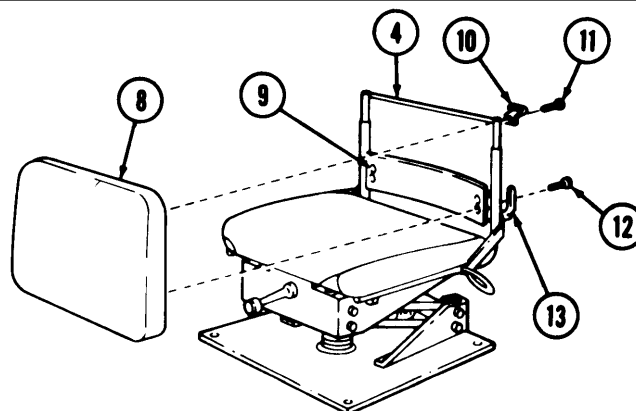
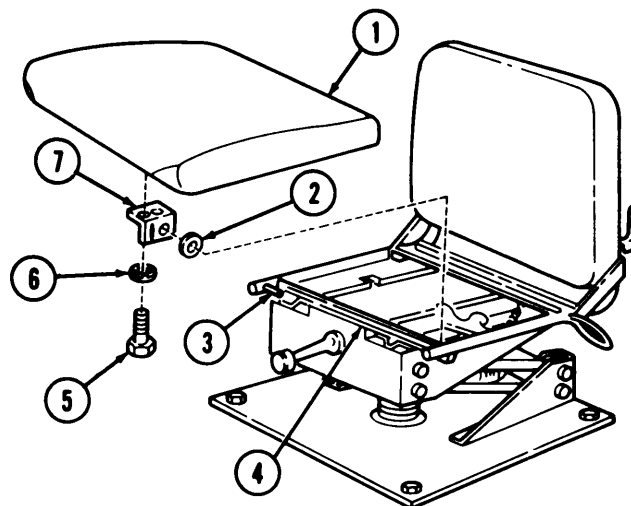
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Two lockwashers		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Two seat brackets (7) to underside of seat cushion (1)	Two screws (5) and lockwashers (6)	Remove from each bracket (7).	Discard lockwashers (6).
2.	Seat frame pins (3)	Two seat brackets (7) and washers (2)	Remove.	
3.	Seat frame (4)	Seat cushion (1)	Remove.	
4.	Two adjuster rod brackets (13)	Two screws (12)	Remove.	
5.	Seat frame (4)	Two screws (11 ) and upper mounting brackets (10)	Remove.	
6.		Backrest cushion (8) and wear plate (9)	Remove,	
<b>b. Installation</b>				
7.		Wear plate (9) and backrest cushion (8)	a. Install on seat frame (4) and adjuster rod brackets (13) with two screws (12).	



**9-28. DRIVER'S SEAT CUSHION AND BACKREST CUSHION REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			b. Install on top of seat frame (4) with two upper mounting brackets (10) and screws (11 ).	
8.		Two seat brackets (7)	Install on seat cushion (1) with two screws (5) and new lock-washers (6).	
9.		Seat cushion (1)	Position over seat frame (4).	
10.		Two washers (2) and seat brackets (7)	Install one on each seat frame pin (3).	



END OF TASK!

TA 349223

## 9-29. COMPANION SEAT CUSHION, BACKREST CUSHION, AND FRAME REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-22	Parking brake set. Battery box cover removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two cotter pins Fourteen lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

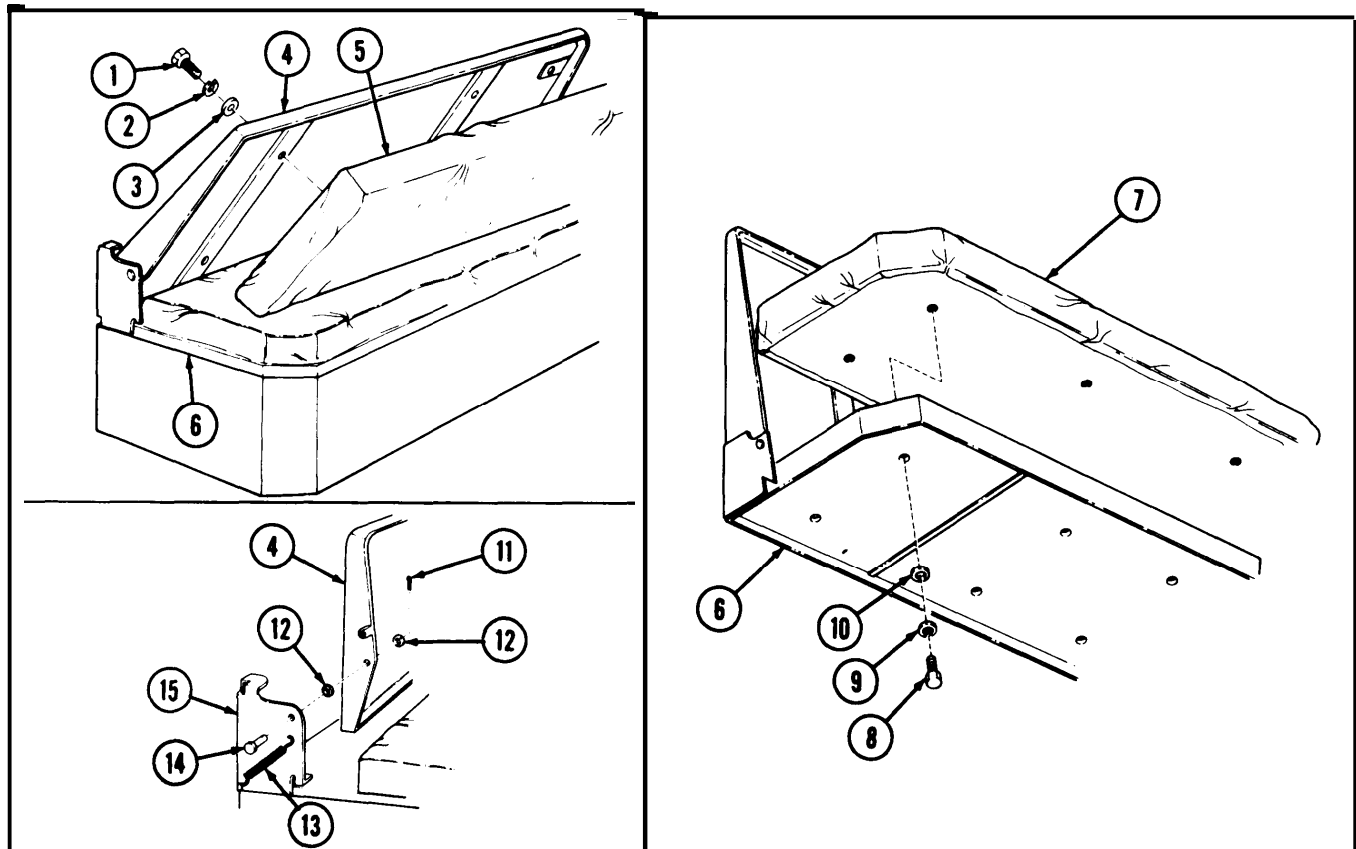
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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#### a. Removal

- |    |  |   |            |                           |
|----|--|---|------------|---------------------------|
| 1. | Battery box cover (6)  | Backrest cushion frame (4)  | Fold down. |                           |
| 2. | Backrest cushion frame (4)   | Eight screws (1), lockwashers (2), and washers (3) and backrest cushion (5) | Remove.    | Discard lockwashers (2).  |
| 3. | Battery box cover (6)  | Six screws (8), lockwashers (9), and washers (10) and seat cushion (7)      | Remove.    | Discard lockwashers (9).  |
| 4. | Two battery box cover extensions (15) and backrest cushion frame (4) | Two springs (13)  | Remove.    |                           |
| 5. | Two battery box cover extensions (15)                                | Two cotter pins (11), four washers (12), and two pins (14)                  | Remove.    | Discard cotter pins (11). |
| 6. |  | Backrest cushion frame (4)  | Remove.    |                           |

# 9-29. COMPANION SEAT CUSHION, BACKREST CUSHION, AND FRAME REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
7.		Backrest cushion frame (4)	Install on battery box cover extensions (15) with two pins (14), four washers (12), and two new cotter pins (11).	
8.		Two springs (13)	Install.	
9.		Seat cushion (7)	Install with six washers (10), new lock-washers (9), and screws (8).	
10.		Backrest cushion (5)	Install with eight washers (3), new lock-washers (2), and screws (1).	



END OF TASK!

FOLLOW-ON TASK: Install battery box cover (para 4-22).

TA 349226

## 9-30. MAP COMPARTMENT REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<b><u>Applicable Models</u></b>		
All	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		
None		
<b><u>Materials/Parts</u></b>		
Four locknuts		
<b><u>Personnel Required</u></b>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

#### a. Removal

- |    |  |   |  |                        |
|----|--|---|--|------------------------|
| 1. |  | Companion seat backrest (3)   | Fold forward.                          |                        |
| 2. | Battery box (4)                                      | Two latches (5)   | Release.                               |                        |
| 3. |  | Battery box cover (2)   | Raise and secure with support rod (1). |                        |
| 4. | Map compartment risers (10) to battery box cover (2) | Four locknuts (11), two gaskets (6), four washers (7), and screws (8) | Remove.                                | Discard locknuts (11). |
| 5. |  | Map compartment (9)   | Remove.                                |                        |

#### b. Installation

#### NOTE

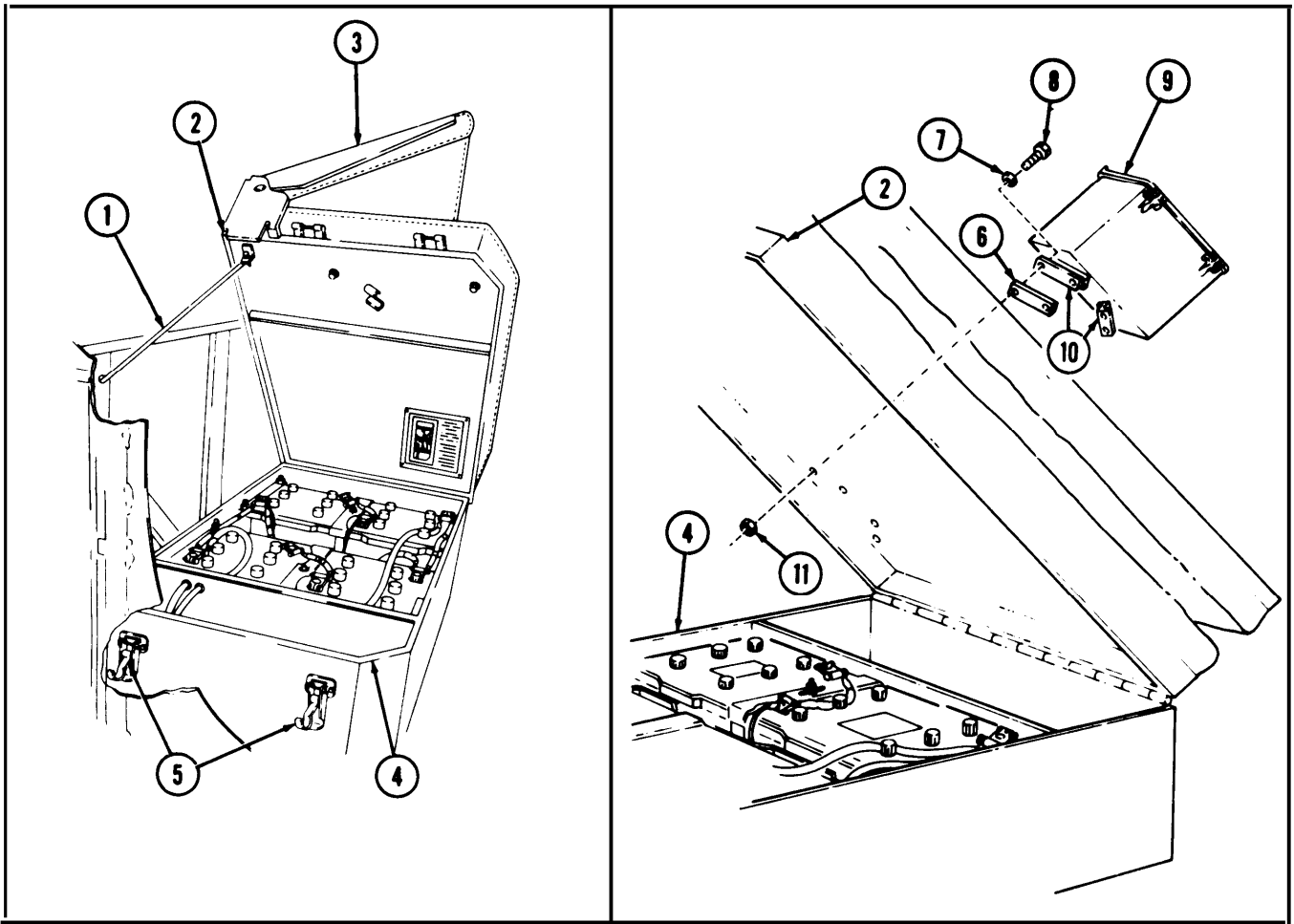
Assistant will help with step 6.

- |    |                     |  |
|----|---------------------|--|
| 6. | Map compartment (9) | Install on battery box cover (2) with four screws (8), washers (7), two gaskets (6), and four new locknuts (11). |
|----|---------------------|--|

# 9-30. MAP COMPARTMENT REPLACEMENT (Cont'd)

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

- |    |  |                             |  |  |
|----|--|-----------------------------|--|--|
| 7. |  | Battery box cover (2)       | Release support rod (1) and install on battery box (4) with two latches (5). |  |
| 8. |  | Companion seat backrest (3) | Fold back.   |  |



END OF TASK!

TA 349227

9-31. CAB GRAB HANDLE REPLACEMENT

This task covers:

a. Removal

b. Installation

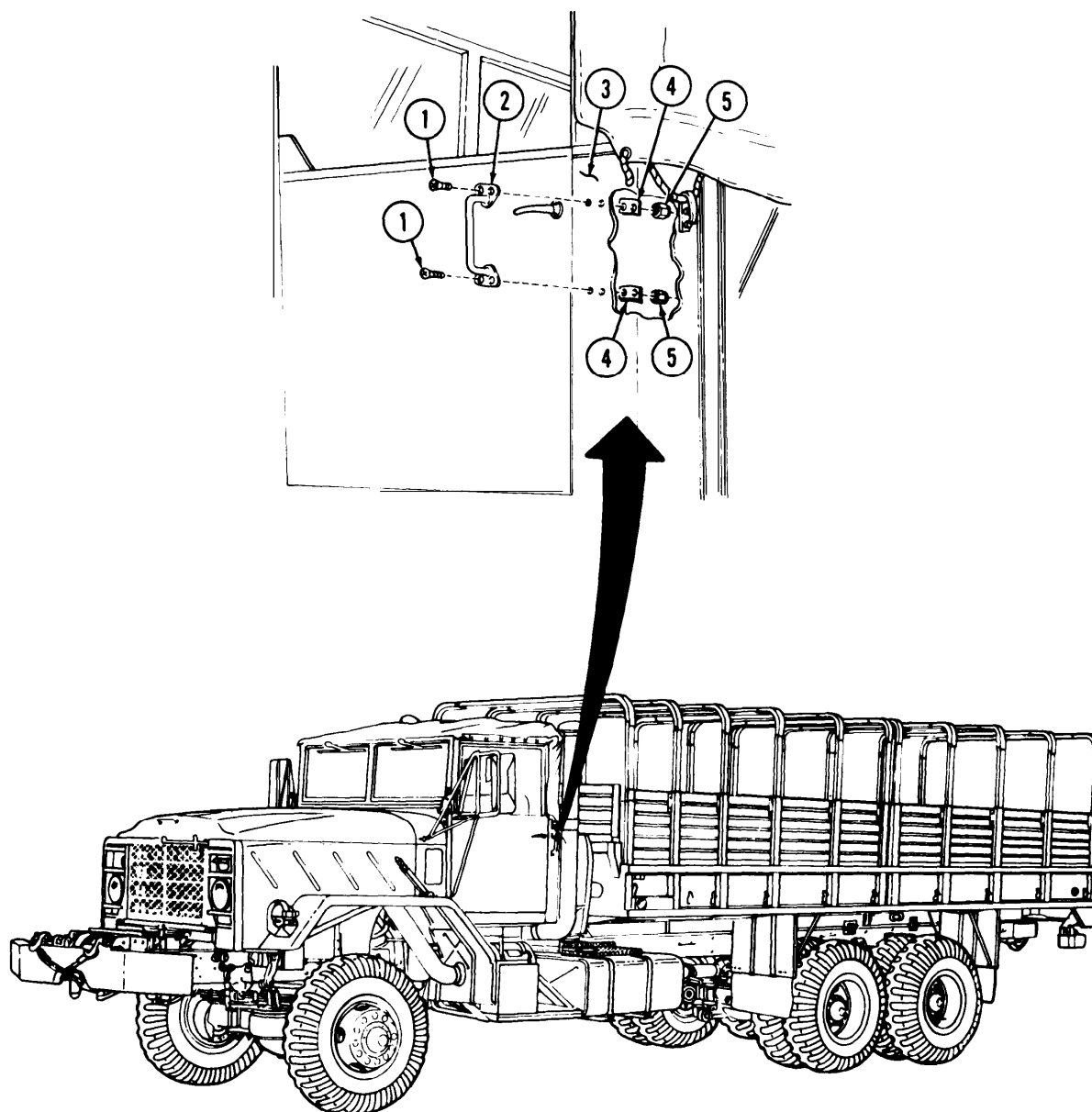
INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Adhesive (Appendix D, Item 1)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Rear corner of cab (3)	Four locknuts (5) and screws (1)	Remove from grab handle (2).	Lift insulation and cut two square patches to gain access to locknuts (5) and reinforcing plates (4). Save patches for installation.
2.		Grab handle (2) and two reinforcement plates (4)	Remove.	Discard locknuts (5).
<b>b. Installation</b>				
3.		Grab handle (2)	Position on cab (3), and install with two reinforcing plates (4), four screws (1), and new locknuts (5).	Using adhesive, adhere insulation patches to cab (3).

# 9-31. CAB GRAB HANDLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349228

## 9-32. REARVIEW MIRROR AND MIRROR BRACE ASSEMBLY REPLACEMENT

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tool</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Nine locknuts		None
Lockwasher		
Screw-assembled lockwasher		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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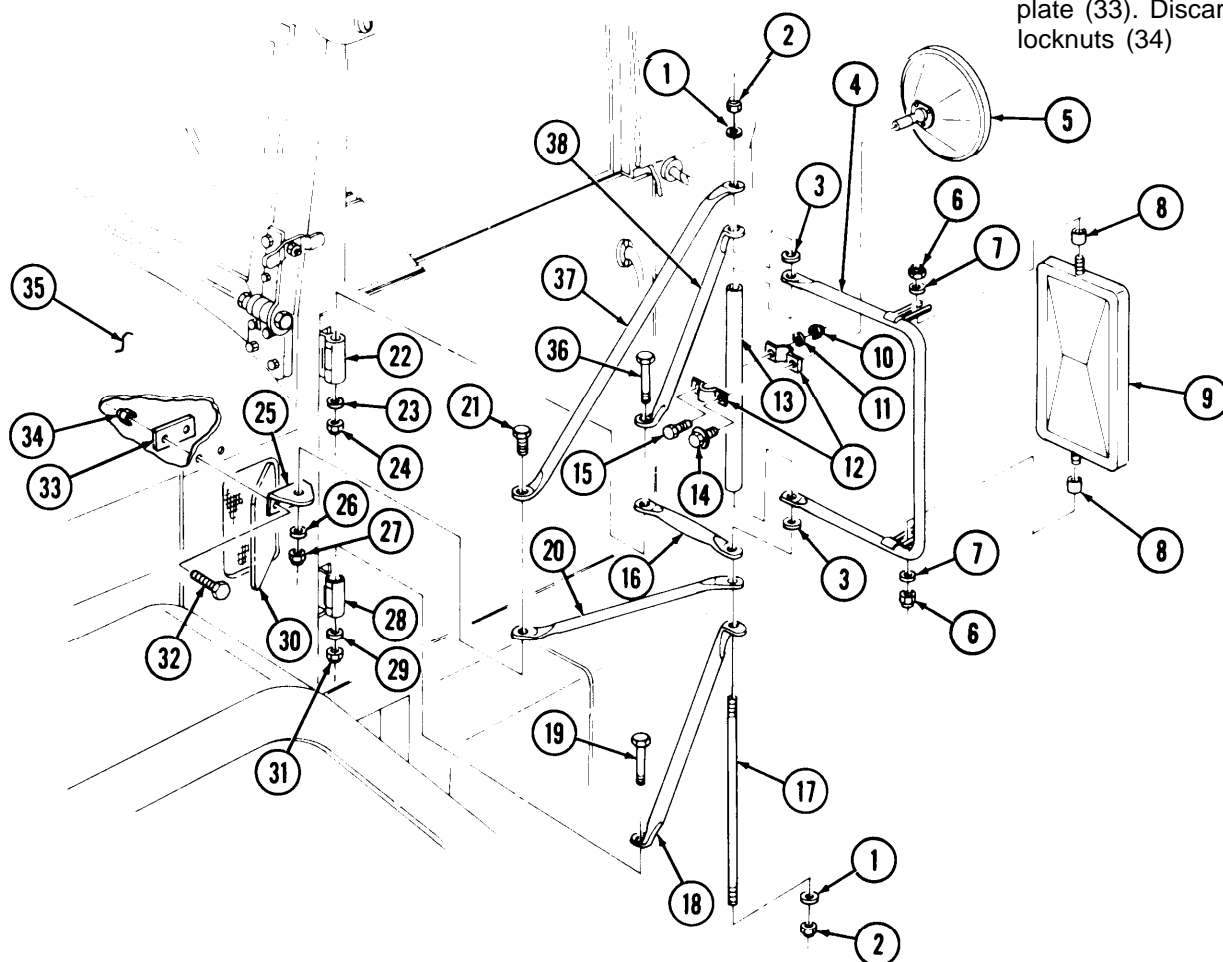
**a. Removal**

- | STEP NO. | LOCATION   | ITEM  | ACTION                                 | REMARKS                                 |
|----------|--|---|--|---|
| 1.       | Mirror (9)   | Two locknuts (6) and washers (7)                | Remove.                                | Discard locknuts (6).                   |
| 2.       | Brace (4)  | Rearview mirror (9) and two spacers (8)         | Remove.                                |   |
| 3.       | Two clamps (12)  | Screw (15), lockwasher (11), and nut (10)       | Remove.                                | Discard lockwasher (11).                |
| 4.       | Convex mirror (5) at clamps (12)                               | Screw-assembled lockwasher (14)                 | Remove.                                | Discard screw-assembled lockwasher (4). |
| 5.       | Upper brace (13)   | Two clamp halves (12) and convex mirror (5)     | Remove.                                |   |
| 6.       | Upper mirror braces (16) and (38) to upper cab door hinge (22) | Hinge screw (36), locknut (24), and washer (23) | Remove.                                | Discard locknut (24).                   |
| 7.       |  | Upper mirror braces (38) and (16)               | Push away from cab door hinge (22).    |   |
| 8.       |  | Hinge screw (36)                                | Insert into upper cab door hinge (22). | Do not tighten hinge screw (36).        |
| 9.       | Lower mirror brace (18) to lower cab door hinge (28)           | Hinge screw (19), locknut (31), and washer (29) | Remove.                                | Discard locknut (31).                   |



## 9-32. REARVIEW MIRROR AND MIRROR BRACE ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.		Lower mirror brace (18)	Push away from cab door hinge (28).	
11.		Hinge screw (19)	Insert into lower cab door hinge (28).	Do not tighten hinge screw (19).
12.	Front mirror brace (37) and (20) to cab cowl bracket (25)	Screw (21), locknut (27), and washer (26)	Remove.	Discard locknut (27).
13.		Rearview mirror brace (4)	Remove.	After all braces have been removed, tag for installation.
14.	Upper brace (13)	Two locknuts (2), washers (1), and gaskets (3) and rod (17)	Remove.	Discard locknuts (2).
15.	Cowl side panel (35)	Two screws (32), locknuts (34), cowl plate (33), and bracket (25)	Remove.	Open air-vent door (30) from inside cab before removing locknuts (34) and cowl plate (33). Discard locknuts (34)



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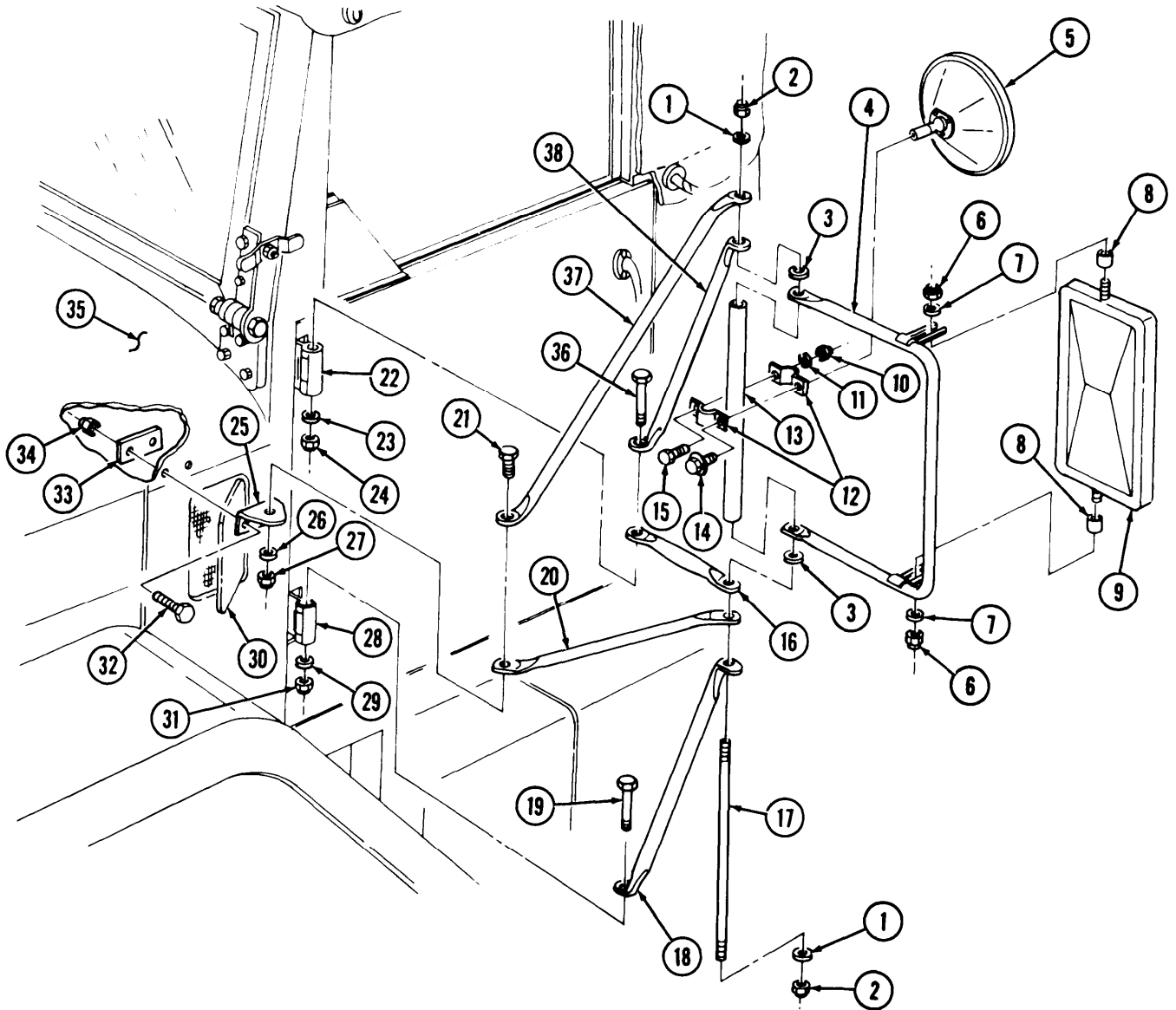
**9-32. REARVIEW MIRROR AND MIRROR BRACE ASSEMBLY REPLACEMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
16.		Bracket (25), cowl plate (33), two new locknuts (34), and screws (32)	Install on cowl side panel (35).	Open air-vent door (30) from inside cab to install locknuts (34) and cowl plate (33).
17.		Braces (13), (4), (16), (37), (38), (20), and (18)	Install with rod (17), two gaskets (3), washers (1), and new locknuts (2).	
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Assistant will help with step 18.</p>				
18.		Mirror braces (20) and (37)	Install on cab cowl bracket (25) with screw (21), washer (26), and new locknut (27).	
19.		Hinge screw (36)	Remove from top door hinge (22).	
20.		Upper mirror brace (38) and mirror brace (16)	Install as follows: a. Position over upper door hinge (22). b. Insert hinge screw (36) through brace (38), brace (16), and hinge (22). c. Install with washer (23) and new locknut (24).	
21.		Hinge screw (19)	Remove from lower door hinge (28).	
22.		Lower mirror brace (18)	a. Position over lower door hinge (28). b. Insert hinge screw (19) through brace (18) and hinge (28). c. Install with washer (29) and new locknut (31).	
23.		Two clamp halves (12)	Install on upper brace (13) with screw (15), new lock-washer (11), and nut (10).	
24.		Convex mirror (5)	Install on clamp halves (12) with new screw-assembled lockwasher (14).	
25.		Rearview mirror (9) and two spacers (8)	Position on mirror brace (4) and install with two washers (7) and new locknuts (6).	

**9-32. REARVIEW MIRROR AND MIRROR BRACE ASSEMBLY REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

### 9-33. PERSONNEL HEATER INLET HOSE REPLACEMENT

This task covers:

#### a. Removal

#### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Right splash shield removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		
None		
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
None		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

#### NOTE

Have drainage container ready to catch coolant.

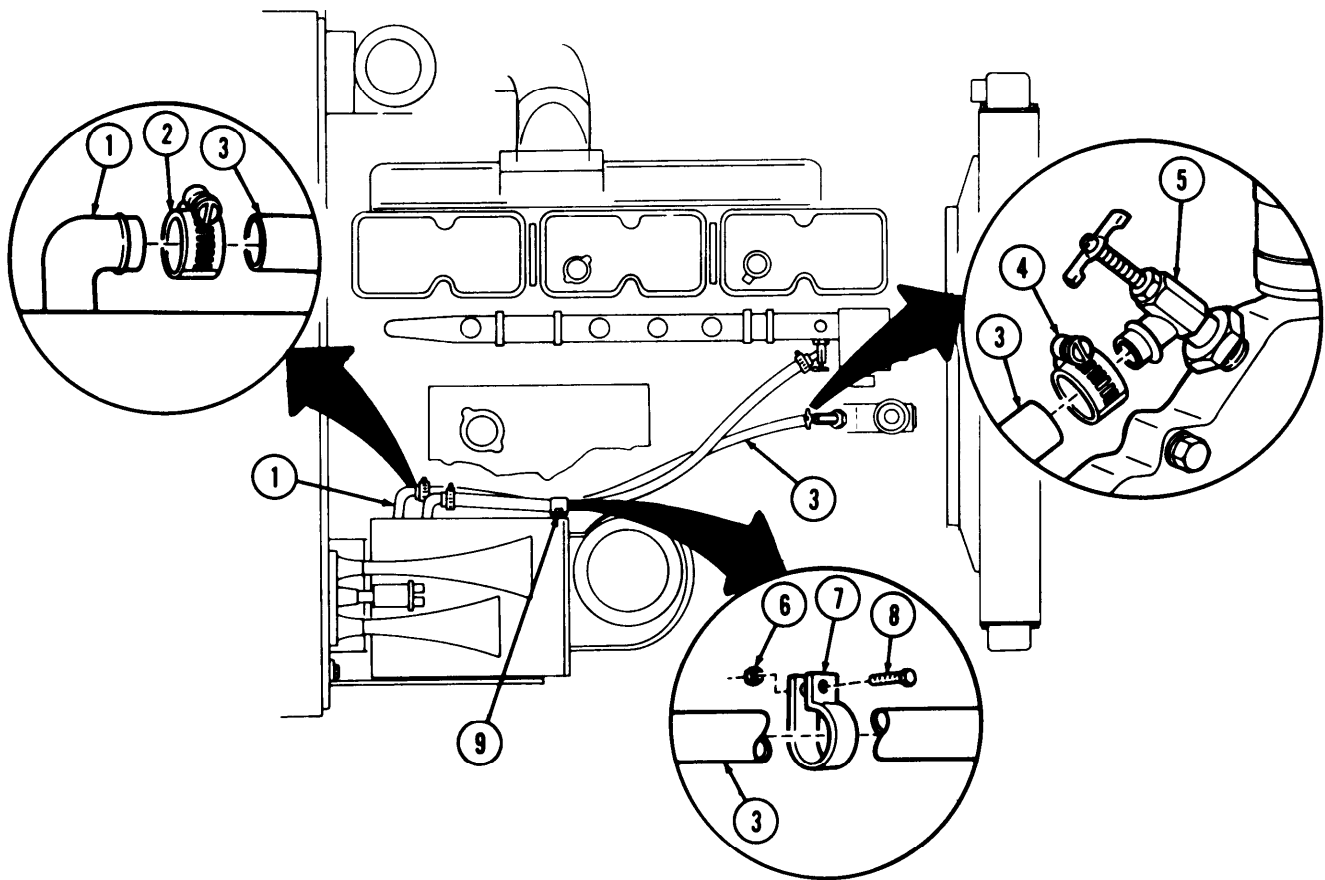
- |    |                                     |                                     |  |
|----|-------------------------------------|-------------------------------------|--|
| 1. | Right side of engine                | Heater inlet hose (3)               | a. Loosen hose clamp (2).<br>b. Disconnect from heater elbow (1).          |
| 2. | Heater inlet hose support clamp (7) | Screw (8) and nut (6)               | Remove.  |
| 3. |                                     | Heater inlet hose support clamp (7) | Remove from heater support (9) and heater inlet hose (3).                  |
| 4. |                                     | Heater inlet hose (3)               | a. Loosen hose clamp (4).<br>b. Remove from oil cooler shut-off valve (5). |

#### b. Installation

- |    |  |                       |   |
|----|--|-----------------------|---|
| 5. |  | Heater inlet hose (3) | a. Connect to heater elbow ( 1 ) and install with hose clamp (2). |
|----|--|-----------------------|---|

9-33. PERSONNEL HEATER INLET HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Heater inlet hose support clamp (7)	Place around heater hose (3) and install to heater support (9) with screw (8) and nut (6).	b. Connect to engine oil cooler shutoff valve (5) and install with hose clamp (4).



END OF TASK!

- FOLLOW-ON TASKS:
- Fill cooling system to proper level and test antifreeze (Para. 3-46).
  - Install right splash shield (TM 9-2320-272-10).
  - Check heater for proper operation (TM 9-2320-272- 10).

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## 9-34. PERSONNEL HEATER OUTLET HOSE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

ENGINE CENTER		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Right splash shield 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

#### NOTE

Have drainage container ready to catch coolant.

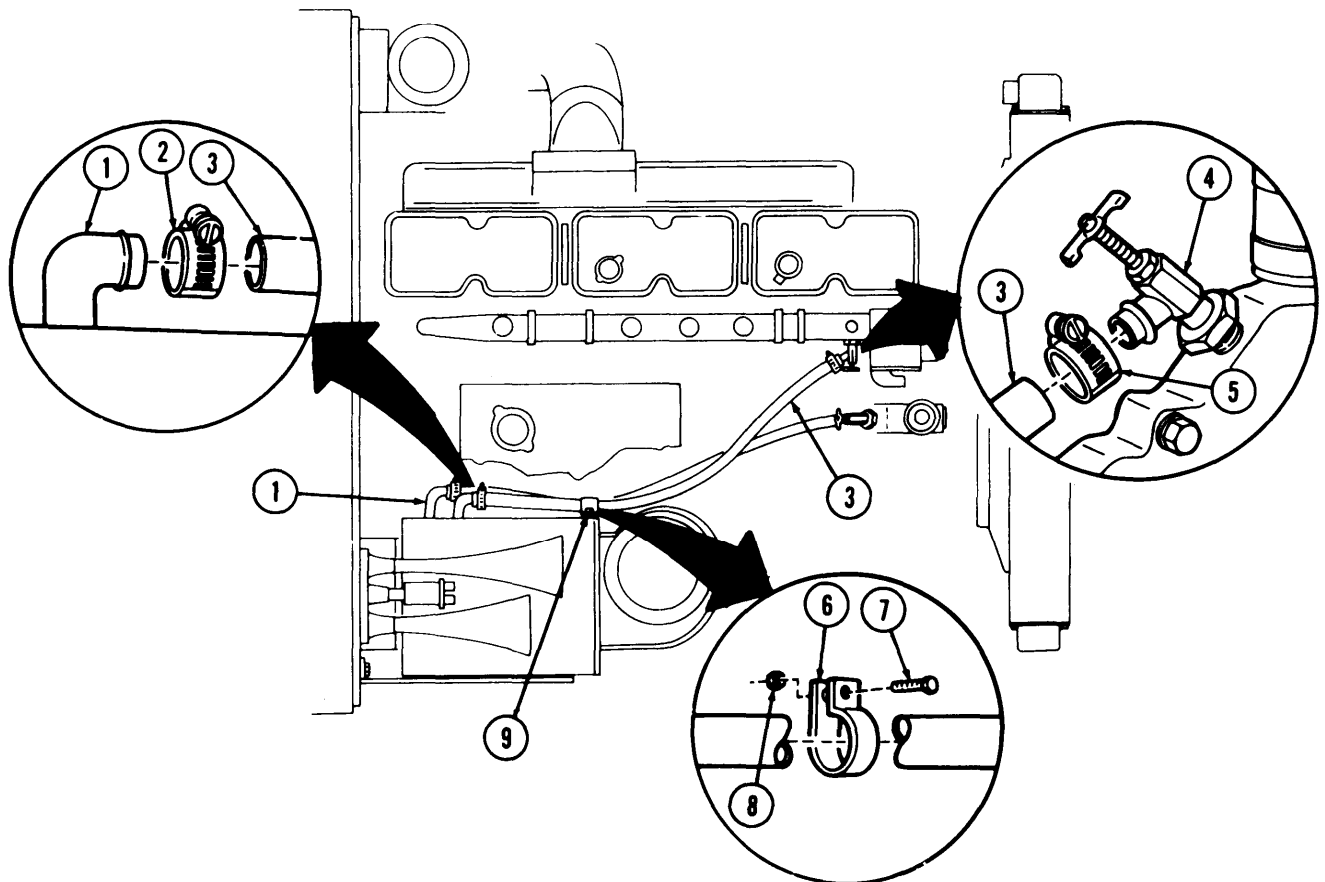
- |    |                                      |                                      |  |
|----|--------------------------------------|--------------------------------------|--|
| 1. | Right side of engine                 | Heater outlet hose (3)               | a. Loosen hose clamp (2).                                  |
|    |                                      |                                      | b. Disconnect from heater elbow (1),                       |
| 2. | Heater outlet hose support clamp (6) | Screw (7) and nut (8)                | Remove.  |
| 3. |                                      | Heater outlet hose support clamp (6) | Remove from heater support (9) and heater outlet hose (3). |
| 4. |                                      | Heater outlet hose (3)               | a. Loosen hose clamp (5).                                  |
|    |                                      |                                      | b. Remove from water manifold shutoff valve (4).           |

### b. Installation

- |    |  |                        |   |
|----|--|------------------------|---|
| 5. |  | Heater outlet hose (3) | a. Connect to heater elbow (1) and install with hose clamp (2). |
|----|--|------------------------|---|

# 9-34. PERSONNEL HEATER OUTLET HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Heater outlet hose support clamp (6)	<p>b. Connect to water manifold shutoff valve (4) and install with hose clamp (5).</p> <p>Place around heater hose (3) and install to heater support (9) with screw (7) and nut (8).</p>	



END OF TASK!

- FOLLOW-ON TASKS:
- Fill cooling system to proper level and test antifreeze (para. 3-46).
  - Install right splash shield (TM 9-2320-272-10).
  - Check heater for proper operation (TM 9-2320-272-10).

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**9-35. PERSONNEL HOT WATER HEATER REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 9-33 Para. 9-34	Parking brake set. Heater inlet hose removed. Heater outlet hose removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Cotter pin		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |   |   |             |                         |
|----|---|---|-------------|-------------------------|
| 1. | Personnel hot water heater (8)                  | Screw (4) sheet spring nut (6), and conduit clamp bracket (5) | Remove.     |                         |
| 2. | Fresh air shutoff rod (1)                       | Cotter pin (7)  | Remove.     | Discard cotter pin (7). |
| 3. |   | Fresh air control cable (3) and clip (2)                      | Remove.     |                         |
| 4. | Personnel hot water heater (8)                  | Wire (24)   | Disconnect. |                         |
| 5. | Rear heater support (16)                        | Nut (19), two washers (15), and screw (14)                    | Remove.     |                         |
| 6. | Forward heater support (21 )                    | Nut (25), two washers (9), and screw (10)                     | Remove,     |                         |
| 7. | Forward and rear heater supports (21 ) and (16) | Four screws (23) and washers (22)                             | Remove.     |                         |
| 8. | Firewall (12)                                   | Two screws (18), washers (17), and left bracket (20)          | Remove.     |                         |



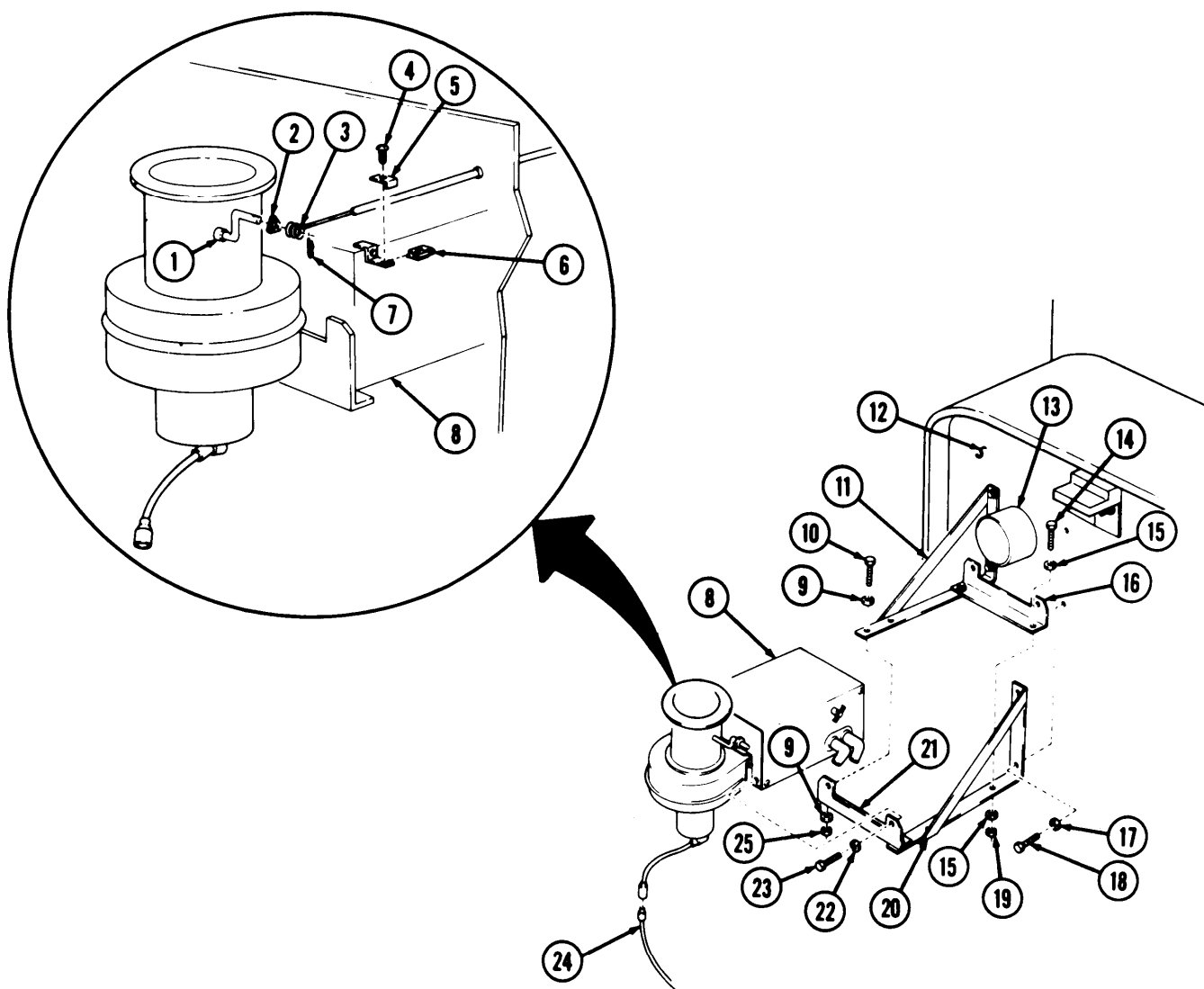
9-35. PERSONNEL HOT WATER HEATER REPLACEMENT (Cont'd)

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

Do not twist or bend elbows. They are welded on personnel hot water heater and will be damaged.

- |    |  |                                |         |
|----|--|--------------------------------|---------|
| 9. | Diverter duct (13) and right bracket (11 ) | Personnel hot water heater (8) | Remove. |
|----|--|--------------------------------|---------|



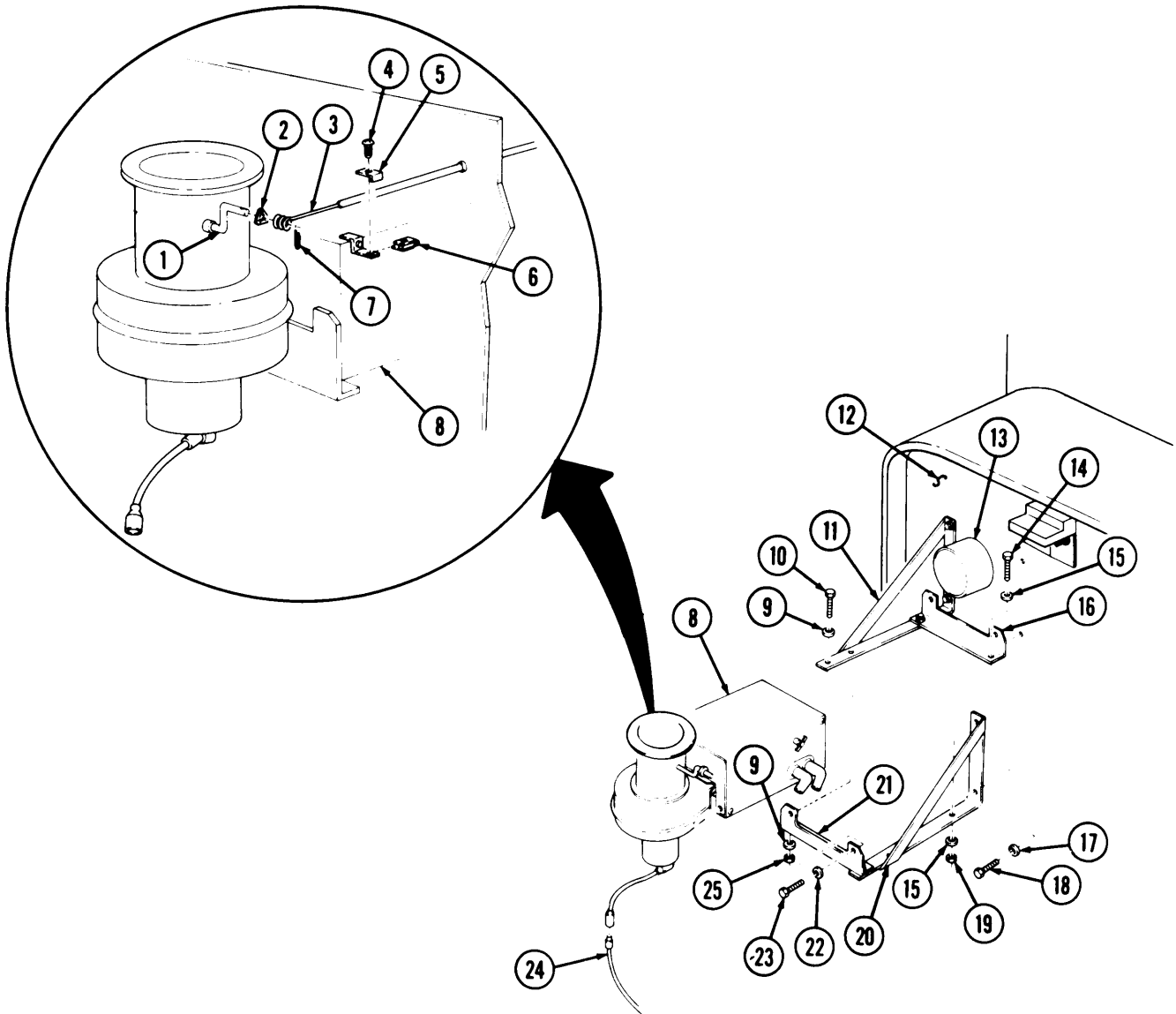
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**9-35. PERSONNEL HOT WATER HEATER REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
<p style="text-align: center;"><b><u>CAUTION</u></b></p> <p>During installation of personnel hot water heater do not twist or bend elbows. They are welded on personnel hot water heater and will be damaged.</p>				
10.		Personnel hot water heater (8)	Install on diverter duct (13) and right bracket (11).	
11.		Left bracket (20)	Install on firewall (12) with two washers (17) and screws (18).	
12.		Forward and rear supports (21 ) and (16)	<p>a. Install on personnel hot water heater (8) with four washers (22) and screws (23).</p> <p>b. Install on left bracket (20) and right bracket (11 ), with screw (10), two washers (9), nut (25), screw (14), two washers (15), and nut (19).</p>	
13.		Wire (24)	Connect to personnel hot water heater (8).	
14.		Clip (2) and fresh air control cable (3)	Install on fresh air shutoff rod (1) with new cotter pin (7).	
15.		Conduit clamp bracket (5) and fresh air control cable (3)	Install on personnel hot water heater (8) with sheet spring nut (6) and screw (4).	

## 9-35. PERSONNEL HOT WATER HEATER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Install heater outlet hose (para. 9-34).
- Install heater inlet hose (para. 9-33).
- Check heater for proper operation (TM 9-2320-272-10).

TA 349234

## 9-36. FRESH AIR VENT CONTROL ASSEMBLY REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Cotter pin LockWasher		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

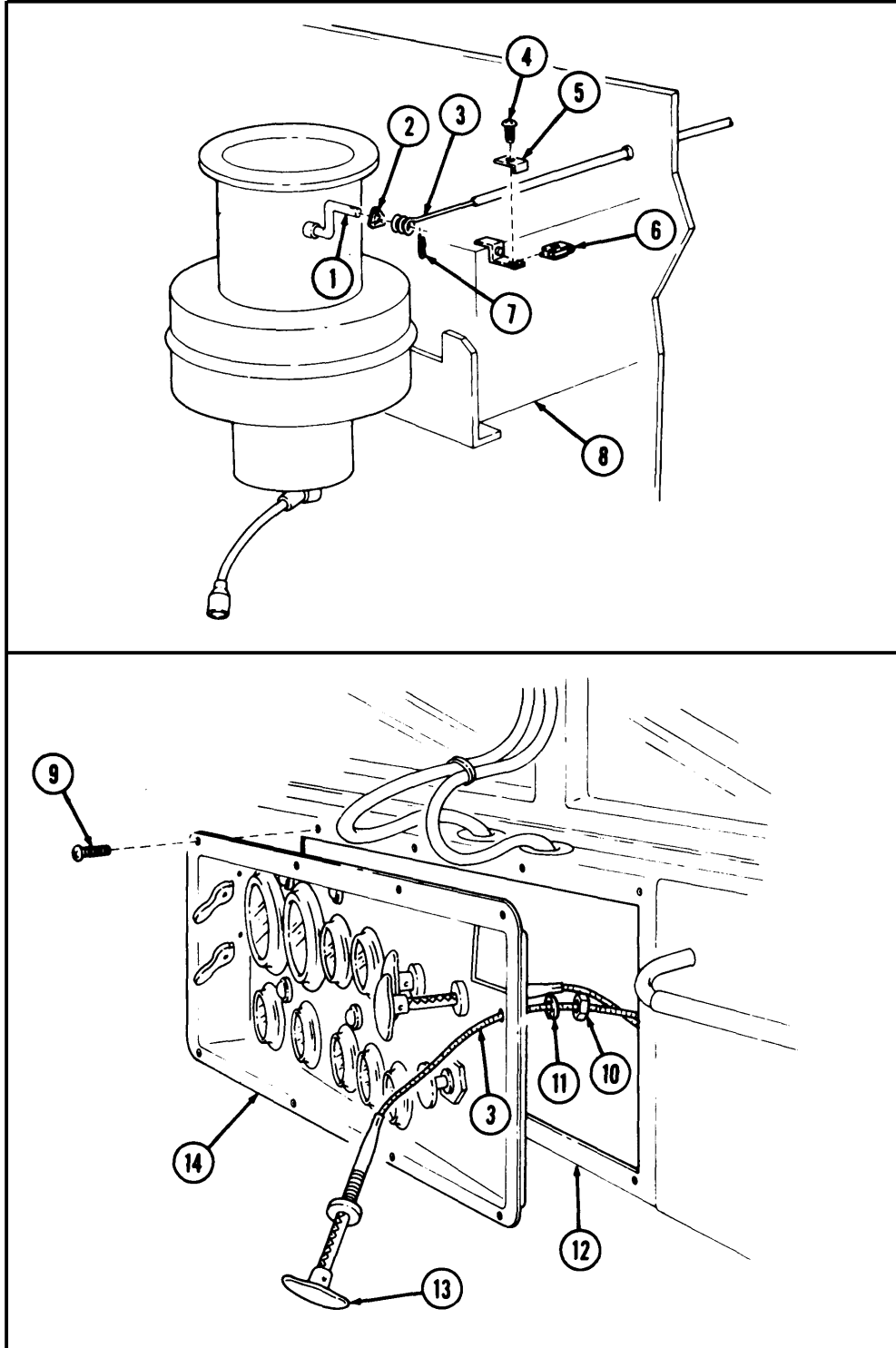
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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#### a. Removal

1.	Personnel hot water heater (8)	Screw (4), sheet spring nut (6), and conduit clamp bracket (5)	Remove.	
2.	Fresh air shutoff rod (1)	Cotter pin (7)	Remove.	Discard cotter pin (7).
3.		Fresh air control cable (3) and clip (2)	Remove.	
4.	Instrument cluster (14) to instrument panel (12)	Eight screws (9)	Remove, and pull instrument cluster (14) away from instrument panel (12).	
5.	Instrument cluster (14)	Nut (10) and lock-washer (11)	Remove from threaded section of fresh air control handle (13) and slide off cable (3) at coiled end.	
6.		Fresh air control handle (13) and fresh air control cable (3)	Remove.	

9-36. FRESH AIR VENT CONTROL ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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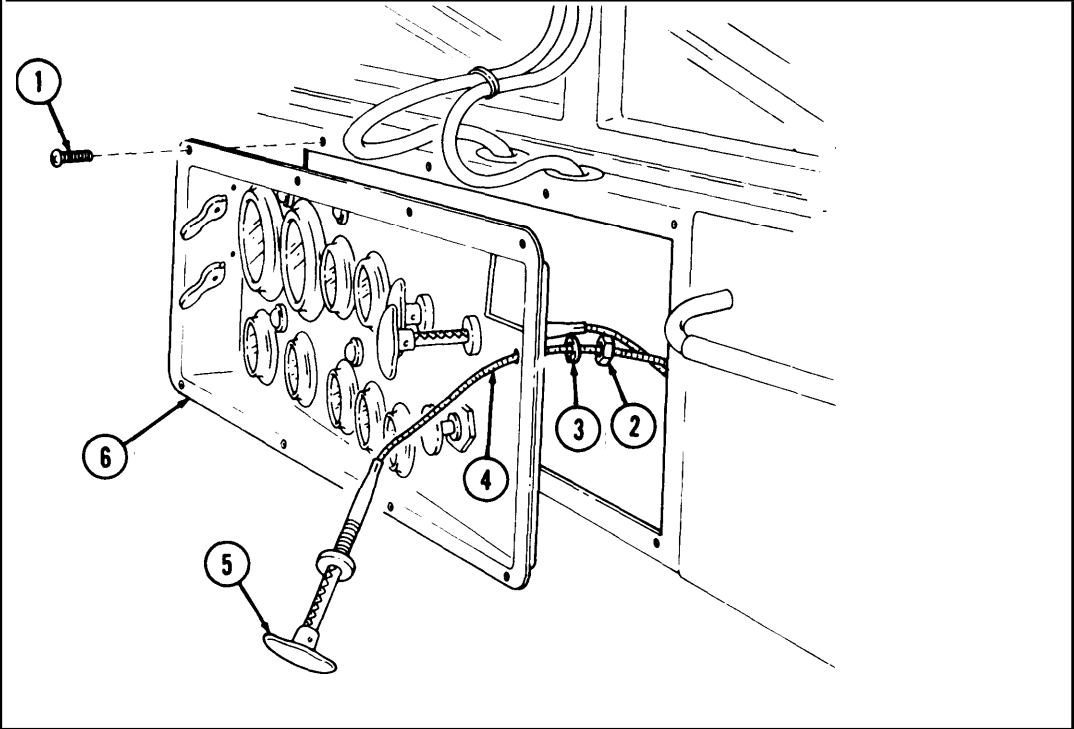
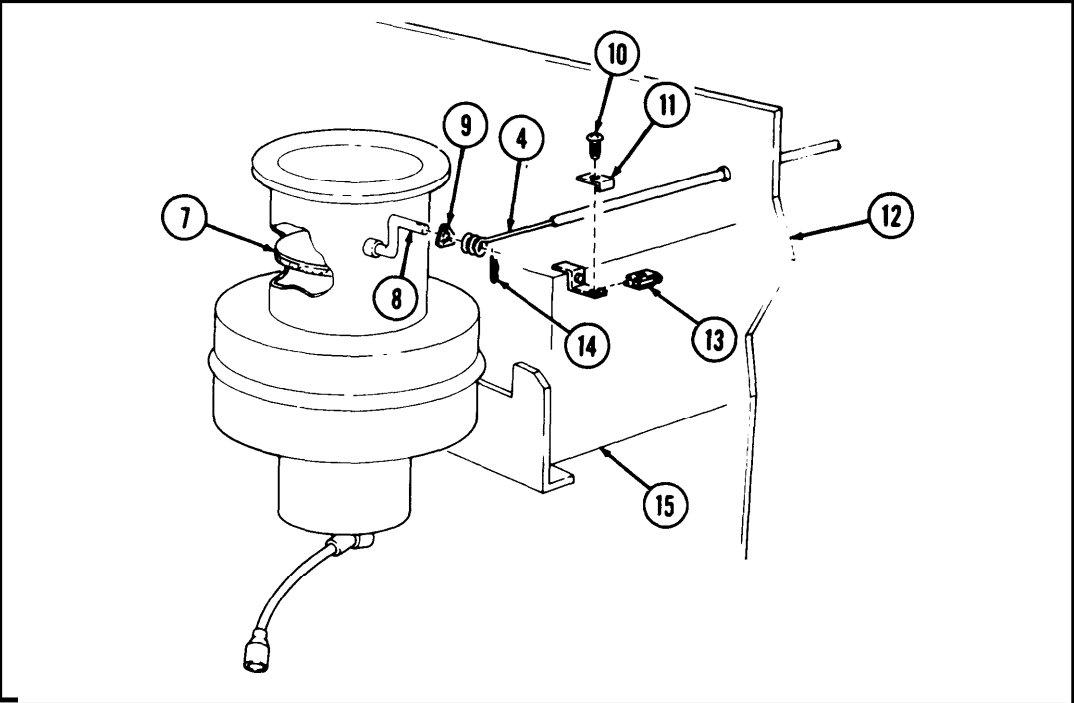


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## 9-36. FRESH AIR VENT CONTROL ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
7.		Fresh air control handle (5) and fresh air control cable (4)	a. Thread cable (4) end through holes in instrument cluster (6). b. Position control handle (5) against instrument cluster (6) and install with new lockwasher (3) and nut (2). c. Thread cable (4) through firewall (12).	
8.		Instrument cluster (6)	Install with eight screws (1).	
9.		Fresh air control handle (5)	Push in all the way.	
10.		Fresh air control rod (8)	Close before connecting fresh air control cable (4).	Air intake flap (7) inside personnel hot water heater (15) must be closed.
11.		Clip (9) and fresh air control cable (4)	Install on fresh air shutoff rod (8) with new cotter pin (14),	
12.		Conduit clamp bracket (11) and fresh air control cable (4)	a. Install on personnel hot water heater (15) with sheet spring nut (13) and screw (10). b. Adjust air intake flap (7) to closed position.	

9-36. FRESH AIR VENT CONTROL ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

END OF TASK!

FOLLOW-ON TASK: Check fresh air vent for proper operation (TM 9-2320-272-10).

TA 349236

## 9-37. DEFROST AND HEAT CONTROLS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		
None		
<u>Materials/Parts</u>		
Two cotter pins		
Two spring nuts		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		
		<u>Special Environmental Conditions</u>
		None
		<u>General Safety Instructions</u>
		None

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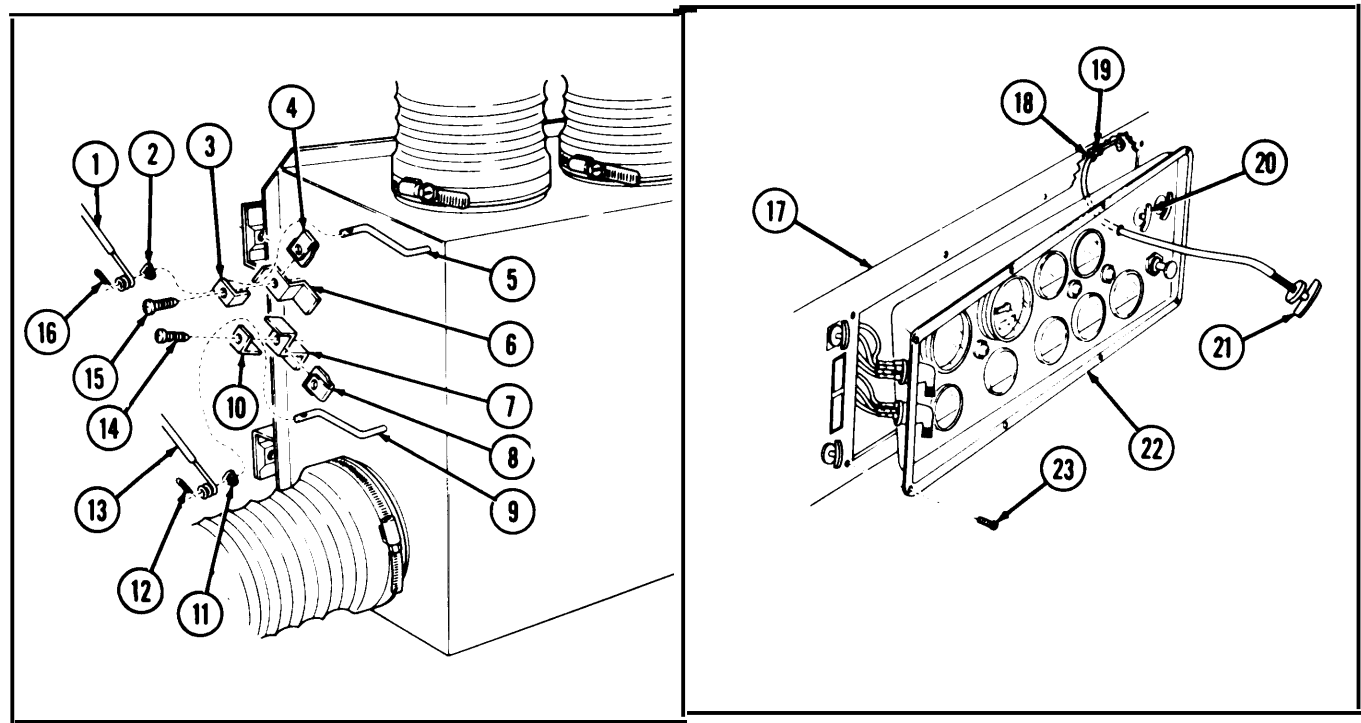
#### a. Removal

- | STEP NO. | LOCATION              | ITEM   | ACTION   | REMARKS  |
|----------|-----------------------|--|--|--|
| 1.       | Diverter bracket (6)  | Screw (15), clamp (3), cable (1), and retaining clip (4)   | Remove.  |  |
| 2.       | Control rod (5)       | Cotter pin (16)  | Remove.  | Discard cotter pin (16).                                   |
| 3.       |                       | Defrost control cable (1) and spring nut (2)               | Remove.  | Tag cable (1) for installation. Discard spring nut (2).    |
| 4.       | Diverter bracket (7)  | Screw (14), clamp (10), cable (13), and retaining clip (8) | Remove.  |  |
| 5.       | Control rod (9)       | Cotter pin (12)  | Remove.  | Discard cotter pin (12).                                   |
| 6.       |                       | Heat control cable (13) and spring nut (11)                | Remove.  | Tag cable (13) for installation, Discard spring nut (1 1). |
| 7.       | Instrument panel (17) | Instrument cluster (22)                                    | Remove eight screws (23) and pull away from instrument panel (17). |  |
| 8.       |                       | Two nuts (19) and washers (18)                             | Remove.  |  |



9-37. DEFROST AND HEAT CONTROLS REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
9.	Defrost control (21 ) and defrost control cable (1)	Remove.	
10.	Heat control (20) and heat control cable (13)	Remove.	



<b>9-37. DEFROST AND HEAT CONTROLS REPLACEMENT (Cont'd)</b>
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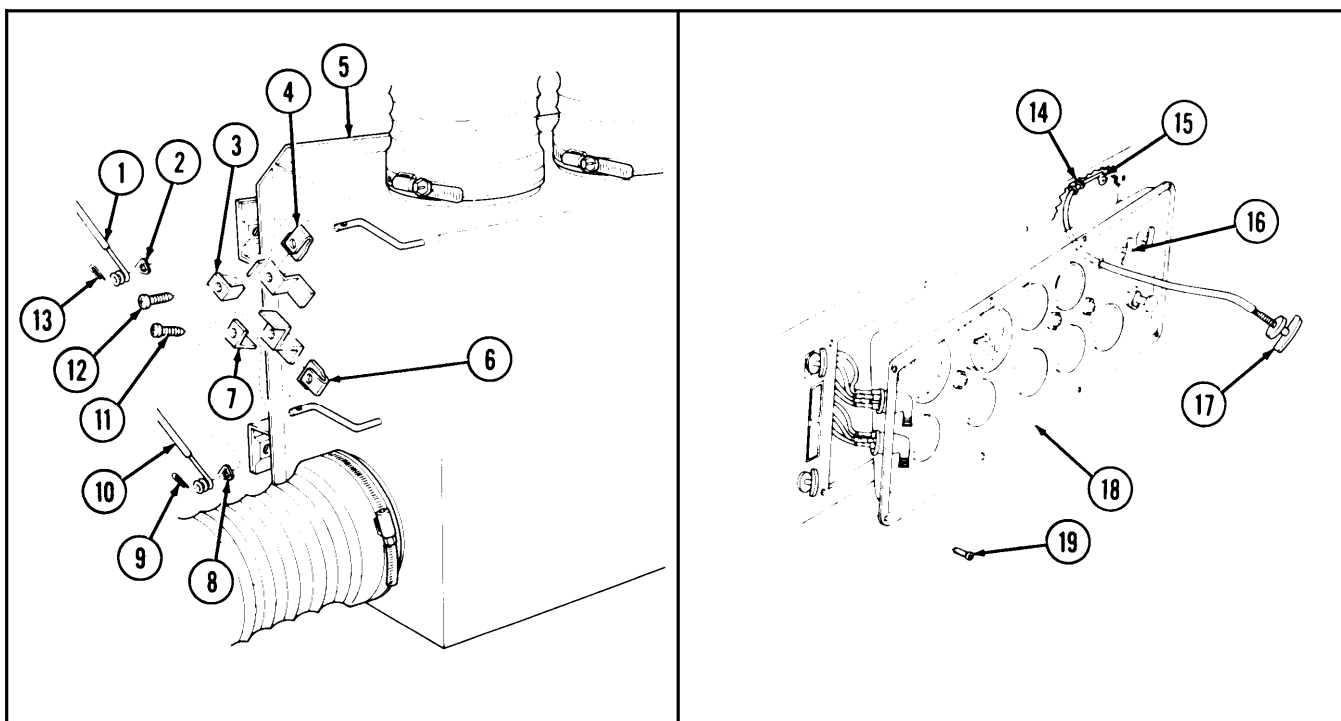
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
------------------------

11.		Heat control (16)	Install.	
12.		Defrost control (17)	Install.	
13.		Two washers (14) and nuts (15)	Install.	
14.		Cable (10) and cable (1)	Route to diverter (5).	
15.		Instrument cluster (18)	Install with eight screws (19).	
16.		Heat control handle (16) and defrost control handle (17)	Push in all the way.	
17..		Heat control cable (10)	a. Install with new spring nut (8) and new cotter pin (9). b. Install with retaining clip (6), clamp (7), and screw (11).	
18.		Defrost control cable (1)	a. Install with new spring nut (2) and new cotter pin (13). b. Install with retaining clip (4), clamp (3), and screw (12).	

# 9-37. DEFROST AND HEAT CONTROLS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check defrost and heat controls for proper operation (TM 9-2320-272-10).

TA 349238

## 9-38. DIVERTER ASSEMBLY REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Defrost and heat control levers closed. Right splash shield removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two cotter pins Two spring nuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

1.	Diverter (9) and adapter flanges (8)	Three ducting hoses (7) and clamps (10)	Remove.	Use twisting force from side to side.
2.	Defroster control cable bracket (13)	Screw (23), clamp (22), and nut (12)	Remove.	
3.	Control rod (11)	Cotter pin (24)	Remove.	Discard cotter pin (24).
4.		Defroster control cable (25) and spring nut (26)	Remove.	Tag cable (25) for installation. Discard spring nut (26).
5.	Heater control cable bracket (14)	Screw (21), clamp (20), and nut (15)	Remove.	
6.	Control rod (16)	Cotter pin (18)	Remove.	Discard cotter pin (18)
7.		Heater control cable (19) and spring nut (17)	Remove.	Tag cable (19) for installation. Discard spring nut (17).
8.	Right side of engine compartment cowl (1)	Two screw-assembled washers (3) and bracket (2)	Remove.	

# 9-38. DIVERTER ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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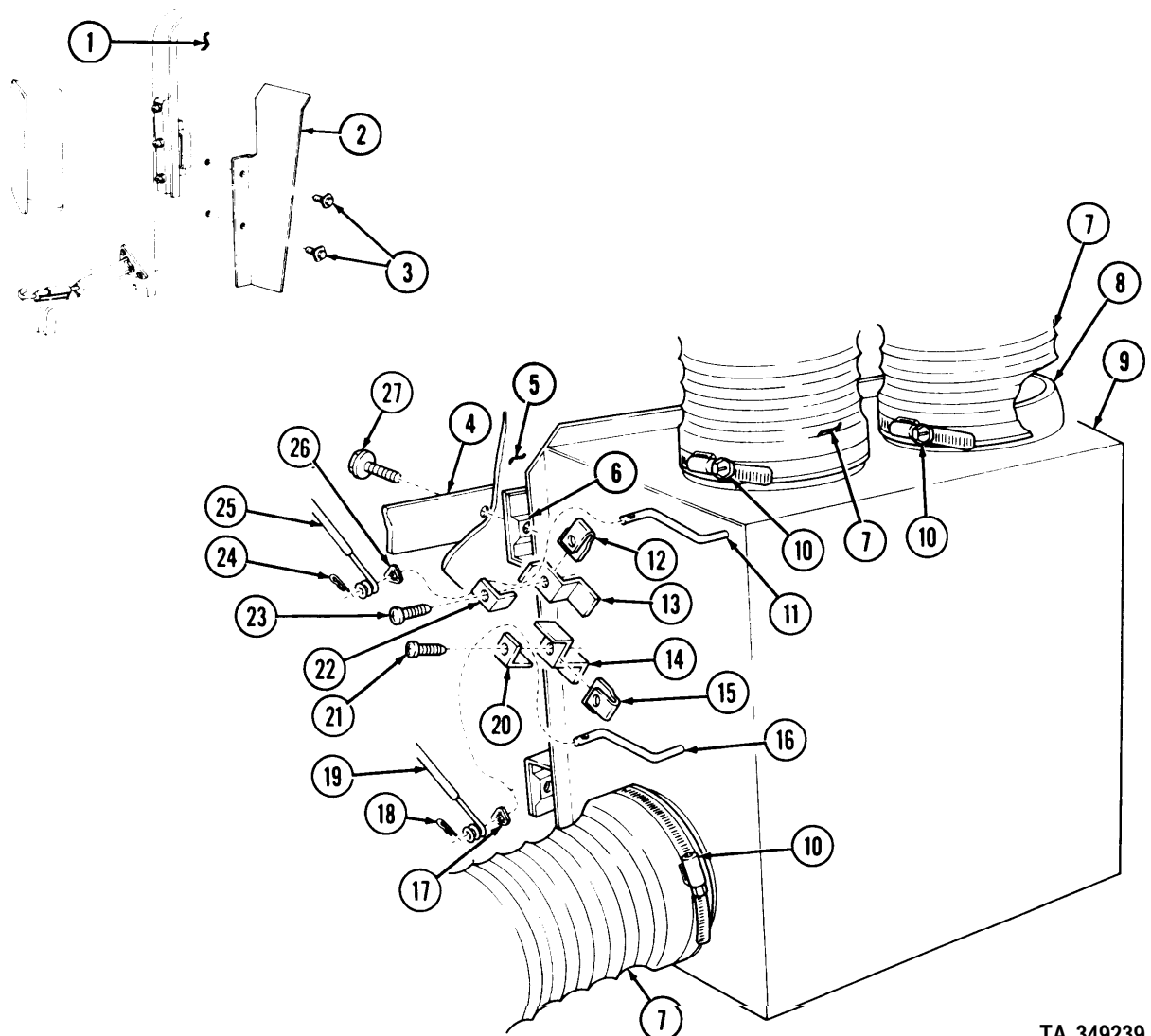
## CAUTION

Hold personnel hot water heater and brackets in place during removal of diverter. Roth mount to firewall with same screws.

## NOTE

Assistant will help with steps 9 and 10.

- |  |                                   |                            |
|--|-----------------------------------|----------------------------|
| 9. Personnel hot water heater bracket (4)      | Four screw-assembled washers (27) | Remove from cage nuts (6). |
| 10. Inside right hand vehicle cab firewall (5) | Diverter (9)                      | Remove.                    |



TA 349239

## 9-38. DIVERTER ASSEMBLY REPLACEMENT (Cont'd)

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

#### **CAUTION**

Hold personnel hot water heater and brackets in place during installation of diverter. Roth mount on firewall with same screws.

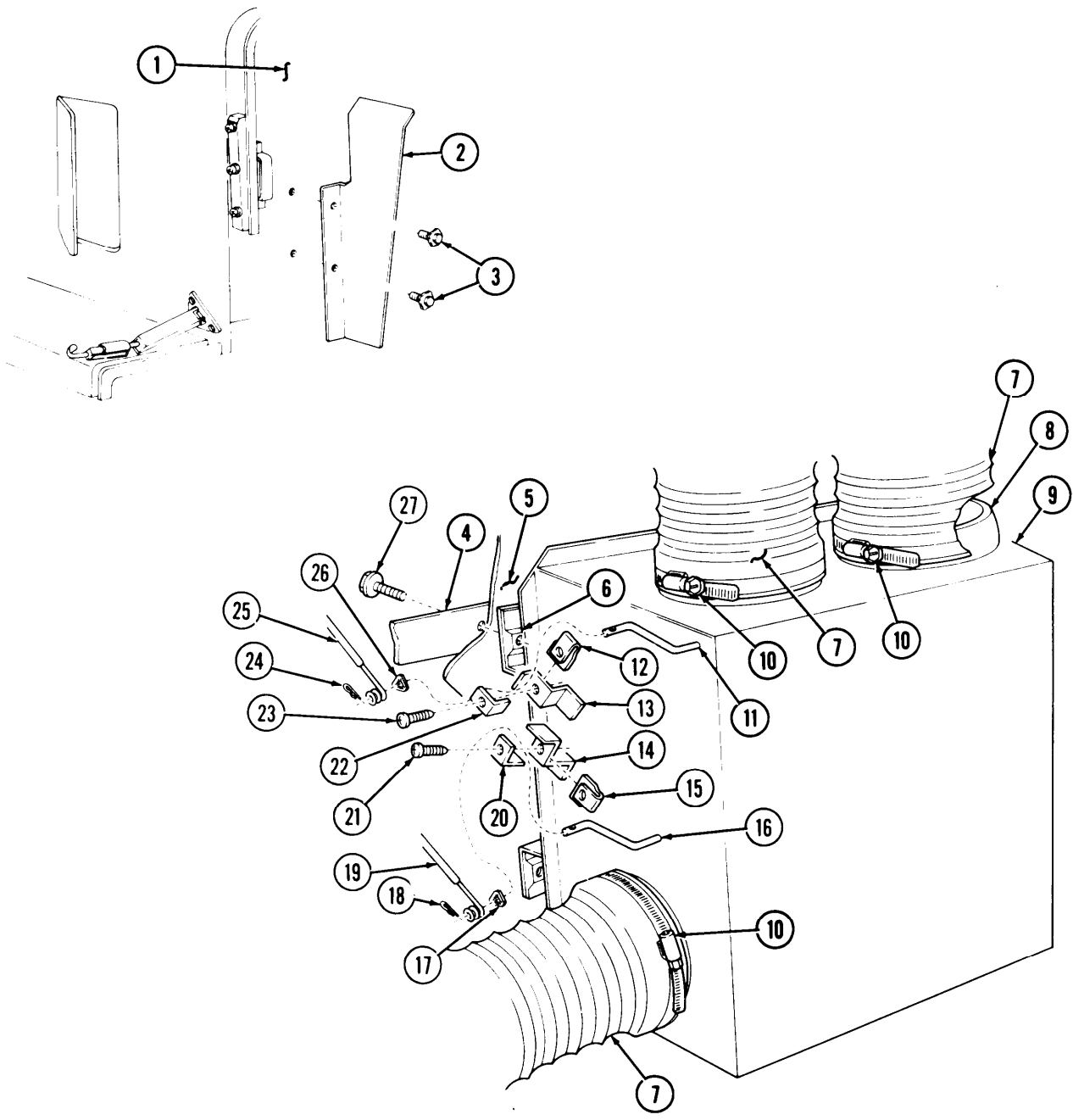
#### **NOTE**

Assistant will help with step 11.

11.		Diverter (9)	Install with four screw-assembled washers (27) through personnel hot water heater bracket (4), firewall (5) into cage nuts (6).	
12.		Bracket (2)	Install with two screw-assembled washers (3) to right side engine compartment cowl (1).	
13.		Three ducting hoses (7)	Attach to adapter flanges (8) on diverter (9) with three clamps (10).	
14.		Heater control cable (19)	a. Install on control rod (16) with new spring nut (17) and new cotter pin (18). b. Install on bracket (14) with clamp (20), screw (21), and nut (15).	
15.		Defroster control cable (25)	a. Install on control rod (11) with new spring nut (26) and new cotter pin (24). b. Install on bracket (13) with clamp (22), screw (23), and nut (12).	

9-38. DIVERTER ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Install right splash shield (TM 9-2320-272-10).
  - Check heater for proper operation (TM 9-2320-272-10).

TA 349240

## 9-39. FRESH AIR INLET DUCTING REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Defrost and heat control levers closed. Hood raised and secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

### a. Removal

- |    |                             |   |                         |                                       |
|----|-----------------------------|---|-------------------------|---------------------------------------|
| 1. | Fresh air inlet ducting (5) | Clamp (1)   | Loosen.                 |                                       |
| 2. | Adapter flange (2)          | Fresh air inlet ducting (5)                           | Disconnect.             | Use twisting force from side to side. |
| 3. | Two mounting clamps (3)     | Two screws (9) and nuts (6)                           | Remove.                 |                                       |
| 4. | Fresh air inlet ducting (5) | Two mounting clamps (3)                               | Spread open and remove. |                                       |
| 5. |                             | Clamp (8)   | Loosen.                 |                                       |
| 6. | Flange (7)                  | Fresh air inlet ducting (5), clamp (8), and clamp (1) | Remove.                 |                                       |

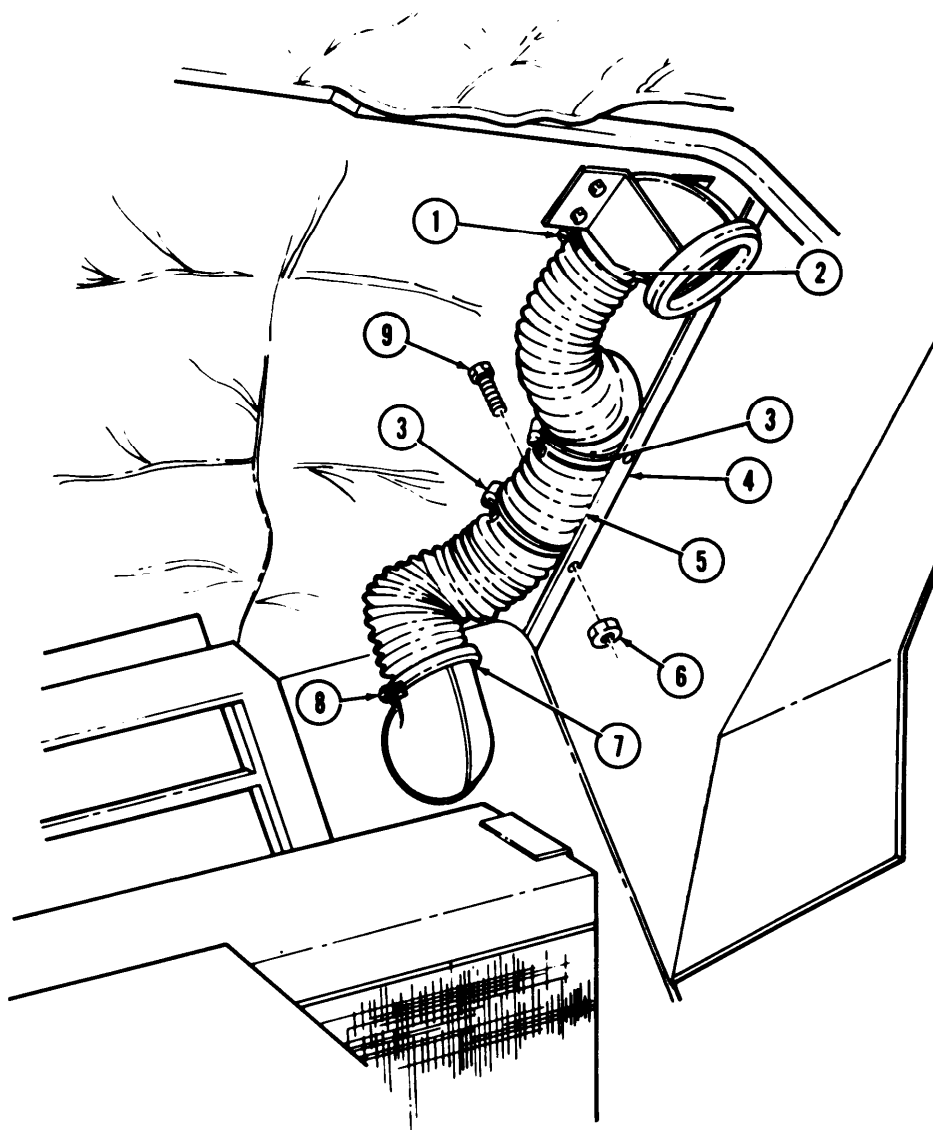
### b. Installation

- |    |  |                             |  |                 |
|----|--|-----------------------------|--|-----------------|
| 7. |  | Clamp (8) and clamp (1)     | Install on ends of fresh air ducting (5).    | Do not tighten. |
| 8. |  | Fresh air inlet ducting (5) | Install to flange (7) and tighten clamp (8). |                 |



# 9-39. FRESH AIR INLET DUCTING REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.		Two mounting clamps (3)	Install over ducting (5) and install on hood bracket (4) with two screws (9) and nuts (6).	
10.		Fresh air inlet ducting (5)	Install to flange (2) and tighten clamp (1).	



END OF TASK!

TA 349241

## 9-40. CAB HEAT AND DEFROST AIR DUCTING REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

APPLICABLE MODELS		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
TEST EQUIPMENT		
None		
SPECIAL TOOLS		
None		<u>Special Environmental Conditions</u>
		None
MATERIALS/PARTS		
None		
PERSONNEL REQUIRED		
Light-wheeled vehicle mechanic MOS 63B		<u>General Safety Instructions</u>
		None
MANUAL REFERENCES		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

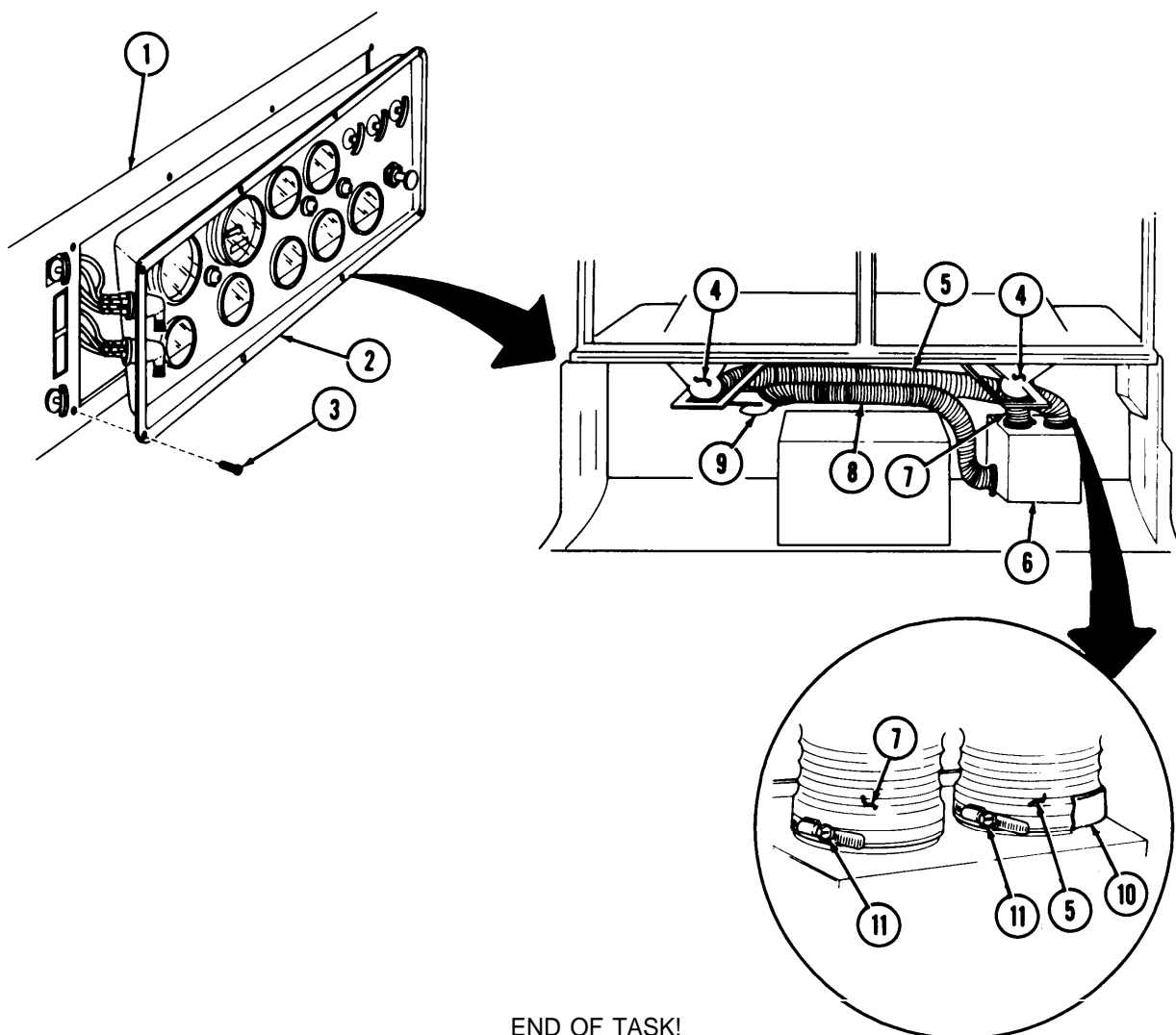
- | STEP NO. | LOCATION  | ITEM                                  | ACTION  | REMARKS  |
|----------|---|---------------------------------------|---|--|
| 1.       | Instrument cluster (2)  | Eight screws (3)                      | Remove.                                       | Pull instrument cluster (2) away from instrument panel (1) without disconnecting wires or tubes. |
| 2.       | Cab heat ducting hose (8) and defrost ducting hoses (5) and (7) | Six clamps (11)                       | Loosen and slide back free of flanges (10).   |  |
| 3.       |   | Cab heat ducting hose (8)             | Remove.                                       | Use twisting force from side to side to remove.  |
| 4.       |   | Two defrost ducting hoses (5) and (7) | Remove.                                       |  |
| 5.       |   | Six clamps (11)                       | Remove from ends of ducting (5), (7) and (8). |  |

### b. Installation

- |    |  |                 |  |                 |
|----|--|-----------------|--|-----------------|
| 6. |  | Six clamps (11) | Install on ends of cab heat ducting hose (8), and defrost air ducting hoses (5) and (7). | Do not tighten. |
|----|--|-----------------|--|-----------------|

# 9-40. CAB HEAT AND DEFROST AIR DUCTING REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.		Two defrost ducting hoses (5) and (7)	a. Install on flanges (10) at top of diverter (6). b. Install opposite end to defrost air flanges (4).	Use twisting force from side to side to install.
8.		Cab heat ducting hose (8)	Install on diverter (6) and exhaust flange (9).	
9.		Six clamps (11)	Tighten.	
10.		Instrument cluster (2)	Install on instrument panel (1) with eight screws (3).	



END OF TASK!

**9-41. VENT DOOR WEATHER SEAL REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Vent door weather seal		
Adhesive (Appendix D, Item 1)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

- |    |                            |                  |                       |                   |
|----|----------------------------|------------------|-----------------------|-------------------|
| 1. |                            | Vent door (2)    | Open from inside cab. |                   |
| 2. | Vent door seal channel (1) | Weather seal (3) | Remove.               | Discard seal (3). |

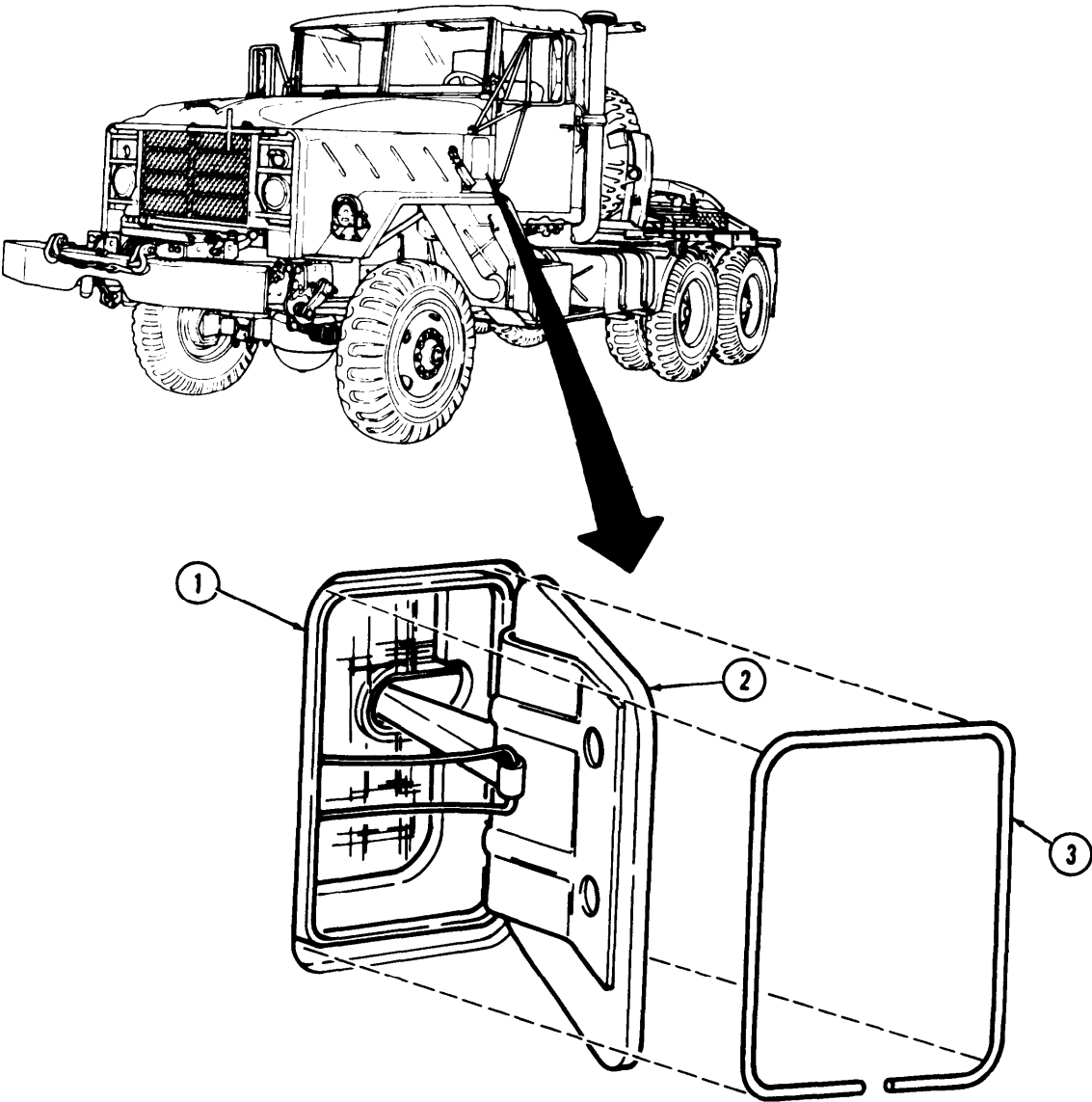
**b. Installation****NOTE**

Surface of cowl vent door opening must be clean, dry, and free of oil and grease before seal is installed.

- |    |   |   |
|----|---|---|
| 3. | Vent door seal channel (1) and new weather seal (3) | <p>a. Apply a thin even coat of rubber cement to mating surfaces and allow to dry until tacky.</p> <p>b. Position weather seal (3) into seal channel (1) and press firmly into place.</p> |
|----|---|---|

9-41. VENT DOOR WEATHER SEAL REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349243

## 9-42. CAB COWL VENT SCREEN AND DOOR REPLACEMENT

This task covers:

### a. Removal

### b. Installation

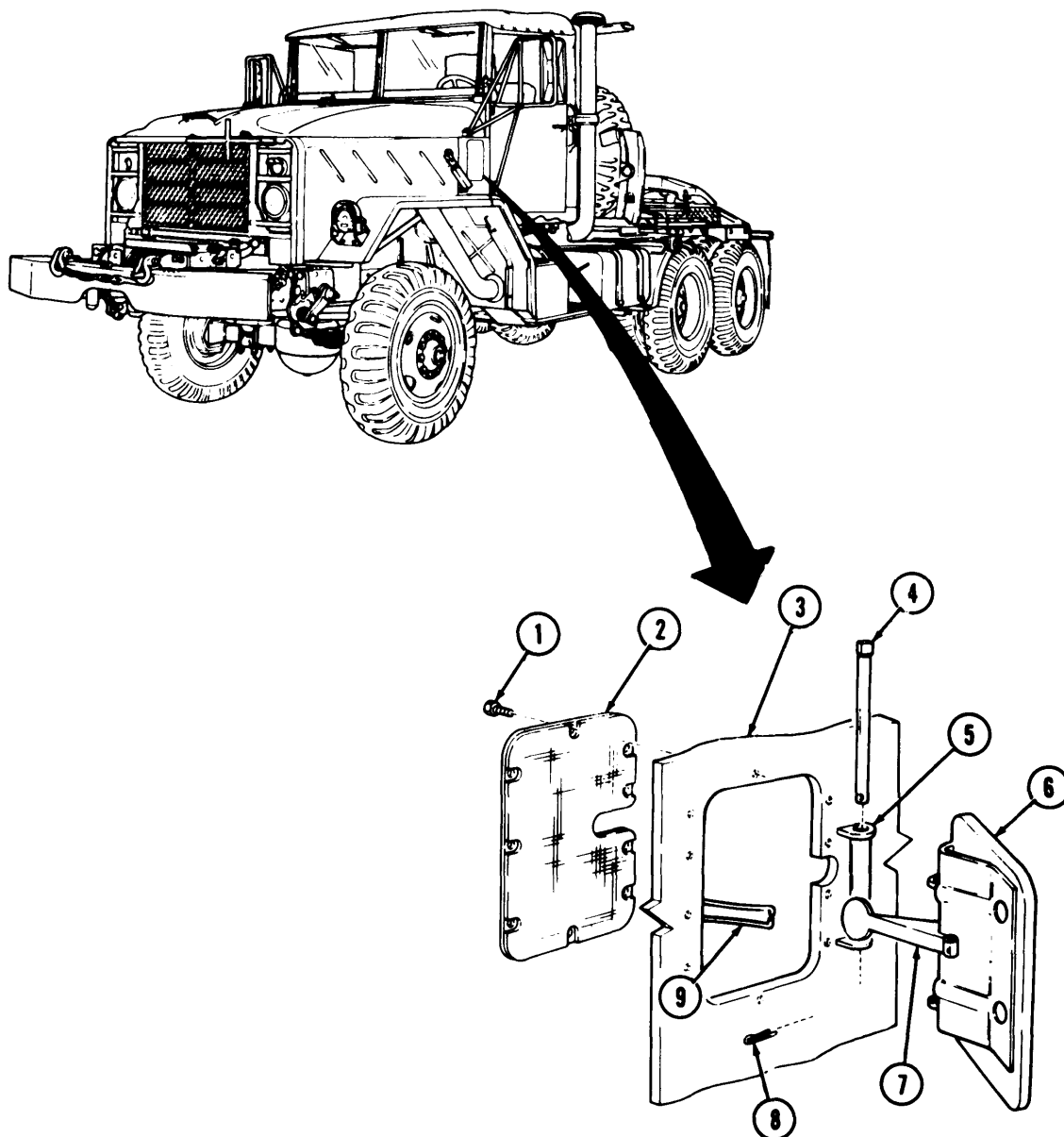
#### INITIAL SETUP:

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
All	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Cotter pin		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Vent screen and frame (2) to cab cowl (3)	Nine self-tapping screws (1)	Remove.	
2.		Vent screen and frame (2)	Remove from cab cowl (3).	
3.		Vent door spring (9)	Spread apart and disconnect from vent door bracket (7).	
4.	Door pivot pin (4)	Cotter pin (8)	Remove.	Discard cotter pin (8).
5.	Door hinge (5)	Door pivot pin (4)	Remove.	
6.		Vent door (6)	Remove.	
<b>b. Installation</b>				
7.		Vent door (6)	Align to holes in hinge (5) and install hinge pin (4).	
8.		New cotter pin (8)	Install in hinge pin (4).	
9.		Vent door spring (9)	Spread apart and clamp to door hinge bracket (7).	
10.		Vent screen and frame (2)	Install on cab cowl (3) with nine self-tapping screws (1).	

9-42. CAB COWL VENT SCREEN AND DOOR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349244

9-430 FRONT FENDER EXTENSION REPLACEMENT

This task covers:		
a. Removal		b. Installation
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Fender extension removal and installation is the same for both left and right fenders. This procedure covers the right fender extension only.

a. Removal

1.	Fender extension (6) to splash shield (4)	Five screw-assembled washers (5)	Remove.	
2.	Fender extension (6) to support bracket (3)	Two locknuts (7) and screws (1)	Remove.	Discard locknuts (7).
3.		Fender extension (6)	Remove.	

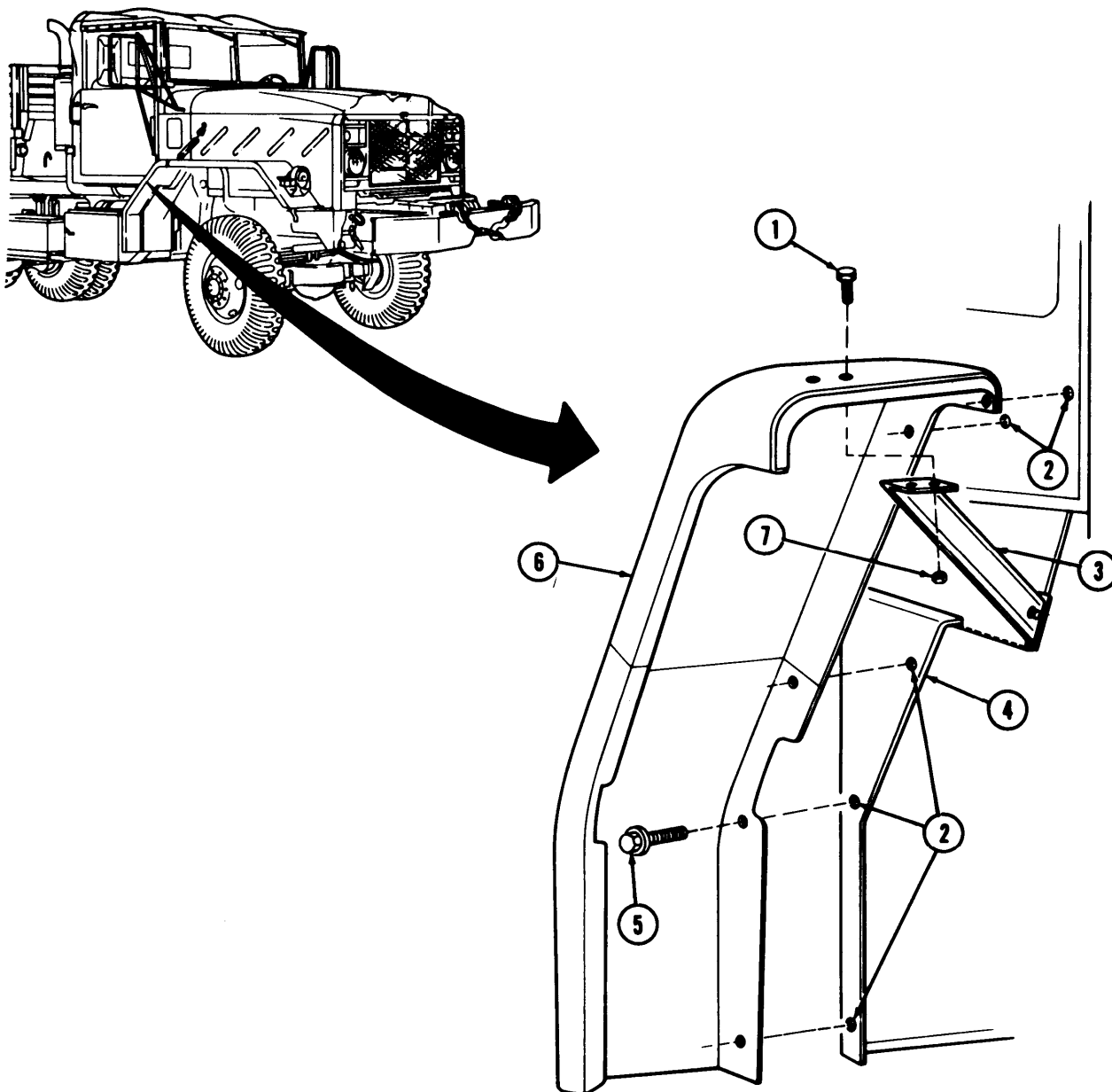
b. Installation

4.	Fender extension (6)	a. Position to holes in support bracket (3). b. Install on support bracket (3) with two screws ( 1 ) and new locknuts (7). c. Install on splash shield (4) with five screw-assembled washers (5) through threaded holes (2).		
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9-43. FRONT FENDER EXTENSION REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349245

**9-44. FENDER SPLASH SHIELD REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para 9-43 Para 3-16	Parking brake set. Fender extension removed. Air cleaner intake pipe hump hose removed (left splash shield only).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Three lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal****NOTE**

Assistant will help with steps 1 and 3.

- |    |   |  |         |                           |
|----|---|--|---------|---------------------------|
| 1. | Splash shield (6) to support brace (3)  | Locknut (9), screw (7) and washer (8)          | Remove. | Discard locknut (9).      |
| 2. | Splash shield (6) to cab extension (12) | Three screws (10) and lockwashers(11)          | Remove. | Discard lockwashers (11). |
| 3. | Splash shield (6) to cab floor (1)      | Three screws (2), washers (4) and locknuts (5) | Remove. | Discard locknuts (6).     |
| 4. |   | Splash shield (6)                              | Remove. |                           |

**b. Installation****NOTE**

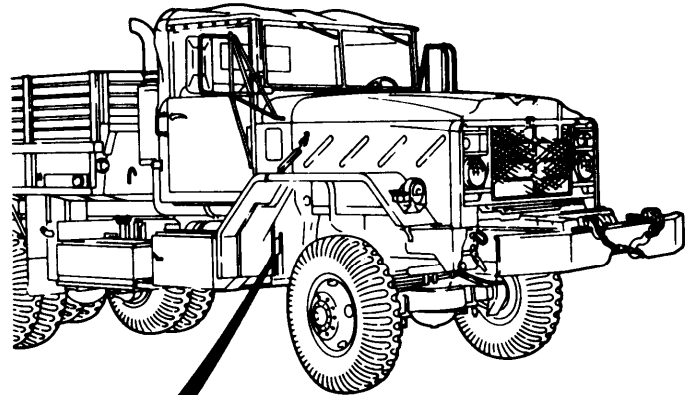
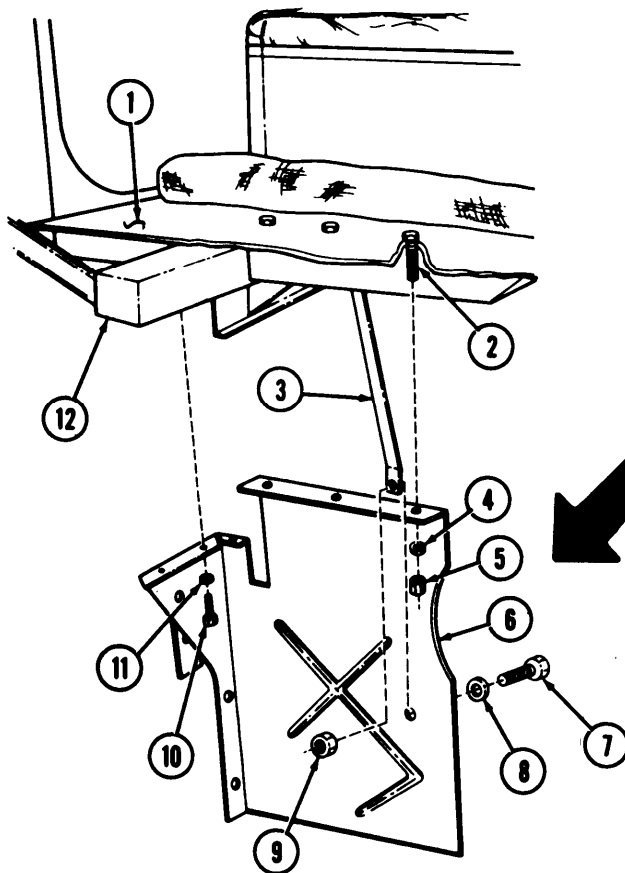
Assistant will help with steps 5a and 6c.

- |    |                   |   |
|----|-------------------|---|
| 5. | Splash shield (6) | a. Install on cab floor (1) with three screws (2), washers (4) and new lock-nuts (5). |
|----|-------------------|---|

# 9-44. FENDER SPLASH SHIELD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- b. Install on cab extension (12) with three new lock-washers (11) and screws (10).
- c. Install on support brace (3) with screw (7), washer (8) and new locknut (9).



END OF TASK!

FOLLOW-ON TASKS: • Install air cleaner intake pipe hump hose (para 3-16) (left splash shield only).  
• Install fender extension (para 9-43).

TA 349246

**9-45. TOOLBOX AND STEPS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
A I I	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Sixteen locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

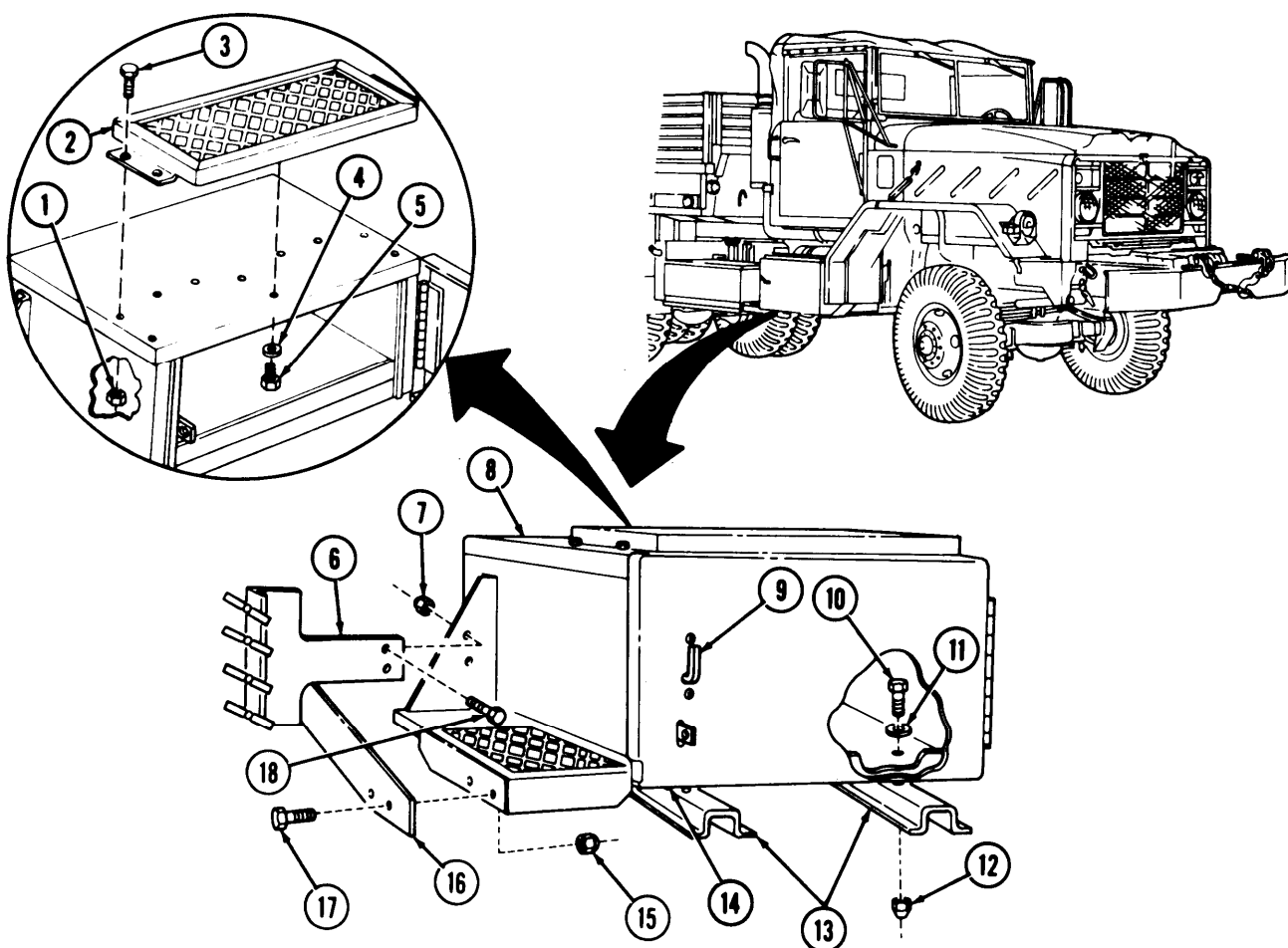
- |    |                              |  |                             |                        |
|----|------------------------------|--|-----------------------------|------------------------|
| 1. | Toolbox and step (8)         | Two locknuts (7) and screws (18), and drain-cock bracket (6) | Remove.                     | Discard locknuts (7).  |
| 2. | Toolbox support bracket (16) | Two locknuts (15) and screws (17)                            | Remove.                     | Discard locknuts (15). |
| 3. |                              | Toolbox door (14)  | Release latch (9) and open. |                        |
| 4. | Toolbox and step (8)         | Four locknuts (12), screws (10), and washers (11 )           | Remove.                     | Discard locknuts (12). |
| 5. |                              | Toolbox and step (8)   | Remove.                     |                        |
| 6. |                              | Two screws (5) and washers (4)                               | Remove.                     |                        |
| 7. |                              | Eight screws (3) and locknuts (1), and step (2)              | Remove.                     | Discard locknuts (1).  |

**b. Installation**

- |    |          |  |
|----|----------|--|
| 8. | Step (2) | a. Install with eight screws (3) and new locknuts (1). |
|----|----------|--|

# 9-45. TOOLBOX AND STEPS REPLACEMENT (Cont'd)

9. Toolbox and step (8)
  - b. Install two washers (4) and screws (5).
 Install on top of hangers (13) with four screws (10), washers (11), and new locknuts (12).
10. Toolbox **support** bracket (16)
 Install with two screws (17) and new locknuts (15).
11. **Draincock bracket** (6)
 Install with two screws (18) and new locknuts (7).



END OF TASK!

T1A 349247

9-46. CAB TURNBUTTONS AND LASHING HOOKS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set,
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

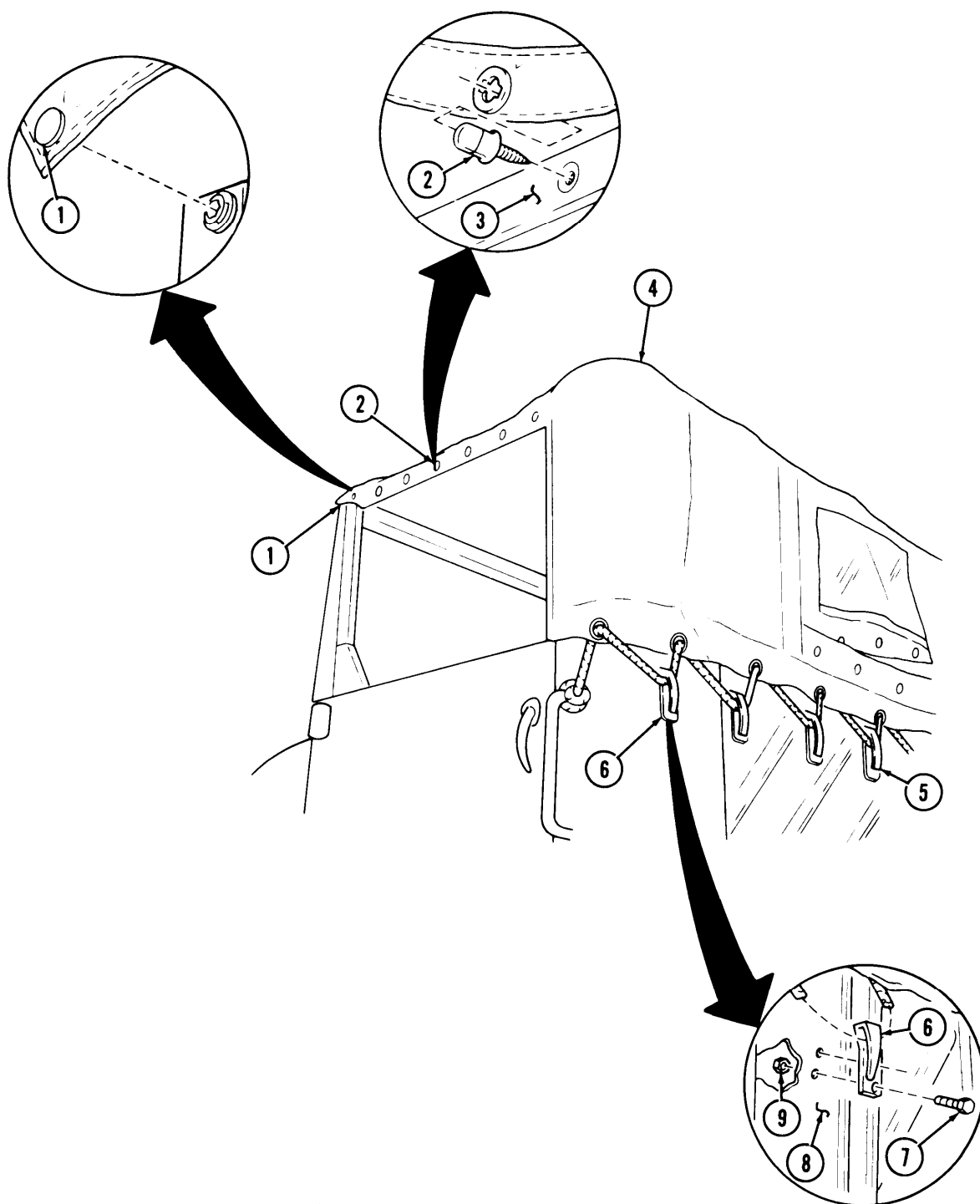
1.	Cab top (4)	Snapbutton (1)	Unsnap.	
2.	Cab side rail (3)	Turnbutton (2)	Remove.	
<b>NOTE</b>				
Center lashing hook has only two screws.				
3.	Rear of cab (8)	Two locknuts (9) and screws (7), and lashing hook (6)	Remove.	Discard locknuts (9).

b. Installation

<b>NOTE</b>				
Center lashing hook has only two screws.				
4.	Lashing hook (6)	Install on cab rear (8) with two screws (7) and locknuts (9).	Center hook (5) has no locknuts (9).	
5.	Turnbutton (2)	Install on cab side rail (3).		
6.	Snapbutton (1)	Snap on cab side rail (3).		

9-46. CAB TURNBUTTONS AND LASHING HOOKS REPLACEMENT (Cont'd)

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



END OF TASK!

TA 349248

9-47. FRONT CAB MOUNT REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Locknut		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

NOTE

This procedure applies to both left and right front cab mounts.

a. Removal

- |    |                                      |   |  |                      |
|----|--------------------------------------|---|--|----------------------|
| 1. | Cab bracket (1) to frame bracket (8) | Jacking screw (9)                                     | Turn in until cab weight is supported. |                      |
| 2. |                                      | Locknut (7), washer (6), and insulator lower half (5) | Remove from cab bracket (1).           | Discard locknut (7). |
| 3. |                                      | Screw (2), washer (3), and insulator upper half (4)   | Remove from cab bracket (1).           |                      |

b. Installation

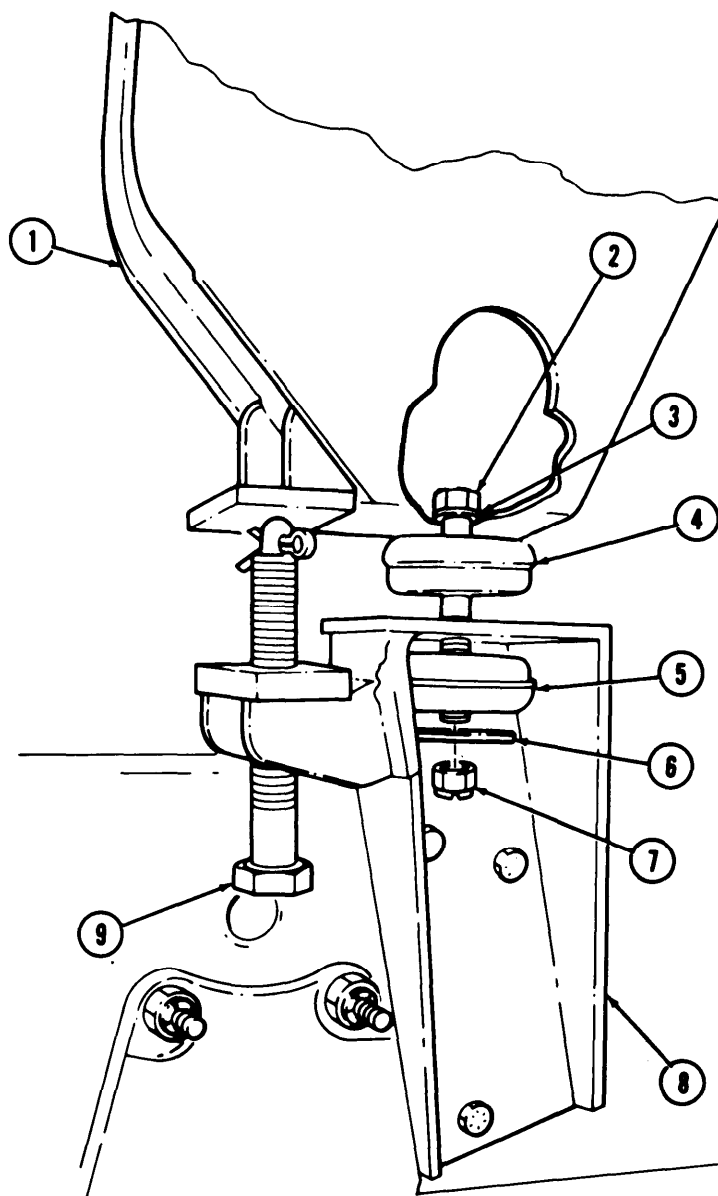
- |    |  |                          |   |  |
|----|--|--------------------------|---|--|
| 4. |  | Insulator upper half (4) | Place between cab bracket (1) and frame bracket (8).  |  |
| 5. |  | Screw (2) and washer (3) | Place screw (2) through washer (3), cab bracket (1), insulator upper half (4), and frame bracket (8). |  |
| 6. |  | Jacking screw (9)        | Turn out until jacking screws are secured all the way down.   |  |



9-47. FRONT CAB MOUNT REPLACEMENT (Cont'd)

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

- |    |  |                          |  |  |
|----|--|--------------------------|--|--|
| 7. |  | Insulator lower half (5) | Position on screw (2) and install with washer (6) and new locknut (7). |  |
|----|--|--------------------------|--|--|



END OF TASK!

TA 349249

**9-48. REAR CAB MOUNT REPLACEMENT**

This task covers:

- a. Removal
- b. Installation

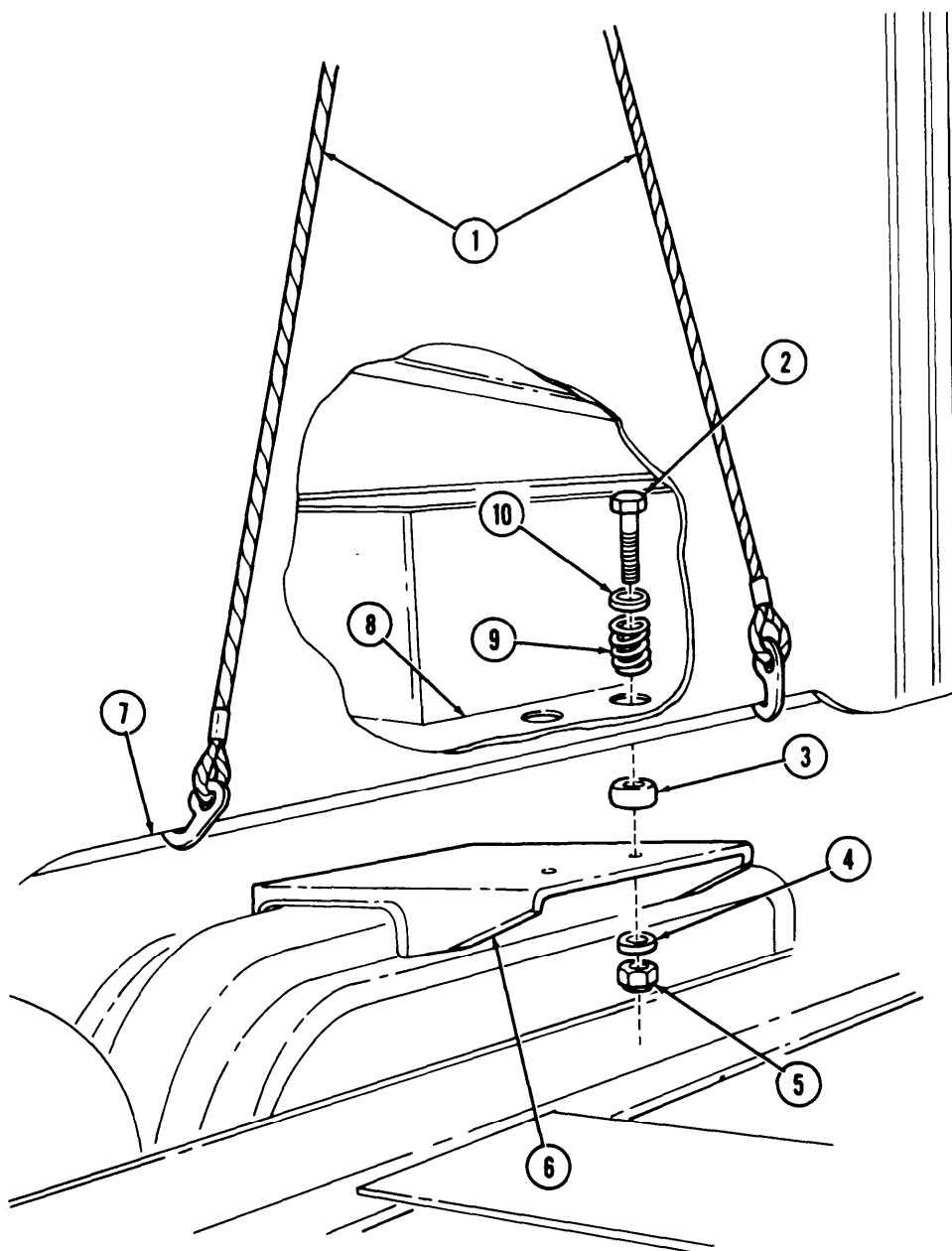
**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Dump body raised (M929 and M930). Cab top removed. Spare tire removed (all except M931 and M932).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts Two insulators		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
1.	Inside cab (8) behind battery box	Insulation and two screws (2)	a. Pull back insulation until screws (2) are exposed.  b. Hold screws in place.	
2.	Cab (7) to frame (6)	Two locknuts (5) and washers (4)	Remove.	Discard locknuts (5).
<b>CAUTION</b> Raise rear of cab enough to remove insulators. Damage to cab will result if raised too high.				
3.		Overhead lifting device slings (1)	Hook to underside of cab (7) and raise until cab (7) clears insulators (3).	
4.	Inside cab (8) behind battery box	Two screws (2), washers (10), and springs (9)	Remove.	
5.		Two insulators (3)	Remove.	Discard insulators (3).
6.		Cab (7)	Lower to frame (6).	

9-48. REAR CAB MOUNT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 349250

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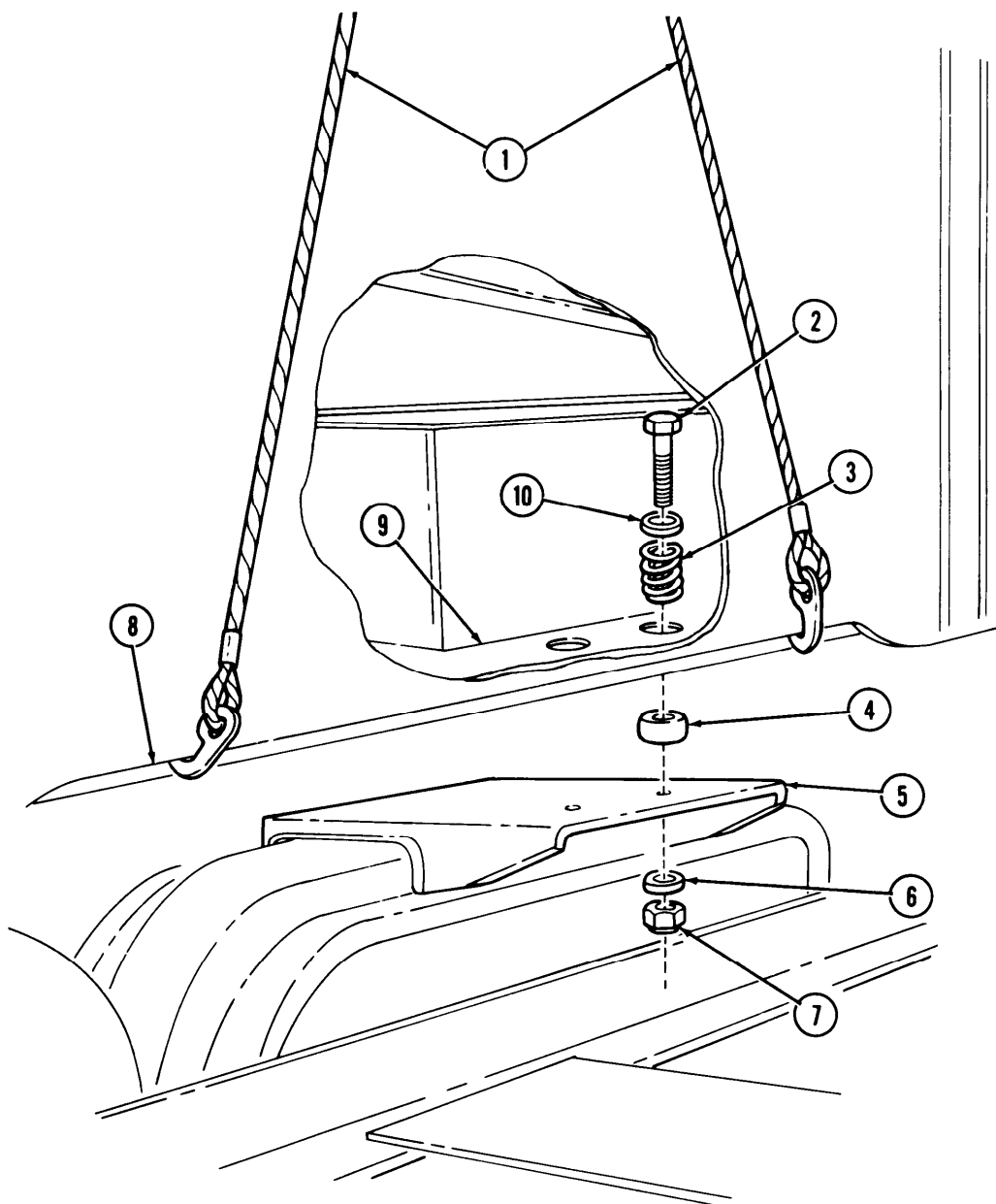
**9-48. REAR CAB MOUNT REPLACEMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
7.		Overhead lifting device and slings (1)	a. Hook to underside of cab (8).	
<b>CAUTION</b>				
Raise rear of cab enough to position insulators between cab and <b>frame</b> . Damage to cab will result if raised too high,				
			b. Raise cab (8) clear of frame (5).	
8.		Two new insulators (4)	Position between cab (8) and frame (5) with screw (2) holes aligned.	
9.		Washer (10) and spring (3)	Install one on each screw (2).	
10.		Screw (2)	Place through each new insulator (4).	Hold from inside cab (8) and force insulator (4) on screw (2) until threads are through insulator (4) and frame (5).
11.		Cab (8)	Lower and remove overhead lifting device and slings (1).	
12.		Washer (6) and new locknut (7)	Install on each screw (2) and tighten until washer (10) is even with cab floor (9).	Hold screw (2) from inside cab (8),

## 9-48. REAR CAB MOUNT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: Ž Install spare tire (all except M931 and M932) (TM 9-2320-272-10).  
 • Lower dump body (M929 and M930 only) (TM 9-2320-272-10).  
 Ž Install cab top (TM 9-2320-272-10).

TA 349251

**9-49. CAB INSULATION REPLACEMENT**

This task covers:

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

All

**Equipment  
Condition  
Reference**

Para. 9-26

**Condition Description**

Driver's seat removed (left rear upper insulation only).

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

Adhesive (Appendix D, Item 1.1)

**General Safety Instructions**

None

**Personnel Required**

Light-wheeled vehicle mechanic MOS 63B

**Manual References**

TM 9-2320-272-20P

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

AH insulation is removed the same way except where noted. This procedure covers replacement of left rear upper and engine access cover insulation panels only. Do not add adhesive to new floor insulation.

**a. Removal**

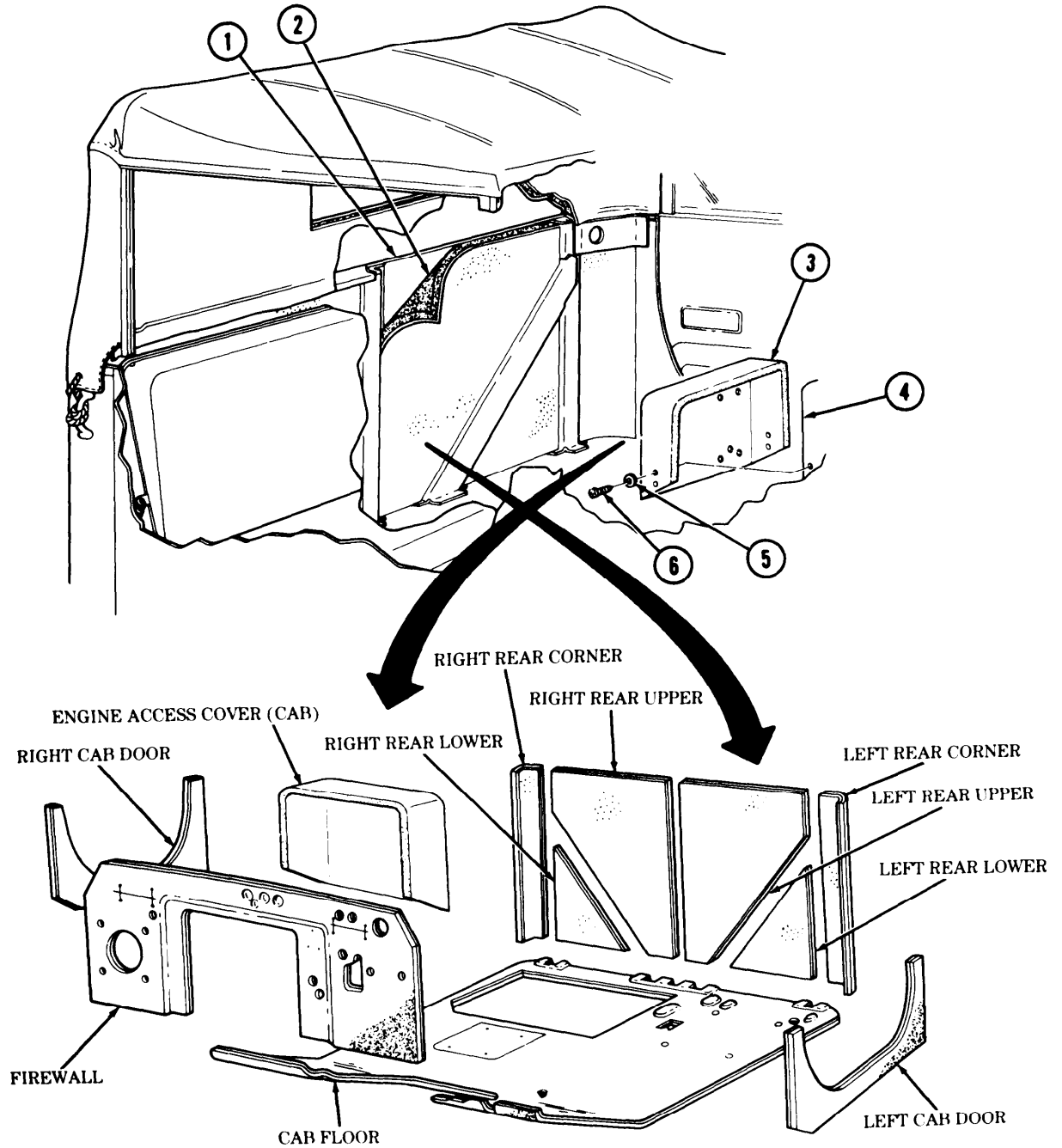
1. Cab (1) interior	Left rear upper panel insulation (2)	Pull away from cab (1) interior.	Clean all insulating material and adhesive from contact area.
2. Engine access cover insulation (3).	Four screws (6) and washers (5)	Remove.	
3.	Engine access cover insulation (3)	Pull away from engine access cover (4).	Clean all insulating material and adhesive from contact area.

**b. Installation**

4.	Left rear upper panel insulation (2)	Apply adhesive to foam side of insulation and install on cab (1) interior.
5.	Engine access cover insulation (3)	Apply adhesive to foam side of insulation (3) and install on engine access cover (4).
6.		Install four washers (5) and screws (6).

9-49. CAB INSULATION REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install driver's seat, if removed (para. 9-26).

## 9-50. OUTSIDE DOOR HANDLE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

This procedure covers steps for replacing left and right outside door handles.

#### a. Removal

- |    |  |   |
|----|--|---|
| 1. | Outside of cab door (3) Two screws (1) | Remove from door handle bracket (2).  |
| 2. | Door handle (5) and bracket (2)        | Remove by rotating door handle (5) 1/4 turn counterclockwise and by pulling out at same time. |

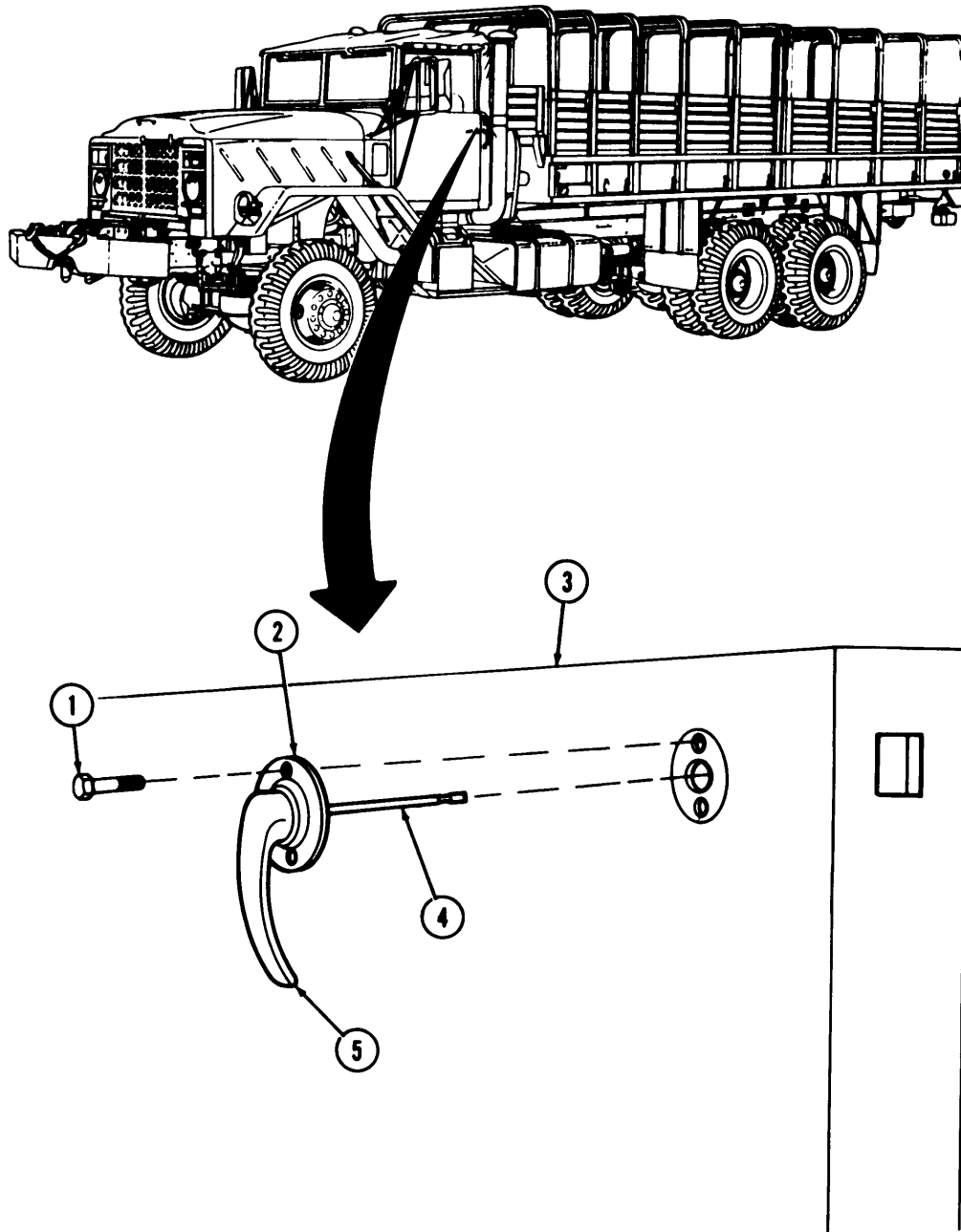
#### b. Installation

- |    |                 |  |  |
|----|-----------------|--|--|
| 3. | Door handle (5) | <p>a. Position with bracket (2) over holes in cab door (3).</p> <p>b. Install with two screws (1).</p> | <p>It may be necessary to rotate door handle (5) slightly to install handle shaft (4) in cab door (3).</p> |
|----|-----------------|--|--|



9-50. OUTSIDE DOOR HANDLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check door handle for proper operation (TM 9-2320-272-10).

TA 349253

## 9-51. WINDOW REGULATOR HANDLES AND INSIDE DOOR HANDLES REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

This procedure covers steps for replacing left and right handles.

#### a. Removal

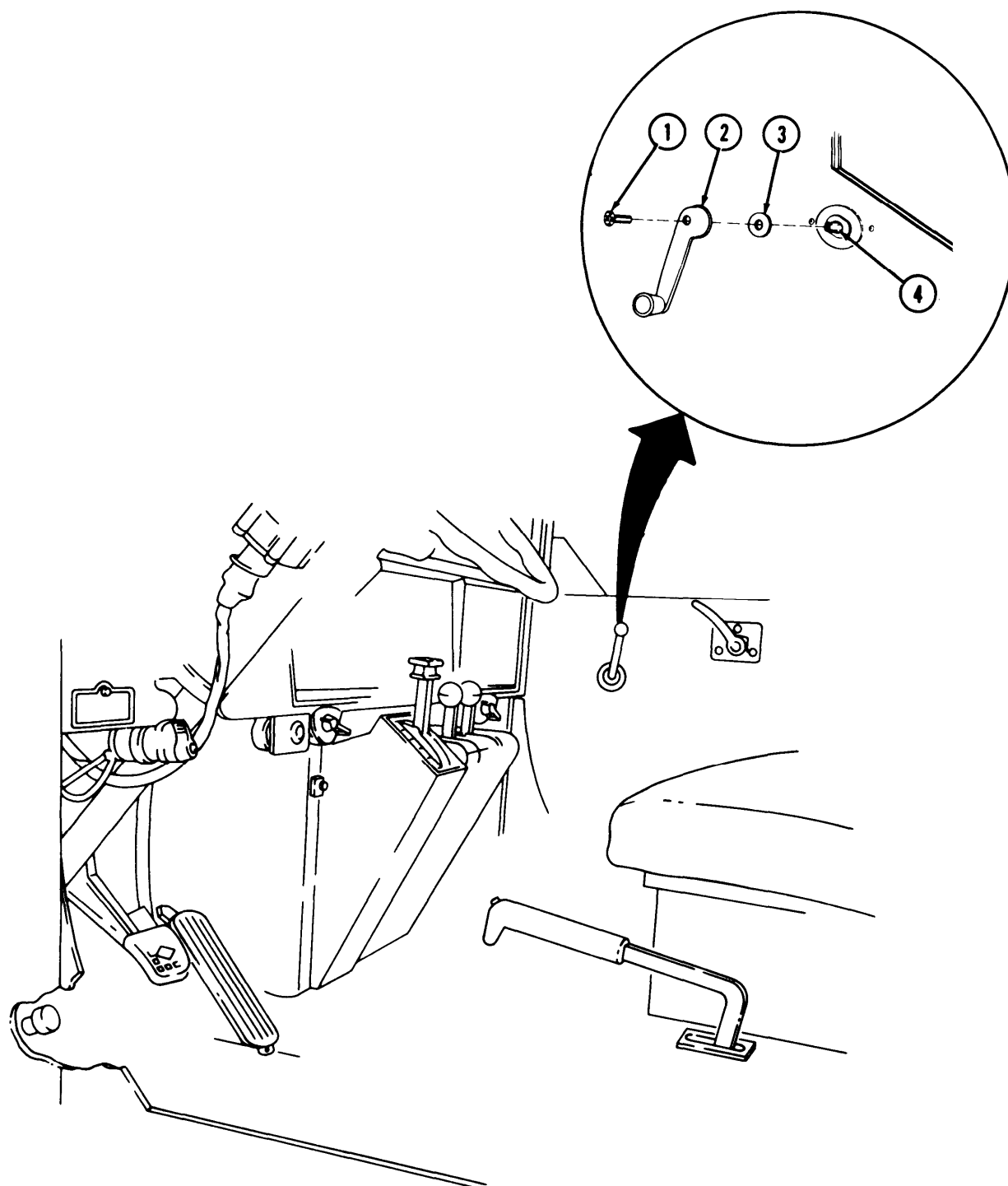
- |    |   |                           |  |
|----|---|---------------------------|--|
| 1. | Window regulator handle or inside door handle (2) | Screw (1)                 | Remove.                                |
| 2. |   | Handle (2) and washer (3) | Remove from control linkage shaft (4). |

#### b. Installation

- |    |  |   |
|----|--|---|
| 3. | Window regulator handle (2) and washer (3) | Position over control linkage shaft (4) and install with screw (1). |
|----|--|---|

9-51. WINDOW REGULATOR HANDLES AND INSIDE DOOR HANDLES  
REPLACEMENT (Cont'd)

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



END OF TASK

TA 349254

9-52. CAB DOOR DOVETAIL WEDGE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Gasket		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

This procedure applies to left and right doors.

a. Removal

1.

Door (1)

Two screw-assembled lockwashers (4)

Remove.
2.

Dovetail wedge (3) and gasket (2)

Remove.

Discard gasket (2).

b. Installation

3.

New gasket (2) and dovetail wedge (3)

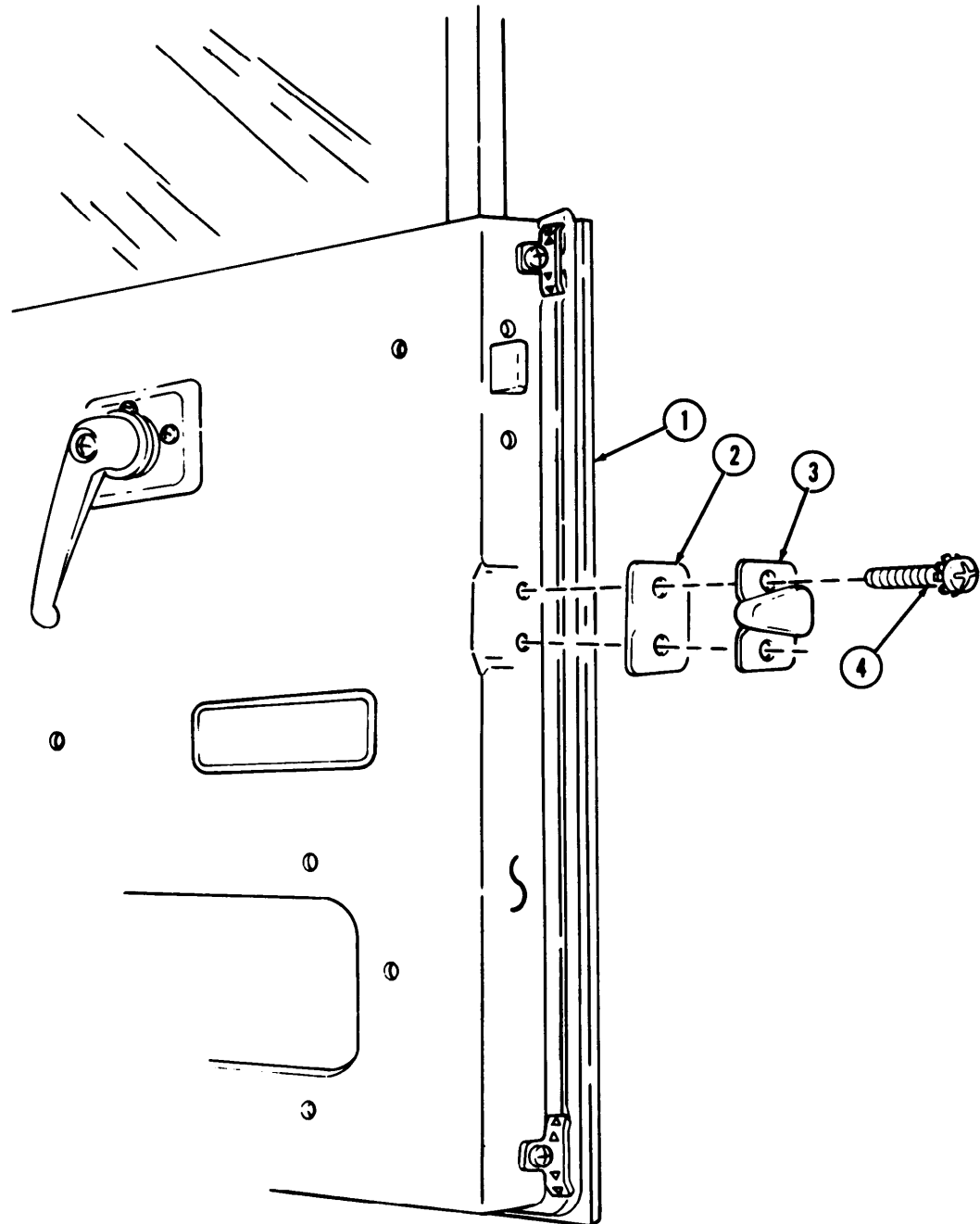
Position to door (1).
4.

Two screw-assembled lockwashers (4)

Install.

## 9-52. CAB DOOR DOVETAIL WEDGE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check cab door for proper operation (TM 9-2320-272-10).

TA 349255

**9-53. CAB DOOR DOVETAIL REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right doors.

**a. Removal**

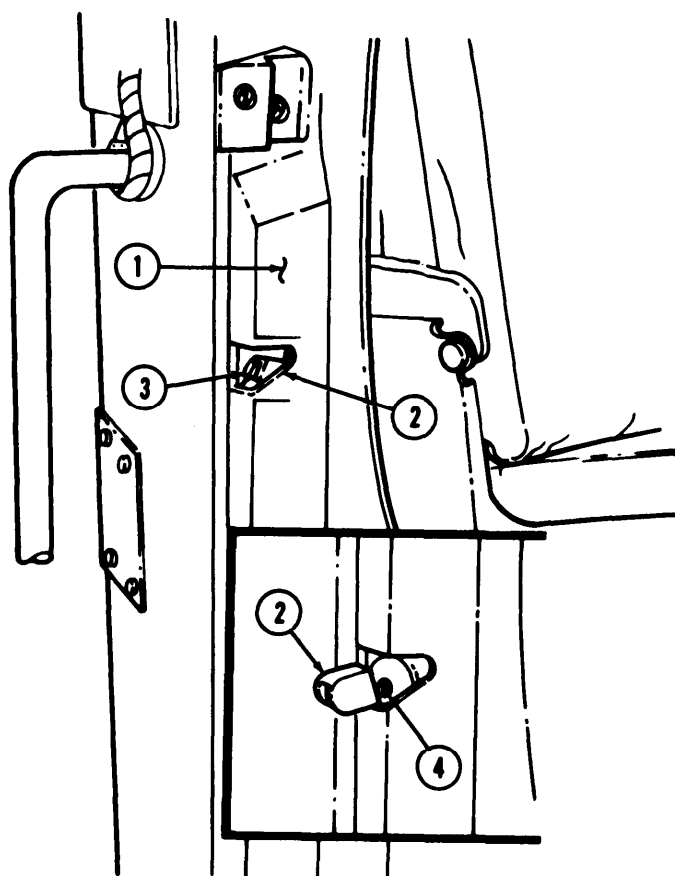
- |    |               |                             |  |
|----|---------------|-----------------------------|--|
| 1. | Door post (1) | Dovetail (2)                | Insert screwdriver in notch (3) at end of dovetail (2) and push in and up. |
| 2. |               | Dovetail (2) and spring (4) | Remove from door post (1).   |

**b. Installation**

- |    |                             |  |
|----|-----------------------------|--|
| 3. | Spring (4) and dovetail (2) | a. Position in door post (1).<br>b. Insert screwdriver in notch (3) of dovetail (2) and push in and down.<br>c. Release inward pressure to snap dovetail (2) in place. |
|----|-----------------------------|--|

## 9-53. CAB DOOR DOVETAIL REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check cab door for proper operation (TM 9-2320-272-10).

TA 349256

**9-54. CAB DOOR WEATHERSEAL REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Adhesive (Appendix D, Item 1)		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right cab door weatherseal. Cab door must be open.

**a. Removal**

- |    |                 |                                   |         |                                       |
|----|-----------------|-----------------------------------|---------|---------------------------------------|
| 1. | Weatherseal (4) | Five screws (3) and retainers (2) | Remove. |                                       |
| 2. | Cab door (1)    | Two weatherseals (4) and (5)      | Remove. | Clean seal remains from cab door (1). |

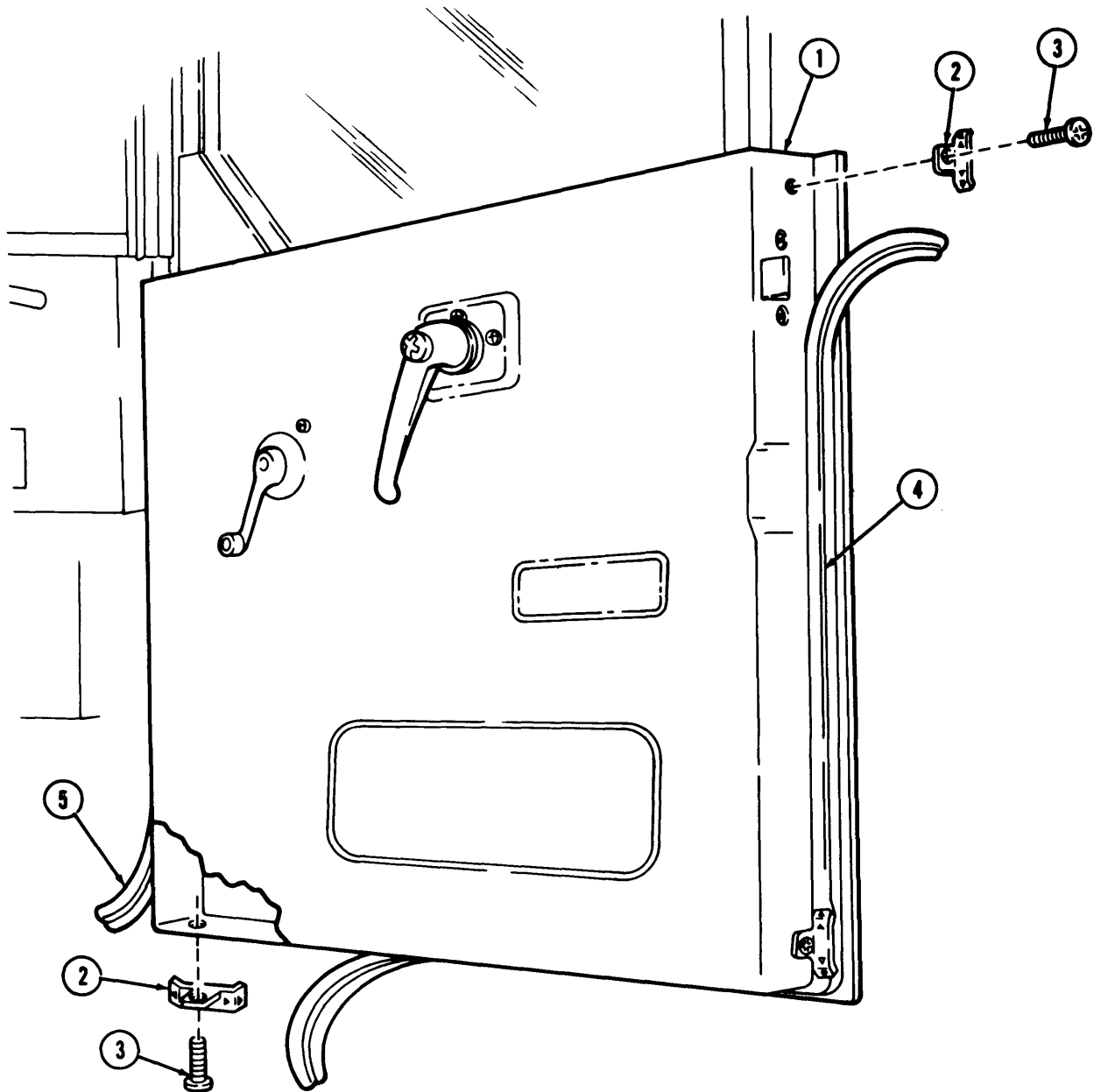
**b. Installation**

- |    |                                  |   |   |
|----|----------------------------------|---|---|
| 3. | Cab door (1) and weatherseal (4) | Apply light coat of adhesive.   |   |
| 4. | Weatherseal (4)                  | Position in place on cab door (1) and install with five retainers (2) and screws (3). | Allow door to remain open until adhesive dries. |
| 5. | Weatherseal (5) and cab door (1) | Apply light coat of adhesive.   |   |
| 6. | Weatherseal (5)                  | Install on door (1).  | Allow door to remain open until adhesive dries. |



9-54. CAB DOOR WEATHERSEAL REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349257

**9-55. CAB DOOR INSPECTION HOLE COVER REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right cab door inspection hole covers.

**a. Removal**

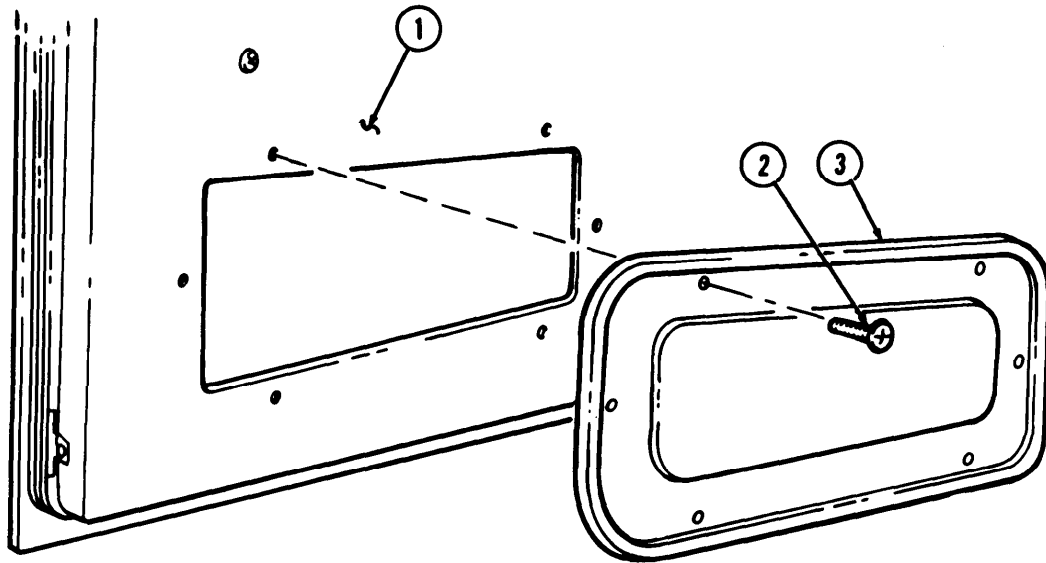
- |    |                                    |                                    |         |
|----|------------------------------------|------------------------------------|---------|
| 1. | Cab door inspection hole cover (3) | Six screws (2)                     | Remove. |
| 2. | Cab door (1)                       | Cab door inspection hole cover (3) | Remove. |

**b. Installation**

- |    |                                    |                           |
|----|------------------------------------|---------------------------|
| 3. | Cab door inspection hole cover (3) | Position to cab door (1). |
| 4. | Six screws (2)                     | Install.                  |

9-55. CAB DOOR INSPECTION HOLE COVER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349258

**9-56. CAB DOOR LOCK REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 9-50  Para. 9-55  Para. 9-51	Parking brake set. Outside door handle removed (door open) Cab door inspection hole cover removed. Inside door handle 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right door locks.

**a. Removal**

- |    |              |                                       |  |
|----|--------------|---------------------------------------|--|
| 1. | Cab door (3) | Three screw-assembled lockwashers (2) | Remove.                                  |
| 2. |              | Three screw-assembled lockwashers (1) | Remove.                                  |
| 3. |              | Door lock assembly (6)                | Remove through door inspection hole (8). |

**b. Installation**

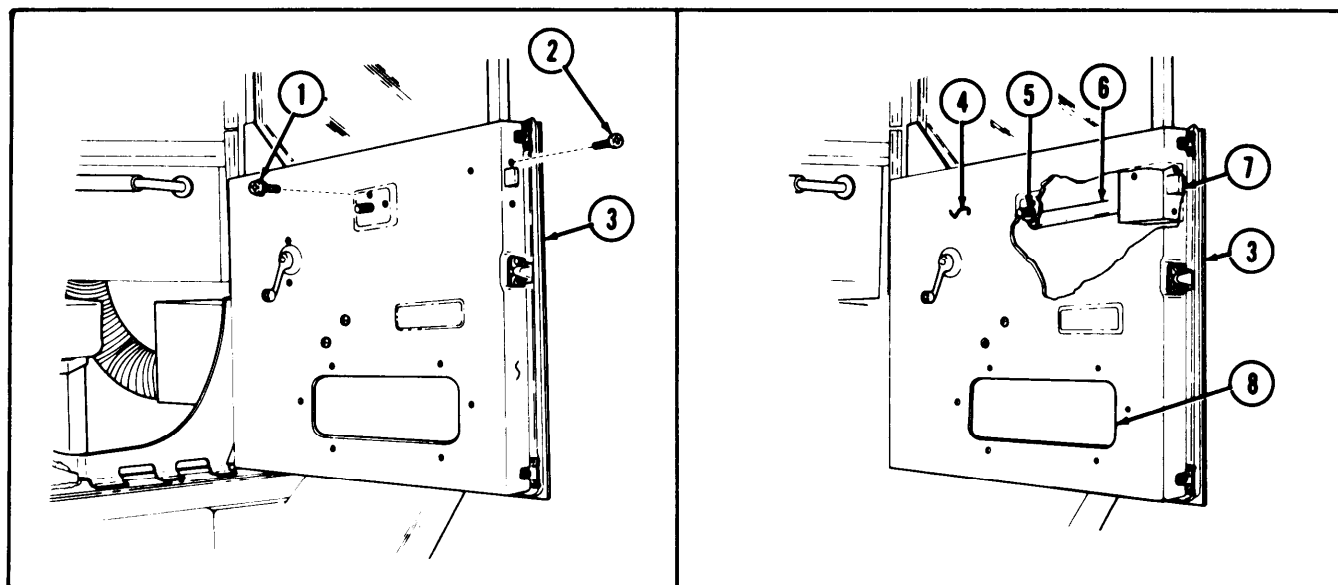
- |    |                        |   |
|----|------------------------|---|
| 4. | Door lock assembly (6) | a. Position in door (3) with latch (7) inserted through hole in door (3) and lock shaft (5) through inner door panel (4). |
|----|------------------------|---|

## 9-56. CAB DOOR LOCK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Install three screw-assembled lock-washers (1).

c. Install three screw-assembled lock-washers (2).



END OF TASK!

FOLLOW-ON TASKS: Ž Install door inspection hole cover (para. 9-55).

- Install outside door handle (para. 9-50).
- Install inside door handle (para. 9-51).
- Check cab door lock for proper operation (TM 9-2320-272-10).

TA 349259

**9-57. CAB DOOR GLASS MAINTENANCE**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 9-55	Cab door inspection hole cover removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two fasteners		
Four lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right door glass assemblies.

**a. Removal**

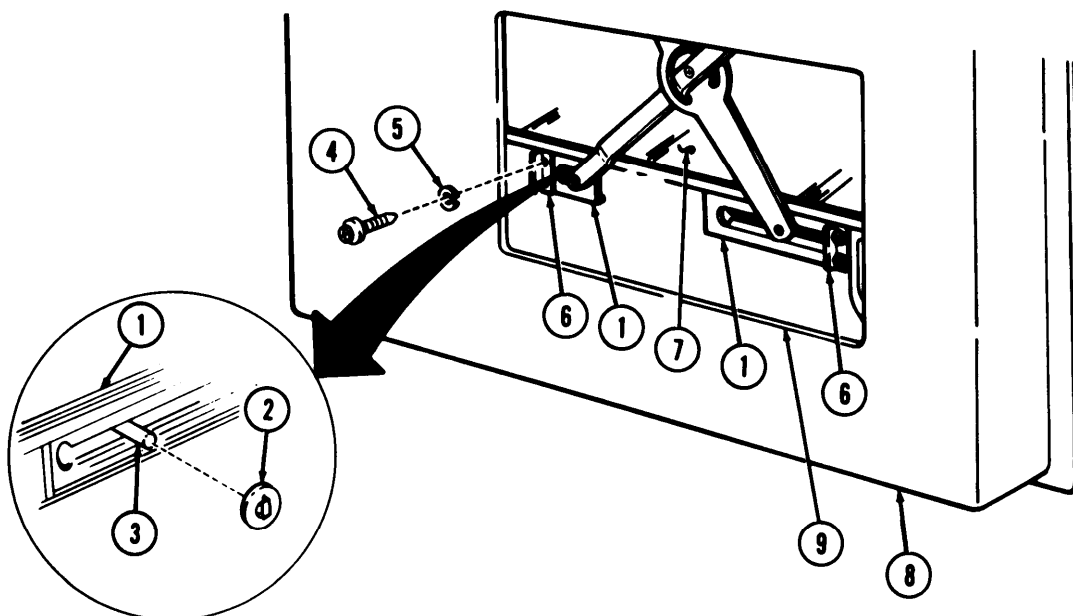
- |    |                                    |  |  |   |
|----|------------------------------------|--|--|---|
| 1. | Cab door (8)                       | Door glass (7)   | Position in cab door (8) so that regulator channel (1) is accessible through door inspection hole (9). |   |
| 2. |                                    | Four screws (4), lockwashers (5), and two window regulator stop brackets (6) | Remove.  | Discard lockwashers (5).                          |
| 3. | Two window regulator arm studs (3) | Two fasteners (2)  | Remove and pull arm studs (3) out of regulator channel (1).  | Discard fasteners (2),                            |
| 4. | Cab door (8)                       | Door glass (7)   | Pull up and out of cab door (8).   | Note position of door glass (7) for installation. |

## 9-57. CAB DOOR GLASS MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
5.		Door glass (7)	Position in cab door (8) so regulator channel (1) is accessible through door inspection hole (9).	
6.		Two window regulator arm studs (3)	Place in regulator channel (1) and install with two new fasteners (2).	
7.		Two window regulator stop brackets (6)	Install with four screws (4) and new lockwashers (5).	Do not tighten.

**c. Adjustment**

- |    |                |  |   |
|----|----------------|--|---|
| 8. | Door glass (7) | a. Raise to full up position.<br><br>b. Lower and tighten four screws (4). | Window regulator stop brackets (6) will slide to matching position. |
|----|----------------|--|---|



END OF TASK!

FOLLOW-ON TASK: Install door inspection hole cover (para. 9-55).

TA 349260

**9-58. WINDOW WEATHERSTRIPPING (CAB DOOR) REPLACEMENT**

This task covers:

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

<b><u>Applicable Models</u></b>		
All	Para. 9-57	Cab door glass removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		
None		
<b><u>Materials/Parts</u></b>		
Pop rivet		
<b><u>Personnel Required</u></b>		
Light-wheeled vehicle mechanic MOS 63B		
<b><u>Manual References</u></b>		
TM 9-2320-272-20P		
<b><u>Equipment Condition Reference</u></b>		
<b><u>Condition Description</u></b>		
<b><u>Special Environmental Conditions</u></b>		
None		
<b><u>General Safety Instructions</u></b>		
None		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to window weatherstripping of left and right cab doors.

**a. Removal**

- |    |              |                               |         |                        |
|----|--------------|-------------------------------|---------|------------------------|
| 1. | Cab door (5) | Screw (6) and channel (4)     | Remove. |                        |
| 2. |              | Pop rivet (1) and channel (2) | Remove. | Discard pop rivet (1). |
| 3. |              | Weatherstripping (3)          | Remove. |                        |

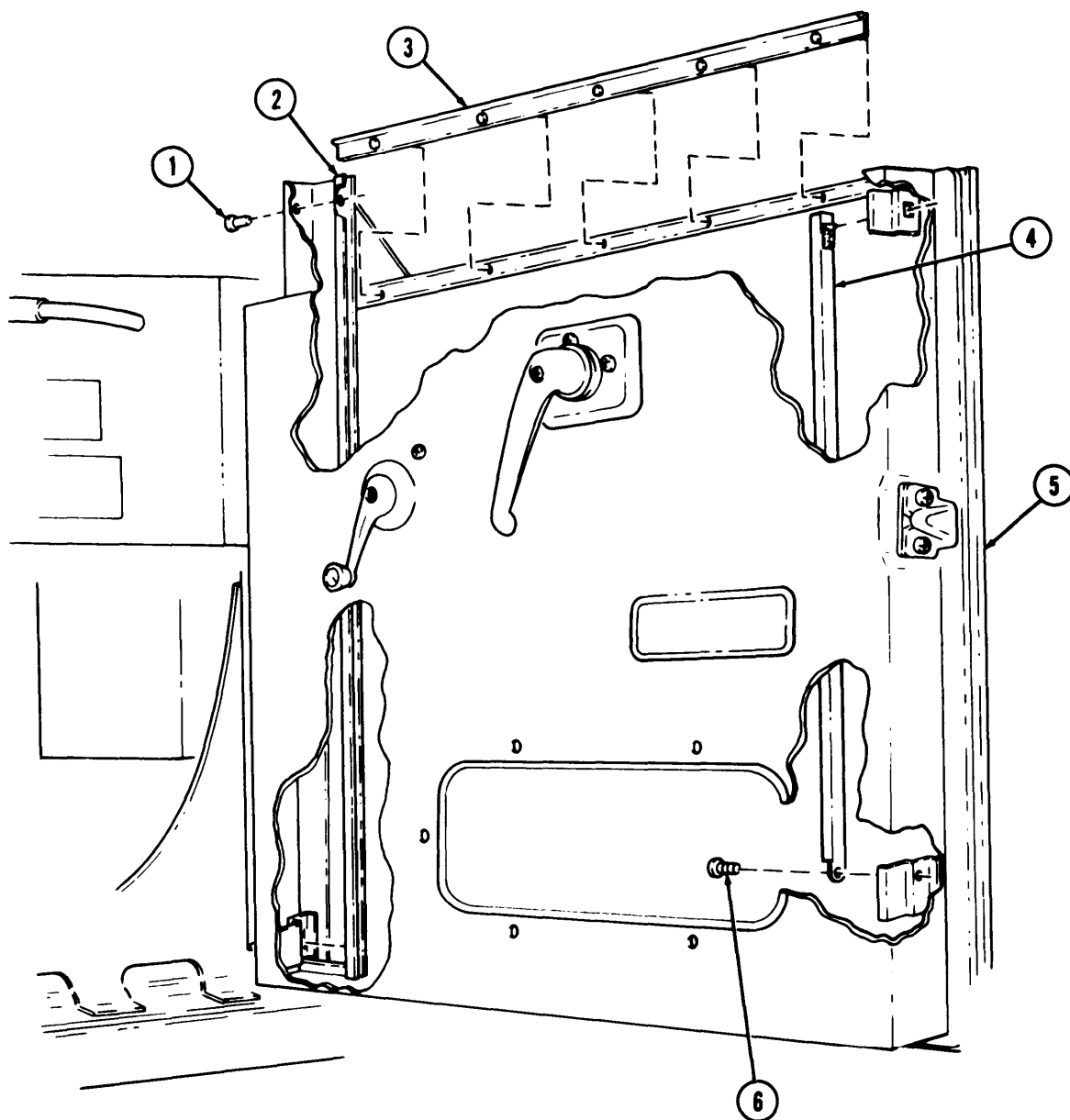
**b. Installation**

- |    |  |                      |                                 |  |
|----|--|----------------------|---------------------------------|--|
| 4. |  | Weatherstripping (3) | Install.                        |  |
| 5. |  | Channel (2)          | Install with new pop rivet (1). |  |
| 6. |  | Channel (4)          | Install with screw (6).         |  |



9-58. WINDOW WEATHERSTRIPPING (CAB DOOR) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install cab door glass (para. 9-67).

TA 349261

**9-59. CAB TOP SEAL AND RETAINER REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Cab top removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Adhesive (Appendix D, Item 1)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to cab top seal **and** retainer replacement of left and right cab pillars.

**a. Removal**

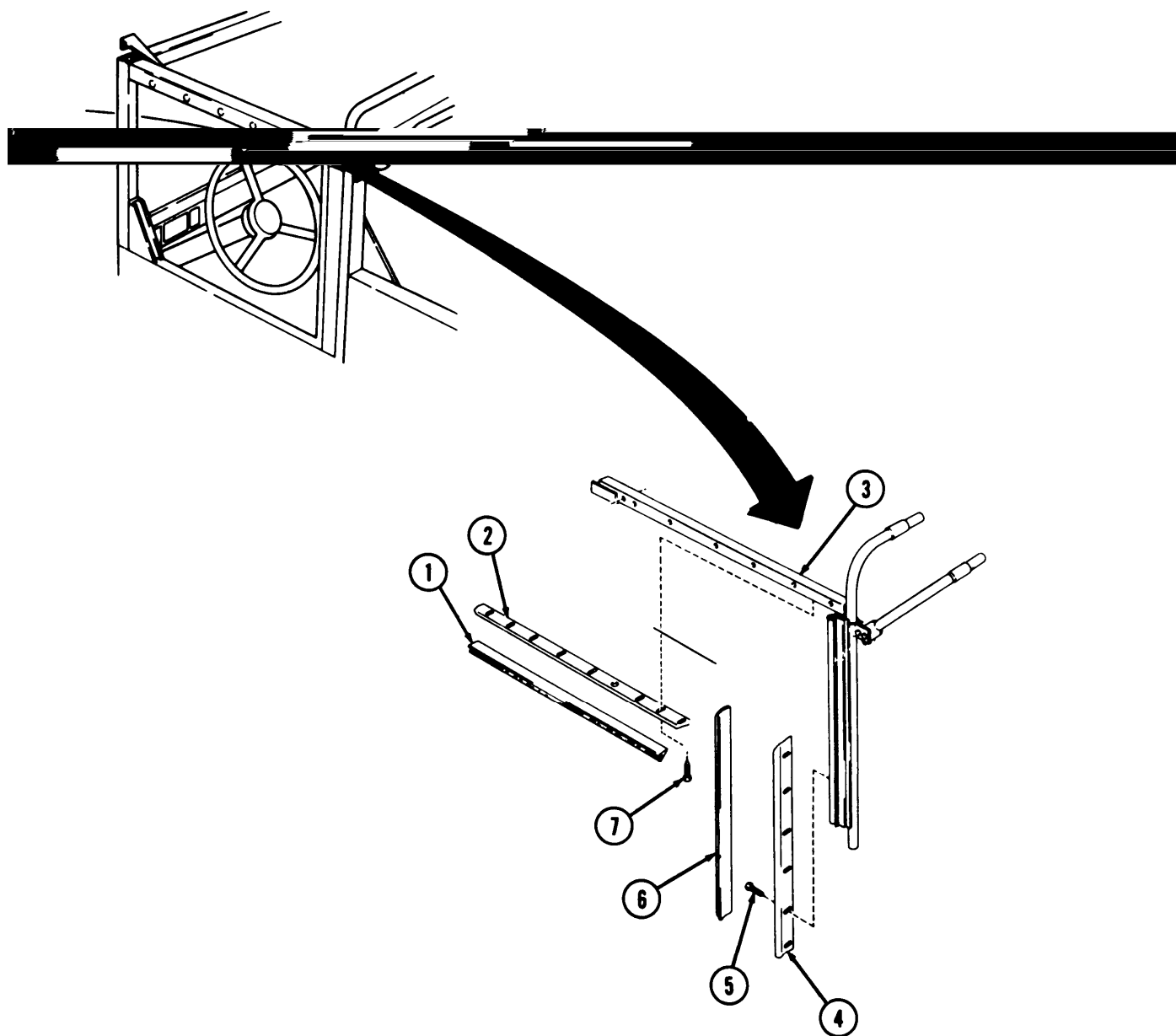
- |    |                |  |                |
|----|----------------|--|----------------|
| 1. | Cab pillar (3) | Rubber seal (1) and (6)                | <b>Remove.</b> |
| 2. |                | Nine screws (7) and retainer (2)       | <b>Remove.</b> |
| 3. |                | Six screws <b>(5)</b> and retainer (4) | <b>Remove.</b> |

**b. Installation**

- |    |  |                          |  |
|----|--|--------------------------|--|
| 4. |  | Retainers (4) and (2)    | Install with fifteen screws (5) and (7). |
| 5. |  | Rubber seals (6) and (1) | Install with adhesive.                   |

9-59. CAB TOP SEAL AND RETAINER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349262

**9-60. CAB DOOR REGULATOR ASSEMBLY REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 9-57 Para. 9-51	Door glass assembly removed. Window regulator handle 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right cab door regulator assemblies.

**a. Removal**

- |    |                      |                 |  |   |
|----|----------------------|-----------------|--|---|
| 1. | Inner door panel (2) | Four screws (1) | Remove.  | Be prepared to catch regulator assembly (6) when last screw (1) is removed. |
| 2. |                      | Regulator (6)   | Allow regulator arm stud (3) to slide out of stationary track (4) and remove through door inspection hole (5). |   |

**b. Installation****NOTE**

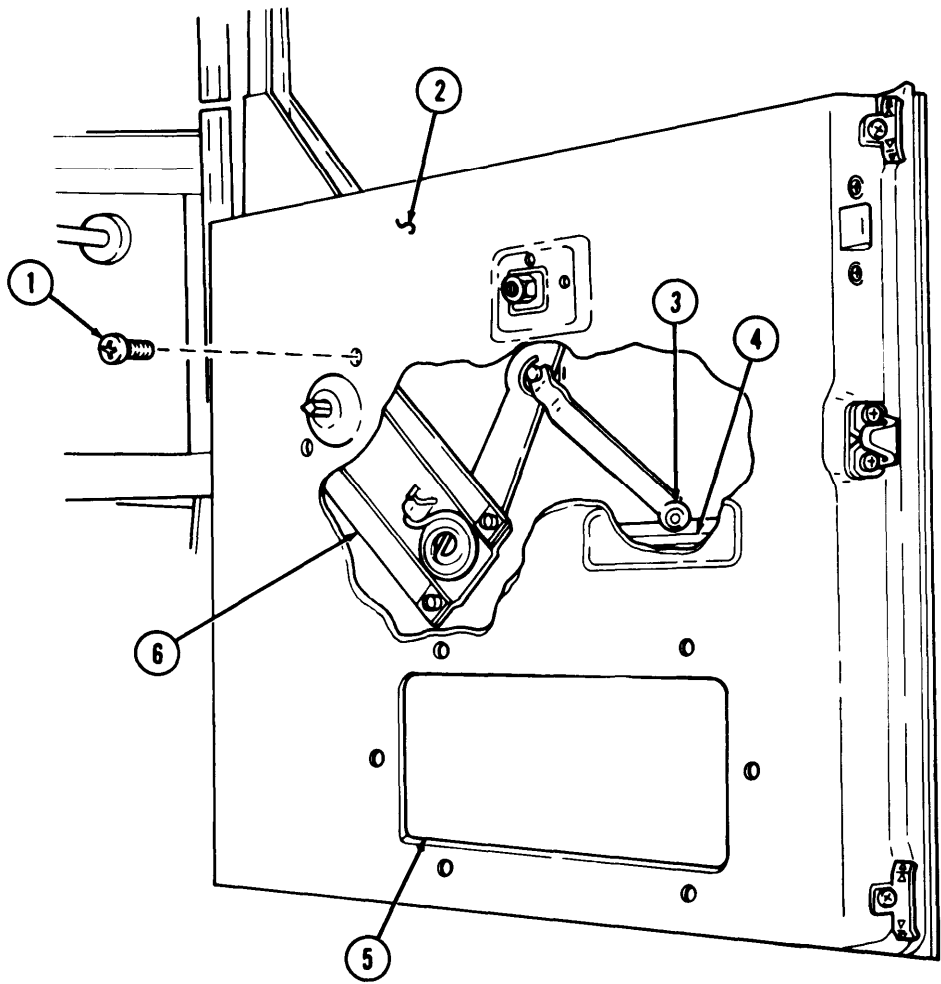
When securing regulator, do not allow regulator arm stud to slip out of stationary track.

- |    |               |  |
|----|---------------|--|
| 3. | Regulator (6) | a. Slide regulator arm stud (3) into stationary track (4). |
|----|---------------|--|

9-60. CAB DOOR REGULATOR ASSEMBLY REPLACEMENT (Cont'd)

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

b. Install on inner door panel (2) with four screws (1).



END OF TASK!

FOLLOW-ON TASKS: Ž Install window regulator handle (para. 9-51).  
• Install door glass assembly (para. 9-57).

TA 349243

**9-61. CAB DOOR CHECK ROD REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right door check rods.

**a. Removal**

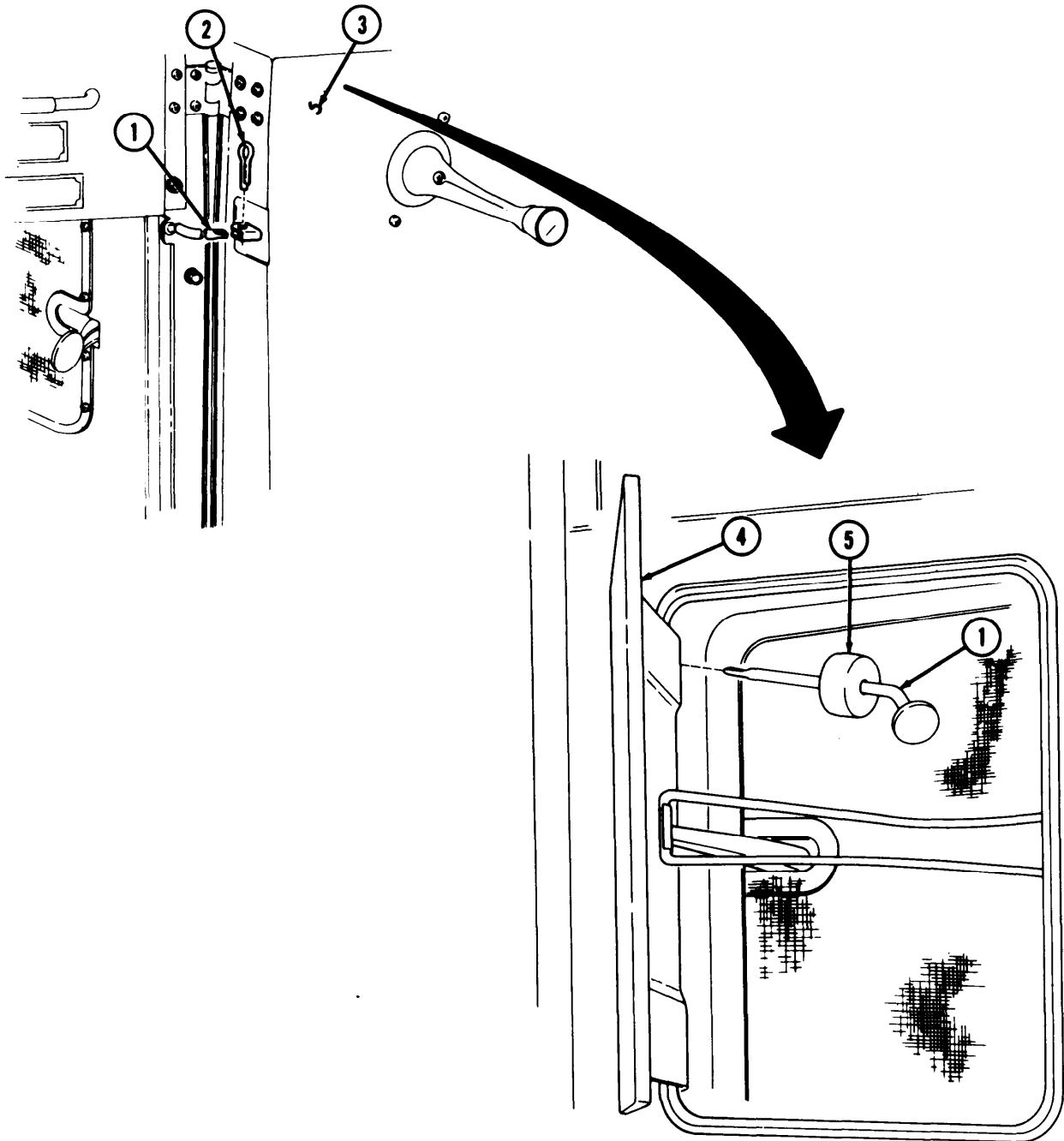
- |    |                   |                           |                                |  |
|----|-------------------|---------------------------|--------------------------------|--|
| 1. | Cab door (3)      | Cotter pin (2)            | Remove.                        | Discard cotter pin (2).                        |
| 2. | Air vent door (4) | Check rod (1) and pad (5) | Open vent door (4) and remove. | Check pad (5) for cracks. If cracked, replace. |

**b. Installation**

- |    |                               |  |
|----|-------------------------------|--|
| 3. | Check rod (1) and new pad (5) | Install.   |
| 4. | Door check rod (1)            | Install on cab door (3) with new cotter pin (2). |

9-61. CAB DOOR CHECK ROD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349244

**9-62. CAB DOOR REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 9-56 Para. 9-52 Para. 9-58  Para. 9-60 Para. 9-61 Para. 9-54	Cab door lock removed. Cab door dovetail wedge removed. Window weatherstripping (cab door) removed. Cab door regulator assembly removed. Cab door check rod removed. Cab door weatherseal removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to left and right cab doors.

**a. Removal**

- |    |  |   |   |                       |
|----|--|---|---|-----------------------|
| 1. | Three mirror braces (2) to two door hinges (7) | Hinge screw (1), washer (5) and locknut (6) | Remove from each hinge (7) and release mirror braces (2). | Discard locknuts (6). |
| 2. | Two hinges (7)                                 | Cab door (4)                                | Remove.   |                       |
| 3. | Cab door (4)                                   | Two door hinges (3)                         | Remove.   | Refer to para 9-63.   |

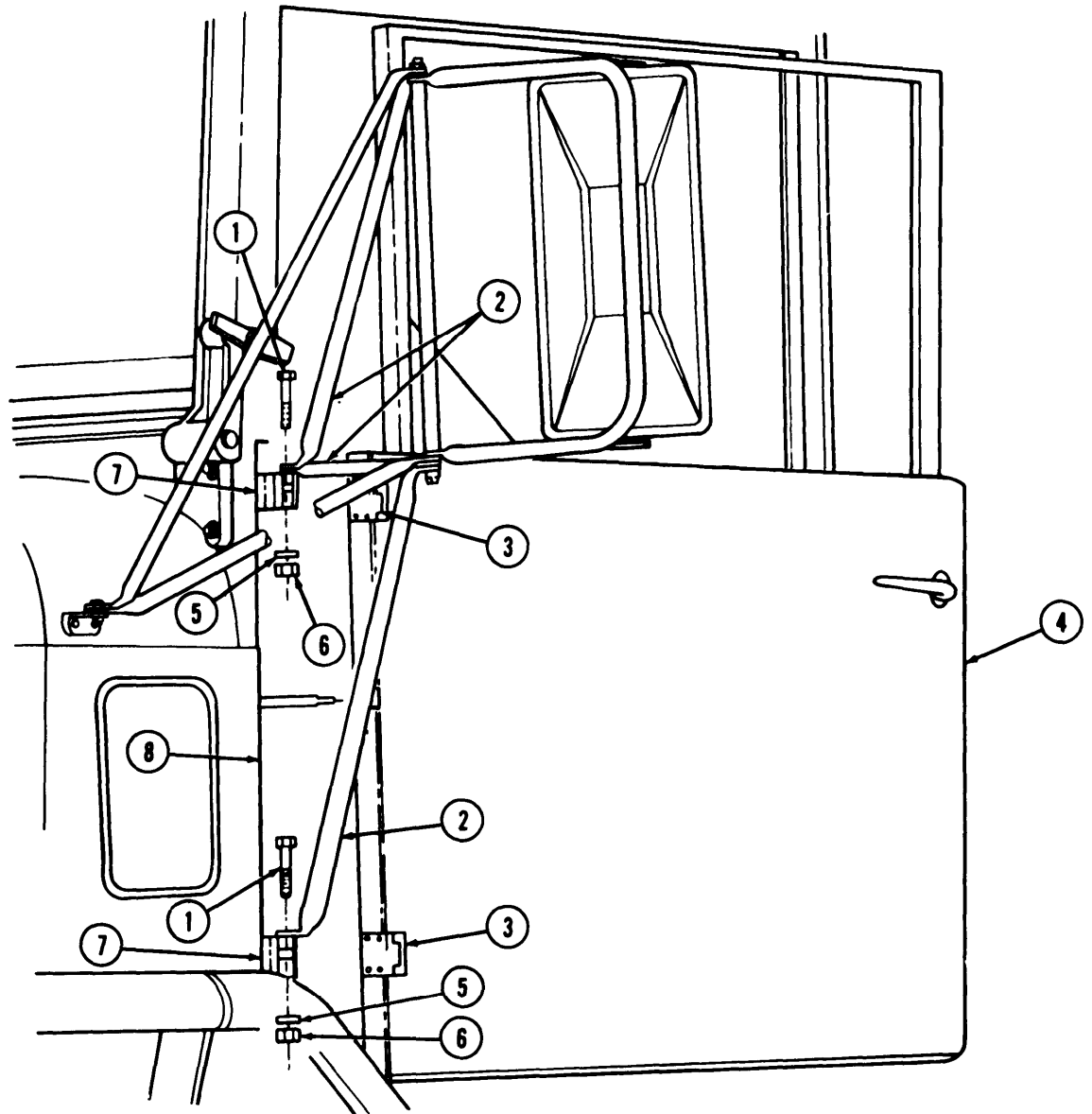
**b. Installation**

- |    |   |  |                      |
|----|---|--|----------------------|
| 4. | Two door hinges (3)                                   | Install on cab door (4).                               | Refer to para. 9-63. |
| 5. | Cab door (4) and three mirror braces (2)              | Position on cab body (8) and align hinges (3) and (7). |                      |
| 6. | Two hinge screws (1) washers (5) and new locknuts (6) | Install.   |                      |



## 9-62. CAB DOOR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Install cab door weatherseal (para. 9-54).
- Install cab door check rod (para. 9-61).
- Ž Install cab door regulator assembly (para. 9-60).
- Install window weatherstripping (cab door) (para. 9-58).
- Install cab door dovetail wedge (para. 9-52).
- Ž Install cab door lock (para. 9-56).

TA 349265

**9-63. CAB DOOR HINGE REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para. 9-62	Cab door 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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

This procedure applies to all cab door hinges.

**a. Removal**

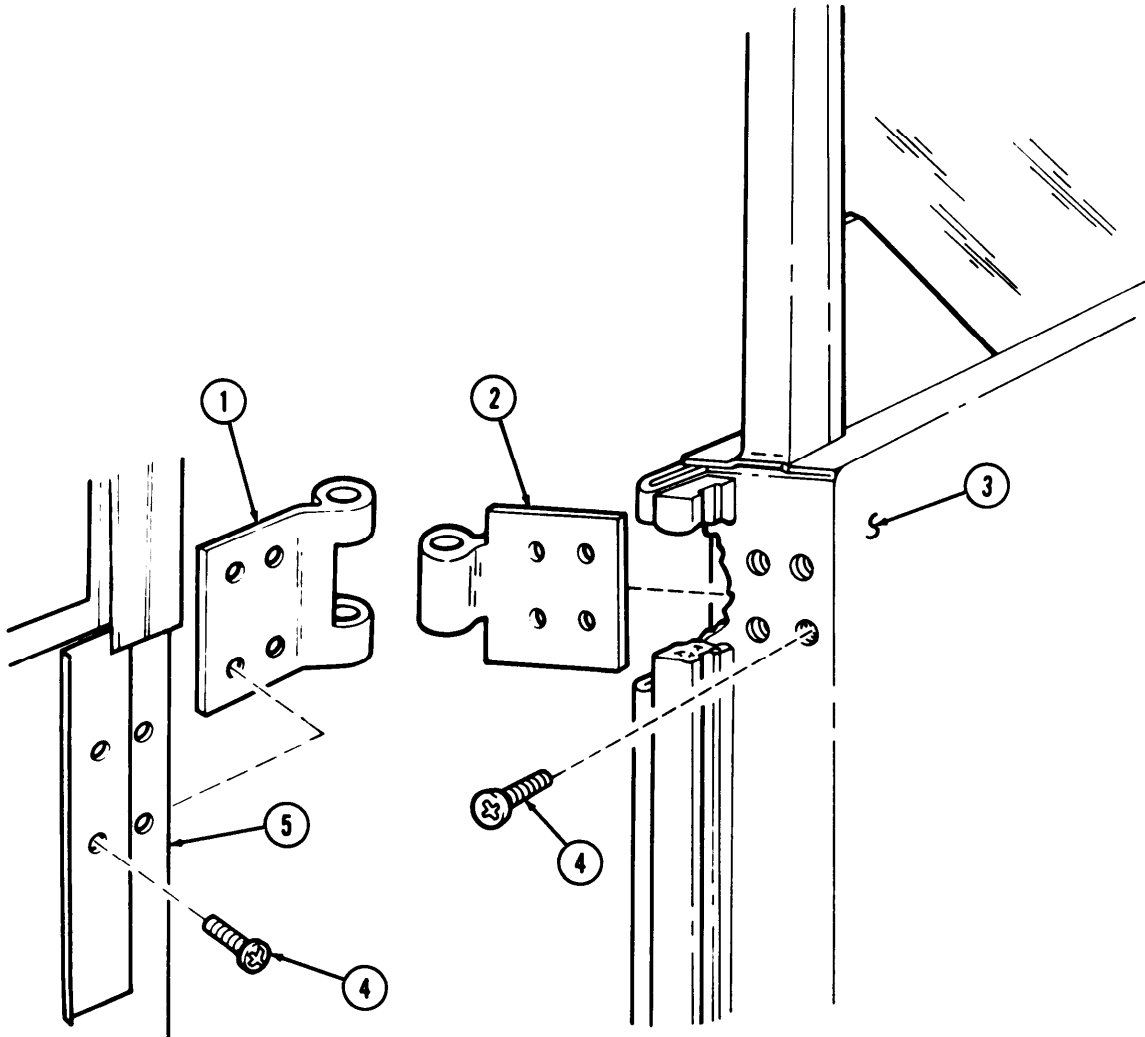
1. Cab door (3) and cab body (5) Eight screws (4) Remove.
2. 'IWO hinges (2) and (1) Remove.

**b. Installation**

3. Two hinges (1) and (2) Position on cab body (5) and cab door (3).
4. Eight screws (4) Install.

9-63. CAB DOOR HINGE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install cab door (para. 9-62).

TA 349266

9-64. CAB DOOR CATCH REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

This procedure applies to left and right door catch.

a. Removal

1.	Cab door catch (2)	Two screw-assembled lockwashers (3)	Remove.
2.	Cab body (1)	Cab door catch (2)	Remove.

b. Installation

3.	Cab door catch (2)	Install with two screw-assembled lockwashers (3).
----	--------------------	---

END OF TASK!

FOLLOW-ON TASK: Check cab door catch for proper operation (TM 9-2320-272-10).

TA 349267

## CHAPTER 10 AUXILIARY EQUIPMENT AND SPECIAL BODY MAINTENANCE

### Section 1. WINCH MAINTENANCE

#### **10-1. GENERAL**

This section provides maintenance procedures assigned to the organizational level for the front and rear winches. To find a specific procedure, see the maintenance task summary below:

#### **10-2. FRONT AND REAR WINCH MAINTENANCE TASK SUMMARY**

10-3.	Front Winch Automatic Brake Adjustment	10-2
10-4.	Front Winch (With Level Wind) Drag Brake Adjustment	10-6
10-5.	Front Winch (Without Level Wind) Drag Brake Adjustment	10-8
10-6.	Front Winch Cable Chain and Hook Replacement	10-10
10-6.1.	Winch Cable Clevis Replacement	10-11.1
10-7.	Front Winch Cable Replacement	10-12
10-8.	Front Winch Motor Replacement	10-14
10-9.	Front Winch Replacement	10-16
10-10.	Rear Winch Adjustment	10-22
10-11.	Rear Winch Cable Replacement	10-26
10-12.	Rear Winch Replacement	10-28
10-13.	Housing Assembly Cover Replacement	10-34
10-14.	Transmission PTO to Hydraulic Pump Propeller Shaft Replacement	10-36
10-15.	Transmission PTO to Hydraulic Pump Propeller Shaft Universal Joint Maintenance	10-38
10-16.	Winch Hydraulic Oil Reservoir Filter Replacement	10-42
10-17.	Winch Hydraulic Oil Reservoir Replacement	10-44
10-17.1.	Tractor Winch Hydraulic Oil Reservoir (M939A1 Series) Replacement	10-46.2

**10-3. FRONT WINCH AUTOMATIC BRAKE ADJUSTMENT**

This task covers:

**a. Testing****b. Adjustment****INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M930, M932, M936	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B (2)		<ul style="list-style-type: none"> <li>• Wear hand protection when handling winch cable.</li> <li>• Never stand between test vehicles,</li> <li>• Assistant must remain in secondary vehicle to engage service brakes if cable snaps or winch automatic brake fails.</li> </ul>
<u>Manual References</u>		
TM 9-2320-272-10		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Testing**

- |    |                       |  |
|----|-----------------------|--|
| 1. | Test vehicle (1)      | Park facing downhill on steep grade.             |
| 2. | Secondary vehicle (4) | Park at bottom of grade facing test vehicle (1). |

**WARNING**

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

- |    |                       |                 |   |   |
|----|-----------------------|-----------------|---|---|
| 3. | Test vehicle (1)      | Winch cable (3) | Unwind and rig to secondary vehicle (4).  | Refer to TM 9-2320-272-10.              |
| 4. | Secondary vehicle (4) |                 | a. Place transmission lever in "N" neutral.<br>b. Disengage parking brake.<br>c. Disengage front-wheel drive, if engaged. | Refer to vehicle (4) operator's manual. |

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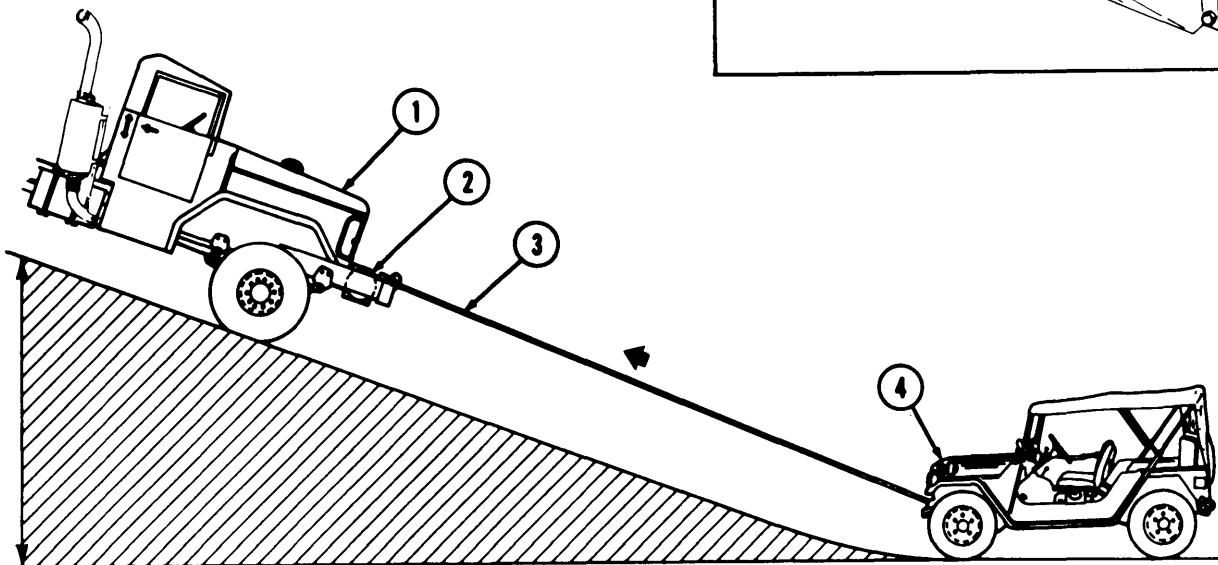
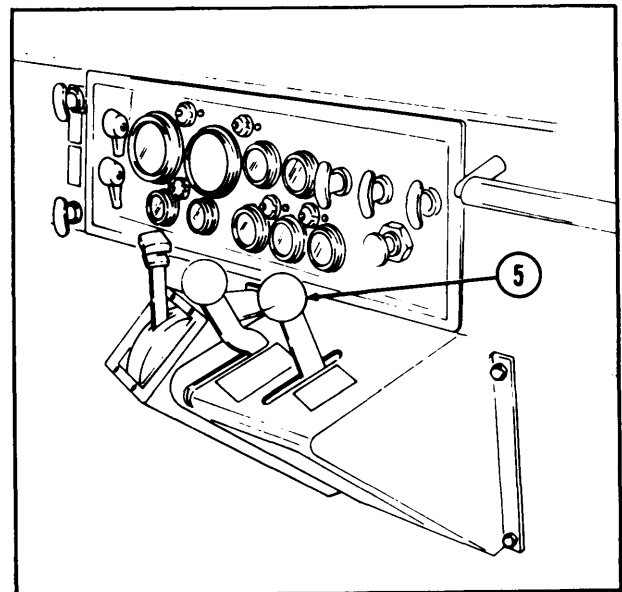
**10-3. FRONT WINCH AUTOMATIC BRAKE ADJUSTMENT (Cont'd)**


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**WARNING**

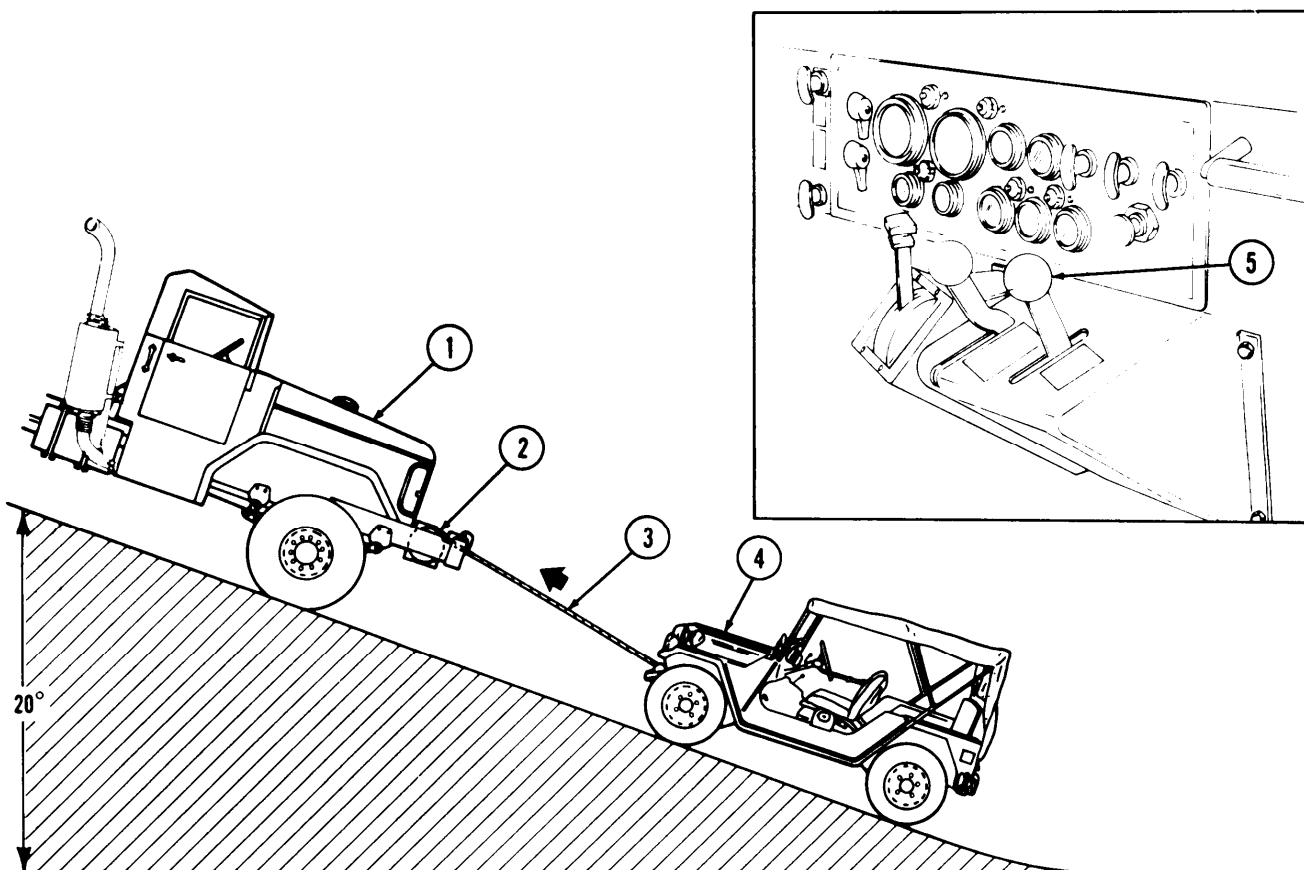
Never stand between vehicles. Assistant must remain in secondary vehicle to engage service brake if cable snaps or automatic brake fails while towing vehicle. Failure to do this may result in injury to personnel.

- |    |                  |                                |                      |   |
|----|------------------|--------------------------------|----------------------|---|
| 5. | Test vehicle (1) | Front winch (2)                | Prepare for winding. | Refer to TM 9-2320-272-10.                    |
| 6. |                  | Winch <b>control</b> lever (5) | Pull back to WIND.   | Wind secondary vehicle (4) part way up grade. |



### 10-3. FRONT WINCH AUTOMATIC BRAKE ADJUSTMENT (Cont'd)

7. Secondary vehicle (4)      Observe movement.      Automatic brake is properly adjusted if winch holds secondary vehicle (4) on grade.  
Automatic brake needs adjustment if secondary vehicle (4) rolls backwards. See task b, adjustment.
8. Test vehicle (1)      Winch control lever (5)      Push forward to WINCH to unwind cable (3).  
Unwind until secondary vehicle (4) is back on level grade.  
Unrig and rewind cable (3) if automatic brake is properly adjusted.  
See task b. for adjustment if automatic brake needs adjustment.



TA 349269



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**10-3. FRONT WINCH AUTOMATIC BRAKE ADJUSTMENT (Cont'd)**


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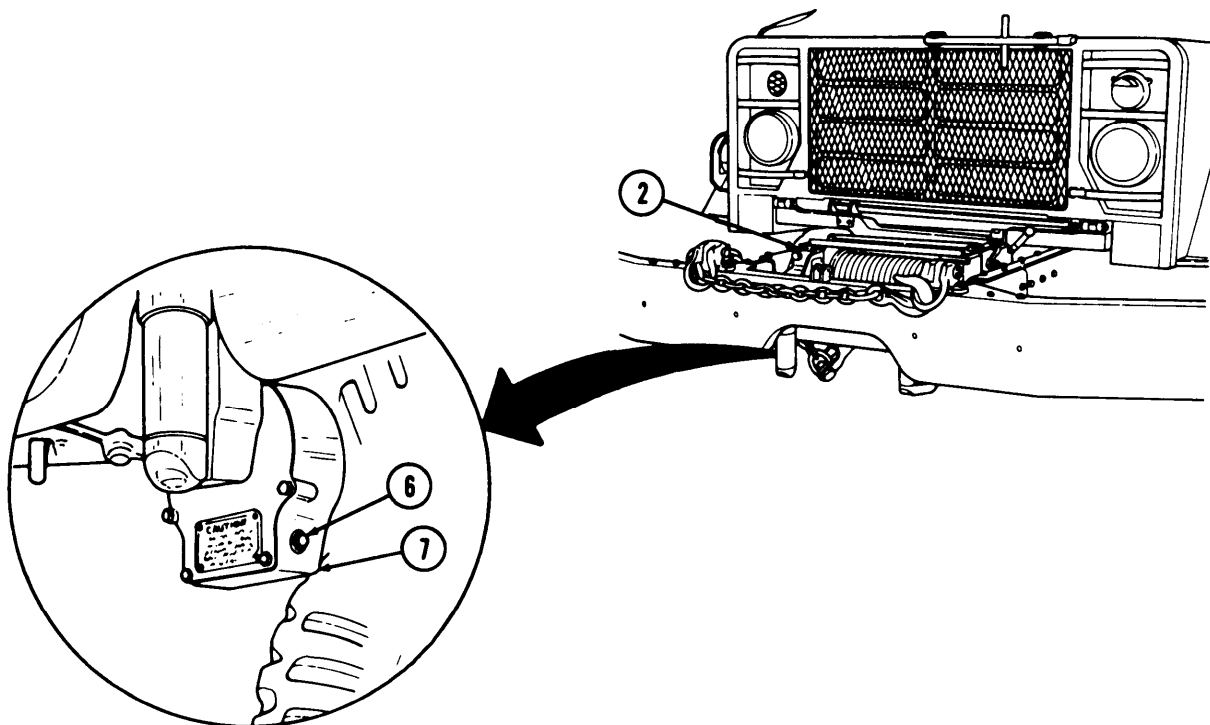


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**b. Adjustment**


---

- |     |                                    |   |   |  |
|-----|------------------------------------|---|---|--|
| 9.  | Front winch (2) (lower right side) | Automatic brake set-screw (6)   | <p>a. Turn 1/2 turn clockwise to increase braking action.</p> <p>b. Repeat steps 4 through 9a until automatic brake is properly adjusted.</p> | Notify DS maintenance if automatic brake cannot be adjusted.             |
| 10. | Winch control lever (5)            | <p>a. Push forward to WINCH to unwind cable (3).</p> <p>b. Return to "N" neutral.</p> |   |  |
| 11. | Front winch (2) (lower right side) | Automatic brake housing (7)   | <p>Place bare hand near brake housing (7).</p>  | If housing (7) is hot, back off setscrew (6) 1/4 turn counter-clockwise. |



END OF TASK!

FOLLOW-ON TASK: If adjustment is completed, rewind cable (TM 9-2320-272-10).

TA 349270

**10-4. FRONT WINCH (WITH LEVEL WIND) DRAG BRAKE ADJUSTMENT**

This task covers:

**a. Testing****b. Adjustment****INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M930, M932, M936	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B		Wear hand protection when handling winch cable.
<u>Manual References</u>		
TM 9-2320-272-10		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Testing****WARNING**

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

- |    |                 |                    |   |                            |
|----|-----------------|--------------------|---|----------------------------|
| 1. | Front winch (1) | Drum lock knob (2) | Pull out, rotate 90 degrees, and release, | Refer to TM 9-2320-272-10. |
|----|-----------------|--------------------|---|----------------------------|

**NOTE**

Steps 2 and 3 apply to M936 only.

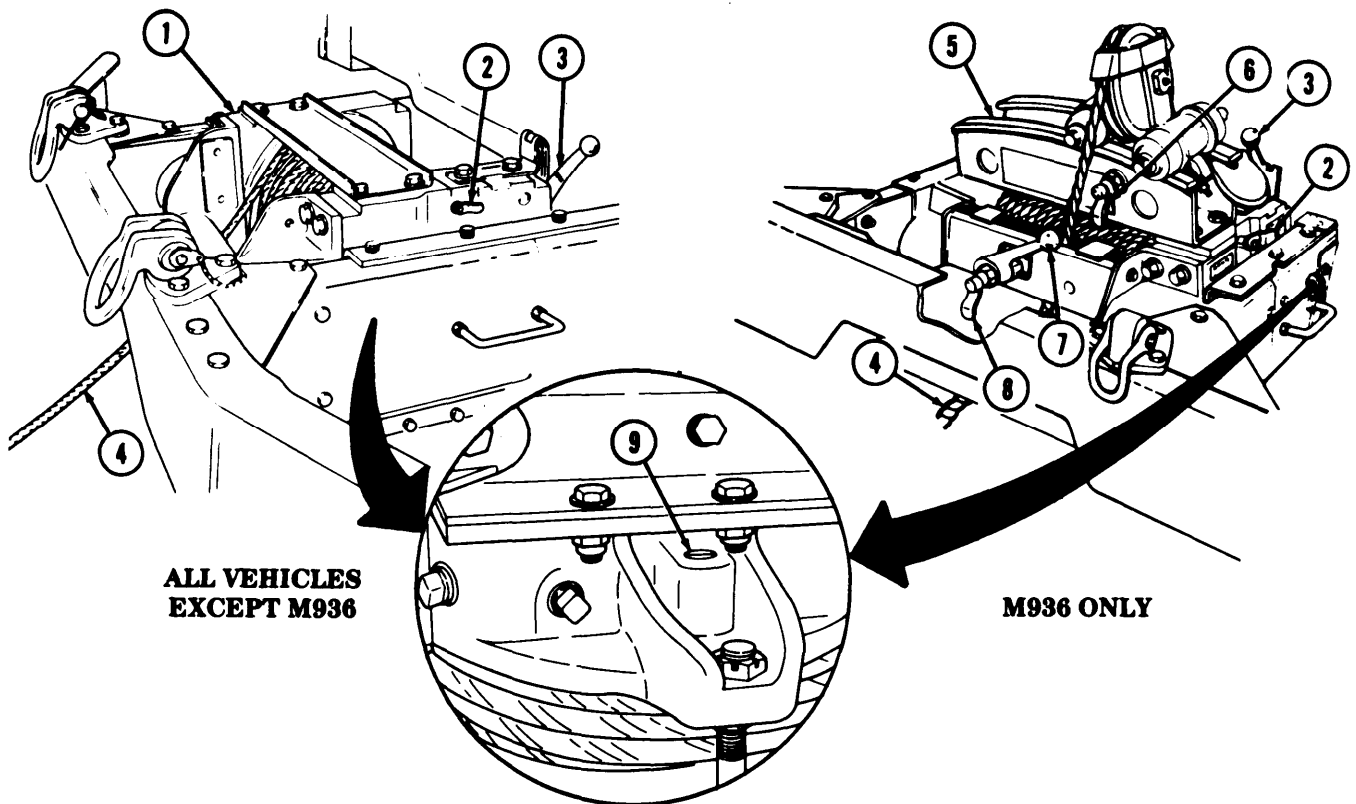
- |    |                      |                               |  |                      |
|----|----------------------|-------------------------------|--|----------------------|
| 2. | Level wind frame (5) | Level wind lock knob (6)      | Pull out, rotate 1/4 turn, and release.    |                      |
| 3. |                      | Cable tensioner lock knob (8) | Pull out, and release tensioner lever (7). |                      |
| 4. |                      | Clutch lever (3)              | Push toward front of winch (1).            | To disengage clutch. |

# 10-4. FRONT WINCH (WITH LEVEL WIND) DRAG BRAKE ADJUSTMENT (Cont'd)

- |    |                 |   |
|----|-----------------|---|
| 5. | Winch cable (4) | Pull out 3 to 4 ft (0.9 to 1.2 m) off drum. Drum will stop turning as soon as pulling has stopped if drag brake is properly adjusted. If drum continues to turn after pulling has stopped, drag brake needs adjustment. |
|----|-----------------|---|

## b. Adjustment

- |    |                 |                                |   |
|----|-----------------|--------------------------------|---|
| 6. | Front winch (1) | Drag brake adjusting screw (9) | <p>a Turn 1/4 turn clockwise to increase drag, and counter-clockwise to decrease drag.</p> <p>b. Repeat steps 5 and 6 If drag brake cannot be properly adjusted, refer to TM 9-2320-272-10.</p> |
|----|-----------------|--------------------------------|---|



END OF TASK!

FOLLOW-ON TASK: If adjustment is completed, rewind cable (TM 9-2320-272- 10).

TA 349271

**10-5. FRONT WINCH (WITHOUT LEVEL WIND) DRAG BRAKE ADJUSTMENT**

This task covers:

**a. Testing**

**b. Adjustment**

**INITIAL SETUP:**

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
M925, M926, M928, M930, M932	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
None		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		Wear hand protection when handling winch cable.
<b><u>Manual References</u></b>		
TM 9-2320-272-10		

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

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

**a. Testing**

1.	Front winch (1)	Drum lock knob (2)	Pull out, rotate 90 degrees, and release.	Refer to TM 9-2320-272-10.
2.		Clutch lever (3)	Push toward front of winch (1).	To disengage clutch.
3.		Winch cable (5)	Pull out 3 to 4 ft (0.9 to 1.2 m) off drum.	Drum will stop turning as soon as pulling has stopped if drag brake is properly adjusted. If drum continues to turn after pulling has stopped, drag brake needs adjustment.

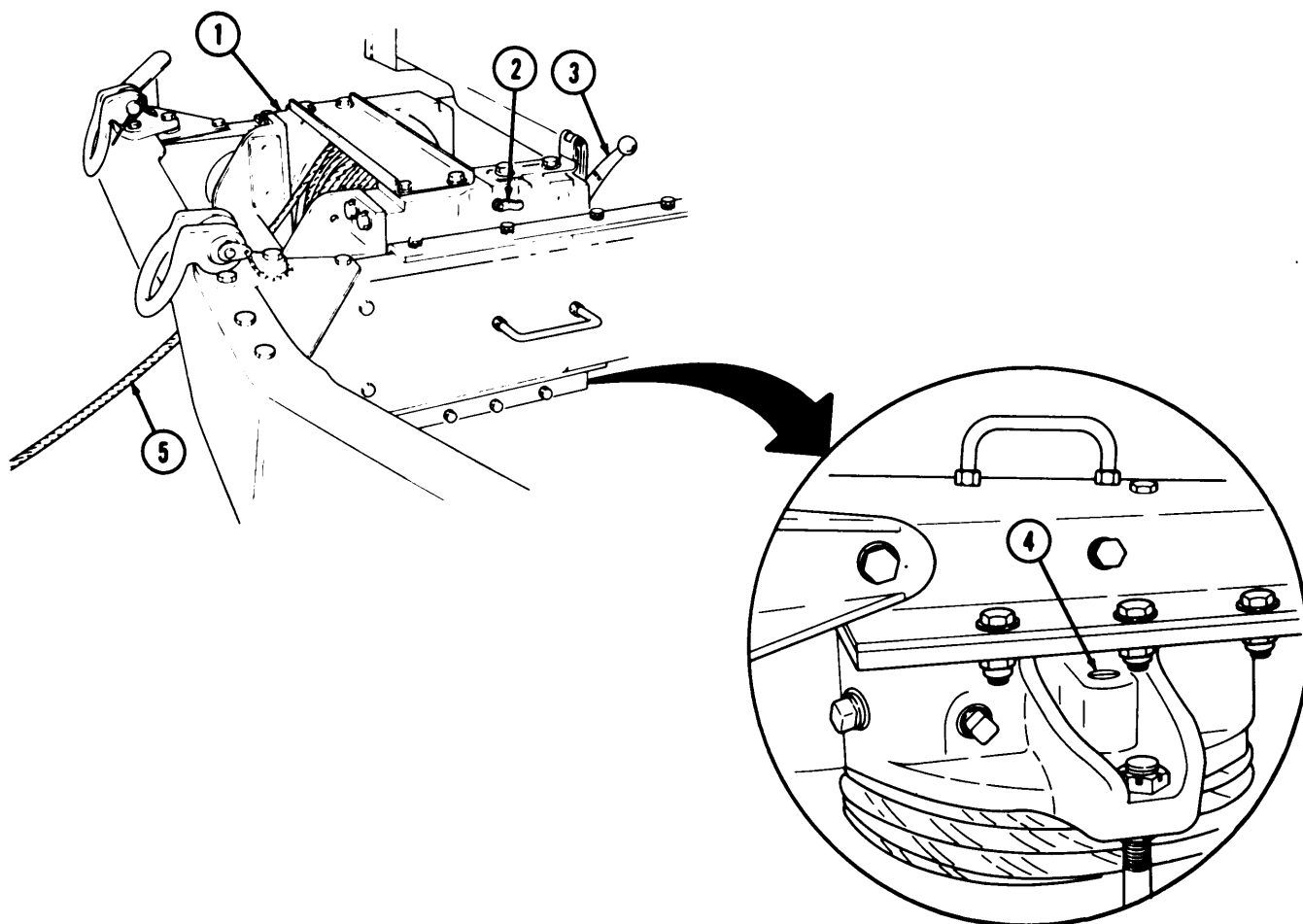
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## 10-5. FRONT WINCH WITHOUT LEVEL WIND) DRAG BRAKE ADJUSTMENT (Cont'd)

---

### b. Adjustment

4. Front winch (1)      Drag brake adjusting screw (4)
  - a. Turn 1/4 turn clockwise to increase drag, and counter clockwise to decrease drag.
  - b. Repeat steps 3 and 4 If drag brake cannot be properly adjusted, refer to TM 9-2320-272-10.



END OF TASK!

FOLLOW-ON TASK: If adjustment is completed, rewind cable (TM 9-2320-272- 10).

TA 349272

**10-6. FRONT WINCH CABLE CHAIN AND HOOK REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M930, M932, M936	TM 9-2320-272-10	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 Rewired</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

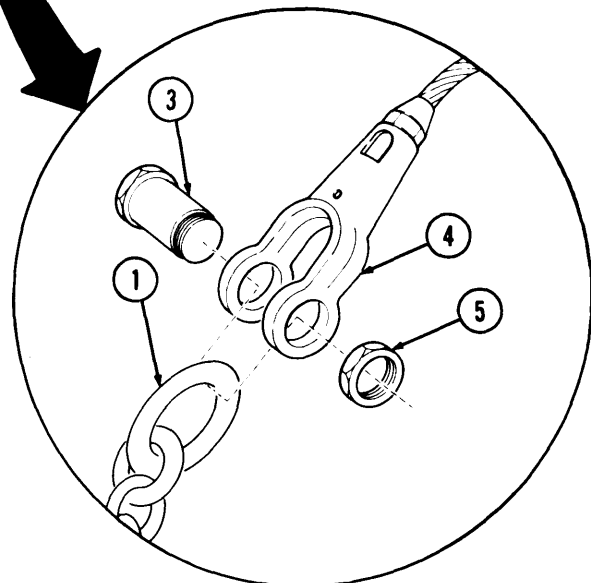
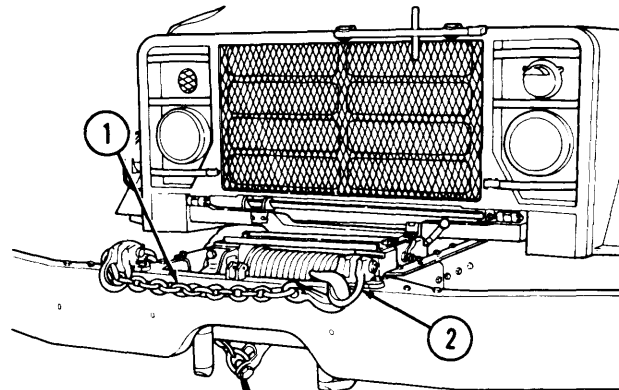
- |    |                                  |                            |                     |
|----|----------------------------------|----------------------------|---------------------|
| 1. | Front bumper lifting shackle (2) | Cable chain and hook (1)   | Remove.             |
| 2. | Clevis (4)                       | Clevis pin (3) and nut (5) | Unscrew and remove. |
| 3. |                                  | Cable chain and hook (1)   | Remove.             |

**b. Installation**

- |    |  |                          |   |
|----|--|--------------------------|---|
| 4. |  | Cable chain and hook (1) | a. Insert into clevis (4).<br>b. Install in place with nut (5) and pin (3).<br>c. Store on front bumper lifting shackle (2) for travel. |
|----|--|--------------------------|---|

# 10-6. FRONT WINCH CABLE CHAIN AND HOOK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

## 10-6.1. WINCH CABLE CLEVIS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

#### Applicable Models

M925, M926, M928,  
M930, M932, M936

#### Equipment Condition Reference

TM 9-2320-272-10  
Para. 10-6

#### Condition Description

Parking brake set.  
Cable chain and hook removed.

#### Test Equipment

None

#### Special Tools

None

#### Materials/Parts

None

#### Personnel Required

Light-wheeled vehicle mechanic MOS 63B

#### Special Environmental Conditions

None

#### General Safety Instructions

Wear hand protection when handling  
winch cable.

#### Manual References

TM 9-2320-272-10  
TM 9-2320-272-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Wear hand protection when handling winch cable. Broken wires  
may cause injury to personnel.

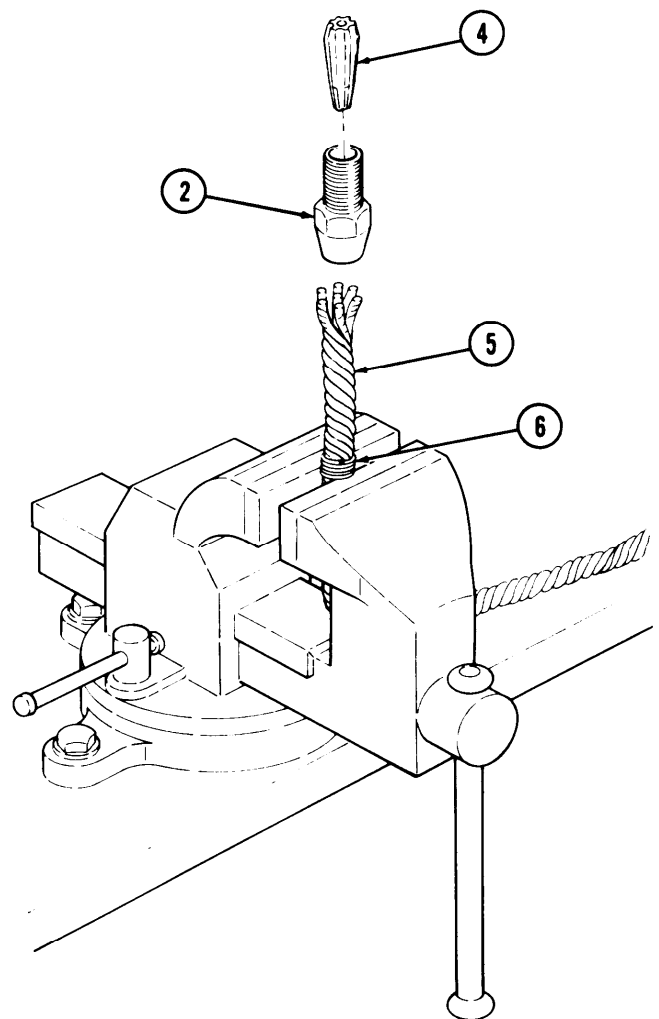
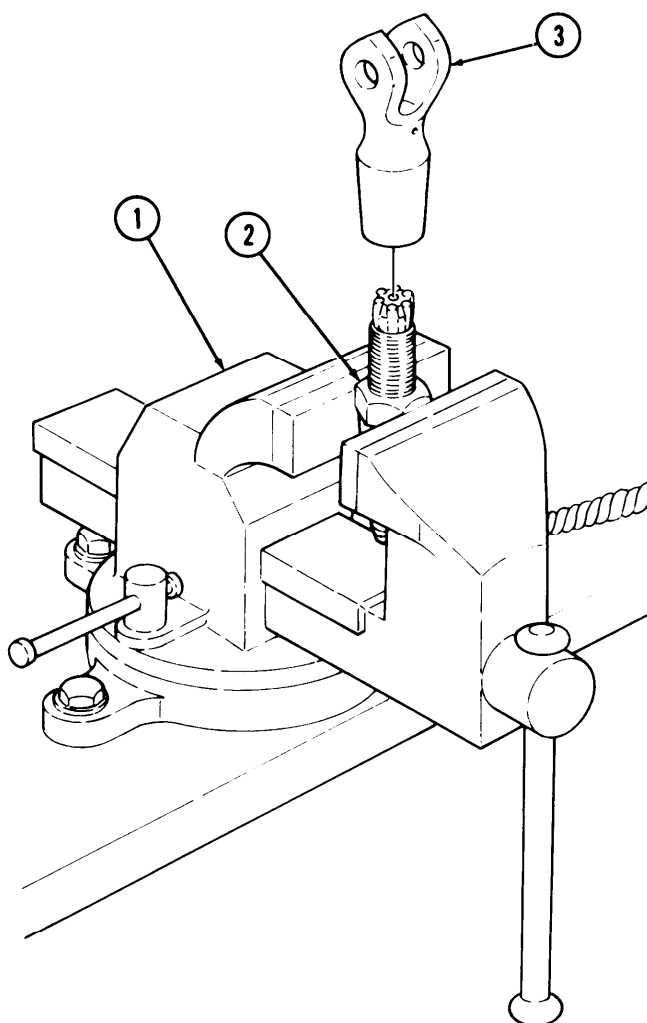
#### a. Removal

- |             |                                      |  |                                    |
|-------------|--------------------------------------|--|------------------------------------|
| 1. Vise (1) | Threaded sleeve (2)                  | Place threaded sleeve<br><b>(2)</b> into vice (1). | Tighten vice (1) jaws<br>securely. |
| 2.          | Clevis socket (3)                    | Remove from threaded<br>sleeve (2).                |                                    |
| 3.          | Threaded sleeve (2)<br>and cable (5) | Remove from vice<br>(1).                           |                                    |
| 4.          | Cable (5)                            | Clamp in vice (1)<br>below seizing wire<br>(6).    |                                    |



# 10-6.1. WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Cable (5)	Plug (4)	Remove.	
6.		Threaded sleeve (2)	Remove.	
7.		Seizing wire (6)	Remove.	If present.
8.	Vice (1)	Cable (5)	a. Remove. b. Trim cable (5) to provide new end.	



# 10-6.1. WINCH CABLE CLEVIS REPLACEMENT (Contd)

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

### WARNING

Top seizing must not be less than 5.0 in. (12.7 cm) from end of cable (2). Faulty Installation will cause cable failure and may result in injury or death to personnel.

- |    |           |  |
|----|-----------|--|
| 9. | Cable (2) | <ul style="list-style-type: none"> <li>a. Place in vice (1) with 5-1/2 in. (14.0 cm) of cable (2) above jaws of vice (1).</li> <li>b. Starting 5.0 in. (12.7 cm) below end of cable (2), wrap 1/2 in. (12.7 mm) of mechanics wire (3) around cable (2) toward vice (1).</li> <li>c. Twist ends of mechanics wire (3) together and bend flat in a groove of cable (2).</li> </ul> |
|----|-----------|--|

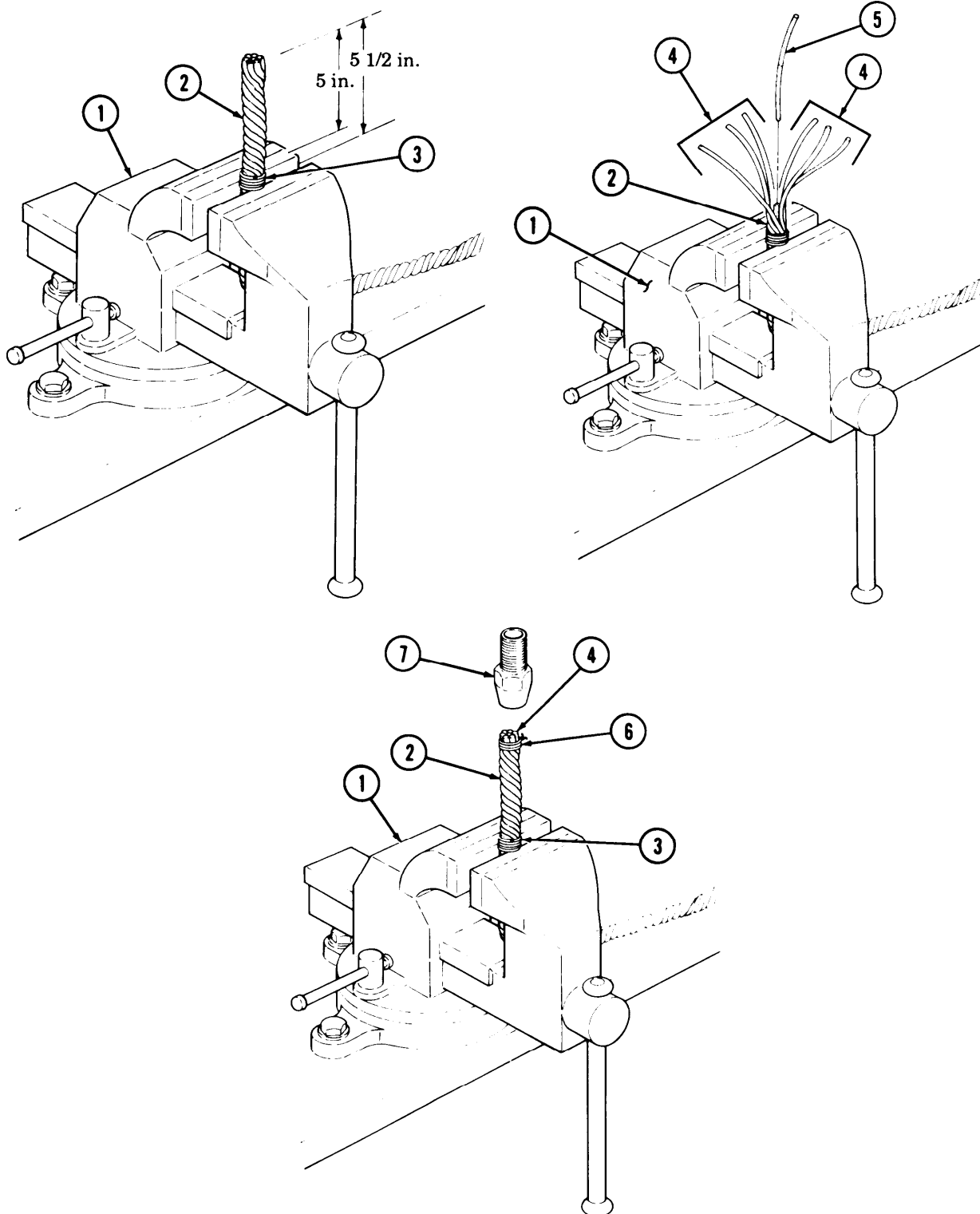
### NOTE

If cable is wire core type, proceed to step 12.

- |     |                     |  |  |
|-----|---------------------|--|--|
| 10. | Cable (2)           | <ul style="list-style-type: none"> <li>a. Unravel six strands (4 of cable (2) above vice (1).</li> <li>b. Cut off hemp core (5) as close to vice (1) as possible.</li> <li>c. Wrap upper ends of strands (4) with wire (6).</li> </ul> |  |
| 11. | Threaded sleeve (7) | Slide over end of cable (2) and seat against mechanics wire (3).   | Approximately 1-3/8 in. (3.5 cm) of cable (2) should extend above threaded sleeve (7). |
| 12. | Cable (2)           | Remove from vice (1) and reclamp on hex flats of threaded sleeve (7).  |  |
| 13. | Cable (2)           | Remove upper wire (6) wrapping from cable (2).   | Discard wire wrapping (6).   |

# 10-6.1 WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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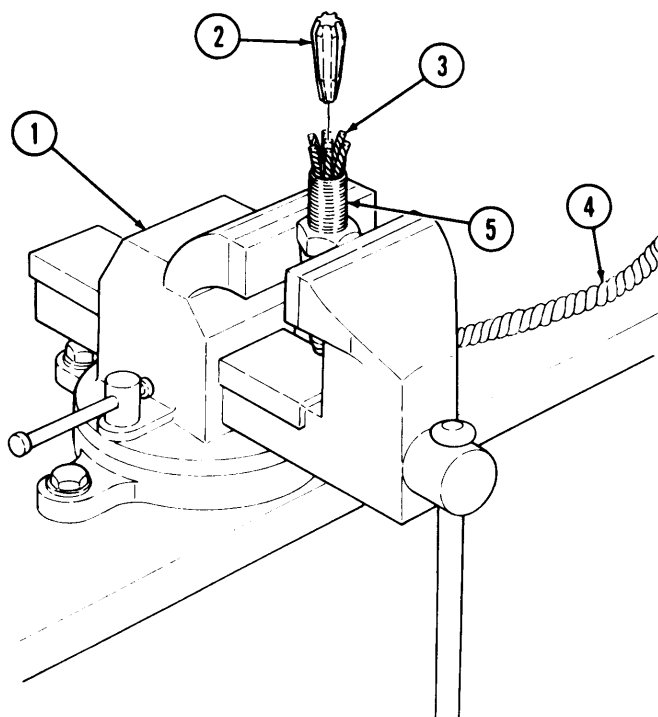


# 10-6.1. WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<p align="center"><b>NOTE</b></p> <p align="center">If cable is wire core type, proceed to step 15.</p>				
14.		Cable (4)	Drive plug (2) into center of cable (4) and into threaded sleeve (5).	Aline strands (3) with grooves in plug (2). Use plug P/N 7071906 for hemp core cable (4).
15.		Cable (4)	a. Slide plug (6) over core wire (7) and down onto cable (4).  b. Drive plug (6) into cable (4) and threaded sleeve (5).	Aline strands (3) with grooves in plug (6). Use plug P/N 7071871 for wire core cable (4).
16.		Clevis socket (8)	Place over end of cable (4) and install on threaded sleeve (5).	Tighten on threaded sleeve (5) until only 3-5 threads are exposed.
17.		Cable (4)	Must be visible through inspection hole (9) of clevis socket (8).	

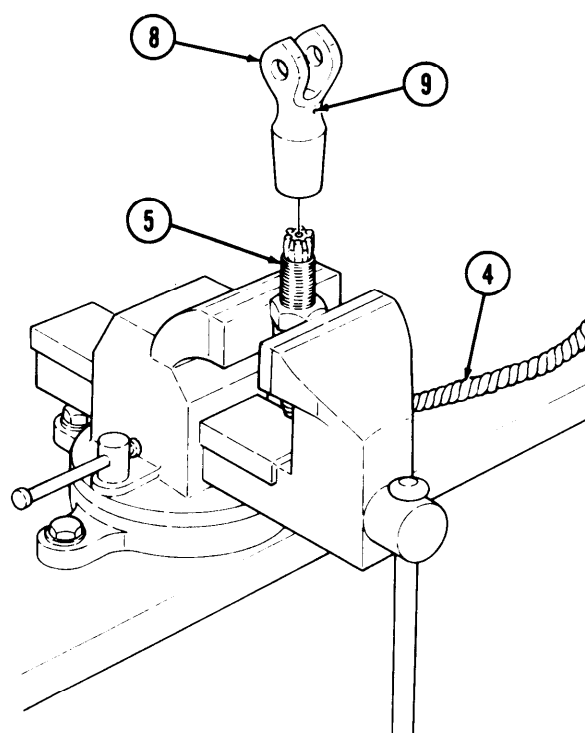
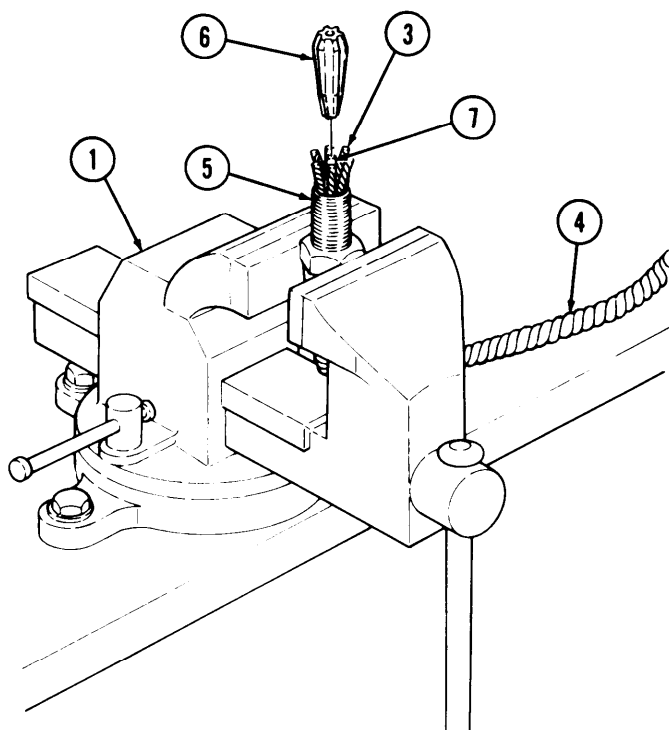
## NOTE

Refer to TB 43-0142 for cable and clevis assemblies that must be proof load tested.



# 10-6.1 WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Install cable chain and hook (para. 10-6).
- Secure winch cable and lock in travel position (TM 9-2320-272-10).

10-7. FRONT WINCH CABLE REPLACEMENT

- This task covers:
- a. Removal

b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
M925, M926, M928, M930, M932, M936	TM 9-2320-272-10 Para. 10-6 TM 9-2320-272-10	Parking brake set. Cable chain and hook removed. Front winch cable unwound.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
None		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B		Wear hand protection when handling winch cable.
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

a. Removal

1. Front winch drum (9)

Set screw (7)

Remove.
2.

Winch cable (4)

a. Pull out of hole (8) in drum (9).

NOTE

Step 2b is only required when front winch is equipped with level wind and tensioner.

- b. Pull out at side roller (6), over level wind pulley (2), down through tensioner sheaves (3), and out of rollers (5) and (6).

# 10-7. FRONT WINCH CABLE REPLACEMENT (Cont'd)

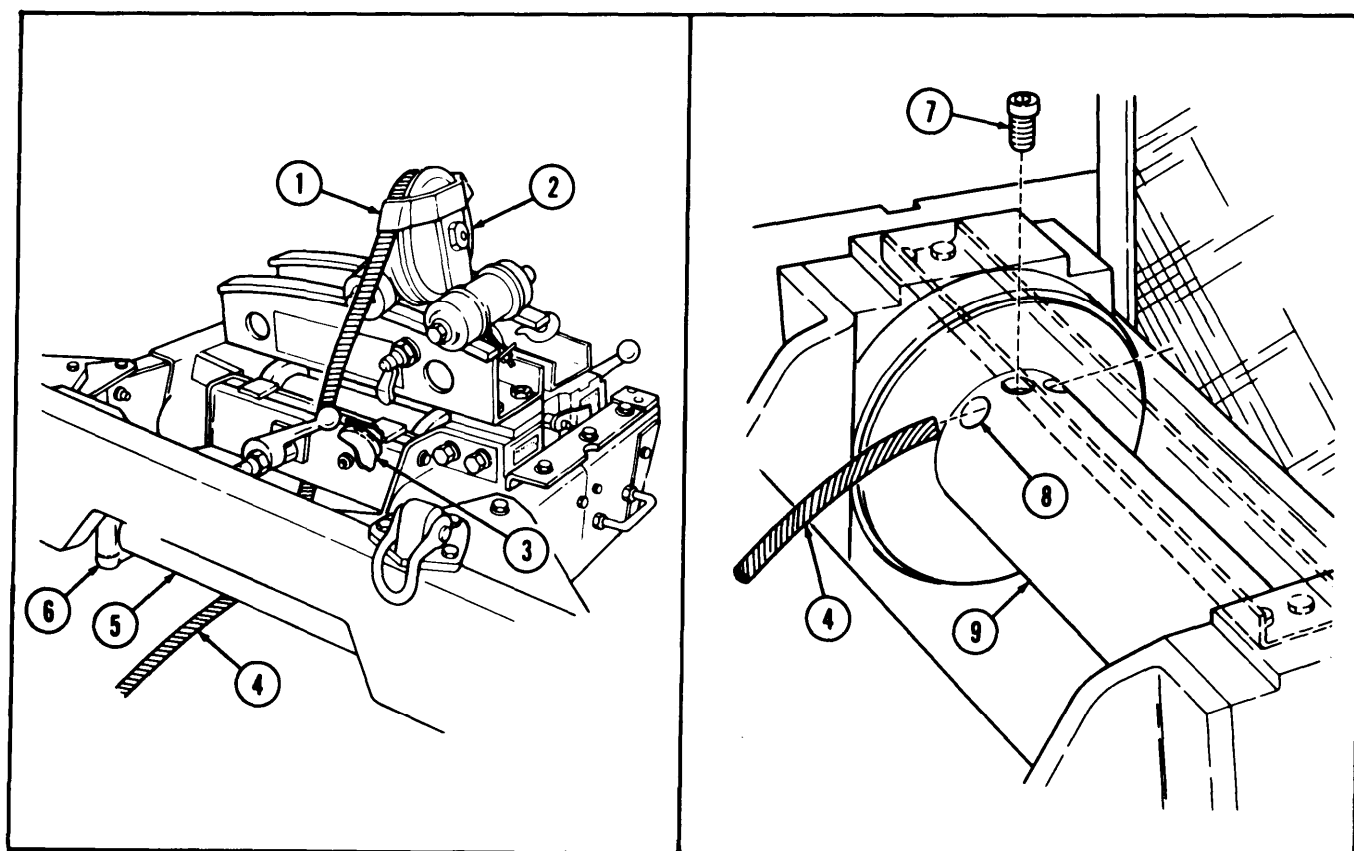
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

### NOTE

Step 3a is required only when front winch is equipped with level wind and tensioner.

- |    |                 |  |
|----|-----------------|--|
| 3. | Winch cable (4) | <p>a. Thread into center of rollers (5) and (6), tensioner sheaves (3), and under level wind pulley plate (1).</p> <p>b. Install in hole (8) of drum (9) with set-screw (7).</p> |
|----|-----------------|--|



END OF TASK!

FOLLOW-ON TASKS:

- Wind cable to drum (TM 9-2320-272-10).
- Install cable chain and hook (para. 10-6).

TA 349274

**10-8. FRONT WINCH MOTOR REPLACEMENT**

This task covers:

**a. Removal****b. Installation**

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 LO 9-2320-272-12	Parking brake set. Drain hydraulic oil reservoir.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Winch motor to adapter gasket Four lockwashers Protective cap-plugs (Appendix D, Item 5)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

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

Have drainage container ready to catch oil.

1.	Elbow (4)	Hydraulic return line (5)	Remove.	Tag for installation,
2.	Elbow (2)	Hydraulic supply line (1)	Remove.	Tag for installation.
3.	Front winch motor (3)	Four screws (6) and lockwashers (7)	Remove.	Discard lockwashers (7).
4.	Winch motor adapter (10)	Winch motor (3) and gasket (11)	Remove.	Discard gasket (11). Clean gasket remains from mating surfaces.

**CAUTION**

When disconnecting hydraulic lines and hoses, plug all openings to prevent dirt from entering and causing internal parts damage.



# 10-8. FRONT WINCH MOTOR REPLACEMENT (Cont'd)

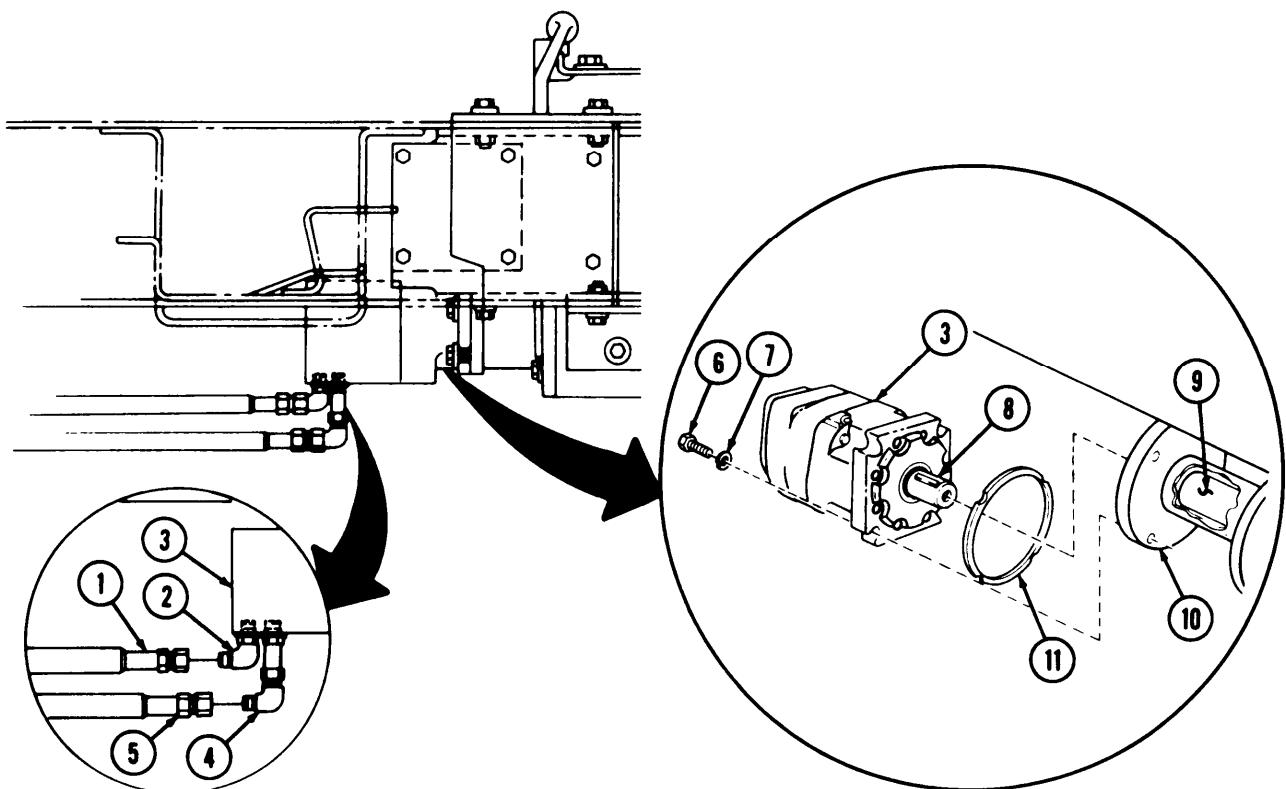
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

### NOTE

If new winch motor is being installed, fittings from old winch motor may be used. Fittings must be cleaned and inspected for cracks and stripped threads.

- |    |                                     |   |  |
|----|-------------------------------------|---|--|
| 5. | New gasket (11) and winch motor (3) | Install on winch motor adapter (10) with four new lockwashers (7) and screws (6). | Make sure winch motor shaft key (8) meshes with winch gear shaft (9) keyway. |
| 6. | Hydraulic supply line (1)           | Connect to elbow (2).   |  |
| 7. | Hydraulic return line (5)           | Connect to elbow (4).   |  |



END OF TASK!

FOLLOW-ON TASKS:

- Fill hydraulic oil reservoir (LO 9-2320-272-12).
- Start engine (TM 9-2320-272-10) and check winch for leaks and proper operation.

TA 349275

## 10-9. FRONT WINCH REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP

#### Applicable Models

M925, M926, M928,  
M930, M932, M936

#### Equipment Condition Reference

TM 9-2320-272-10  
LO 9-2320-272-12  
Para. 9-5  
Para. 10-7

#### Condition Description

Parking brake set.  
Front winch drained.  
Front bumper removed.  
Front winch cable removed.

#### Test Equipment

None

#### Special Tools

None

#### Special Environmental Conditions

None

#### Materials/Parts

Six locknuts  
Sixteen lockwashers  
Protective cap-plugs (Appendix D, Item 5)

#### Personnel Required

Light-wheeled vehicle mechanic MOS 63B (2)

#### General Safety Instructions

Direct all personnel to stand clear during hoisting operations.

#### Manual References

TM 9-2320-272-10  
TM 9-2320-272-20P  
LO 9-2320-272-12

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

#### CAUTION

When disconnecting hydraulic lines and hoses, plug all openings to prevent dirt from entering and causing internal parts damage.

#### NOTE

Have drainage container ready to catch oil.

1.	Front winch motor rear adapter elbow (21)	Hydraulic oil supply hose (22)	Disconnect.	Tag line for installation,
2.	Winch motor front adapter elbow (24)	Hydraulic oil return hose (23)	Disconnect.	Tag line for installation.
3.	Left mounting support plate (7)	Four screws (4), lockwashers (5), and washers (6)	Remove.	Discard lockwashers (5).
4.	Left inner support plate bracket (10)	Three locknuts (11), washers (9), and screws (8)	Remove.	Discard locknuts (11).

**10-9. FRONT WINCH REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Right mounting support plate (17)	Four screws (20), lockwashers (19), and washers (18)	Remove.	Discard lockwashers (19).
6.	Right inner support plate bracket (13)	Three locknuts (12), washers (14), and screws (15)	Remove.	Discard locknuts (12).
7.		Utility chain (1)	Securely rig around winch (16).	Make sure loop (3) ends meet at center above winch (16).
8.		Hoist hook (2)	Attach to utility chain loops (3).	

**WARNING**

All personnel must stand clear of winch during hoisting operations. A snapped cable, or shifting or swinging load may cause injury to personnel.

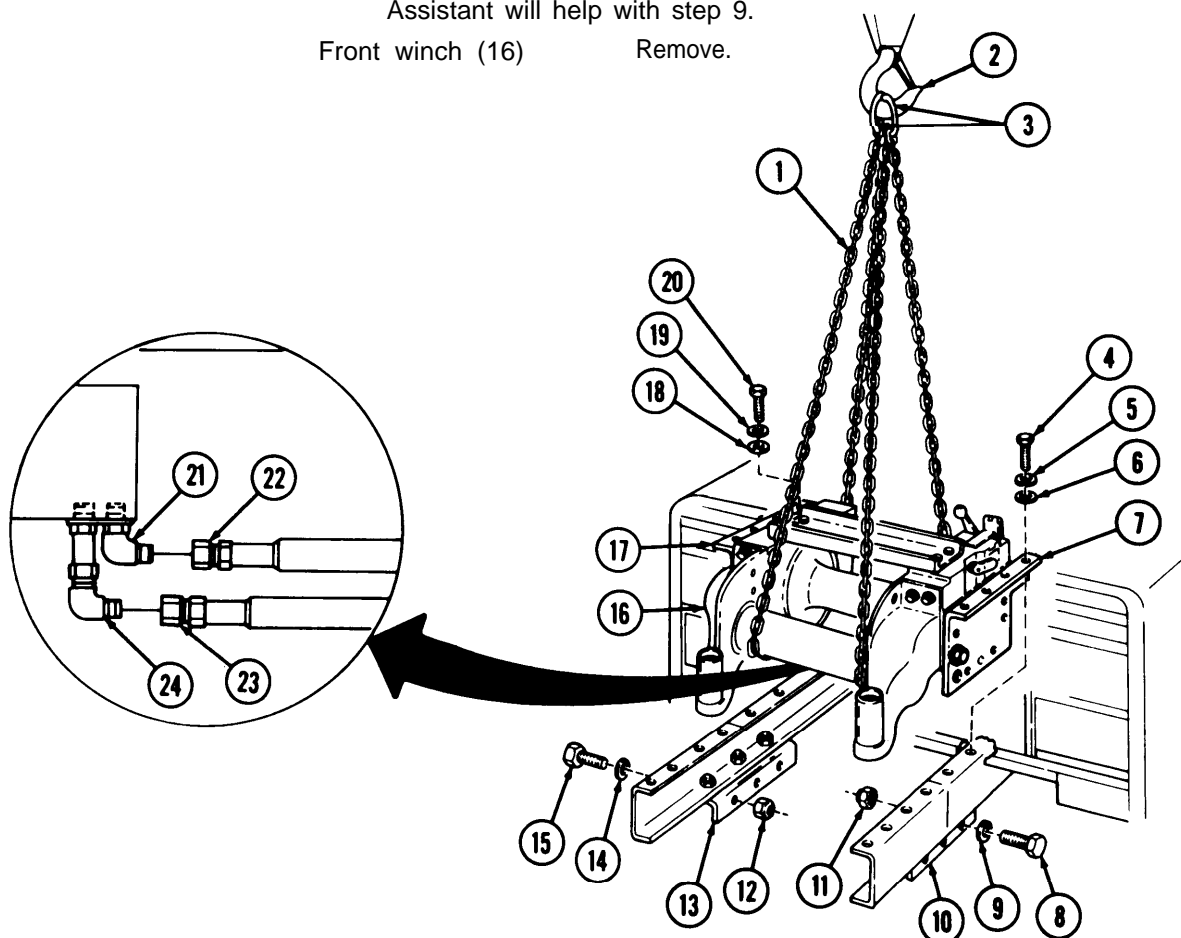
**NOTE**

Assistant will help with step 9.

9.

Front winch (16)

Remove.



TA 349276

## 10-9. FRONT WINCH REPLACEMENT (Cont'd)

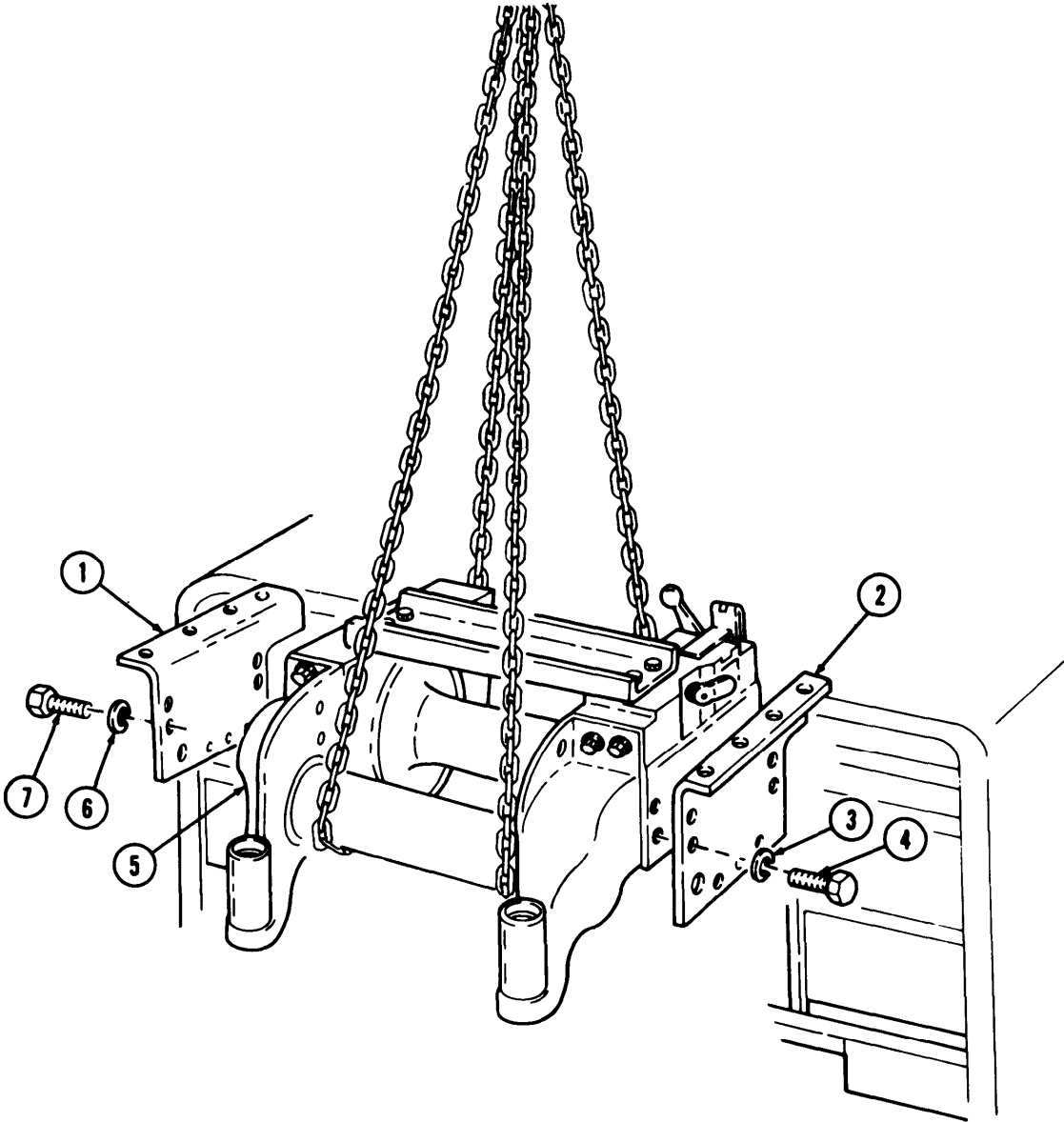
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Front winch (5)	Four screws (4) and lockwashers (3), and left mounting support plate (2)	Remove.	Discard lockwashers (3).
11.		Four screws (7) and lockwashers (6), and right mounting support plate (1)	Remove.	Discard lockwashers (6).
<p style="text-align: center;"><b>NOTE</b></p> <p>Make sure eight lockwashers (6) and (3), and screws (7) and (4), have been reinstalled in front winch.</p>				
12.		Eight new lockwashers (6) and (3), and screws (7) and (4)	Install.	Do not tighten,

### b. Installation

13.	Front winch (5)	Eight screws (4) and (7), and lockwashers (3) and (6)	Remove.	Do not discard lockwashers (3) and (6).
14.		Right mounting support plate (1)	Install with four lockwashers (6) and screws (7).	
15.		Left mounting support plate (2)	Install with four lockwashers (3) and screws (4).	

10-9. FRONT WINCH REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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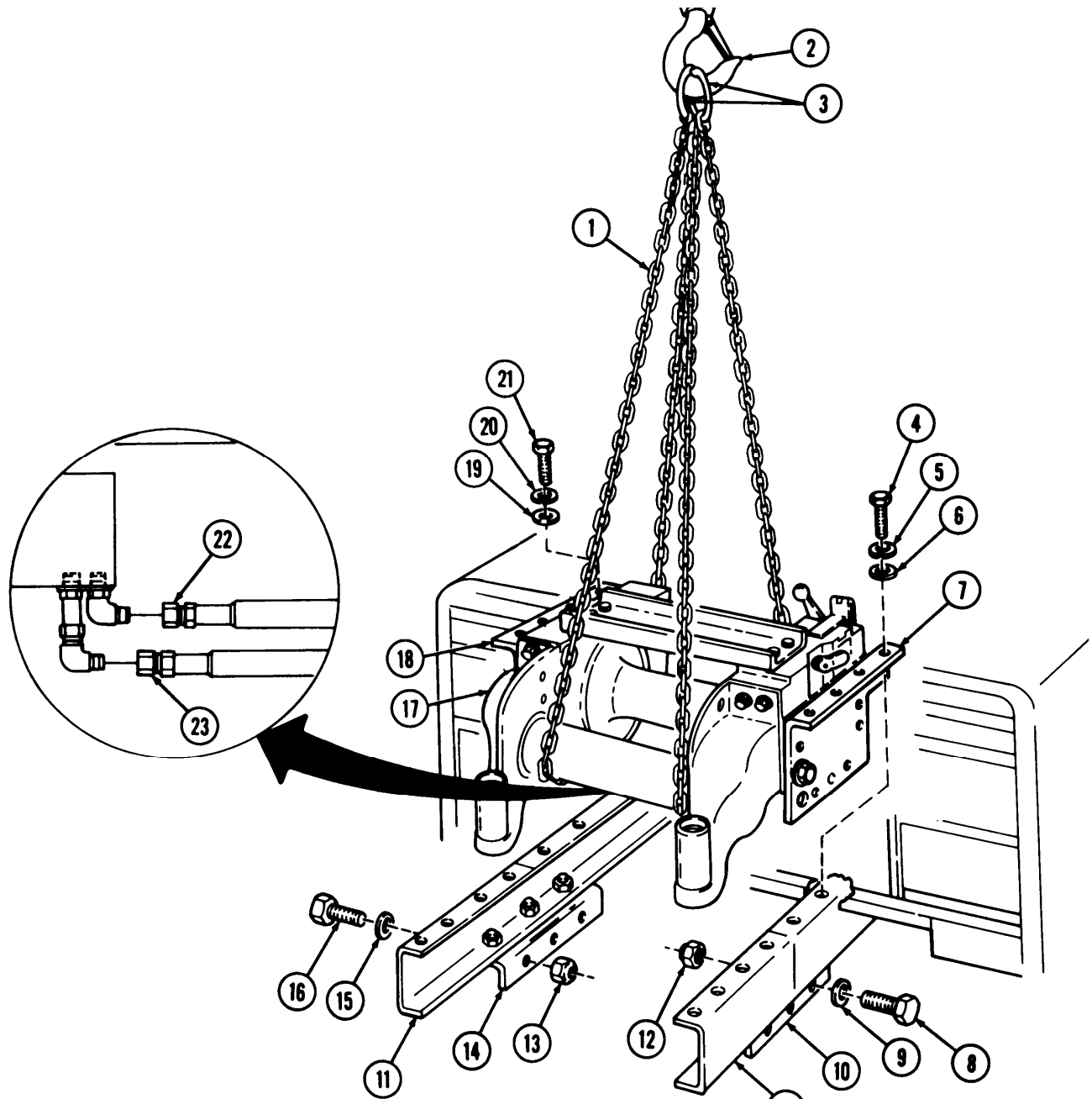


**10-9. FRONT WINCH REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
16.		Utility chain (1)	Securely rig around winch (17).	Make sure loop (3) ends meet at center above winch (17).
17.		Hoist hook (2)	Attach to utility chain loops (3).	
<p style="text-align: center;"><b><u>WARNING</u></b></p> <p>All personnel must stand clear of winch during hoisting operations. A snapped cable, or shifting or swinging load may cause injury to personnel.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Assistant will help with step 18.</p>				
18.		Front winch (17)	Hoist onto frame rail extensions (11) and aline.	
<p style="text-align: center;"><b>NOTE</b></p> <p>Do not disconnect hoist and utility chain until winch is secured to frame rail extension.</p>				
19.		Right mounting support plate (18)	a. Install to right inner support plate bracket (14) with three screws (16), washers (15), and new locknuts (13), b. Install to frame rail extension (11 ) with four washers (19), new lockwashers (20), and screws (21).	
20.		Left mounting support plate (7)	a. Install to left inner support plate bracket (10) with three screws (8), washers (9), and new locknuts (12). b. Install to frame rail extension (11 ) with four washers (6), new lockwashers (5), and screws (4).	
21.		Utility chain (1)	Remove.	
22.		Hydraulic oil return hose (23)	Connect.	
23.		Hydraulic oil supply hose (22)	Connect.	

### **I 10-9. FRONT WINCH REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

**FOLLOW-ON TASKS**

- Fill hydraulic oil reservoir (LO 9-2320-272-12).
- Fill front winch (LO 9-2320-272-12).
- Operate front winch (TM 9-2320-272- 10) and check for leaks.
- Install front winch cable (para. 10-7).
- Install front bumper (para. 9-5).

TA 349278

## 10-10. REAR WINCH ADJUSTMENT

This task covers:

### a. Cable Tensioner Check

### b, Cable Tensioner Adjustment

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	Para. 10-11	Rear winch cable removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Cotter pin		
Test rod, 5/8 in. (15.7 mm) diameter		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>I a. Cable Tensioner Check I</b>				
1.		Engine	Start and build up normal operating air pressure,	Refer to TM 9-2320-272-10.
2.		Cable tensioner control valve lever (1)	Place in "ON".	Refer to TM 9-2320-272-10.
3.		Test rod (3)	Place between sheaves (2).	If rod (3) cannot be inserted or fits loosely, adjust cable tensioner (4).

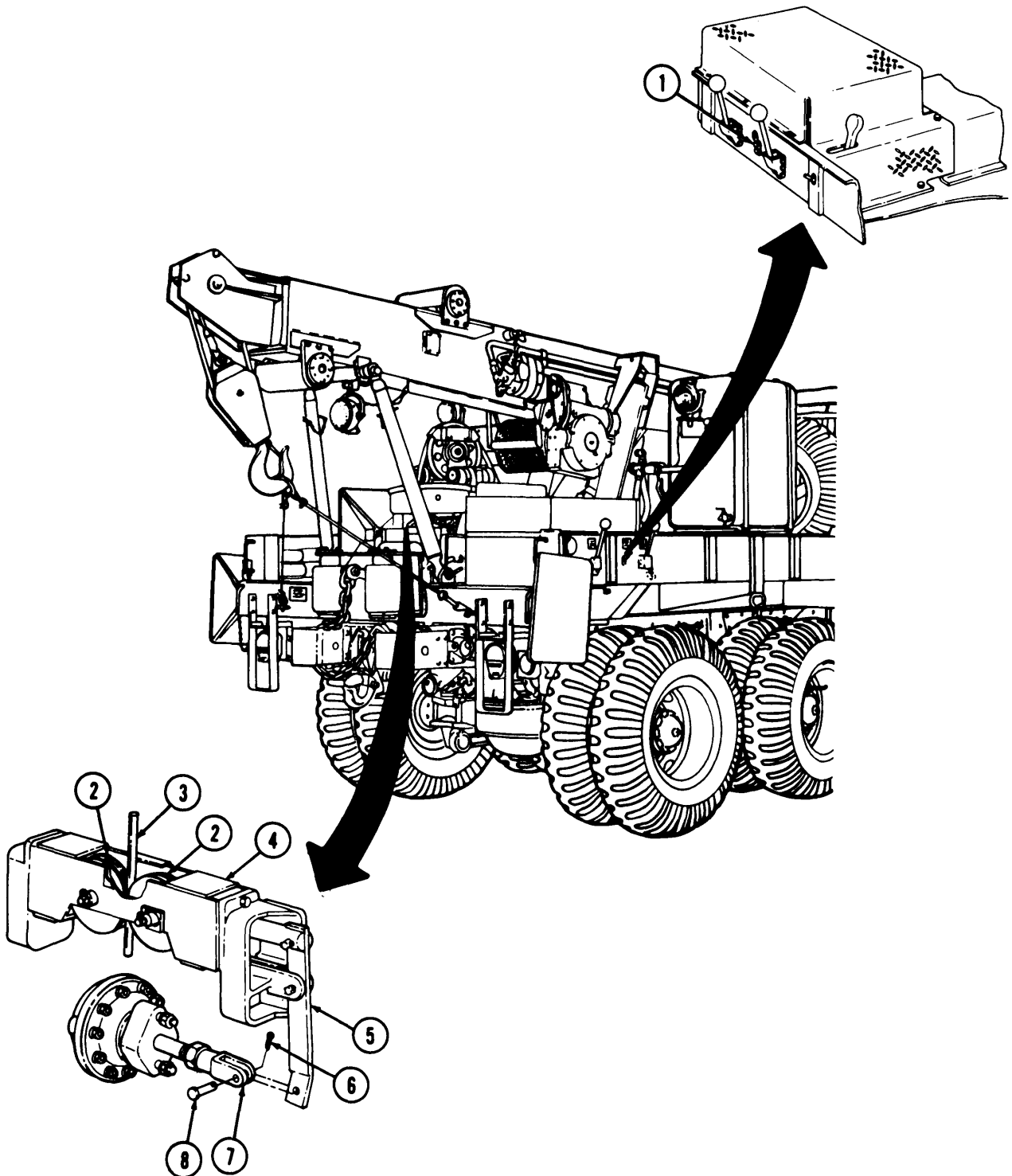
### b, Cable Tensioner Adjustment

4.	Air chamber pushrod yoke (7) to tensioner pivot arm (5)	Cotter pin (6) and yoke pin (8)	Remove from pushrod yoke (7).	Discard cotter pin (6).
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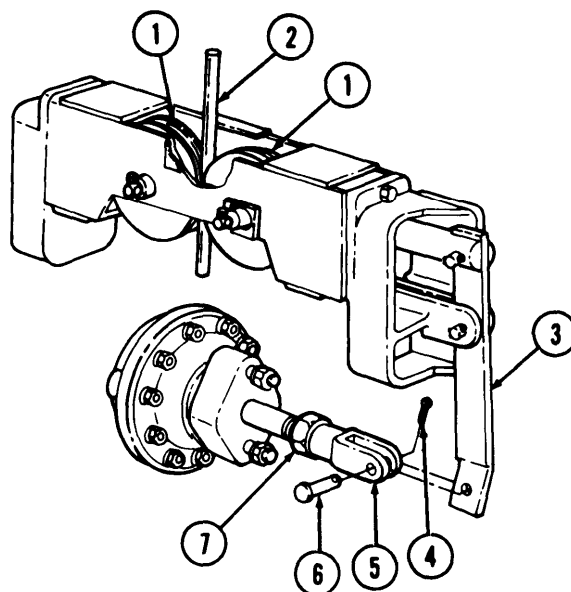
# 10-10. REAR WINCH ADJUSTMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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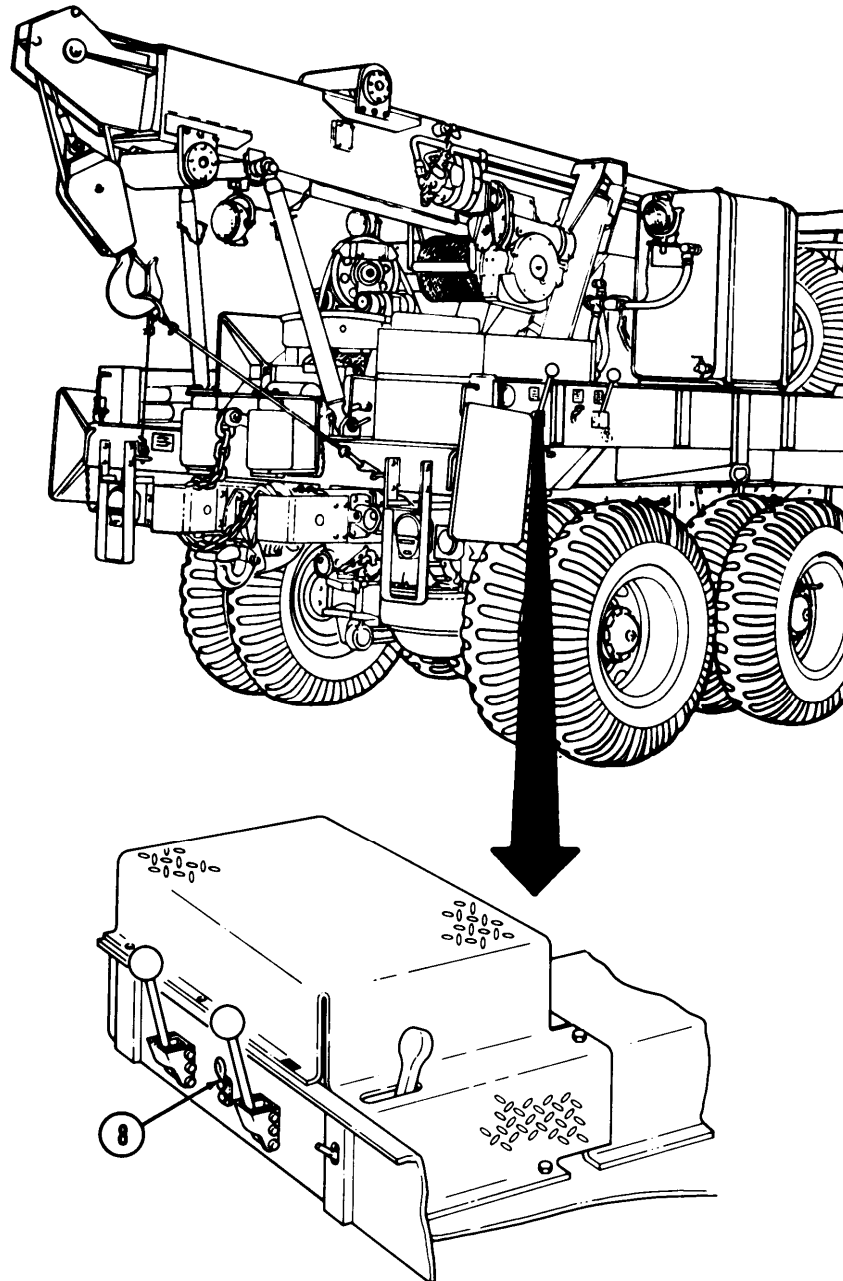
# 10-10. REAR WINCH ADJUSTMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Test rod (2)	Place between tensioner sheaves (1).	
6.		Rod jam nut (7)	Loosen.	
7.		Tensioner pivot arm (3)	Position so sheaves (1) are against test rod (2).	Test rod (2) is between tensioner sheaves (1).
8.		Pushrod yoke (5)	a. Adjust until holes in yoke (5) and hole in pivot arm (3) are alined. b. Install to tensioner pivot arm (3) with yoke pin (6) and new cotter pin (4).	Turn clockwise to open sheaves ( 1 ) and counterclockwise to close sheaves (1). Tighten jam nut (7) 16-20 lb-ft (22-27 N.m).
9.		Cable tensioner control valve lever (8)	a. Place in "OFF position and remove test rod (2). b. Stop engine.	Refer to TM 9-2320-272-10.



# 10-10. REAR WINCH ADJUSTMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install rear winch cable (para. 10-11).

10-11. REAR WINCH CABLE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Rear winch cable unwound,
<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>
Light-wheeled vehicle mechanic MOS 63B		Wear hand protection when handling winch cable.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

a. Removal

- |    |                     |                 |  |
|----|---------------------|-----------------|--|
| 1. | Rear winch drum (7) | Set screw (9)   | Remove,  |
| 2. |                     | Winch cable (4) | a. Pull out of hole (8) in drum (7).<br>b. Pull out at side roller (3), over level wind pulley (6), down through tensioner sheaves (2), and out of rollers (5) and side rollers (3). |

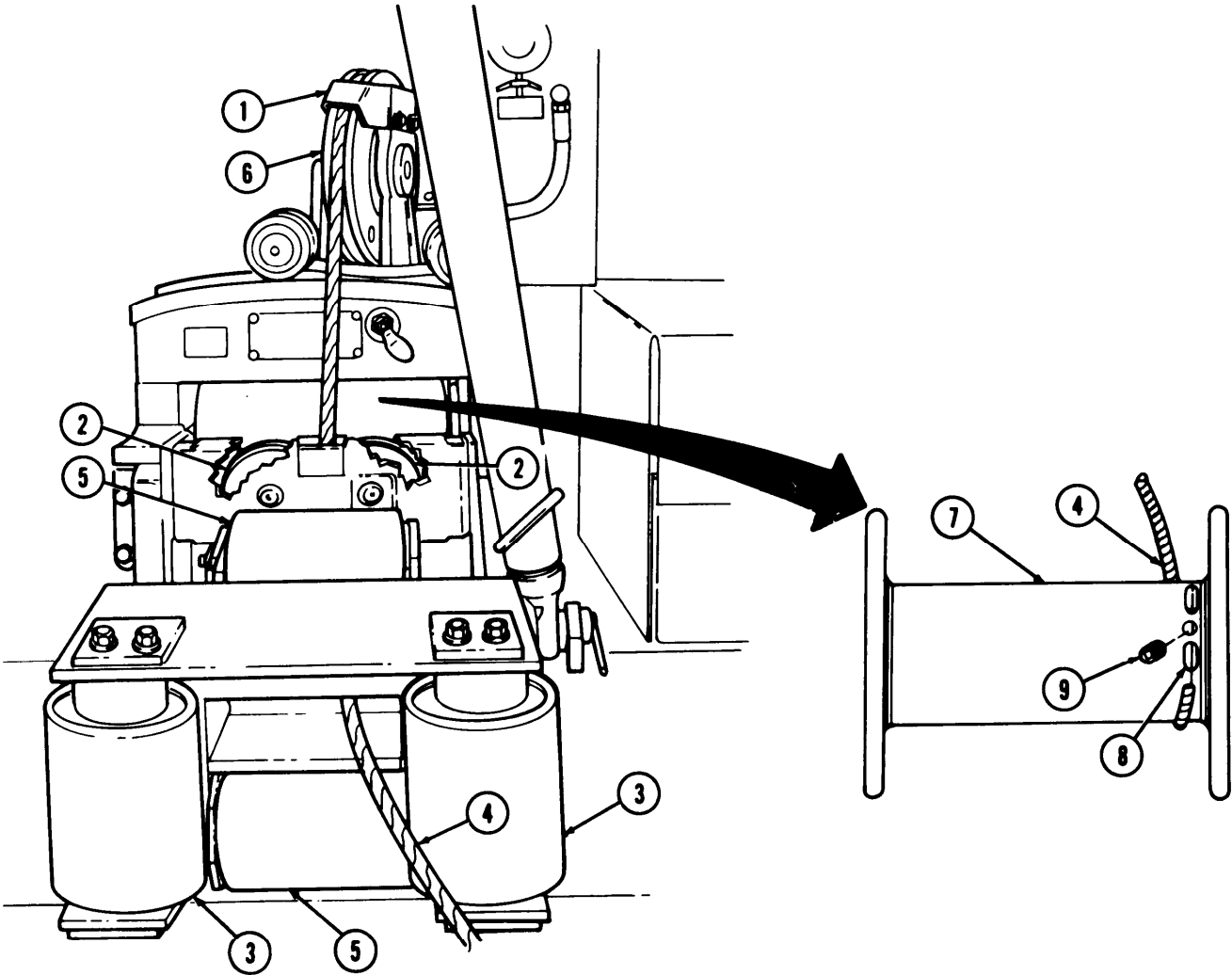
10-11. REAR WINCH CABLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

3.
- Winch cable (4)
- a. Thread into center of side rollers (3), rollers (5), tensioner sheaves (2), and under level wind pulley plate (1).

b. Install in hole (8) of drum (7) with set screw (9).



END OF TASK!

FOLLOW-ON TASK: Wind cable on drum (TM 9-2320-272-10).

## 10-12. REAR WINCH REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 LO 9-2320-272-12 Para. 10-11 TM 9-2320-272-10 Para. 10-13	Parking brake set. Rear winch drained. Rear winch cable removed. Boom jack base plates removed. Housing assembly cover removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Eight locknuts Seven lockwashers Two cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		Direct all personnel to stand clear during hoisting operations.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

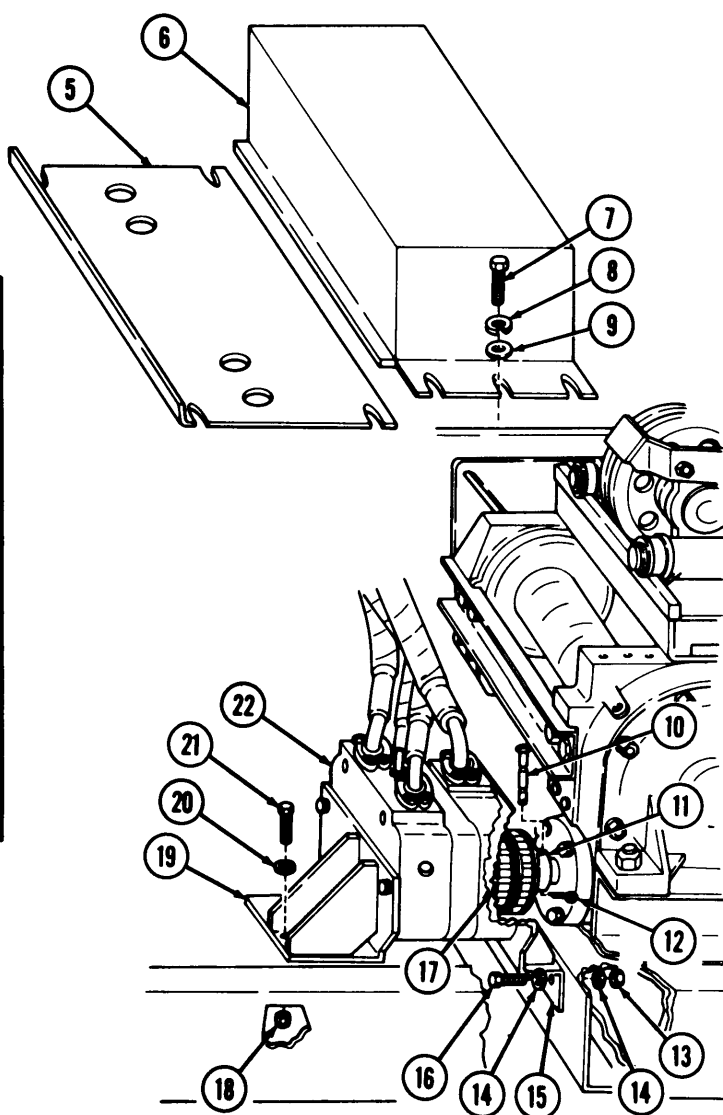
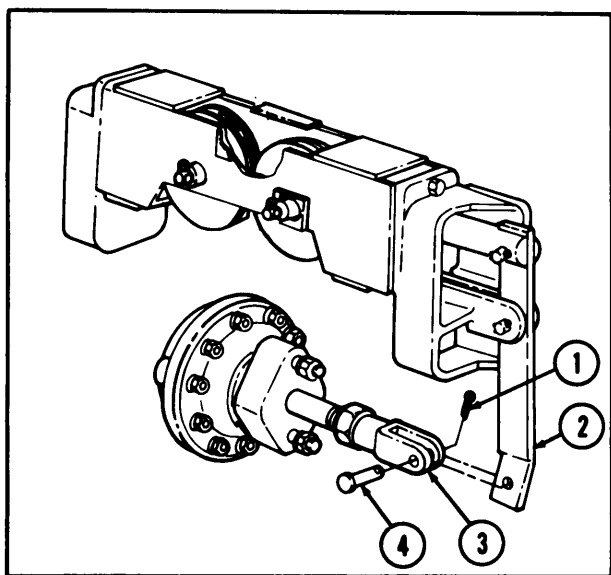
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### I a. Removal I

1.	Lever (2)	Air chamber pushrod yoke (3)	Remove cotter pin (1) and yoke pin (4), and disconnect.	Discard cotter pin (1).
2.	Rear winch motor cover (6)	Seven screws (7), lockwashers (8), and washers (9), cover (6), and plate (5)	Remove.	Provides access to motor (22). Discard lockwashers (8).
3.	Rear winch motor drive coupling (17)	Cotter pin (12) and shear pin (10)	Remove.	Rotate coupling (17) for access to cotter pin (12) and shear pin (10). Discard cotter pin (12).
4.	Rear winch motor front bracket (19)	Two screws (21 ), washers (20), and locknuts (18)	Remove.	Discard locknuts (18).

# 10-12. REAR WINCH REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Rear winch rear bracket (15)	Two locknuts (13) and screws (16), and four washers (14)	Remove.	Discard locknuts (13).
6.		Winch motor (22)	Slide forward until clear of winch drive shaft (11).	



**10-12. REAR WINCH REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7,	Rear winch (3)	Utility chain (2)	Securely rig around winch (3).	
<p style="text-align: center;"><b><u>WARNING</u></b></p> <p>All personnel must stand clear during hoisting operations. A snapped cable, or shifting or swinging load may cause injury to personnel.</p>				
8.		Hoist hook (1)	a. Attach to utility chain (2) ends. b. Raise hoist until all slack is removed from chain (2).	
9.	Four frame winch mounts (5)	Four locknuts (4), washers (6), and screws (7)	Remove and hoist winch (3) away from vehicle.	Discard locknuts (4),

**b. Installation****NOTE**

Assistant will help with steps 10 through 15.

10.		Utility chain (2)	Securely rig around winch (3).	Make sure chain (2) ends meet at center above winch (3).
11.		Hoist hook (1)	Attach to utility chain (2) ends.	

**WARNING**

All personnel must stand clear during hoisting operations. A snapped cable, or shifting or swinging load may cause injury to personnel.

**NOTE**

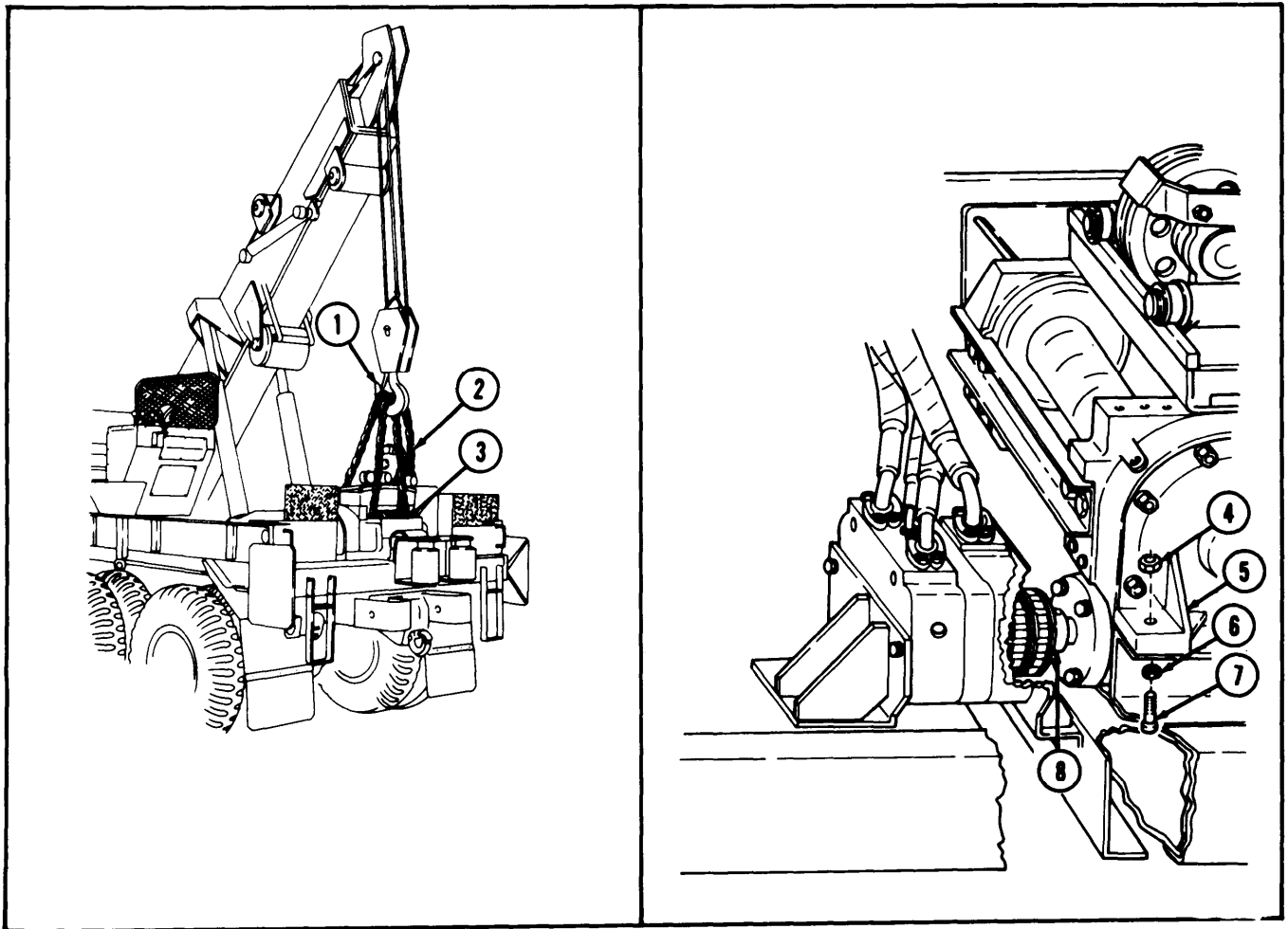
Mechanic will direct hoisting operation. Assistant will operate hoist. Refer to TM 9-2320-272-10 for crane operating instructions.

12.		Winch (3)	Hoist and position on frame winch mounts (5) with winch drive shaft (8) aligned.	
13.		Hoist hook (1) and utility chain (2)	Detach from winch (3).	Crane operation completed. Winch in position.
14.		Four new locknuts (4), washers (6), and screws (7)	Install to frame winch mounts (5).	



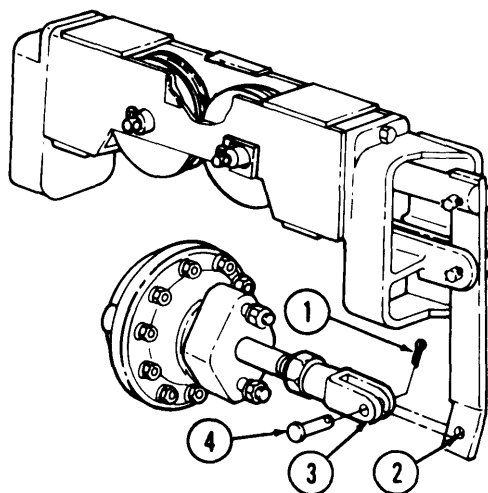
# 10-12. REAR WINCH REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## 10-12. REAR WINCH REPLACEMENT (Cont'd)

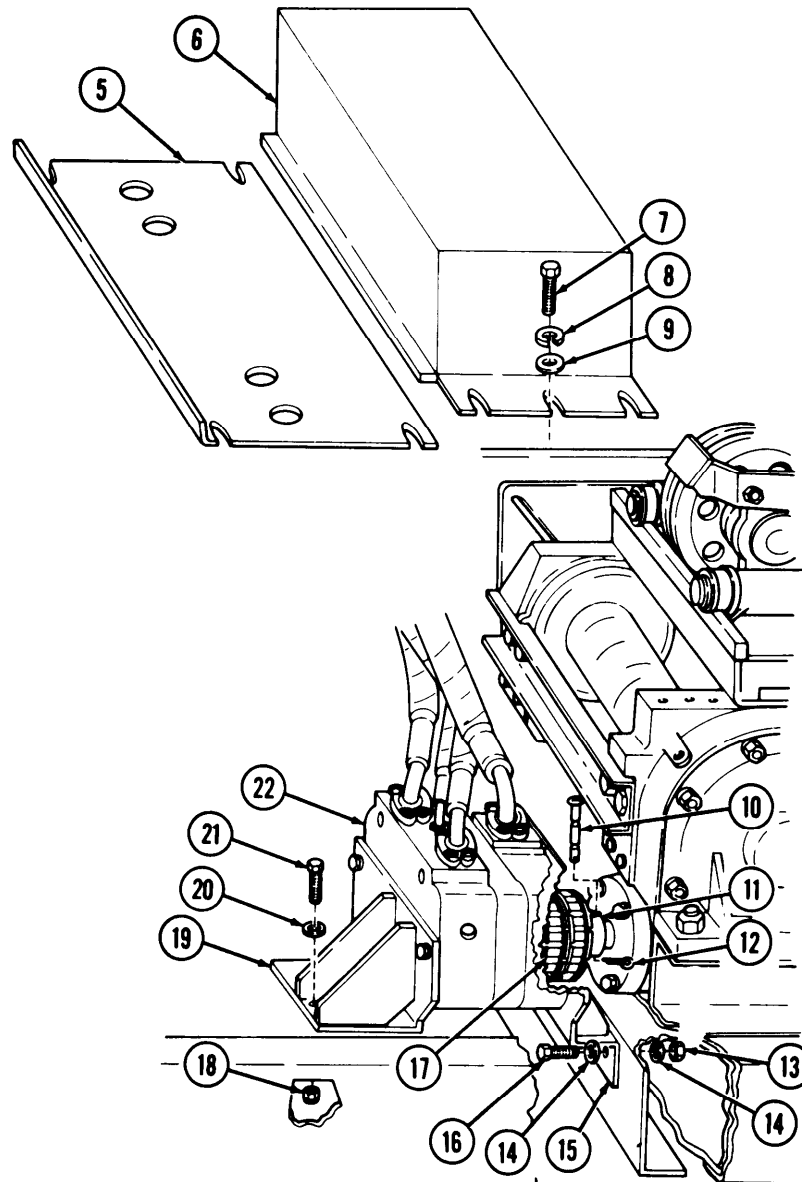
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
15.		Winch motor (22) and coupling (17)	a. Slide to winch drive shaft (1 1) so coupling (17) and driveshaft holes are alined. b. Install shear pin (10) and new cotter pin (12).	
16.		Winch motor (22)	a. Install on rear mounting bracket (15) with two screws (16), four washers (14), and two new locknuts (13). b. Install on front mounting bracket (19) with two screws (21), washers (20), and new locknuts (18).	
17.		Winch motor plate (5) and cover (6)	Position over winch motor (22) and install on crane body with seven screws (7), new lockwashers (8), and washers (9).	
18.		Air chamber pushrod yoke (3)	Connect to tensioner sheave adjusting lever (2) and secure with yoke pin (4) and new cotter pin ( 1).	



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# 10-12. REAR WINCH REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Fill rear winch (LO 9-2320-272-12).
  - Operate winch and test for proper operation (TM 9-2320-272-10).
  - Install rear winch cable (para. 10-11).
  - Adjust rear winch cable tensioner (para. 10-10).
  - Install boom jack base plates (TM 9-2320-272-10).
  - Install housing assembly cover (para. 10-13).
  - Lubricate winch (LO 9-2320-272-12).

10-13. HOUSING ASSEMBLY COVER REPLACEMENT

This task covers:		
a. Removal		b. Installation
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Nine lockwashers		
Locknut		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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I a. Removal I

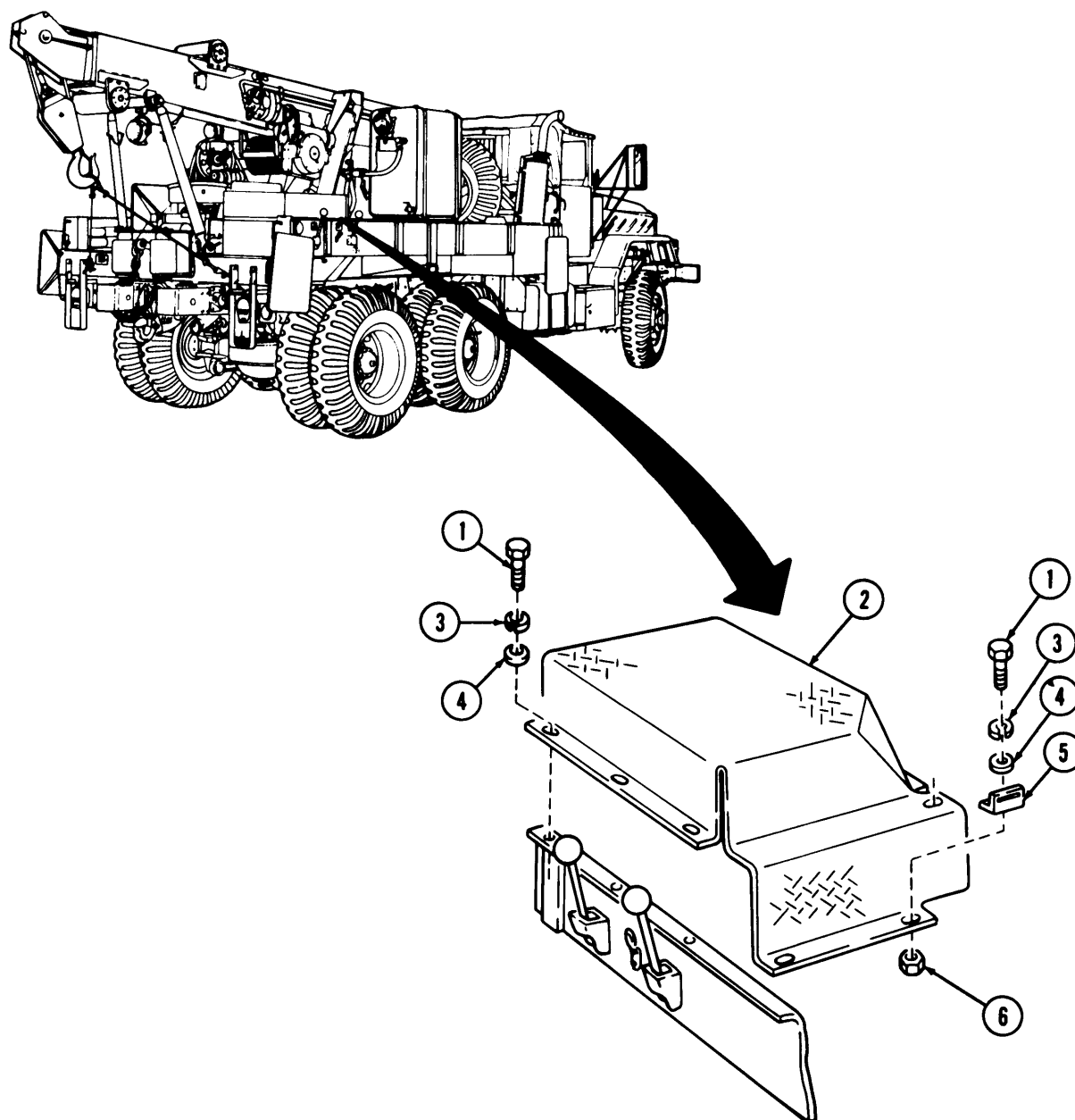
1.	Housing assembly cover (2)	Nine screws (1) and lockwashers (3), locknut (6), nine washers (4), and bracket (5)	Remove.	Discard lockwashers (3) and locknut (6).
2.		Housing assembly	Remove,	

b. Installation

3.		Housing assembly cover (2), nine screws (1) and new lockwashers (3), new locknut (6), nine washers (4), and bracket (5)	Install.	
----	--	---	----------	--

# 10-13. HOUSING ASSEMBLY COVER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

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## 10-14. TRANSMISSION PTO TO HYDRAULIC PUMP PROPELLER SHAFT REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M929, M930, M932, M935, M936	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

### a. Removal

- |    |   |   |   |
|----|---|---|---|
| 1. | Propeller shaft (4) to PTO shaft (2)            | Setscrew (9)                              | Remove.   |
| 2. | Propeller shaft (4) to hydraulic pump shaft (8) | Setscrew (5)                              | Remove.   |
| 3. |   | PTO to hydraulic pump propeller shaft (4) | Remove from PTO shaft (2) and hydraulic pump shaft (8). |

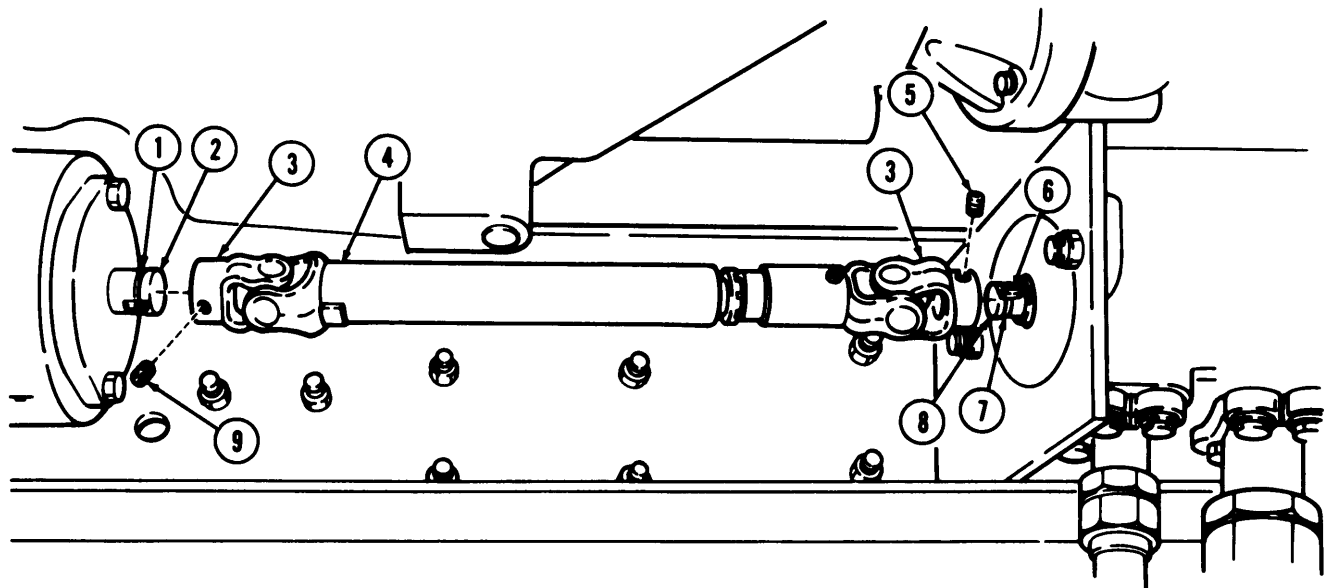
### b. Installation

- |    |   |  |   |
|----|---|--|---|
| 4. | PTO to hydraulic pump propeller shaft (4) | a. Install universal joint ends (3) over PTO shaft (2) and hydraulic pump shaft (8).<br><br>b. Install on PTO shaft (2) with setscrew (9). | Make sure both universal joint ends (3) seat over PTO shaft (2) and hydraulic pump propeller shaft (4) woodruff keys (6).<br><br>Make sure setscrew (9) seats in PTO shaft channel (1). |
|----|---|--|---|

10-14. TRANSMISSION PTO TO HYDRAULIC PUMP PROPELLER SHAFT  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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			c. Install on hydraulic pump shaft (8) with setscrew (5).	Make sure setscrew (5) seats with hydraulic pump shaft channel (7).
--	--	--	---	---



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10) and operate any accessory driven by the transmission PTO to hydraulic pump propeller shaft. Stop engine (TM 9-2320-272-10) and check shaft for looseness.

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## 10-15. TRANSMISSION PTO TO HYDRAULIC PUMP PROPELLER SHAFT UNIVERSAL JOINT MAINTENANCE

This task covers:

- |                                 |               |
|---------------------------------|---------------|
| a. Disassembly<br>b. Inspection | c. Reassembly |
|---------------------------------|---------------|

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M930, M932, M935, M936	Para. 10-14	Transmission PTO to hydraulic pump propeller shaft removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		
None		
<b><u>Materials/Parts</u></b>		
Lubricating oil OE/HDO 10 (Appendix D, Item 16) Felt washer		
<b><u>Personnel Required</u></b>		
Light-wheeled vehicle mechanic MOS 63B		
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P		
<b><u>General Safety Instructions</u></b>		
None		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Disassembly

### NOTE

- This procedure covers maintenance for both universal joints.
- Scribe mark shaft to slip yoke to ensure proper alinement for assembly. Arrow on slip yoke may not be stamped.

- |    |                     |                              |  |
|----|---------------------|------------------------------|--|
| 1. |                     | Propeller shaft assembly (1) | Position in soft-jawed vise (4) so end yoke (2) can move freely. |
| 2. | Universal joint (7) | Four lockrings (3)           | Remove.  |

### NOTE

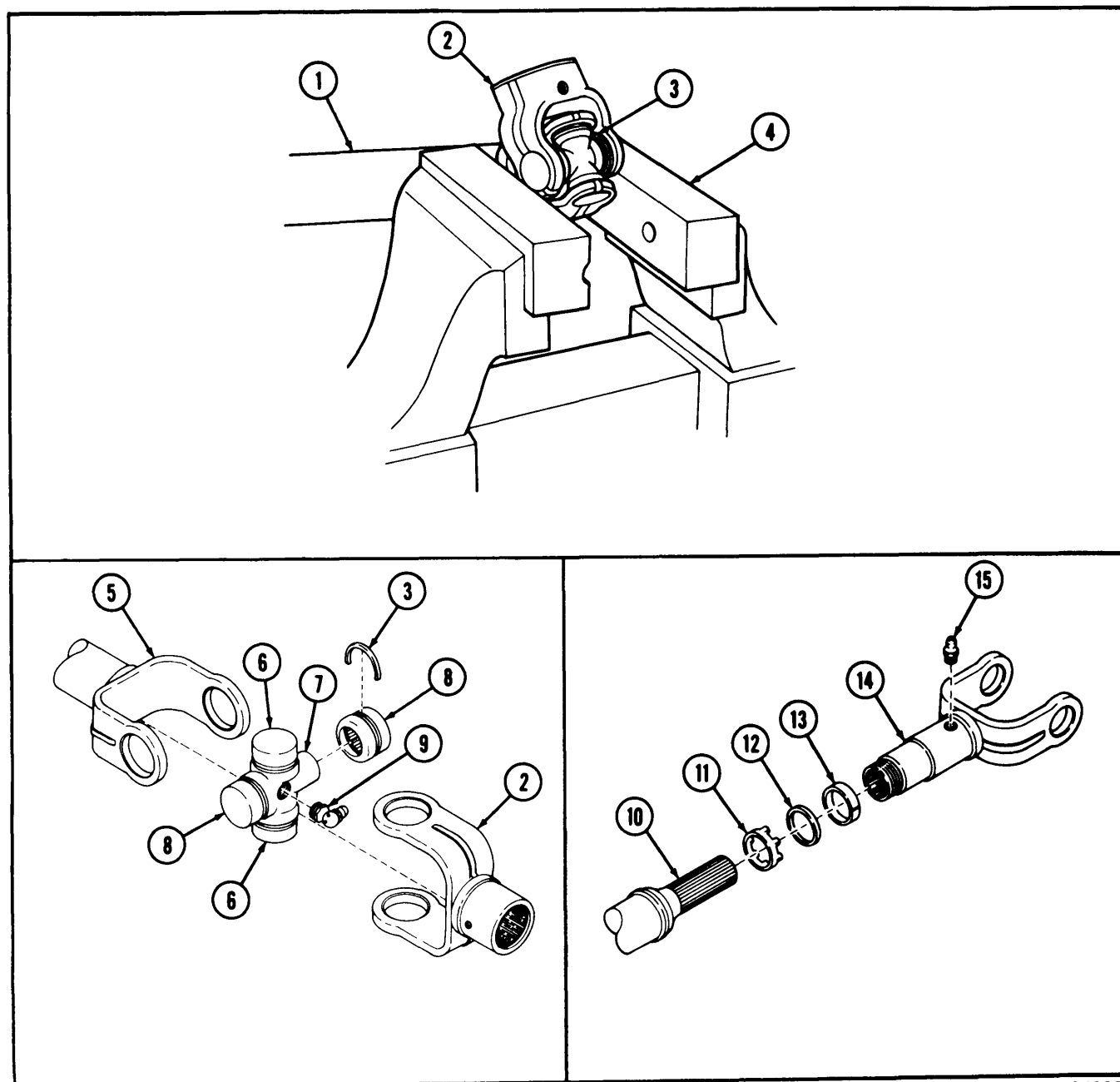
Do not drop bearing cups. Needle bearings inside are very small and can be easily lost.

- |    |                             |  |   |
|----|-----------------------------|--|---|
| 3. | Propeller shaft yoke (5)    | Two bearing cups (8) and end yoke (2)        | Remove.                                 |
| 4. | End yoke (2)                | Two bearing cups (6) and universal joint (7) | Remove.                                 |
| 5. | Universal joint (7)         | Grease fitting (9)                           | Remove,                                 |
| 6. | Propeller shaft spline (10) | Dust cap (11 ) and slip yoke (14)            | Slide from propeller shaft spline (10). |



# 10-15. TRANSMISSION PTO TO HYDRAULIC PUMP PROPELLER SHAFT UNIVERSAL JOINT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Slip yoke (14)	Dust cap (11)	Remove.	
8.	Dust cap (11)	Nylon washer (12) and felt washer (13)	Remove.	Discard felt washer (13).
9.	Slip yoke (14)	Grease fitting (15)	Remove.	

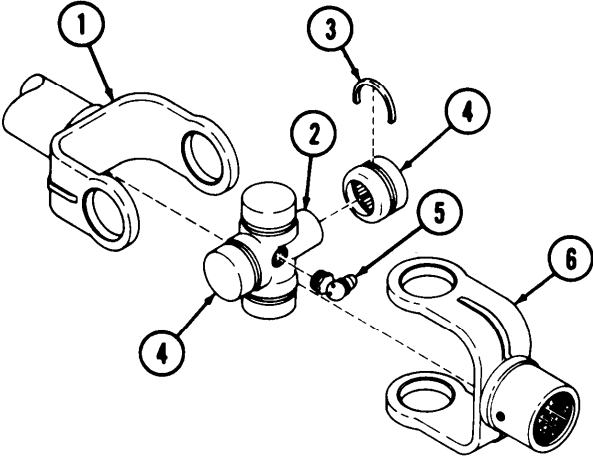
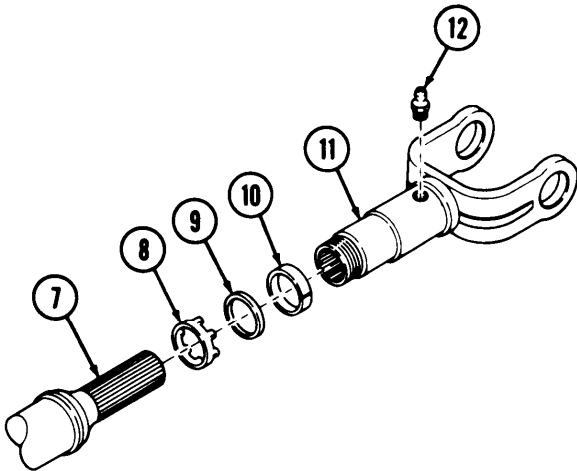
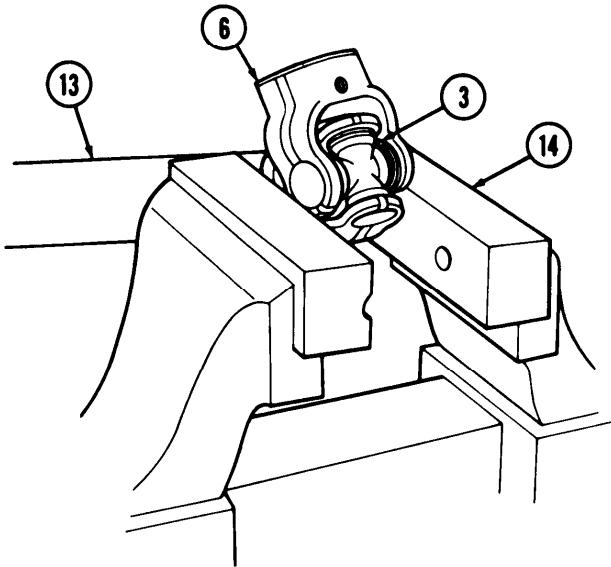


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# 10-15. TRANSMISSION PTO TO HYDRAULIC PUMP PROPELLER SHAFT UNIVERSAL JOINT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Inspection</b>				
10.		Bearing cups (4)	a. Inspect for worn or missing needle bearings. b. Insert a few drops of oil in cups (4) and roll bearings around one finger to check for free movement.	Replace if bearings are worn or missing. Replace bearings cups (4) if bearing movement is rough or uneven.
11.		End yoke (6), propeller shaft yoke (1) and universal joint (2)	Inspect for scoring, burrs, cracks, and bends.	Replace if scored, burred, cracked, or bent.
<b>c. Reassembly</b>				
12.		Grease fitting (12)	Install in slip yoke (11).	
13.		Dust cap (8), nylon washer (9), new felt washer (10), and slip yoke (11)	Slide over propeller shaft spline (7).	Soak new felt washer (10) with oil before installation.
14.		Nylon washer (9) and felt washer (10)	Install in dust cap (8).	
15.		Dust cap (8)	Install on slip yoke (11).	
16.		Propeller shaft assembly (13)	Place in soft-jawed vise (14).	
17.		Grease fitting (5)	Install in universal joint (2).	
<b>NOTE</b>				
Always lubricate new or used universal joint assemblies before reassembly.				
18.		Universal joint (2)	Place in propeller shaft yoke (1).	
<b>NOTE</b>				
Press bearing cups into yoke enough to install lockrings.				
19.		Two bearing cups (4)	Install.	
20.		Two lockrings (3)	Install.	
<b>NOTE</b>				
Repeat steps 19 and 20 to complete installation of universal joint in end yokes.				

# 10-15. TRANSMISSION PTO TO HYDRAULIC PUMP PROPELLER SHAFT UNIVERSAL JOINT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
 				
				

END OF TASK!

- FOLLOW-ON TASKS:
- Install transmission PTO to hydraulic pump propeller shaft (para. 10-14).
  - Start engine (TM 9-2320-272-10) and operate any accessory driven by the transmission PTO to hydraulic pump propeller shaft. Stop engine (TM 9-2320-272-10) and check universal joints for excessive play.

TA 349290

## 10-16. WINCH HYDRAULIC OIL RESERVOIR FILTER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M929, M930, M932	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Oil filter Gasket		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### NOTE

- Have drainage container ready to catch oil.
- The oil filter is located on the right frame rail above the wet tank air reservoir.

### a. Removal

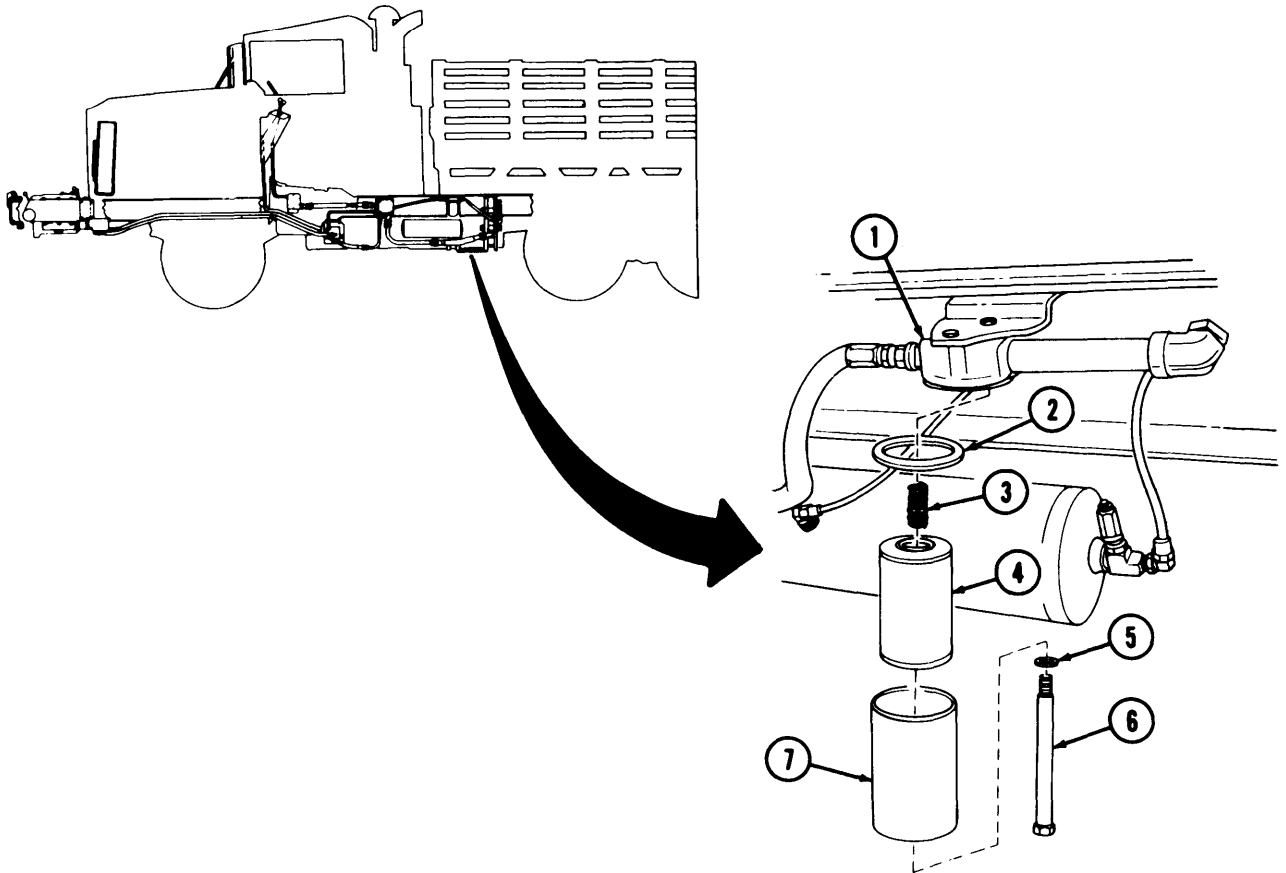
1.	Filter housing (7)	Center bolt (6)	Loosen, and remove filter housing (7) from filter base (1) and spring (3).	Do not reuse old hydraulic fluid.
2.		Center bolt (6) and washer (5)	Remove.	
3.		Oil filter (4)	Remove.	Discard filter (4).
4.	Filter base (1)	Gasket (2)	Remove.	Discard gasket (2). Clean gasket (2) remains from mating surfaces.

### b. Installation

5.	Center bolt (6) and washer (5)	Install into filter housing (7).
----	--------------------------------	----------------------------------

# 10-16. WINCH HYDRAULIC OIL RESERVOIR FILTER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		New oil filter (4)	Insert in filter housing (7).	
7.		New gasket (2)	Install on filter base (1).	
8.		Filter housing (7) and spring (3)	Install to filter base (1) Tighten 30-35 lb-ft (41-47 N·m).	



END OF TASK!

FOLLOW-ON TASK: Fill hydraulic oil reservoir if needed (LO 9-2320-272-12).

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## 10-17. WINCH HYDRAULIC OIL RESERVOIR REPLACEMENT

This task covers:

- a. Removal

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M925, M926, M928, M932	TM 9-2320-272-10 LO 9-2320-272-12	Parking brake set. Hydraulic oil reservoir drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Eight lockwashers Protective cap-plugs (Appendix D, Item 5) Tiedown straps (Appendix D, Item 19) Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

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

## CAUTION

When disconnecting hydraulic oil lines and hoses, plug all openings to prevent dirt from entering and causing internal parts damage.

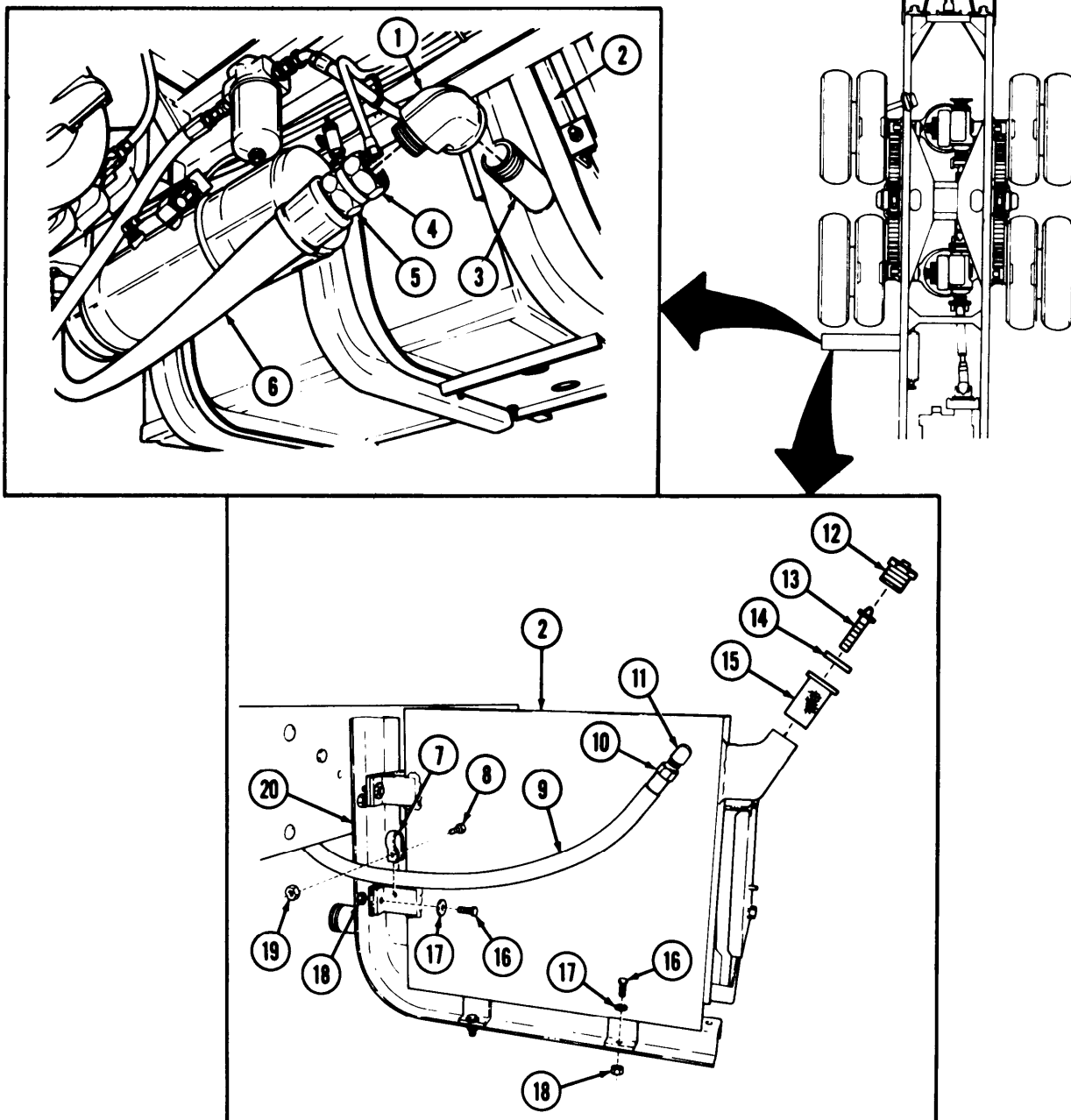
### NOTE

Cut tiedown straps as required.

1.	Oil supply hose (6) to elbow (1)	Nut (4)	Disconnect.	Hold nut (5) to prevent turning.
2.	Nipple pipe (3)	Elbow (1)	Loosen.	
3.	Oil return hose (9) to elbow (11 )	Nut ( 10)	Disconnect.	Plug opening.
4.	Reservoir (2)	Screw (8), nut (19), and clamp (7)	Remove.	
5.	Frame bracket (20)	Eight screws (16), lockwashers (17), and nuts (18)	Remove, and pull out reservoir (2) about two inches.	Discard lockwashers (17).
6.	Reservoir (2)	Elbow (1) and nipple pipe (3)	Remove.	Plug opening.

# 10-17. WINCH HYDRAULIC OIL RESERVOIR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Frame bracket (20)	Reservoir (2)	Remove.	
8.	Reservoir (2)	Elbow (11)	Remove.	Plug opening.
9.	Reservoir (2)	Plug (12), gage (13), spacer (14), and strainer (15)	Remove.	Plug opening.



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**10-17. WINCH HYDRAULIC OIL RESERVOIR REPLACEMENT (Cont'd)**

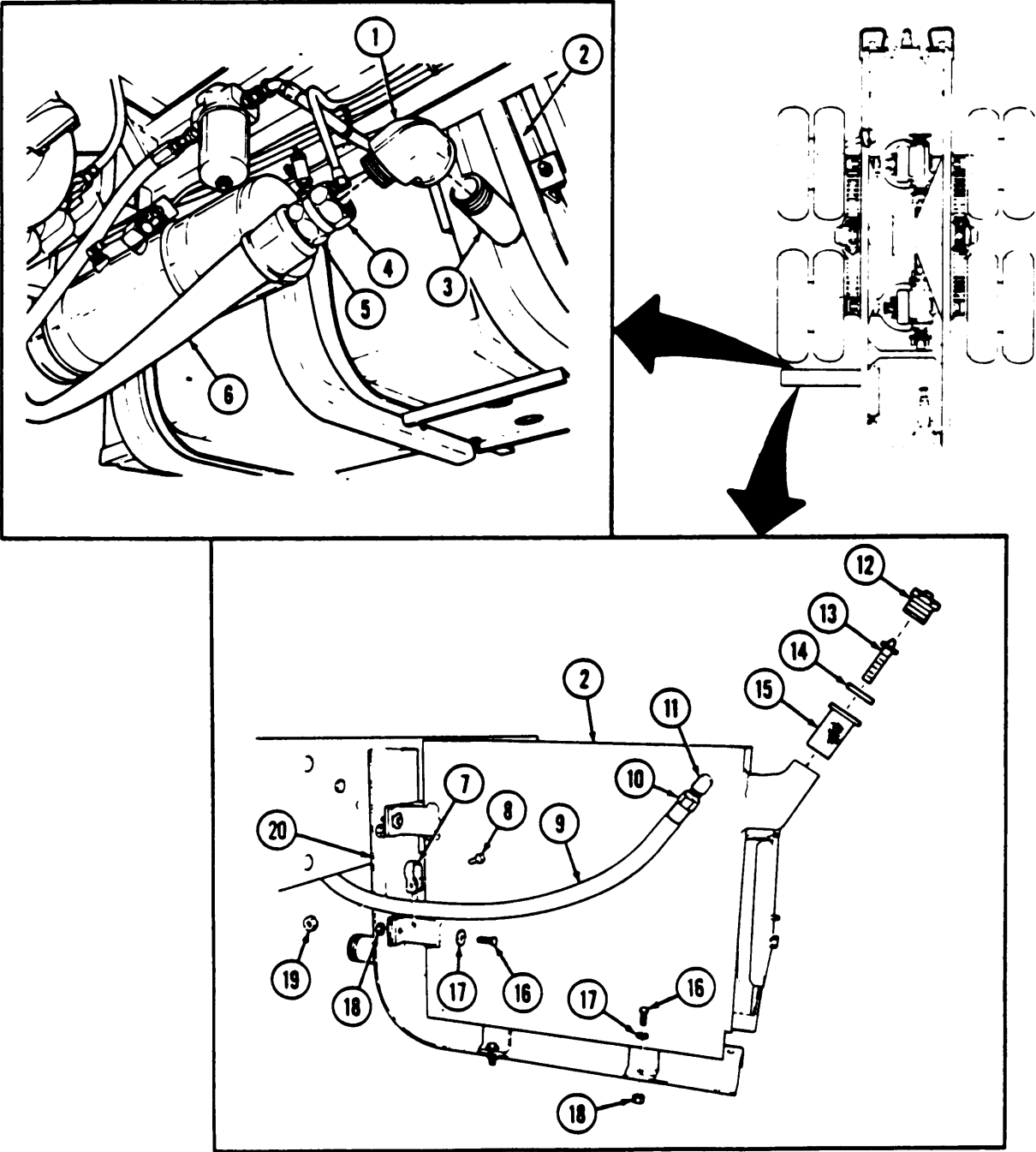

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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>I b. Installation I</b>				
<p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Wrap all male pipe threads with sealing tape before installation.</li> <li>• Install tiedown straps as required.</li> </ul>				
10.		Plug (12), gage (13), spacer (14), and strainer (15)	Install in reservoir (2).	
11.		Elbow (11 ) and nipple pipe (3)	Install on reservoir (2).	
12.		Reservoir (2)	Place on frame bracket (20).	
13.		Elbow (1)	Install on nipple pipe (3).	
14 <sub>0</sub>		Reservoir (2)	Install on frame bracket (20) with eight screws (16), new lock-washers (17), and nuts (18).	
15.		Return hose (9)	Install on elbow (11) by tightening nut (10).	
16.		Clamp (7)	Install on hose (9) and reservoir (2) with screw (8) and nut (19).	
17.		Supply hose (6)	Install on elbow (1) and tighten nut (4).	Hold nut (5) to prevent turning.



10-17. WINCH HYDRAULIC OIL RESERVOIR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Fill hydraulic oil reservoir (LO 9-2320-272-12).
  - Operate hydraulic system (TM 9-2320-272-10) and check for leaks.

## 10-17.1. TRACTOR WINCH HYDRAULIC OIL RESERVOIR (M939A1 SERIES) REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M932A1	TM 9-2320-272-10 TM 9-2320-272-10 LO 9-2320-272-12	Parking brake set. Spare tire removed. Hydraulic oil reservoir drained.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Thirteen locknuts Four lockwashers "o" ring Protective cap-plugs (Appendix D, Item 5) Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

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

#### CAUTION

When disconnecting hydraulic oil lines and hoses, plug all openings to prevent dirt from entering and causing internal parts damage.

- |   |  |         |                       |
|---|--|---------|-----------------------|
| 1. Muffler support (1) and reservoir base (3) | Two locknuts (2) and screws (4), and brace (6) | Remove. | Discard locknuts (2). |
|---|--|---------|-----------------------|

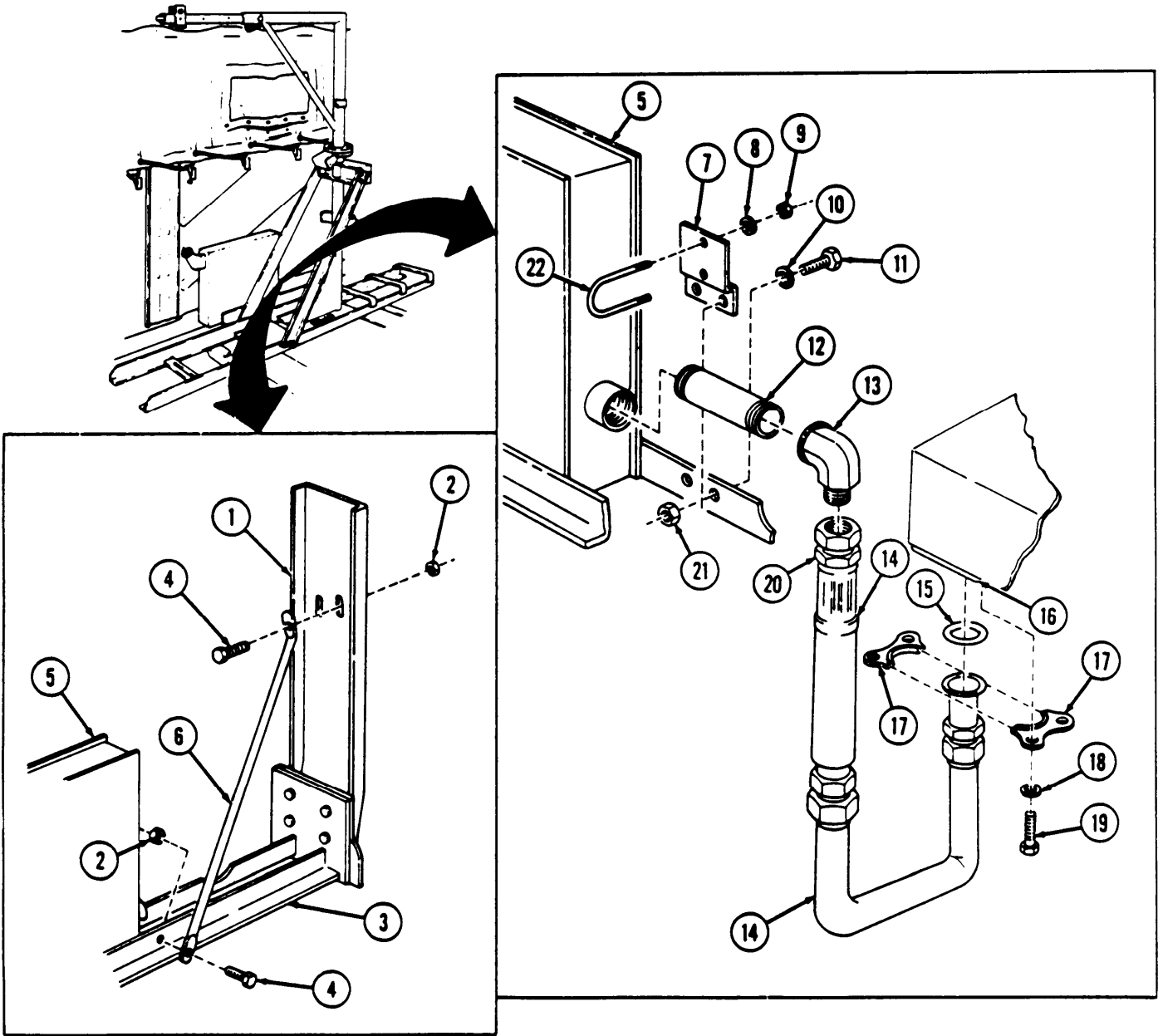
#### NOTE

Have drainage container ready to catch oil.

- |                            |   |             |   |
|----------------------------|---|-------------|---|
| 2. Elbow ( 13)             | Supply line (14)  | Disconnect. | Hold nut (20) to prevent turning.           |
| 3. Hydraulic oil pump (16) | Four screws (19) and lockwashers (18), two split flanges (17), "o" ring ( 15), and supply line (14) | Remove.     | Discard lockwashers (18) and "O" ring (15). |

10-17.1. TRACTOR WINCH HYDRAULIC OIL RESERVOIR (M939A1 SERIES)  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Nipple support (7)	Two locknuts (9) and washers (8), and U-bolt (22)	Remove.	Discard locknuts (9).
5.	Reservoir (5)	Elbow (13) and pipe nipple (12)	Remove.	
6.	Reservoir base (3)	Two locknuts (21), washers (10), and screws (11), and nipple support (7)	Remove.	Discard locknuts (21).



# 10-17.1. TRACTOR WINCH HYDRAULIC OIL RESERVOIR (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Elbow (6)	Return hose (8)	Disconnect.	Hold nut (7) to prevent turning.
8.	Reservoir base (9)	Locknut (19), screw (17), and Clamp (18)	Remove.	Discard locknut (19).
9.	Muffler support (10)	Four locknuts (11) and screws (12)	Remove.	Discard locknuts (11).
10.	Frame bracket (13)	Two locknuts (14) and screws (16), and four washers (15)	Remove.	Discard locknuts (14).
11.	Base (9) to bracket (13)	Reservoir (5)	Remove.	
12.	Reservoir (5)	Elbow (6)	Remove.	
13.		Filler cap (1), dipstick (2), spacer (3), and strainer (4)	Remove.	

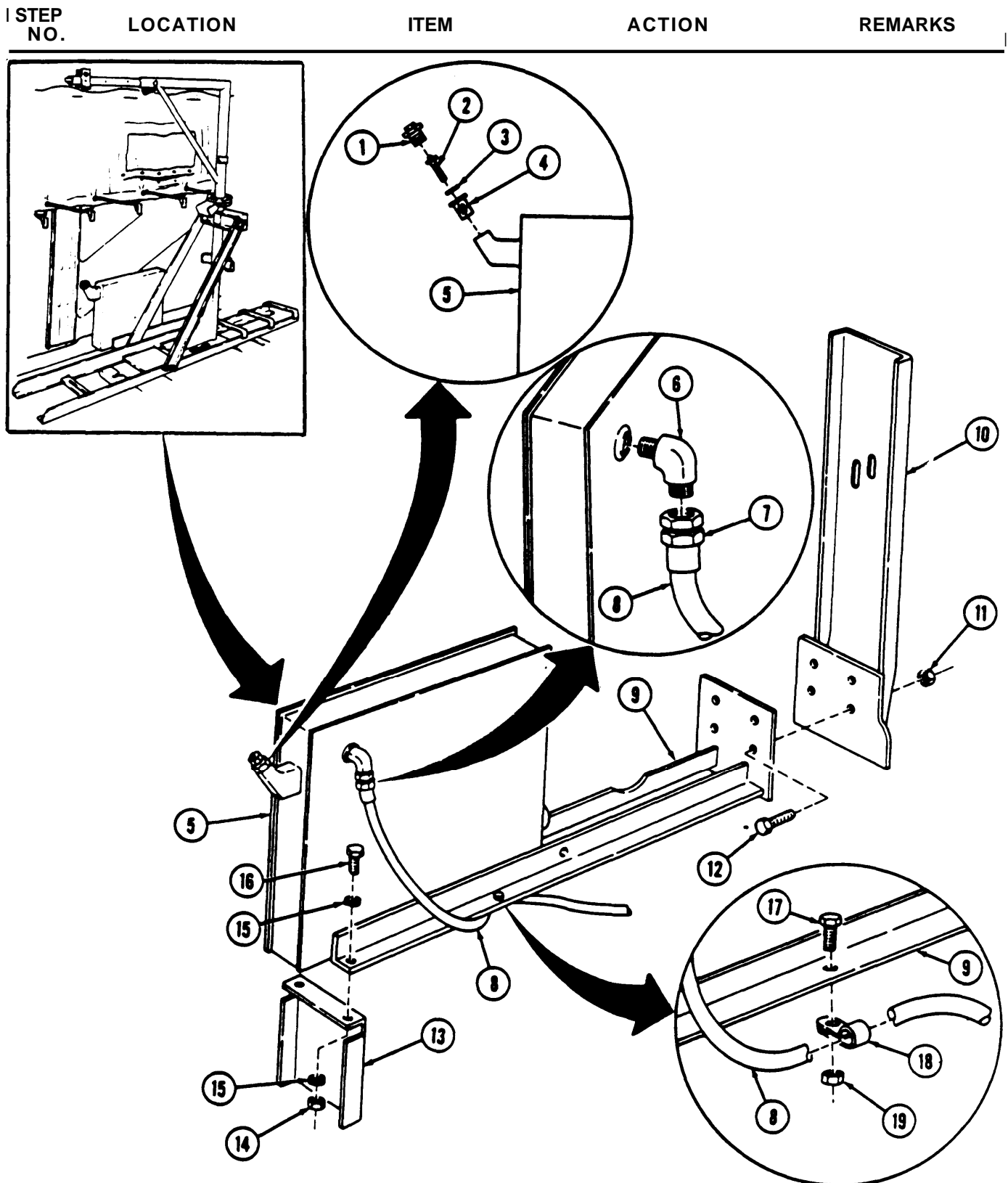
## b. Installation

### NOTE

- When new hydraulic oil reservoir is installed, use attaching parts and fittings from old hydraulic oil reservoir.
- Wrap all male pipe threads with sealing tape before installation.

14.		Strainer (4), spacer (3), dipstick (2), and filler cap (1)	Install on reservoir (5).	
15.		Elbow (6)	Install on reservoir (5).	
16.		Reservoir base (9)	a. Install on frame bracket (13) with two screws (16), four washers (15), and two new locknuts (14). b. Install on muffler support (10) with four screws (12) and new locknuts (11).	
17.		Return hose (8)	Connect to elbow (6).	Hold nut (7) to prevent turning.
18.		clamp (18)	Install on reservoir base (9) with screw (17) and new locknut (19).	

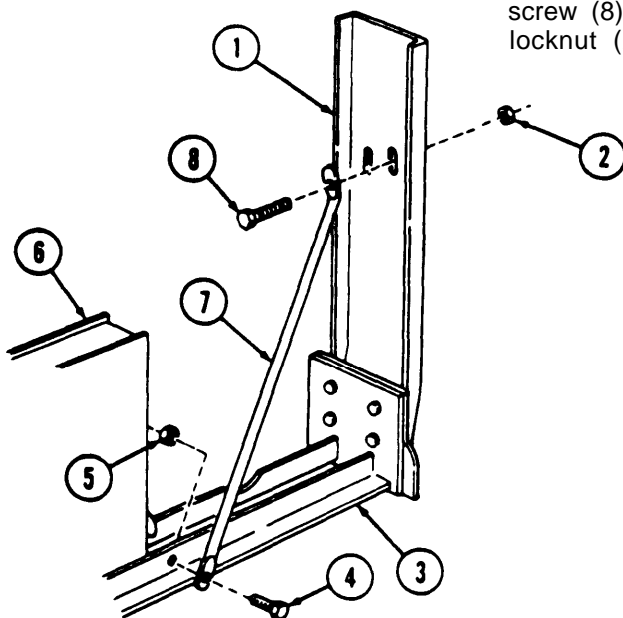
**10-17.10 TRACTOR WINCH HYDRAULIC OIL RESERVOIR (M939A1 SERIES)  
REPLACEMENT (Cont'd)**



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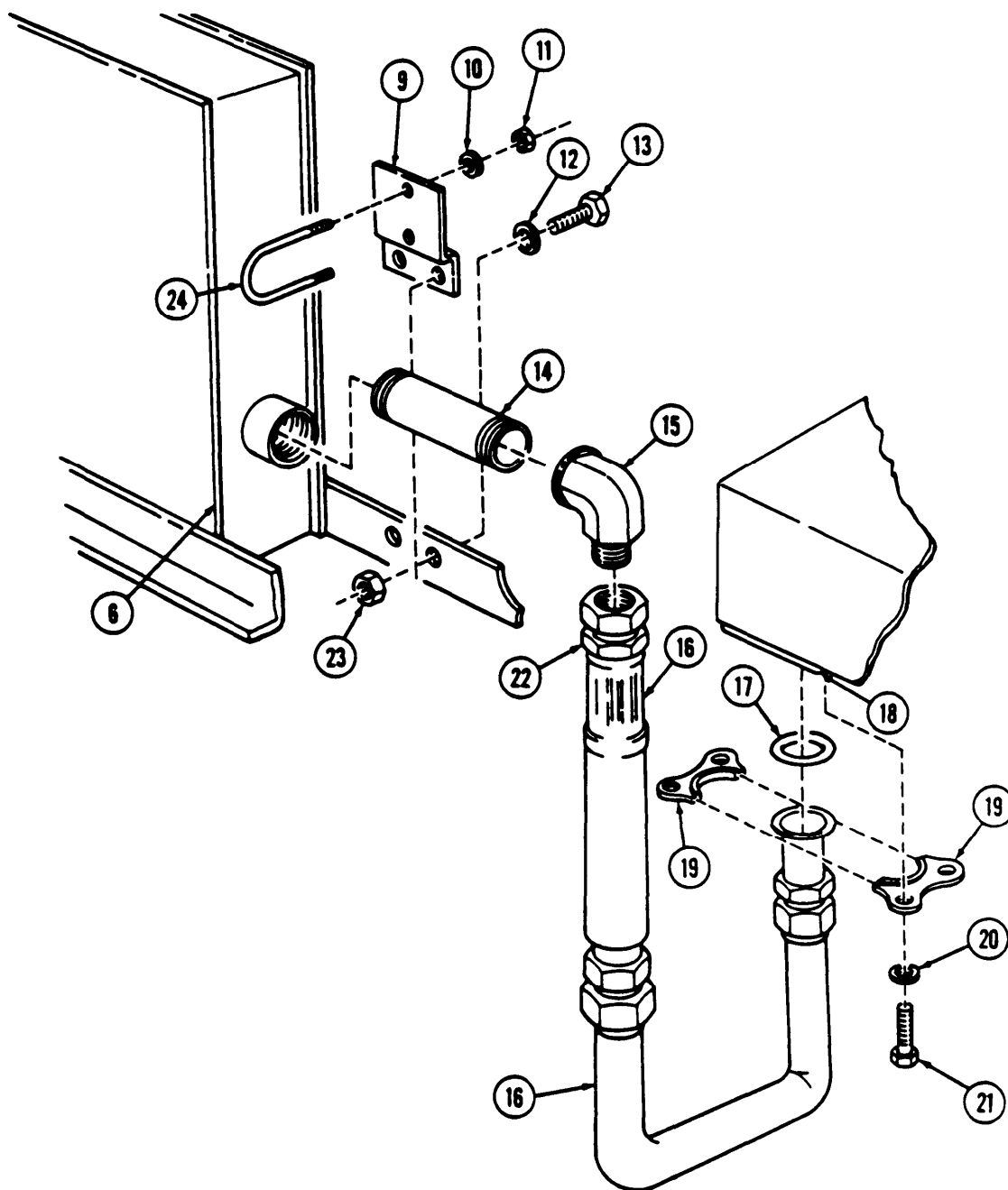
# 10-17.1. TRACTOR WINCH HYDRAULIC OIL RESERVOIR (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
19.		Nipple support (9)	Install on frame bracket (3), with two screws (13), washers (12), and new locknuts (23).	
20.		Pipe nipple (14)	Install on reservoir (6).	
21.		Elbow (15)	Install on pipe nipple (14).	
22.		Supply line (16)	& Connect to elbow (15). b. Connect to hydraulic oil pump (18) with new "O" ring (17), two split flanges (19), and four new lockwashers (20) and screws (21).	Hold nut (22) to <b>prevent</b> turning.
23.		U-bolt (24)	Install on nipple support (9) with two washers (10) and new locknuts (11).	
24.		Brace (7)	a. Install on reservoir base (3) with screw (4) and new locknut (5). b. Install on muffler support (1) with screw (8) and new locknut (2).	



# 10-17.1. TRACTOR WINCH HYDRAULIC OIL RESERVOIR (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Fill hydraulic oil reservoir (LO 9-2320-272-12).
  - Operate hydraulic oil system (TM 9-2320-272-10) and check for leaks.
  - Install spare tire (TM 9-2320-272-10).

TA 351044





## Section II. WRECKER CRANE MAINTENANCE

### **10-18. GENERAL**

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

### **10-19. WRECKER CRANE MAINTENANCE TASK SUMMARY**

<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
10-20.	Automatic Brake (Hoist Winch) Adjustment	10-50
10-21.	Hoist Winch Cable Replacement	10-52
10-22.	Hoist Winch Cable Clevis Replacement	10-58
10-23.	Boom Floodlight Wire Replacement	10-62
10-24.	Crane Wiring Harness Replacement	10-68
10-25.	Wrecker Crane Hydraulic Hose and Tube Replacement	10-74
10-26.	Crane Hydraulic Pump Replacement	10-78
10-27.	Pressure Relief Valve Maintenance	10-82
10-28.	Snubber Valve Assembly Replacement	10-84
10-29.	Crane Hydraulic Filter Maintenance	10-86
10-29.1	Forward Deck Plate Replacement	10-91.1
10-30.	Transfer PTO to Hydraulic Pump Propeller Shaft Replacement	10-92
10-31.	Floodlight Sealed Beam Lamp and Door (M936) Replacement	10-94
10-32.	Floodlight (M936) Maintenance	10-94
10-33.	Floodlight Electrical Connector Replacement	10-94
10-34.	Floodlight Switch Replacement	10-94
10-35.	Floodlight Housing to Bracket Mounting Bolt and Grommet Replacement	10-94
10-36.	Floodlight Control Switch (M936) Maintenance	10-94

**10-20. AUTOMATIC BRAKE (HOIST WINCH) ADJUSTMENT**

This task covers:

- a. Cover Removal
- b. Adjustment

- c. Cover Installation

**INITIAL SETUP:**

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
M936	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Gasket		
Six lockwashers		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

**a. Cover Removal**

- |    |                           |                                    |         |   |
|----|---------------------------|------------------------------------|---------|---|
| 1. | Automatic brake cover (3) | Six screws (2) and lockwashers (1) | Remove. | Discard lockwashers (1).  |
| 2. | Brake case (6)            | Cover (3) and gasket (5)           | Remove. | Discard gasket (5).<br>Clean gasket (5) remains from mating surfaces. |

**b. Adjustment**

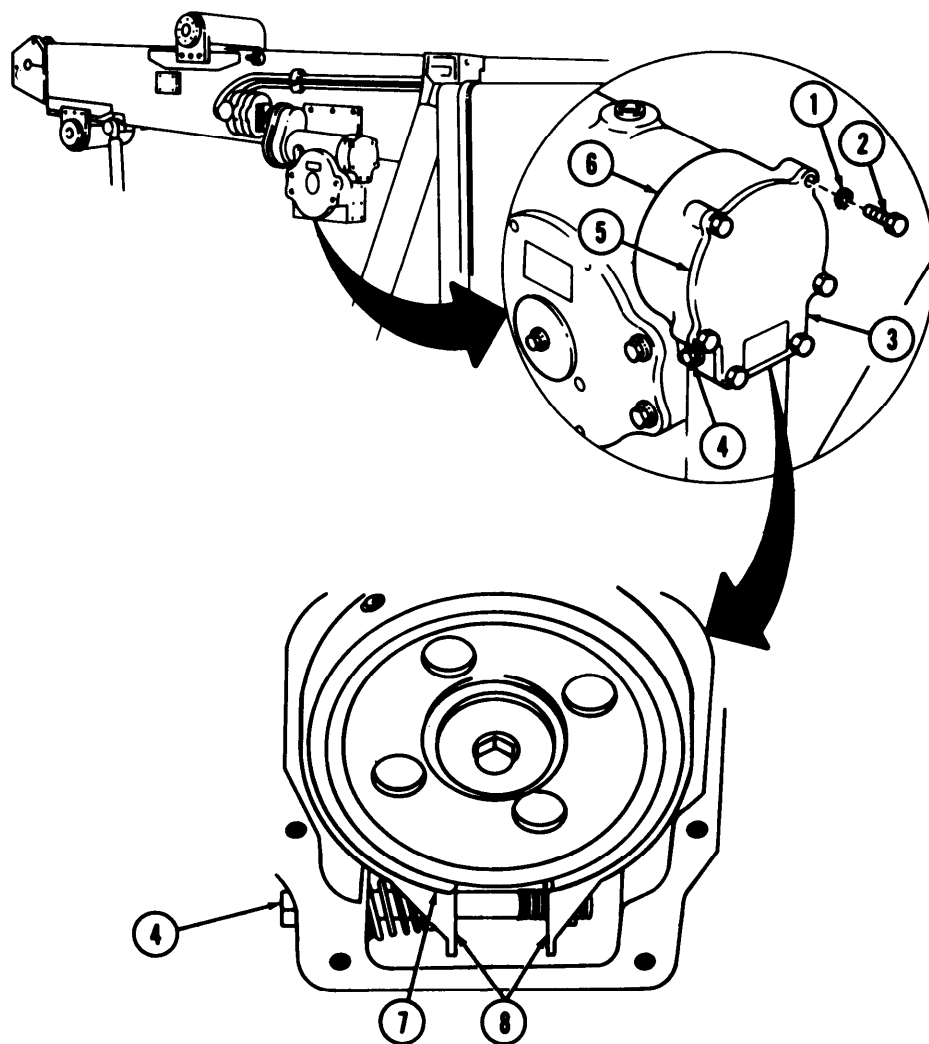
- |    |                     |  |   |
|----|---------------------|--|---|
| 3. | Brake band (7)      | Measure distance between two band ears (8).                          | If properly adjusted, distance should measure 1-7/32 in. (31 mm) $\pm$ 1/32 in. (1 mm). |
| 4. | Adjusting screw (4) | a. Turn clockwise to tighten.<br>b. Turn counterclockwise to loosen. | Turn until proper distance between band ears (8) is reached.                            |

# 10-20. AUTOMATIC BRAKE (HOIST WINCH) ADJUSTMENT (Cont'd)

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

## c. Cover Installation

- |    |                |   |   |
|----|----------------|---|---|
| 5. | New gasket (5) | Install on brake case (6).  | Use light coat of grease to hold it in place. |
| 6. | Cover (3)      | Position over gasket (5) and install on brake case (6) with six screws (2) and new lockwashers (1). |   |



END OF TASK!

FOLLOW-ON TASK: Lift a heavy load with crane (TM 9-2320-272-10) and check adjustment by observing slippage when trying to sustain load. If crane does not hold load, notify DS maintenance.

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## 10-21. HOIST WINCH CABLE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Four lockwashers Two locknuts		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B (2)	Wear hand protection when handling winch cable.	
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

#### a. Removal

- |    |                      |   |                        |                          |
|----|----------------------|---|------------------------|--------------------------|
| 1. | Rear cable guard (4) | Two screws (1), lockwashers (2), and washers (3)      | Remove from each side. | Discard lockwashers (2). |
| 2. |                      | Cable guard (4)                                       | Remove.                |                          |
| 3. | Inner boom (8)       | Two support screws (5), spacers (6), and locknuts (7) | Remove.                | Discard locknuts (7).    |

### WARNING

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

- |    |  |                      |   |                            |
|----|--|----------------------|---|----------------------------|
| 4. |  | Hoist winch drum (9) | Prepare for unwinding.  | Refer to TM 9-2320-272-10. |
| 5. |  | Hoist cable (12)     | a. Unwind until snatch block (10) contacts ground,<br>b. Return hoist control to neutral. |                            |

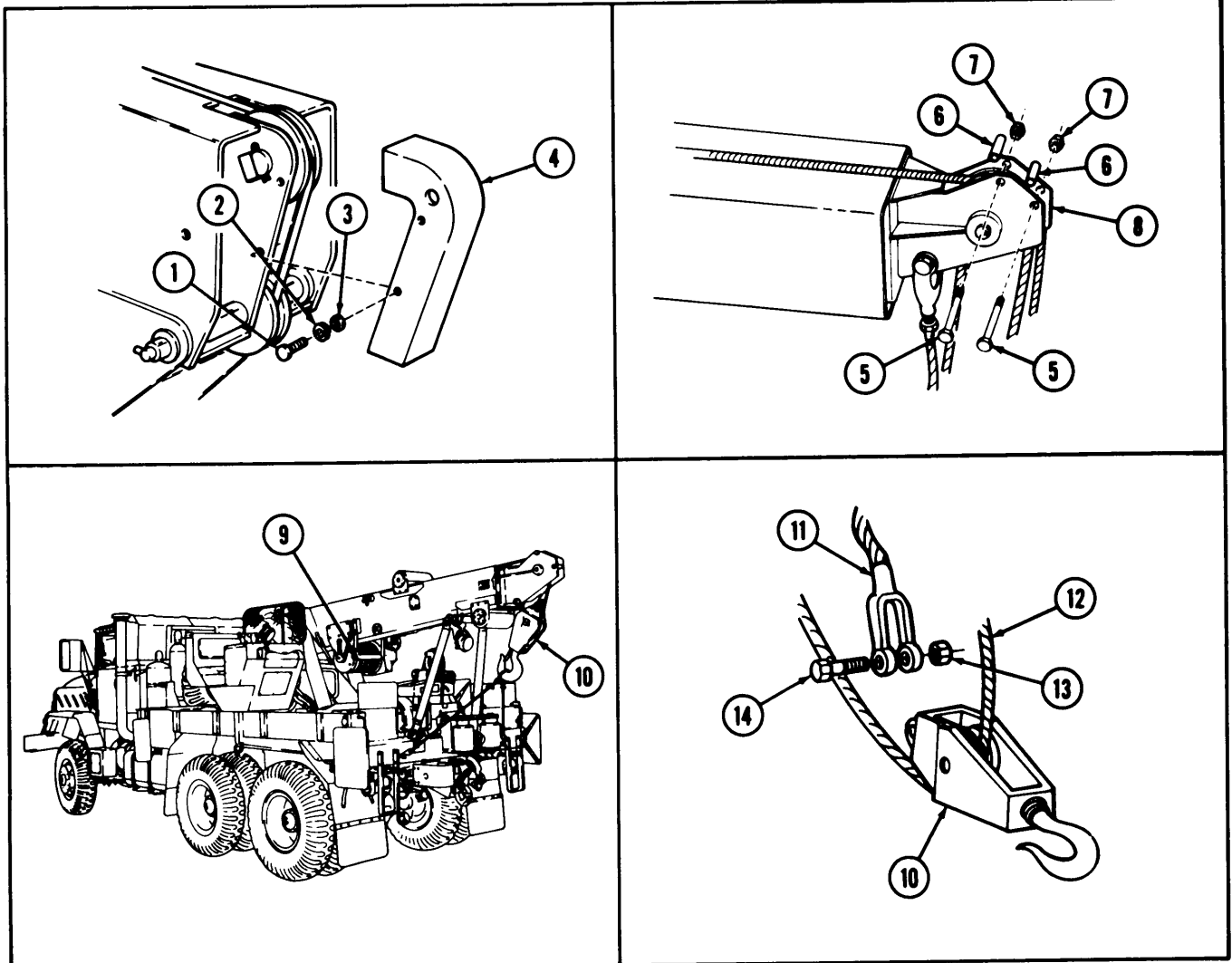
**10-21. HOIST WINCH CABLE REPLACEMENT (Cont'd)**

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

**NOTE**

Maintain manual tension on hoist cable when removing block from cable clevis.

- |    |                   |   |  |
|----|-------------------|---|--|
| 6. | Snatch block (10) | Anchor bolt (14), nut (13), and cable clevis (11) | a. Remove.<br>b. Reinstall anchor bolt (14) and nut (13) to snatch block (10) for storage. |
|----|-------------------|---|--|



## 10-21. HOIST WINCH CABLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.		Cable clevis (3)	Thread through forward boom sheaves (2) until only one part of cable (4) extends from forward boom sheaves (2).	
<p style="text-align: center;"><b>NOTE</b></p> <p>Mechanic will operate crane hoist. Assistant will maintain tension on cable.</p>				
8.		Hoist winch drum (6)	a. Unwind. b. Return hoist control to neutral when screw (5) on hoist winch drum (6) is visible. c. Shut down vehicle winch hoist operation.	Refer to TM 9-2320-272-10.  Refer to TM 9-2320-272-10.
9.	Hoist winch drum (6)	Screw (5)	Remove.	
10.		Hoist cable (4)	Pull out of hole in hoist winch drum (6).	
11.		Screw (5)	Reinsert into drum (6) screw hole for storage.	
12.		Hoist cable (4)	Pull through boom (1) and remove.	
<div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>b. Installation</b></div>				
13.		Hoist cable (4)	a. Thread cable end over forward boom sheaves (2) and through upper boom roller (9). b. Thread cable end around upper rear sheave (8) and around lower rear sheave (10). c. Feed under boom (1) to within reach of hoist winch drum (6).	
14.		Screw (5)	Remove from hoist winch drum (6).	

# 10-21. HOIST WINCH CABLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
15.		Hoist cable (4)	Insert end into hole (7) in hoist winch drum (6) and install with screw (5).	

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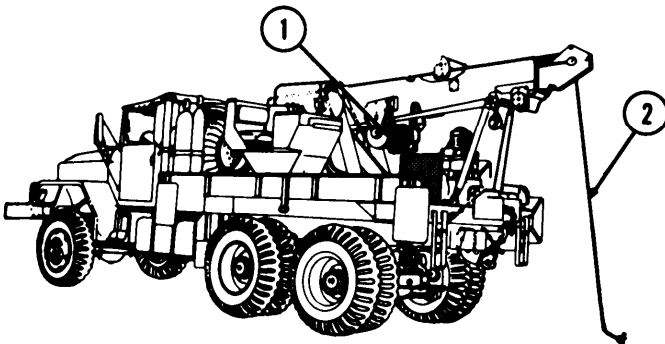
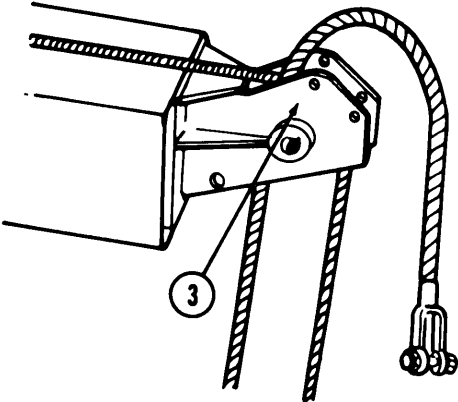
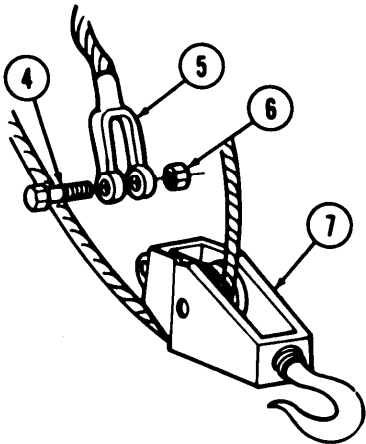
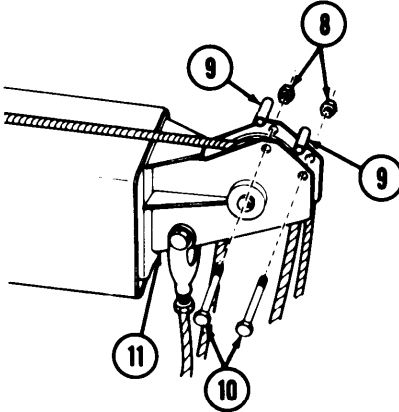
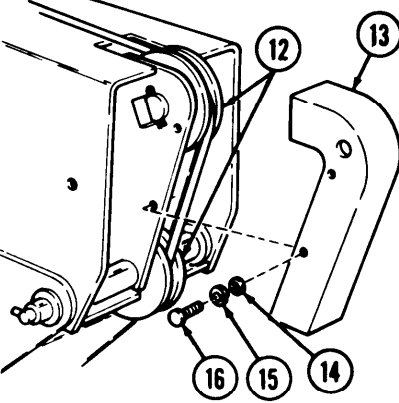
**10-21. HOIST WINCH CABLE REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<p style="text-align: center;"><b>NOTE</b></p> <p>Mechanic will operate winch hoist. Assistant will maintain manual tension on cable and observe that cable is winding properly.</p>				
16.		Hoist winch drum (1)	a. Prepare for unwinding. b. Wind cable (2) onto drum (1). c. Return hoist control to neutral when clevis (5) end of cable (2) leaves ground.	Refer to TM 9-2320-272-10.
17.		Cable clevis (5)	a. Thread through snatch block (7), over forward boom sheave (3) and back to snatch block (7). b. Install with anchor bolt (4) and nut (6).	Forms a three-part line.
18.		Two support screws (10), spacers (9), and new locknuts (8)	Install on forward boom (11) end and tighten.	
19.		Rear cable guard (13)	Install over rear sheaves (12) with four screws (16), new lock-washers (14), and washers (15).	
20.		Hoist winch	a. Raise snatch block (7) and install in travel position. b. Return hoist control to neutral. c. Shut down vehicle winch operation.	Refer to TM 9-2320-272-10.



10-21. HOIST WINCH CABLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">  </div> <div style="width: 50%;">  </div> <div style="width: 33%;">  </div> <div style="width: 33%;">  </div> <div style="width: 33%;">  </div> </div>				

END OF TASK!

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## 10-22. HOIST WINCH CABLE CLEVIS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Unwind hoist winch cable.
<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>
Light-wheeled vehicle mechanic MOS 63B		<ul style="list-style-type: none"> <li>• Wear hand protection when handling winch cable.</li> <li>• Top of seizing must be installed correctly to end of cable.</li> </ul>
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Wear hand protection when handling winch cable. Broken wires may cause injury to personnel.

### a. Removal

1.	Frame-mounted vise (3)	Clevis assembly (2)	a. Insert clevis yoke end (6) into vise (3). b. Tighten vise (3) jaws securely.	Locking screw (4) free of vise (3) jaws.
2.	Clevis assembly (2)	Fine wire seizing (1)	Remove.	Discard fine wire seizing (1).
3.		Locking screw (4)	a. Unscrew from clevis yoke end (6). b. Slide back along cable (7).	
4.		Cable (7)	Manually pull free of clevis yoke end (6).	Clevis plug (5) will fall free of clevis cable connection. Retrieve plug (5).
5.		Locking screw (4)	Slide forward and off cable end.	

## 10-22. HOIST WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

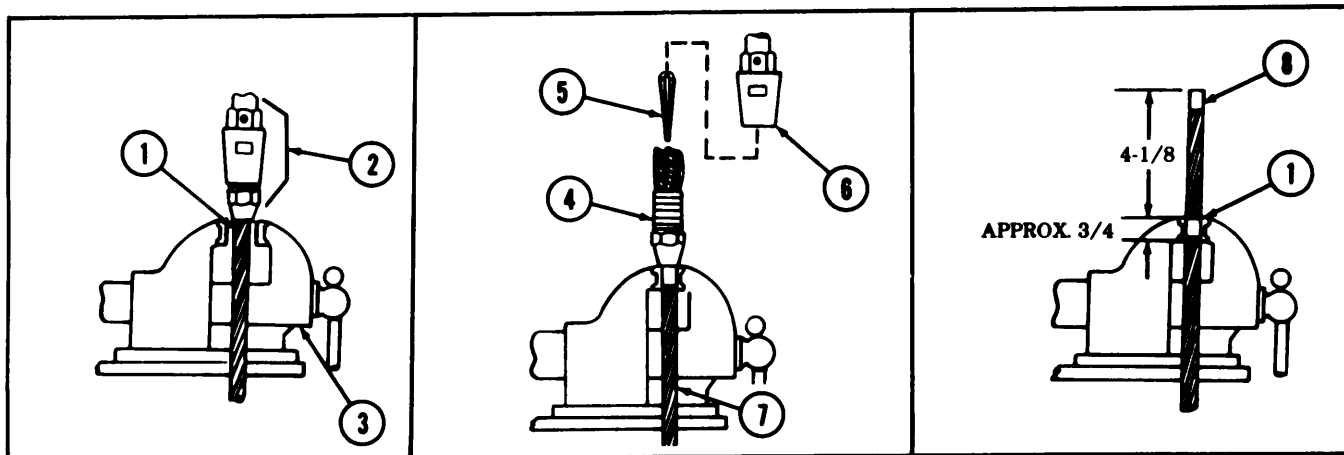
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Clevis plug (5)	Insert into clevis yoke end (6) and install with locking screw (4).	For storage.
7.	Frame-mounted vise (3)	Clevis assembly (2)	Remove.	

### b. Installation

#### **WARNING**

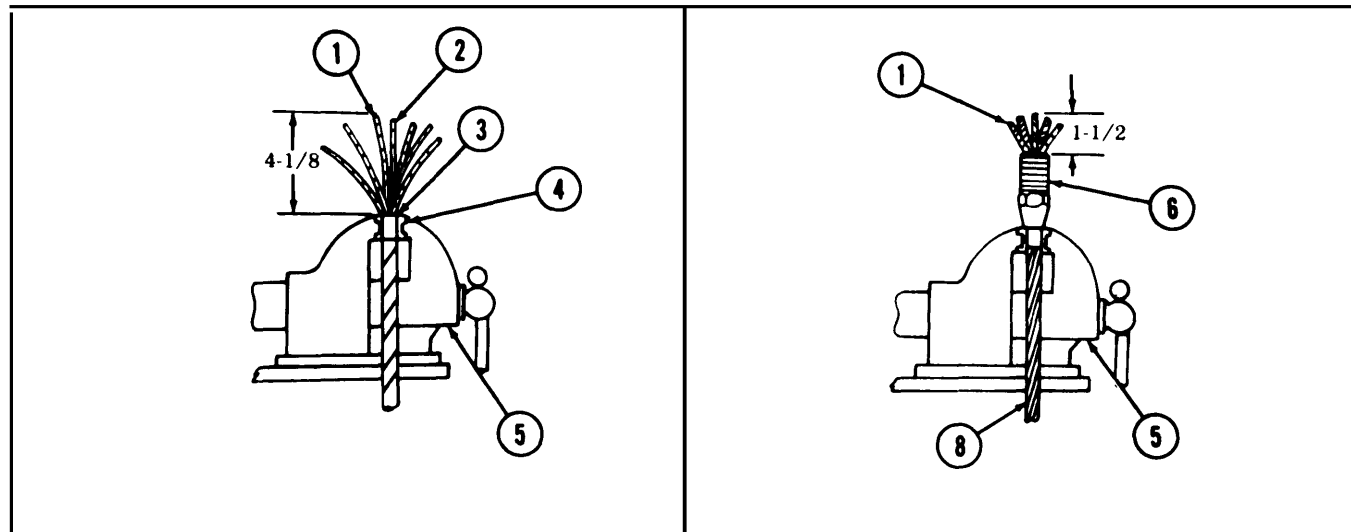
Top of seizing must not be less than 4-1/8 in. (10.6 cm) from end of cable (8). Faulty installation will cause cable failure and may result in injury or death to personnel.

8.	Frame-mounted vise (3)	Fine wire seizing (1)	Wrap around cable (7) 4-1/8 in. (10.5 cm) down from cable end. Knot or secure as required.	Use strand of discarded cable (7).
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# 10-22. HOIST WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.		Cable end (2)	a. Insert into vise (5) leaving 4-1/8 in. (10.5 cm) extended up from level of vise jaws (4) and tighten vise jaws. b. Unravel cable end (2) strands to level of vise jaws (4).	Hemp core (1) exposed.
10.		Hemp core (1)	Cut off as close as possible to level of vise jaws (4).	
11.		Cable end (2)	Close and install top end with fine wire seizing (3).	Use strand of discarded cable (8).
12.		Locking screw (6)	Insert over cable end (2) and slide down to level of vise jaw (4).	



## NOTE

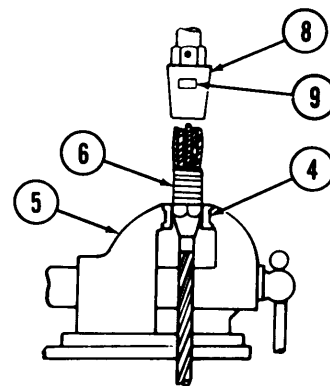
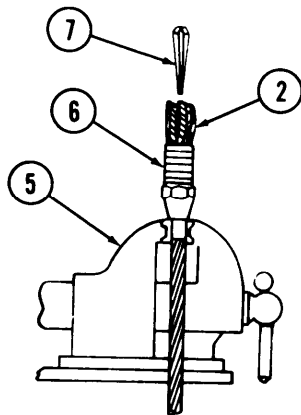
Exposed end of cable should be approximately 1-1/2 in. (3.8 cm) above end of locking screw.

13.	Fine wire seizing (3)	Remove from cable end (2).	Discard fine wire seizing (3).
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# 10-22. HOIST WINCH CABLE CLEVIS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
14.		Clevis plug (7)	a. Insert into center of cable end (2). b. Drive into cable end (2) and locking screw (6).	
15.		Cable end (2) and locking screw (6)	a. Remove from vise (5). b. Reinsert into vise with hex nut edges of locking screw (6) between vise jaws (4) and tighten vise jaws (4) securely.	
16.		Clevis yoke (8)	a. Insert socket end into cable end (2). b. Install on locking screw (6) and tighten.	
17.		Clevis assembly	Remove from vise (5).	
18.		Clevis assembly	When properly installed, wire strands can be seen through the inspection hole (9).	



END OF TASK!

FOLLOW-ON TASKS: • Rewind hoist winch cable (TM 9-2320-272-10).  
• Secure hoist winch cable and hook in travel position (TM 9-2320-272-10).

## 10-23. BOOM FLOODLIGHT WIRE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B (2)		<ul style="list-style-type: none"> <li>• Stand clear of boom during raising and lowering.</li> <li>• Operator must remain at crane controls while work is being done beneath boom.</li> </ul>
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

- |    |                                |                                 |   |  |
|----|--------------------------------|---------------------------------|---|--|
| 1. | Rear of floodlight (5) housing | Two connectors (6)              | Pull and remove.  |  |
| 2. |                                | Room floodlight wire clamps (1) | a. Remove screw (3) holding each clamp (1).<br>b. Open clamp (1) and remove boom floodlight wire (2).<br>c. Reinstall clamps (1) for storage. | Remove in sequence from clamp (1) nearest floodlight (5) back. |

### WARNING

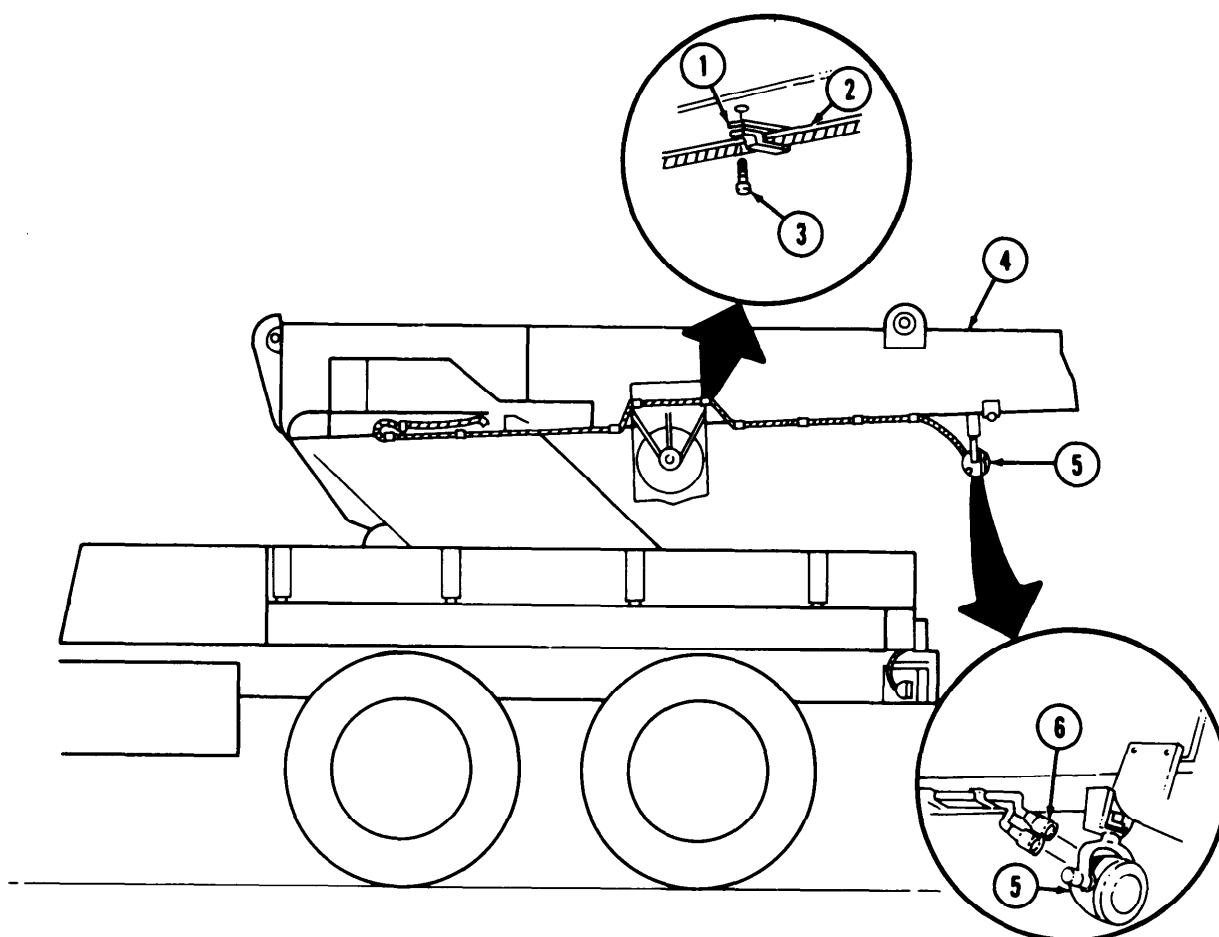
Assistant must stay with crane controls until removal operation is completed. Injury to personnel may result if boom control lever is accidentally engaged while work is being done between raised boom and swivel base.

### NOTE

Assistant will operate crane. Mechanic will continue with removal operation after boom has been raised.

# 10-23. BOOM FLOODLIGHT WIRE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Boom (4)	a. Ready for operation.	Refer to TM 9-2320-272-10.
			b. Raise boom (4) to about 45 degree angle.	Allows easy access to wire clamps (1) on underside of boom (4)
4.	Under raised boom (4)	Boom floodlight wire clamps (1)	a. Remove screw (3) holding each clamp (1).	
			b. Open clamp (1) and remove boom floodlight wire (2).	
			c. Reinstall clamps (1) for storage.	



TA 349301

## 10-23. BOOM FLOODLIGHT WIRE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Wiring harness (2)	Two boom floodlight wire to crane wiring harness connectors (1)	Pull and remove,	
6.		Boom floodlight wire (3)	Remove from vehicle.	
<p style="text-align: center;"><b>WARNING</b></p> <p>All personnel must stand clear of boom during lowering operation. A shifting or swinging load may cause injury to personnel.</p>				
7.		Boom (6)	a. Ready for operation, b. Lower boom (6).	Refer to TM 9-2320-272-10.
<p><b>b. Installation</b></p>				
8.		Boom floodlight wire (3)	Spread out on vehicle along general lines of installation.	
<p style="text-align: center;"><b>NOTE</b></p> <p>Connectors on either end are the same. Either connector end can go to the floodlight. Either end can go to the wiring harness.</p>				
9.		Two connectors (7)	Install on contacts, rear of floodlight (8) housing.	
10.		Boom floodlight wire clamps (5)	a. Remove screws (4) and detach each clamp (5). b. Spread open clamp (5) and insert boom floodlight wire (3). c. Reinstall clamp (5) to boom (6).	Install in sequence from clamp (5) nearest boom floodlight (8) back. Take up slack so that wire (3) does not snag between clamp (5) installations.



# 10-23. BOOM FLOODLIGHT WIRE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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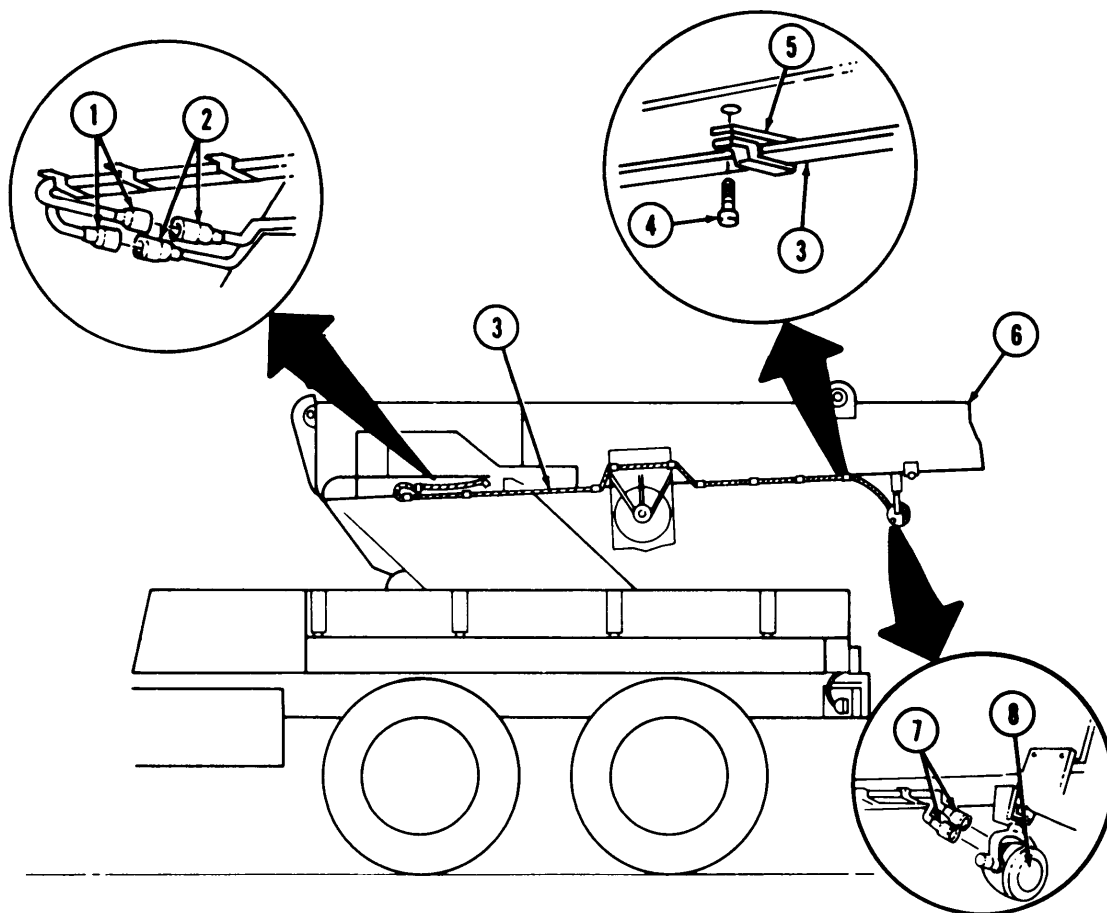
## WARNING

- All personnel must stand clear of crane during boom raising operation. A shifting or swinging load may cause injury to personnel.
- Assistant must stay with crane controls until installation operation is completed. Injury to personnel may result if boom control lever is accidentally engaged while work is being done between raised boom and swivel base.

## NOTE

Assistant will operate crane. Mechanic will continue with installation operation after boom has been raised.

- |     |          |   |                            |
|-----|----------|---|----------------------------|
| 11. | Boom (6) | a. Ready for operation.<br>b. Raise to about 45 degree angle. | Refer to TM 9-2320-272-10. |
|-----|----------|---|----------------------------|



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**10-23. BOOM FLOODLIGHT WIRE REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
12.		Boom floodlight wire clamps (5)	a. Remove screws (4) and detach each clamp (5). b. Spread open clamp (5) and insert boom floodlight wire (6). c. Reinstall clamps to boom (3).	Install in sequence from clamp (5) nearest boom floodlight back. Take up slack so that wire (6) does not snag between clamp (5) installations.

**NOTE**

It does not matter which connector end of boom floodlight wire is attached to which connector end of crane wiring harness.

13.		Two connectors (1)	Insert over connector ends of crane wiring harness (2).	Allow remainder of wire (6) to hang loosely.
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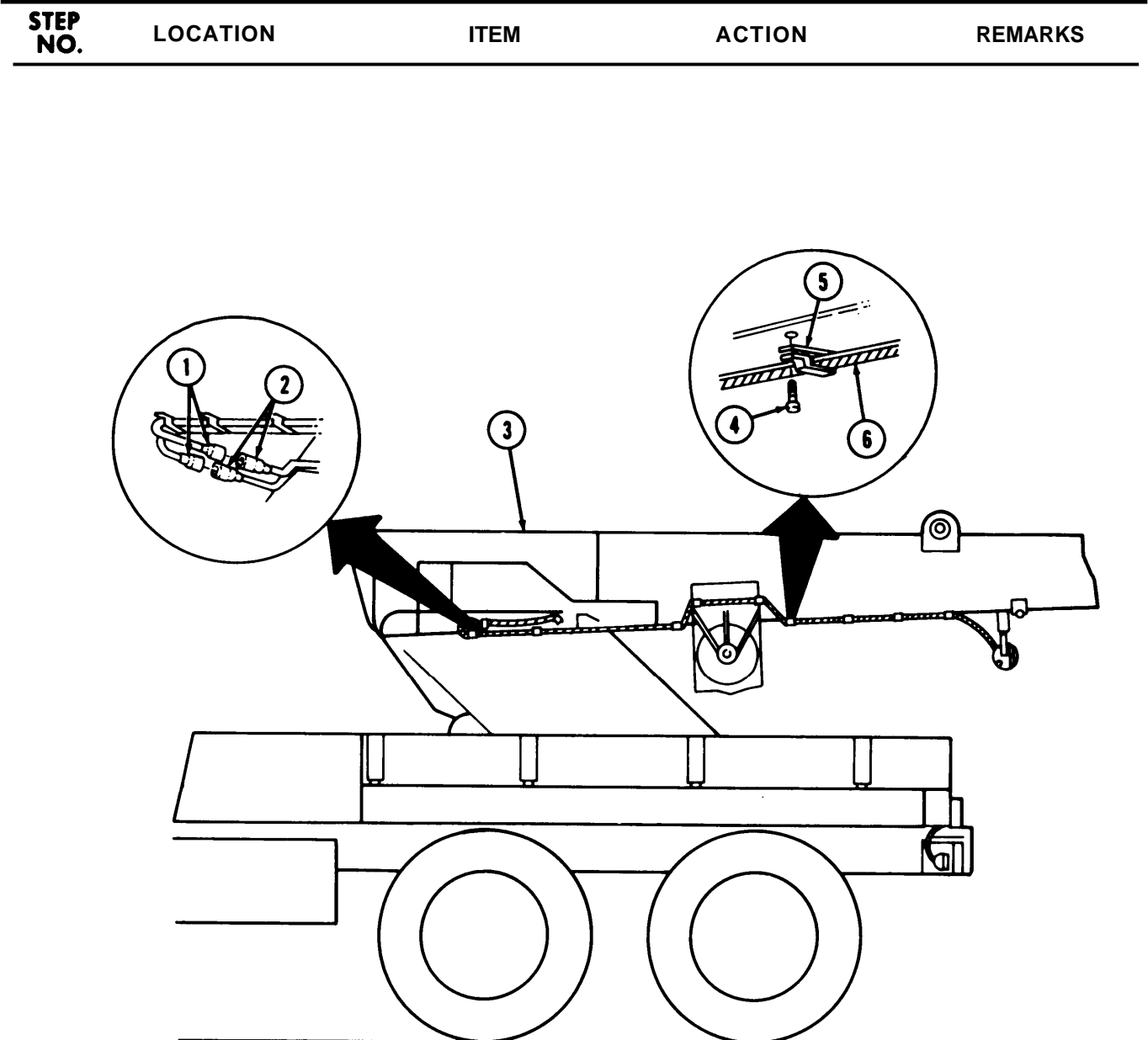
**WARNING**


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All personnel must stand clear of boom during lowering operation. A shifting or swinging load may cause injury to personnel.

14.		Boom (3)	a. Ready for operation. b. Lower boom (3) and shut down operation.	Refer to TM 9-2320-272-10.
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<b>10-23. BOOM FLOODLIGHT WIRE REPLACEMENT (Cont'd)</b>
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END OF TASK!

FOLLOW-ON TASK: Check boom floodlight for proper operation (TM 9-2320-272-10).

TA 3493303

**10-24. CRANE WIRING HARNESS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B (2)	Operator must remain at crane controls while work is being done under boom.	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	LOCATION	ITEM	ACTION	REMARKS
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**a. Removal**

- |    |  |                              |   |   |
|----|--|------------------------------|---|---|
| 1. | Floodlight (1)                                 | Two connectors (2)           | Pull to disconnect.   |   |
| 2. | Three floodlight wire clamps (3)               | Screw (12)                   | Remove from each clamp (3).   |   |
| 3. |  | clamps (3)                   | a. Open, and remove floodlight wire (11).<br>b. Reinstall each clamp (3) to gondola (13) with screw (12). | For storage.                            |
| 4. |  | Floodlight wire (11 )        | Insert through hole in crane side plate (4).  | Wire (11) should hang loose under boom. |
| 5. | Oil reservoir floodlight (7)                   | Two connectors (6)           | Pull to disconnect.   |   |
| 6. | Three oil reservoir floodlight wire clamps (9) | Screw (5)                    | Remove from each clamp (9).   |   |
| 7. |  | Clamps (9)                   | a. Open, and remove floodlight wire (8).<br>b. Reinstall clamps (9).                                      | For storage.                            |
| 8. |  | Oil tank floodlight wire (8) | Insert through hole in crane side plate (10).   | Wire (8) should hang loose under boom.  |

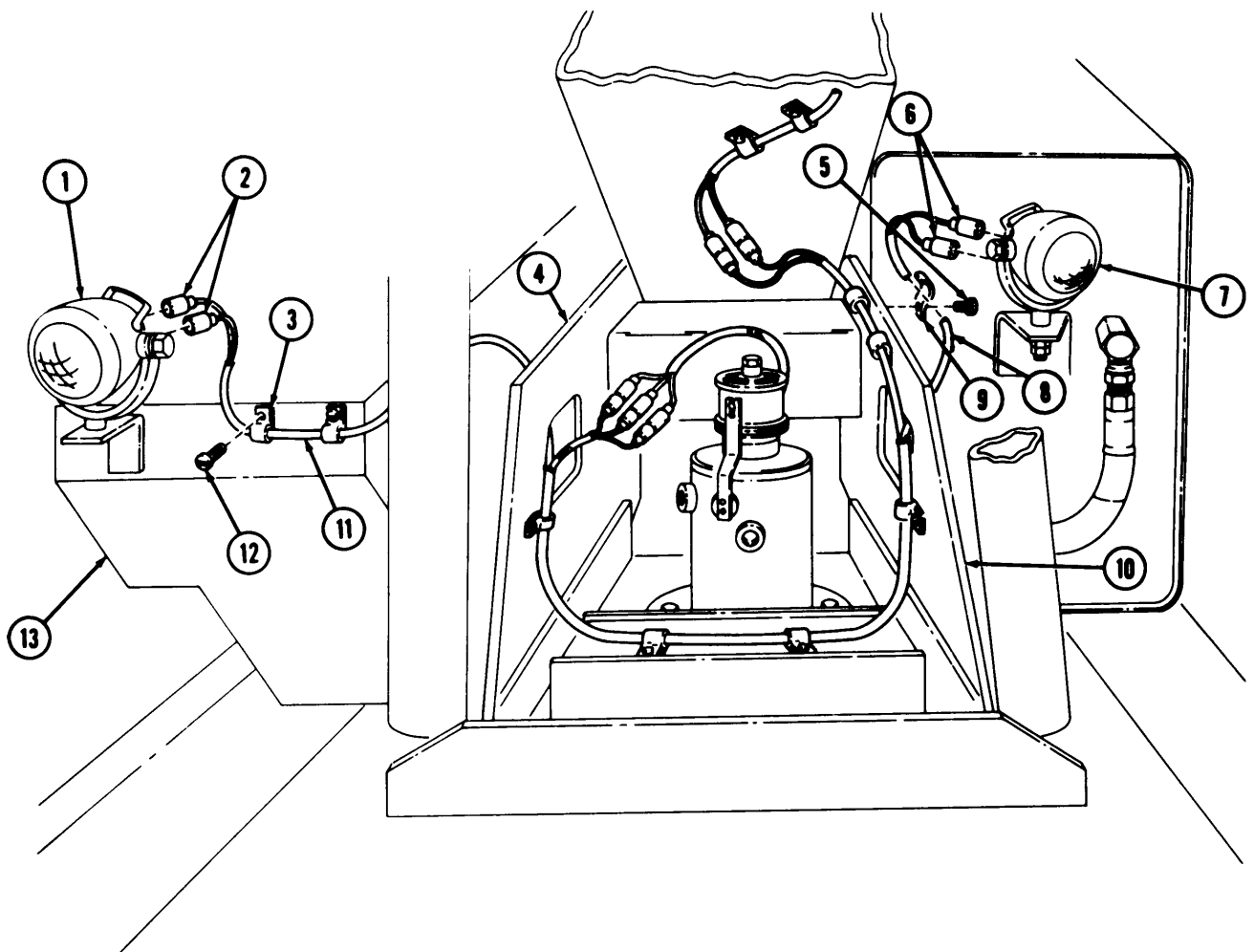
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**10-24. CRANE WIRING HARNESS REPLACEMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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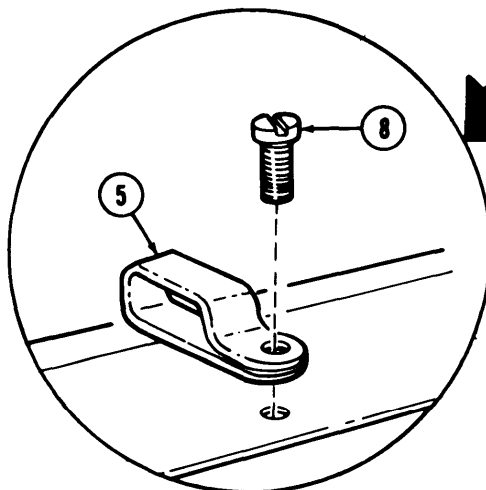
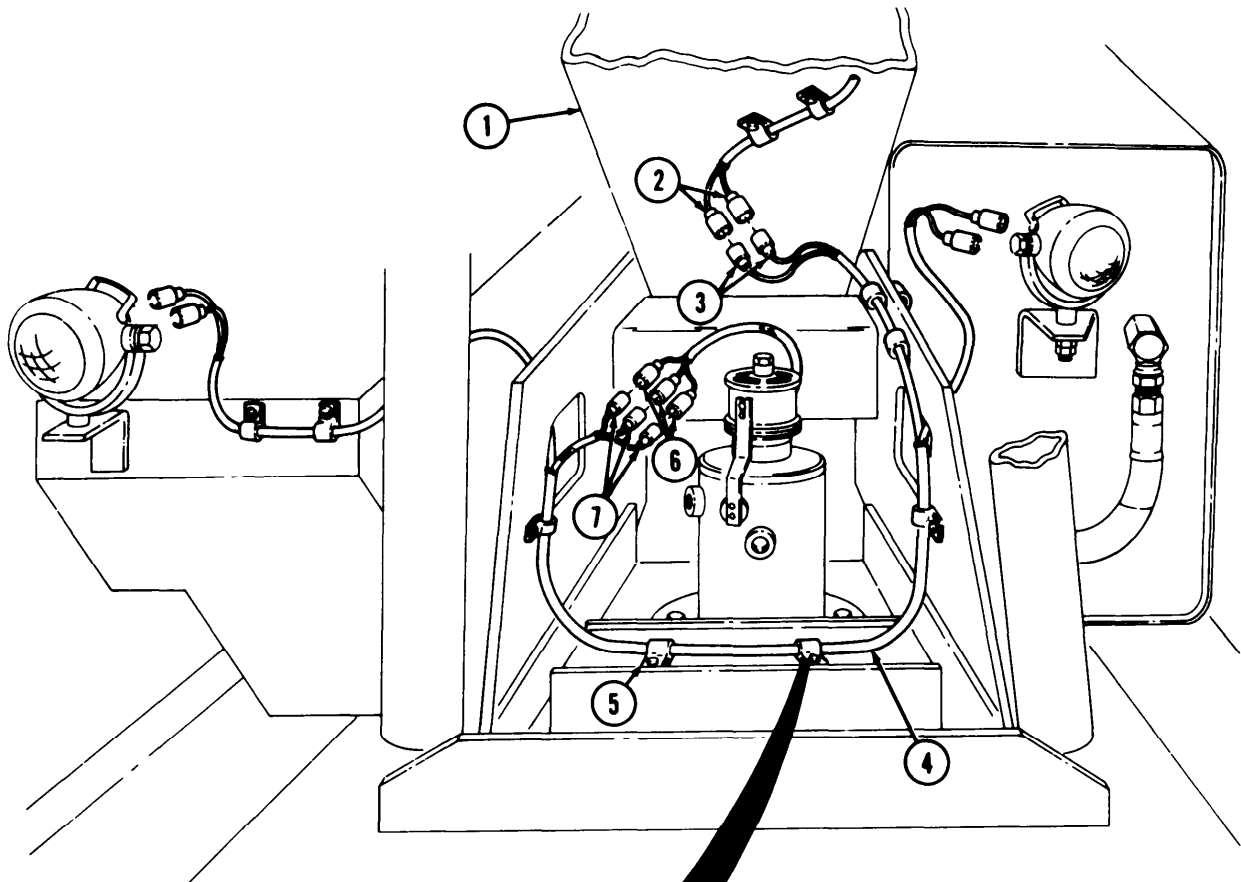


<b>10-24. CRANE WIRING HARNESS REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<p style="text-align: center;"><b>NOTE</b></p> <p>Assistant will operate crane. Mechanic will continue removal procedure.</p>				
9.		Boom (1)	Raise to about 45 degree angle.	To allow access to clamps (5) on under-side of boom (1).  Refer to operator's manual TM 9-2320-272-10.
<p style="text-align: center;"><b><u>WARNING</u></b></p> <p>Assistant must stay with crane control until floodlight wiring harness removal is completed. Never leave crane control unattended while work is being done between the raised boom and swivel base. Failure to do this may cause injury to personnel.</p>				
10.	Floodlight wire connectors (2)	Two connectors (3)	Disconnect.	Refer to paragraph 10-23 for boom floodlight wire removal and installation.
11.	Six crane wiring harness clamps (5)	Screws (8)	Remove from each clamp (5).	One clamp (5) on left side plate, three on right side plate, and two on vehicle bed.
12.		clamps (5)	a. Open, and remove wiring harness (4). b. Reinstall clamps (5). For storage.	
13.	Swivel connectors (6)	Three connectors (7)	Disconnect.	
14.		Crane wiring harness (4)	Remove.	

# 10-24. CRANE WIRING HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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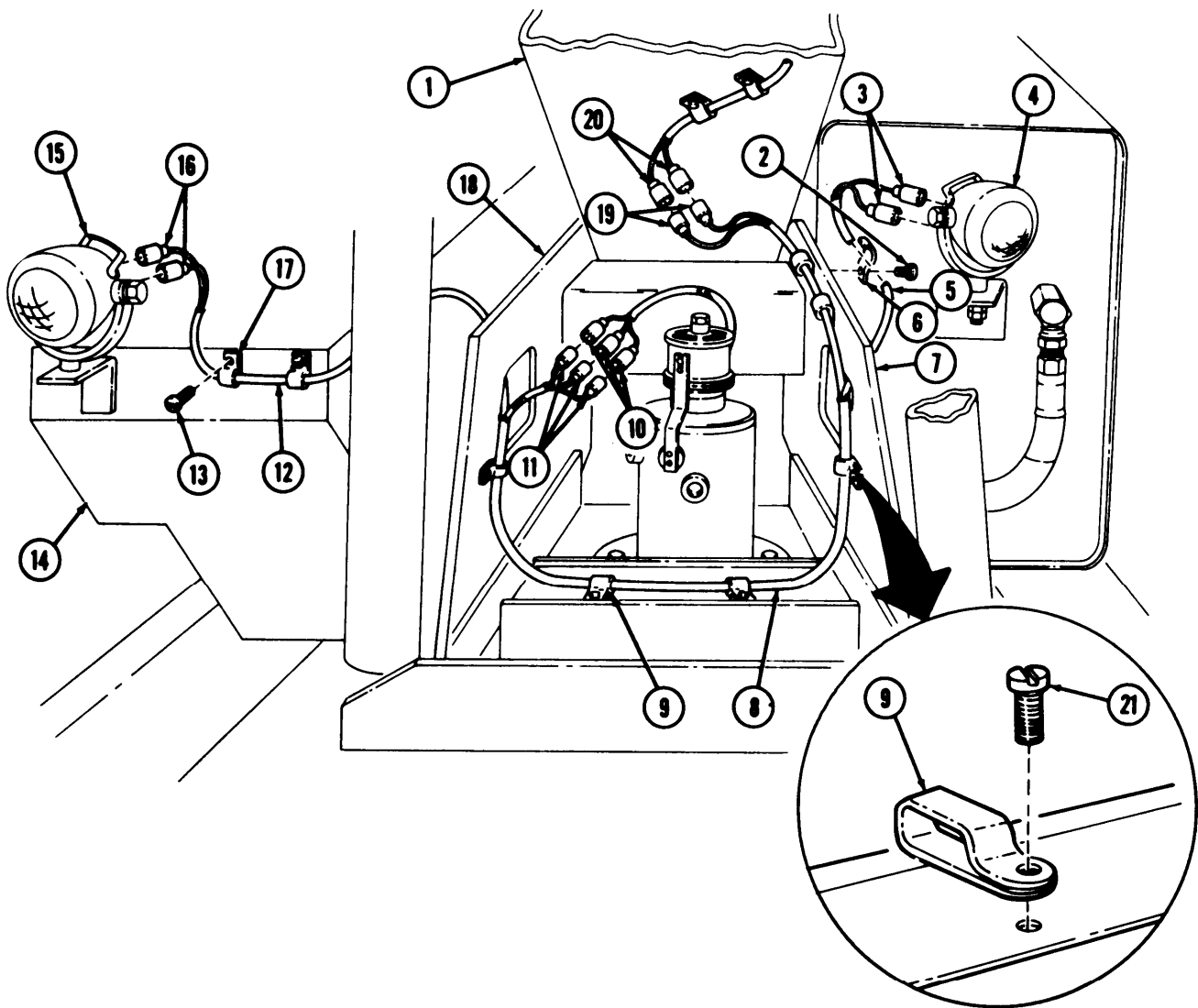
## 10-24. CRANE WIRING HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
15.		Crane wiring harness (8)	Place on vehicle between crane turntable side plates (18) and (7).	
16.		Floodlight wire (12)	Thread through hole in crane turntable side plate (18).	
17.		Two floodlight connectors (16)	Connect to rear of floodlight (15).	
18.	Three floodlight clamps (17)	Screw (13)	Remove from each clamp (17).	
19.		Three clamps (17)	a. Open, and install floodlight lead wire (12). b. Install on gondola (14) with three screws (13).	
20.	Under boom (1)	Oil reservoir floodlight wire (5)	Thread through hole in turntable side plate (7).	
21.		Two connectors (3)	Connect to rear of oil reservoir floodlight (4).	
22.	Oil reservoir floodlight wire clamps (6)	Screw (2)	Remove from each clamp (6).	
23.		Clamps (6)	Open, and install oil reservoir floodlight wire (5).	
24.	Under boom (1)	Two connectors (19)	Connect to boom floodlight wire connectors (20).	
25.	Six crane wiring harness clamps (9)	Screws (21)	Remove from each clamp (9).	Three clamps (9) on side plate (7), one on side plate (18), two on vehicle bed.



# 10-24. CRANE WIRING HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
26.	Under boom (1)	Clamps (9)	a Open, and install wiring harness (8). b. Install on boom side plates (7) and (18), and vehicle bed with screws (21).	
27.		Three connectors (11)	Connect to swivel connectors (10).	



END OF TASK!

FOLLOW-ON TASKS

- Check boom floodlight for proper operation (TM 9-2320-272-10).
- Lower boom and secure for travel (TM 9-2320-272-10).

TA 349304

## 10-25. WRECKER CRANE HYDRAULIC HOSE AND TUBE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 TM 9-2320-272-10 LO 9-2320-272-12	Parking brake set. Shipper brace in travel position. Drain hydraulic oil reservoir.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Six locknuts Protective cap plugs (Appendix D, Item 5)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

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

#### NOTE

Tag all hoses and tubes for proper installation.

- |    |                    |  |         |   |
|----|--------------------|--|---------|---|
| 1. | Crane wrecker body | Six locknuts (5), hoses (7), tubes (1), and six clamps (2) | Remove. | Discard locknuts (5). Bracket (3) and screw (4) remain attached to wrecker. |
|----|--------------------|--|---------|---|

#### CAUTION

When disconnecting hydraulic lines and hoses, plug all openings to prevent dirt from entering and causing internal parts damage.

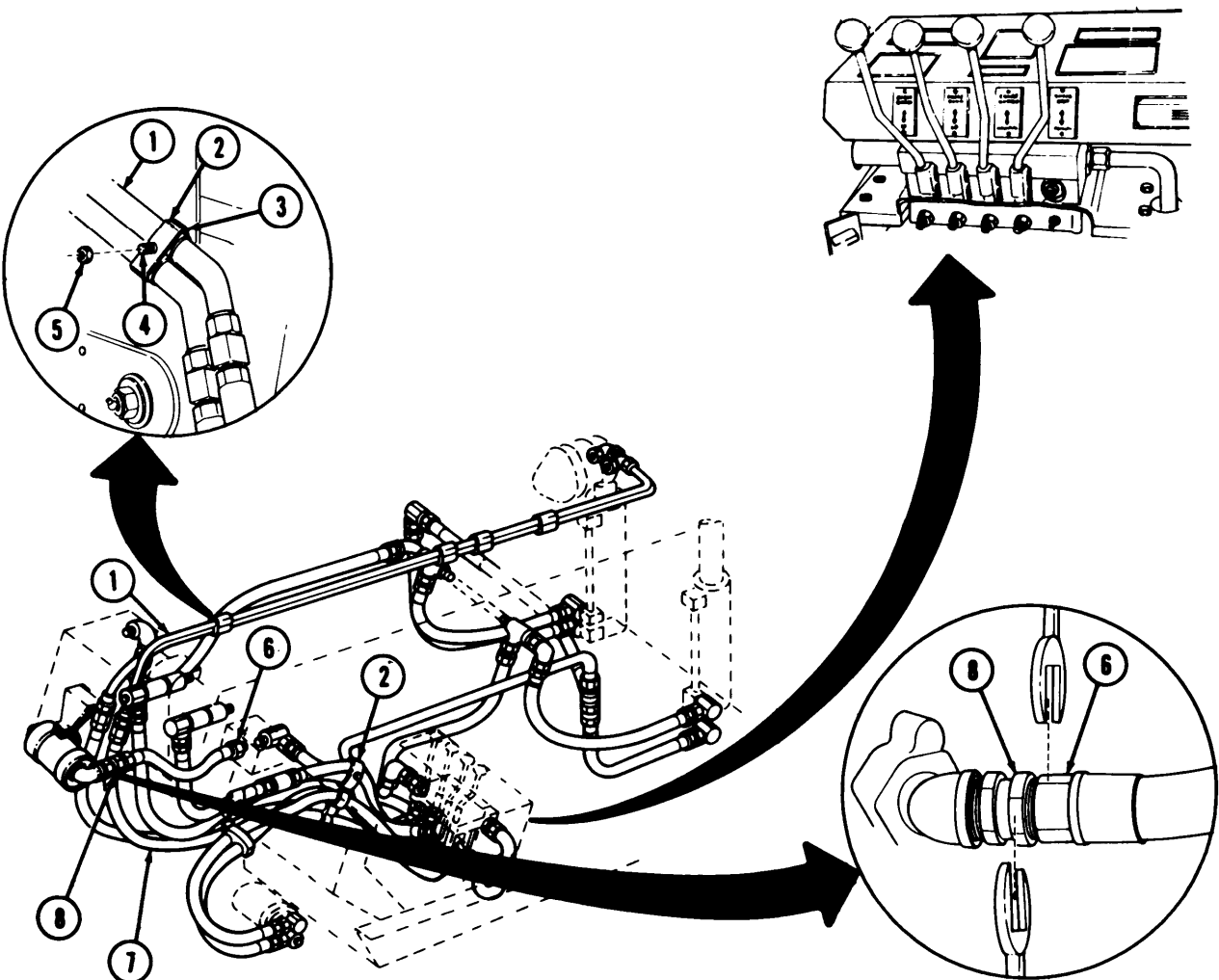
#### NOTE

Do not twist hose during removal. Do not attempt removal or installation with only one wrench. Have drainage container ready to catch oil.

- Hose fitting ends connected by a single hexagonal nut cannot be disconnected until the flare nut connection at the opposite end is removed. The entire hose must be free to turn whenever removing hose connected by a single hexagonal nut.

# 10-25. WRECKER CRANE HYDRAULIC HOSE AND TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
2.		Fourteen hoses (7) and two tubes (1)	<p>a. Position wrench over hexagonal fitting (6).</p> <p>b. Position wrench over flare nut (8) and unscrew flare nut (8).</p> <p>c. Disconnect.</p>	<p>Hold fitting (6) firmly in place.</p> <p>Turns counterclockwise to unscrew.</p> <p>Repeat procedure at opposite end of hose (7) and/or tube (1).</p>

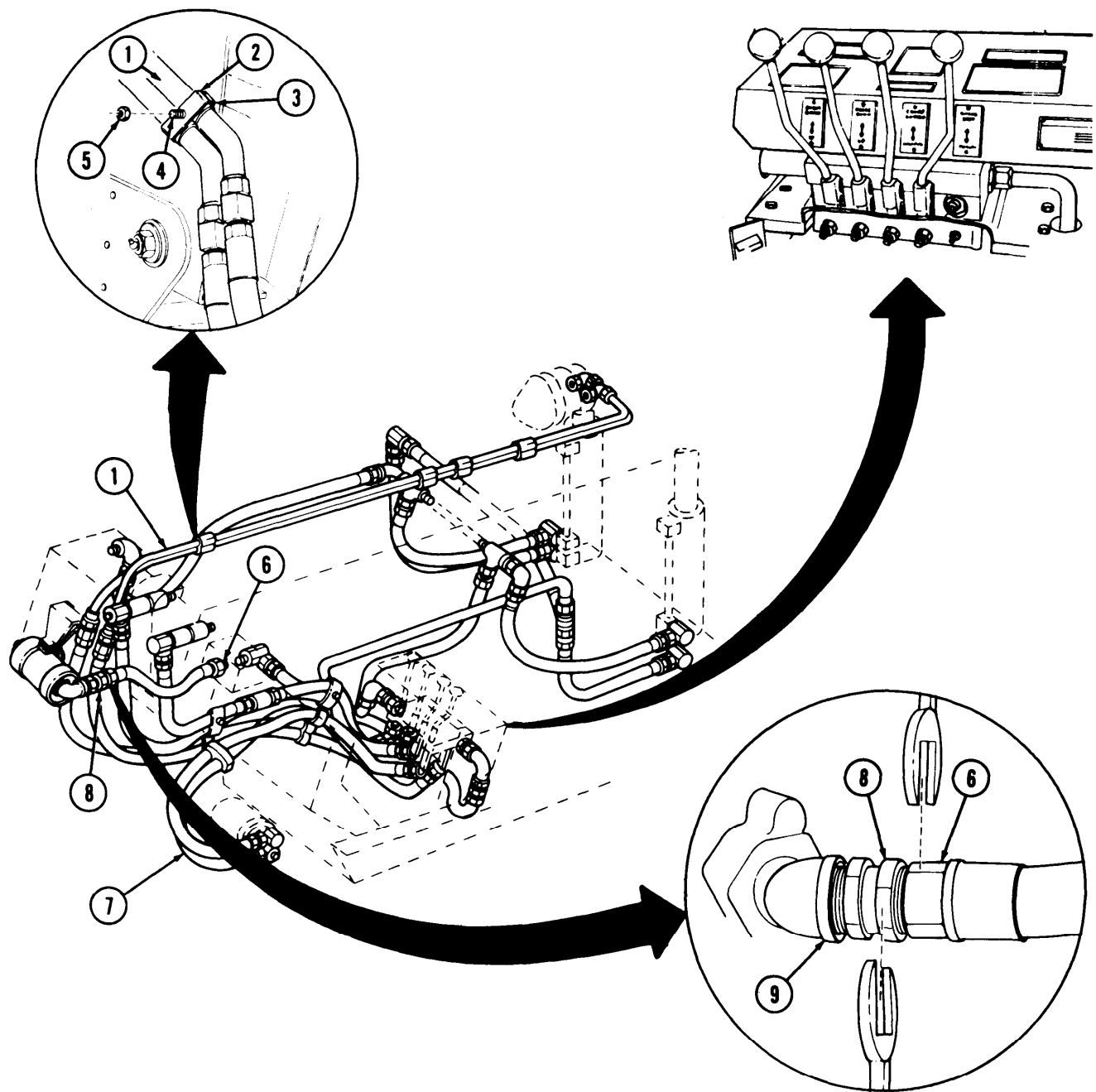


**10-25. WRECKER CRANE HYDRAULIC HOSE AND TUBE REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>b. Installation</b>				
<p style="text-align: center;"><b>CAUTION</b></p> <p>Make certain no particles of plugging become trapped in crane hydraulic system during installation of hosing/tubes. Failure to do this may result in damage to equipment.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Hose fitting ends connected by a single hexagonal nut must be connected before the flare nut connection at the opposite end is installed. The entire hose must be free to turn whenever installing hoses connected by a single hexagonal nut.</p>				
3.		Fourteen hoses (7) and two tubes (1)	a. Install on fittings (9). b. Position wrench over hexagonal nut (6). c. Position wrench over flare nut (8) and tighten clockwise.	Hold nut (6) firmly in place.
4.	Brackets (3)	Six clamps (2)	a. Install against hoses (7) and/or tubes (1) over screws (4). b. Install with new locknuts (5).	

10-25. WRECKER CRANE HYDRAULIC HOSE AND TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Fill hydraulic oil reservoir (LO 9-2320-272-12).

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**10-26. CRANE HYDRAULIC PUMP REPLACEMENT**


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This task covers:

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

M936

**Equipment  
Condition  
Reference**

TM 9-2320-272-10

LO 9-2320-272-12

**Condition Description**

Parking brake set.

Hydraulic oil reservoir drained,

**Test Equipment**

None

**Special Tools**

None

**Special Environmental Conditions**

None

**Materials/Parts**

Sixteen lockwashers

Two "O" rings

Protective cap-plugs (Appendix D, Item 5)

**Personnel Required**

Light-wheeled vehicle mechanic MOS 63B (2)

**General Safety Instructions**

None

**Manual References**

TM 9-2320-272-10

TM 9-2320-272-20P

LO 9-2320-272-12

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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal****CAUTION**

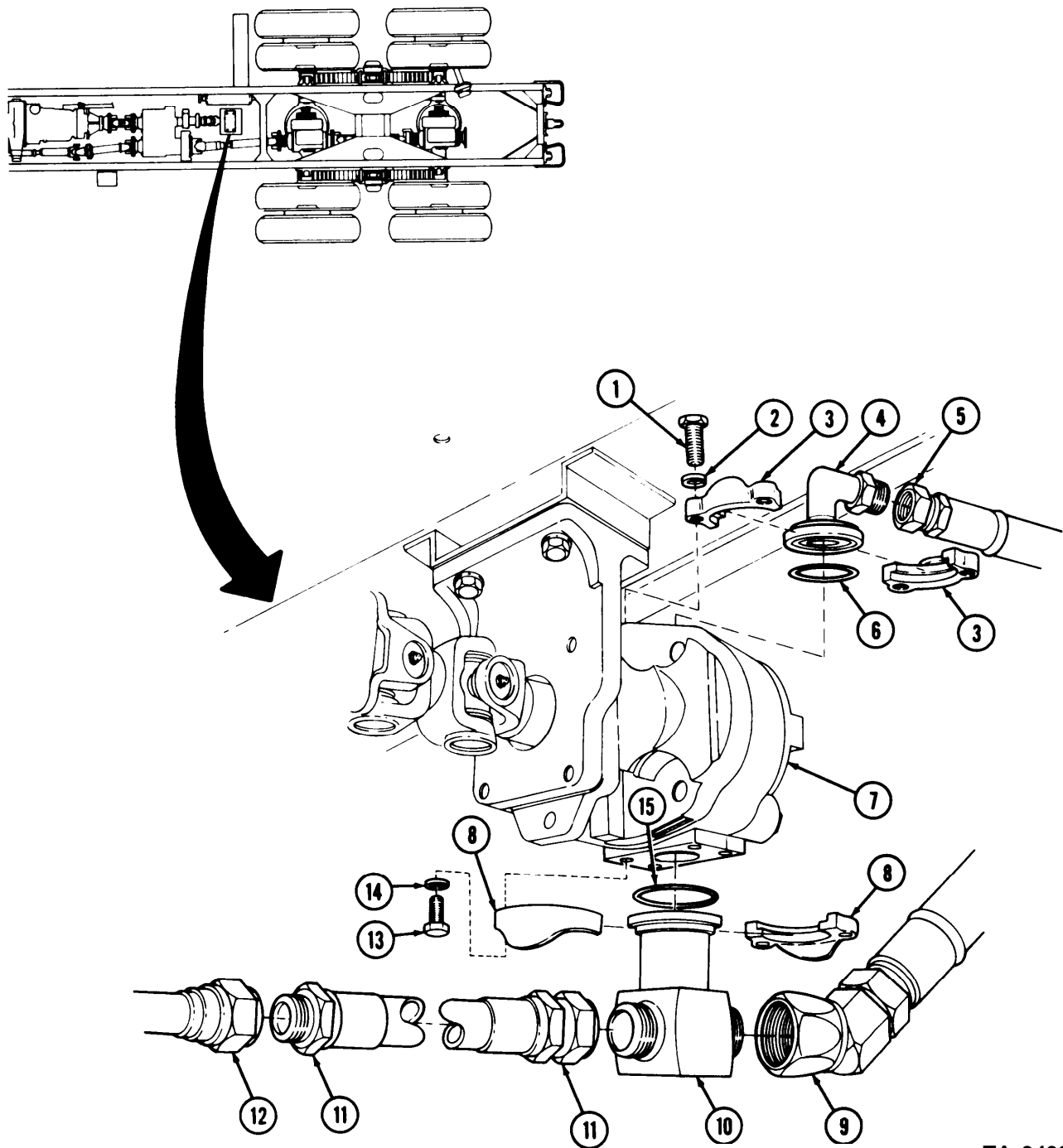
When disconnecting hydraulic lines and hoses, plug all openings to prevent dirt from entering and causing internal parts damage.

**NOTE**

Have drainage container ready to catch oil.

1.	Tube (12)	Hose(11)	Disconnect.	
2.	Inlet hose tee (10)	Two hoses (11) and (9)	Disconnect.	
3.	Crane hydraulic pump (7)	Four screws (13) and lockwashers (14), two split flanges (8), inlet hose tee (10), and "O" ring (15)	Remove.	Discard lockwashers (14) and "O" ring (15).
4.	Outlet hose adapter (4)	Hose (5)	Disconnect.	
5.	Crane hydraulic pump (7)	Four screws (1) and lockwashers (2), two split flanges (3), outlet hose adapter (4), and "O" ring (6)	Remove.	Discard lockwashers (2) and "O" ring (6).

10-26. CRANE HYDRAULIC PUMP REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



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**10-26. CRANE HYDRAULIC PUMP REPLACEMENT (Cont'd)**


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

ŽAssistant will help with step 6.

- Support needed when crane pump and mount are removed.

6.	Bracket (1)	Four screws (21) and lockwashers (22), mount (19), and crane pump (10)	Remove.	Discard lockwashers (22).
7.	Mount (19)	Four screws (9) and lockwashers (2), and crane pump (10)	Remove.	Discard lockwashers (2).

---

**b. Inspection**


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8.		Hydraulic crane pump (10)	Inspect for cracks and leaks.	Replace pump (10) if cracked or leaking oil.
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**c. Installation**


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9.		Hydraulic crane pump (10)	Install on mount (19) with four new lockwashers (2) and screws (9).	
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**NOTE**

ŽAssistant will help with step 10.

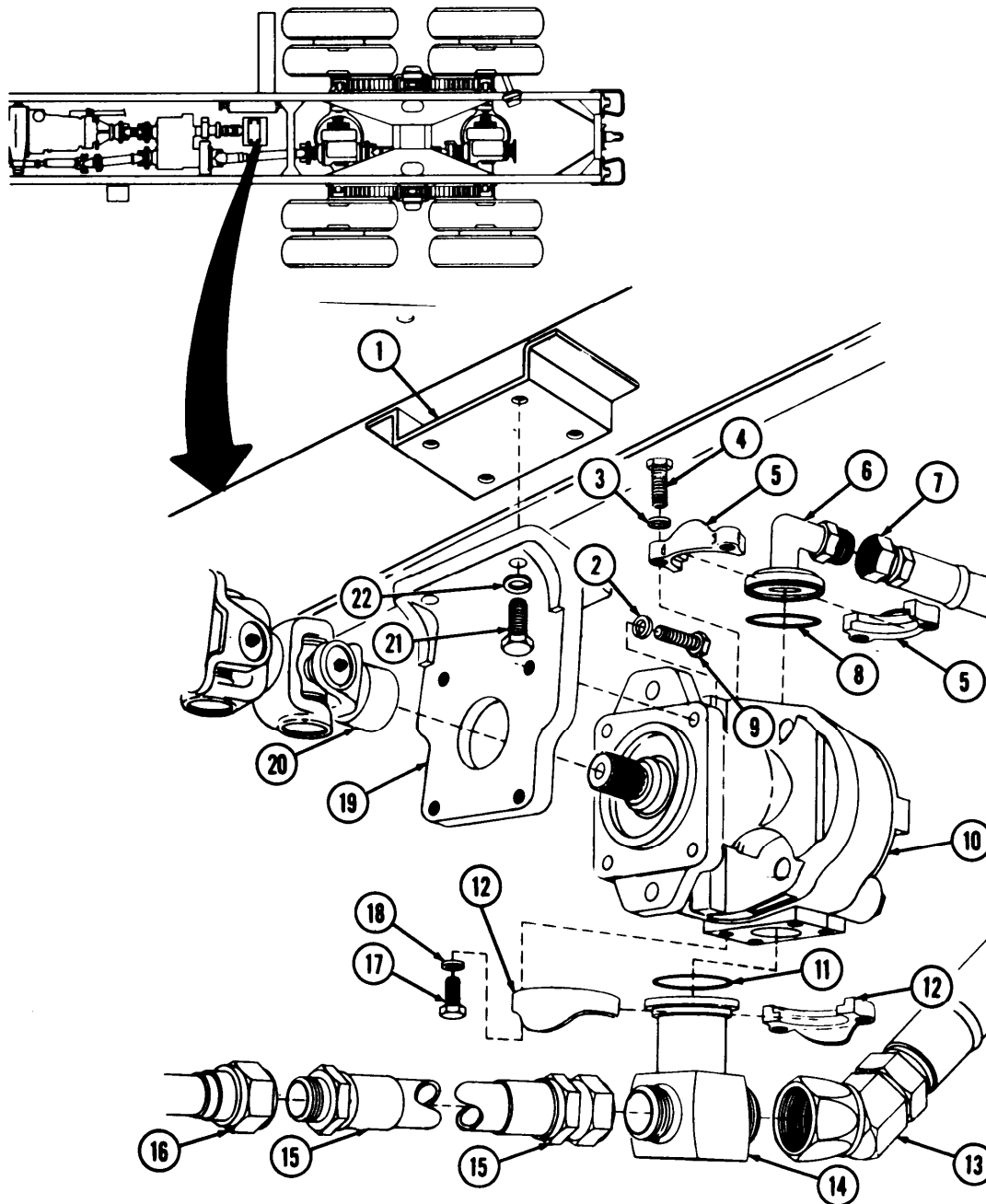
- Support needed when crane pump and mount are installed.

10.		Mount (19) and hydraulic crane pump (10)	Install on bracket (1) with four new lockwashers (22) and screws (21), and align on drive shaft hub (20),	
11.		New "O" ring (8), outlet hose adapter (6), and two split flanges (5)	Install on crane pump (10) with four new lockwashers (3) and screws (4).	Tighten 50-60 lb-ft (68-81 N·m).
12.		Hose (7)	Connect to adapter (6).	
13.		New "O" ring (11), inlet hose tee (14), and two split flanges (12)	Install on crane pump (10) with four new lockwashers (18) and screws (17).	Tighten 50-60 lb-ft (68-81 N·m).
14.		Hose (13)	Connect to inlet hose tee (14).	
15.		Hose (15)	Connect to inlet hose tee (14) and tube (16).	



## **10-26. CRANE HYDRAULIC PUMP REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

**FOLLOW-ON TASKS**

- Fill hydraulic reservoir (LO 9-2320-272-12).
- Check crane hydraulic pump for proper operation (TM 9-2320-272-10)

**TA 349310**

10-27. PRESSURE RELIEF VALVE MAINTENANCE

This task covers:		
a. Testing		b. Adjustment
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 LO 9-2320-272-12	Parking brake set. Boom secured in travel position.
<u>Test Equipment</u>		
Hydraulic pressure gage 3005456		
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Testing

1.	Crane gondola (1)	Five screws (2) and cover (3)	Remove.	
2.		Valve bank plug (4)	Remove.	
3.		Hydraulic pressure gage (5)	Install in hole for valve bank plug (4).	
4.		Vehicle	Start engine and engage crane hydraulic system.	Engine idle at 1250 rpm. Refer to TM 9-2320-272-10.
5.		Hydraulic pressure gage (5)	Observe that pressure setting is 1450 psi (9998 kPa) $\pm$ 50 psi (345 kPa).	

NOTE

If setting is correct, perform steps 8 and 9.

b. Adjustment

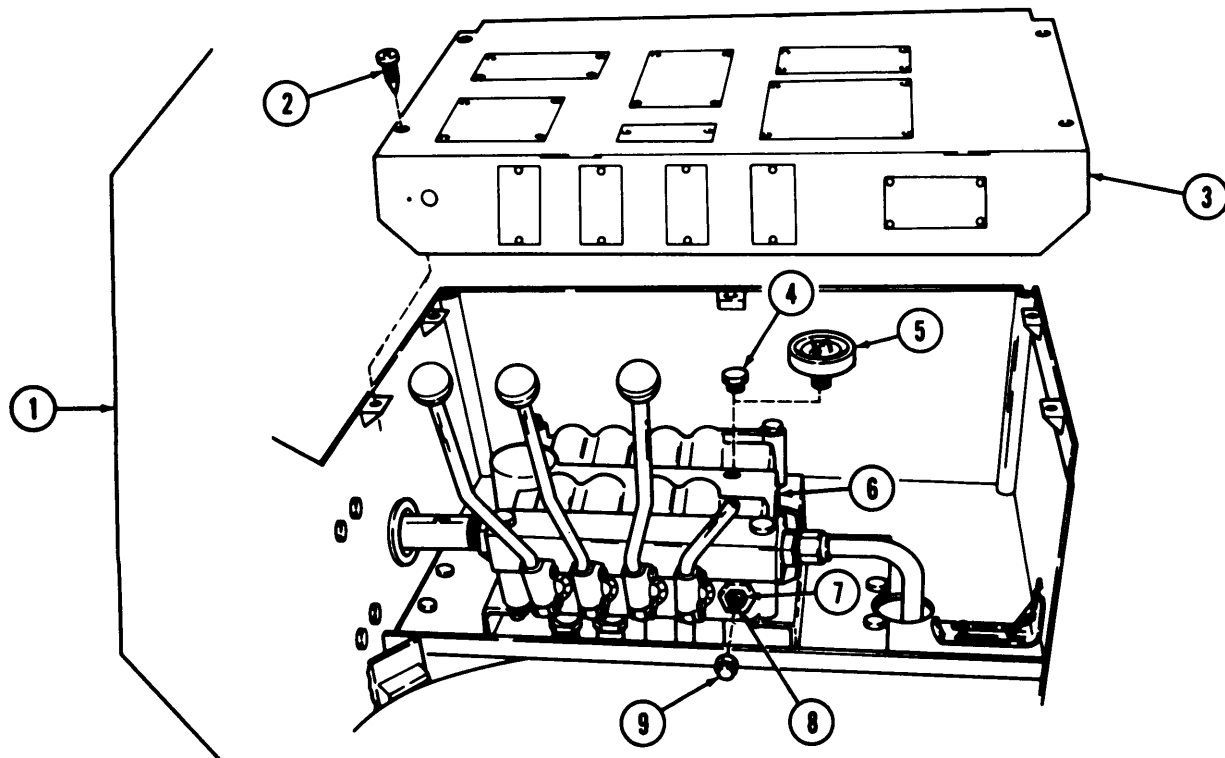
6.	Acorn nut (9)	Remove.	
7.	Adjusting screw (8)	a. Loosen jam nut (7), and turn to obtain correct valve psi.	Observe for 1450 psi (9998 kPa) $\pm$ 50 psi (345 kPa) as indicated by gage (5).

# 10-27. PRESSURE RELIEF VALVE MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			b. Hold in adjusted position with screwdriver and tighten jam nut (7).	
			c. Install acorn nut (9) and repeat step 5.	
8.	Valve bank (6)	Hydraulic pressure gage (5)	Remove.	
9.		Valve bank plug (4)	Install in valve bank (6).	

## NOTE

Notify DS maintenance if correct pressure reading cannot be obtained.



END OF TASK!

TA 349311

**10-28. SNUBBER VALVE ASSEMBLY REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10 TM 9-2320-272-10	Boom in DOWN position. Shipper braces in travel position.
<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>
Light-wheeled vehicle mechanic MOS 63B		Do not disassemble snubber valve assembly. Remove as one unit.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

- |    |                            |   |             |                           |
|----|----------------------------|---|-------------|---------------------------|
| 1. | Snubber valve assembly (2) | Lift cylinder to cross-<br>over tube hose (1) | Disconnect. | Refer to paragraph 10-25. |
|----|----------------------------|---|-------------|---------------------------|

**WARNING**

Remove and replace snubber valve and lift cylinder adapter cap as one assembly. Do not disconnect adapter cap from snubber valve. Valve and cap are locked together against spring tension. Improper removal of valve from adapter cap may cause injury to personnel.

- |    |                           |                            |                                       |                                  |
|----|---------------------------|----------------------------|---------------------------------------|----------------------------------|
| 2. | Lift cylinder fitting (4) | Snubber valve assembly (2) | Unscrew and remove.                   | Turn counterclockwise to remove. |
| 3. |                           | Plug (3)                   | Install in lift cylinder fitting (4). | To prevent excessive oil loss.   |

10-28. SNUBBER VALVE ASSEMBLY REPLACEMENT (Cont'd)

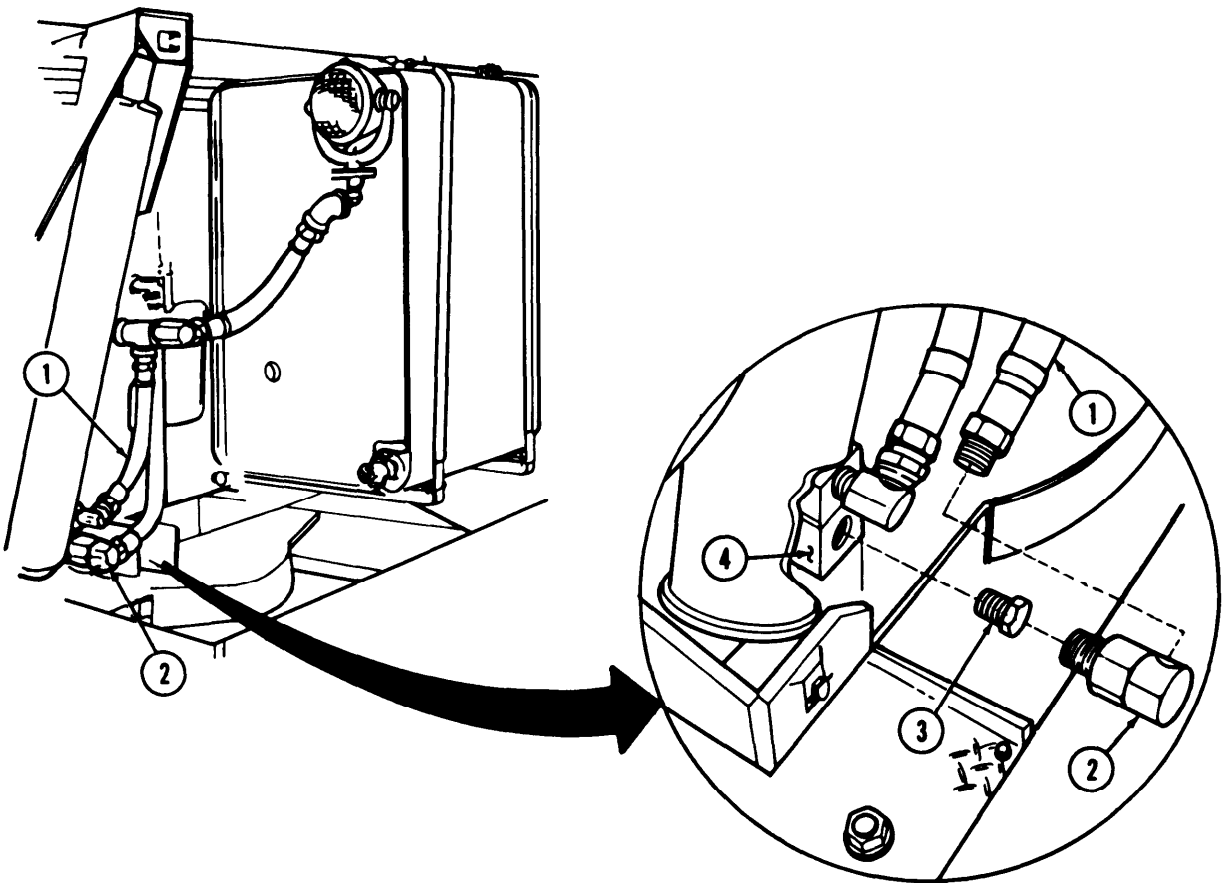
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

**CAUTION**

Make certain plug is removed from lift cylinder fitting before installation. Make certain no particles of plugging become trapped in lift cylinder hydraulic lines. Failure to do this may result in damage to equipment.

4.		Plug (3)	Remove from lift cylinder fitting (4).	
5.		Snubber valve assembly (2)	Screw into lift cylinder fitting (4) and tighten.	
6.		Lift cylinder to cross-over tube hose (1)	Connect to snubber valve assembly (2).	Refer to paragraph 10-25.



END OF TASK!

FOLLOW-ON TASK: Fill hydraulic oil reservoir (LO 9-2320-272- 12).

TA 349312

## 10-29. CRANE HYDRAULIC FILTER MAINTENANCE

This task covers:

- |                             |                 |
|-----------------------------|-----------------|
| a. Removal                  | c. Reassembly   |
| b. Disassembly and Cleaning | d. Installation |

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two "O" rings		
Piston ring seal		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		<ul style="list-style-type: none"> <li>• Wear eyeshields during removal and installation.</li> <li>• Keep fire extinguisher nearby when using dry cleaning solvent.</li> </ul>
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		
LO 9-2320-272-12		

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

#### WARNING

Hydraulic filter assembly is under great pressure and oil will spurt out from housing during removal and installation. Wear eyeshields during removal and installation of assembly. Failure to do this may cause injury to personnel.

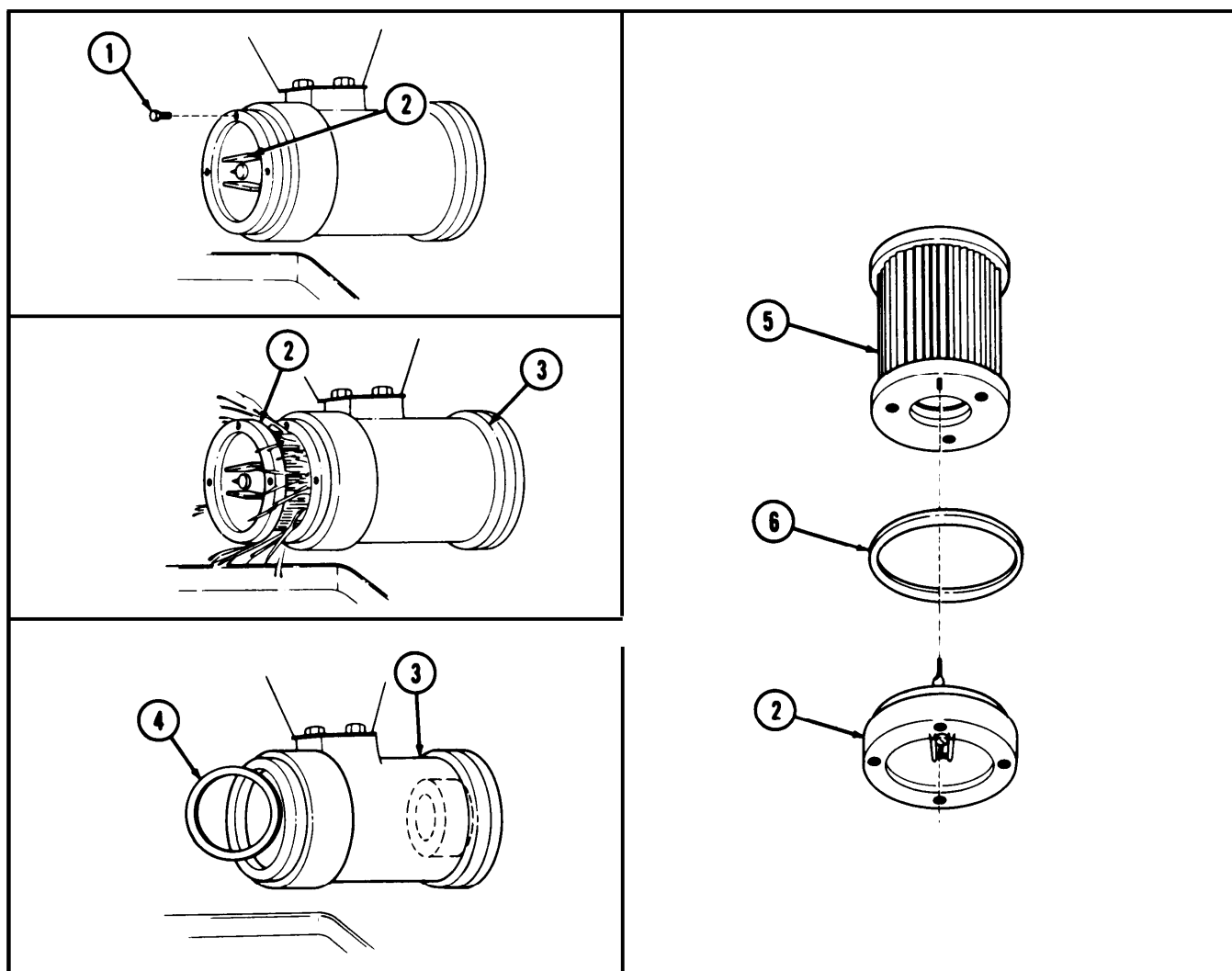
#### NOTE

- Mechanic must hold filter cover firmly in place while assistant removes screws. Cover and attached filter assembly must be pulled quickly from housing. A shutoff valve inside housing stops oil flow immediately after filter assembly is removed.
- Have drainage container ready to catch oil.

- |    |                            |                 |   |  |
|----|----------------------------|-----------------|---|--|
| 1. | Rear of filter housing (3) | Four screws (1) | a. Remove.                                  |  |
|    |                            |                 | b. Pull cover (2) quickly from housing (3). | Filter assembly (5) attached to cover (2). |

# 10-29. CRANE HYDRAULIC FILTER MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
2.	Inside rear of falter housing (3)	"O" ring (4)	Remove.	If necessary, dislodge "O" ring (4) from seat. Discard "O" ring (4).
<b>b. Disassembly and Cleaning</b>				
3.	Vehicle	Filter assembly (5)	a. Position cover (2) on a flat surface. b. Pull falter assembly (5) straight up to separate assembly (5) from cover (2). c. Remove "O" ring (6) from cover (2).	Discard "O" ring (6).



TA 349313

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**10-29. CRANE HYDRAULIC FILTER MAINTENANCE (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
4.	Filter element (4)	Three screws (2) and rear cap (1)	Remove.	
5.		Front cap (8) and piston ring seal (7)	Remove.	Discard piston ring seal (7).
6.		Filter element (4)	Pull from metal shroud (5).	

---

**WARNING**


---

Drycleaning solvent is flammable and will not be used near open flame. Use only in well-ventilated places. Failure to do this may cause injury to personnel.

**NOTE**

Inspect for cracks, holes, and excessive wear during cleaning operation. Replace damaged components.

7.	Filter assembly (9) components	Cover (12), rear cap (1), screws (2), filter element (4), front cap (8), and metal shroud (5).	a. Wash in drycleaning solvent. b. Blow dry with compressed air.	
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**c. Reassembly**

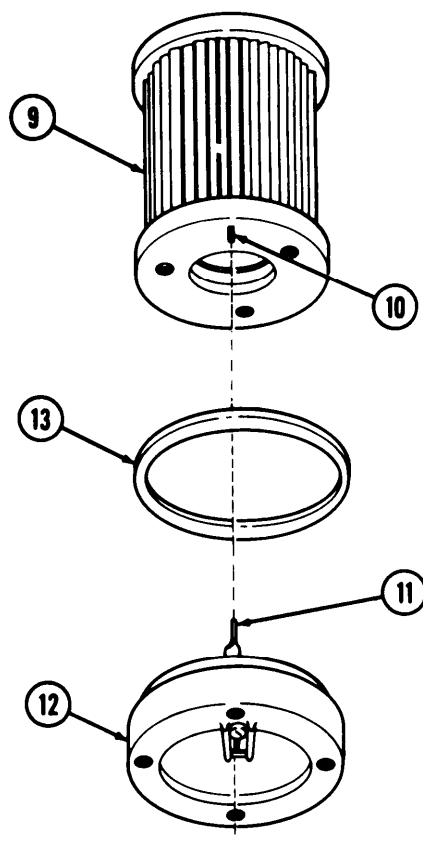
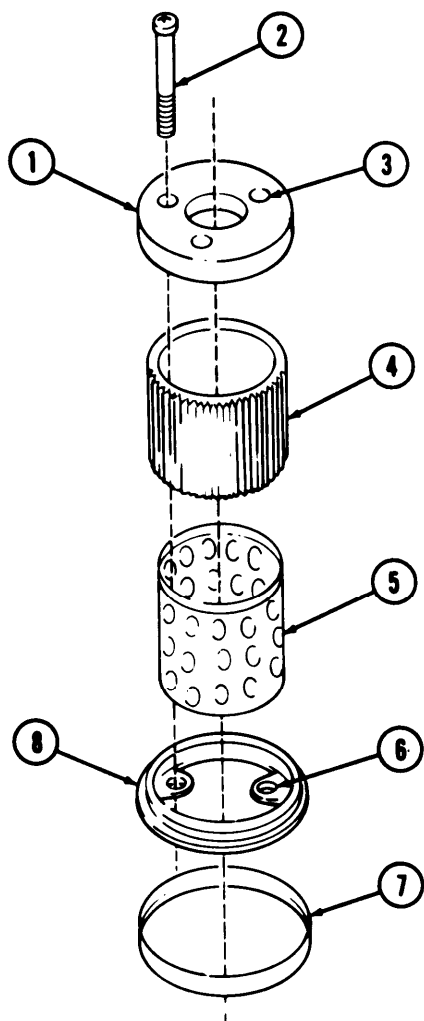

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8.		Filter element (4)	Install over metal shroud (5).	
9.		New ring seal (7)	Install in cap (8) and position cap (8) on filter element (4).	
10.		Rear cap (1)	a. Position on opposite end of filter (4) with screw holes (3) and (6) aligned. b. Install with three screws (2).	
11.		Cover (12)	Install new "O" ring (13).	
12.		Filter assembly (9) and cover (12)	a. Position cover (12) on flat surface. b. Align spiral key (11) of inside cover (12) with slot (10) on rear cap (1). c. Lower filter assembly (9) into position.	Spiral key (11) inserted into slot (10).



# 10-29. CRANE HYDRAULIC FILTER MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**10-29. CRANE HYDRAULIC FILTER MAINTENANCE (Cont'd)**


---

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>d. Installation</b>				
13.		New "O" ring (1)	a. Install sideways in filter housing (2). b. Rotate and seat into position when ring (1) contacts rear of housing (2).	To avoid tripping oil shutoff valve.

---

**WARNING**


---

Hydraulic filter assembly is under great pressure and oil will spurt out from housing during installation. Wear eyeshields during removal and installation of assembly. Failure to do this may cause injury to personnel.

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**CAUTION**


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- Indicator must be level and on the right side of housing during installation. Assembly will not seat if indicator is improperly positioned.

Do not reuse hydraulic oil from drainage container. Damage to equipment may result if drain oil is used,

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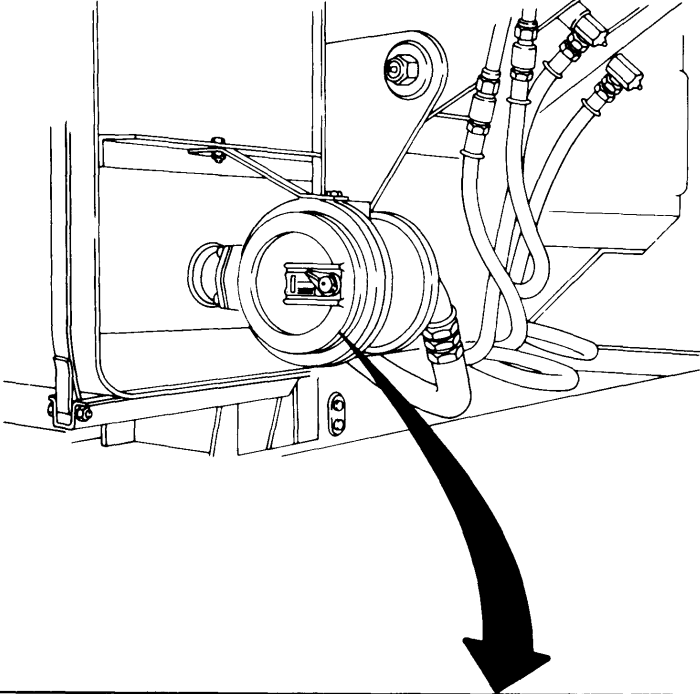
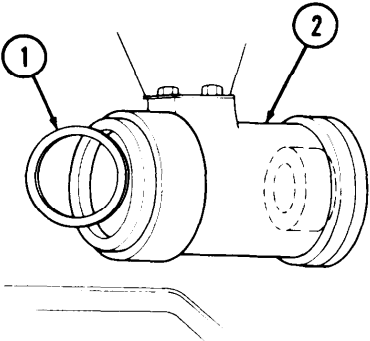
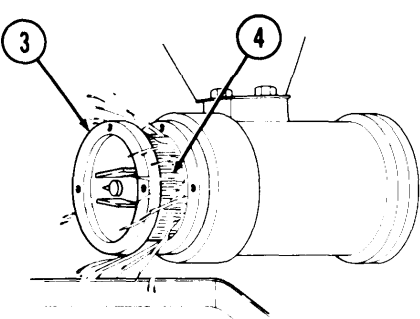
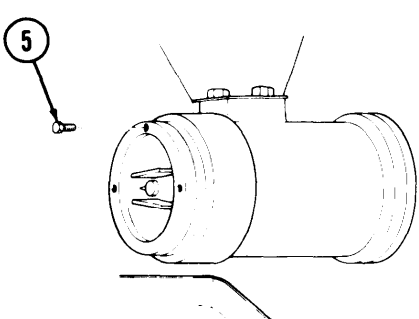
**NOTE**


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Mechanic must seat filter assembly quickly and hold assembly firmly in position while assistant installs screws.

14.		Cover (3) and filter assembly (4)	a. Position just inside opening of housing (2). b. Push quickly and firmly into housing (2) and install with four screws (5).	
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10-29. CRANE HYDRAULIC FILTER MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				
				
				

END OF TASK!

FOLLOW-ON TASK: Fill hydraulic oil reservoir (LO 9-2320-272-12).

10-29.1. FORWARD DECK PLATE REPLACEMENT

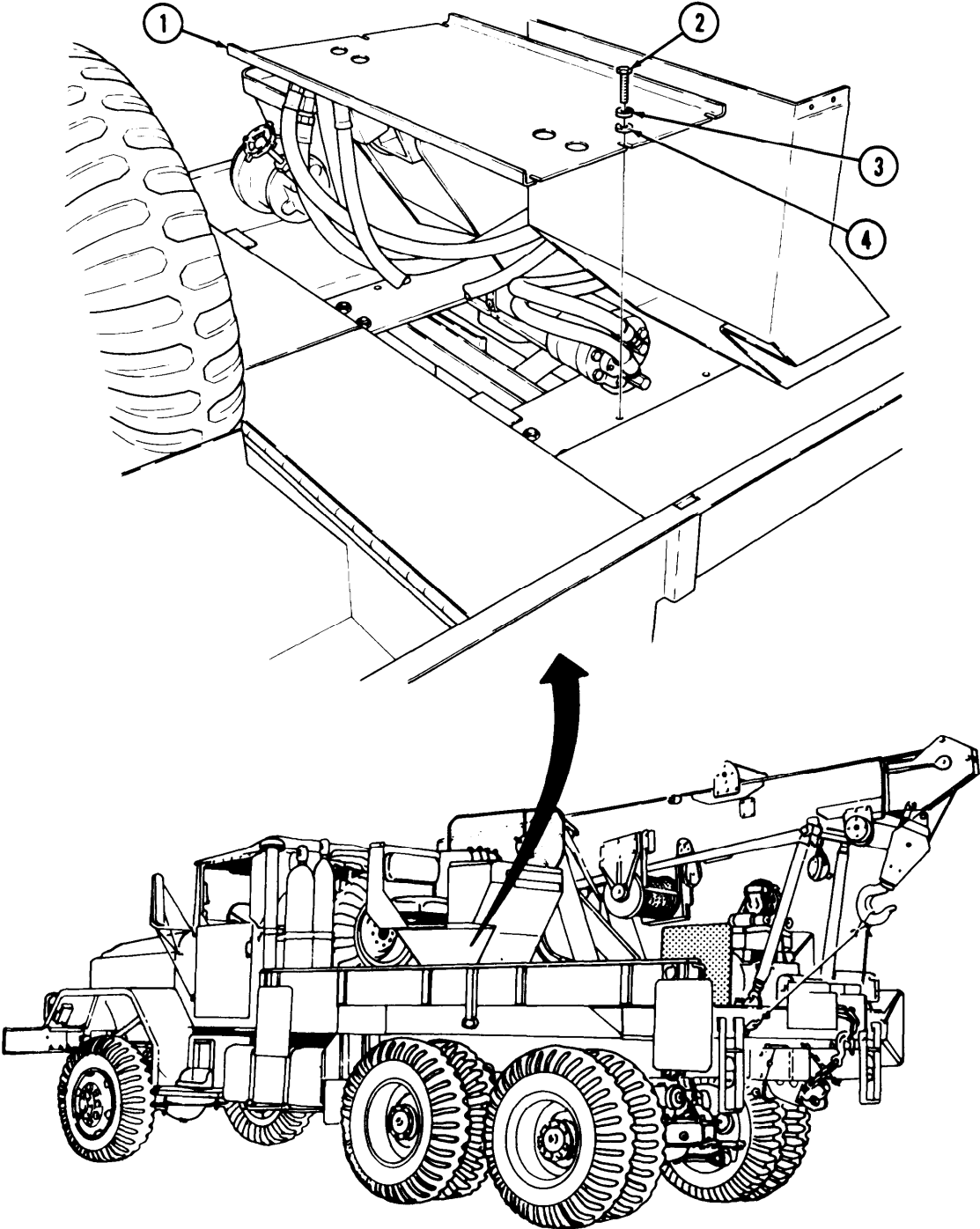
This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tool</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Six lockwashers		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-20P		
TM 9-2320-272-10		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
a. Removal				
1.	Forward deck plate (1)	Six screws (2), lockwashers (3), and washers (4)	Remove.	Discard lockwashers (3).
b. Installation				
2.		Forward deck plate (1)	Position in place and install with six screws (2), new lockwashers (3), and washers (4).	

# 10-29.1. FORWARD DECK PLATE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				

END OF TASK!

**10-30. TRANSFER PTO TO HYDRAULIC PUMP PROPELLER SHAFT REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>	<u>General Safety Instructions</u>	
Eight lockwashers		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63D		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

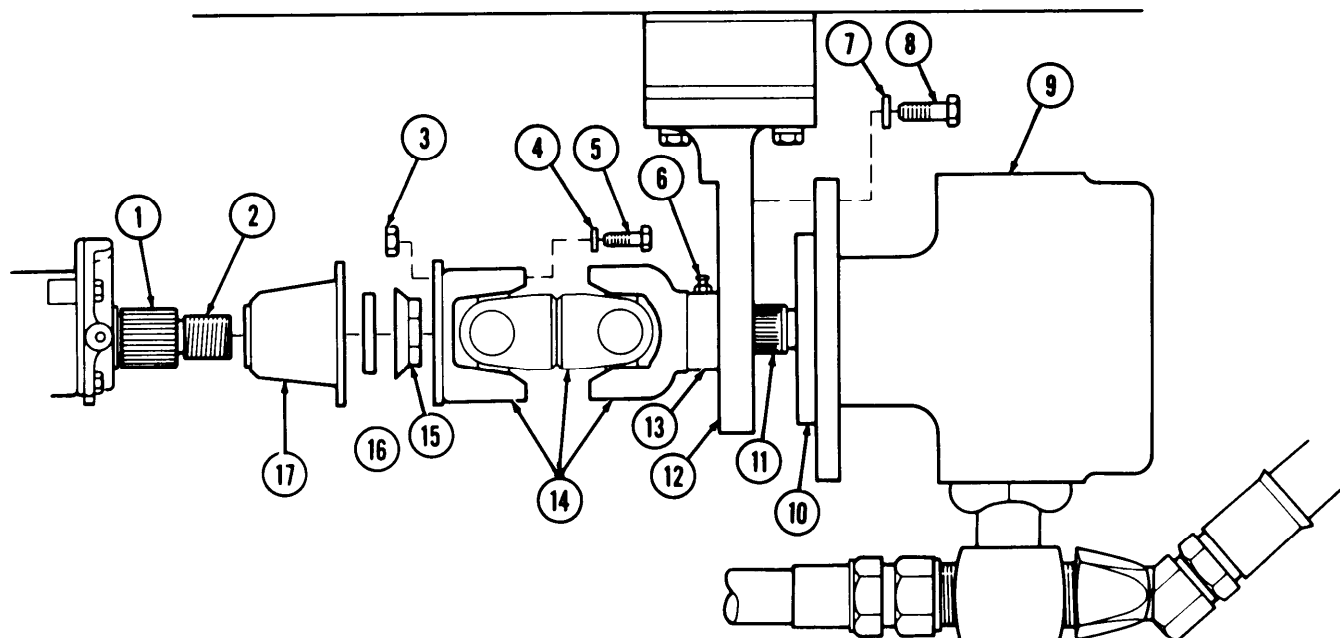
Transfer PTO to crane hydraulic pump propeller shaft and adapter come assembled as one unit, but the adapter must be removed and installed separately.

**a. Removal**

- |    |   |  |   |   |
|----|---|--|---|---|
| 1. | Propeller shaft adapter (17) and propeller shaft (14) | Four screws (5), lockwashers (4), and nuts (3) | Remove.   | Discard lockwashers (4).  |
| 2. | Crane hydraulic pump (9)                              | Four screws (8) and lockwashers (7)            | Remove.   | Discard lockwashers (7).  |
| 3. |   | Crane hydraulic pump (9)                       | Slide to rear.                                    | Make sure propeller shaft lube fitting (6) is on top.<br>Move pump (9) to rear until pump boss (10) clears foot-mount (12). |
| 4. |   | Propeller shaft (14)                           | Slide off pump shaft (11).                        | Slightly lower support under pump (9) until propeller shaft (14) is free.   |
| 5. | Transfer PTO shaft (2)                                | Nut (15) and washer (16)                       | Remove, and slide adapter (17) off PTO shaft (1). |   |

# 10-30. TRANSFER PTO TO HYDRAULIC PUMP PROPELLER SHAFT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
6.		Adapter (17)	Install with washer (16) and nut (15) on PTO shaft (1).	
7.		Propeller shaft (14)	Install on pump shaft (11).	Raise pump (9) to allow rear hub of propeller shaft (13) to slide on pump shaft (11).
8.		Propeller shaft (14)	Install on adapter (17) with four screws (5), new lockwashers (4), and nuts (3).	
9.		Hydraulic pump (9)	Install in foot-mount (12) with four screws (8) and new lock-washers (7).	Tighten screws 32-40 lb-ft (43-54 N-m).



END OF TASK!

FOLLOW-ON TASK: Check operation of crane hydraulic system (TM 9-2320-272-10).

TA 349316

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**10-31. FLOODLIGHT SEALED BEAM LAMP AND DOOR (M936) REPLACEMENT**

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For floodlight sealed beam lamp and door (M936) replacement, refer to paragraph 4-35.

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**10-32. FLOODLIGHT (M936) MAINTENANCE**

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For floodlight (M936) maintenance refer to paragraph 4-36.

---

**10-33. FLOODLIGHT ELECTRICAL CONNECTOR REPLACEMENT**

---

For floodlight electrical connector replacement, refer to paragraph 4-36.

---

**10-34. FLOODLIGHT SWITCH REPLACEMENT**

---

For floodlight switch replacement, refer to paragraph 4-36.

---

**10-35. FLOODLIGHT HOUSING TO BRACKET MOUNTING BOLT AND GROMMET REPLACEMENT**

---

For floodlight housing to bracket mounting bolt and grommet replacement, refer to paragraph 4-36.

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**10-36. FLOODLIGHT CONTROL SWITCH (M936) MAINTENANCE**

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For floodlight control switch (M936) maintenance, refer to paragraph 4-37.



### Section III. TRACTOR BODY

#### **10-37. GENERAL**

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

#### **10-38. TRACTOR BODY MAINTENANCE TASK SUMMARY**

<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
10-39.	Tractor Spare Tire Carrier Toolbox Replacement	10-96
10-40.	Tractor Fifth Wheel Replacement	10-98
10-41.	Fifth Wheel Approach Plates Replacement	10-100
10-42.	Fifth Wheel Deck Plate Replacement	10-102
10-43.	Fifth Wheel Spacers Replacement	10-104
10-44.	Tractor Spare Tire Carrier Replacement	10-106
10-44.1.	Tractor Spare Tire Carrier (M939A1 Series) Replacement	10-108.2
10-45.	Tractor Spare Tire Carrier Access Step Replacement	10-110

**10-39. TRACTOR SPARE TIRE CARRIER TOOLBOX REPLACEMENT**

This task covers:

a. Removal

b. Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931, M932	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Seven locknuts		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B (2)	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

- Make sure toolbox is empty before starting procedure.
- Assistant will help with step 1.

1.	Base of toolbox (3)	Six screws (4), washers (5), and locknuts (7)	Remove.	Discard locknuts (7).
2.	Boom support bracket (1) to toolbox (3)	Screw (8) and locknut (2)	Remove.	Discard locknut (2).
3.		Toolbox (3)	Remove.	

**b. Installation****NOTE**

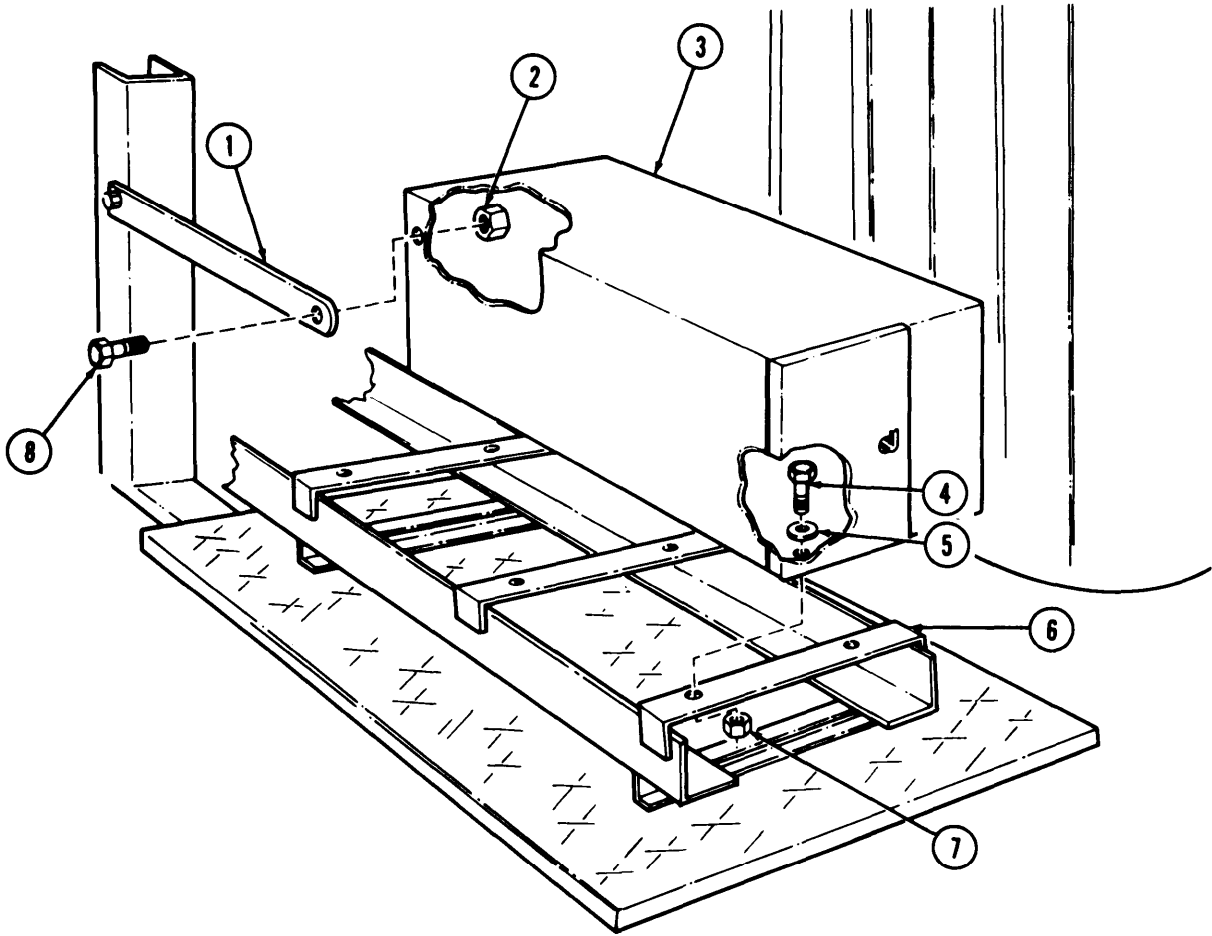
Assistant will help with step 4.

4.	Toolbox (3)	a. Position over carrier base (6) with holes aligned. b. Install on carrier base (6) with six screws (4), washers (5), and new locknuts (7).		
----	-------------	---	--	--

10-39. TRACTOR SPARE TIRE CARRIER TOOLBOX REPLACEMENT (Cont'd)

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

c. Install on boom support bracket (1) with screw (8) and new locknut (2).



END OF TASK!

**10-40. TRACTOR FIFTH WHEEL REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931, M932	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Ten lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		All personnel must stand clear during hoisting operations.
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		
LO 9-2320-272-12		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |                   |                                    |   |  |
|----|-------------------|------------------------------------|---|--|
| 1. | Fifth wheel (3)   | Ten screws (9) and lockwashers (8) | Remove.   | Discard lockwashers (8),   |
| 2. | Utility chain (2) |                                    | a. Attach link ends (4) to fifth wheel (3) with two screws (6), four washers (5), and two nuts (1).<br>b. Attach to lifting device. | Make sure one washer (5) is between fifth wheel (3) and head of screw (6), and other washer (5) is between chain link (4) and nut (1). |

**WARNING**

**All personnel must stand clear during hoisting operations. A shifting or swinging load may cause injury to personnel.**

**NOTE**

Assistant will help with step 3.

- |    |                 |  |
|----|-----------------|--|
| 3. | Fifth wheel (3) | Raise from base supports (7) and lift away from vehicle. |
|----|-----------------|--|

# 10-40. TRACTOR FIFTH WHEEL REPLACEMENT (Cont'd)

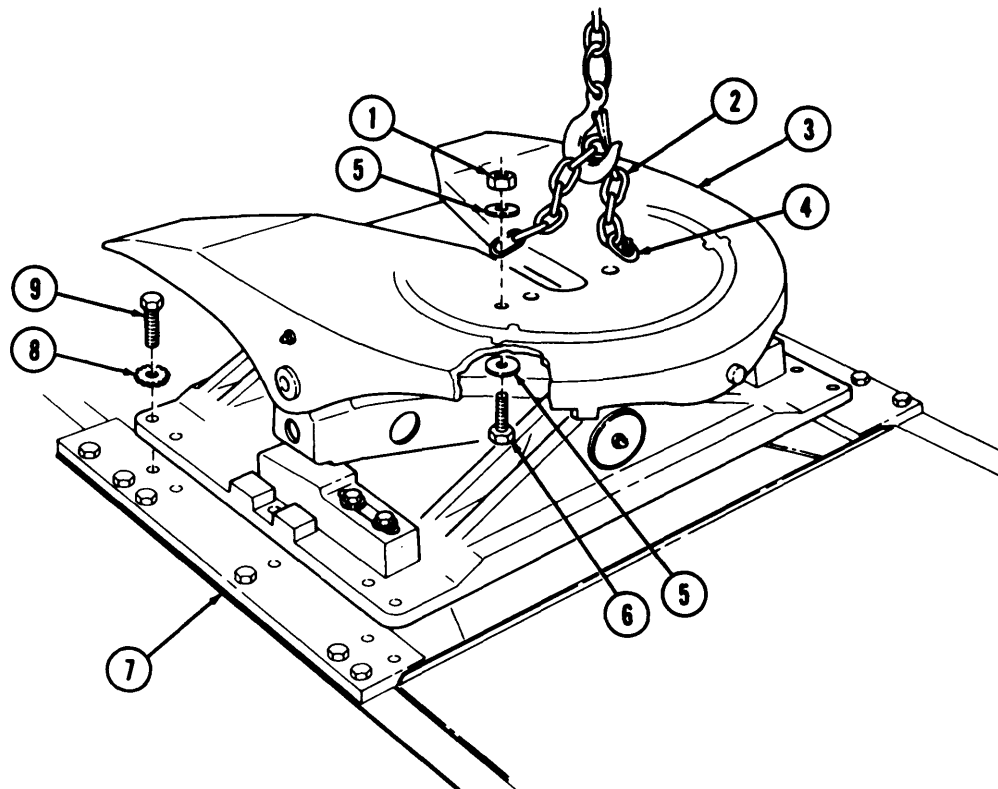
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

### NOTE

Assistant will help with step 4.

- |    |                 |   |  |
|----|-----------------|---|--|
| 4. | Fifth wheel (3) | <p>a. Hoist and align with holes in base supports (7).</p> <p>b. Install with ten screws (9) and new lockwashers (8).</p> | <p>Tighten screws (9) 160-170 lb-ft (217-231 N•m).</p> |
| 5. | Fifth wheel (3) | Two screws (6) and nuts (1), four washers (5), and utility chain (2)  | Remove.  |



END OF TASK!

FOLLOW-ON TASK: Lubricate fifth wheel (LO 9-2320-272-12).

TA 349318

10-99

10-41. FIFTH WHEEL APPROACH PLATES REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931, M932	TM 9-2320-272-10 Para. 10-40	Parking brake set. Fifth wheel removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Fourteen locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

a. Removal

- |    |   |   |         |                       |
|----|---|---|---------|-----------------------|
| 1. | Left approach plate (4) and right approach plate (9) to frame (6)   | Four screws (10) and screws (5), and eight locknuts (7)   | Remove. | Discard locknuts (7). |
| 2. | Channel (2) to left approach plate (4) and right approach plate (9) | Four screws (11) and locknuts (3)   | Remove. | Discard locknuts (3). |
| 3. | Frame (6)   | Two screws (1) and locknuts (8), channel (2), left approach plate (4), and right approach plate (9) | Remove. | Discard locknuts (8). |

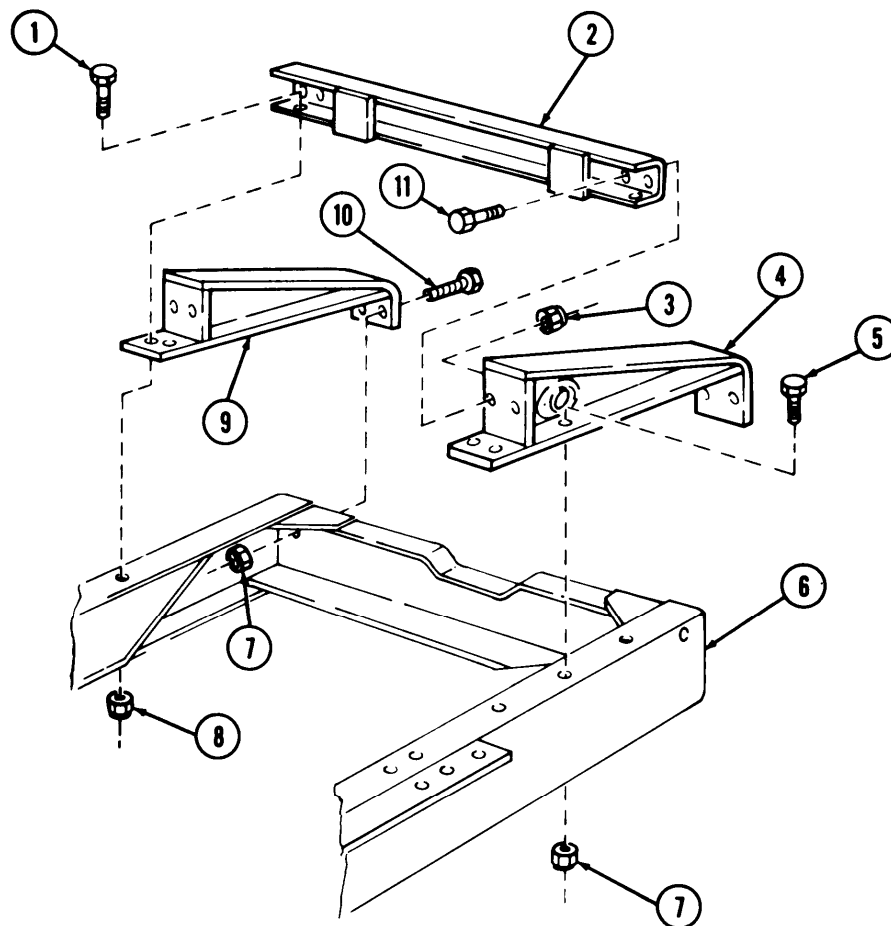
b. Installation

- |    |  |  |
|----|--|--|
| 4. | Left approach plate (4) and right approach plate (9) | Position on frame (6) and install each with two screws (10) and screws (5), and four new locknuts (7). |
|----|--|--|

## 10-41. FIFTH WHEEL APPROACH PLATES REPLACEMENT (Cont'd)

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

- |    |             |   |
|----|-------------|---|
| 5. | Channel (2) | <p>a. Position over approach plates (4) and (9) and install on frame (6) with two screws (1) and new locknuts (8).</p> <p>b. Install on approach plates (4) and (9) with four screws (11) and new locknuts (3).</p> |
|----|-------------|---|



END OF TASK!

FOLLOW-ON TASK: Install fifth wheel (para. 10-40).

TA 349319

10-101

**10-42. FIFTH WHEEL DECK PLATE REPLACEMENT**

This task covers:

a. Removal

b. Installation

**INITIAL SETUP:**

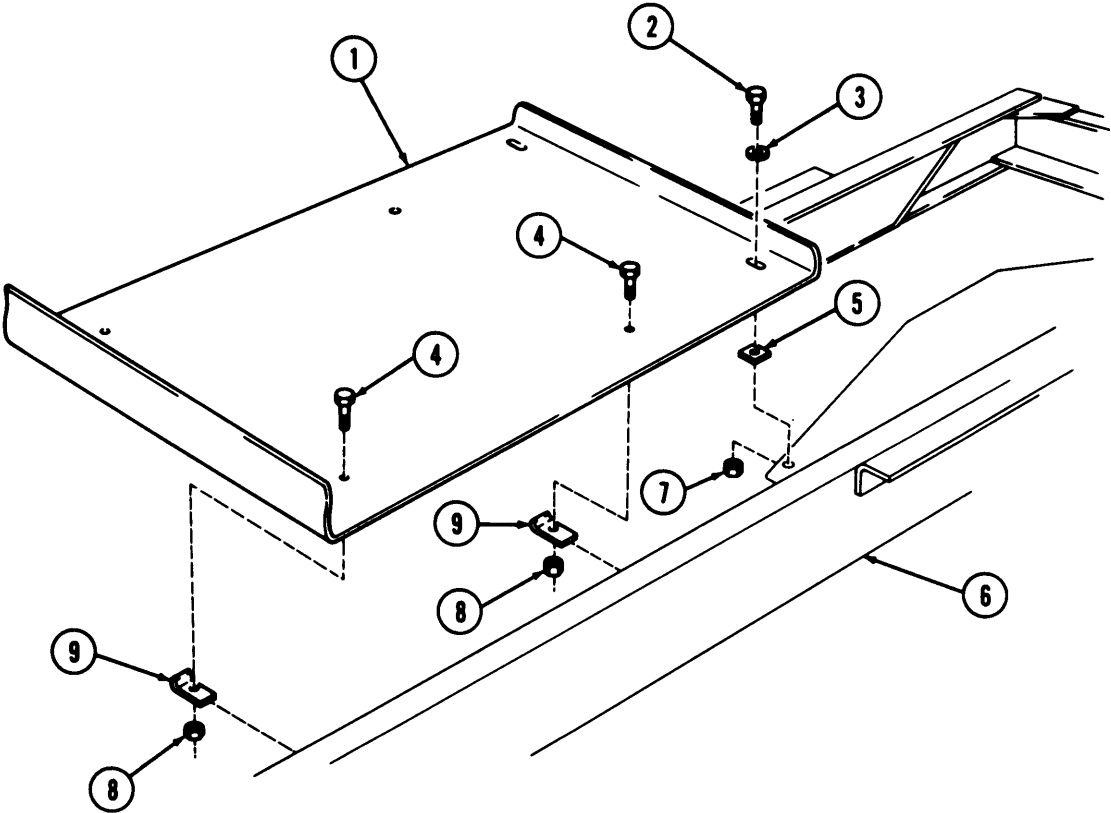
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931, M932	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Six locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Frame (6)	Four screws (4), locknuts (8), and plate retainers (9)	Remove.	Discard locknuts (8).
2.		Two screws (2), washers (3), locknuts (7), deck plate (1), and two spacers (5)	Remove.	Discard locknuts (7).
<b>b. Installation</b>				
3.		Two spacers (5) and deck plate (1)	Position on frame (6) and install with two screws (2), washers (3), and new locknuts (7).	
4.		Four plate retainers (9)	a. Position under frame (6) and align with holes in deck plate (1). b. Install on frame (6) and deck plate (1) with four screws (4) and new locknuts (8).	



10-42. FIFTH WHEEL DECK PLATE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

## 10-430 FIFTH WHEEL SPACERS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931, M932	Para 10-40	Fifth wheel removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Six locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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#### NOTE

Left and right spacers are removed and installed the same way.

### a. Removal

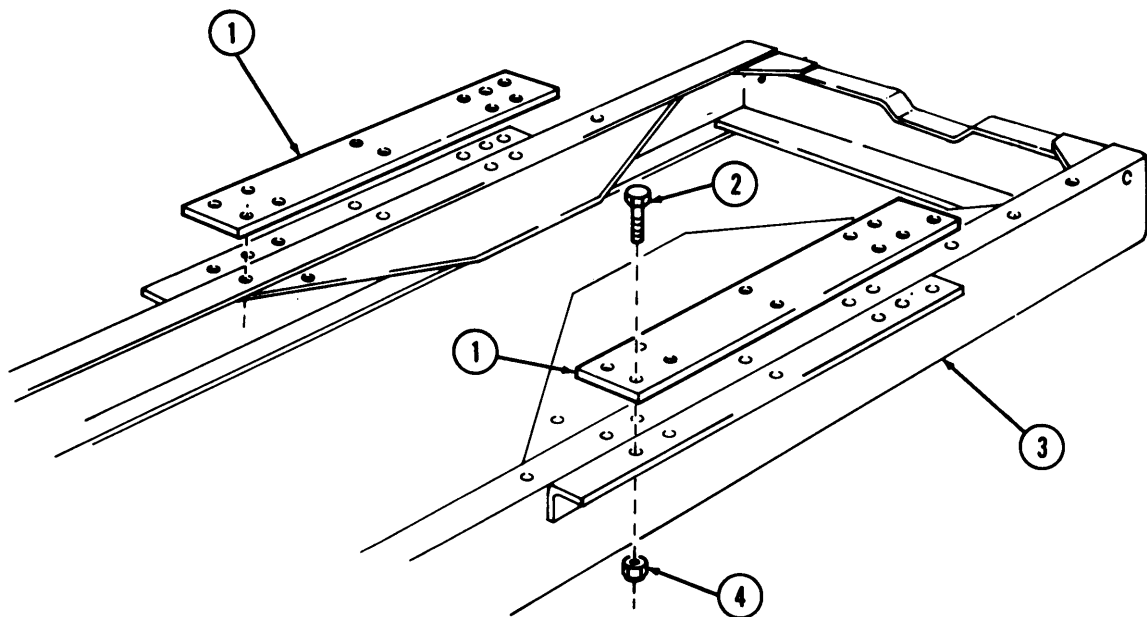
- |    |           |  |         |                       |
|----|-----------|--|---------|-----------------------|
| 1. | Frame (3) | Six screws (2) and lock-nuts (4), and spacer (1) | Remove. | Discard locknuts (4). |
|----|-----------|--|---------|-----------------------|

### b. Installation

- |    |            |   |
|----|------------|---|
| 2. | Spacer (1) | Position on frame (3) and install with six screws (2) and new locknuts (4). |
|----|------------|---|

# 10-43. FIFTH WHEEL SPACERS REPLACEMENT (Cont'd)

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



END OF TASK!

FOLLOW-ON TASK: Install fifth wheel (para. 10-40).

TA 349321

10-105

## 10-44. TRACTOR SPARE TIRE CARRIER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931 , M932	TM 9-2320-272-10 TM 9-2320-272-10 Para. 10-39 Para. 10-45	Parking brake set. Spare tire removed. Toolbox removed. Carrier access steps removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

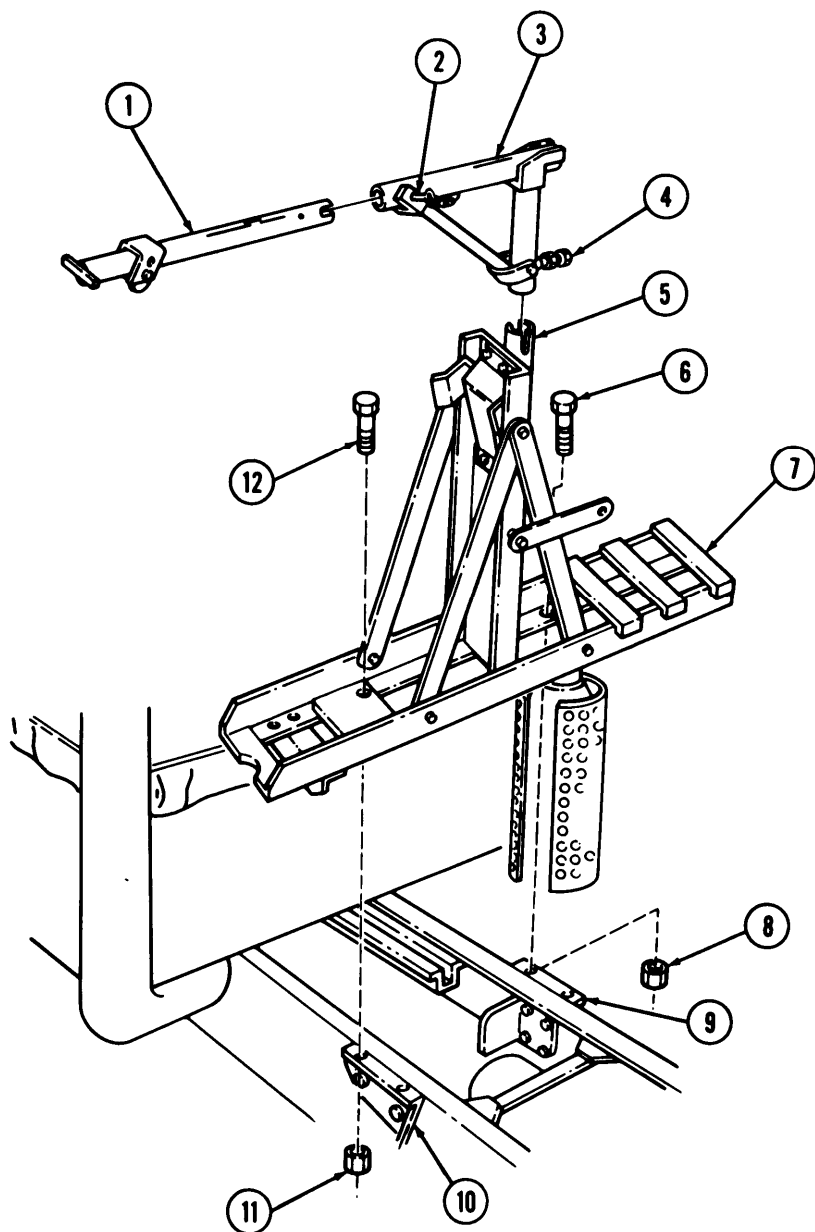
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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#### a. Removal

- |    |  |                                    |         |                         |
|----|--|------------------------------------|---------|-------------------------|
| 1. | Boom extension (1) to boom (3)                   | Retaining pin (2)                  | Remove. |                         |
| 2. |  | Boom extension (1)                 | Remove. |                         |
| 3. | Boom (3)   | Screw (4)                          | Loosen. |                         |
| 4. | Boom support (5)                                 | Boom (3)                           | Remove. |                         |
| 5. | Carrier base (7) to right frame rail bracket (9) | Two screws (6) and locknuts (8)    | Remove. | Discard locknuts (8).   |
| 6. | Carrier base (7) to left frame rail bracket (10) | Two screws (12) and locknuts (11 ) | Remove. | Discard locknuts (11 ). |
| 7. | Frame brackets (9) and (10)                      | Carrier base (7)                   | Remove. |                         |

# 10-44. TRACTOR SPARE TIRE CARRIER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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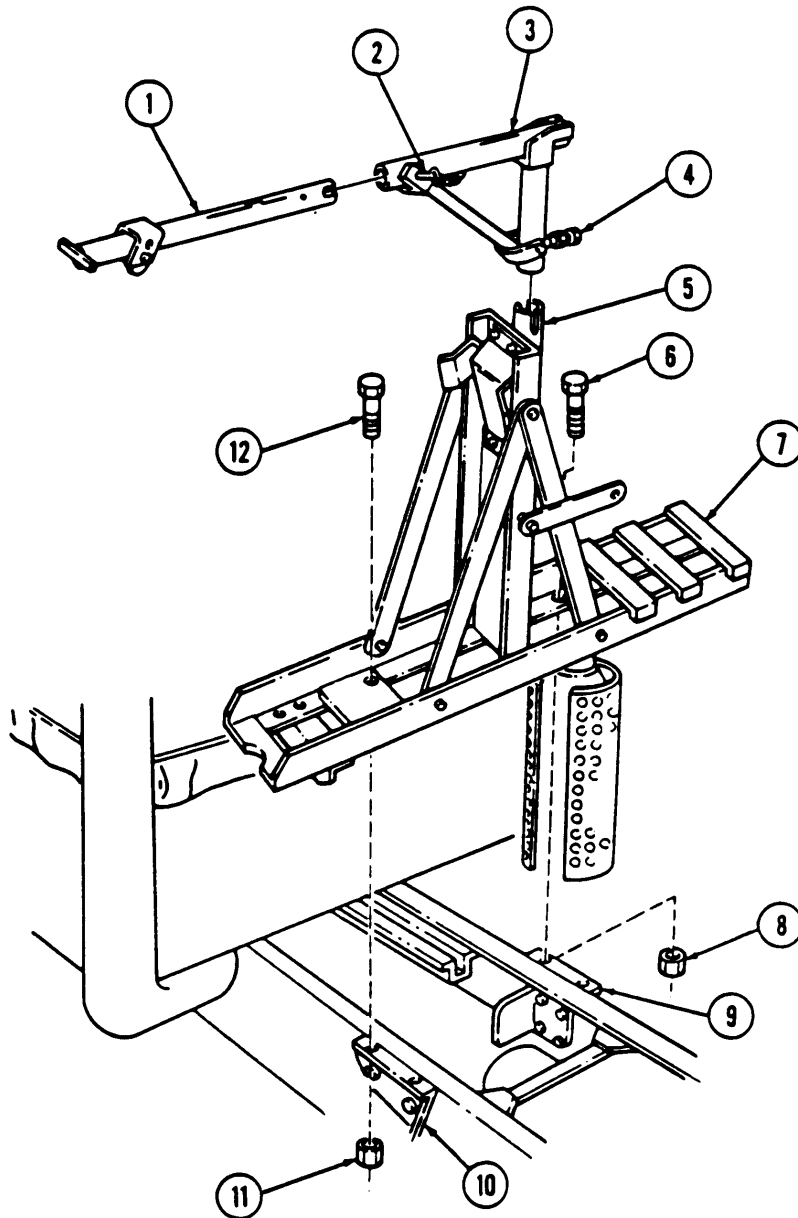
**10-44. TRACTOR SPARE TIRE CARRIER REPLACEMENT (Cont'd)**


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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>b. Installation</b>				
8.		Carrier base (7)	a. Position between vehicle cab and body. b. Aline to holes in right frame rail bracket (9) and install with two screws (6) and new locknuts (8). c. Aline to holes in left frame rail bracket (10) and install with two screws (12) and new locknuts (11).	
9.		Boom (3)	a. Position onto boom support (5). b. Install with screw (4).	Make sure screw (4) is tightened against pre-set groove in boom support (5).
10.		Boom extension (1)	a. Position inside boom (3) until holes are alined. b. Install with retaining pin (2).	

## 10-44. TRACTOR SPARE TIRE CARRIER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Install carrier access steps (para 10-45).
- Install toolbox (para 10-39).
- Install spare tire (TM 9-2320-272-10).

TA 351045

Change 1 10-108.1

**10-44.1. TRACTOR SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931A1, M93W1	TM 9-2320-272-10 TM 9-2320-272-10 Para 7-42	Parking brake set. Spare tire removed. Trailer coupling hoses removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Thirty-nine locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |   |  |                   |                         |
|----|---|--|-------------------|-------------------------|
| 1. | Carrier base (14)                                 | Two locknuts (15), screws (12), and reflector bracket (13)                           | Remove.           | Discard locknuts ( 15). |
| 2. |   | Four locknuts (7) and screws (4), two ground wires (5), and trailer harness plug (6) | Remove.           | Discard locknuts (7).   |
| 3. | Fuel lines (28) to carrier base (14)              | Locknut (30) and screw (27), and two. clamps (29)                                    | Remove.           | Discard locknut (30).   |
| 4. | Boom extension (1)                                | Lockpin (22) and retaining pin (21 )   | Remove.           |                         |
| 5. | Boom (20)   | Boom extension (1)   | Remove.           |                         |
| 6. | Boom (20) to support (19)                         | Four locknuts (3) and screws (2)   | Remove.           | Discard locknuts (3).   |
| 7. |   | Boom (20)  | Remove.           |                         |
| 8. | Left and right carrier access steps (23)          | Two locknuts (24) and screws (26), and reflector bracket (25)                        | Remove from each. | Discard locknuts (24).  |
| 9. | Carrier base (14) to right frame rail bracket (9) | Locknut (8) and screw (18)   | Remove.           | Discard locknut (8).    |



**10-44.1 TRACTOR SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Carrier base (14) to right and left frame rail brackets (9) and (11)	Three locknuts (10), screws (17), and washers (16)	Remove.	Discard locknuts (10).

TA 351046

Change 1 10-108.3

**10-44.1 TRACTOR SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
11.		Utility chain (2)	Attach to upper tire carrier (1).	
12.		Carrier base (4)	Remove and place on jack stands (3).	Use suitable lifting device.
13.	Upper tire carrier (1)	Utility chain (2)	Remove.	
14.	Toolbox (5) to carrier base (4)	six locknuts (9), washers (7), and screws (6)	Remove.	Discard locknuts (9).
15.		Toolbox (5)	Remove.	
16.	Bracket assembly (11) to carrier base (4) and carrier access step (8)	six locknuts (13), washers (12), and screws (10)	Remove.	Discard locknuts (13).
17.		Bracket assembly (11)	Remove.	
<b>NOTE</b>				
Assistant will support access steps during steps 18, 19, 20, and 21.				
18.	Left and right step brackets" to carrier base (4)	Four locknuts (14) and screws (16)	Remove from each.	Discard locknuts (14).
19.		Left and right carrier access steps (8)	Remove.	

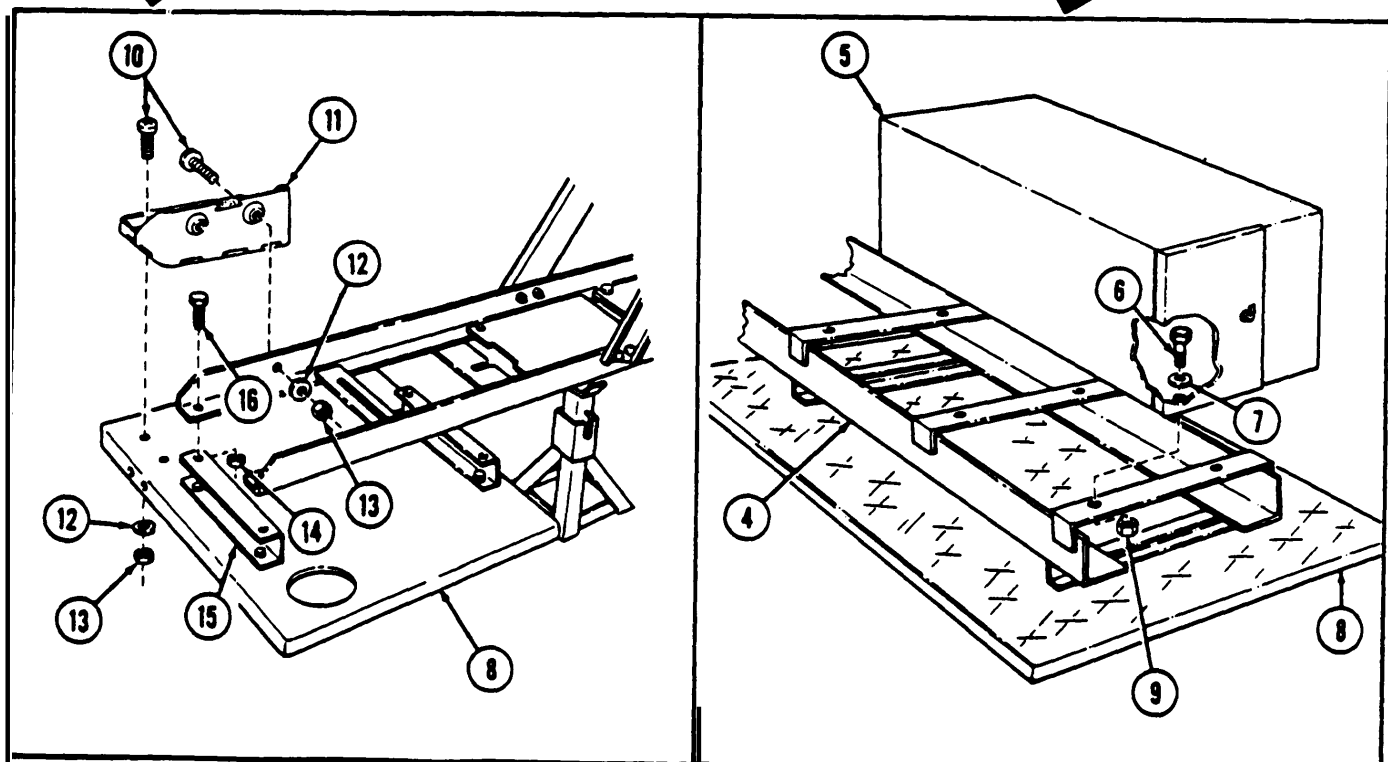
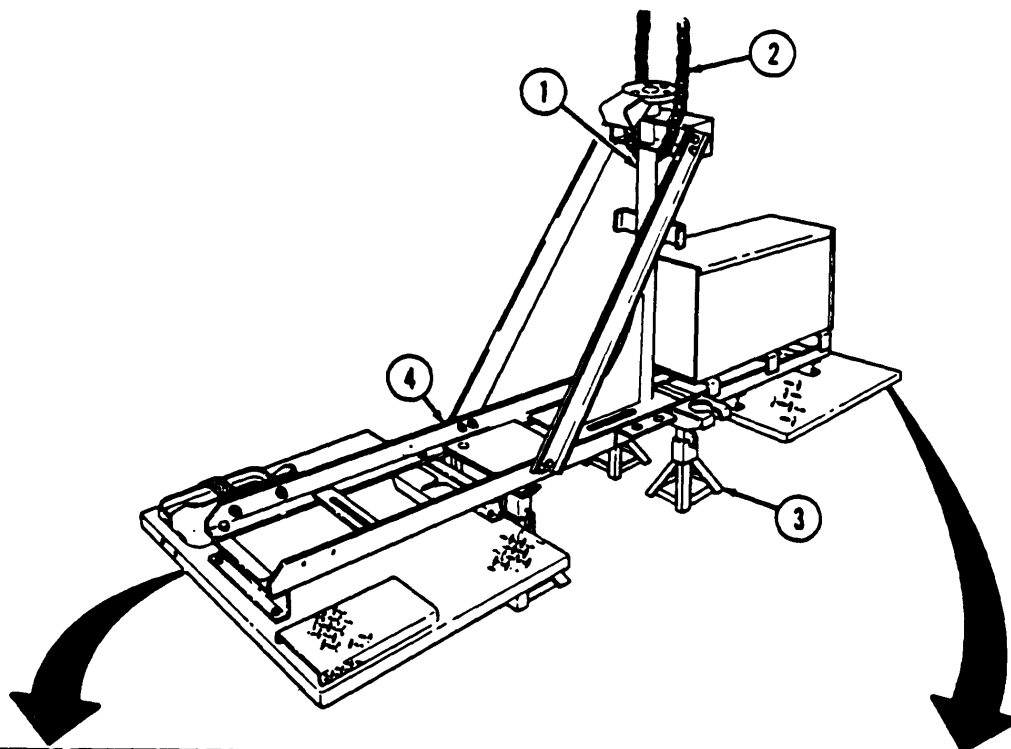
**b. Installation**

20.	Left and right carrier access steps (8)	Position beneath carrier base (4) with holes alined.
21.	Step brackets (13)	Attach to each side of carrier base (4) with four screws (16) and new locknuts (14).
22.	Bracket assembly (11 )	a. Position to carrier access step (8) and carrier base (4) with holes alined. b. Install with six screws (10), washers (12), and new locknuts (13).
23.	Toolbox (5)	a. Position over carrier base (4) with holes alined. b. Install with six screws (6), washers (7), and new locknuts (9).

# 10-44.1 TRACTOR SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

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

- |     |  |                   |                                   |  |
|-----|--|-------------------|-----------------------------------|--|
| 24. |  | Utility chain (2) | Attach to upper tire carrier (1). |  |
|-----|--|-------------------|-----------------------------------|--|



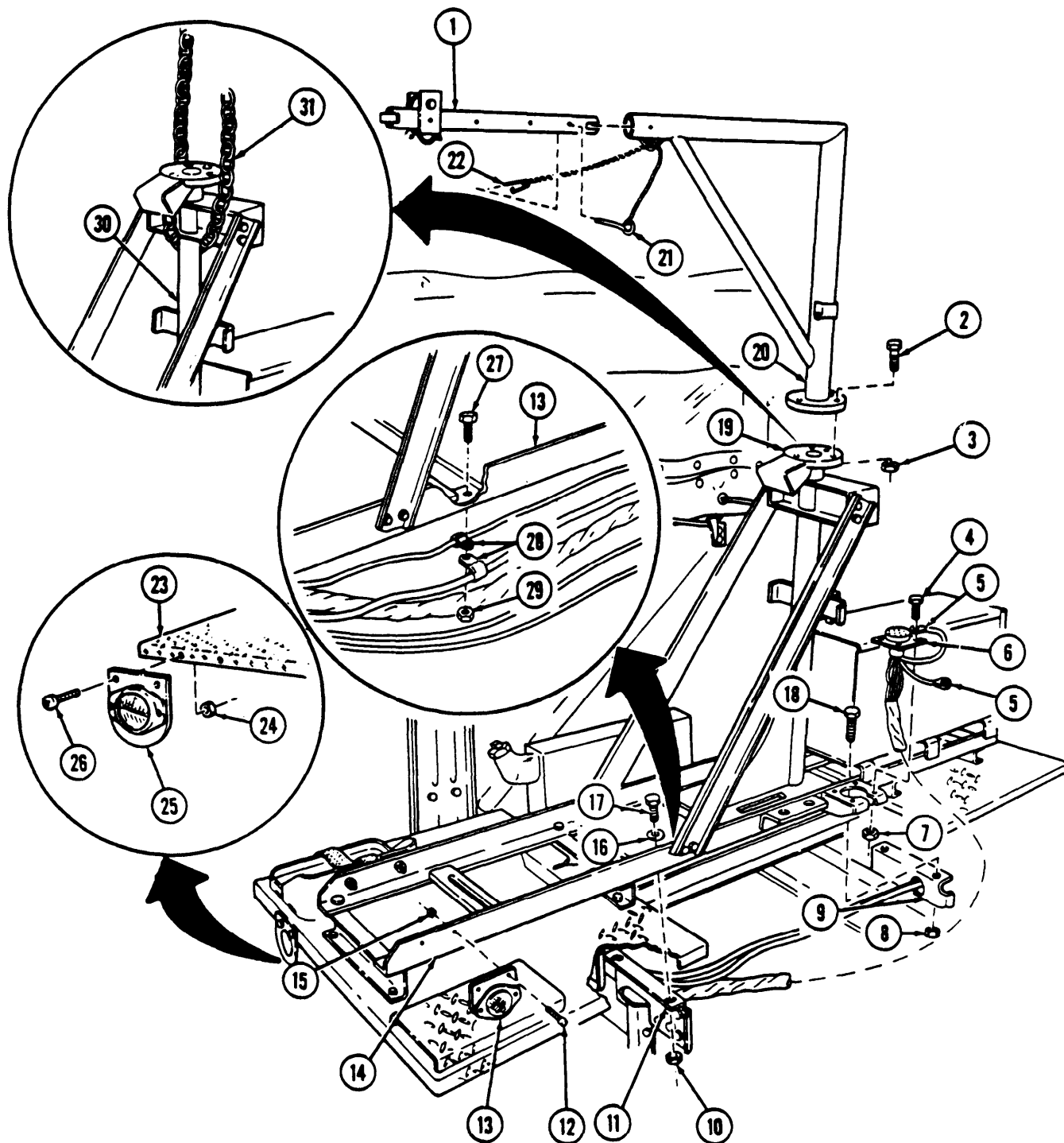
TA 351047

**10-44.1 TRACTOR SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
25.		Carrier base (14)	a. Position between vehicle cab and body. b. Install on right and left frame rail brackets (9) and (11) with three screws (17), washers (16), and new locknuts (10). c. Install on right frame rail bracket (9) with screw (18) and new locknut (8).	Use suitable lifting device.
26.	Upper tire carrier (30)	Utility chain (31)	Remove.	
27.		Reflector bracket (25)	Install on each carrier access step (23) with two screws (26) and new locknuts (24).	
28.		Boom (20)	Install on boom support (19) with four screws (2) and new locknuts (3).	
29.		Boom extension (1)	a. Position inside boom (20) until holes are aligned. b. Install with retaining pin (21 ) and lockpin (22).	
30.		Two clamps (28)	Attach to carrier base (14) with screw (27) and new locknut (29).	
31.		Trailer harness plug (6)	Install on carrier base (14) with four screws (4), two ground wires (5), and four new locknuts (7).	
32.		Reflector bracket (13)	Attach to carrier base (14) with two screws (12) and new locknuts (15).	

## 10-44.1 TRACTOR SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS:

- Install trailer coupling hoses (para 7-42).
- Install spare tire (TM 9-2320-272-10).

TA 351048

Change 1 10-109

## 10-45. TRACTOR SPARE TIRE CARRIER ACCESS STEP REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M931, M932	TM 9-2320-272-10 Para 10-39	Parking brake set. Toolbox removed (right access step only).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Lint-free cloth (Appendix D, Item 9)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not perform this procedure near flames.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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### WARNING

Diesel fuel is highly flammable. Do not perform fuel system procedures near open flame. Injury to personnel may result.

### **NOTE**

This procedure is the same for steps mounted over left or right tanks, except that right step has no fuel cap cover. Toolbox assembly must be removed only for right step removal.

#### a. Removal

- |    |                     |   |  |   |
|----|---------------------|---|--|---|
| 1. | Above fuel tank (7) | Two screws (11 ) and nuts (9), and reflector (10) | Remove.  |   |
| 2. |                     | Four screws (1) and locknuts (8)                  | Remove from carrier base (2) and step brackets (6).                    | Discard locknuts (8).                     |
| 3. |                     | Fuel cap (3) and chain (4)                        | Lift fuel cap cover ( 13), and remove from filler neck strainer ( 12). | Cover strainer (12) with lint-free cloth. |
| 4. |                     | Carrier access step (5)                           | Remove.  |   |







## Section IV. DUMP BODY AND HOIST MAINTENANCE

### 1046. GENERAL

This section provides maintenance procedures assigned to the organizational level for the dump body and hoist. To find a specific procedure, see the maintenance task summary below:

### 10-47. DUMP BODY AND HOIST MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
10-48.	Dump Tailgate Personnel Step Replacement	10-114
10-49.	Dump Tailgate Assembly Replacement	10-116
10-50.	Dump Tailgate Control Linkage Replacement	10-118
10-51.	Dump Spare Tire Carrier Replacement	10-124
10-51.1.	Dump Spare Tire Carrier (M939A1 Series) Replacement	10-124.29

## 1048. DUMP TAILGATE PERSONNEL STEP REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M929, M930	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Tailgate in closed position and safety chain attached.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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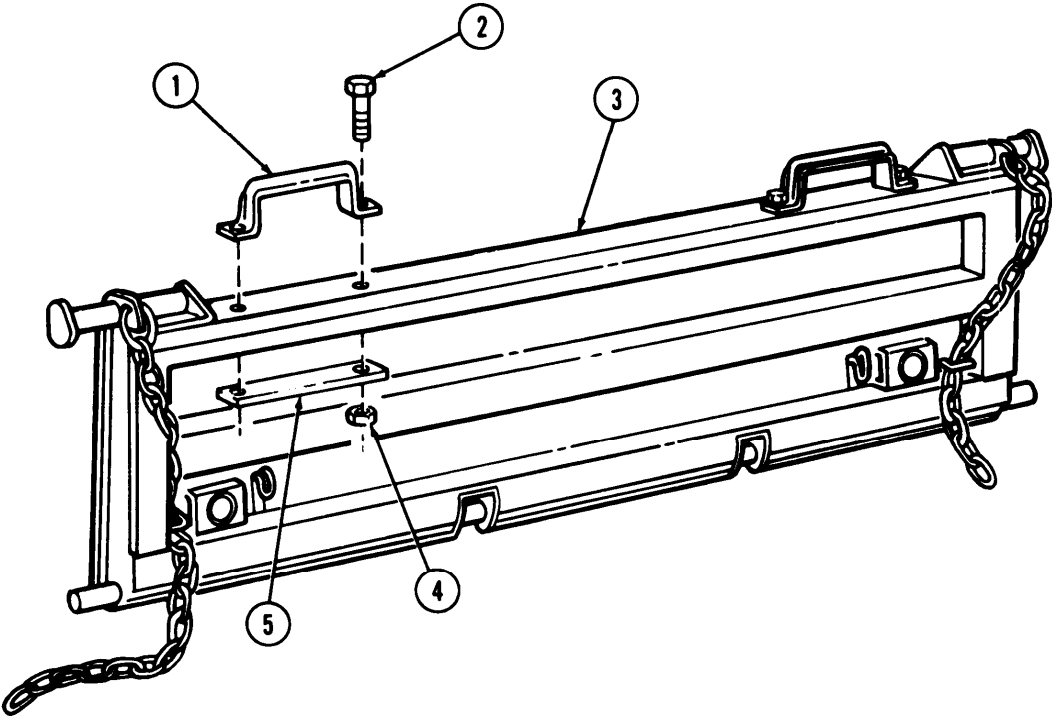
#### a. Removal

- |    |                      |  |                           |                       |
|----|----------------------|--|---------------------------|-----------------------|
| 1. | Personnel step ( 1 ) | Two screws (2) and locknuts (4)                | Remove.                   | Discard locknuts (4). |
| 2. |                      | Personnel step ( 1 ) and reinforcement bar (5) | Remove from tailgate (3). |                       |

#### b. Installation

- |    |                       |   |
|----|-----------------------|---|
| 3. | Personnel step ( 1 )  | a Position to top of tailgate (3).<br>b. Install with two screws (2) and reinforcement bar (5). |
| 4. | Reinforcement bar (5) | Install with two new locknuts (4).  |

10-48. DUMP TAILGATE PERSONNEL STEP REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



END OF TASK!

10-49. DUMP TAILGATE ASSEMBLY REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
M929, M930	TM 9-2320-272-10	Parking brake set.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
None		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B (2)		The tailgate is heavy. Be prepared to support tailgate weight as soon as retaining pins are removed.
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

a. Removal

1.

Left front dump body (1)

Tailgate control lever (2)

Release.
2.

Two safety chains (7)

Disconnect from chain brackets (8).

WARNING

The tailgate is heavy. Be prepared to support tailgate weight as soon as retaining pins are removed. Failure to do this may cause injury to personnel.

3.

Two tailgate stud brackets (4)

Two retaining pins (3)

Remove.
4.

Tailgate (6)

Remove.

b. Installation

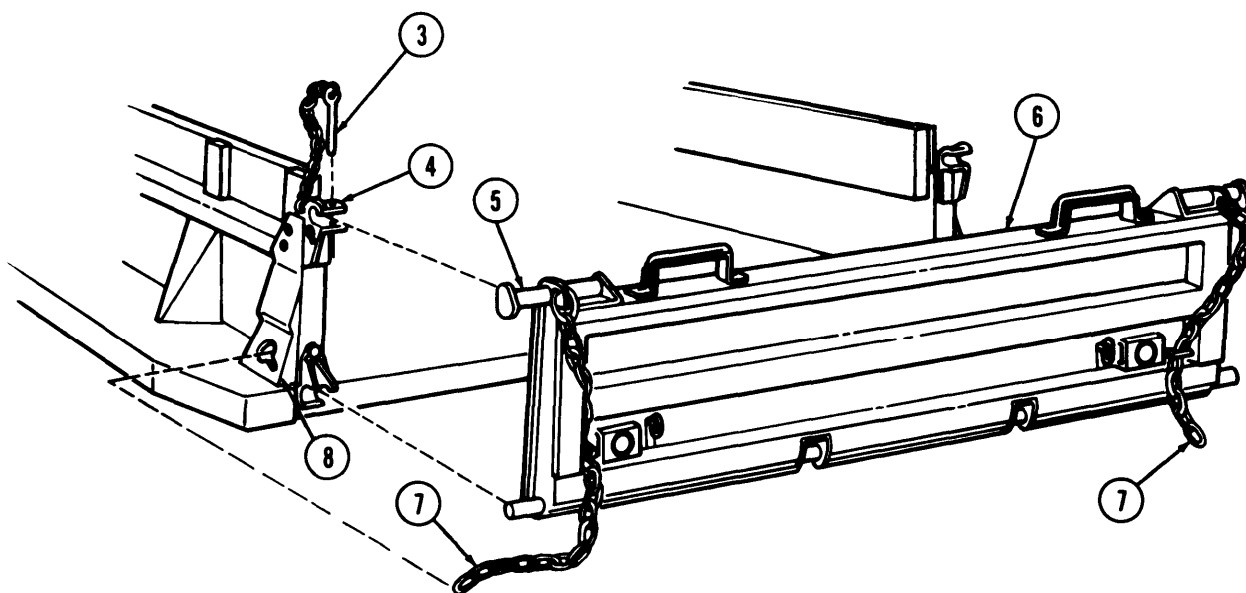
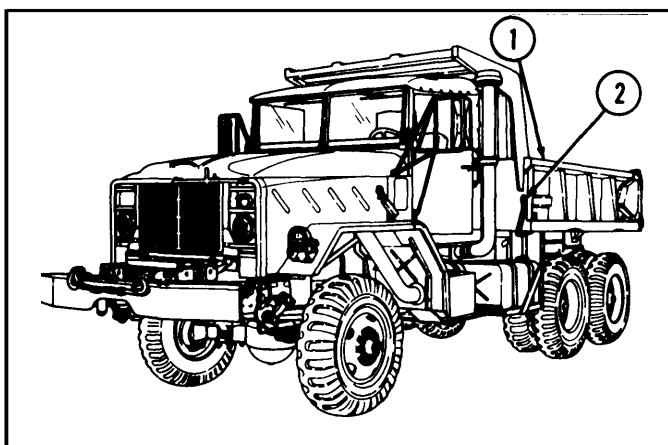
5.

Tailgate (6)

Position to dump body (1) so upper studs (5) enter stud brackets (4) and install with two retaining pins (3).

# 10-49. DUMP TAILGATE ASSEMBLY REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Two safety chains (7)	Connect to chain brackets (8).	
7.		Tailgate control lever (2)	Engage to install lower end of tailgate (6) on dump body (1).	



END OF TASK!

TA 349327

10-50. DUMP TAILGATE CONTROL LINKAGE REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M929, M930	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Dump body in lowered position.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four cotter pins Two woodruff keys Sixteen locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

a. Removal				
1.	Dump body, left front corner (15)	Tailgate control lever (5)	Pull down to open position.	
2.	Threaded end of control rod (10)	Forward adjusting nut (12)	Remove.	
3.	Control lever (5)	Screw (9), clevis (11), washer (13), and locknut (14)	Remove.	Discard locknut (14).
4.	Control lever (5) to control rod (10)	Screw (7) and locknut (6)	Remove, and slide control lever (5) off control rod (10).	Discard locknut (6).
5.	Control rod (10)	Woodruff key (8)	Remove.	Discard woodruff key (8).

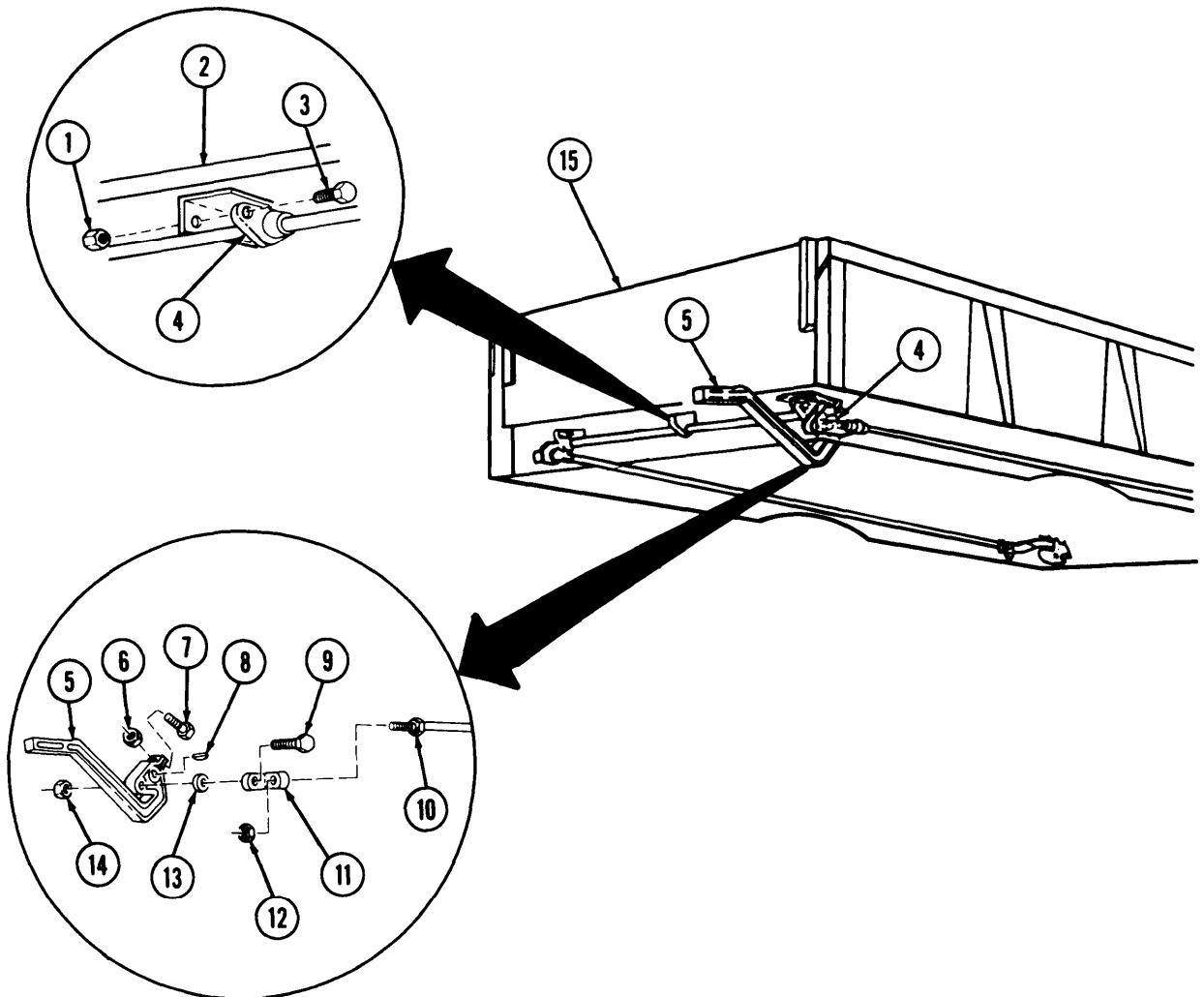
**10-50. DUMP TAILGATE CONTROL LINKAGE REPLACEMENT (Cont'd)**

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

**NOTE**

Repeat steps 2 through 5 for removal of control linkage at opposite side. Tailgate control linkage is identical on each side except for tailgate control lever. Tailgate control lever on vehicle left side has a hand control. Tailgate control lever on vehicle right side does not.

- |    |  |                                 |         |                       |
|----|--|---------------------------------|---------|-----------------------|
| 6. | Three cross-shaft bearings (4) to bearing supports (2) | Six screws (3) and locknuts (1) | Remove. | Discard locknuts (1). |
|----|--|---------------------------------|---------|-----------------------|



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**10-50. DUMP TAILGATE CONTROL LINKAGE REPLACEMENT (Cont'd)**


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LOCATION	ITEM	ACTION	REMARKS
7. Link plate (10)	Two cotter pins (8) and slotted nuts (9), and link (1)	Remove.	Discard cotter pins (8).
8.	Link plate (10)	Remove.	
9. Front of dump body (14)	Side control rod (11 )	Pull out.	
10. Tailgate latch (6)	Three screws (7), locknuts (3), and washers (4)	Remove.	Discard locknuts (3).
11. Rear of dump body (14)	Tailgate latch (6)	Pull out.	

**NOTE**

Repeat steps 7 through 11 for removal of control linkage at opposite side of dump body.

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**b. Installation**

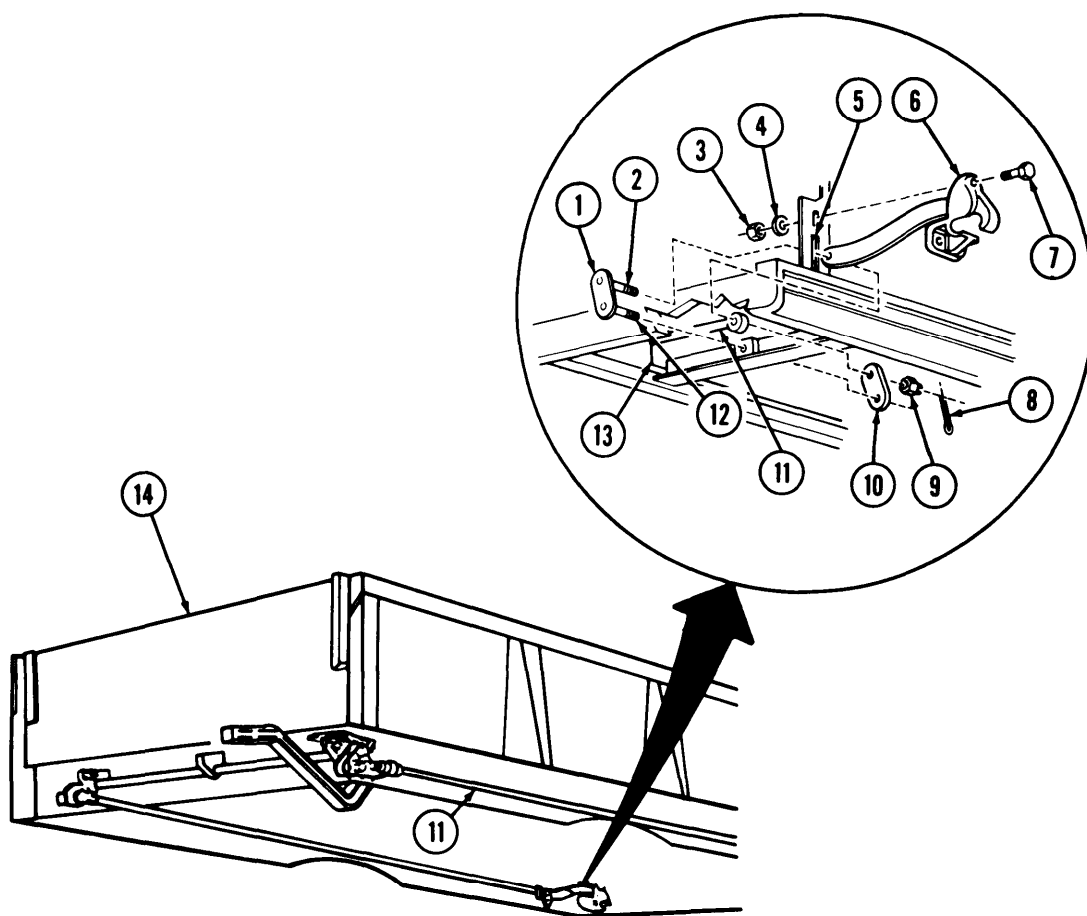

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12.	Tailgate latch (6)	a. Insert bar end through hole (5) and position against dump body (14). b. Install with three screws (7), new locknuts (3), and washers (4).	Mounting holes alined.
13.	Side control rod (11)	a. Insert yoke end through slots (13) in dump body (14) crossmembers. b. Aline yoke hole to hole in tailgate latch (6).	From forward cross-member back toward tailgate latch (6).



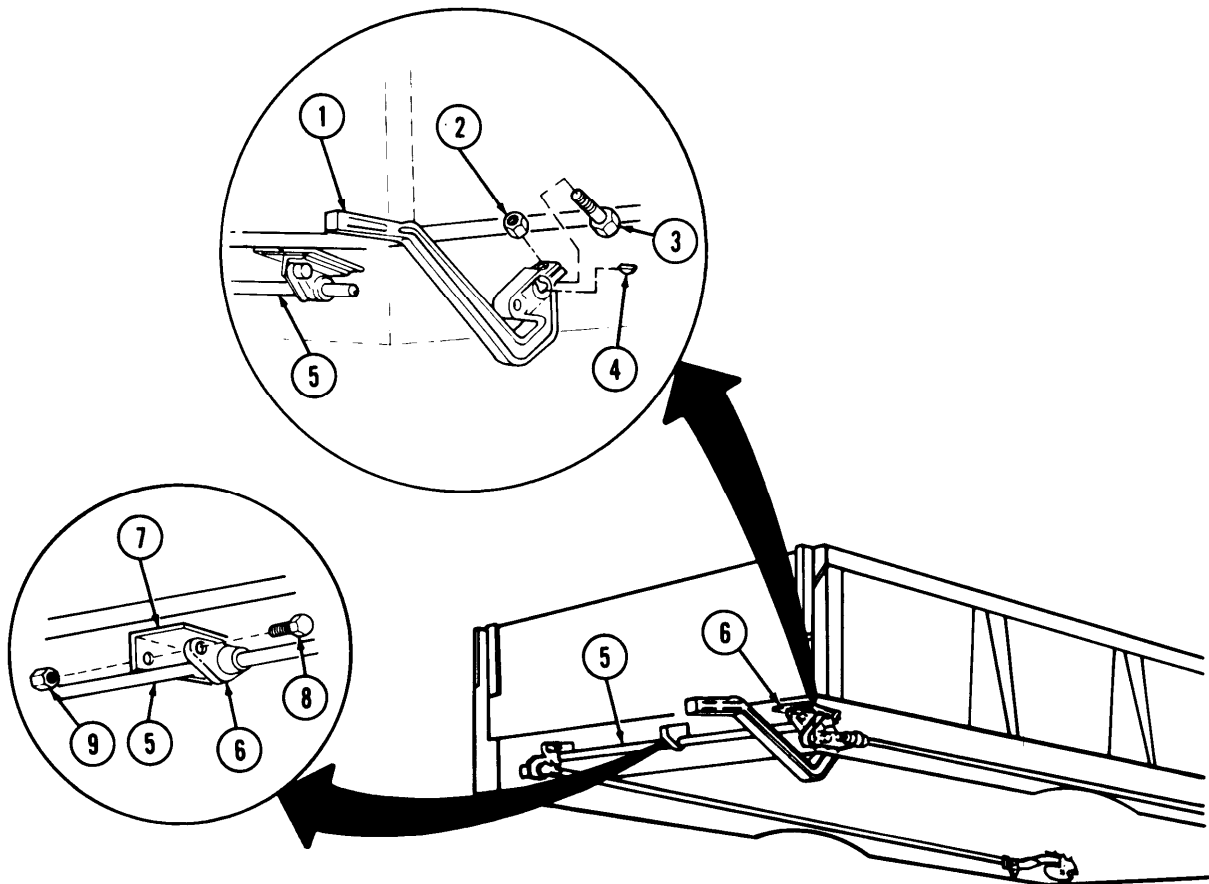
# 10-50. DUMP TAILGATE CONTROL LINKAGE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
14.		Link (1)	<p>a. Insert upper stud (2) through hole in tailgate latch (6) and yoke side of control rod (11).</p> <p>b. Insert lower stud (12) into hole in dump body (14).</p> <p>c. Install with link plate (10), two slotted nuts (9), and two new cotter pins (8).</p>	



## 10-50. DUMP TAILGATE CONTROL LINKAGE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
15.		Three cross-shaft bearings (6)	a. Slide onto control rod (5). b. Position against outer bearing brackets (7) and install with six screws (8) and new locknuts (9).	
16.		Tailgate control lever (1)	a. Place in "open" position as shown. b. Aline slot in end of control rod (5) and install new woodruff key (4). c. Install to control rod (5) and install with screw (3) and new locknut (2).	In "open" position.



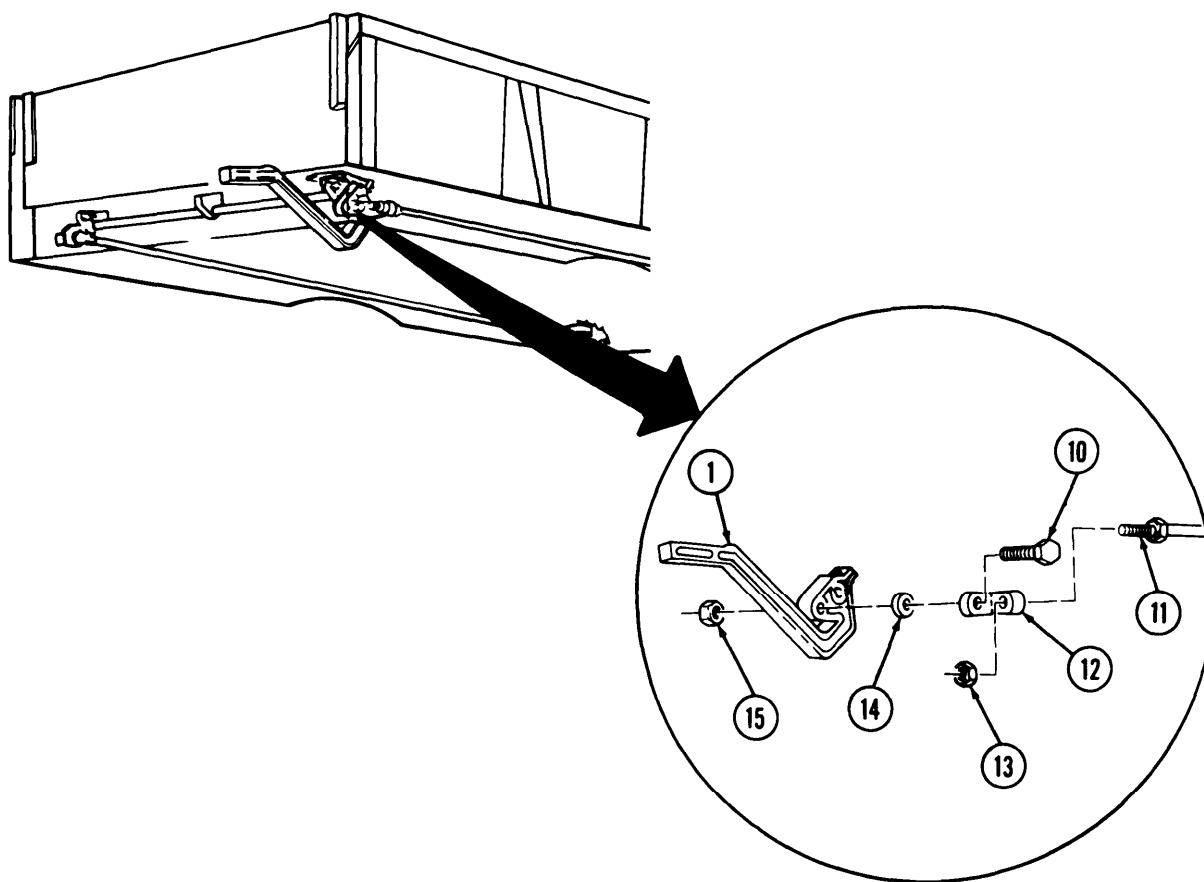
TA 349330

**10-50. DUMP TAILGATE CONTROL LINKAGE REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
17.		Washer (14) and control rod clevis (12)	a. Insert over side control rod threaded end (11) and position against tailgate control rod lever (1). b. Install with screw (10) and new lock-nut (15).	With holes alined.
18.		Forward adjusting nut (13)	Install on side control rod threaded end (11) and tighten.	

**NOTE**

Repeat steps 16 through 18 on tailgate control linkage at opposite side.



END OF TASK!

TA 349331

## 10-51. DUMP SPARE TIRE CARRIER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

#### Applicable Models

M929, M930

#### Equipment Condition Reference

TM 9-2320-272-10  
TM 9-2320-272-10  
Para. 10-45

#### Condition Description

Parking brake set.  
Spare tire removed.  
Carrier access steps removed.

#### Test Equipment

None

#### Special Tools

None

#### Special Environmental Conditions

None

#### Materials/Parts

Four locknuts

#### Personnel Required

Light-wheeled vehicle mechanic MOS 63B (2)

#### General Safety Instructions

None

#### Manual References

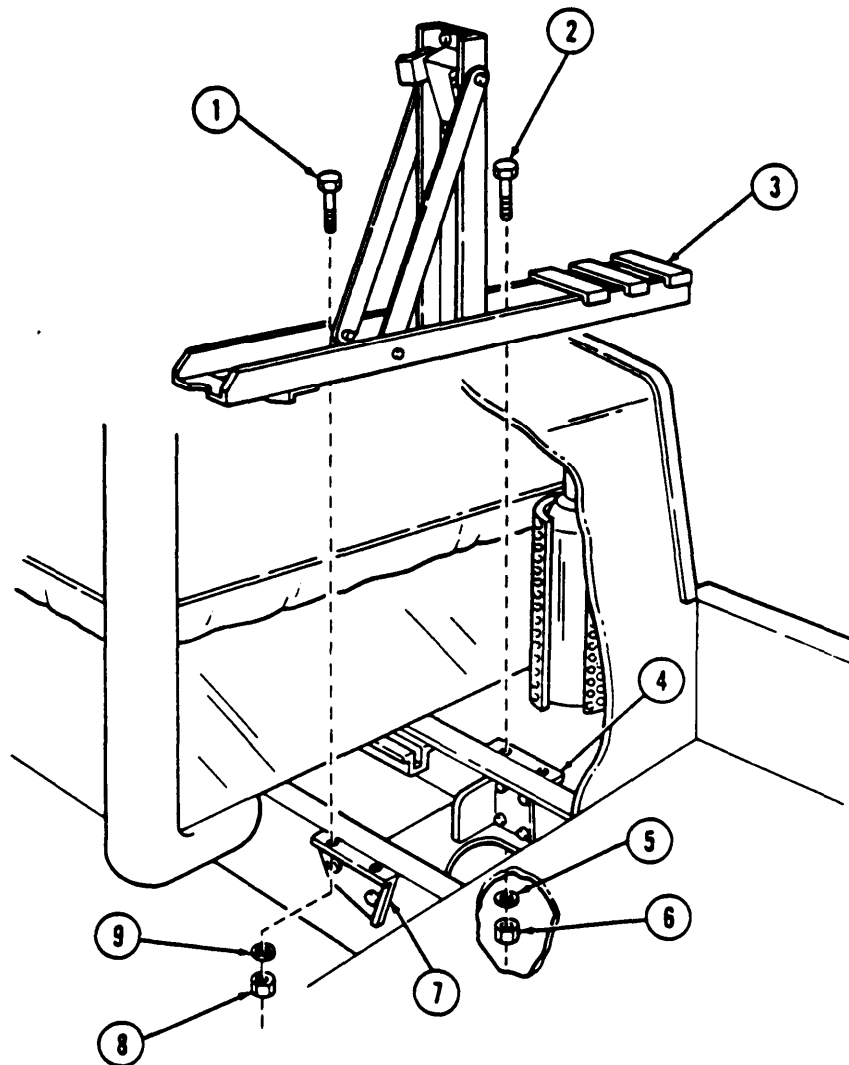
TM 9-2320-272-10  
TM 9-2320-272-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Carrier base (3) to left frame rail bracket (7)	Two screws (1), washers (9), and locknuts (8)	Remove.	Discard locknuts (8),
2.	Carrier base (3) to right frame rail bracket (4)	Two screws (2), washers (5), and locknuts (6)	Remove.	Discard locknuts (6).
3.	Frame rail brackets (7) and (4)	Carrier base (3)	Remove.	
<b>b. Installation</b>				
4.		Carrier base (3)	a. Position between vehicle cab and body. b. Install on left frame rail bracket (7) with two screws (1), washers (9), and new locknuts (8). c. Install on right frame rail bracket (4) with two screws (2), washers (5), and new locknuts (6).	

## 10-51. DUMP SPARE TIRE CARRIER REPLACEMENT (Cont'd)

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

- c. Install on right frame rail bracket (4) with two screws (2), washers (5), and new locknuts (6).



END OF TASK!

- FOLLOW-ON TASKS:
- Install carrier access steps (para 10-45).
  - Install spare tire (TM 9-2320-272-10).

10-51.1. DUMP SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Applicable Models	Equipment Condition Reference	Condition Description
M929A1, M930A1	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Spare tire removed.
Test Equipment		
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		
Twenty-two locknuts		
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B (2)		Dump body must be raised and secured with safety braces before removal and installation.
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

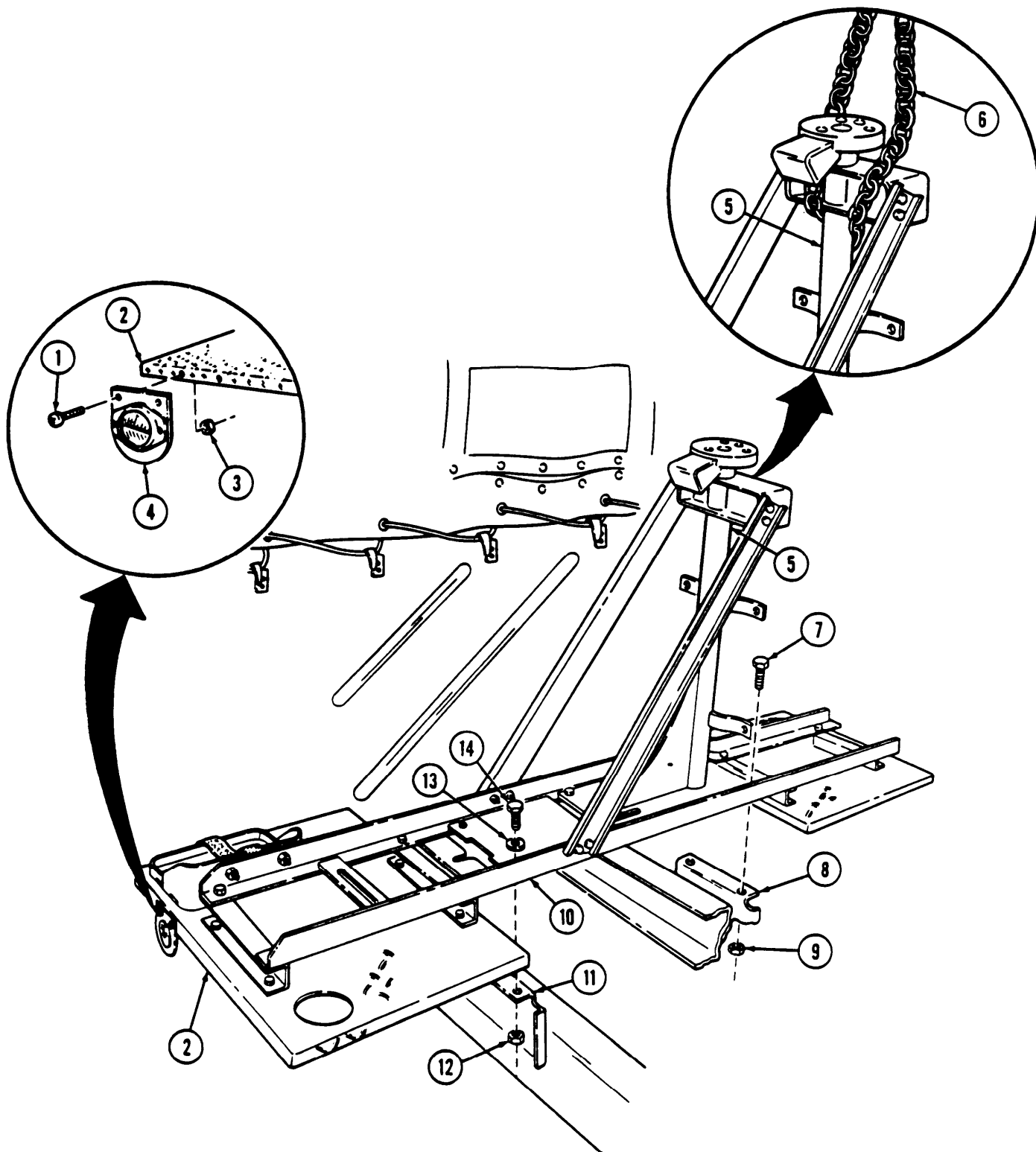
Dump body must be raised and secured with safety braces before removal and installation of dump spare tire carrier. Failure to do this may result in injury to personnel.

a. Removal

1.	Vehicle	Dump body	Raise and secure with safety braces.	Refer to TM 9-2320-272-10.
2.	Left and right carrier access steps (2)	Two locknuts (3), screws (1), and reflector bracket (4)	Remove from each.	Discard locknuts (3).
3.	Carrier base (10) to frame rail brackets (8) and (11).	Three locknuts (12), screws (14), and washers (13)	Remove.	Discard locknuts (12).
4.	Carrier base (10) to right frame rail bracket (8)	Locknut (9) and screw (7)	Remove.	Discard locknut (7).
5.		Utility chain (6)	Attach to upper tire carrier (5).	

10-51.1 DUMP SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 351050

Change 1 10-124.3

**10-51.1 DUMP SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)**

LOCATION	ITEM	ACTION	REMARKS
6.	Carrier base (4)	Remove and place on jack stands (3).	Use suitable lifting device.
7.	Upper tire carrier (1)	Remove.	
8.	Bracket assembly (10) to carrier base (4) and carrier access step (5)	Remove.	Discard locknuts (7).
9.	Bracket assembly (10)	Remove.	
<b>NOTE</b>			
Assistant will support access step during steps 10 and 11.			
10.	Left and right step brackets (6) to carrier base (4)	Four locknuts (12) and Remove horn each. screws (11 )	Discard locknuts (12).
11.	Left and right carrier access steps (5)	Remove.	
12.	Vehicle	Dump body	Release safety braces, and lower. Refer to TM 9-2320-272-10.

**b. Installation****WARNING**

Dump body must be raised and secured with safety braces before installation of dump spare tire carrier. Failure to do this may result in injury to personnel.

13.	Vehicle	Dump body	Raise and secure with safety braces. Refer to TM 9-2320-272-10.
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**NOTE**

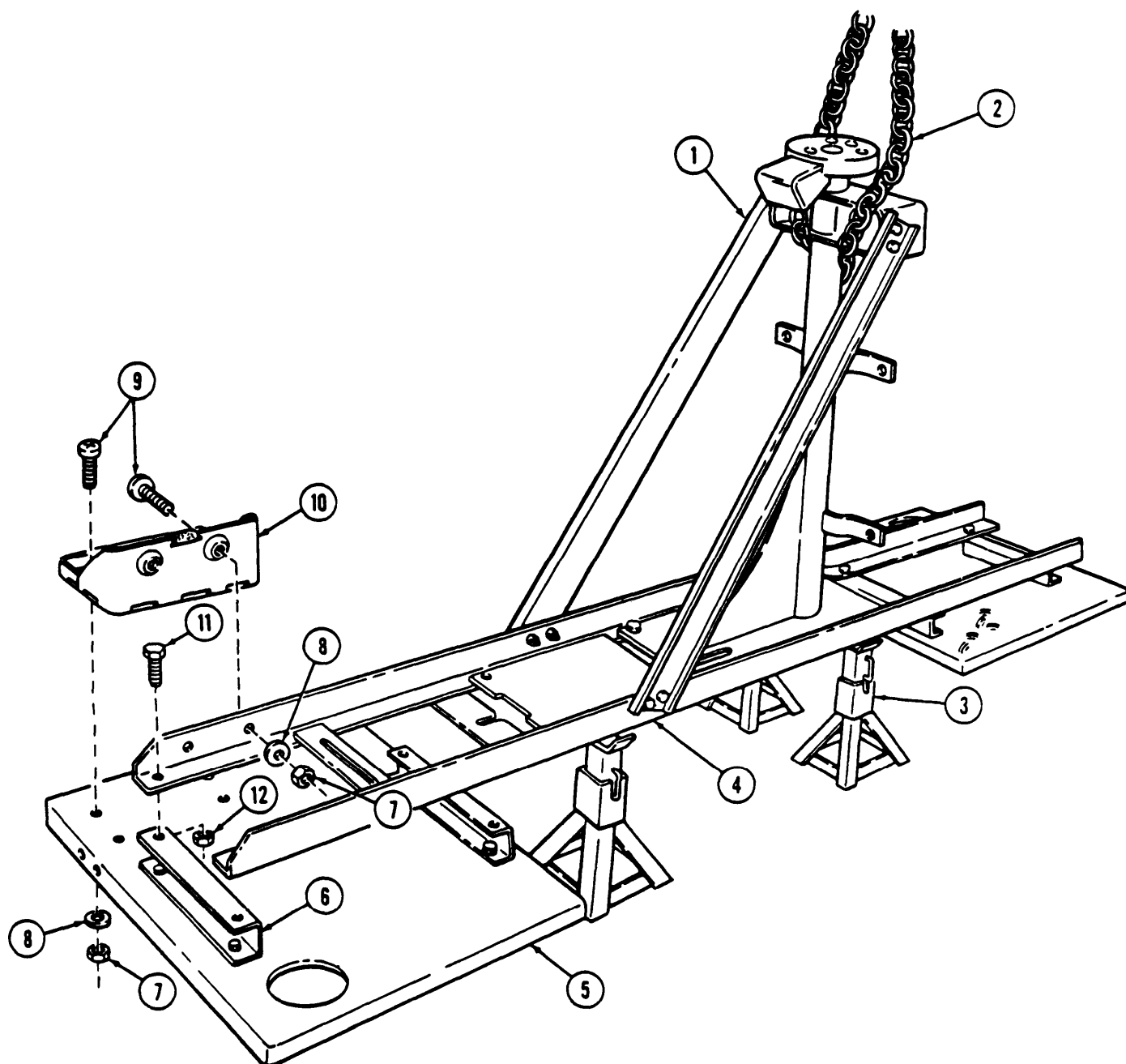
Assistant will support access step during steps 14 and 15.

14.	Carrier access step (5)	Position beneath carrier base (4) with holes aligned.
15.	Left and right step brackets (6)	Attach to each side of carrier base (4) with four screws (11 ) and new locknuts (12).
16.	Bracket assembly (10)	a. Position to carrier access step (5) and carrier base (4) with holes aligned. b. Install with six screws (9), washers (8), and new locknuts (7).
17.	Utility chain (2)	Attach to upper tire carrier (1)



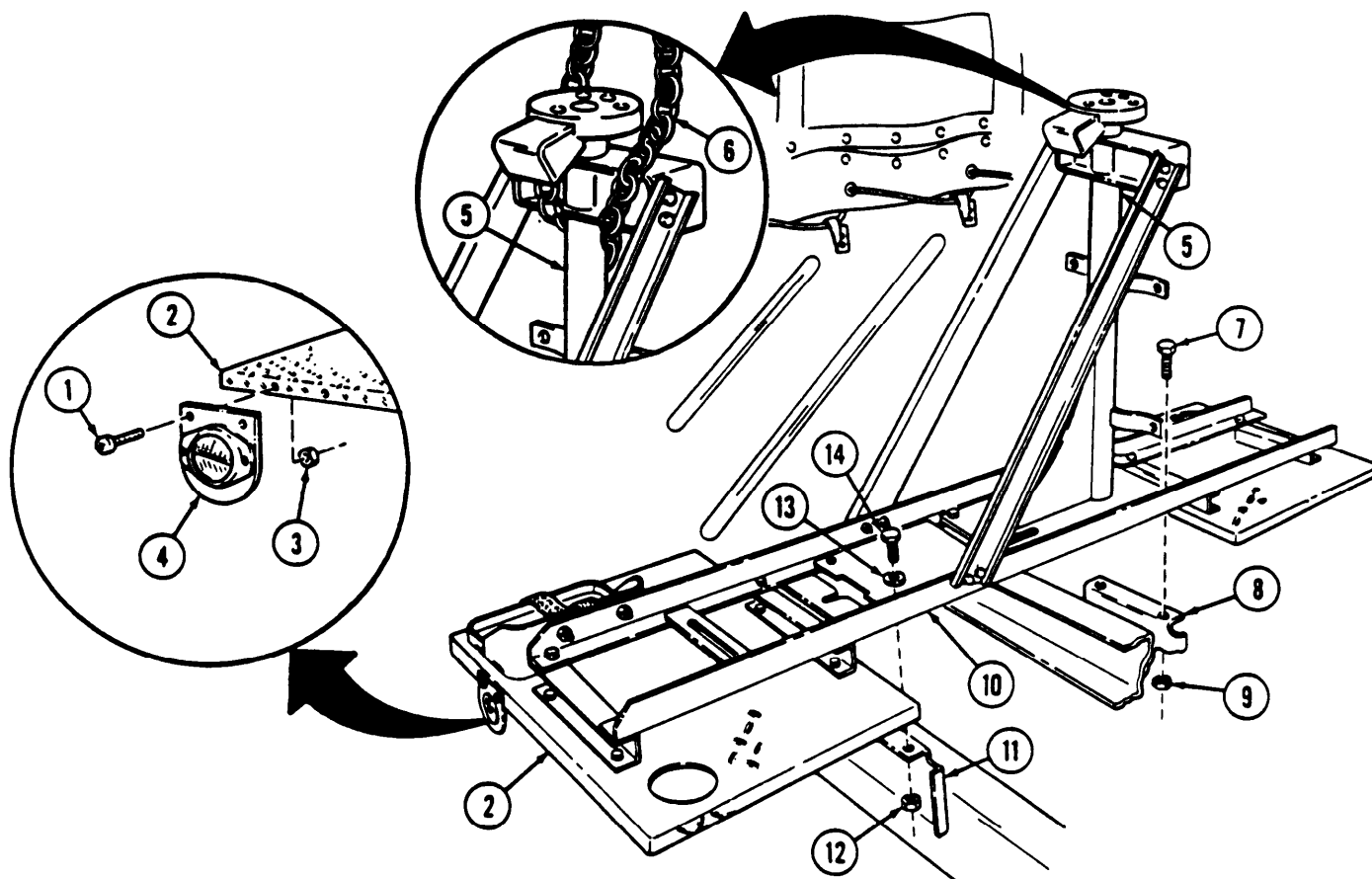
10-51.1 DUMP SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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# 10-51.1 DUMP SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
18.		Carrier base (10)	a. Position between vehicle cab and body. b. Install on frame rail brackets (8) and (11) with three washers (13), screws (14), and new locknuts (12). c. Install on right frame rail bracket (8) with screw (7) and new locknut (9).	Use suitable lifting device.
19.		<b>Reflector</b> bracket (4)	Install on each carrier access step (2) with two screws (1) and new locknuts (3).	
20.	Upper-tire carrier (S)	Utility chain (6)	Remove.	



END OF TASK!

FOLLOW-ON TASK: **Install** spare tire (TM 9-2320-272-10).

TA 351052

## Section V. CARGO BODY MAINTENANCE

### 10-52. GENERAL

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

### 10-53. CARGO BODY MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE No.
10-54	Cargo Troop Seat Replacement	10-128
10-55.	Cargo Body Cover Bows Replacement	10-130
10-56.	Cargo Upper and Lower Wheel Splash Guard Replacement	10-132
10-57.	Cargo Spare Tire Carrier Replacement	10-136
10-57.1.	Cargo Spare Tire Carrier (M939A1 Series) Replacement	10-138.2
10-58.	Cargo Tailgate Replacement	10-140
10-59.	Reflectors Replacement	10-142
10-60.	Cargo Storage Box Replacement	10-152
10-61.	Cargo Spare Tire Carrier Access Step Replacement	10-154
10-61.1.	Tailgate Bumpers Replacement	10-155.1

**10-54. CARGO TROOP SEAT REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Troop seat in stowed position.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Six cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal****NOTE**

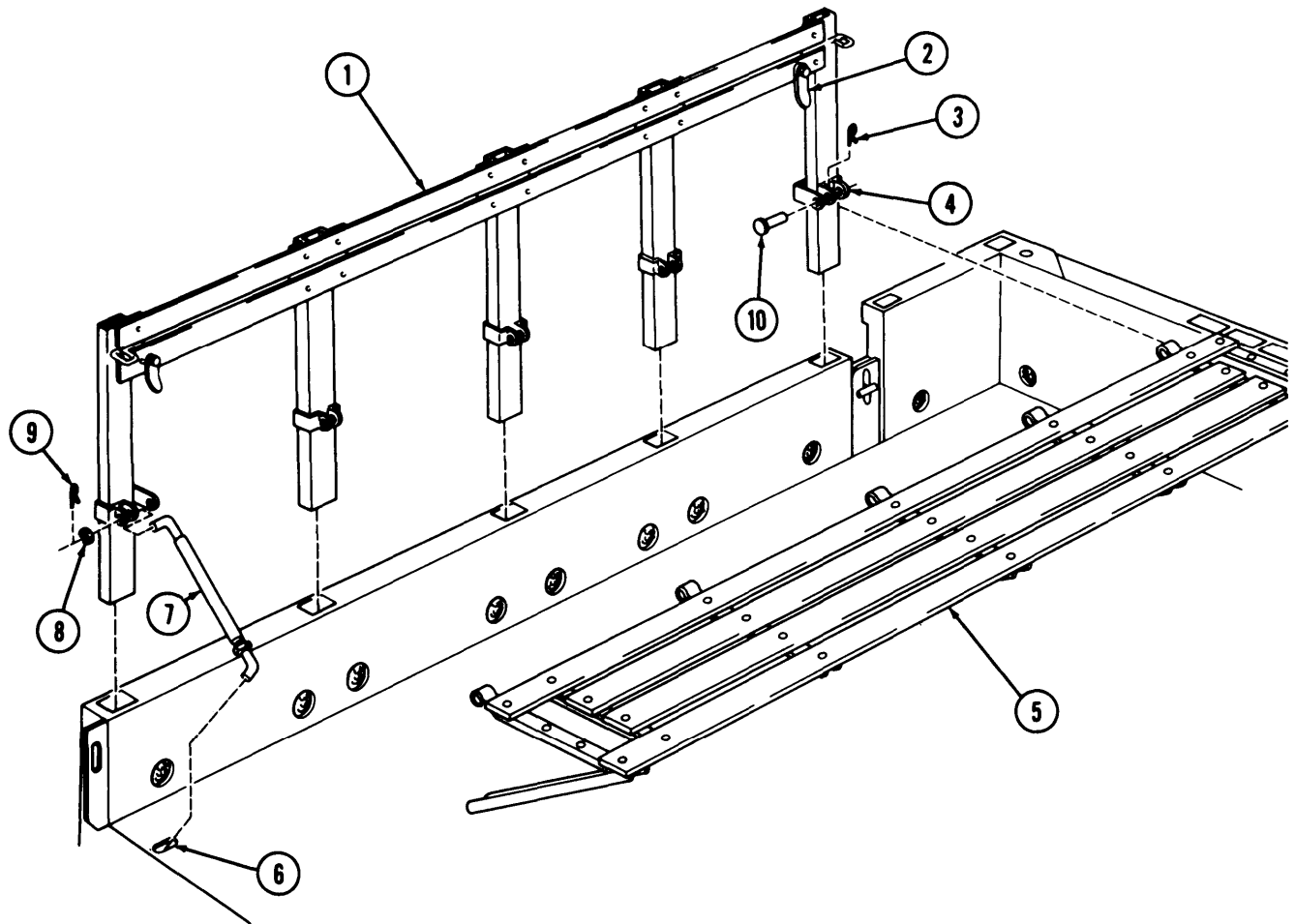
- M927 and M928 cargo models have six hinges per troop seat. The M923, M924, M925, and M926 cargo models have five hinges per troop seat as shown in this procedure.

. Assistant will support troop seat during steps 2 through 8.

1.	Hinge pins (10)	Five cotter pins (3)	Remove.	Discard cotter pins (3).
2.	Hinges (4)	Five hinge pins ( 10)	Remove.	
3.	Dropside stab rod (7)	Cotter pin (9) and washer (8)	Remove.	Discard cotter pin (9).
4.	Side rack (1) and cargo bed (6)	Rod (7)	Remove.	
5.	Side rack ( 1 )	Troop seat (5)	Release two set latches (2) and remove.	

**10-54. CARGO TROOP SEAT REPLACEMENT (Cont'd)**

LOCATION	ITEM	ACTION	REMARKS
b. Installation			
6.	Troop seat (5)	Align to hinges (4) on side rack (1).	
7.	Rod (7)	Install on side rack (1) and cargo bed (6) with washer (8) and new cotter pin (9).	
8.	Troop seat (5)	a. Install on hinges (4) with five hinge pins (10) and new cotter pins (3). b. Install on side rack (1) with two set latches (2).	



END OF TASK!

TA 349333

## 10-55. CARGO BODY COVER BOWS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Tarpaulins, curtains, and extensions 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

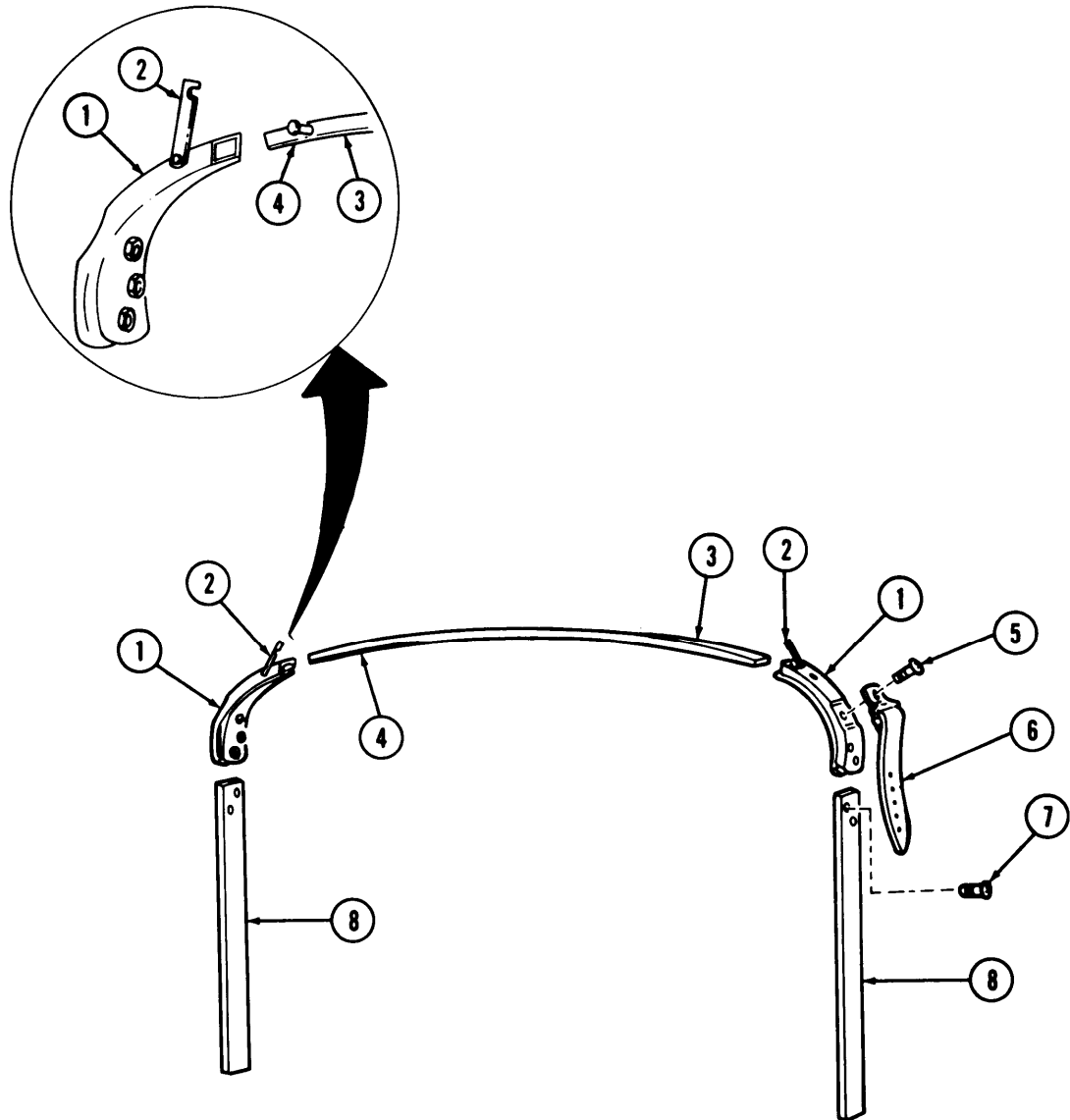
- |    |                                  |                             |  |
|----|----------------------------------|-----------------------------|--|
| 1. | Corner sections (1) to stake (8) | Two screws (7)              | Remove from each corner section (1) and remove stakes (8).         |
| 2. |                                  | Two latches (2)             | Rotate off rivets (4) and remove corner sections (1) from bow (3). |
| 3. |                                  | Screw (5) and bow strap (6) | Remove from each corner section (1).                               |

#### b. Installation

- |    |                         |  |
|----|-------------------------|--|
| 4. | Two corner sections (1) | Position long end over bow (3), rotate latch (2) over rivet (4). |
| 5. | Two stakes (8)          | Position on each corner section (1) and install two screws (7).  |
| 6. | Two bow straps (6)      | Install on each corner section (1) with screw (5).               |

10-55. CARGO BODY COVER BOWS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install tarpaulin, curtains, and extensions (TM 9-2320-272-10).

TA 349334

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**10-56. CARGO UPPER AND LOWER WHEEL SPLASH GUARD REPLACEMENT**


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This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M925, M925, M926, M927, M928	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Ten locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

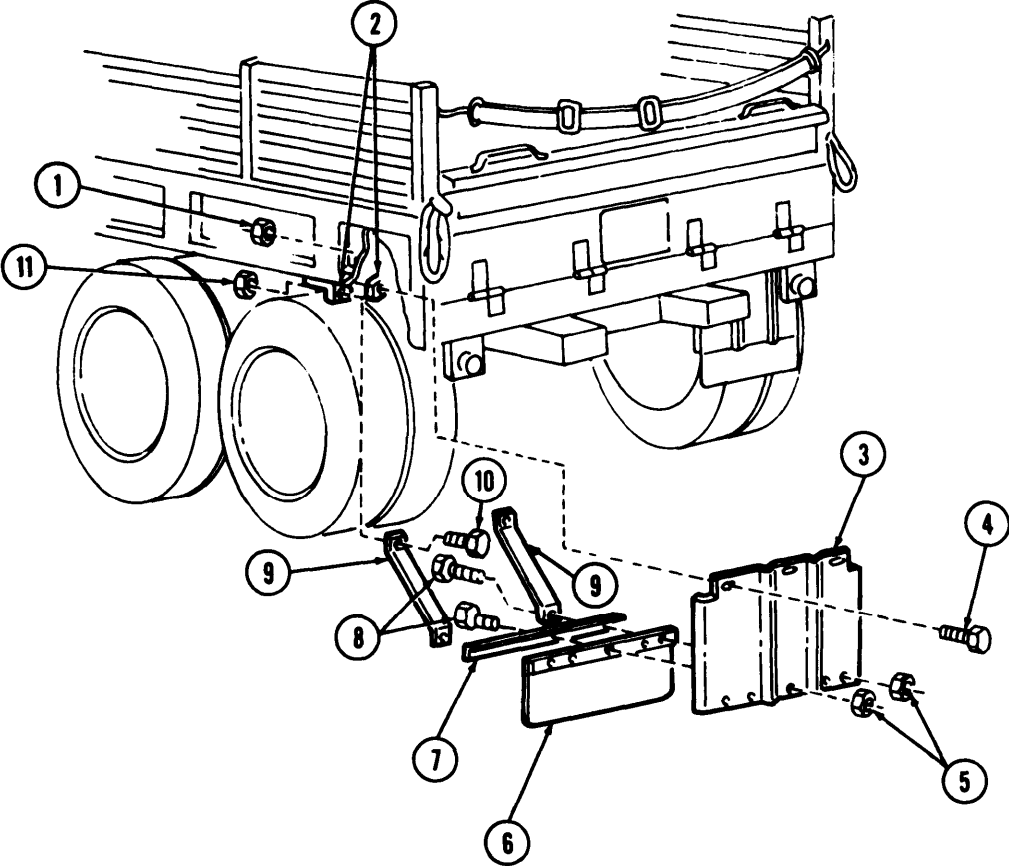
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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<hr/> <b>a. Removal</b> <hr/>				
1.	Lower splash guard (6) to upper splash guard (3)	Five screws (8) and locknuts (5)	Remove.	Discard locknuts (6).
2.		Lower splash guard (6) and retainer (7)	Remove.	
3.	Upper splash guard (3) to weld bracket (2)	Three screws (4) and locknuts (1)	Remove.	Discard locknuts (1),
4.		Upper splash guard (3)	Remove.	
5.	Two splash guard braces (9) to weld brackets (2)	Screw (10) and lock-nut (11)	Remove from each brace (9).	Discard locknuts (11).
6.		Two splash guard braces (9)	Remove.	



10-56. CARGO UPPER AND LOWER WHEEL SPLASH GUARD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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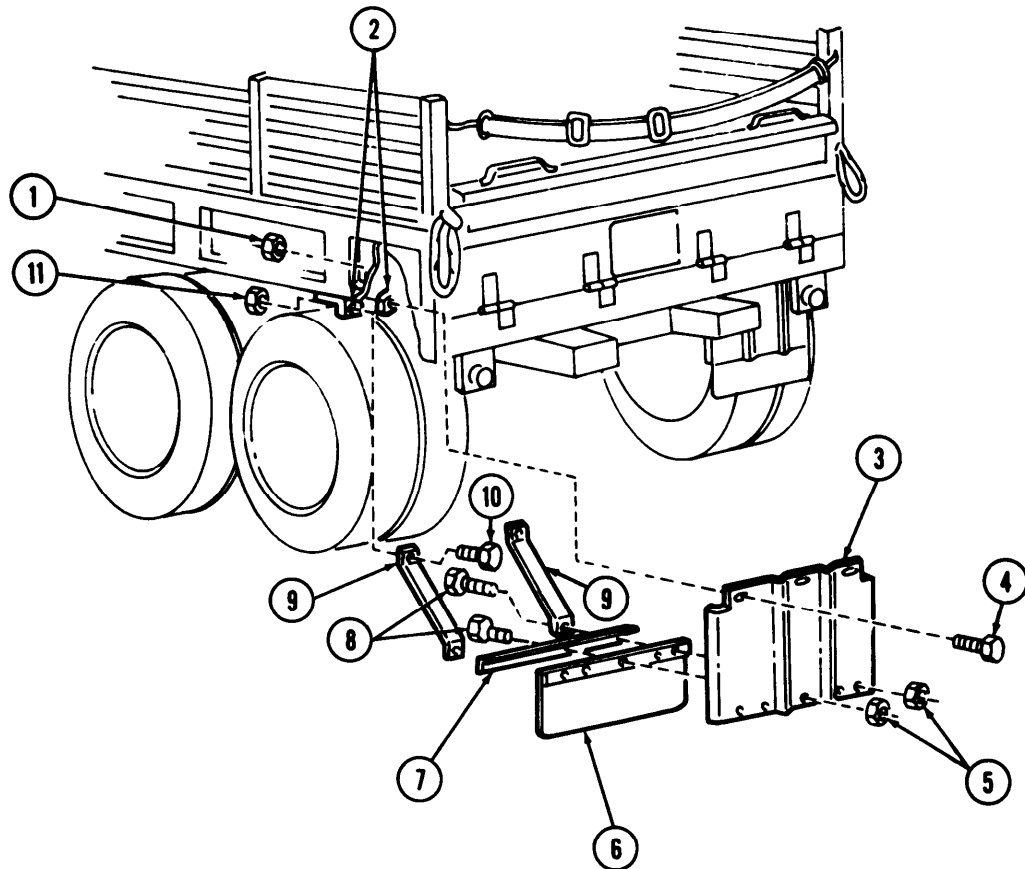


# 10-56. CARGO UPPER AND LOWER WHEEL SPLASH GUARD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
7.		Two splash guard braces (9)	a. Aline with holes in weld bracket (2) closest to wheel. b. Install each with screw (10) and new locknut (11),	Make sure angle of each brace (9) is pointed down and away from wheel.
8.		Upper splash guard (3)	a. Aline with holes in weld bracket (2) furthest away from wheel. b. Install with three screws (4) and new locknuts (1).	
9.		Retainer (7)	Position to five holes in lower splash guard (6) flush with upper splash guard (3).	
10.		Lower splash guard (6) and retainer (7)	a. Position between splash guard braces (9) and upper splash guard (3) with holes alined. b. Install with five screws (8) and new locknuts (5).	

**10-56. CARGO UPPER AND LOWER WHEEL SPLASH GUARD  
REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349336

## 10-57. CARGO SPARE TIRE CARRIER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10 TM 9-2320-272-10 Para. 10-61 TM 9-2320-272-10	Parking brake set. Spare tire removed. Carrier access step removed. Forward cargo rack removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Eight locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

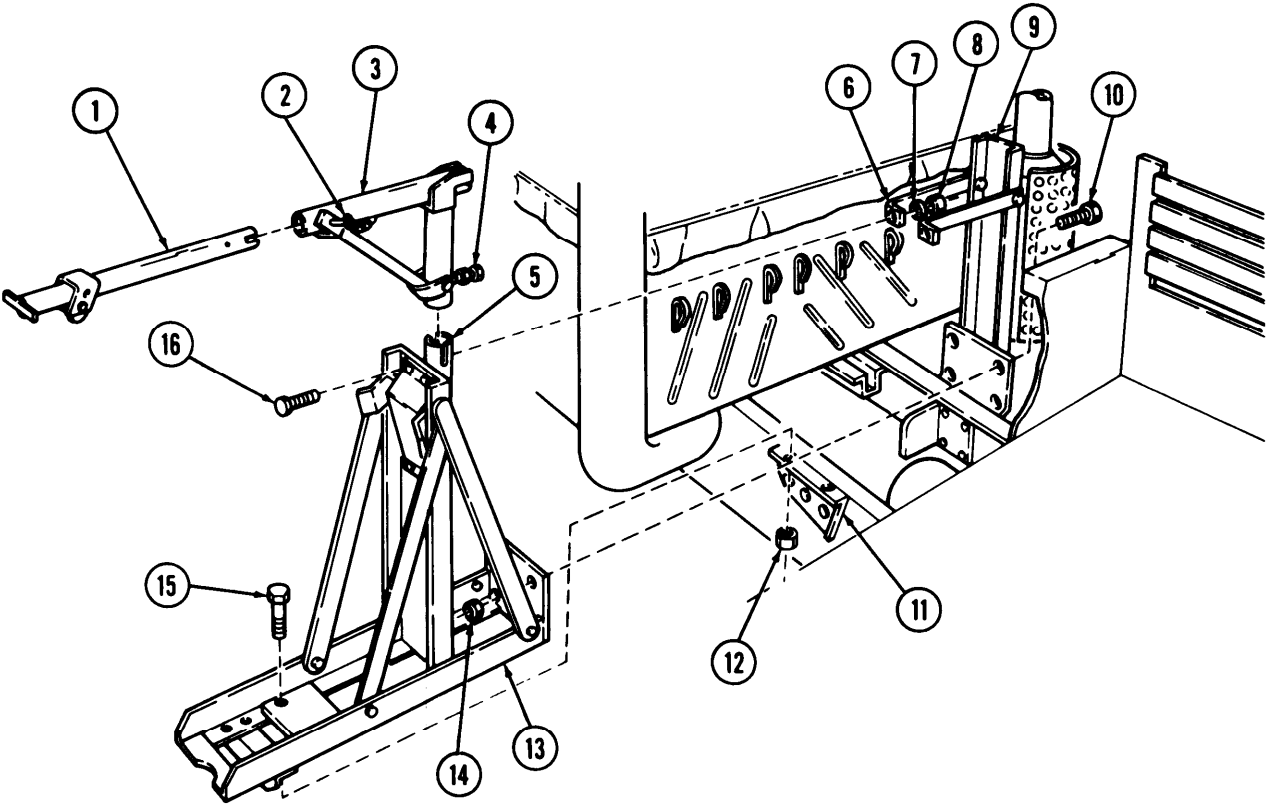
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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#### a. Removal

- |    |   |   |                               |                         |
|----|---|---|-------------------------------|-------------------------|
| 1. | Boom extension (1)                              | Retaining pin (2)                       | Remove.                       |                         |
| 2. |   | Boom extension (1)                      | Remove.                       |                         |
| 3. | Boom (3)  | Setscrew (4)                            | Loosen.                       |                         |
| 4. |   | Boom (3)                                | Lift out of boom support (5). |                         |
| 5. | Carrier base (13) to muffler support braces (6) | Screw (16), washer (7), and locknut (8) | Remove from each brace (6).   | Discard locknuts (8).   |
| 6. | Carrier base (13) to muffler support (9)        | Four screws (10) and locknuts (14)      | Remove.                       | Discard locknuts ( 14). |
| 7. | Carrier base (13) to frame rail bracket (11)    | Two screws (15) and locknuts (12)       | Remove.                       | Discard locknuts (12).  |
| 8. |   | Carrier base (13)                       | Remove.                       |                         |

10-57. CARGO SPARE TIRE CARRIER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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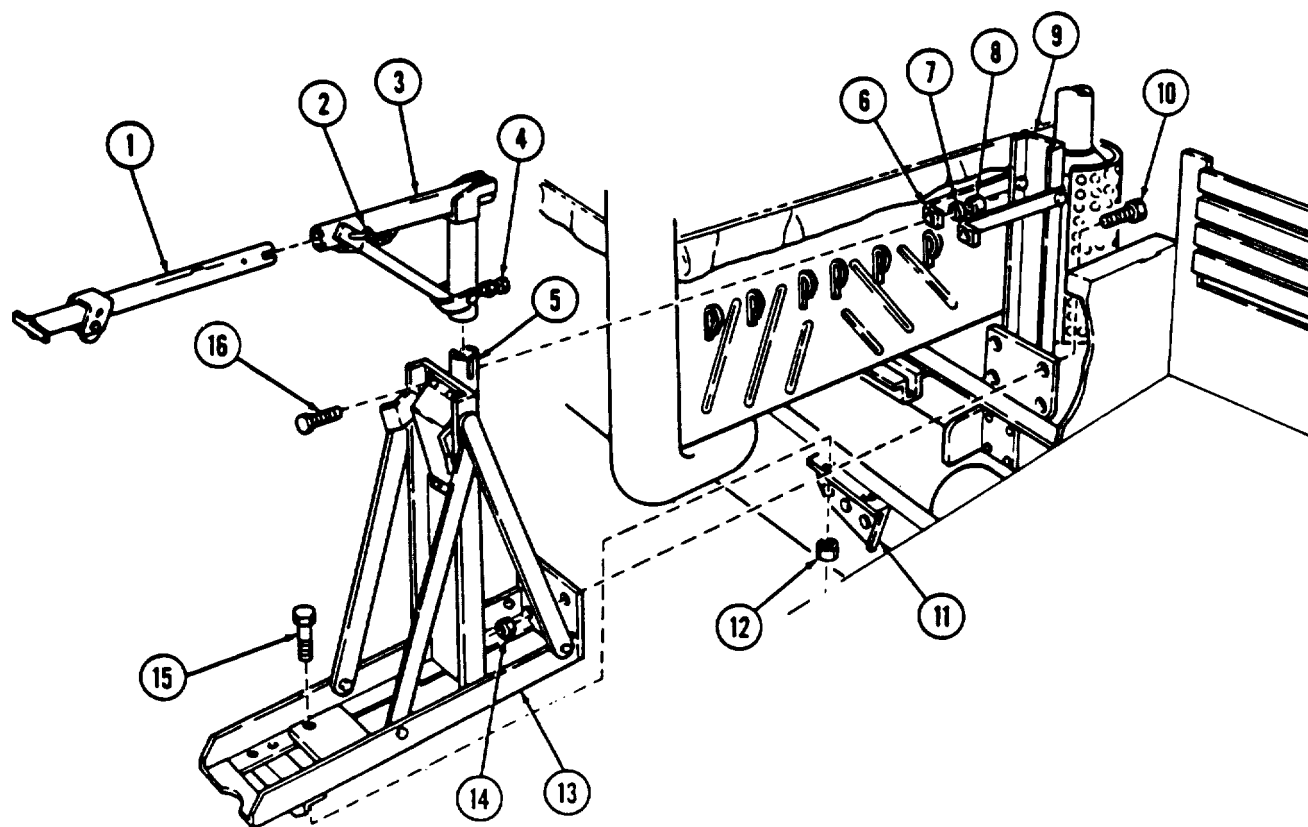


**10-57. CARGO SPARE TIRE CARRIER REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>b. Installation</b>				
9.		Carrier base (13)	<ul style="list-style-type: none"> <li>a. Position between vehicle cab and body.</li> <li>b. Install on muffler support (9) with four screws (10) and new locknuts (14).</li> <li>c. Install on left frame rail bracket (11 ), with two screws (15), and new locknuts (12).</li> <li>d. Install on muffler support braces (6) with two screws (16), washers (7), and new locknuts (8).</li> </ul>	
10.		Boom (3)	<ul style="list-style-type: none"> <li>a. Position inside boom support (5).</li> <li>b. Install with setscrew (4).</li> </ul>	Make sure setscrew (4) is tightened against boom support (5) preset groove.
11.		Boom extension (1)	<ul style="list-style-type: none"> <li>a. Position inside boom (3) with holes alined.</li> <li>b. Install with retaining pin (2).</li> </ul>	

# 10-57. CARGO SPARE TIRE CARRIER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS . Install spare tire (TM 9-2320-272-10).  
 . Install forward cargo rack (TM 9-2320-272-10).  
 . Install carrier access step (para. 10-61).

TA 351053

Change 1 10-138.1

## 10-57.1. CARGO SPARE TIRE (M939A1 SERIES) REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923A1, M924A1, M925A1, M926A1, M927A1, M928A1	TM 9-2320-272-10 TM 9-2320-272-10 Pam 10-61 TM 9-2320-272-10	Parking brake set. Spare tire removed. C-writer access step removed. Forward cargo rack removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
twelve locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled Vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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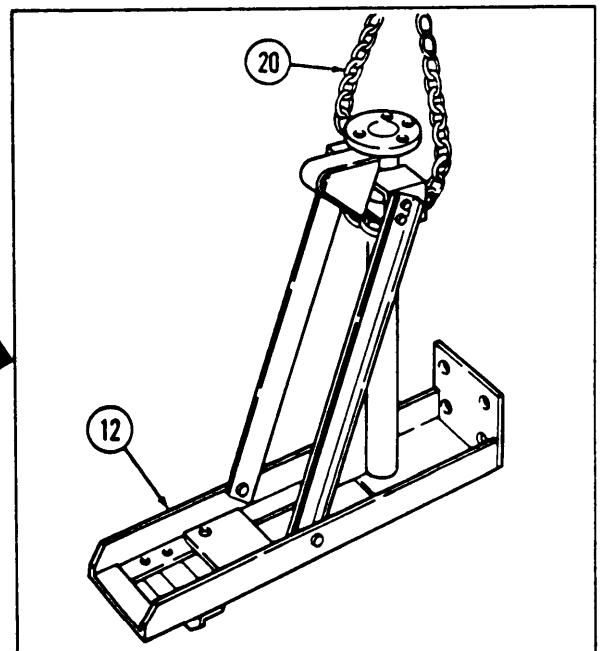
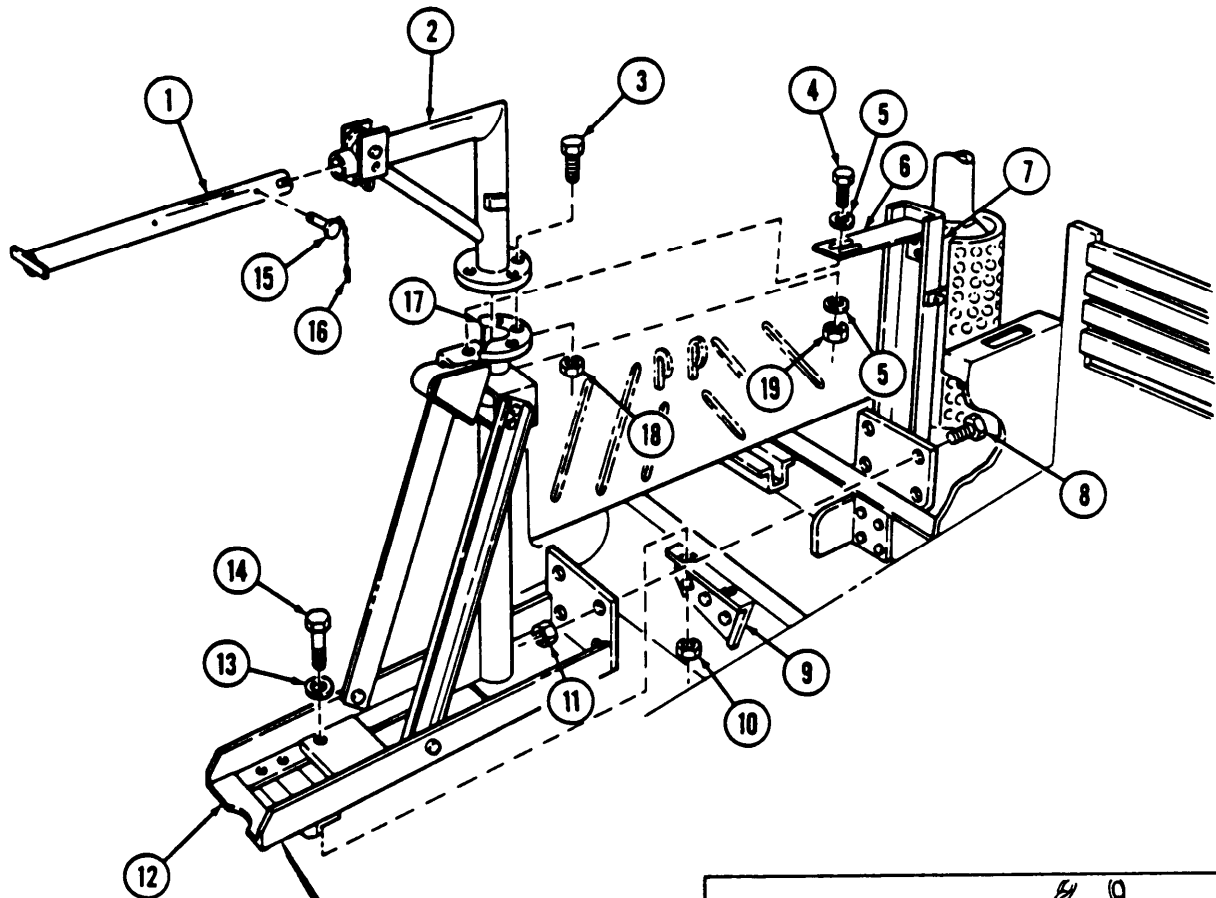
#### a. Removal

- |     |  |  |                              |                              |
|-----|--|--|------------------------------|------------------------------|
| 1.  | Boom extension (1)                               | LockPin (16) and retaining pin (15)                      | Remove.                      |                              |
| 2.  | Boom (2)   | Boom extension (1)                                       | Remove.                      |                              |
| 3.  | Boom (2) to support (17)                         | Four screws (3) and locknuts (18)                        | Remove.                      | Discard locknuts (18).       |
| 4.  |  | Boom (2)   | Remove.                      |                              |
| 5.  | Carrier base (12) to muffler support brace (6)   | Two screws (4), four washers (5), and two locknuts ( 19) | Remove.                      | Discard locknuts (19).       |
| 6.  | Carrier base (12) to muffler support (7)         | Four screws (8) and locknuts (11)                        | Remove.                      | Discard locknuts 11).        |
| 7.  | Carrier base (12) to left frame rail bracket (9) | Two screws ( 14), washers (13), and lock-nuts (10)       | Remove.                      | Discard locknuts ( 10).      |
| 8.  |  | Utility chain (20)                                       | Attach to carrier base (12). |                              |
| 9.  | Left frame rail bracket (9)                      | Carrier base (12)  | Remove.                      | Use suitable lifting device. |
| 10. | Carrier base (12)                                | Utility chain (20)                                       | Remove.                      |                              |



**10-57.1 CARGO SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)**

LOCATION	ITEM	ACTION	REMARKS
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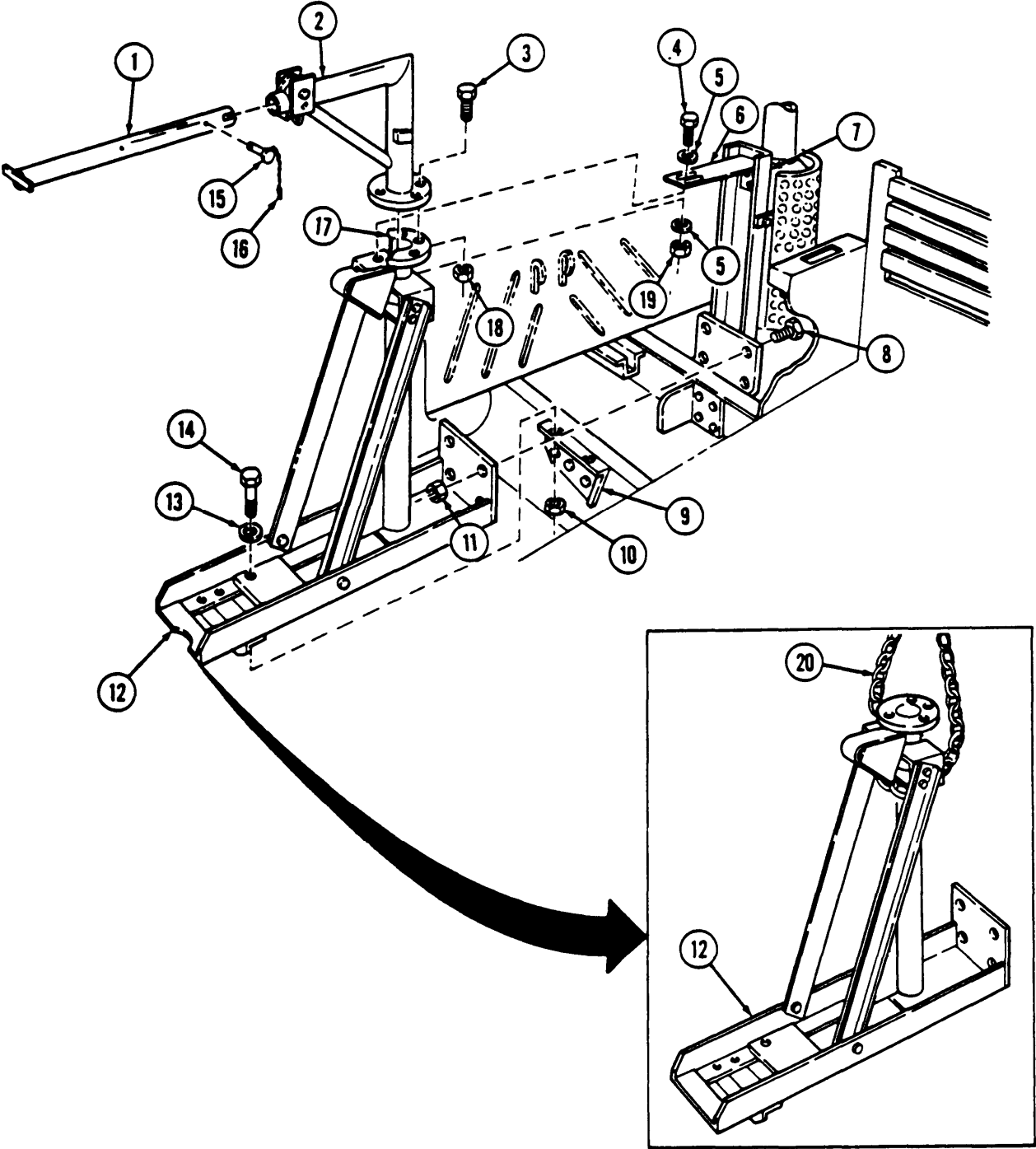
TA 351054

## 10-57.1 CARGO SPARE TIRE CARRIER (M939A1 SERIES REPLACEMENT (Cont'd))

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
11.		Utility chain (20)	Attach to carrier base (12).	
12.		Carrier base (12)	a. Position between vehicle cab and body. b. Install on muffler support (7) with four screws (8) and new locknuts (11 ). c. Install on left three rail bracket (9) with two screws ( 14), washers (13), and new locknuts (10). d. Install on muffler support brace (6) with two screws (4), four washers (5), and two new locknuts (19).	Use suitable lifting device.
13.		Utility chain (20)	Remove.	
14.		Boom (2)	Install on boom support (17) with four screws (3) and new locknuts (18).	
15.		Boom extension (1)	a. Position inside boom (2) until holes are alined. b. Install with retaining pin (15) and lockpin (16).	

10-57.1 CARGO SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS
- Install spare tire (TM 9-2320-272-10).
  - Install carrier access step (para. 10-61).
  - Install forward cargo rack (TM 9-2320-272-10).

TA351055

10-58. CARGO TAILGATE REPLACEMENT

This task covers:

a. Removal	b. Installation
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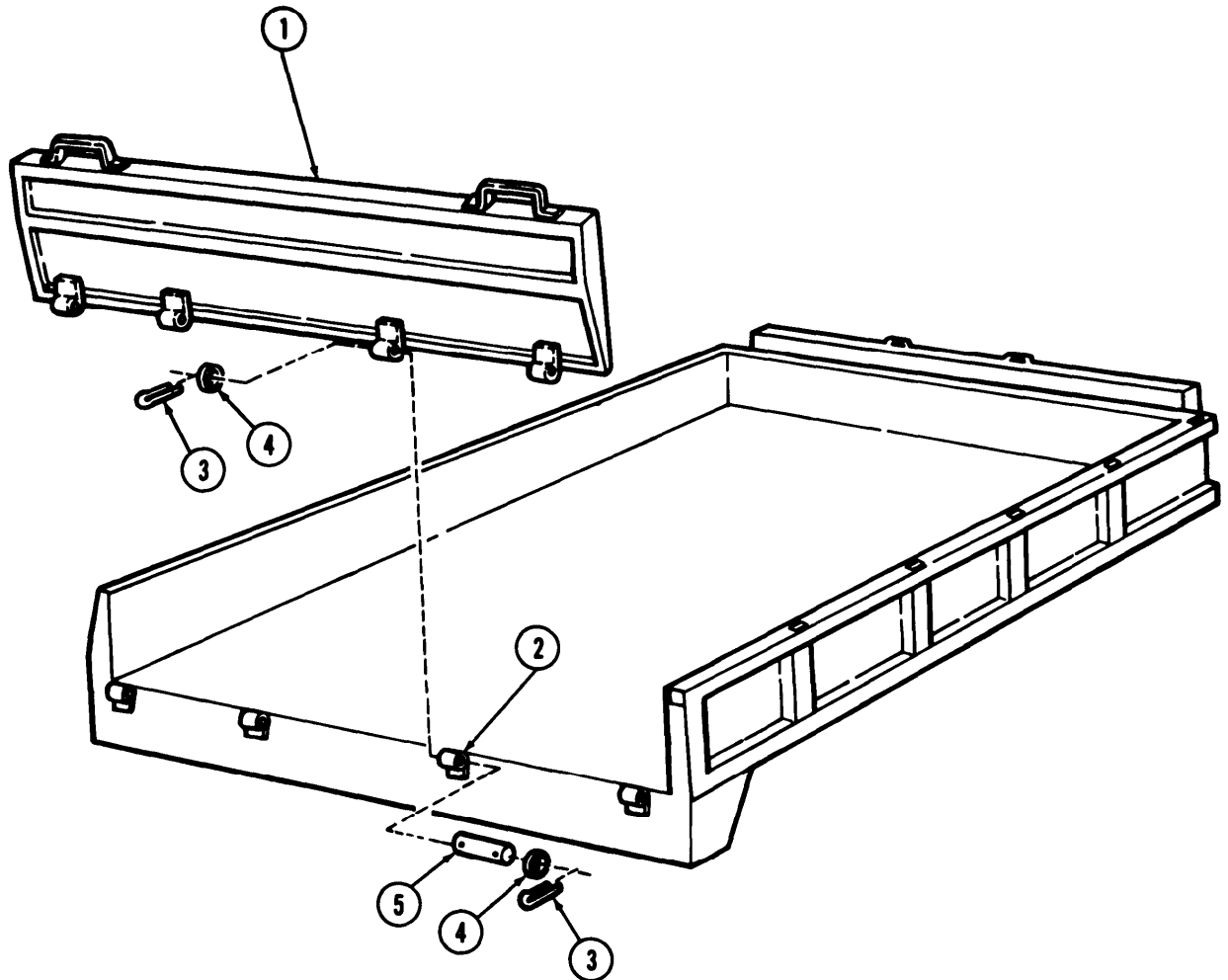
INITIAL SETUP:		
<u>Applicable. Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Tailgate closed and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Eight cotter pins GAA grease (Appendix D, Item 13)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>a. . Removal</b>				
1.	Four hinge pins (5)	Two cotter pins (3) and washers (4)	Remove from each hinge pin (5).	Discard cotter pins (3).
<b>NOTE</b> Assistant will help with step 2.				
2.	Four hinges (2)	Four hinge pins (5)	Remove with punch, and remove tailgate (1).	
<b>b. Installation</b>				
3.	Tailgate (1)		a. Position upright on rear of truck bed with hinges (2) alined. b. Latch in closed position.	Refer to TM 9-2320-272-10.
4.	Four hinge pins (5)		Coat each with GM grease and insert through each hinge (2).	
5.	Two washers (4) and new cotter pins (3)		Install into each end of four hinge pins (5).	

10-58. CARGO TAILGATE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**10-59. REFLECTORS REPLACEMENT**

This task covers:

- |                              |                         |
|------------------------------|-------------------------|
| a. Removal (M923, M924)      | f. Installation (M931 ) |
| b. Installation (M923, M924) | g. Removal (M934)       |
| c. Removal (M929)            | h. Installation (M934)  |
| d. Installation (M929)       | i. Removal (M936)       |
| e. Removal (M931 )           | j. Installation (M936)  |

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M929, M931, M934, M936	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Sixty locknuts Sixteen lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

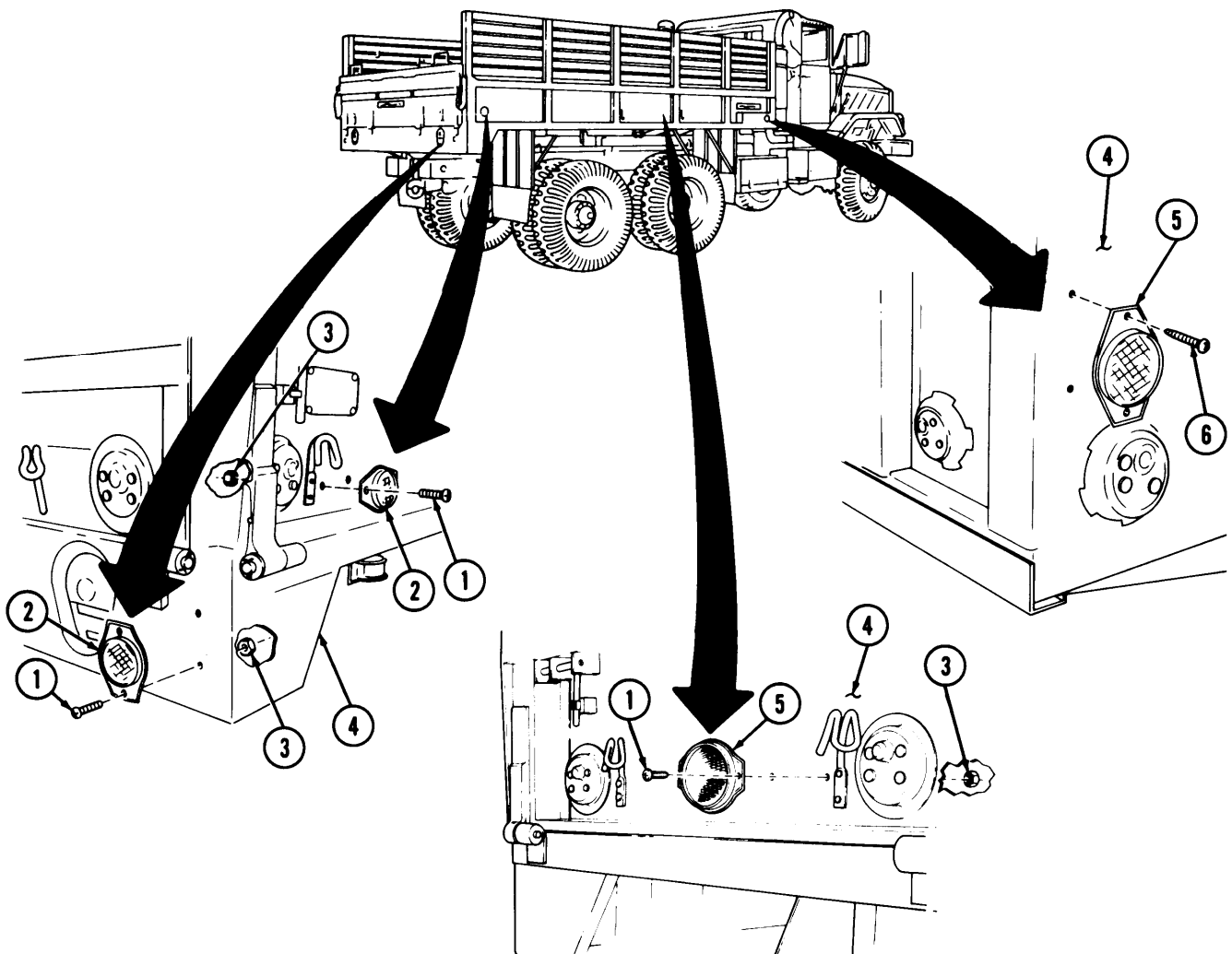
The following tasks show replacement of reflectors on one side of each vehicle. Replacement of reflectors on other side of vehicle is done the same way.

**a. Removal (M923, M924)**

- |    |                                |  |         |                       |
|----|--------------------------------|--|---------|-----------------------|
| 1. | Rear and rear side of body (4) | Two locknuts (3) and screws (1), and red reflector (2)   | Remove. | Discard locknuts (3). |
| 2. | Front side of body (4)         | Two locknuts (3) and screws (1), and amber reflector (5) | Remove. | Discard locknuts (3). |
| 3. | Front of body (4)              | Two screws (6) and amber reflector (5)                   | Remove. |                       |

# 10-59. REFLECTORS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation (M923, M924)</b>				
4.		Amber reflector (5)	Install on front of body (4) with two screws (6).	
5.		Amber reflector (5)	Install on front side of body (4) with two screws (1) and new locknuts (3).	
6.		Red reflector (2)	Install on tailgate and rear side of body (4) with two screws (1) and new locknuts (3).	

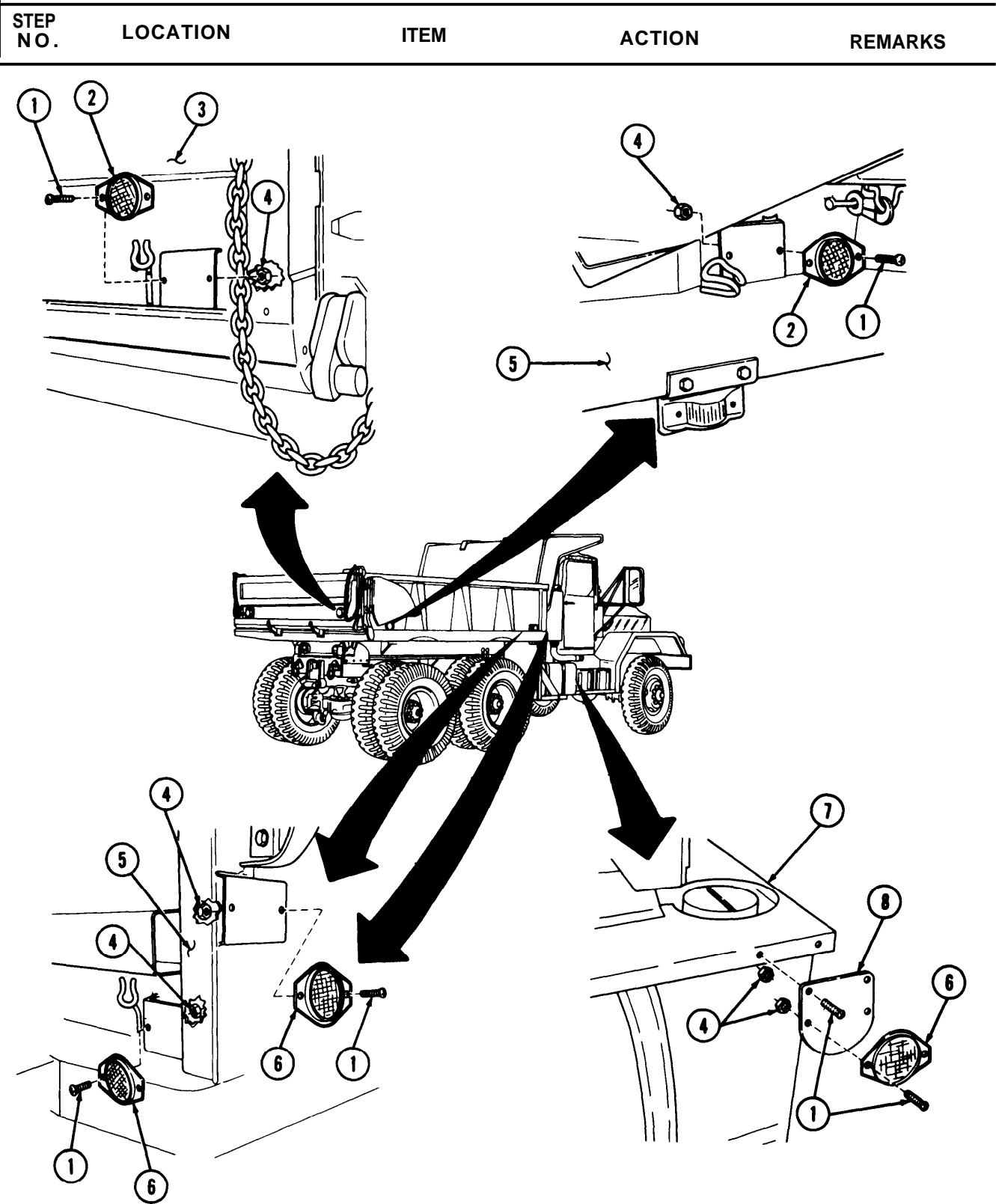


<b>10-59. REFLECTORS REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>c. Removal (M929)</b>				
7.	Tailgate (3) and rear side of dump body (5)	<b>Two</b> locknuts (4) and screws (1), and red reflector (2)	Remove.	Discard locknuts (4).
8.	Front and side of dump body (5)	Two locknuts (4) and screws (1), and amber reflector (6)	Remove,	Discard locknuts (4).
9.	Tire carrier access step (7)	Four locknuts (4) and screws (1), amber reflector (6), and bracket (8)	Remove.	Discard locknuts (4).
<b>d. Installation (M929)</b>				
10.		Amber reflector (6) and bracket (8)	Install on tire carrier access step (7) with four screws (1) and new locknuts (4).	
11.		Amber reflector (6)	Install each on front and side of dump body (5) with four screws (1) and new locknuts (4).	
12.		Red reflector (2)	Install on rear side of dump body (5) and tailgate (3) with two screws (1) and new locknuts (4).	



10-59. REFLECTORS REPLACEMENT (Cont'd)

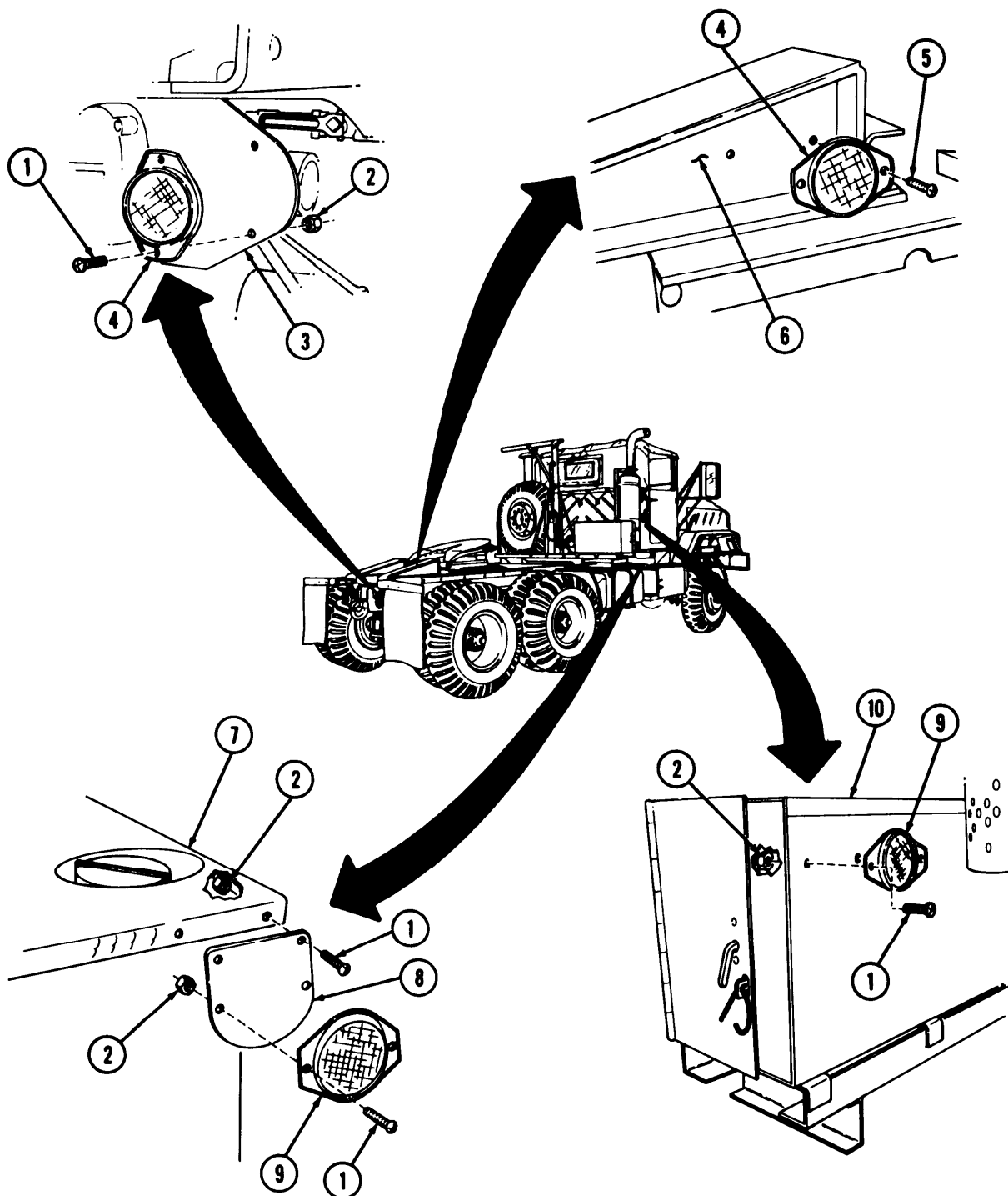
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				

## 10-59. REFLECTORS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>e. Removal (M931)</b>				
13.	Composite light bracket (3)	Two locknuts (2) and screws (1), and red reflector (4)	Remove.	Discard locknuts (2).
14.	Approach plate (6)	Two screws (5) and red reflector (4)	Remove.	
15.	Tire carrier access step (7)	Four locknuts (2) and screws (1), amber reflector (9), and bracket (8)	Remove.	Discard locknuts (2).
16.	Toolbox ( 10)	Two locknuts (2) and screws (1) and amber reflector (9)	Remove.	Discard locknuts (2).
<b>f. Installation (M931 )</b>				
17.		Amber reflector (9)	Install on toolbox (10) with two screws (1) and new locknuts (2).	
18.		Amber reflector (9) and bracket (8)	Install on tire carrier access step (7) with four screws (1) and new locknuts (2).	
19.		Red reflector (4)	Install on approach plate (6) with two screws (5).	
20.		Red reflector (4)	Install on composite light bracket (3) with two screws (1) and new locknuts (2).	

# 10-59. REFLECTORS REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
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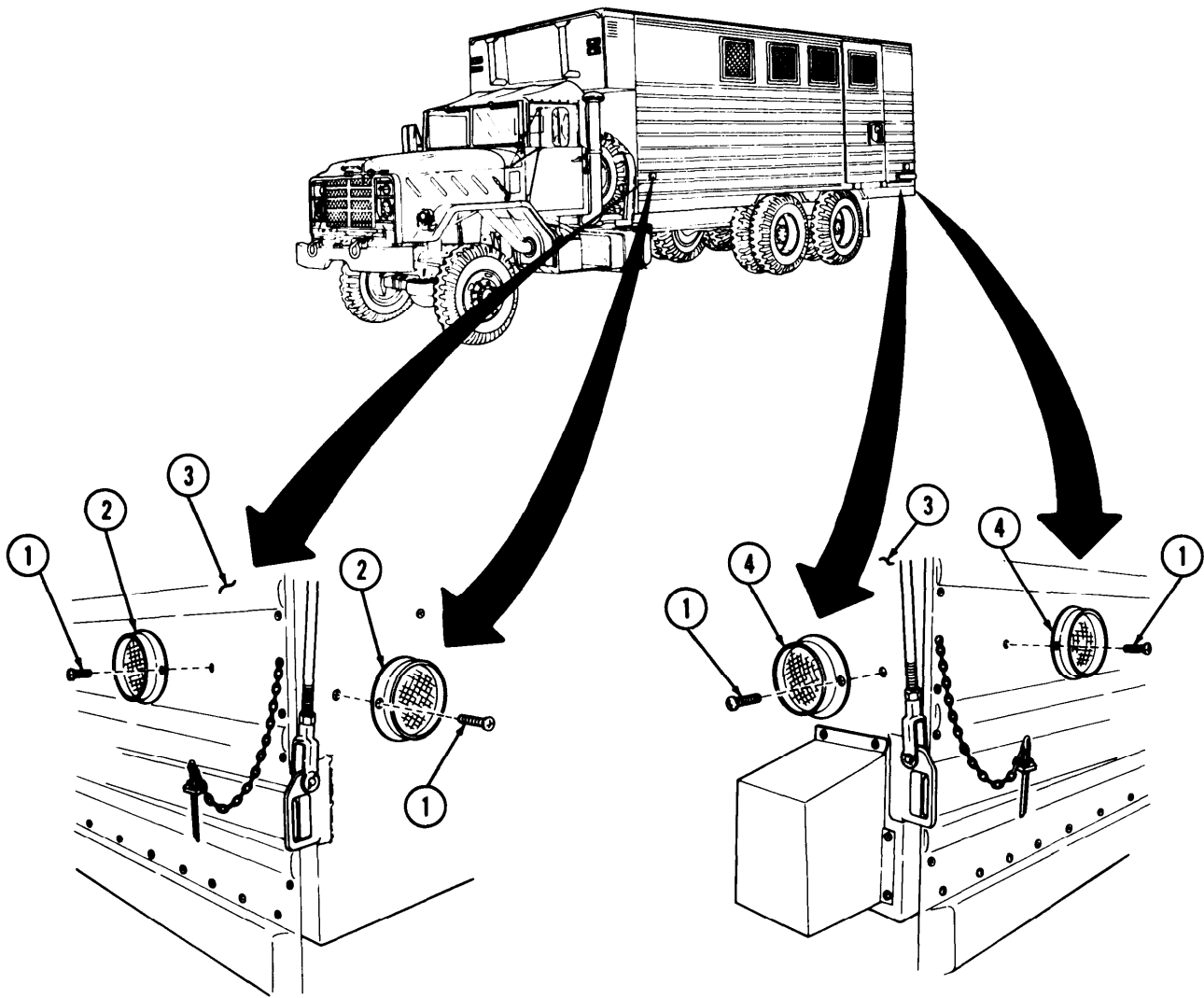
**10-59. REFLECTORS REPLACEMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>g. Removal (M934)</b>				
21.	Front and front side of van body (3)	Two screws (1) and amber reflector (2)	Remove.	
22.	Rear side and end of van body (3)	Two screws (1) and red reflector (4)	Remove.	
<b>h. Installation (M934)</b>				
23.		Red reflector (4)	Install on end and rear side of van body (3) with two screws (1).	
24.		Amber reflector (2)	Install on front side and front of van body (3) with two screws (1).	

10-59. REFLECTORS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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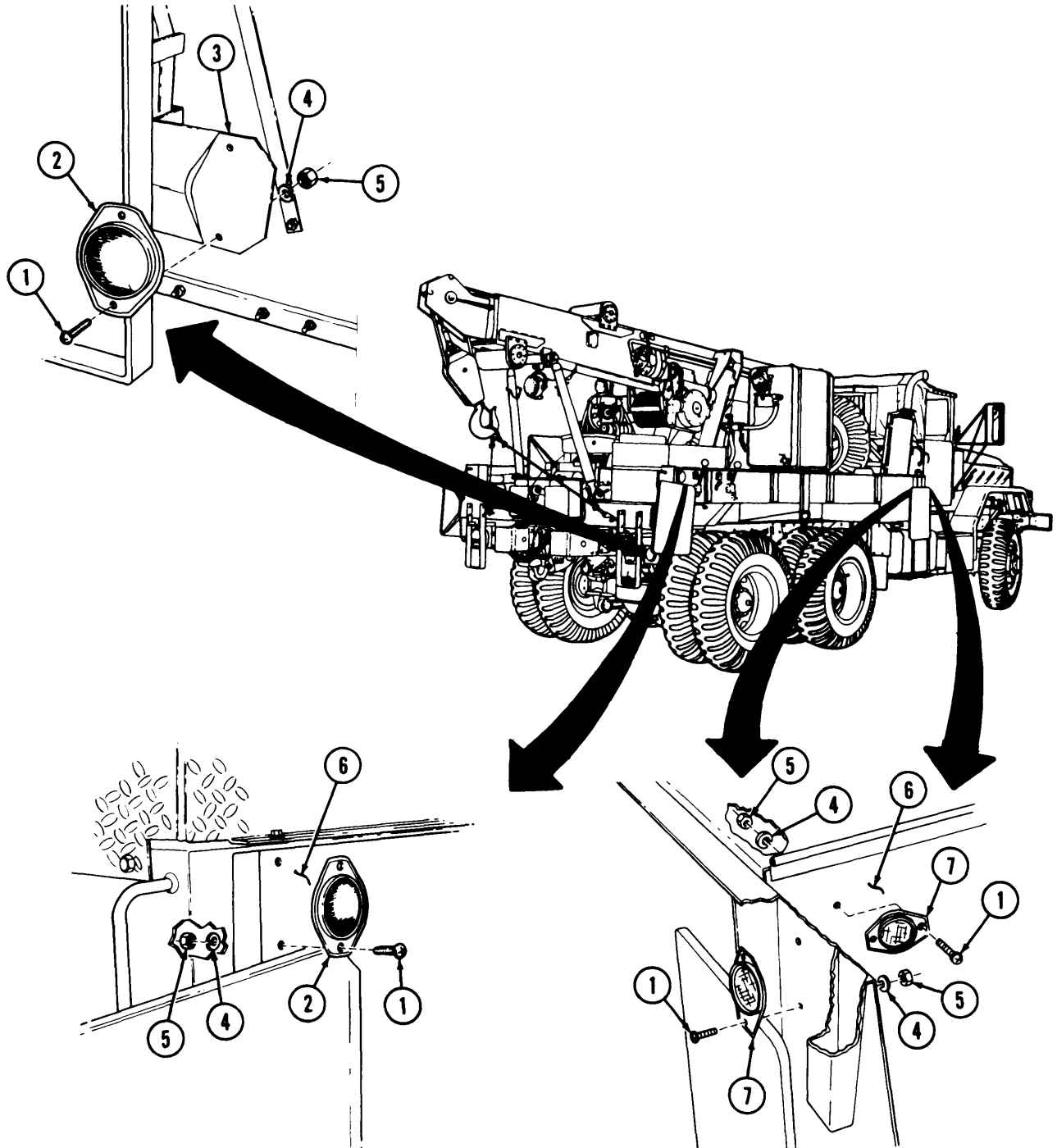


**10-59. REFLECTORS REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>i. Removal (M936)</b>				
25.	Tail light guard (3)	Two nuts (5), lockwashers (4), and screws (1), and red reflector (2)	Remove.	Discard lockwashers (4).
26.	Rear side of body (6)	Two nuts (5), lockwashers (4), and screws (1), and red reflector (2)	Remove.	Discard lockwashers (4).
27.	Front side and front of body (6)	Two nuts (5), lockwashers (4), and screws (1), and amber reflector (7)	Remove.	Discard lockwashers (4).
<b>j. Installation (M936)</b>				
28.		Red reflector (7)	Install on front side and front of body (6) with two screws (1), new lockwashers (4), and nuts (5).	
29.		Red reflector (7)	Install on rear side of body (6) with two screws (1), new lockwashers (4), and nuts (5).	
30.		Amber reflector (2)	Install on tail light guard (3) with two screws (1), new lockwashers (4), and nuts (5).	

10-59. REFLECTORS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349344

**10-60. CARGO STORAGE BOX REPLACEMENT**

This task covers:

a. Removal

b. Installation

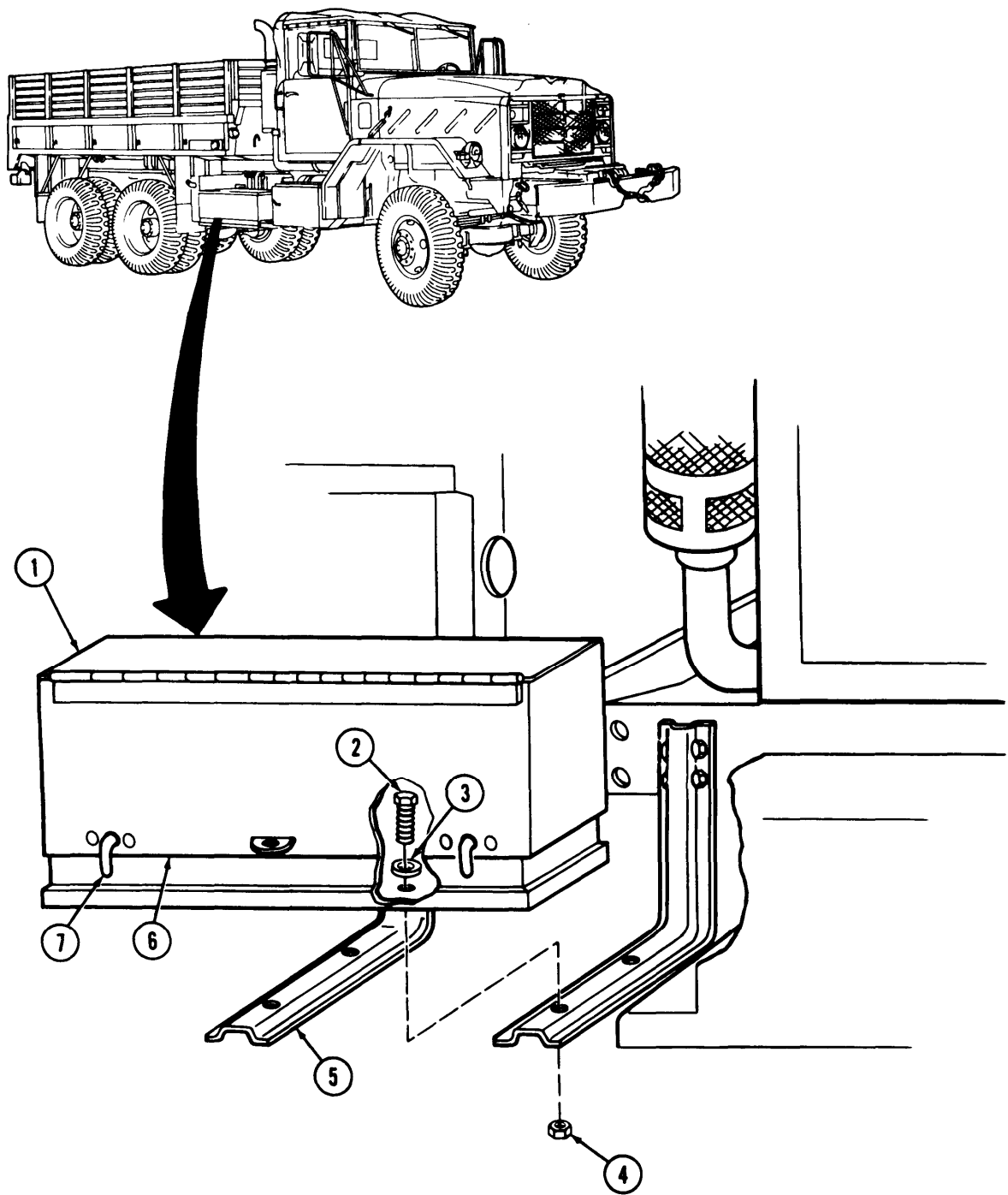
**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.		Storage box door (6)	Release two latches (7) and open.	
2.	Storage box (1) to box hangers (5)	Four locknuts (4), washers (3), and screws (2)	Remove.	Discard locknuts (4).
3.		Storage box (1)	Remove.	
<b>b. Installation</b>				
4.		Storage box (1)	a. Aline with holes in hangers (5) with box door (6) facing outward. b. Install with four screws (2), washers (3), and new locknuts (4).	



10-60. CARGO STORAGE BOX REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



END OF TASK!

TA 349345

10-61. CARGO SPARE TIRE CARRIER ACCESS STEP REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts Lint-free cloth (Appendix D, Item 9)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Do not perform this procedure near flames.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Diesel fuel is highly flammable. Do not perform fuel system procedures near open flame. Injury to personnel may result.

a. Removal				
1.	Above fuel tank (7)	Four screws (1) and locknuts (8)	Remove from carrier base (9) and step brackets (4).	Discard locknuts (8),
2.	Filler neck strainer (6)	Fuel tank cap (2) and chain (3)	Remove.	Cover strainer (6) with lint-free cloth.
3.		Carrier access step (5)	Remove.	
b. Installation				
4.		Carrier access step (5)	Position under carrier base (9) with holes alined.	
5.		Step brackets (4)	Attach to carrier base (9) with four screws (1) and new locknuts (8).	

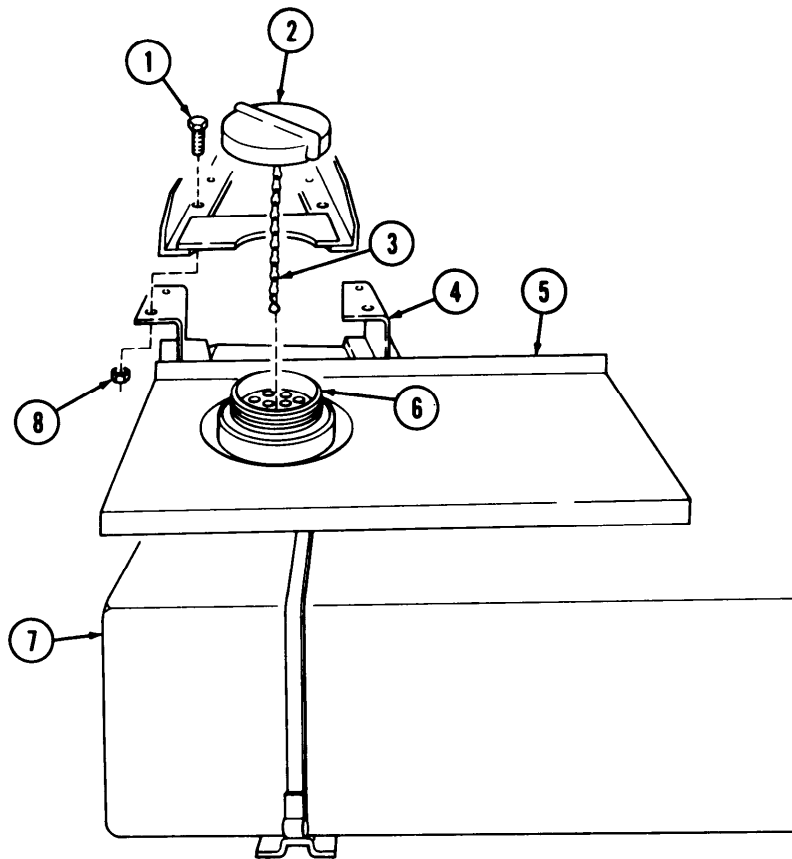
**10-61. CARGO SPARE TIRE CARRIER ACCESS STEP REPLACEMENT (Cont'd)**

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

Remove lint-free cloth from strainer before performing step 6.

- |    |                                 |                                     |
|----|---------------------------------|-------------------------------------|
| 6. | Chain (3) and fuel tank cap (2) | Attach to filler neck strainer (6). |
|----|---------------------------------|-------------------------------------|



END OF TASK!

TA 349346

10-61.1. TAILGATE BUMPERS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926 M927, M928	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

All tailgate bumpers are removed the same.

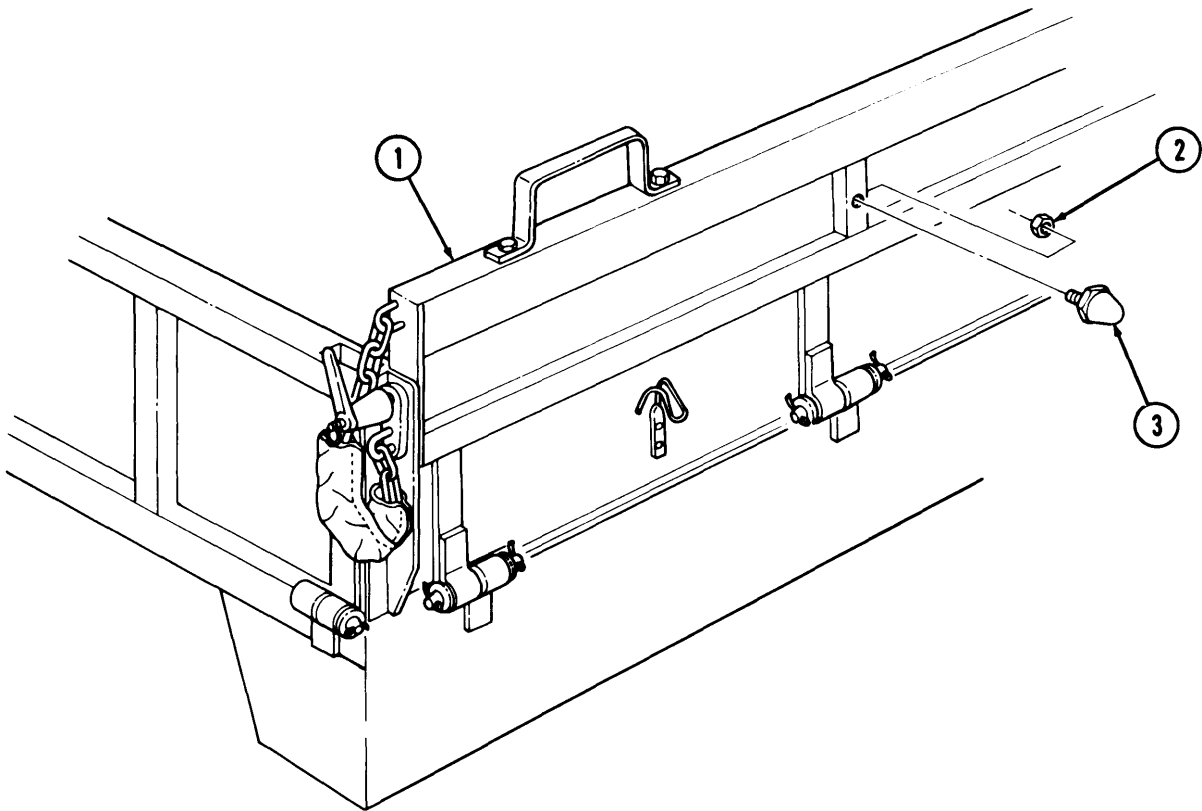
a. Removal

- |                            |             |  |                      |
|----------------------------|-------------|--|----------------------|
| 1. Cargo body tailgate (1) | Locknut (2) | Remove locknut (2) and bumper (3) from tailgate (1). | Discard locknut (2). |
|----------------------------|-------------|--|----------------------|

b. Installation

- |    |            |   |
|----|------------|---|
| 2. | Bumper (3) | Install on tailgate (1) with new locknut (2). |
|----|------------|---|

10-61.1. TAILGATE BUMPERS REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



END OF TASK!

## Section VI. EXPANSIBLE VAN BODY MAINTENANCE

### 10-62. GENERAL

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

### 10-63. EXPANSIBLE VAN BODY MAINTENANCE TASK SUMMARY

<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
10-64.	Van Rear Door and Side Door Window Replacement	10-158
10-65.	Retractable Window Replacement	10-160
10-66.	Window Blackout Panel Replacement	10-162
10-67.	Window Screen Replacement	10-164
10-68.	Retractable Window Regulator Replacement	10-166
10-69.	Window Brush Guard Replacement	10-168
10-70.	Hinged Roof and Floor Counterbalance Cable Replacement	10-170
10-71.	Side Panel to Roof Toggle Clamp Replacement	10-176
10-72.	Toggle Clamp Anchor Post Replacement	10-178
10-73.	Side Panel to Roof Swivel Hook Replacement	10-180
10-74.	Ladder Locking Clamp Replacement	10-182
10-75.	Bonnet Control Rod Replacement	10-184
10-76.	Door Hinge and Seals Replacement	10-186
10-77.	Panel Seals Replacement	10-190
10-78.	Door Handle and Lock Replacement	10-192
10-79.	Door Checks Replacement	10-194
10-80.	Ladder Rack Bumpers Replacement	10-196
10-81.	Side Panel Rubber Bumpers Replacement	10-198
10-82.	Side Panel Rear Lock Replacement	10-200
10-83.	Side Panel Front Lock and Hinged Type Roof Lock Replacement	10-204
10-84.	Side Panel Exterior Lock Replacement	10-208
10-85.	Fluorescent Light Tube Replacement	10-210
10-86.	Emergency Light and Blackout Light Lens Replacement	10-212
10-87.	Emergency Lamp and Blackout Lamp Replacement	10-214
10-88.	Blackout Light Switch and 110 Volt Receptacle Replacement	10-216
10-89.	Inside Telephone Jack Posts Replacement	10-220

**10-63. EXPANSIBLE VAN BODY MAINTENANCE TASK SUMMARY (Cont'd)**

<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
10-90.	Outside Telephone Jack Posts Replacement	10-222
10-91.	Clearance and Blackout Marker Lights Replacement	10-226
10-92.	Side and Rear Door Blackout Light Switch Replacement	10-228
10-93.	Hinged Roof-Operated Blackout Circuit Plungers Replacement	10-232
10-94.	Expanding and Retracting Mechanism Locks Replacement	10-234
10-95.	Van Spare Tire Carrier Replacement	10-236
10-96.	Van Heater Fuel Pump Replacement	10-236
10-97.	Van Spare Tire Carrier (M939A1 Series) Replacement	10-238
10-98.	Van Davit Chain and Wire Rope Assembly (M939A1 Series) Replacement	10-242
10-99.	Van Swing Davit and Pulley (M939A1 Series) Replacement	10-246
10-100.	Van Davit Winch (M939A1 Series) Replacement	10-250
10-101.	Van Power Cable Reel (M939A1 Series) Replacement	10-252
10-102.	Van Heater Fuel Pump (M939A1 Series) Replacement	10-254
10-103.	Air Conditioner Drain Tube Replacement	10-256

10-64. VAN REAR DOOR AND SIDE DOOR WINDOW REPLACEMENT

This task covers:  
a. Removal  
b. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van body fully expanded and secured (side door window only).
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Door (2)	Twenty-one screws (3)	Remove.	
2.		Door window frame (1)	Remove.	

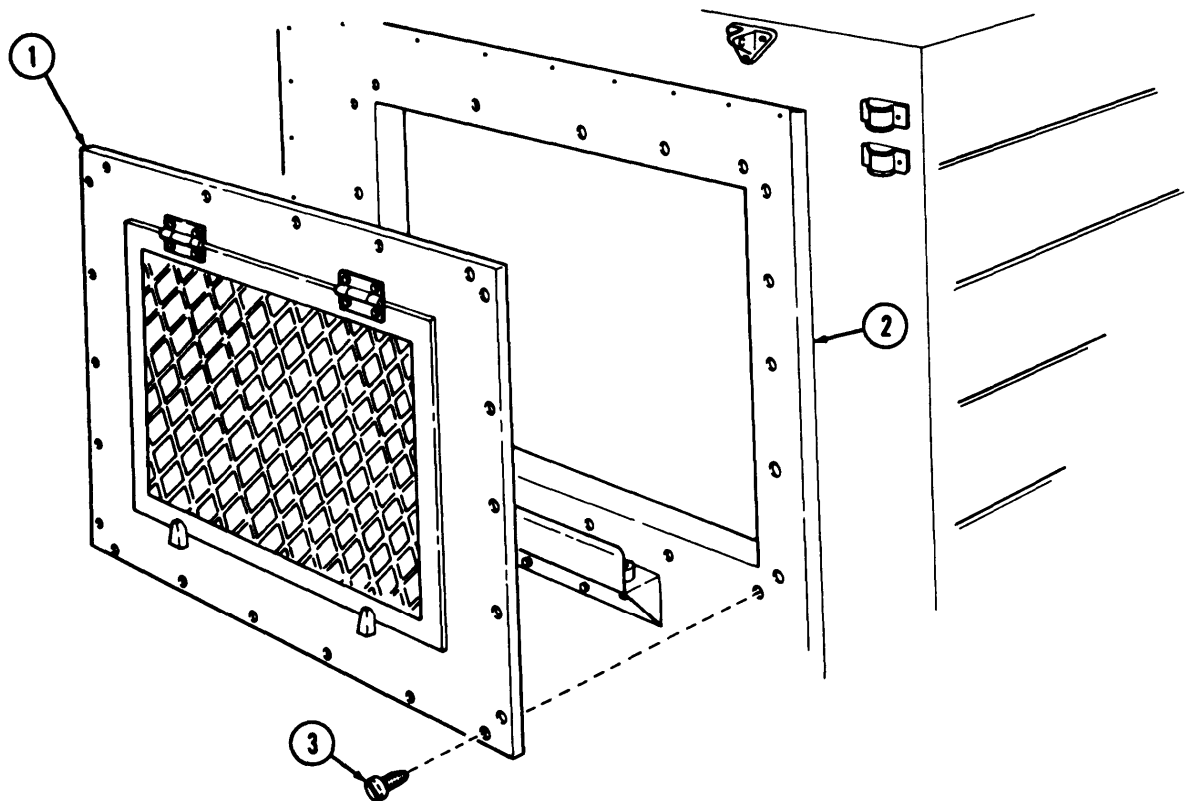
b. Installation

3.		Door window frame (1)	Install on door (2) with twenty-one screws (3).	
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**10-64. VAN REAR DOOR AND SIDE DOOR WINDOW REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!****FOLLOW-ON TASK:** Retract and secure van body (side door window only) (TM 9-2320-272-10).**TA 349347**

## 10-65. RETRACTABLE WINDOW REPLACEMENT

This task covers:

### a. Removal

### b. Installation

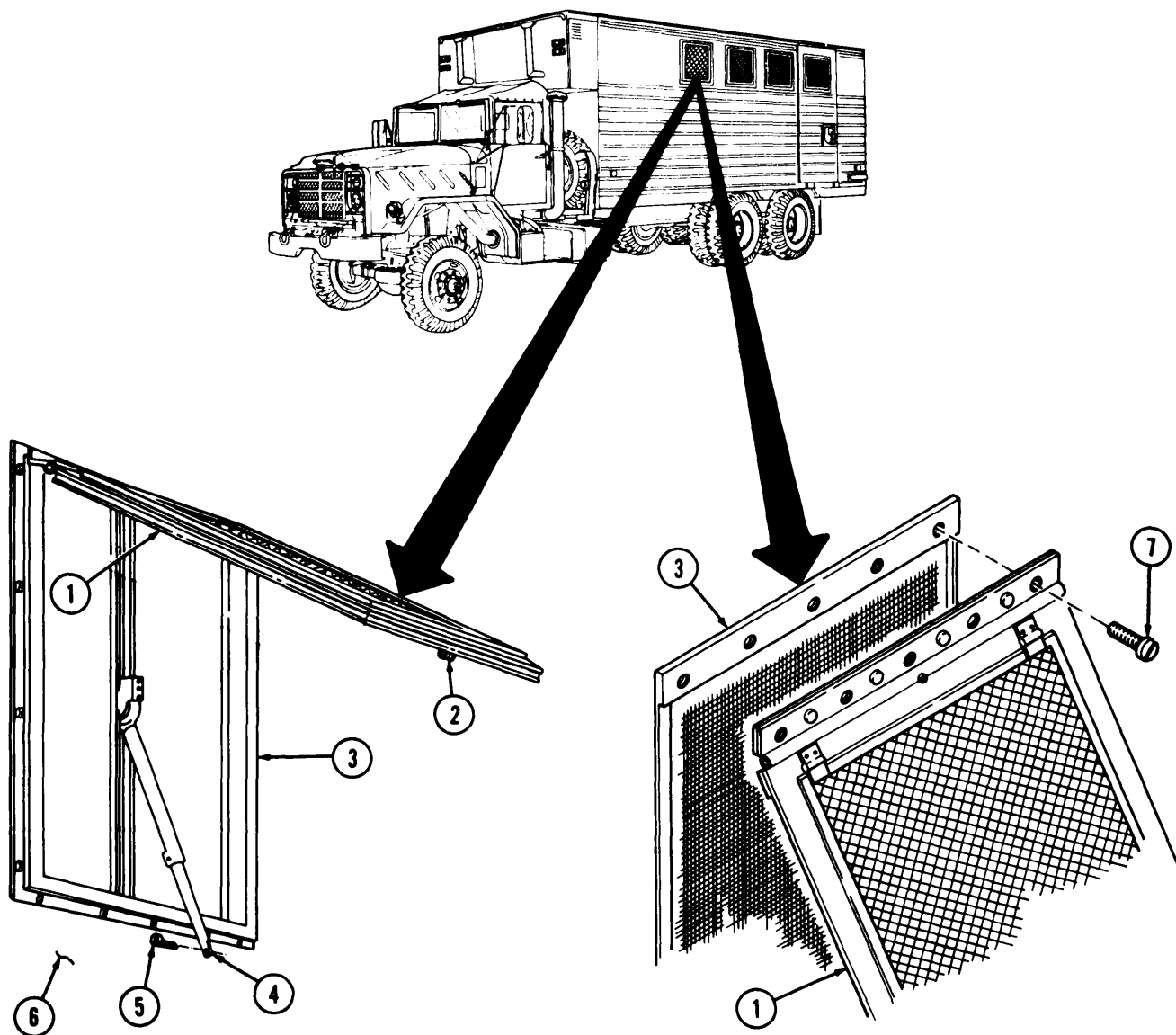
#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded <b>and</b> secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>a. Removal</b>				
1.	Van side panel (6)	Retractable window frame (1)	Open.	
2.	Regulator arm (4)	Cotter pin (5)	Remove.	Discard cotter pin (5)
3.	Outer frame (3)	Five screws (7) and window frame (1)	Remove.	
<b>b. Installation</b>				
4.		Window frame (1)	Install on outer frame (3) with five screws (7).	
5.		Regulator arm (4)	Install on window frame bracket (2) with new cotter pin (5).	

# 10-65. RETRACTABLE WINDOW REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASK:** Retract and secure van side panel (TM 9-2320-272-10).

TA 349348

## 10-66. WINDOW BLACKOUT PANEL REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

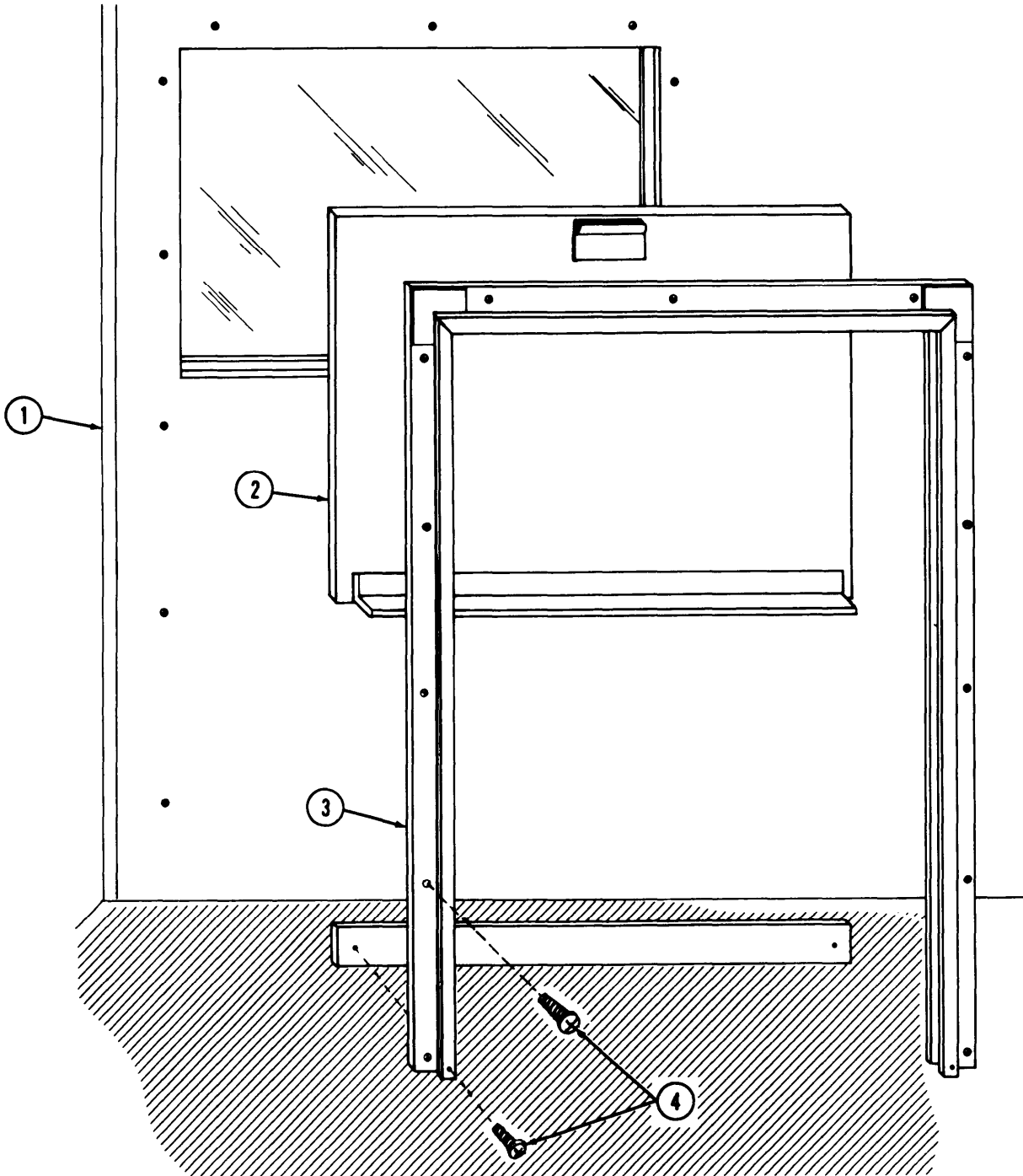
- |    |                                |  |                |
|----|--------------------------------|--|----------------|
| 1. | Blackout panel guide frame (3) | Fifteen screws (4)                     | Remove.        |
| 2. |                                | Guide frame (3) and blackout panel (2) | <b>Remove.</b> |

#### b. Installation

- |    |  |                    |  |
|----|--|--------------------|--|
| 3. |  | Blackout panel (2) | Position in guide frame (3).   |
| 4. |  | Guide frame (3)    | a. Aline with holes in van body side panel (1).<br>b. Install with fifteen screws (4). |

# 10-66. WINDOW BLACKOUT PANEL REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

**FOLLOW-ON TASK::** Retract and secure van side panel (TM 9-2320-272-10).

TA 349349

10-163

**10-67. WINDOW SCREEN REPLACEMENT**

This task covers:

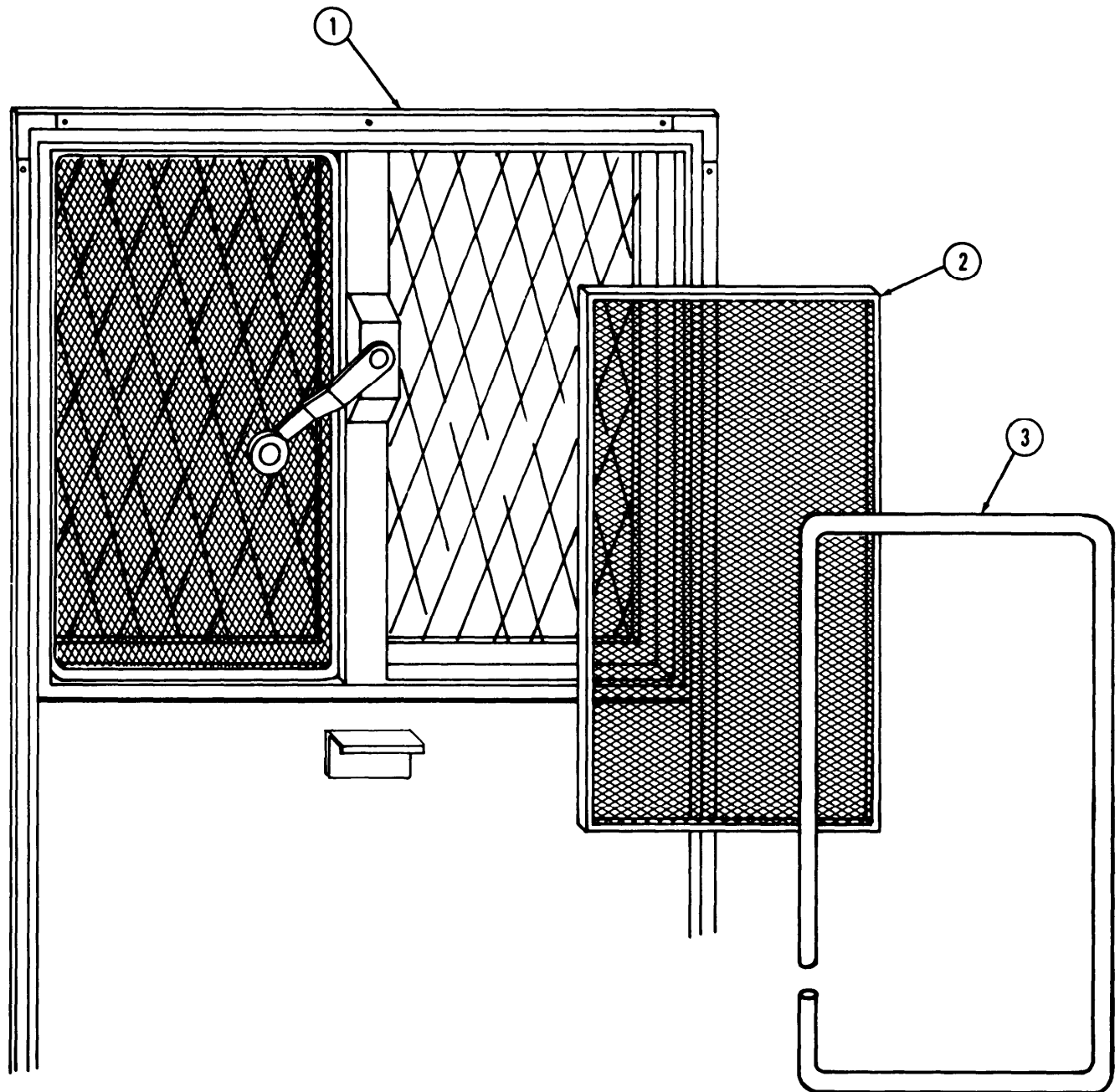
**a. Removal****b. Installation****INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Rewired</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>a. Removal</b>				
1.	Inside van body	Screen retainer cord (3)	Carefully pry from around screen (2).	
2.	Window frame (1)	Window screen (2)	Remove.	
<b>b. Installation</b>				
3.		Window screen (2)	a. Position to window frame (1). b. Install by inserting cord (3) between frame (1) and screen (2).	

## 10-67. WINDOW SCREEN REPLACEMENT (Cont'd)

STEP NO	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASK:** Retract and secure van side panel (TM 9-2320-272-10).

TA 349350

10-165

**10-68. RETRACTABLE WINDOW REGULATOR REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |   |   |  |   |
|----|---|---|--|---|
| 1. |   | Retractable window (1)                    | a. Fully open.<br>b. Brace in open position, |   |
| 2. | Regulator arm (4) to window frame bracket (2) | Cotter pin (5)                            | Remove.                                      | Separates regulator arm (4) from window (1).<br>Discard cotter pin (5). |
| 3. | Inside van                                    | Crank handle (7) and screw (8)            | Remove.                                      |   |
| 4. | Frame (9)                                     | Three screws (6) and window regulator (3) | Remove.                                      |   |

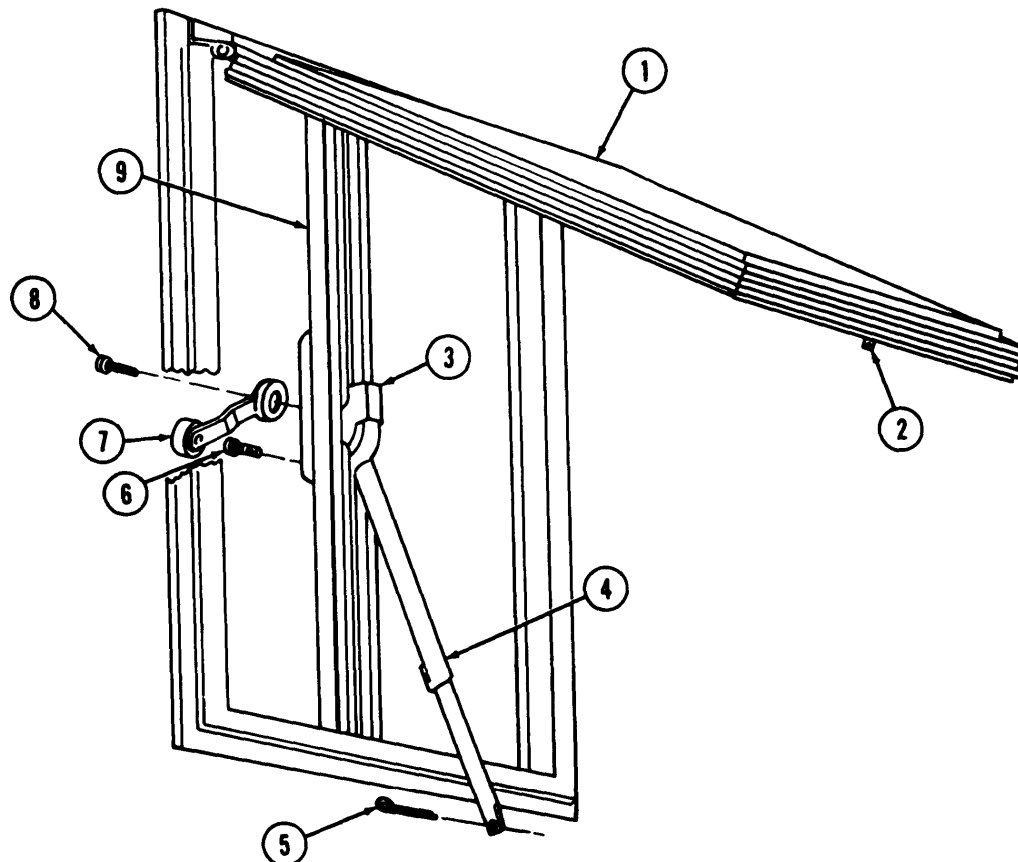
**b. Installation**

- |    |  |                      |   |  |
|----|--|----------------------|---|--|
| 5. |  | Window regulator (3) | a. Position through window frame (9) with holes aligned.<br>b. Install with three screws (6). |  |
|----|--|----------------------|---|--|



**10-68. RETRACTABLE WINDOW REGULATOR REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Crank handle (7)	a. Position over regulator (3). b. Install with screw (8).	
7.		Regulator arm (4)	a. Position arm to frame bracket (2). b. Install with new cotter pin (5).	



END OF TASK!

**FOLLOW-ON TASK:** Retract and secure van side panel (TM 9-2320-272- 10).

TA 349351

**10-69. WINDOW BRUSH GUARD REPLACEMENT**

This task covers:

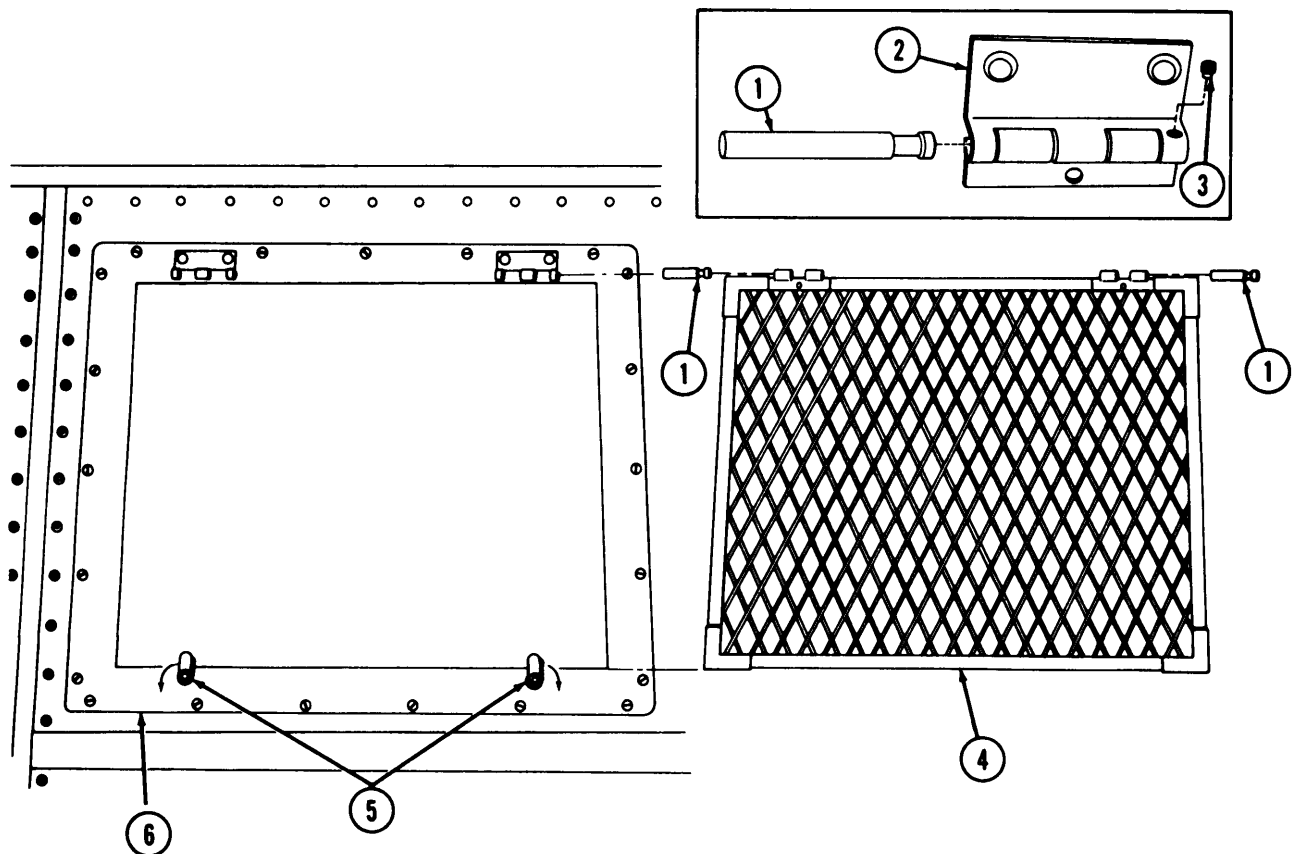
**a. Removal****b. Installation****INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set, Van side panel fully expanded and secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Window frame (6)	Two latches (5)	Release.	
2.	Hinges (2)	Two setscrews (3) and hinge pins (1)	Remove.	
3.	Window frame (6)	Window brush guard (4)	Remove.	
<b>b. Installation</b>				
4.		Window brush guard (4)	Position to two window hinges (2).	
5.		Two hinge pins (1)	a. Install through two hinges (2). b. Install with two setscrews (3).	
6.		Two latches (5)	Fasten.	

# 10-69. WINDOW BRUSH GUARD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**END OF TASK!**

**FOLLOW-ON TASK:** Retract and secure van side panel (TM 9-2320-272-10).

TA 349352

10-70. HINGED ROOF AND FLOOR COUNTERBALANCE CABLE REPLACEMENT

This task covers:

- a. Removal
- b. Installation
- c. Cable Adjustment

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		Always wear hand protection when handling cable.
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Wear hand protection when handling cable. Broken wires may cause injury to personnel.

a. Removal

1.

Hinged roof (4)

a. Support with swivel hooks (3).

b. Place 1 in. (2.5 cm) block of wood between one swivel hook (3) end and hinged roof (4).
2.

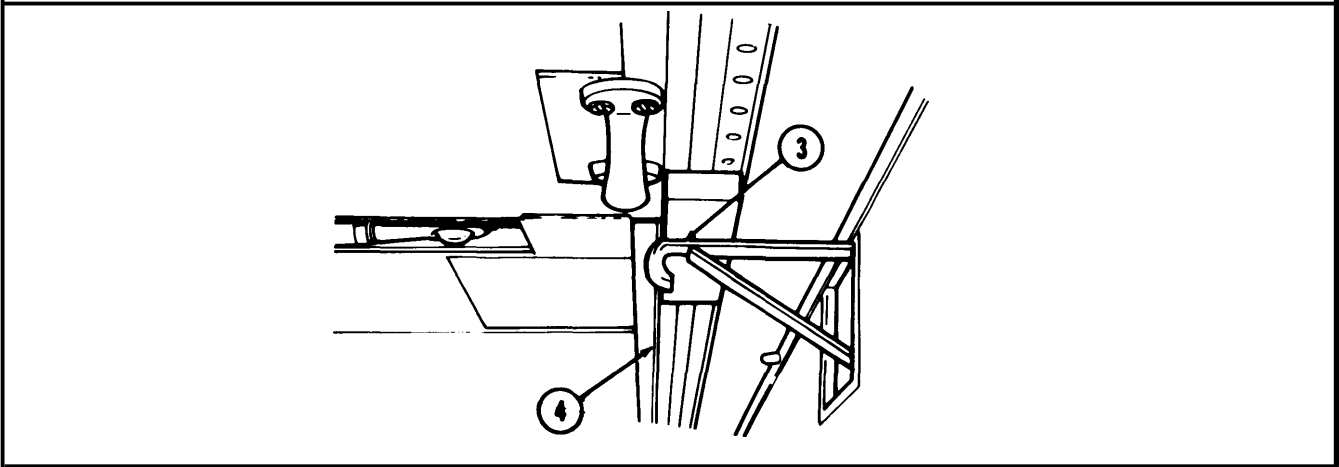
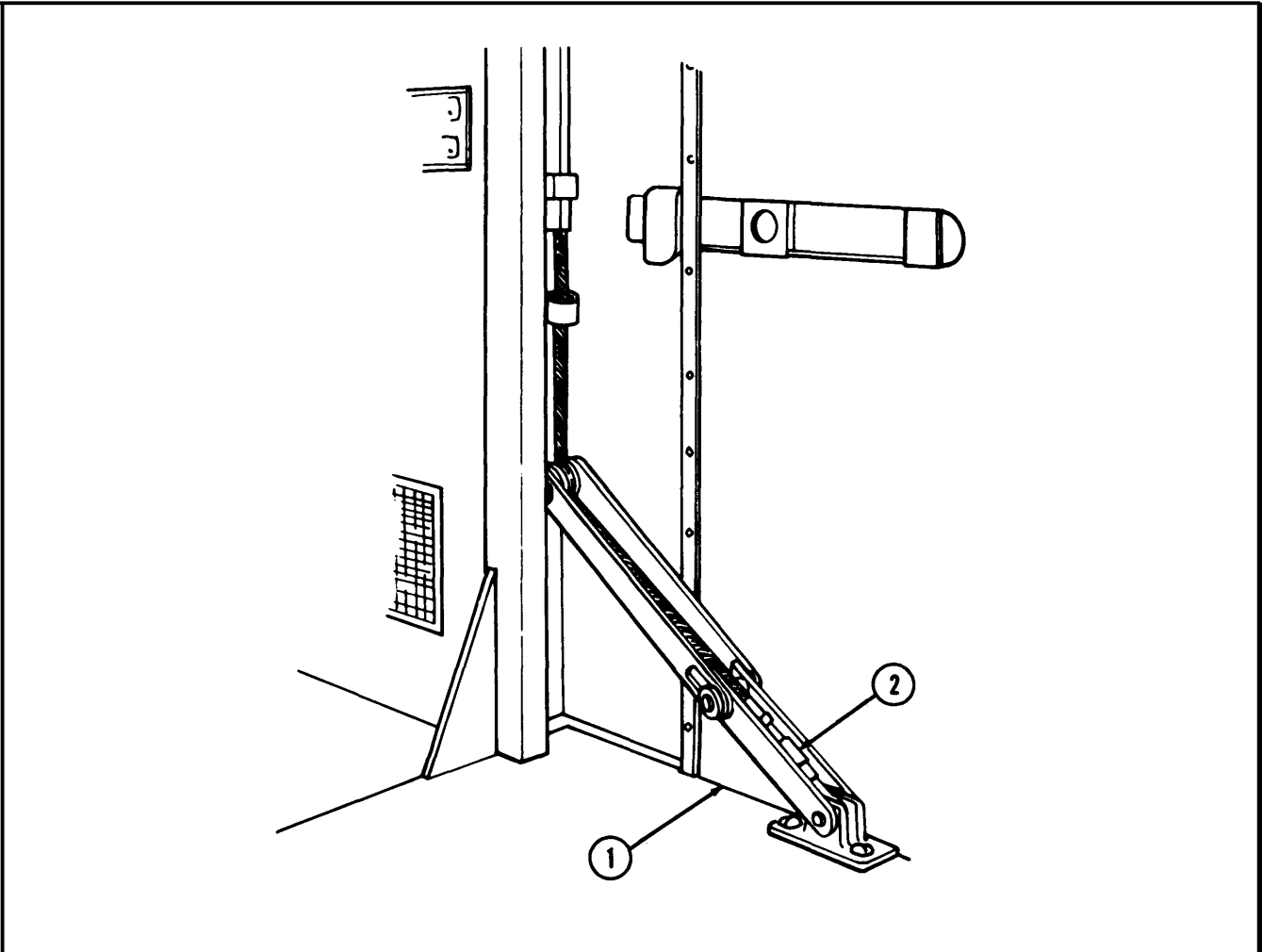
Hinged floor (1)

Turnbuckle (2)

Turn counterclockwise. To decrease cable tension.

10-70. HINGED ROOF AND FLOOR COUNTERBALANCE CABLE  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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# 10-700 HINGED ROOF AND FLOOR COUNTERBALANCE CABLE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Cable (11) to drop arm clevis (2)	Cotter pin (1) and clevis pin (3)	Remove.	<b>Discard</b> cotter pin (1).
4.	Drop arm (4)	Clevis (2)	Remove.	
5.	Mounting plate (7)	Cotter pin (5), roller pin (6), and upper roller (8)	Remove.	Discard cotter pin (5).
6.	Lower folding arm (12)	Cotter pin (15), roller pin (13), and lower roller (14)	Remove.	Discard cotter pin (15).
7.		Lower cable end (9)	Unscrew from turn-buckle (10).	
8.		Cable (11)	Pull upward through two cable guides (16) and remove.	

**10-700 HINGED ROOF AND FLOOR COUNTERBALANCE CABLE  
REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS

<b>10-70. HINGED ROOF AND FLOOR COUNTERBALANCE CABLE REPLACEMENT (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
9.		Turnbuckle eye (10)	Remove from replacement cable end (9).	
10.		Lower cable end (9)	a Thread through cable guides (18). b. Screw onto existing turnbuckle eye (10).	Start at upper guide (18).
11.		Lower folding arm (14)	a Aline with holes in corner post (13). b. Install roller (16) with roller pin (15) and new cotter pin (17).	<b>Make</b> sure cable is behind roller (16).
12.		Upper roller (7)	Position in mounting plate (6).	Make sure cable is on roller groove.
13.		Roller pin (5)	Place through roller (7) and install with new cotter pin (8).	
14.		Cable clevis (2)	Pull down over end of vertical arm (4).	
15.		Clevis pin (3)	Place through holes in cable clevis (2) and install with new cotter pin (1).	
16.		Wood block (19)	Remove from between swivel hook and hinged roof (20).	See step 1.
17.		Turnbuckle(11)	Tighten to increase cable tension if necessary.	See task c. to adjust.
<b>c. Cable Adjustment</b>				
18.	Hinged floor (12)	Turnbuckle(11)	a Turn clockwise to increase cable tension. b. Turn counterclockwise to decrease cable tension.	



**10-70. HINGED ROOF AND FLOOR COUNTERBALANCE CABLE  
REPLACEMENT (Cont'd)**

LOCATION	ITEM	ACTION	REMARKS

**END OF TASK!**

**FOLLOW-ON TASK:** Retract and secure van side panel (TM 9-2320-272-10).

TA 349355

## 10-71. SIDE PANEL TO ROOF TOGGLE CLAMP REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	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>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

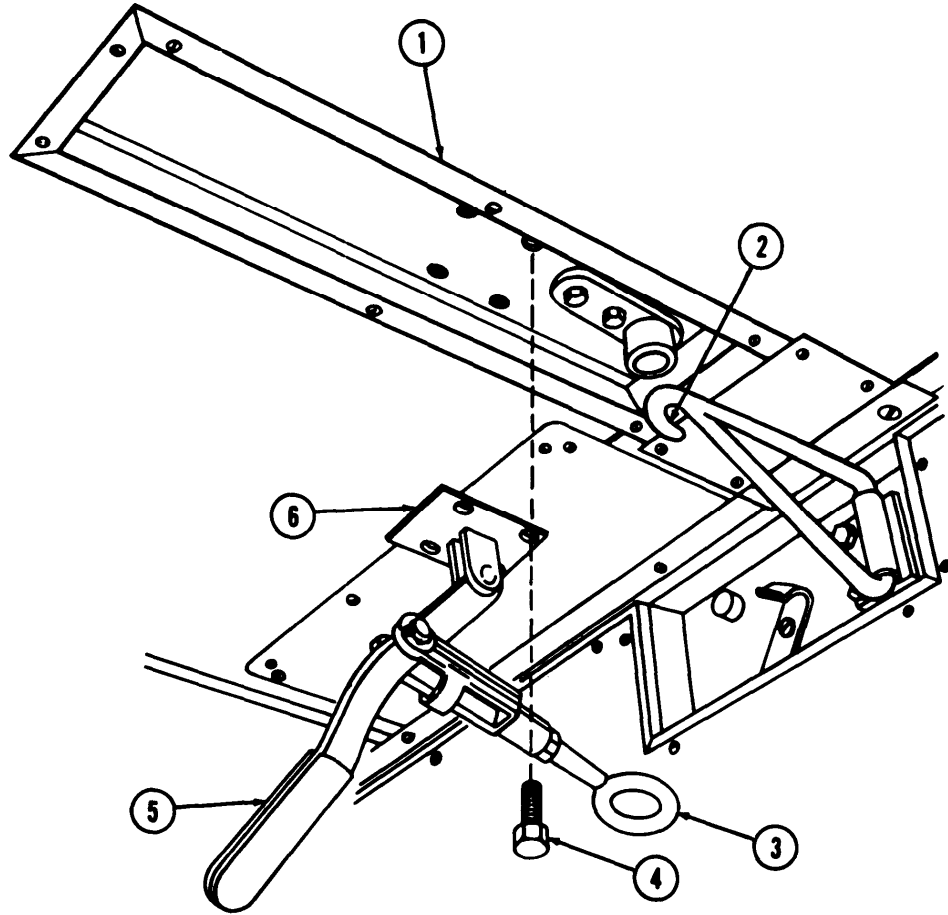
- |    |                                  |                  |          |
|----|----------------------------------|------------------|----------|
| 1. |                                  | Toggle clamp (5) | Release. |
| 2. | Yoke base (6) to hinged roof (1) | Four screws (4)  | Remove.  |
| 3. |                                  | Toggle clamp (5) | Remove.  |

### b. Installation

- |    |               |   |
|----|---------------|---|
| 4. | Yoke base (6) | <p>a. Position to holes in hinged roof (1) so that eyebolt (3) faces swivel hook (2).</p> <p>b. Install with four screws (4).</p> |
|----|---------------|---|

10-71. SIDE PANEL TO ROOF TOGGLE CLIAMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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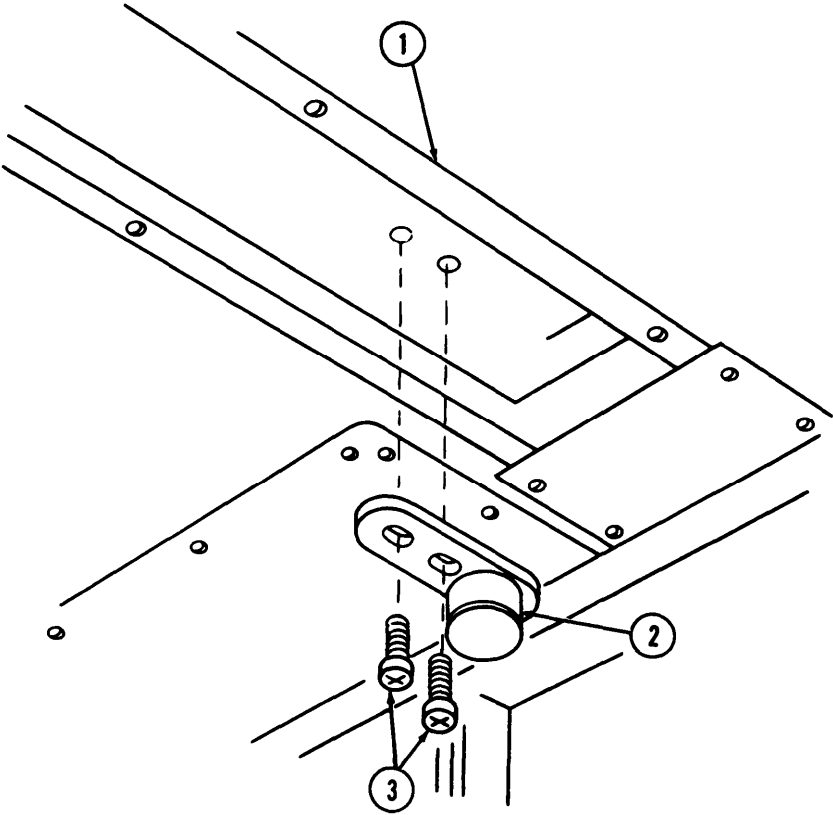
END OF TASK!

TA 349356

10-177



10-72. TOGGLE CLAMP ANCHOR POST REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



END OF TASK!

**10-73. SIDE PANEL TO ROOF SWIVEL HOOK REPLACEMENT**

This task covers:

a. Removal

b. Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

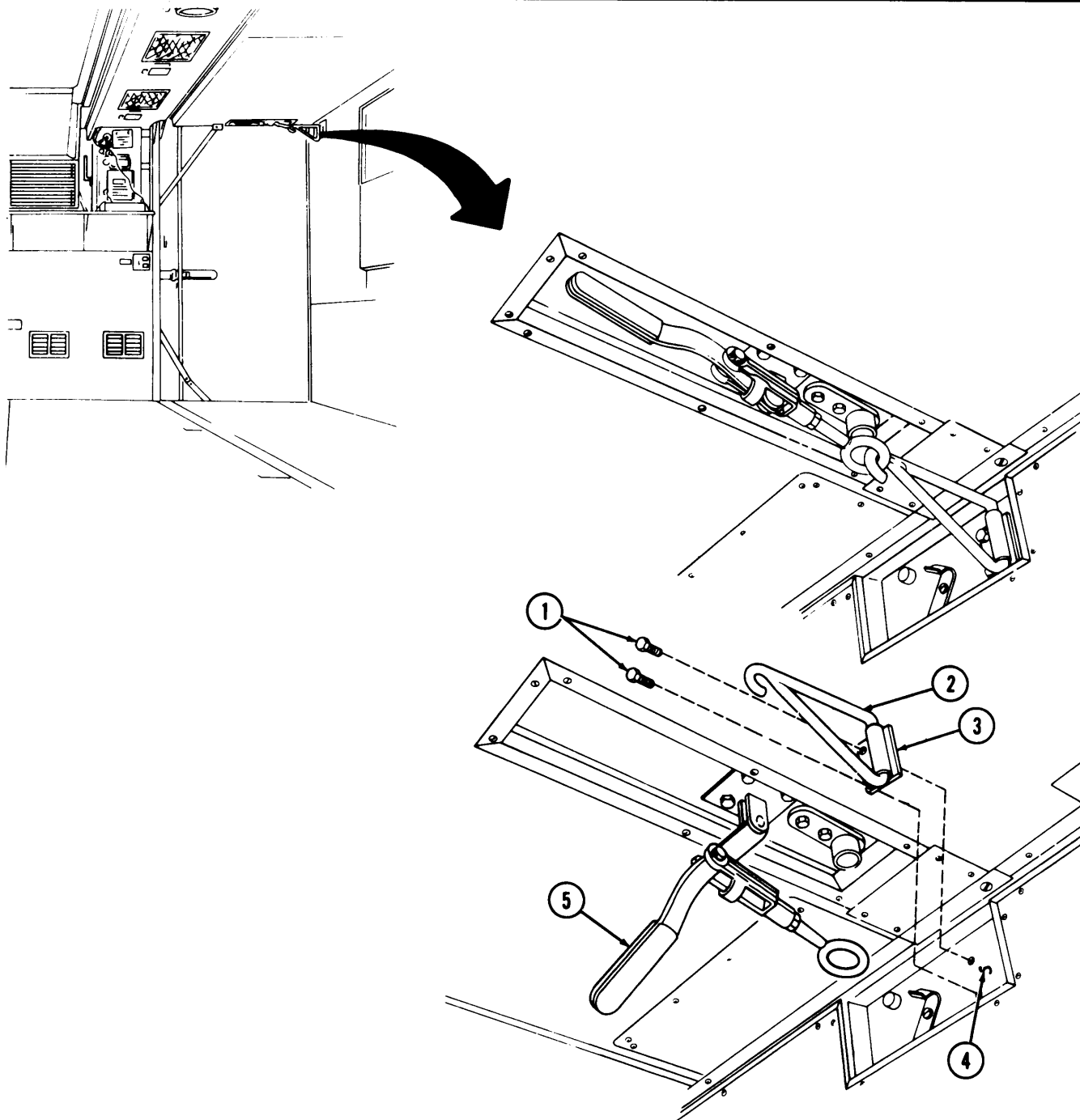
- |    |               |                                   |          |
|----|---------------|-----------------------------------|----------|
| 1. |               | Toggle clamp (5)                  | Release. |
| 2. | Hook base (3) | Two screws (1)                    | Remove.  |
| 3. | Side wall (4) | Swivel hook (2) and hook base (3) | Remove.  |

**b. Installation**

- |    |  |                                   |   |
|----|--|-----------------------------------|---|
| 4. |  | Hook base (3) and swivel hook (2) | a. Position to holes in side wall (4).<br>b. Install with two screws (1). |
| 5. |  | Toggle clamp (5)                  | Latch.  |

## 10-73. SIDE PANEL TO ROOF SWIVEL HOOK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Retract and secure van side panel (TM 9-2320-272-10).

TA 349358

10-181

**10-74. LADDER LOCKING CLAMP REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Ladders 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

- |    |                |                   |         |
|----|----------------|-------------------|---------|
| 1. | Clamp base (3) | Four screws (2)   | Remove. |
| 2. | Door (4)       | Locking clamp (1) | Remove. |

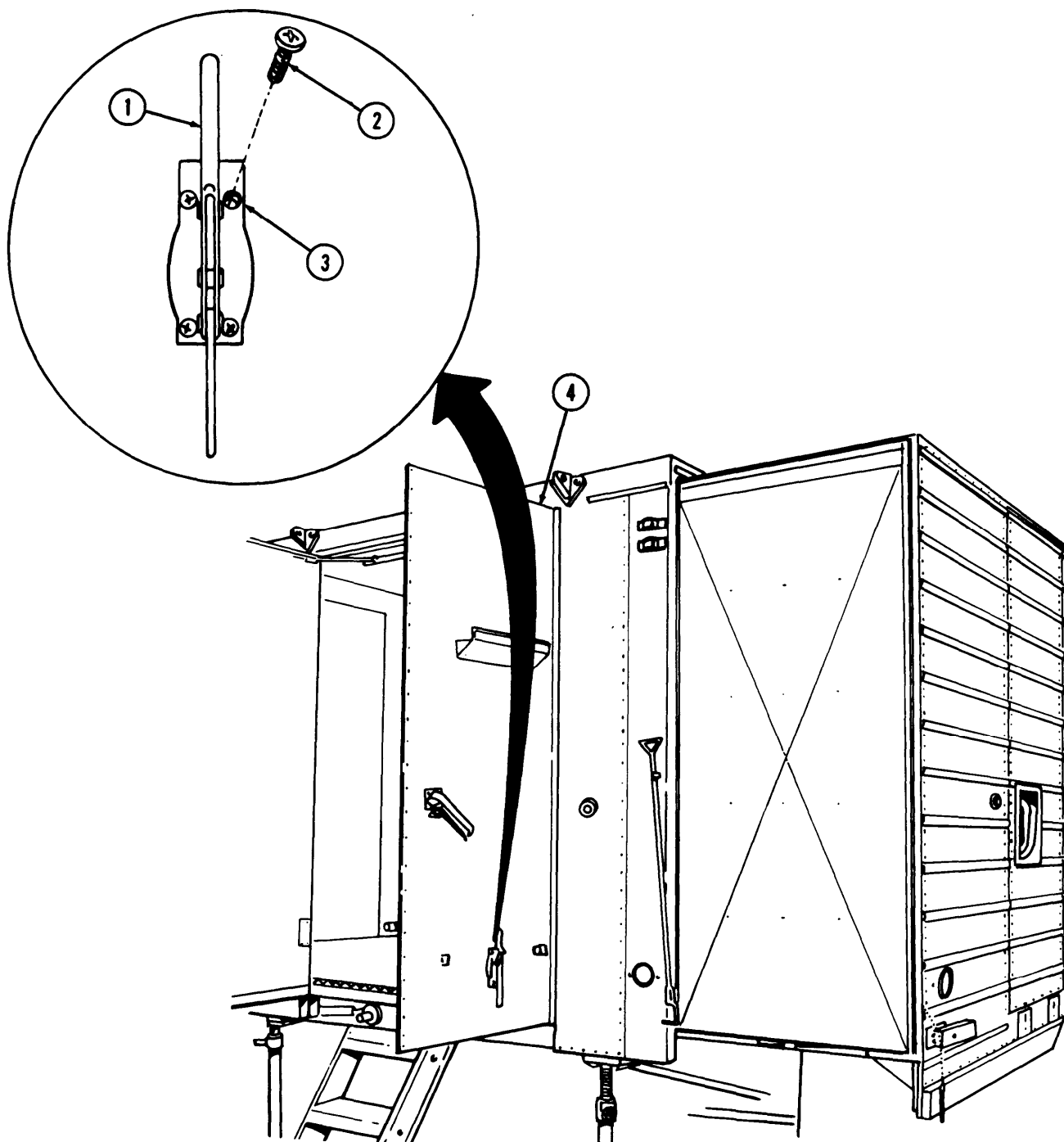
**b. Installation**

- |    |                   |   |
|----|-------------------|---|
| 3. | Locking clamp (1) | a. Position to holes in door (4).<br>b. Install with four screws (2). |
|----|-------------------|---|



10-74. LADDER LOCKING CLAMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install ladders (TM 9-2320-272-10).

TA 349359

**10-75. BONNET CONTROL ROD REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Bonnet front door open and braced.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |                           |                                     |   |                         |
|----|---------------------------|-------------------------------------|---|-------------------------|
| 1. | Handle (5)                | Bent end of control rod (2)         | Remove cotter pin (3).  | Discard cotter pin (3). |
| 2. | Door bracket (1)          | Hooked end of control rod (2)       | a. Remove cotter pin (9).<br>b. Remove from bracket (1) on bonnet door (8). | Discard cotter pin (9). |
| 3. | Handle mounting plate (7) | Nut (4), handle (5), and spacer (6) | Remove.   |                         |

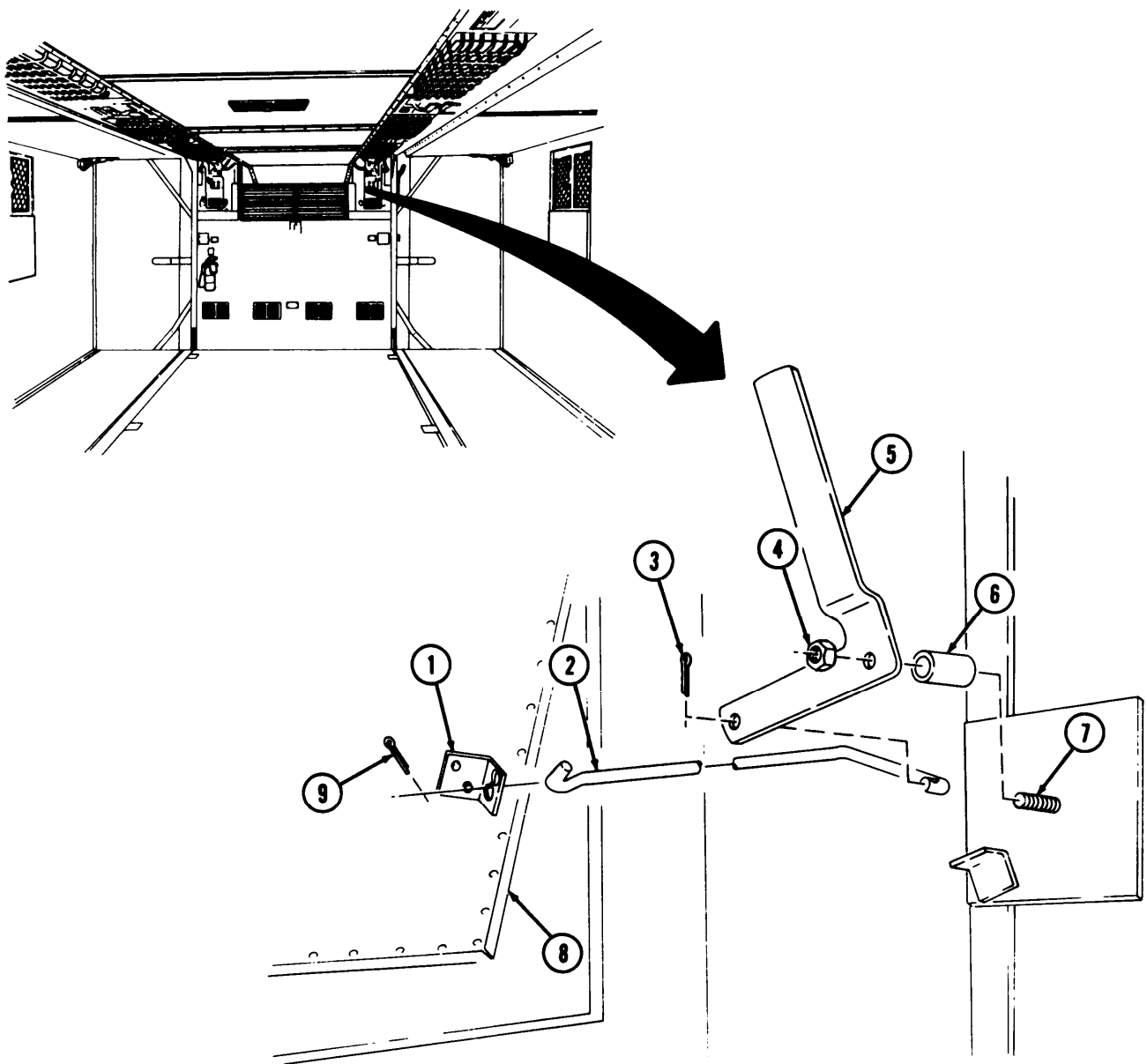
**b. Installation**

- |    |  |                               |  |
|----|--|-------------------------------|--|
| 4. |  | Hooked end of control rod (2) | Rotate rod (2) into door bracket (1) and install new cotter pin (9). |
| 5. |  | Bent end of control rod (2)   | Place into handle (5) and install new cotter pin (3).                |

10-75. BONNET CONTROL ROD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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6.		Nut (4), handle (5) and spacer (6)	Install.	
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END OF TASK!

FOLLOW-ON TASK: Close bonnet front door (TM 9-2320-272-10).

TA 349360

10-76. DOOR HINGE AND SEALS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

- |    |             |                                     |         |                         |
|----|-------------|-------------------------------------|---------|-------------------------|
| 1. |             | Door (6)                            | Open.   |                         |
| 2. | Bracket (1) | Cotter pin (4) pin (2), and arm (3) | Remove. | Discard cotter pin (4). |

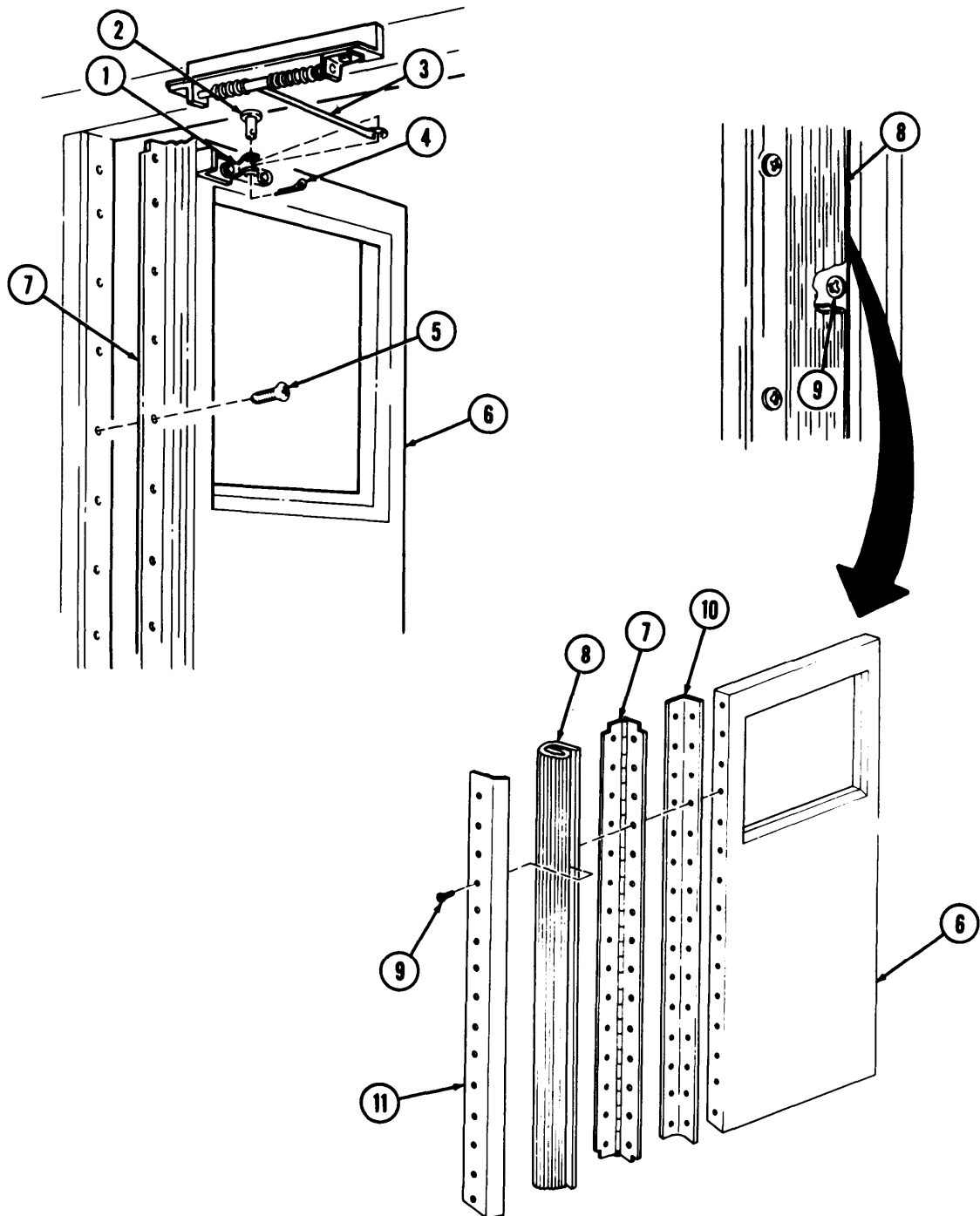
NOTE

Assistant will help with step 3.

- |    |                |   |  |  |
|----|----------------|---|--|--|
| 3. | Door hinge (7) | Fifteen screws (5)  | Remove and lift door (6) away from van body. |  |
| 4. | Door (6)       | Sixteen screws (9), hinge seal retainer (11), weather stripping (8), hinge (7), and outer hinge seal (10) | Remove.                                      |  |

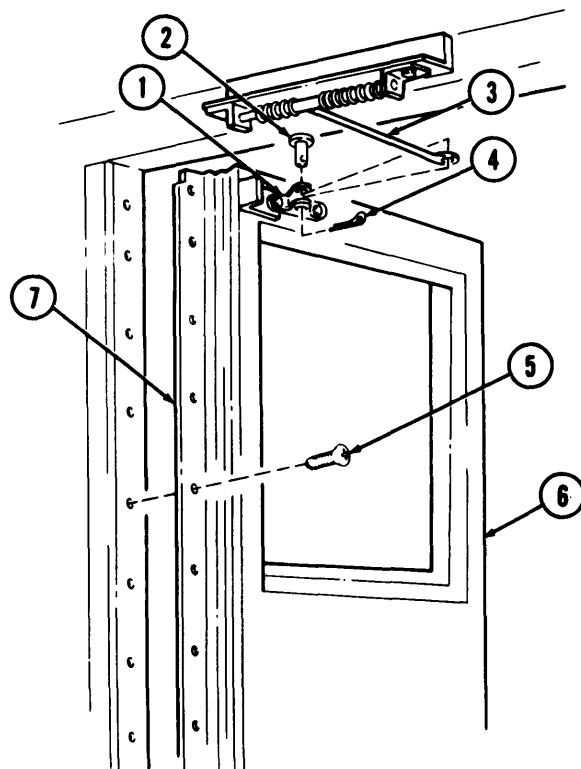
10-76. DOOR HINGE AND SEALS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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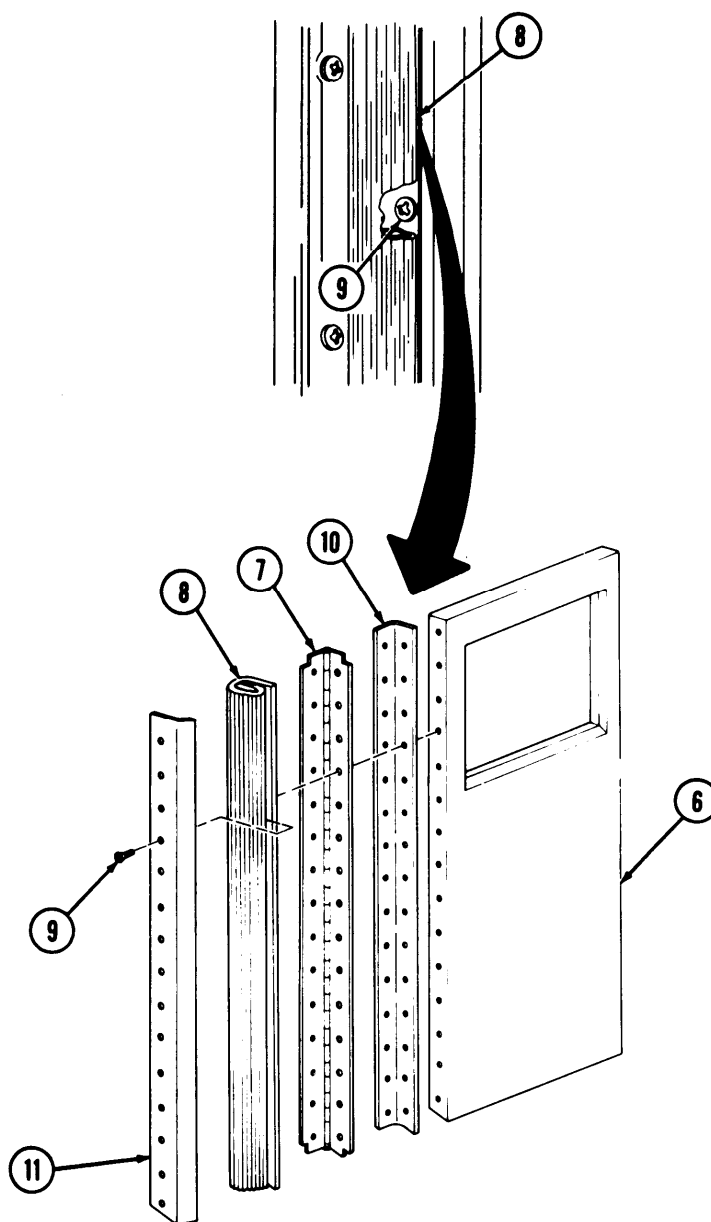
10-76. DOOR HINGE AND SEALS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
b. Installation				
5.		Outer hinge seal (10), hinge (7), weather stripping (8), and hinge seal retainer (11)	Install on door (6) with sixteen screws (9).	
NOTE				
Assistant will help with step 6.				
6.		Door (6) and hinge (7)	Install with fifteen screws (5).	Make sure outer hinge seal (10) is flush with edge of hinge seal retainer (11).
7.		Arm (3)	Install on bracket (1) with pin (2) and new cotter pin (4).	



10-76. DOOR HINGE AND SEALS 'REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349363

10-189

10-77. PANEL SEALS REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

NOTE

All panel seals are installed by retainers with either screws or screws and nuts. This procedure will show screws only. The quantity of screws will also differ.

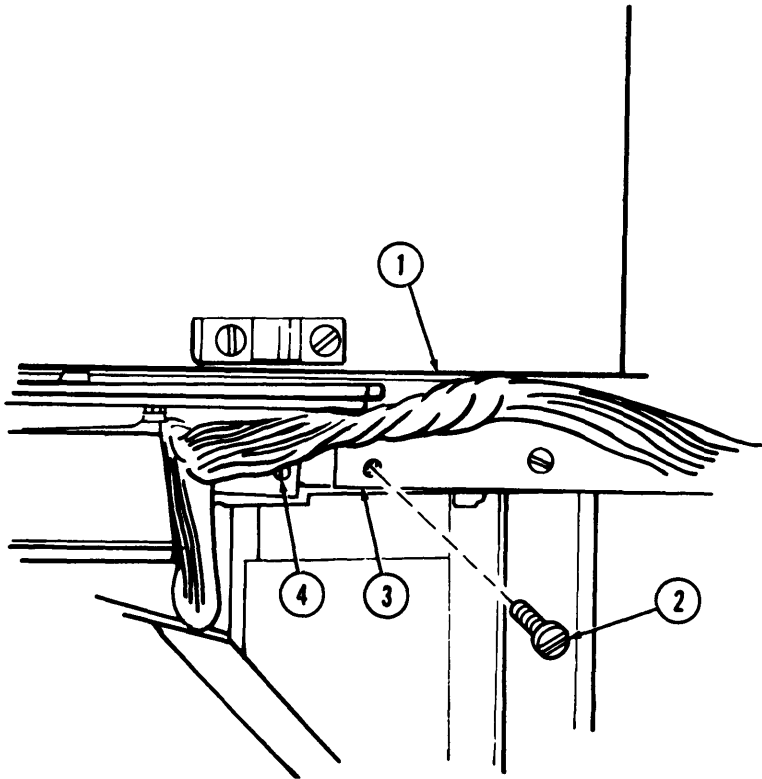
1.		Seal (4)	Lift up to expose screws (2).
2.	Seal retainer (3)	Screws (2)	Remove.
3.		Retainer (3) and seal (4)	Remove.

b. Installation

4.		Retainer (3)	a. Position over seal (4) flap. b. Aline with holes in panel (1). c. Install with screws (2).
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10-77. PANEL SEALS REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



END OF TASK!

TA 349364

**10-78. DOOR HANDLE AND LOCK REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Doors open.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal****NOTE**

This procedure applies to van side doors and both rear doors.

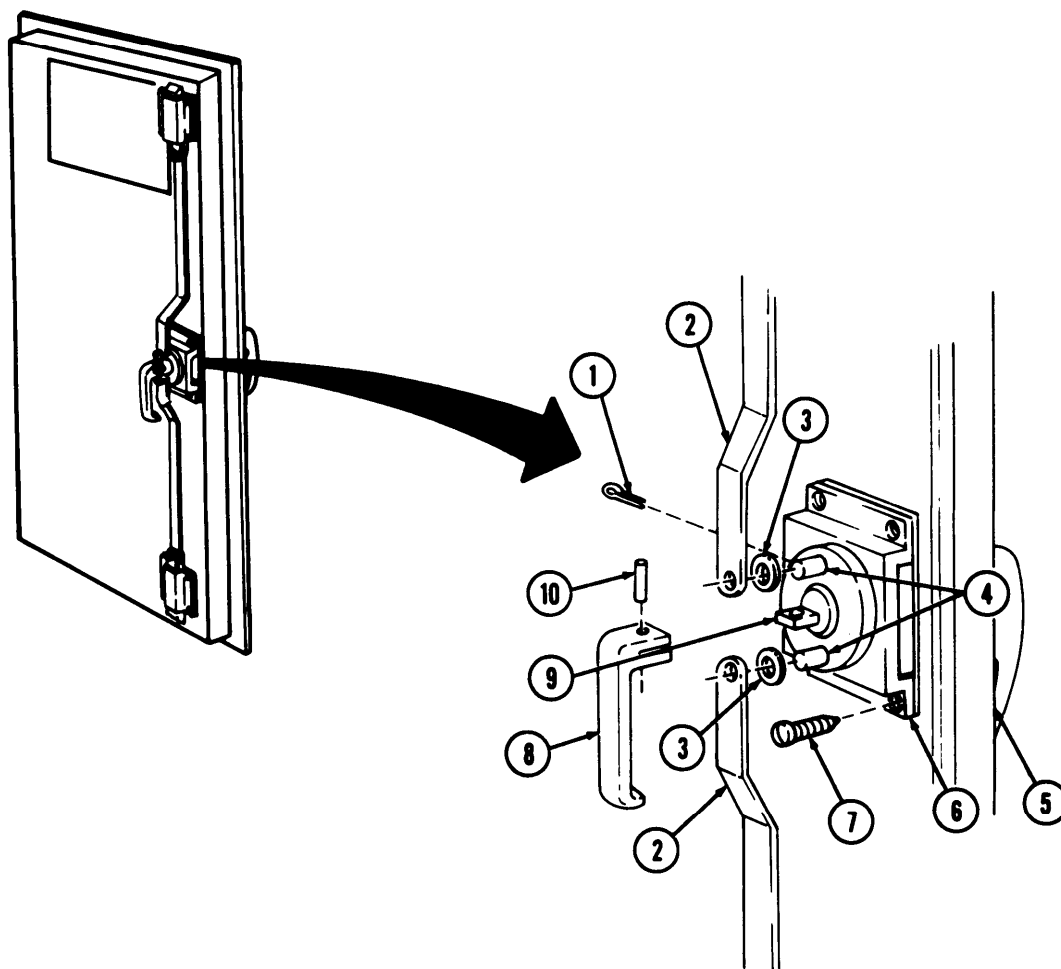
- |    |                                   |                                   |                       |                          |
|----|-----------------------------------|-----------------------------------|-----------------------|--------------------------|
| 1. | Handle shank (9)                  | Straight pin (10)                 | Remove.               |                          |
| 2. |                                   | Inner handle (8)                  | Remove.               |                          |
| 3. | Upper and lower vertical bars (2) | Cotter pin (1) and washer (3)     | Remove from each.     | Discard cotter pins (1). |
| 4. | Upper and lower lockpins (4)      | Upper and lower vertical bars (2) | Remove.               |                          |
| 5. | Door lock (6)                     | Four screws (7)                   | Remove.               |                          |
| 6. |                                   | Door lock (6)                     | Remove from door (5). |                          |

**b. Installation**

- |    |               |   |
|----|---------------|---|
| 7. | Door lock (6) | a Aline to holes in door (5).<br>b. Install with four screws (7). |
|----|---------------|---|

## 10-78. DOOR HANDLE AND LOCK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.		Upper and lower vertical bars (2)	a. Place over lockpins (4). b. Install each with washer (3) and new cotter pin (1).	
9.		Inner handle (8)	a. Position to handle shank (9) with pin-holes alined. b. Install with straight pin (10).	



END OF TASK!

TA 349365

10-193

**10-79. DOOR CHECKS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set, Doors open.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal****NOTE**

- All door checks are removed and installed the same way.
- Blackout switch striker is removed with door check arm bracket on all doors except left rear.

1.	Upper edge of door (1)	Two screws (9), lockwashers (8) and washers (2), and bracket (12)	Remove.	Discard lockwashers (8).
2.	Door check bracket (4)	Two screws (3), lockwashers (5), and nuts (6)	Remove.	Discard lockwashers (5).
3.		Door check (7)	Remove.	
4 <sub>o</sub>	Blackout switch striker (13)	Screw (10), washer (11), and blackout switch striker (13)	Remove.	

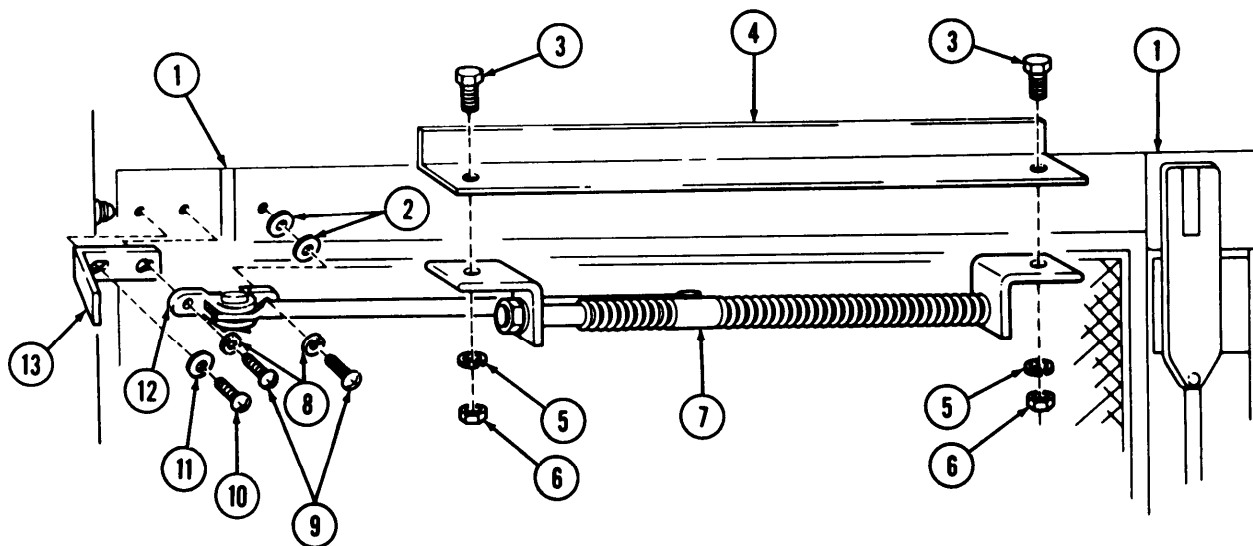
**b. Installation****NOTE**

Blackout switch striker is installed under door check arm bracket on all doors except left rear.

5.	Blackout switch striker (13)	Install with washer (11) and screw (10).
----	------------------------------	--

## 10-79. DOOR CHECKS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Door check (7)	a. Aline with holes in door check bracket (4). b. Install with two new lockwashers (5), screws (3), and nuts (6).	
7.		Door check arm bracket (12)	a. Aline with holes in upper edge of door (1). b. Install with two new lockwashers (8), screws (9), and washers (2).	



END OF TASK!

TA 349366

**10-80. LADDER RACK BUMPERS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Ladders removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

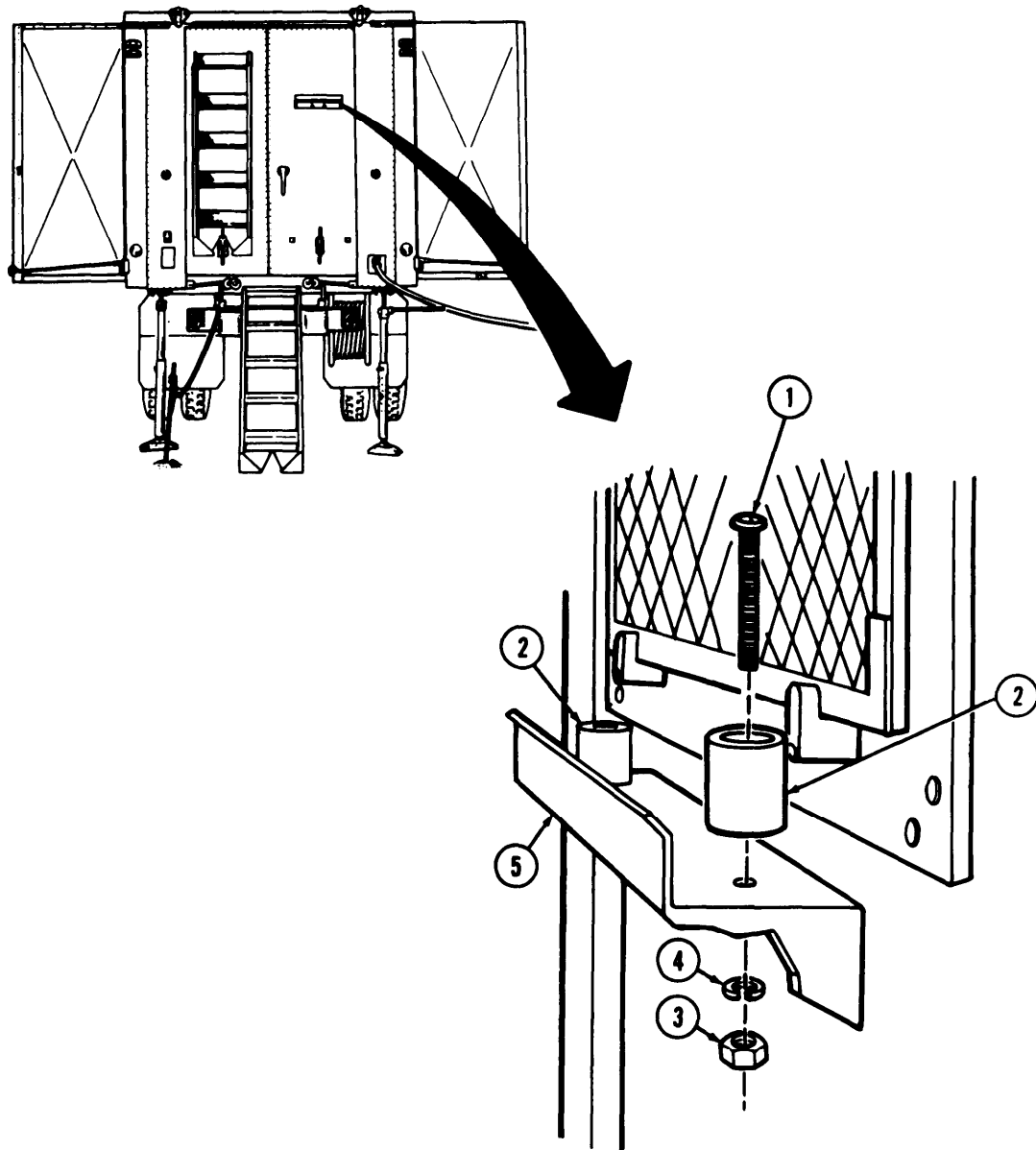
- |    |                             |  |                   |                          |
|----|-----------------------------|--|-------------------|--------------------------|
| 1. | Two ladder rack bumpers (2) | Screw (1), lockwasher (4), and nut (3) | Remove from each. | Discard lockwashers (4). |
| 2. | Ladder rack (5)             | Ladder rack bumpers (2)                | Remove.           |                          |

**b. Installation**

- |    |                             |   |
|----|-----------------------------|---|
| 3. | Two ladder rack bumpers (2) | a. Aline with holes in ladder rack (5).<br>b. Install each with screw (1), new lockwasher (4), and nut (3). |
|----|-----------------------------|---|

10-80. LADDER RACK BUMPERS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install ladders (TM 9-2320-272-10).

TA 349367

10-197

## 10-81. SIDE PANEL RUBBER BUMPERS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### NOTE

Removal procedures for side panel bumpers, ladder rubber bumpers (rear interior wall), and swivel hook rubber bumpers are all the same.

### a. Removal

- |    |                   |                               |         |
|----|-------------------|-------------------------------|---------|
| 1. | Rubber bumper (4) | Screw (2) and flat washer (3) | Remove. |
| 2. |                   | Rubber bumper (4)             | Remove. |

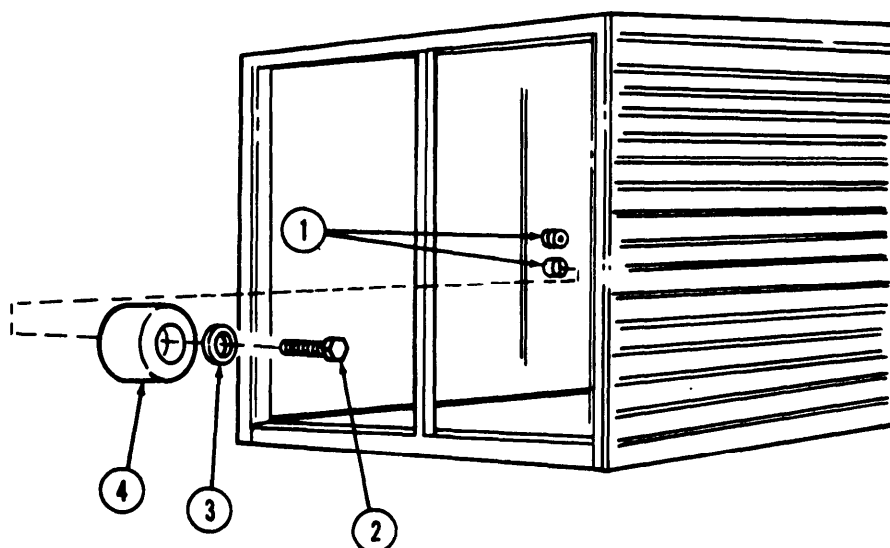
## b. Installation

3. Rubber bumper (4)
  - a. Position to spacer or wall (1) with holes aligned.
  - b. Install with screw (2) and flat washer (3).



**10-81. SIDE PANEL RUBBER BUMPERS REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Retract and secure van side panel (TM 9-2320-272-10).

TA 349368

10-199

**10-82. SIDE PANEL REAR LOCK REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Van side panel fully expanded and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Two cotter pins Locknut Four lockwashers		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

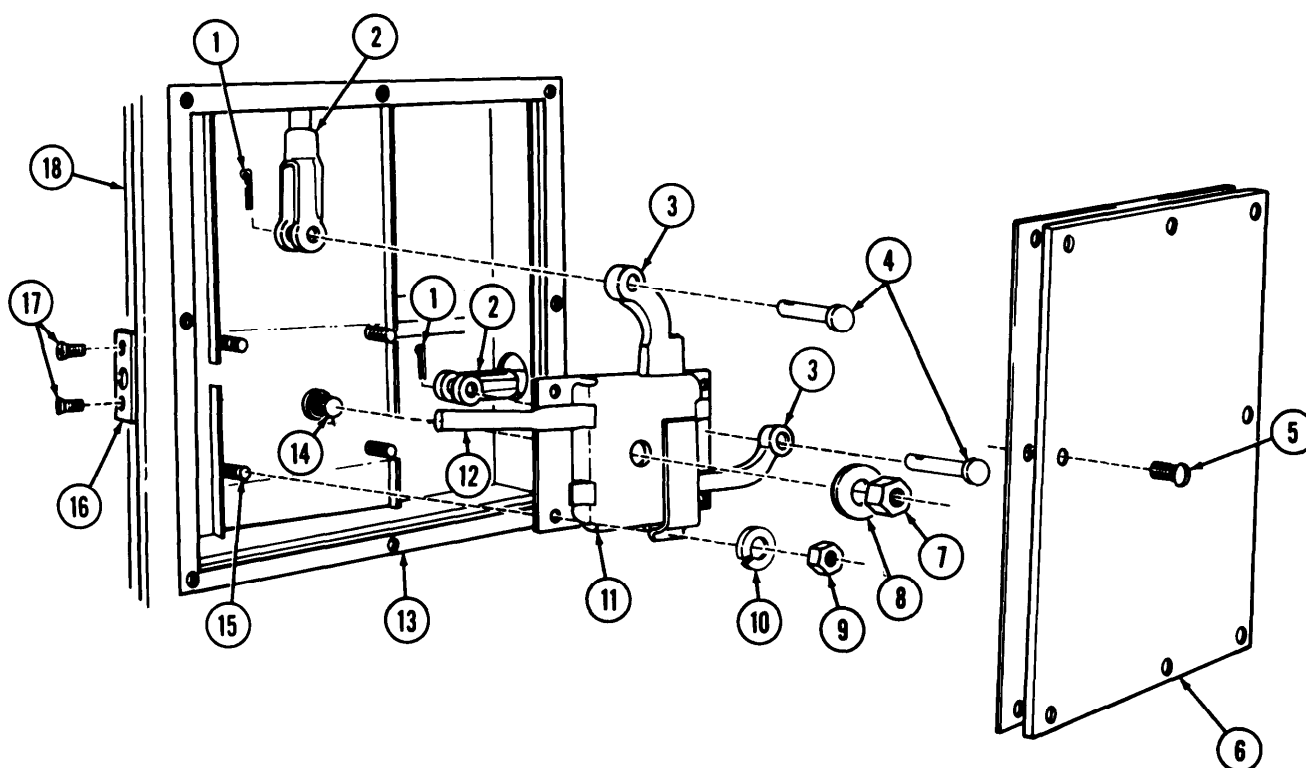
<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

- |    |  |  |                              |   |
|----|--|--|------------------------------|---|
| 1. | Lock cover plate and insulating material (6) | Eight screws (5)                             | Remove.                      |   |
| 2. | Side panel (13)                              | Lock cover plate and insulating material (6) | Remove.                      |   |
| 3. | Edge of door frame (18)                      | Two lock bolt retainer screws (17)           | Remove.                      |   |
| 4. | Two clevis pins (4)                          | Cotter pin (1)                               | Remove from each.            | Discard cotter pins (1).                  |
| 5. |  | Two clevis pins (4)                          | Remove from each clevis (2). | Separate clevises (2) from lock arms (3). |
| 6. | Lock handle shank (14)                       | Locknut (7) and washer (8)                   | Remove.                      | Discard locknut (7).                      |
| 7. | Studs (15)                                   | Four nuts (9) and lock-washers (10)          | Remove.                      | Discard lockwashers (10).                 |

## 10-82. SIDE PANEL REAR LOCK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.		Lock (11), lockbolt (12), and lockbolt retainer (16)	Remove.	

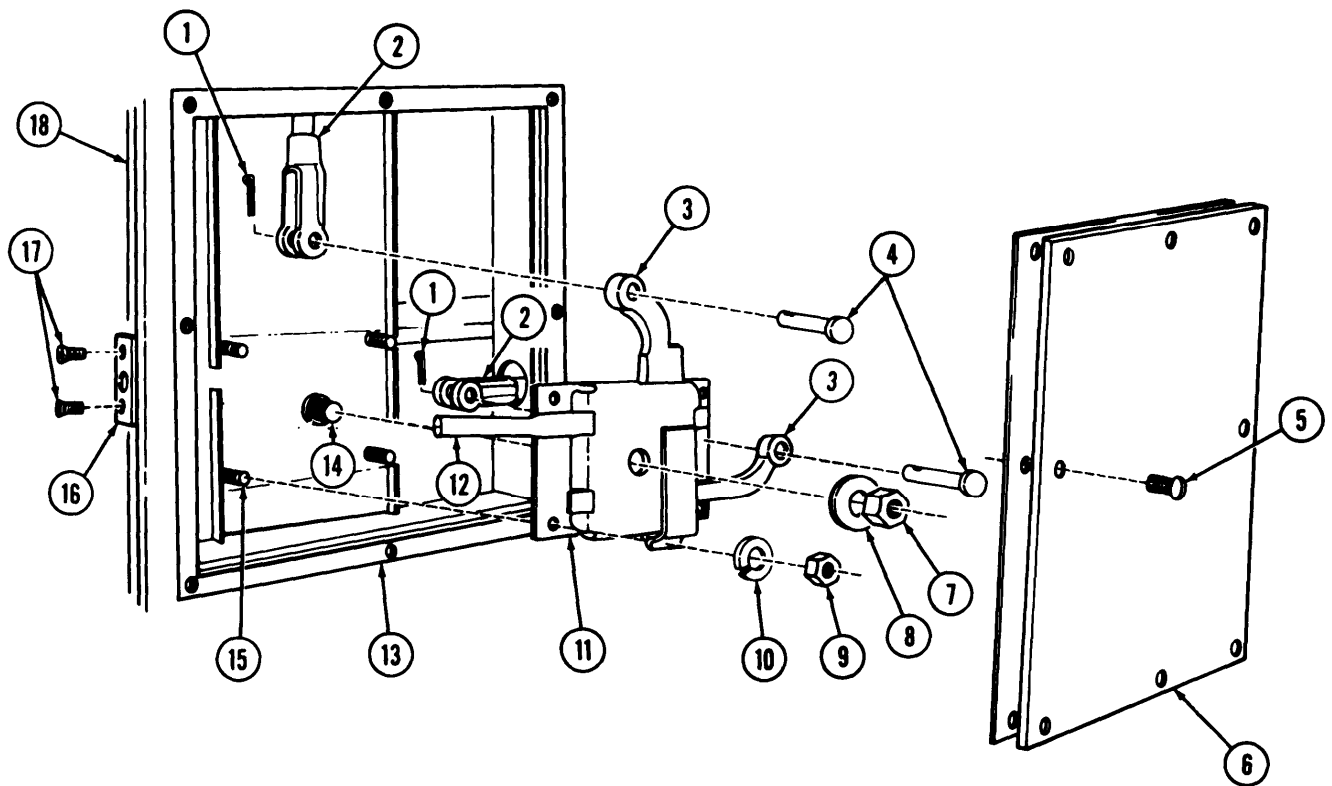


## 10-82. SIDE PANEL REAR LOCK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
9.		Lock(11)	Position over lock handle shank (14) and four corner studs (15).	
10.		Lock bolt retainer (16)	a. Slide on to lockbolt (12). b. Slide into position against inside of door frame (18). c. Install with two screws (17).	Screws (17) must be installed from outer edge of door frame (18).
11.		Lock (11)	Install on side panel (13) with four nuts (9) and new lockwashers (10).	
12.		Lock(11)	Install on lock handle shank (14) with washer (8) and new locknut (7).	
13.		Two clevises (2)	a. Aline with holes in lock arms (3). b. Insert clevis pin (4) in each.	
14.		Two new cotter pins (1)	Place through hole in each clevis pin (4) and bend ends apart.	
15.		Insulating material and lock cover plate (6)	a. Position to holes in side panel (13). b. Install with eight screws (5).	

## 10-82. SIDE PANEL REAR LOCK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Retract and secure van side panel (TM 9-2320-272-10).

TA 349370

10-203

**10-83. SIDE PANEL FRONT LOCK AND HINGED TYPE ROOF LOCK REPLACEMENT**

This task covers:

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

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
M934, M935	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
N o n e		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
Two cotter pins		
One locknut		
Four lockwashers		
GAA grease (Appendix D, Item 13)		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

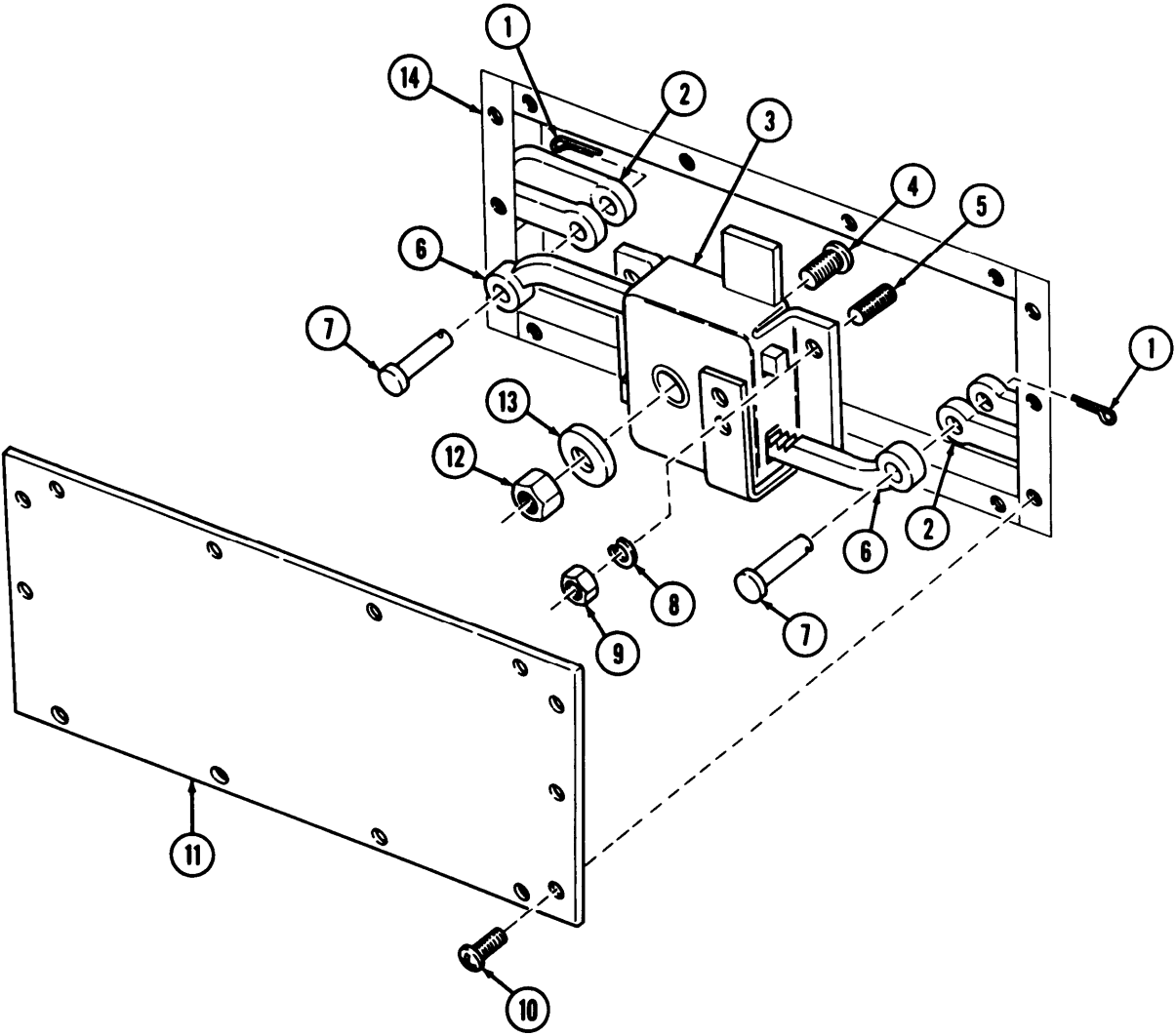
<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |                       |   |                   |  |
|----|-----------------------|---|-------------------|--|
| 1. | Panel (14)            | Ten screws (10) and lock cover plate (11) | Remove.           |  |
| 2. | Two lock arms (6)     | Cotter pin (1) and clevis pin (7)         | Remove from each. | Discard cotter pins (1). Separate clevises (2) from lock arms (6). |
| 3. | Lock handle shank (4) | Locknut (12) and washer (13)              | Remove.           | Discard locknut (12).  |
| 4. | Corner studs (5)      | Four nuts (9) and lockwashers (8)         | Remove.           | Discard lockwashers (8).   |
| 5. |                       | Lock (3)                                  | Remove,           |  |

10-83. SIDE PANEL FRONT LOCK AND HINGED TYPE ROOF LOCK  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**10-83. SIDE PANEL FRONT LOCK AND HINGED TYPE ROOF LOCK  
REPLACEMENT (Cont'd)**

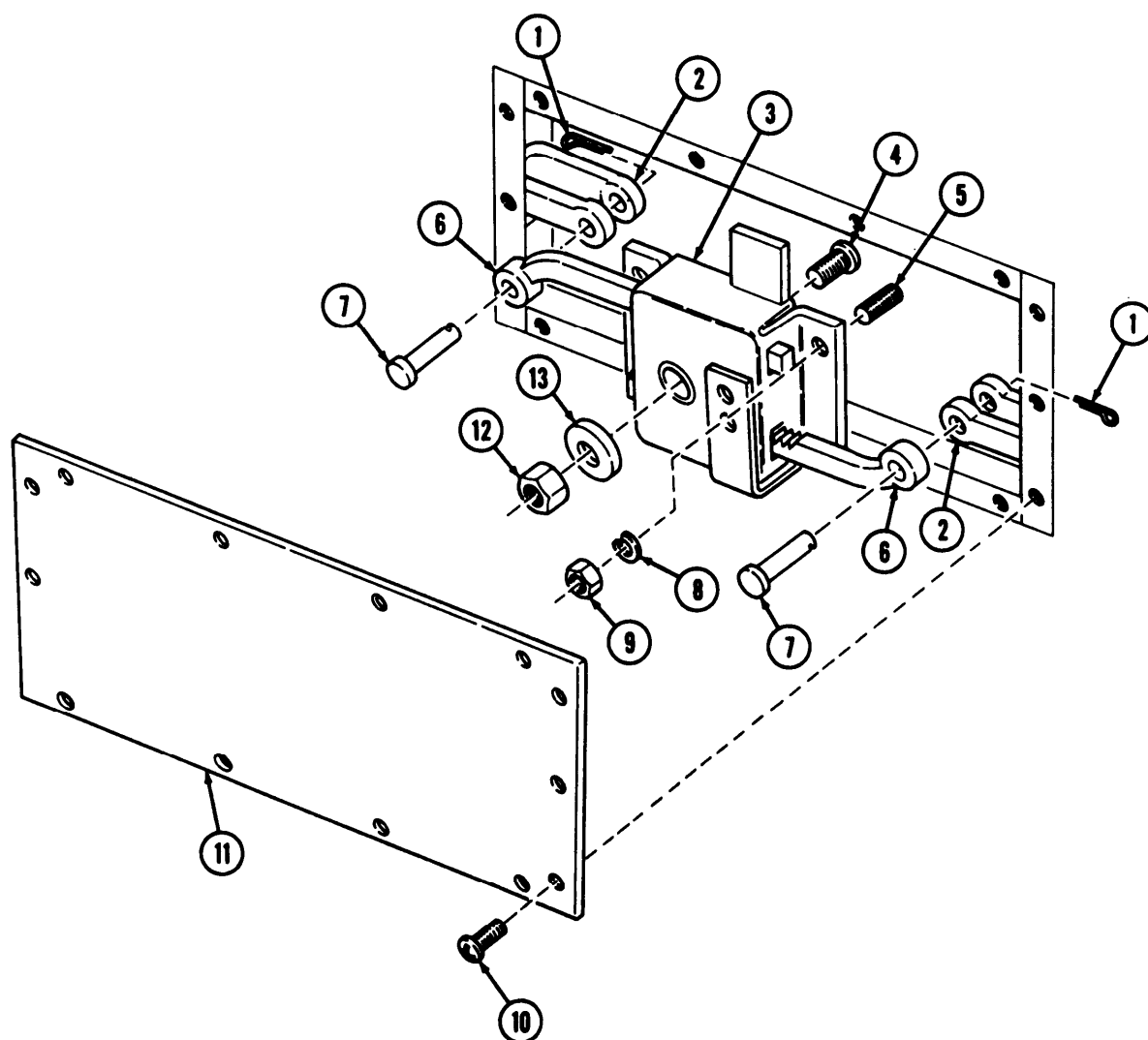

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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<b>b. Installation</b>				
6.		Lock (3)	a. Position over lock handle shank (4) and four corner studs (5). b. Install on lock handle shank (4) with washer (13) and new locknut (12).	
7.		Four new lockwashers (8) and nuts (9) Two clevises (2)	Install on four corner studs (5), a. Aline with holes in lock arms (6). b. Install clevis pin (7) in each.	Apply coat of grease to each clevis pin (7).
9.		Two new cotter pins (1)	Install.	
10.		Lock cover plate (11)	Install with ten screws (10),	



10-83. SIDE PANEL FRONT LOCK AND HINGED TYPE ROOF LOCK  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349372

10-207

**10-84. SIDE PANEL EXTERIOR LOCK REPLACEMENT**

This task covers:

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

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
M934, M935	TM 9-2320-272-10	Parking brake set.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		
None		
<b><u>Personnel Required</u></b>		<b><u>General Safety Instructions</u></b>
Light-wheeled vehicle mechanic MOS 63B		None
<b><u>Manual References</u></b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

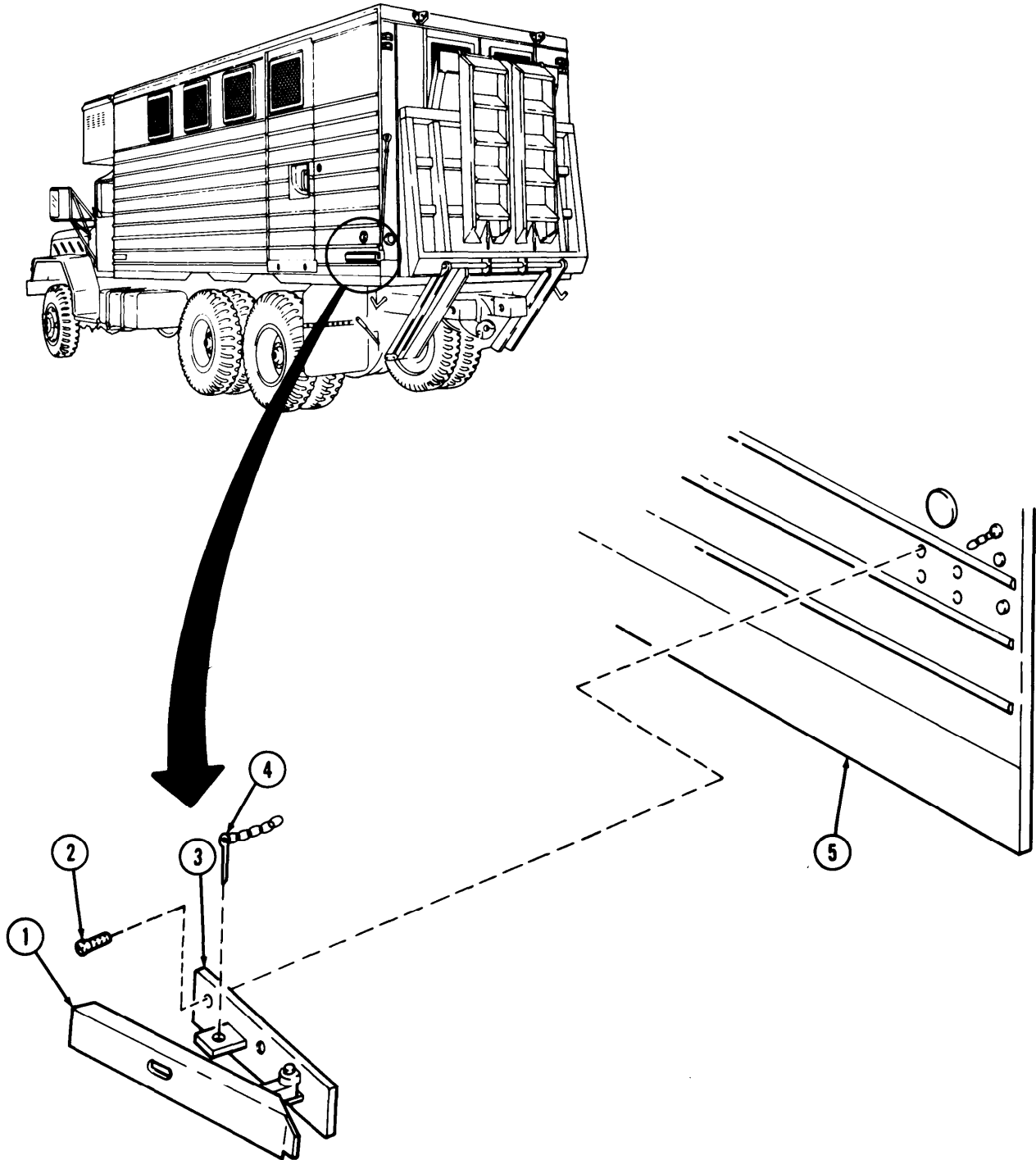
- |    |                      |                      |   |
|----|----------------------|----------------------|---|
| 1. | Lock handle base (3) | Locking pin (4)      | Remove and pull lock handle (1) away from base (3). |
| 2. | Lock handle base (3) | Four screws (2)      | Remove.   |
| 3. |                      | Lock handle base (3) | Remove.   |

**b. Installation**

- |    |  |                      |  |
|----|--|----------------------|--|
| 4. |  | Lock handle base (3) | a. Aline with holes in van body (5).<br>b. Install with four screws (2). |
| 5. |  | Lock handle (1)      | Position over lock handle base (3).                                      |
| 6. |  | Locking pin (4)      | Insert through hole in lock handle base (3).                             |

10-84. SIDE PANEL EXTERIOR LOCK REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 349373

**10-85. FLUORESCENT LIGHT TUBE REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Fluorescent ceiling light switch off.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

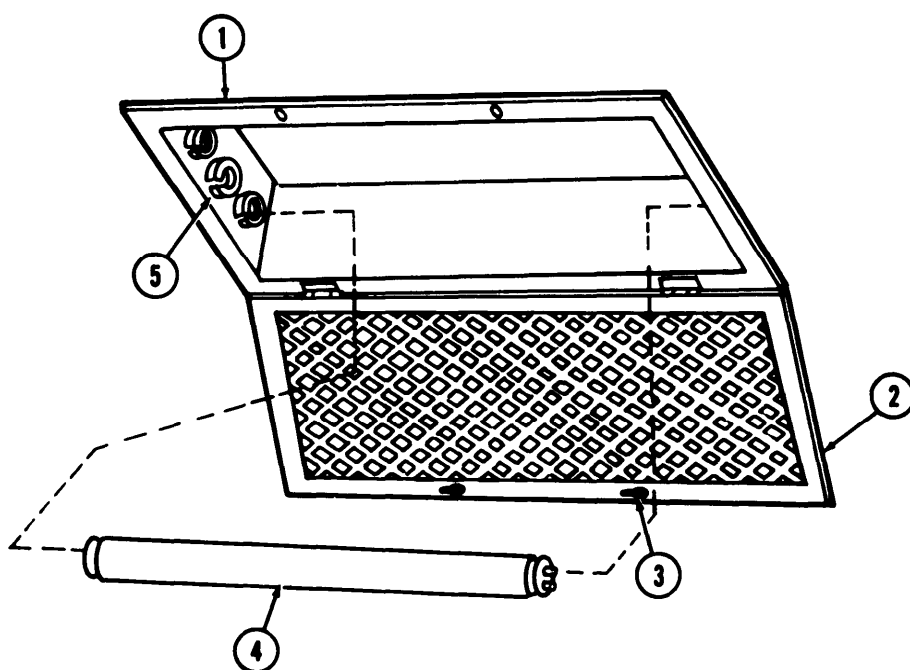
- |    |                   |                                     |         |
|----|-------------------|-------------------------------------|---------|
| 1. | Mesh guard (2)    | Two lockscrews (3)                  | Remove. |
| 2. |                   | Mesh guard (2)                      | Open.   |
| 3. | Light fixture (1) | Three 15-watt fluorescent tubes (4) | Remove. |

**b. Installation**

- |    |  |                              |  |
|----|--|------------------------------|--|
| 4. |  | 15-watt fluorescent tube (4) | Snap each end into tube retaining terminals (5). |
| 5. |  | Tube retaining terminals (5) | Press together.                                  |
| 6. |  | Mesh guard (2)               | Close, and tighten two lockscrews (3).           |

## 10-85. FLUORESCENT LIGHT TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check operation of fluorescent light tubes (TM 9-2320-272-10).

TA 349374

**10-86. EMERGENCY LIGHT AND BLACKOUT LIGHT LENS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Emergency light switch off. Blackout light switch off.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |                                |                         |                           |
|----|--------------------------------|-------------------------|---------------------------|
| 1. | Light door (1) inside van body | Lockscrew (3)           | Loosen.                   |
| 2. |                                | Light door (1)          | Open.                     |
| 3. |                                | Lens retaining clip (2) | Turn to release lens (4). |
| 4. |                                | Lens (4)                | Remove.                   |

**b. Installation****NOTE**

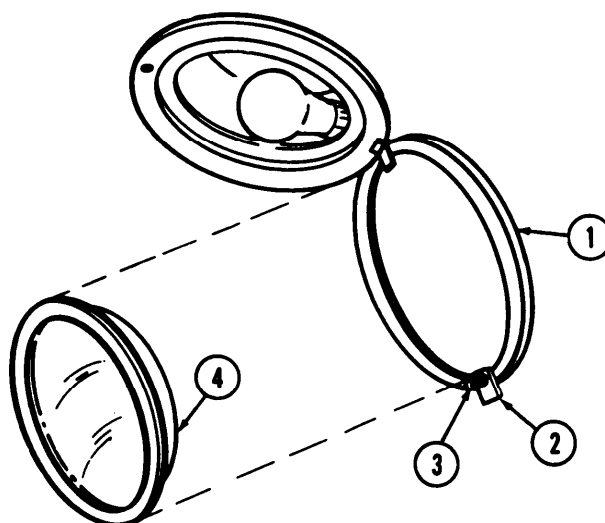
White lens is installed in emergency light door and blue lens in blackout light door.

- |    |          |  |
|----|----------|--|
| 5. | Lens (4) | a. Position in light door (1).<br>b. Install with lens retaining clip (2). |
|----|----------|--|

10-86. EMERGENCY LIGHT AND BLACKOUT LIGHT LENS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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6.		Light door (1)	Close, and tighten lockcrew (3).	
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END OF TASK!

TA 349375

10-213

10-87. EMERGENCY LAMP AND BLACKOUT LAMP REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Emergency light switch off. Blackout light switch off.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

a. Removal

- |    |                 |                |                                  |
|----|-----------------|----------------|----------------------------------|
| 1. | Light door (1)  | Lockscrew (2)  | Loosen.                          |
| 2. |                 | Light door (1) | Open.                            |
| 3. | Lamp socket (3) | Lamp (4)       | Turn counterclockwise to remove. |

b. Installation

NOTE

A 60-watt white frosted lamp is installed in emergency light fixture and a 60-watt white frosted lamp is installed in blackout light fixture.

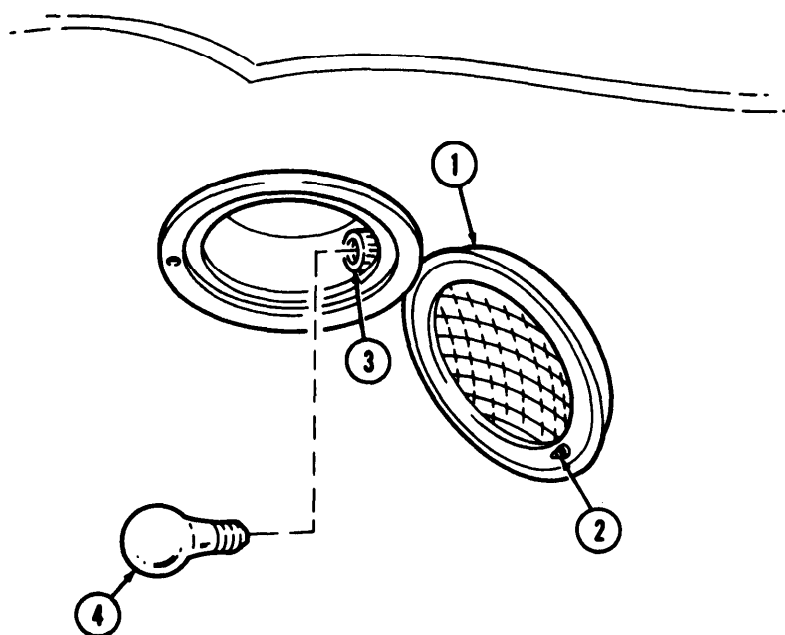
- |    |  |          |  |
|----|--|----------|--|
| 4. |  | Lamp (4) | Install into lamp socket (3) by turning clockwise until tight. |
|----|--|----------|--|



## 10-87. EMERGENCY LAMP AND BLACKOUT LAMP REPLACEMENT (Cont'd)

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

- |    |  |                |                                   |  |
|----|--|----------------|-----------------------------------|--|
| 5. |  | Light door (1) | Close and tighten lock-screw (2). |  |
|----|--|----------------|-----------------------------------|--|



END OF TASK!

TA 349376

10-215

**10-88. BLACKOUT LIGHT SWITCH AND 11 O-VOLT "RECEPTACLE REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Auxiliary A/C power source 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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**a. Removal**

- |    |                 |                  |   |
|----|-----------------|------------------|---|
| 1. | Cover plate (6) | Three screws (7) | Remove.   |
| 2. |                 | Cover plate (6)  | Remove.   |
| 3. | Switch (9)      | Two screws (8)   | Remove and pull switch (9) away from box (1).     |
| 4. | Receptacle (4)  | Two screws (5)   | Remove and pull receptacle (4) away from box (1). |

**NOTE**

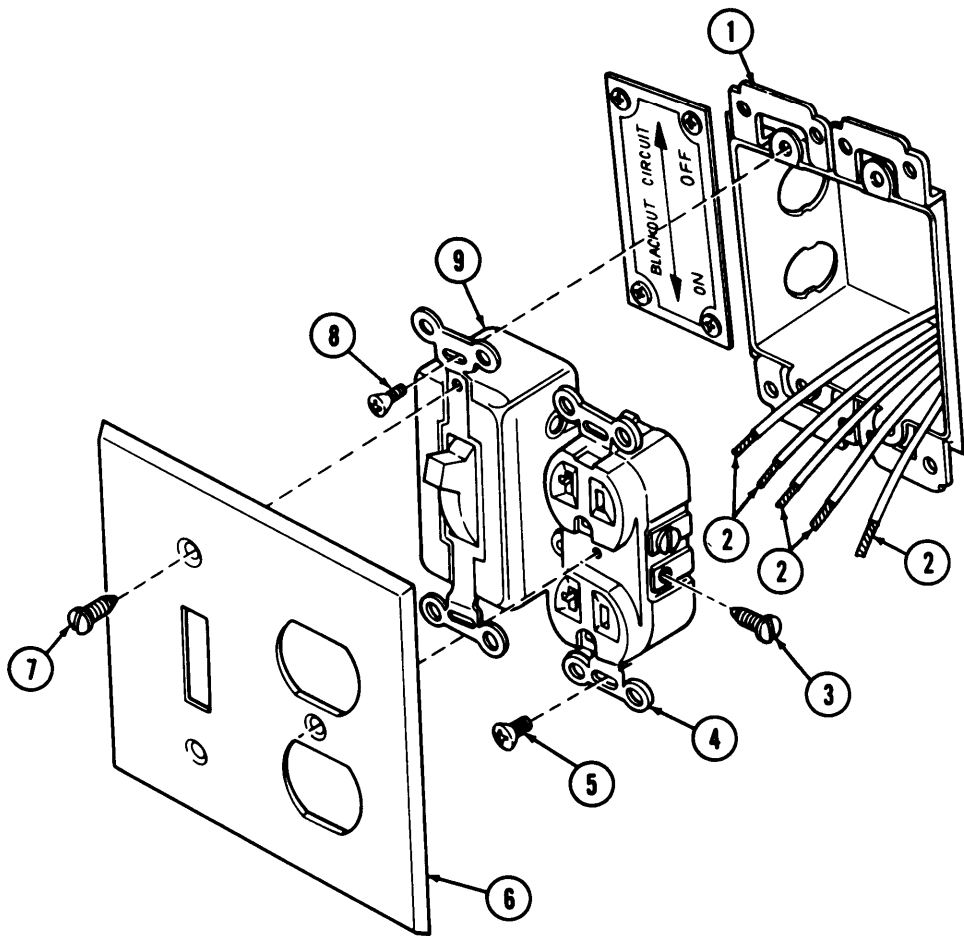
Tag wires for installation.

- |    |                               |                                   |
|----|-------------------------------|-----------------------------------|
| 5. | Five electrical terminals (2) | Remove screw (3), and disconnect. |
|----|-------------------------------|-----------------------------------|

10-88. BLACKOUT LIGHT SWITCH AND 110-VOLT RECEPTACLE  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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6.	Switch (9)	Five electrical terminals (2)	Remove screw (3), and disconnect.	
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**10-88. BLACKOUT LIGHT SWITCH AND 110-VOLT RECEPTACLE  
REPLACEMENT (Cont'd)**


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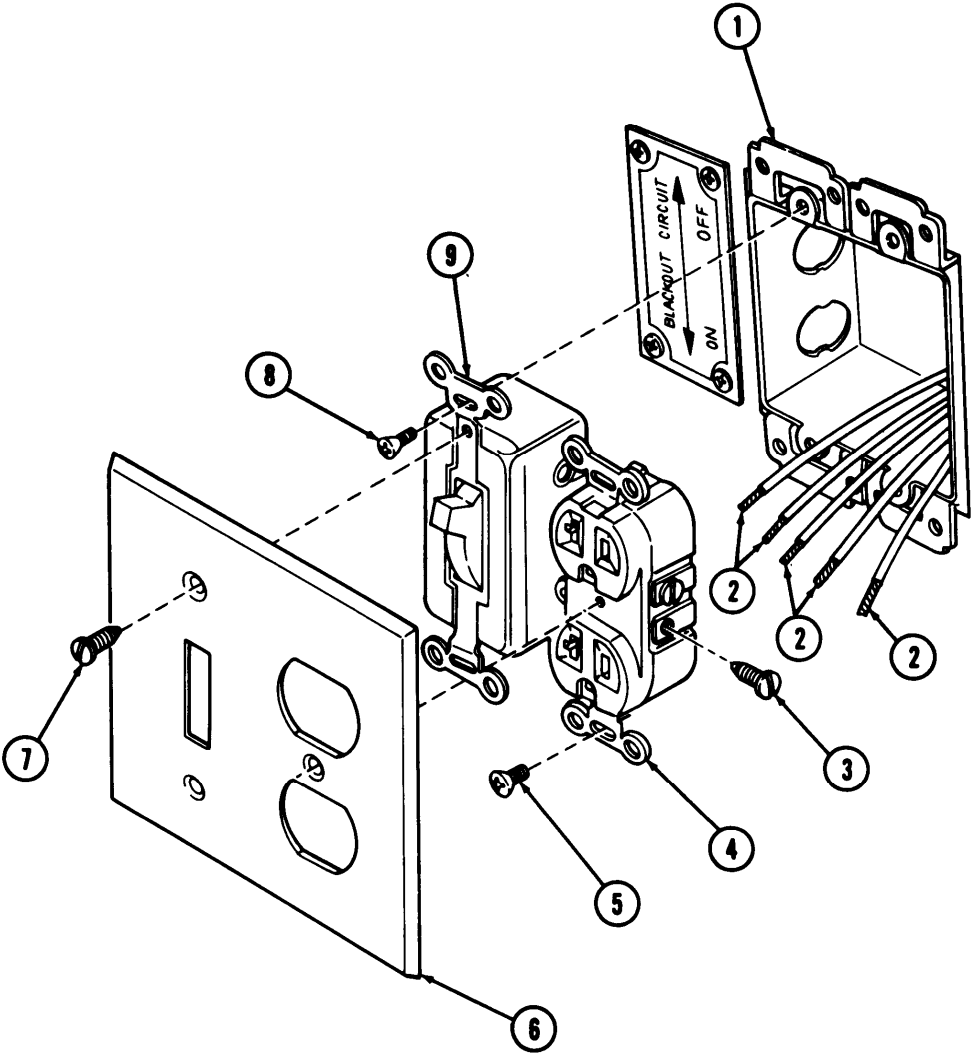
<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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<b>b. Installation</b>
------------------------

7,		Five electrical terminals (2)	Connect to switch (9) and install each with screw (3).	
8.		Five electrical terminals (2)	Connect to receptacle (4) and install each with screw (3).	
9.		Switch (9)	Position to switch box (1) and install with two screws (8).	
10.		Receptacle (4)	Position to switch box (1) and install with two screws (5).	
11.		Cover plate (6)	Install with three screws (7).	

10-88. BLACKOUT LIGHT SWITCH AND 110-VOLT RECEPTACLE  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Connect auxiliary A/C power source and check operation of light switch and 110-volt receptacle (TM 9-2320-272-10).

TA 349378

**10-89. INSIDE TELEPHONE JACK POSTS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Lockwasher "O" ring		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**NOTE**

Inside telephone jack posts are located on van ceiling by emergency light and on left rear panel below fire extinguisher. Both telephone jack posts are changed the same.

**a. Removal**

- |    |                  |   |                            |   |
|----|------------------|---|----------------------------|---|
| 1. | Junction box (6) | Four screws (9)   | Remove.                    |   |
| 2. |                  | Junction box (6)  | Pull away from panel (10). |   |
| 3. | Jack post (8)    | Two nuts (1), two wires (2), lockwasher (3), and washer (4) | Remove.                    | Discard lockwasher (3). Tag wires (2) for installation. Ceiling telephone jack posts have one wire (2). |
| 4. | Grommet (5)      | Telephone jack post (8) and "O" ring (7)                    | Remove.                    | Discard "O" ring (7).   |
| 5. | Junction box (6) | Grommet (5)   | Remove.                    |   |

**b. Installation**

- |    |  |  |                              |
|----|--|--|------------------------------|
| 6. |  | Grommet (5)                                  | Install in junction box (6). |
| 7. |  | New "O" ring (7) and telephone jack post (8) | Install through grommet (5). |

## 10-89. INSIDE TELEPHONE JACK POSTS REPLACEMENT (Cont'd)

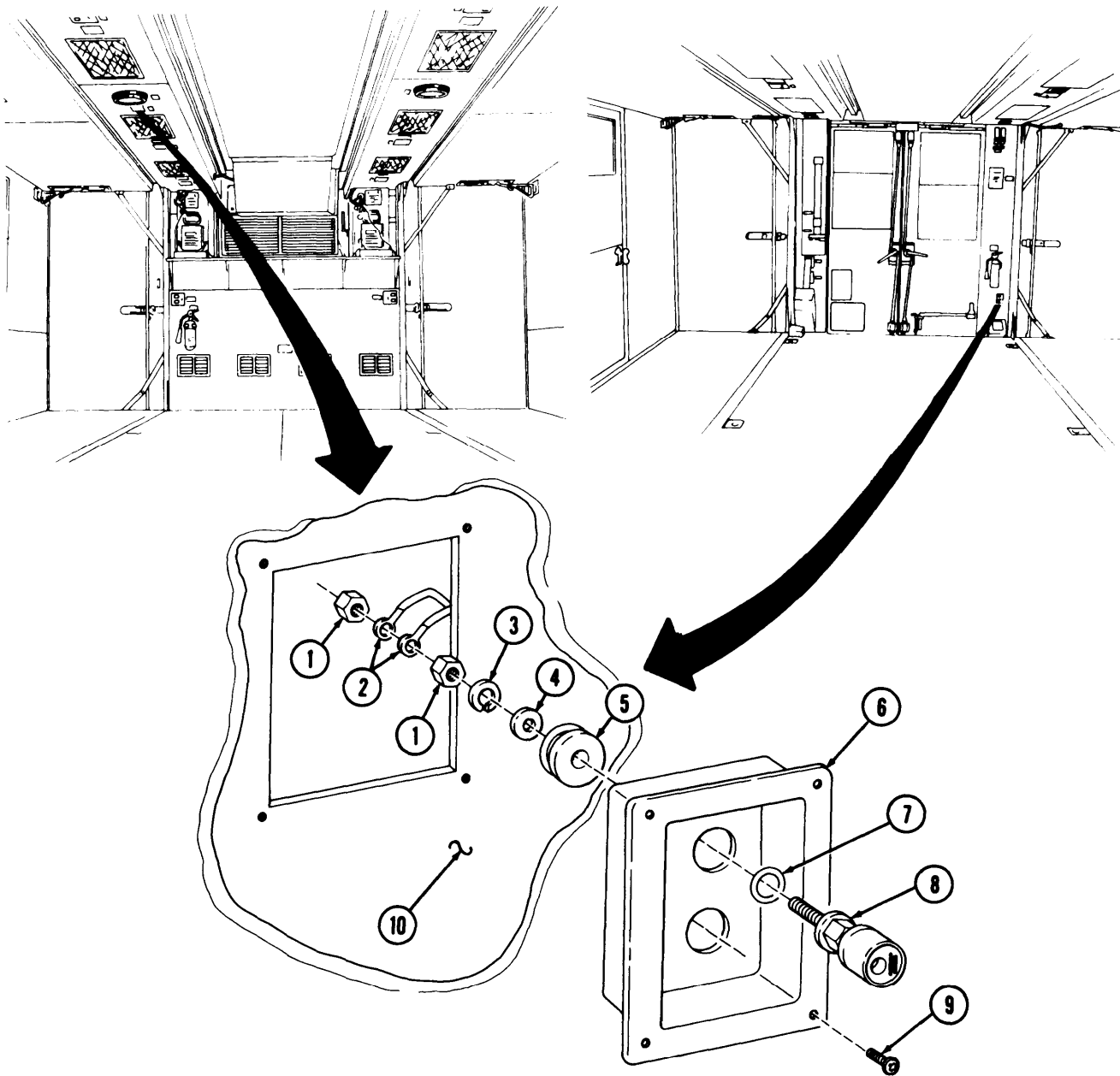
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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8. Washer (4), new lock-washer (3), two wires (2), and two nuts (1)

Install on telephone jack post (8).

9. Junction box (6)

Install in panel (10) with four screws (9).



END OF TASK!

TA 349379

10-221

**10-90. OUTSIDE TELEPHONE JACK POSTS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10 Para. 10-89	Parking brake set. Fire extinguisher removed, Inside telephone jack posts removed,
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Lockwasher "O" ring		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal****NOTE**

Outside telephone jack posts are located on outside of left rear skin panel and both telephone jack posts are removed the same way.

- |    |  |  |                          |  |
|----|--|--|--------------------------|--|
| 1. | Outside skin panel (15)                  | Four screws (13), cover (14), and seal (22)    | Remove.                  |  |
| 2. | Two thermostats (2) on inside panel (11) | Two screws (6) and cover (5)                   | Remove.                  | Screws (6) are retained in cover (5).  |
| 3. |  | Eight screws (4)                               | Remove.                  | Thermostats (2) remain connected to wires (3).   |
| 4. | Inside panel (11)                        | Twenty-three screws (8) and panel retainer (7) | Remove,                  |  |
| 5. |  | Inside panel (11)                              | Pry away from frame (1). | Pry inside panel to clear studs (12) and obtain clearance to rear of junction box (10). Make sure wires (9) are tagged for installation, |



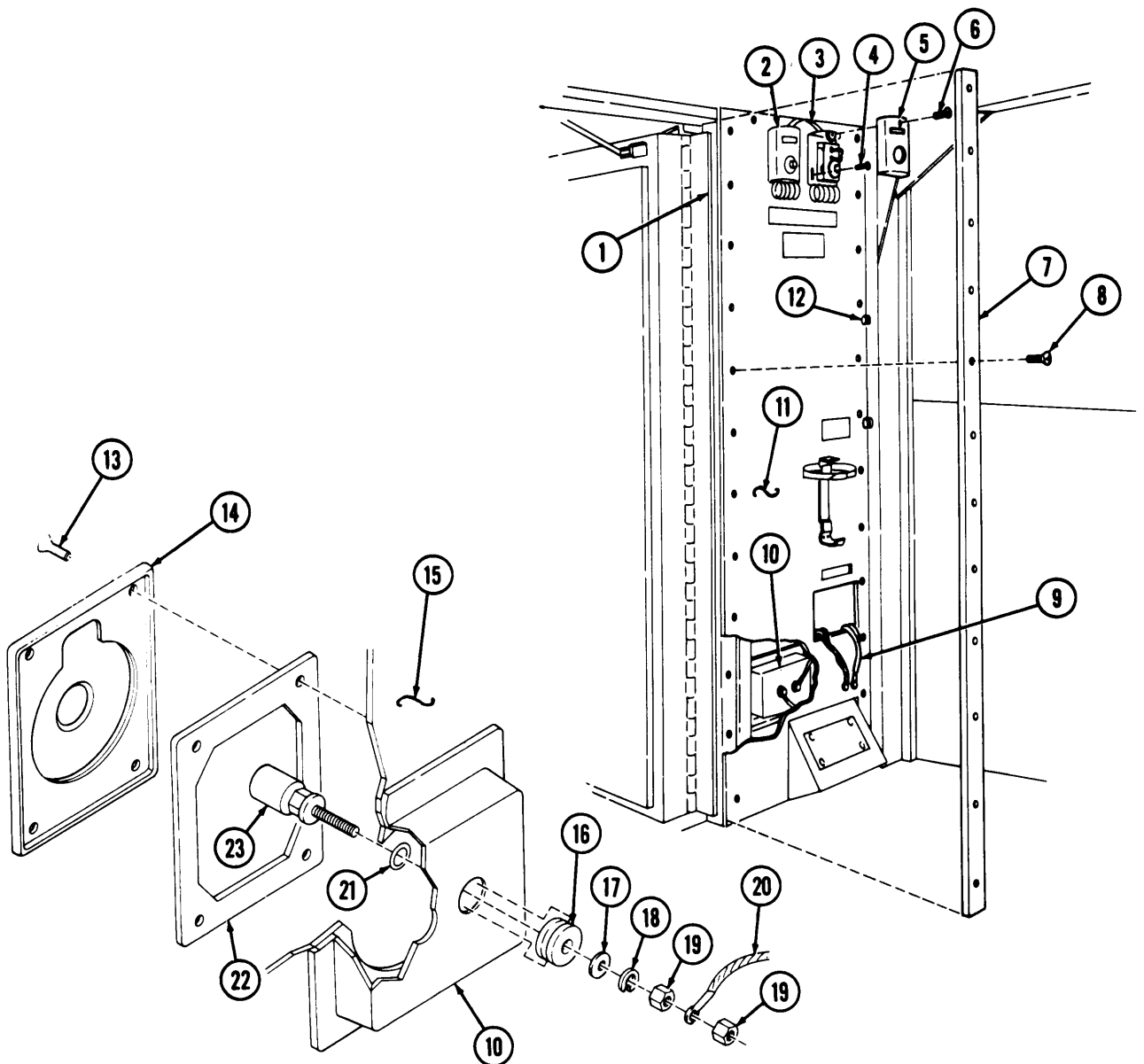
**10-90. OUTSIDE TELEPHONE JACK POSTS REPLACEMENT (Cont'd)**

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

Assistant will help with step 6.

- |    |                   |   |         |  |
|----|-------------------|---|---------|--|
| 6. | Junction box (10) | Two nuts (19), wire (20), lockwasher (18), washer (17), telephone jack post (23), and "O" ring (21) | Remove. | Discard lockwasher (18) and "O" ring (21). Other telephone jack post (23) is removed the same. |
| 7. |                   | Grommet (16)  | Remove. |  |



## 10-90. OUTSIDE TELEPHONE JACK POSTS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
8.		Grommet (16)	Install.	
<b>NOTE</b>				
. Assistant will help with step 9.				
. Both telephone jack posts are installed the same way.				
9.		New "O" ring (21), telephone jackpost (23), washer (17), new lock-washer (18), two nuts (19), and wire (20)	Install through grommet (16) on junction box (10) on outside panel (15).	
10.		Inside panel (11)	Pry back over studs (12) to frame (1).	Make sure thermostat wires (3) and wires (9) are in original location.
11.		Inside panel (11) and panel retainer (7)	Install with twenty-three screws (8).	
12.		Two thermostats (2)	Install on inside panel (11) with eight screws (4).	
13.		Two thermostat covers (5)	Install on two thermostats (2) with two screws (6).	
14.		Seal (22) and cover (14)	Install with four screws (13).	



**10-91. CLEARANCE AND BLACKOUT MARKER LIGHTS REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Main power switch off.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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**a. Removal**

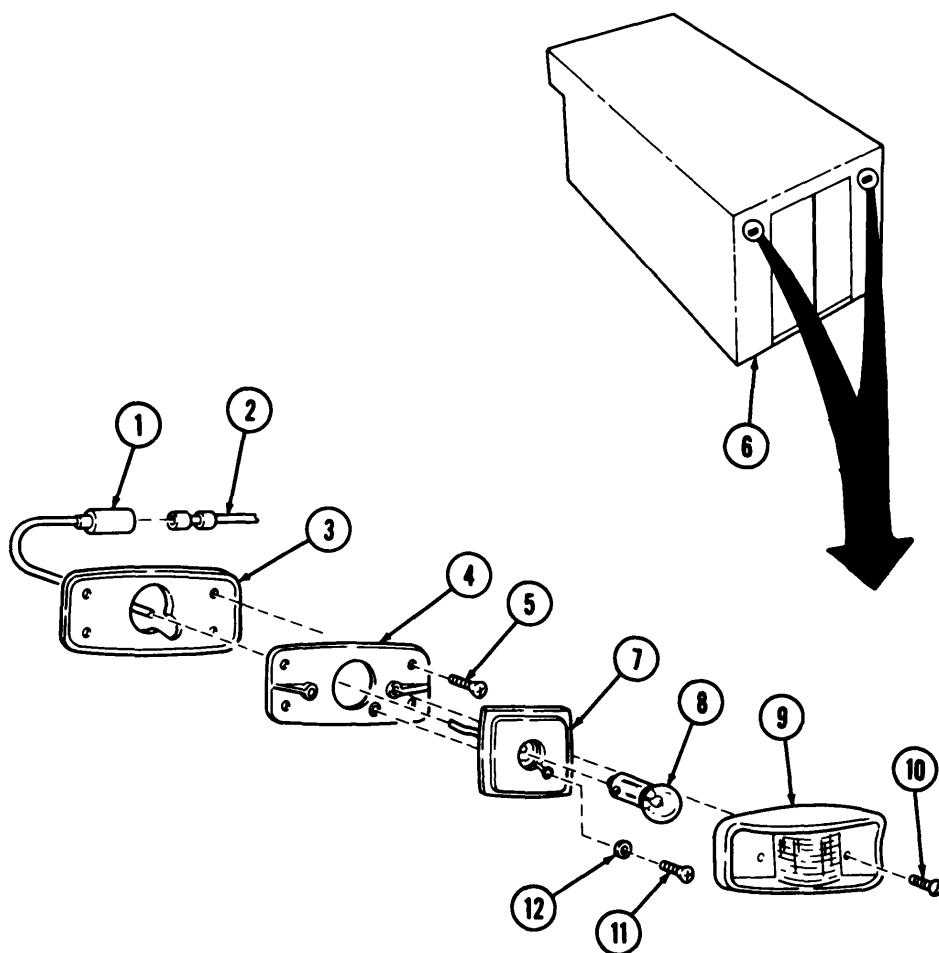
- |    |                    |                                    |                              |
|----|--------------------|------------------------------------|------------------------------|
| 1. | Lens housing (9)   | Two screws (10)                    | Remove.                      |
| 2. | Light base (4)     | Lens housing (9)                   | Remove.                      |
| 3. |                    | Lamp bulb (8)                      | Remove.                      |
| 4. | Socket piece (7)   | Ground screw (11) and washer (12)  | Remove.                      |
| 5. | Light base (4)     | Socket piece (7)                   | Remove.                      |
| 6. |                    | Four screws (5)                    | Remove.                      |
| 7. |                    | Light base (4) and rubber seal (3) | Pull away from van body (6). |
| 8. | Wiring harness (2) | Connector (1)                      | Unplug.                      |

**b. Installation**

- |     |                                    |  |
|-----|------------------------------------|--|
| 9.  | Connector (1)                      | Plug into harness (2).   |
| 10. | Light base (4) and rubber seal (3) | a. Aline with holes on van body (6).<br>b. Install with four screws (5). |

## 10-91. CLEARANCE AND BLACKOUT MARKER LIGHTS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
11.		Socket piece (7)	a. Position over light base (4). b. Install screw (11) and washer (12).	
12.		Lamp bulb (8)	Install.	
13.		Lens housing (9)	Install with two screws (10).	



END OF TASK!

FOLLOW-ON TASK: Turn main power switch on and check operation of clearance and blackout marker lights (TM 9-2320-272-10).

TA 349382

10-92. SIDE AND REAR DOOR BLACKOUT LIGHT SWITCH REPLACEMENT

This task covers:

- a. Removal
- b. Installation
- c. Adjustment

INITIAL SETUP:

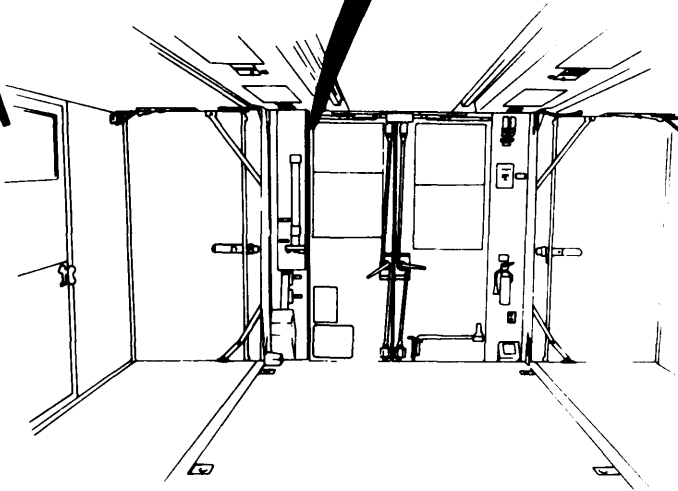
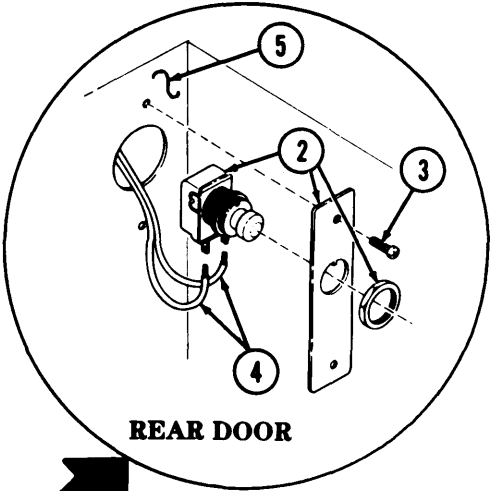
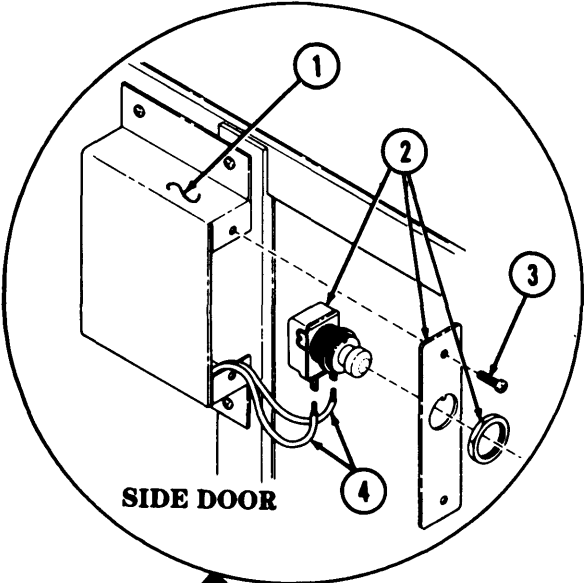
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Main power switch off. Van side panel fully expanded and secured,
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Solder (Appendix D, Item 24)		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

- |    |   |   |  |
|----|---|---|--|
| 1. | Electrical panel (5) and switch box (1) | Two screws (3) and door blackout light switch (2) | Remove.  |
| 2. | Door blackout light switch (2)          | Two wires (4)                                     | Disconnect by unsoldering wire (4) from two terminals of switch (2). |

10-92. SIDE AND REAR DOOR BLACKOUT LIGHT SWITCH REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



**10-92. SIDE AND REAR DOOR BLACKOUT LIGHT SWITCH REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**b. Installation**

- |    |  |                                |   |  |
|----|--|--------------------------------|---|--|
| 3. |  | Two wires (7)                  | Connect with solder to two terminals of door blackout light switch (2). |  |
| 4. |  | Door blackout light switch (2) | Install in electrical panel (8) and switch box (1) with two screws (4). |  |

**c. Adjustment****NOTE**

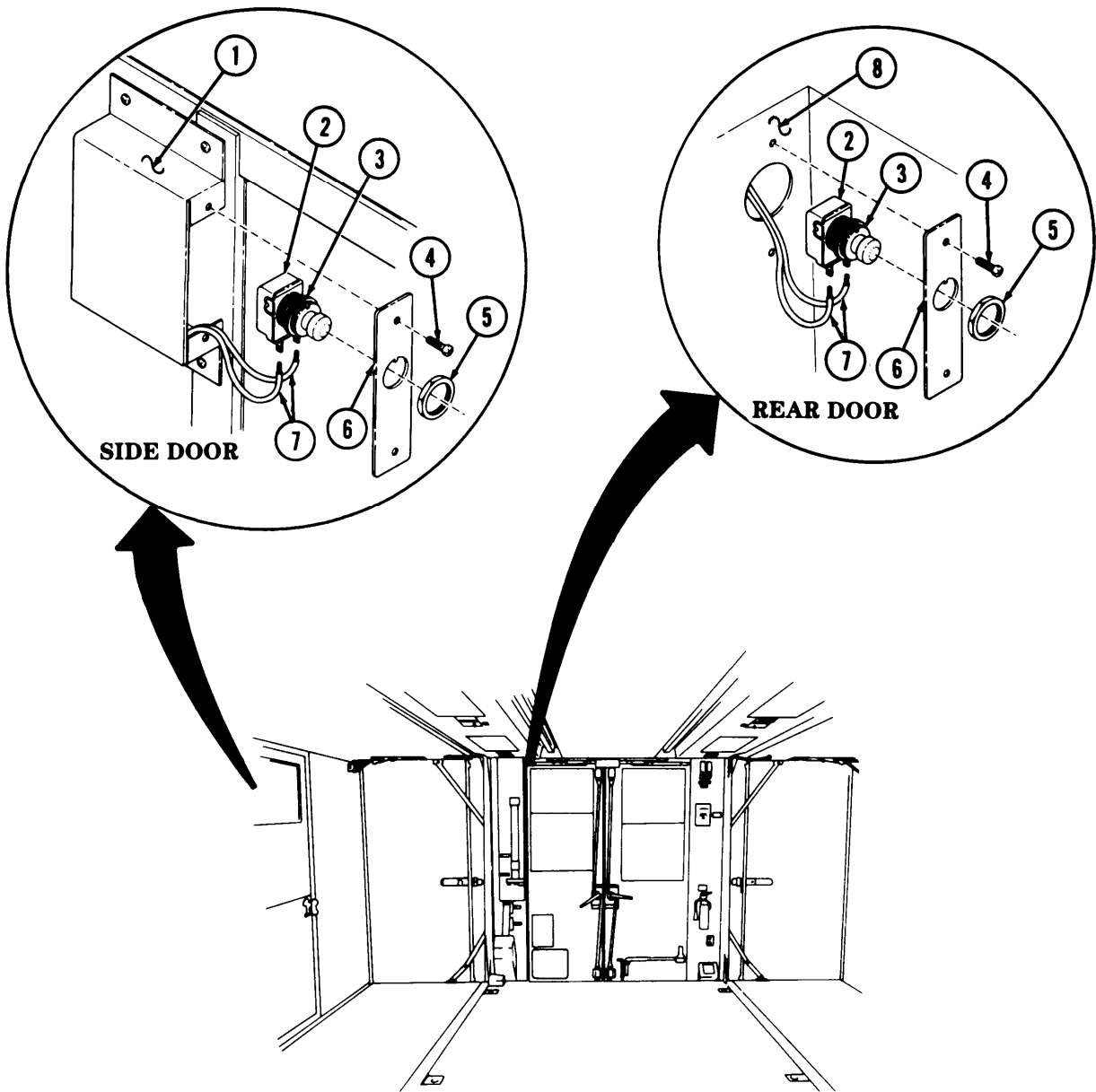
Ž Perform steps 5 through 9 only if door blackout light switch does not function properly.

- With main power switch, interior lights, and blackout light circuit on, interior lights must turn out when door starts to open, and turn on when door is closed.

- |    |   |                                |   |                  |
|----|---|--------------------------------|---|------------------|
| 5. | Electrical panel (8) and switch box (1) | Door blackout light switch (2) | Remove.   | Refer to step 1. |
| 6. | Door blackout light switch (2)          | Nut (5) and switch plate (6)   | Remove.   |                  |
| 7. |   | Ring (3)                       | Rotate further on threaded shaft of light switch (2). |                  |
| 8. |   | Switch plate (6) and nut (5)   | Install.  |                  |
| 9. | Electrical panel (8) and switch box (1) | Door blackout light switch (2) | Install.  | Refer to step 4. |



10-92. SIDE AND REAR DOOR BLACKOUT LIGHT SWITCH REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS



END OF TASK!

FOLLOW-ON TASKS: • Turn on main power switch and check operation of side and rear door blackout switches (TM 9-2320-272- 10).  
ŽRetract and secure van side panel (TM 9-2320-272-10).

TA349384

10-93. HINGED ROOF-OPERATED BLACKOUT CIRCUIT PLUNGERS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

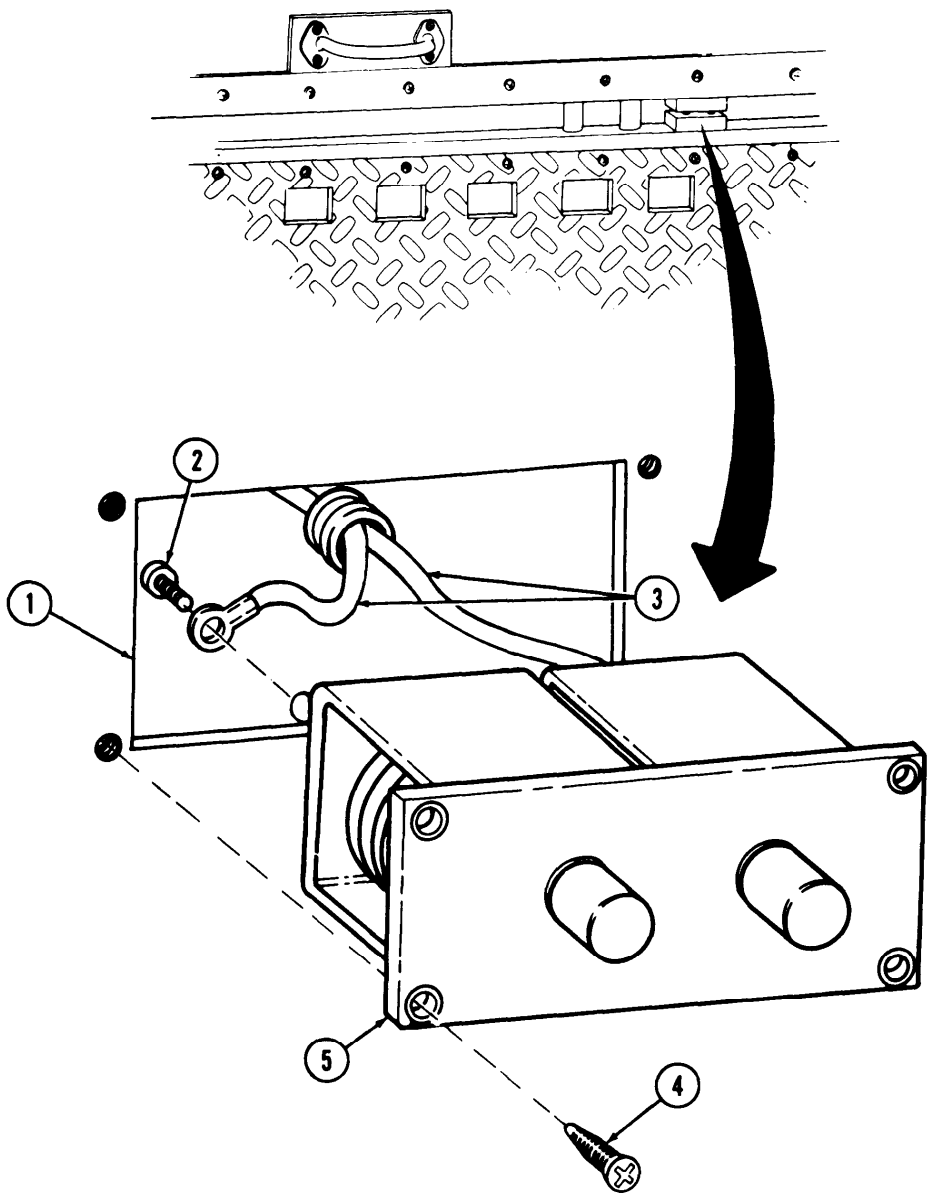
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Side panel fully expanded and secured. Main power switch off.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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<u>a. Removal</u>				
1.	Plunger plate (5)	Four screws (4)	Remove, and pull plunger plate (5) from hinged roof (1).	
2.	Plunger terminals (6)	Two electrical leads (3)	Remove screw (2) from each and disconnect.	Tag leads for installation.
<u>b. Installation</u>				
3.		Two electrical leads (3)	Install on plunger terminals (6) with two screws (2).	
4.		Plunger plate (5)	Position to hinged roof (1) and install with four screws (4).	

10-93. HINGED ROOF-OPERATED BLACKOUT CIRCUIT PLUNGERS  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: • Turn on main power switch and check operation of hinged roof-operated blackout circuit plungers (TM 9-2320-272- 10).  
• Retract and secure van side panel (TM 9-2320-272-10).

TA349385

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**10-94. EXPANDING AND RETRACTING MECHANISM LOCKS REPLACEMENT**


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This task covers:

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

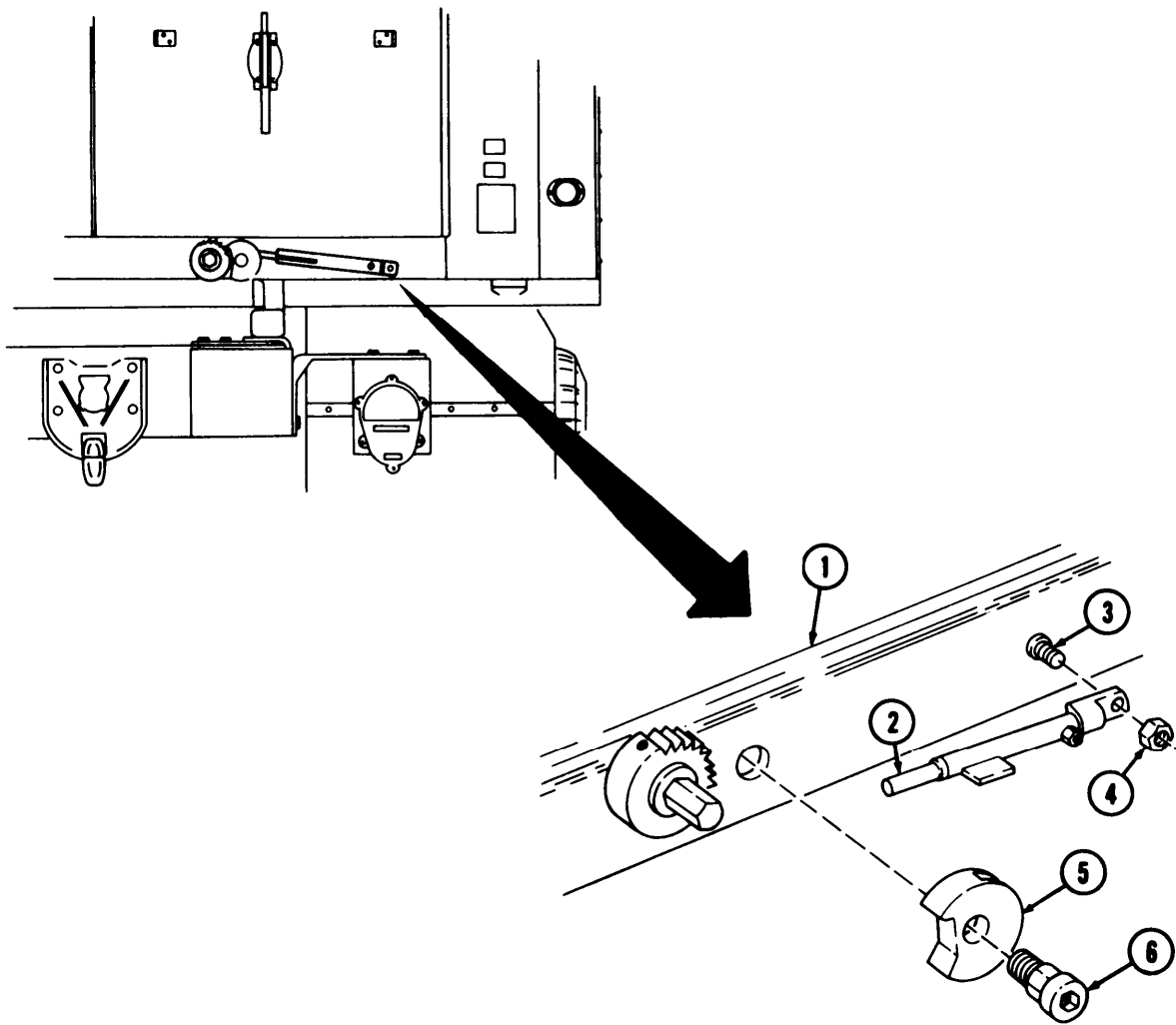
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>		
Locknut		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
<hr/> <b>a. Removal</b> <hr/>				
1.	Lock pawl (5) to van body rear cross-member (1)	Screw (6)	Remove.	
2.	Lock plunger (2) to crossmember stud (3)	Locknut (4)	<b>Remove.</b>	Discard locknuts (4).
3.	Rear crossmember ( 1 )	Lock plunger (2) and lock pawl (5)	Remove and separate.	
<hr/> <b>b. Installation</b> <hr/>				
4.		Lock plunger (2)	a. Position to slot in locking pawl (5). b. Install on cross-member stud (3) with new locknut (4).	
5.		Lock pawl (5)	Install on crossmember (1) with screw (6).	

10-94. EXPANDING AND RETRACTING MECHANISM LOCKS  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Check expanding and retracting mechanism for proper operation (TM 9-2320-272-10). **TA349386**

**10-95. VAN SPARE TIRE CARRIER REPLACEMENT**

For van spare tire carrier replacement, refer to paragraph 10-51.

**10-96. VAN HEATER FUEL PUMP REPLACEMENT**

This task covers:

- a. Removal
- b. Installation

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B		Do not perform this procedure near flames.
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

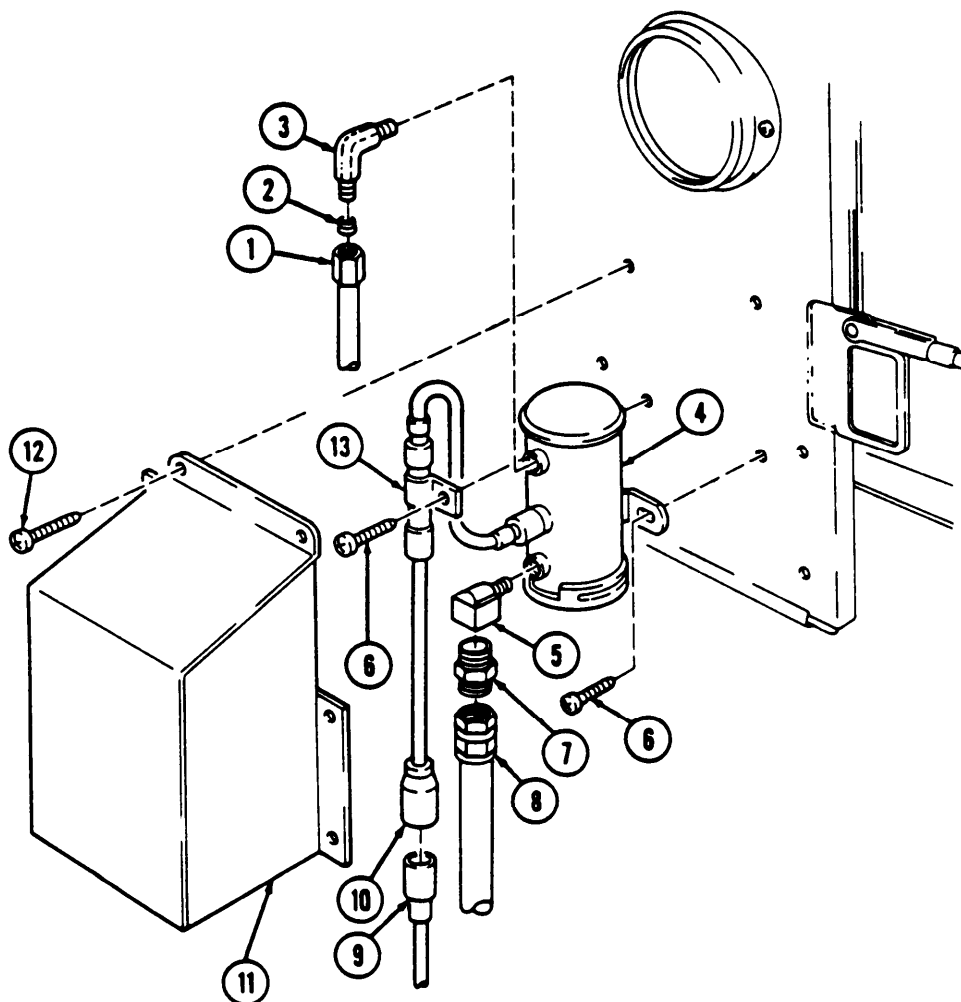
Diesel fuel is highly flammable. Do not perform fuel system procedures near open flame. Injury to personnel may result.

**a. Removal**

1.	Front left corner of van	Seven screws (13) and cover (12)	Remove.	
2.		Wires (10) and (11)	Disconnect.	
3.		Output line coupling (1) and bushing (2)	Disconnect.	Do not remove bushing (2).
4.		Elbow (3)	Remove.	
5.		Inlet line coupling (9)	Disconnect.	
6.		Adapter (8)	Remove.	
7.		Elbow (6)	Remove.	
8.		Two screws (7), fuel pump (4), and clamp (14)	Remove.	

## 10-96. VAN HEATER FUEL PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
9.		Clamp (13) and fuel pump (4)	Install with two screws (6).	
10.		Elbow (5)	Install.	
11.		Adapter (7)	Install.	
12.		Inlet line coupling (8)	Connect.	
13.		Elbow (3)	Install	
14.		Output line coupling (1) and bushing (2)	Connect.	
15.		Wires (10) and (9)	Connect.	
16.		Cover(n)	Install with seven screws (12).	



END OF TASK!

TA351056

# 10-97. VAN SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT

This task covers:

## a. Removal

## b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934A1, M935A1	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Spare tire removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Twelve locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (3)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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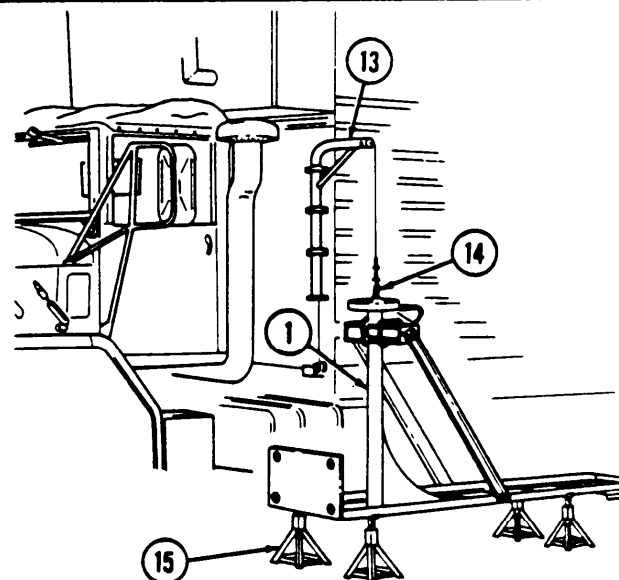
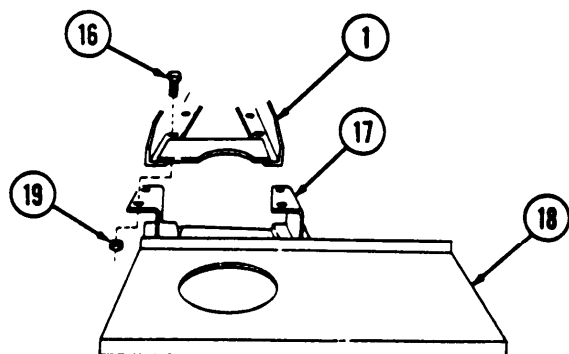
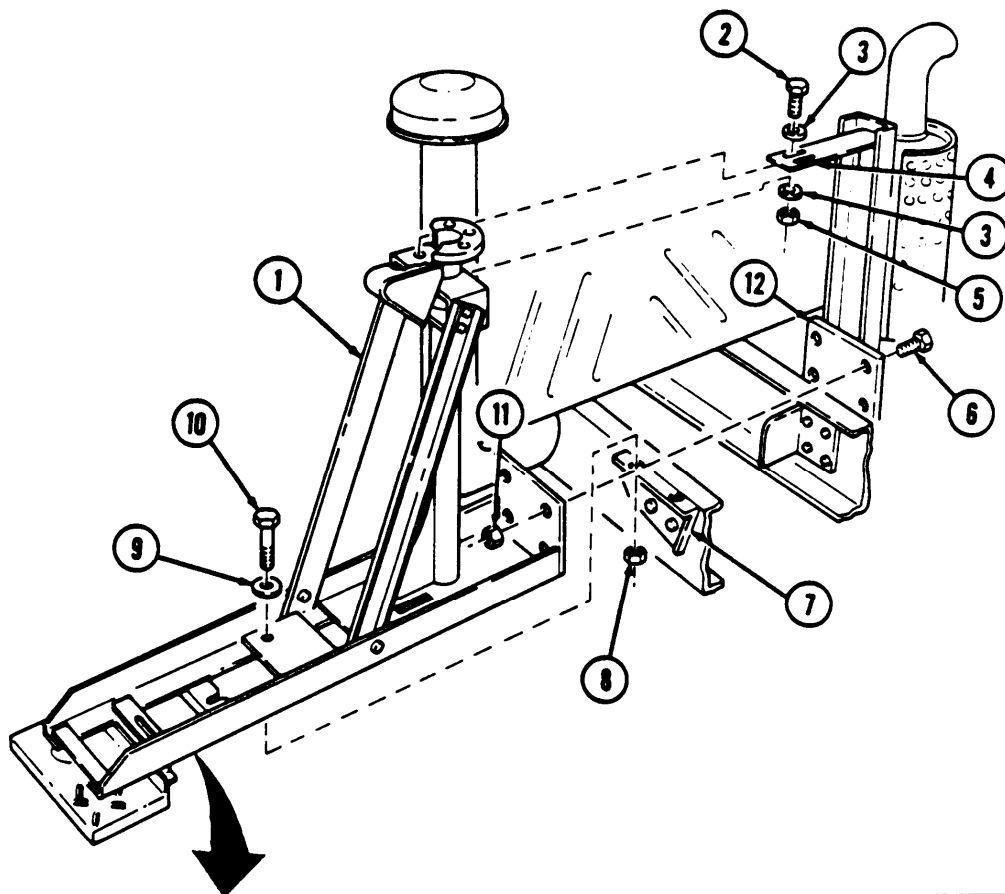
### a. Removal

1.	Carrier base (1) to muffler support brace (4)	Two locknuts (5), four washers (3), and two screws (2)	Remove.	Discard locknuts (5).
2.	Carrier base (1) to muffler support (12)	Four locknuts (11) and screws (6)	Remove.	Discard locknuts (11).
3.	Carrier base (1) to left frame rail bracket (7)	Two locknuts (8), washers (9), and screws (10)	Remove.	Discard locknuts (8).
4.		Davit chain (14)	Attach to carrier base (1).	
5.	Left frame rail bracket (7)	Carrier base (1)	Remove using swing davit assembly (13), and place on jack stands (15).	
6.	Carrier base (1)	Davit chain (14)	Remove.	
7.	Step brackets (17) to carrier base (1)	Four locknuts (19) and screws (16), and carrier access step (18)	Remove.	Discard locknuts (19).



10-97. VAN SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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TA 351057

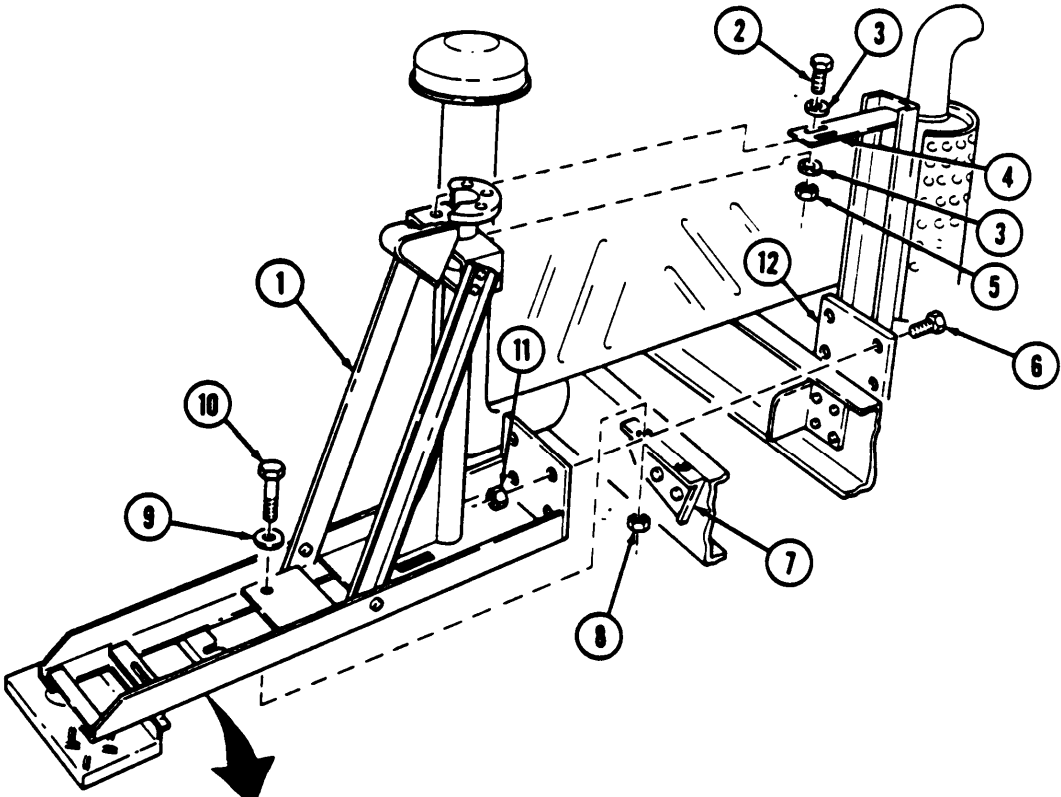
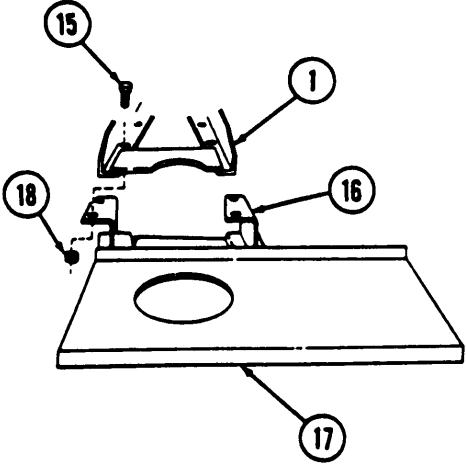
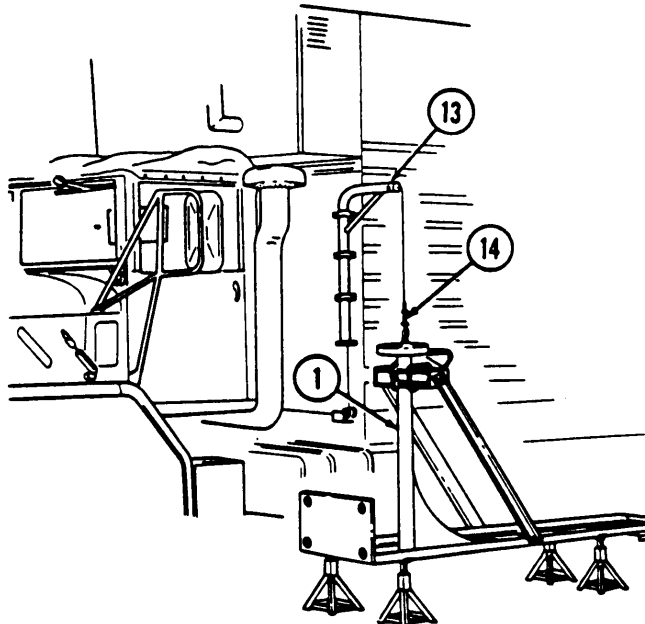
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**10-97. VAN SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)**


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STEP N O .	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
8.		Carrier access step (17)	a Position step brackets (16) under carrier base (1) with holes alined  b. Attach to base (1) with four screws (15) and new lock-nuts (18).	
9.		Davit chain (14)	Attach to carrier base (1).	
10.		Carrier base (1)	a Position between vehicle cab and body using swing davit assembly (13).  b. Attach to muffler support ( 12) with four screws (6) and new locknuts (11).  c. Install on left frame rail bracket (7) with two screws (10), washers (9), and new locknuts (8).  d. Attach to muffler support brace (4) with two screws (2), four washers (3), and two new lock-nuts (5).	
11.		Davit chain (14)	Remove.	

## 10-97. VAN SPARE TIRE CARRIER (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				
				

END OF TASK!

FOLLOW-ON TASK: Install spare tire (TM 9-2320-272-10).

TA351058

Change 1 10-241

# 10-98. VAN DAVIT CHAIN AND WIRE ROPE ASSEMBLY (M939A1 SERIES) REPLACEMENT

This task covers:

## a. Removal

## b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934A1, M935A1	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>	<u>General Safety Instructions</u>	
two cotter pins Locknut	Wear hand protection when handling wire rope.	
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P LO 9-2320-272-12		

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

Wear hand protection when handling wire rope. Broken wires may cause injury to personnel

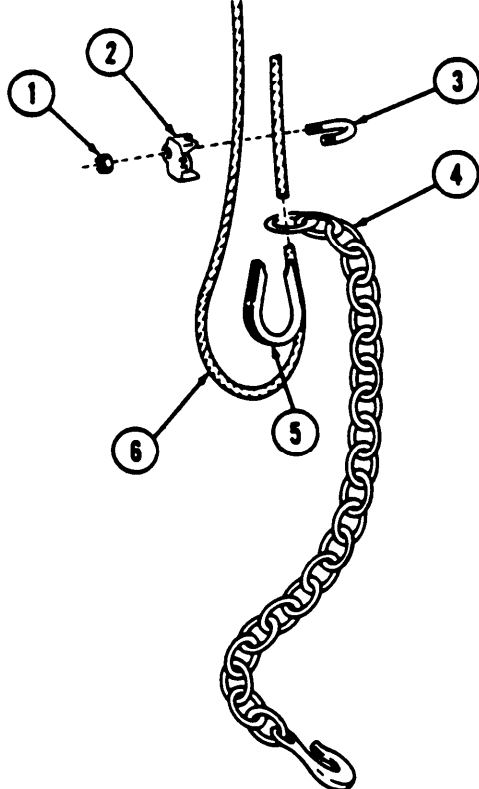
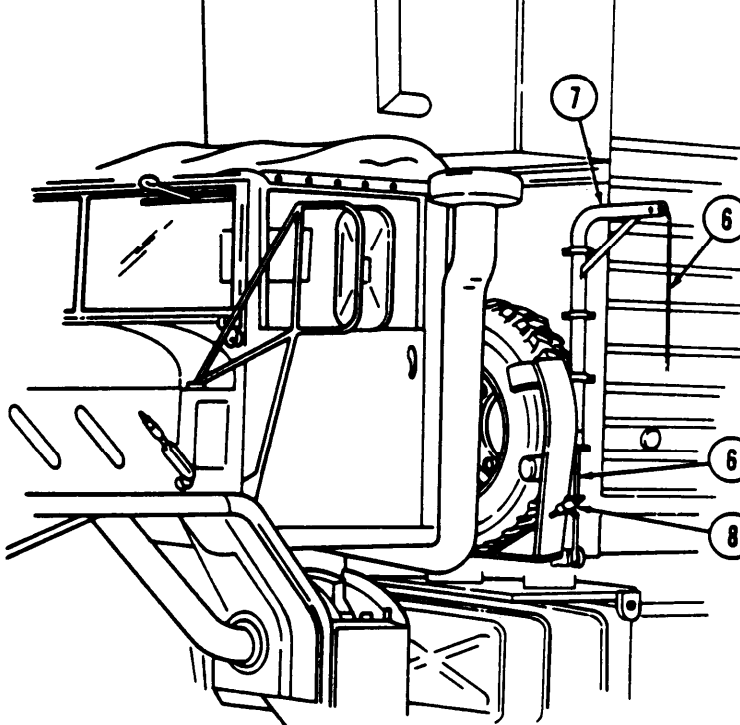
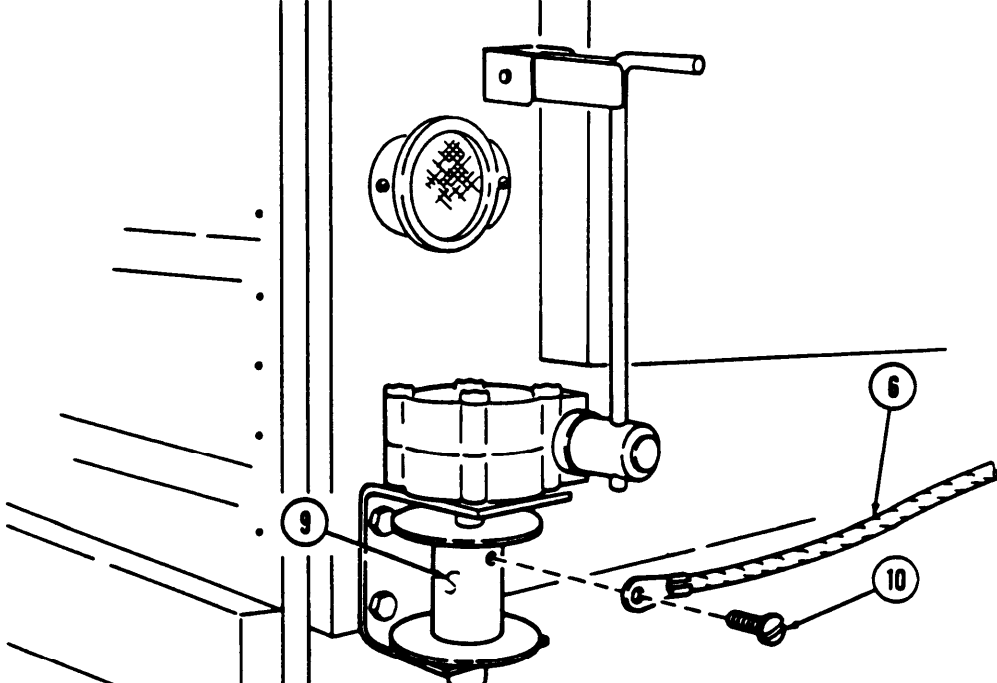
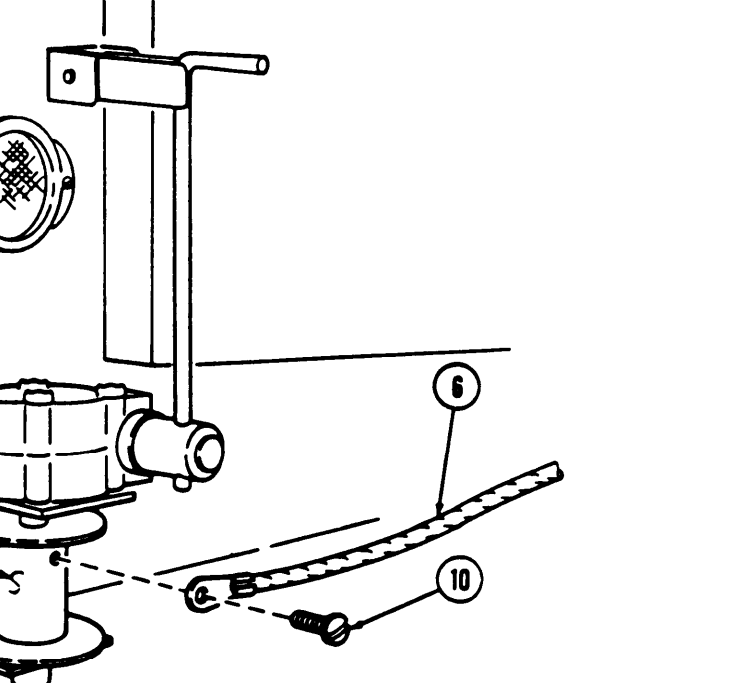
## a. Removal

## NOTE

Davit chain must be removed from spare tire before performing step 1.

1.	Wire rope clamps (2)	Four nuts (1)	Remove.
2.	Wire rope (6)	Two clamps (2) and U-bolts (3)	Remove.
3.	Chain link (4)	Wire rope (6) and thimble (5)	Remove.
4.	Swing davit (7) and pulley (8)	Wire rope (6)	Remove.
5.	Winch barrel (9)	Wire rope (6)	Unwind.
6.		Screw (10) and wire rope (6)	Remove.

10-98. VAN DAVIT CHAIN AND WIRE ROPE ASSEMBLY (M939A1 SERIES)  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

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10-98. VAN DAVIT CHAIN AND WIRE ROPE ASSEMBLY (M939A1 SERIES)  
REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

**WARNING**

Wear hand protection when handling wire rope. Broken wires may cause injury to personnel.

**NOTE**

Inspect wire rope for cracks, frays, and abrasions, and lubricate as necessary (refer to LO 9-2320-272-12).

7.		Wire rope (14)	a Install on winch barrel (16) with screw (17). b. Wind onto winch barrel ( 16).	Leave enough slack in wire rope (14) to perform step 10.
8.	Swing davit (5)	Two cotter pins (7) and davit pin (6)	Remove.	Discard cotter pins (7).
9.		Locknut (4), washer (3), screw (8), two spacers (1), and davit pulley (2)	Remove.	Discard locknut (4).
10.		Wire rope (14)	Thread through swing davit (5) and pulley ( 15).	
11.		Two spacers (1) and davit pulley (2)	Position in swing davit (5) with holes alined.	
12.		Screw (8)	a. Place through holes in swing davit (5), spacers (1), and davit pulley (2). b. Install with washer (3) and new locknut (4).	

**NOTE**

Make sure that wire rope is between davit pin and davit pulley.

13.		Davit pin (6)	a. Place through holes in swing davit (5). b. Install with two new cotter pins (7).	
14.		Wire rope (14) and thimble (13)	Install on chain link (12).	Take up slack in wire rope (14).
15.		Two clamps (10) and U-bob (11 )	Install on wire rope (14) with four nuts (9).	Take up slack in wire rope (14).

# 10-98. VAN DAVIT CHAIN AND WIRE ROPE ASSEMBLY (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS

<b>10-99. VAN SWING DAVIT AND PULLEY (M939A1 SERIES) REPLACEMENT</b>
--

This task covers:

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

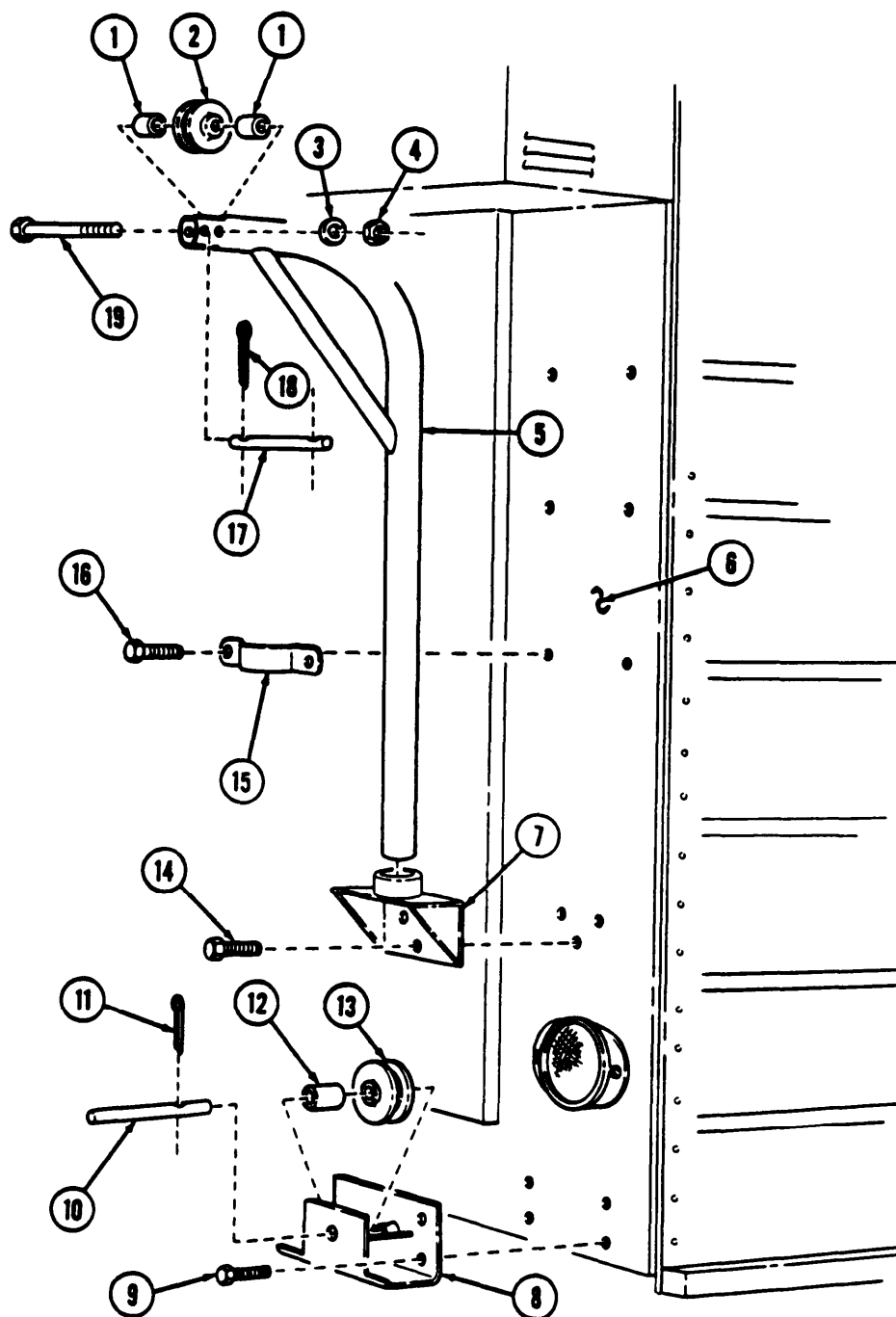
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934A1, M935A1	Para 10-98	Davit chin and wire rope assembly removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Three cotter pins Locknut		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Vehicle (6)	Six screws (16) and three clamps (15)	Remove.	
2.	Davit base (7)	Swing davit (5)	Remove.	
3.		Three screws (14) and base (7)	Remove.	
4.	Swing davit (5)	Two cotter pins (18) and davit pin (17)	Remove.	Discard cotter pins (18).
5.		Locknut (4), washer (3), screw (19), two spacers (1), and davit pulley (2)	Remove.	Discard locknut (4).
6.	Pulley bracket (8)	Cotter pin (11), shaft (10), spacer (12), and pulley (13)	Remove.	Discard cotter pin (11).
7.		Four screws (9) and pulley bracket (8)	Remove.	



## 10-99. VAN SWING DAVIT AND PULLEY (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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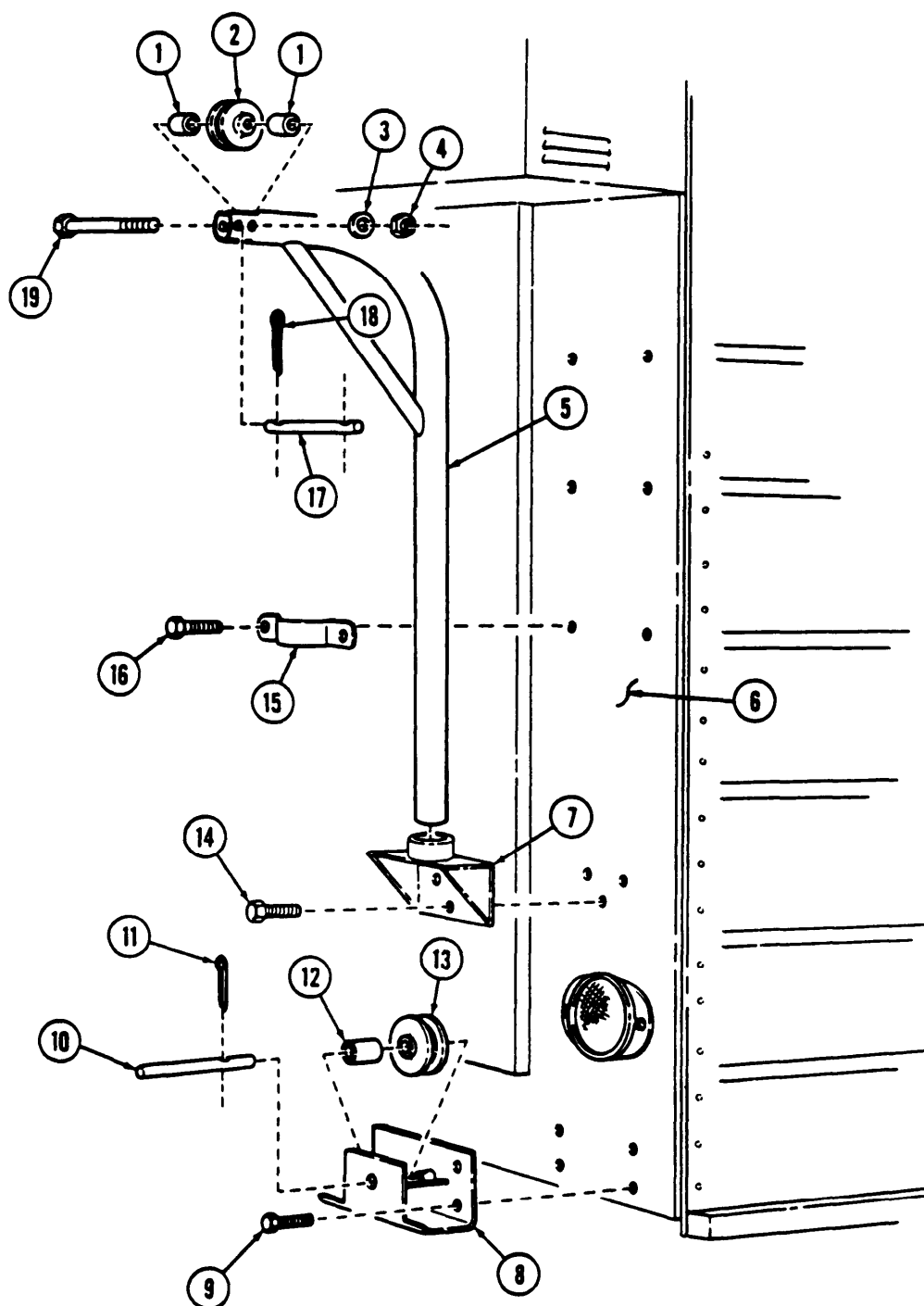


**10-99. VAN SWING DAVIT AND PULLEY (M939A1 SERIES) REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
8.		Pulley bracket (8)	Install on vehicle (6) with four screws (9).	
9.		Spacer (12) and pulley (13)	Position in pulley bracket (8) with holes alined.	
10.		Shaft (10)	a Place through holes in pulley bracket (8), spacer (12), and pulley (13). b. Aline shaft ( 10) hole with pulley bracket (8) hole. c. Install with new cotter pin (11).	
11.		Two spacers (1) and davit pulley (2)	Position in swing davit (5) with holes alined.	
12.		screw (19)	a Place through holes in swing davit (5), spacers (1), and davit pulley (2). b. Install with washer (3) and new locknut (4).	
13.		Davit pin (17)	a Place through holes in swing davit (5). b. Install with two new cotter pins (18).	
14.		Davit base (7)	Install on vehicle (6) with three screws (14).	
15.		Swing davit (5)	a Position on davit base (7). b. Install on vehicle (6) with three clamps (15) and six screws (16).	

## 10-99. VAN SWING DAVIT AND PULLEY (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK; Install davit chain and wire rope assembly (para 10-98).

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## 10-100. VAN DAVIT WINCH (M939A1 SERIES) REPLACEMENT

This task covers:

### a. Removal

### b. Installation

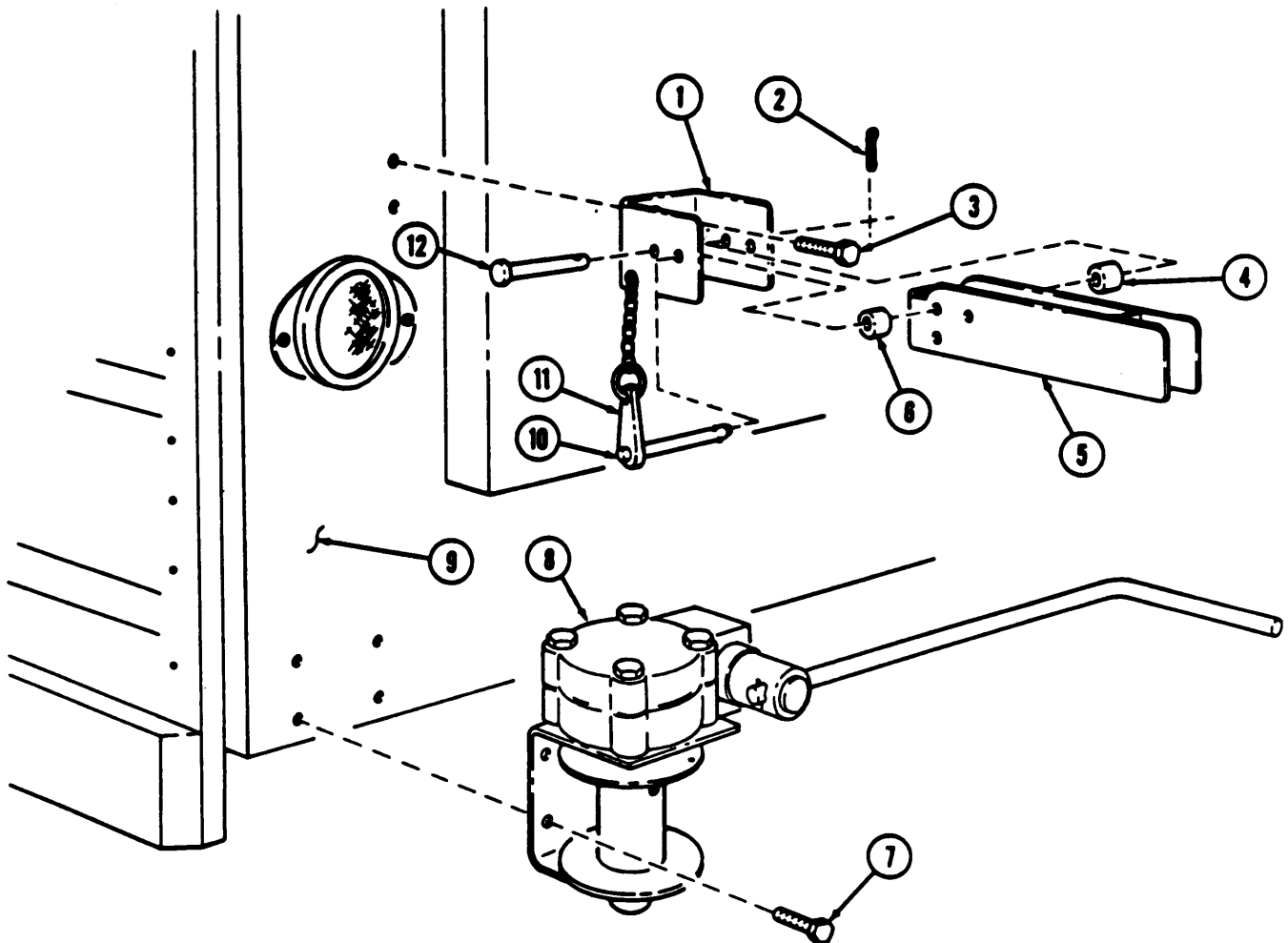
#### INITIAL SETUP

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934A1, M935A1	Para 10-98	Davit chain and wire rope assembly removed.
<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>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>a. Removal</b>				
1.	Vehicle (9)	Four screws (7) and winch (8)	Remove.	
2.	Brace (1)	Retaining pin (11)	Push button (10), and remove.	
3.		Cotter pin (2), pin (12), spacer (4), handle lock (5), and spacer (6)	Remove.	Discard cotter pin (2).
4.	Vehicle (9)	Two screws (3) and brace (1)	Remove.	
<b>b. Installation</b>				
5.		Brace (1)	Install on vehicle (9) with two screws (3).	
6.		Pin (12)	Install on brace (1).	Leave enough clearance to perform step 7.
7.		Spacer (6), handle lock (5), spacer (4), and new cotter pin (2)	Install on pin (12).	
8.		Retaining pin (11)	Push button (10), and install on brace (1).	

# 10-100. VAN DAVIT WINCH (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.		Winch (8)	Install on vehicle (9) with four screws (7).	



END OF TASK!

FOLLOW-ON TASK: Install davit chain and wire rope assembly (para 10-98).

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10-101. VAN POWER CABLE REEL (M939A1 SERIES) REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934A1, M935A1	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Power cable removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

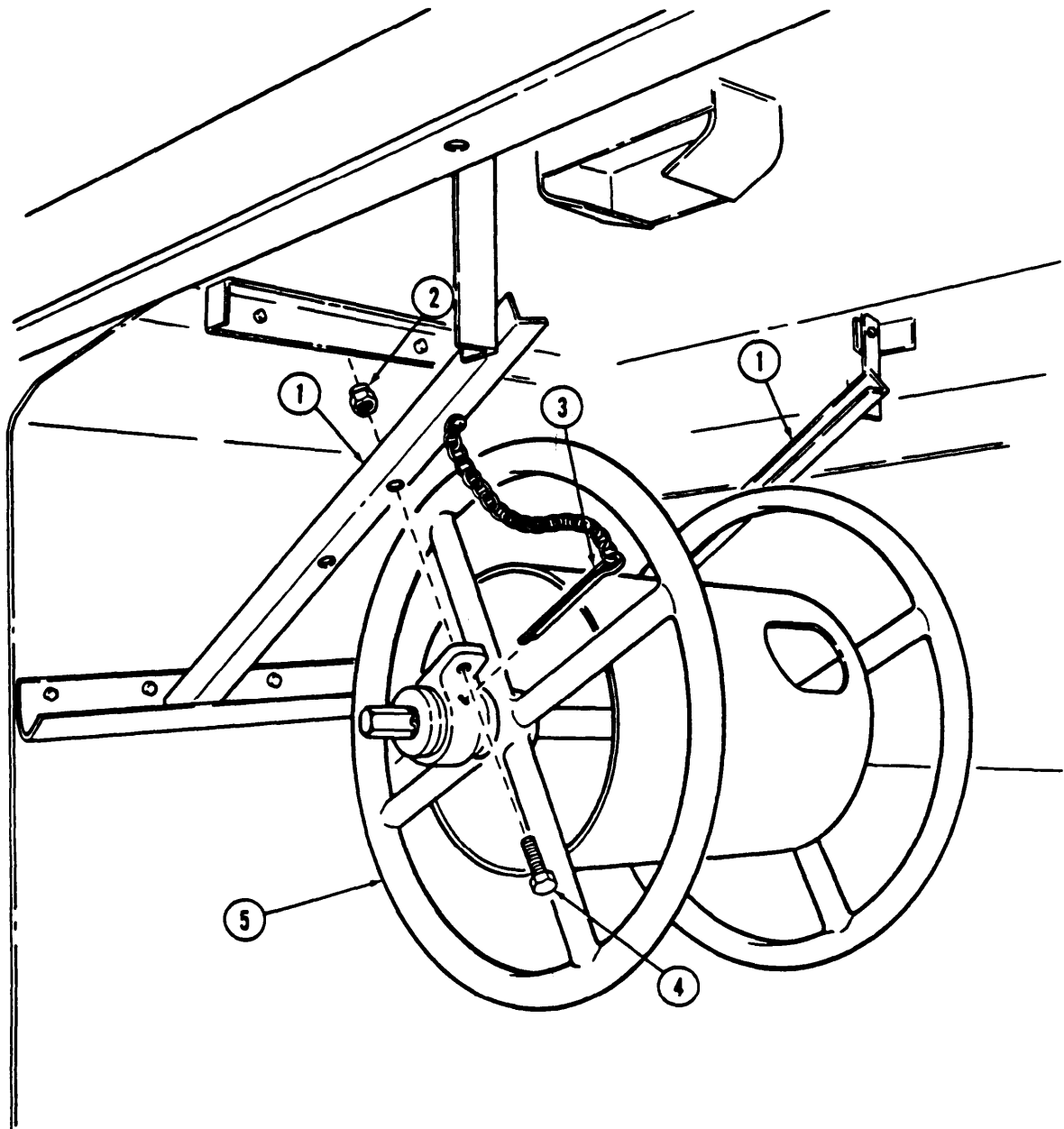
- |    |   |                                  |         |                       |
|----|---|----------------------------------|---------|-----------------------|
| 1. | Power cable reel (5)                      | Retaining pin (3)                | Remove. |                       |
| 2. | Right forward mud flap support braces (1) | Four locknuts (2) and screws (4) | Remove. | Discard locknuts (2). |
| 3. |   | Power cable reel (5)             | Remove. |                       |

b. Installation

- |    |                      |   |
|----|----------------------|---|
| 4. | Power cable reel (5) | a. Position beneath right forward mud flap support braces (1) with holes alined.<br>b. Install with four screws (4) and new locknuts (2). |
| 5. | Retaining pin (3)    | Install on power cable reel (5).  |

## 10-101. VAN POWER CABLE REEL (M939A1 SERIES) REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install power cable (TM 9-2320-272- 10).

TA351064

**10-102. VAN HEATER FUEL PUMP (M939A1 SERIES) REPLACEMENT**

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934A1, M935A1	TM 9-2320-272-10	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>
Light-wheeled vehicle mechanic MOS 63B		Do not perform this procedure near flames.
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
-----------------	-----------------	-------------	---------------	----------------

**WARNING**

Diesel fuel is highly flammable. Do not perform fuel system procedures near open flame. Injury to personnel may result.

**a. Removal**

- |    |                             |   |             |                             |
|----|-----------------------------|---|-------------|-----------------------------|
| 1. | Left side of bonnet         | Two screws (3) and washers (2)                          | Remove.     |                             |
| 2. |                             | Access door (1)   | Open.       |                             |
| 3. |                             | Wires (10) and (9)                                      | Disconnect. |                             |
| 4. | Elbow (4)                   | Output line coupling (13) and bushing (14)              | Disconnect. | Do not remove bushing (14). |
| 5. | Heater fuel pump (5)        | Elbow (4)   | Remove.     |                             |
| 6. | Elbow (7)                   | Inlet line coupling (8)                                 | Disconnect. |                             |
| 7. | <b>Heater</b> fuel pump (5) | Elbow (7)   | Remove.     |                             |
| 8. |                             | Two screws (11 ) and (6), fuel pump (5), and clamp (12) | Remove.     |                             |

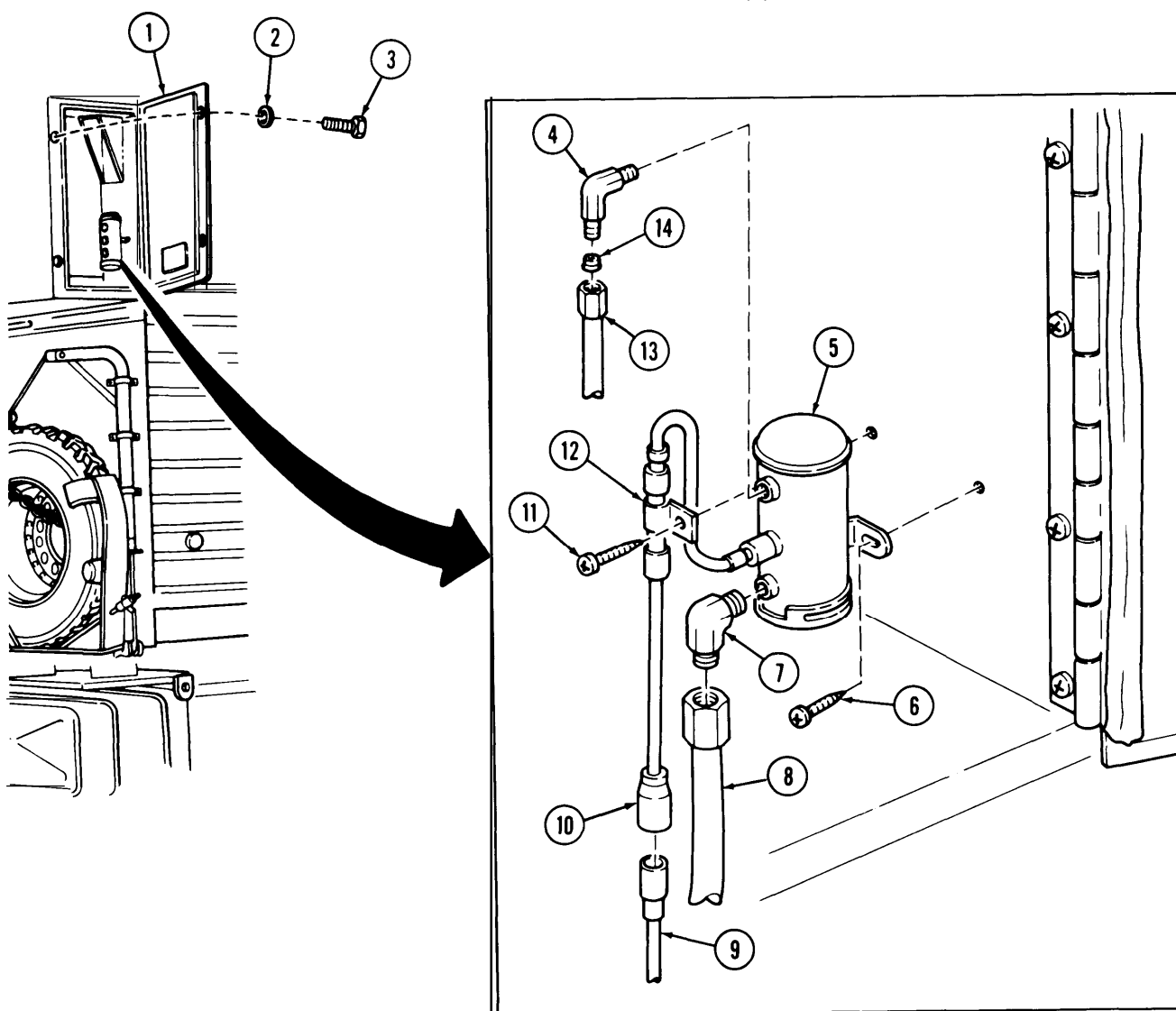
**b. Installation**

- |    |  |                              |                                       |
|----|--|------------------------------|---------------------------------------|
| 9. |  | Clamp (12) and fuel pump (5) | Install with two screws (11) and (6). |
|----|--|------------------------------|---------------------------------------|



**10-102. VAN HEATER FUEL PUMP (M939A1 SERIES) REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.		Elbow (7)	Install.	
11.		Inlet line coupling (8)	Connect.	
12.		Elbow (4)	Install.	
13.		Output line coupling (13) and bushing (14)	Connect.	
14.		Wires (10) and (9)	Connect.	
15.		Access door (1)	Close, and install two washers (2) and screws (3).	



END OF TASK!

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## 10-103. AIR CONDITIONER DRAIN TUBE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M934A1, M935, M935A1	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Sleeve		None
pipe sealant (Appendix D, Item 2)		
Cotter pin		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

1. Bonnet door (5)	Cotter pin (14) and door rod (2)	Remove.	Discard cotter pin (14).
2.	Support rod (6)	Open and support.	
3. Van body (10)	Four screws (11) and clamps (12)	Remove.	
4. Elbow (3)	Tube (13), nut (7), and sleeve (4)	Remove.	Discard sleeve (4).
5. Bonnet (1)	Tube (13)	Remove.	
6. Bonnet holes (9)	Two grommets (8)	Remove.	Replace only if damaged.
7. Air conditioner (15)	Elbow (3)	Remove.	

#### NOTE

Male pipe threads must be coated with pipe sealant before installation.

8.	Two grommets (8)	Install in bonnet holes (9).
9.	Elbow (3)	Install on air conditioner (15).

## 10-103. AIR CONDITIONER DRAIN TUBE REPLACEMENT (Cont'd)

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

- |     |  |           |  |  |
|-----|--|-----------|--|--|
| 10. |  | Tube (13) | Install through two grommets (8) and bonnet holes (9). |  |
|-----|--|-----------|--|--|

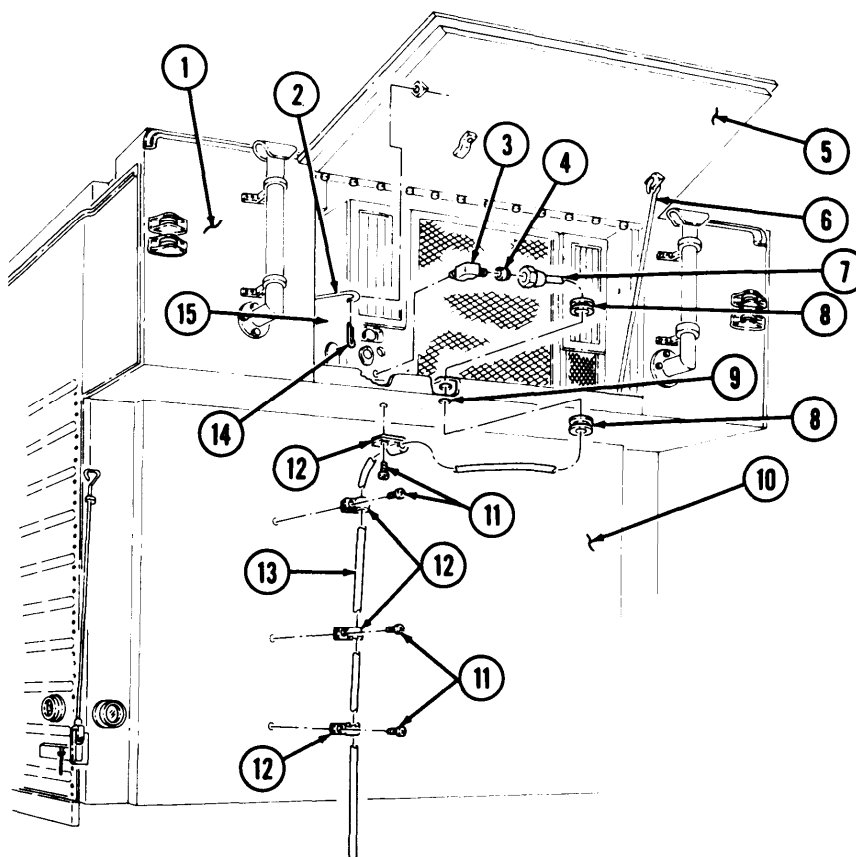
**CAUTION**

Do not crimp tubing when routing through holes, drainage will stop.

**NOTE**

If tube was damaged refer to TM 9-243 for tube fabrication.

- |     |  |  |  |  |
|-----|--|--|--|--|
| 11. |  | Tube (13), nut (7), and new sleeve (4)       | Install on elbow (3).                                |  |
| 12. |  | Tube (13), four clamps (12), and screws (11) | Install on van body (10).                            |  |
| 13. |  | Bonnet door (5)                              | Release support rod (6).                             |  |
| 14. |  | Door rod (2)                                 | Install on bonnet door (5) with new cotter pin (14). |  |



END OF TASK!



## CHAPTER 11 SPECIAL PURPOSE KITS MAINTENANCE

### Section 1. GENERAL

#### **11-1. SCOPE**

This chapter contains maintenance instructions for special purpose kits authorized for the organizational level.

#### **11-2. SERVICE UPON RECEIPT**

When a vehicle equipped with a new or reconditioned kit is received, it must be determined that the kit has been properly serviced and that all necessary parts are included.

### Section II. WINTERIZATION KITS MAINTENANCE

#### **11-3. GENERAL**

This section provides maintenance procedures assigned to the organizational level for winterization kits. Installation drawings are provided with each kit. To find a specific maintenance procedure, see the maintenance task summary below:

#### **11-4. WINTERIZATION KITS MAINTENANCE TASK SUMMARY**

TASK PARA.	PROCEDURES	PAGE NO.
11-5.	Radiator Cover Kit Replacement	11-2
11-6.	Hardtop Kit Replacement	11-4
11-7.	Engine Coolant Heater Replacement	11-8
11-8.	Engine Coolant Heater Pump Replacement	11-12
11-9.	Engine Coolant Heater Control Box Replacement	11-16
11-10.	Engine Coolant Heater Harness Replacement	11-18
11-11.	Engine Coolant Oil Pan Shroud and Exhaust Tube Replacement	11-22
11-12.	Engine Coolant Heater Hose Replacement	11-24
11-13.	Engine Coolant Battery Box Heater Pad Replacement	11-32
11-14.	Swingfire Heater Pump Replacement	11-34
11-15.	Swingfire Heater and Mounting Bracket Replacement	11-38
11-16.	Swingfire Heater Electrical Components Replacement	11-42
11-17.	Swingfire Heater Harness Replacement	11-50
11-18.	Swingfire Heater Oil Pan Shroud and Exhaust Tube Replacement	11-58
11-19.	Swingfire Heater Battery Box Heater Pad Replacement	11-60
11-20.	Swingfire Heater Water Jacket Replacement	11-62
11-21.	Fuel Burning Personnel Heater Replacement	11-66
11-22.	Personnel Heater Mounting Bracket Replacement	11-70
11-23.	Personnel Heater Fuel Pump Replacement	11-72
11-24.	Personnel Heater Fuel Shutoff Valve Replacement	11-76
11-25.	Personnel Heater Control Box Replacement	11-78
11-26.	Personnel Heater Exhaust Tube Replacement	11-80
11-27.	Personnel Heater Wiring Harness Replacement	11-82

## 11-5. RADIATOR COVER KIT REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
None		None
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

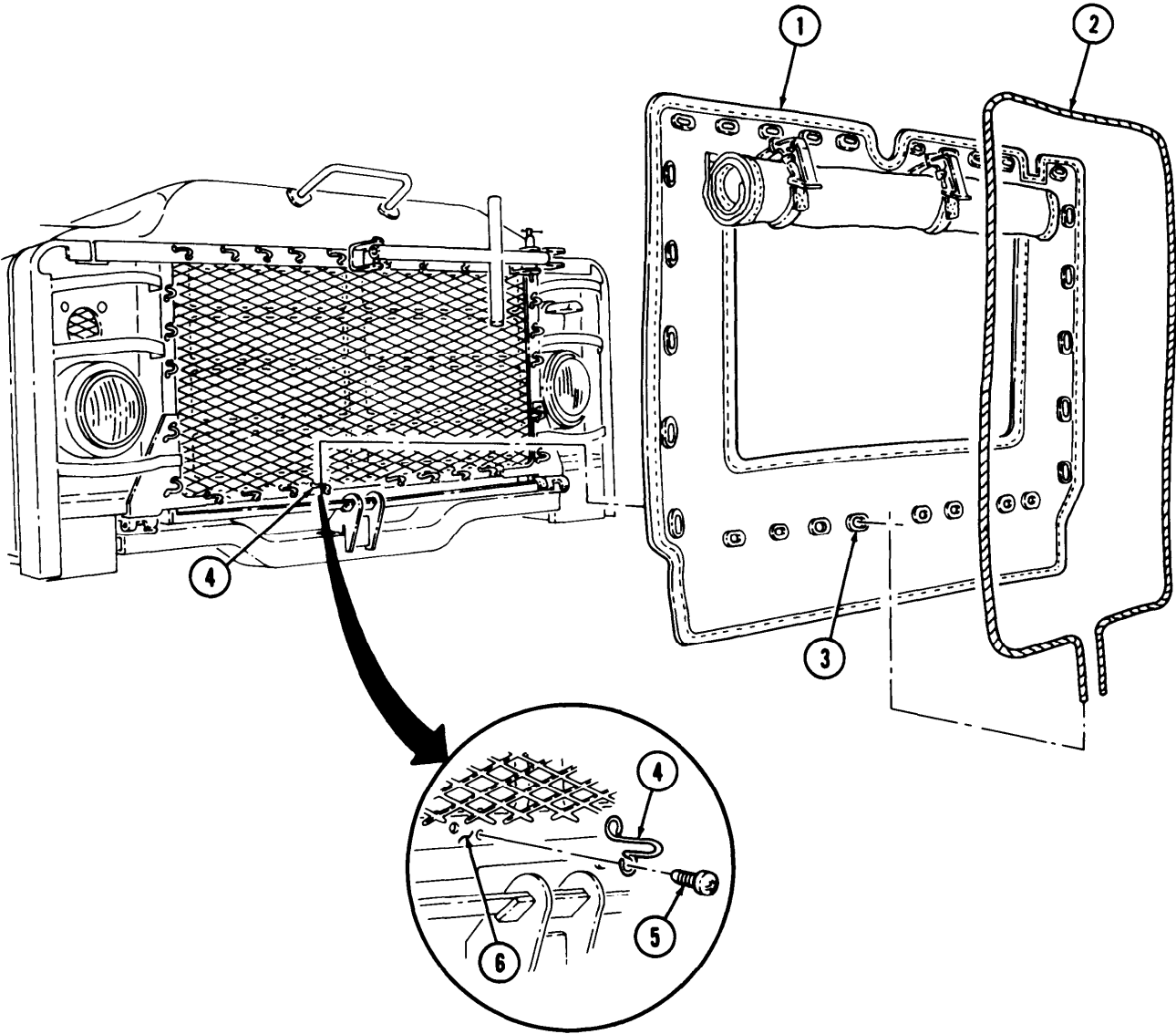
- |    |                                |   |  |
|----|--------------------------------|---|--|
| 1. | Radiator cover (1)             | Tiedown strap (2)                                       | Untie ends and pull from twenty-eight tiedown loops (4). |
| 2. | Twenty-eight tiedown loops (4) | Radiator cover (1)                                      | Remove.  |
| 3. | Hood (6)                       | Fifty-six screws (5) and twenty-eight tiedown loops (4) | Remove.  |

#### b. Installation

- |    |                                |  |
|----|--------------------------------|--|
| 4. | Twenty-eight tiedown loops (4) | Install on hood (6) with fifty-six screws (5).   |
| 5. | Radiator cover (1)             | a. Place over hood (6) and insert tiedown loops (4) through grommets (3).<br>b. Install by threading tie-down strap (2) through each tiedown loop (4) and tie strap ends together. |

11-5. RADIATOR COVER KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

11- 6. HARDTOP KIT REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Thirty-two locknuts Two lockwashers Two rubber seals		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

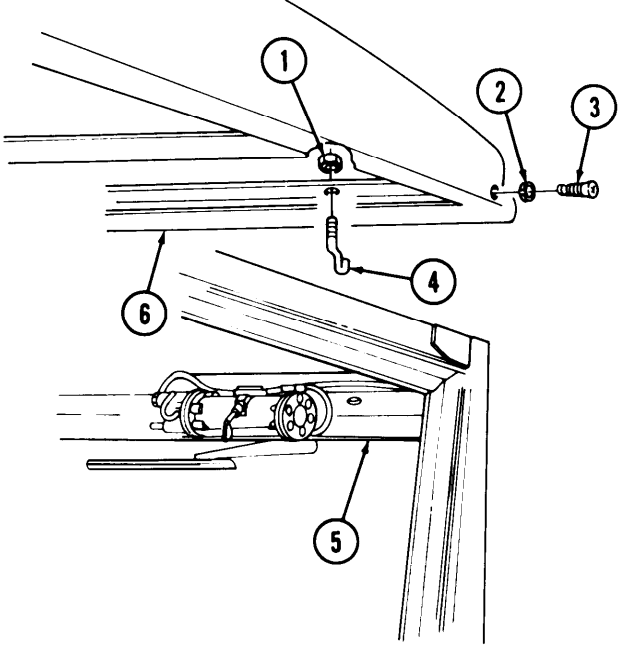
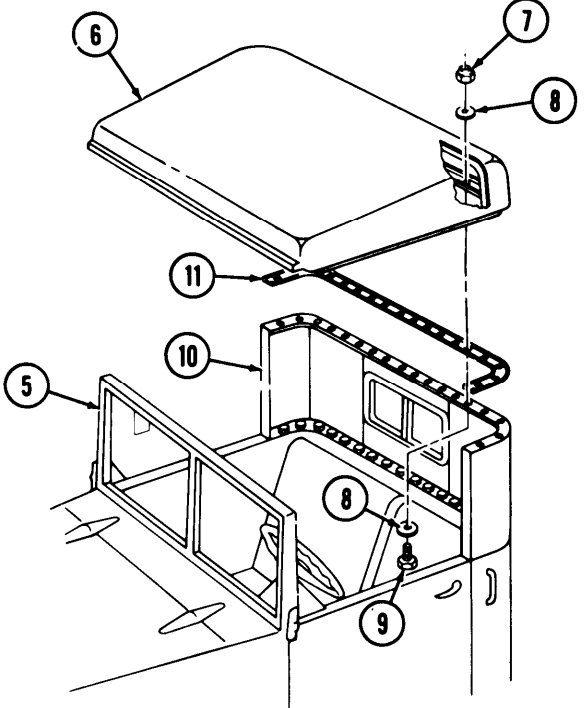
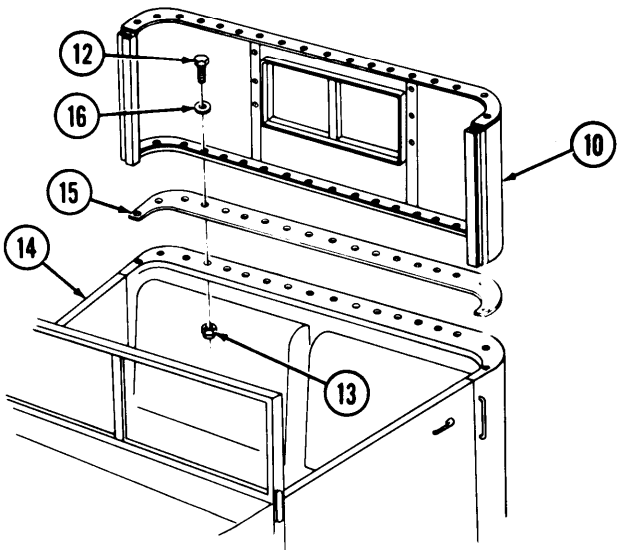
NOTE

Assistant will help when required.

1. Roof assembly (6)	Two screws (3) and lockwashers (2)	Remove.	Discard lockwashers (2).
2. Roof assembly (6) top and windshield frame (5)	Four hook bolts (4) and nuts (1)	Remove.	
3.	Sixteen screws (9), thirty-two washers (8), and sixteen locknuts (7)	Remove.	Discard locknuts (7).
4.	Roof assembly (6) and rubber seal (11)	Remove.	Discard rubber seal (11).
5.	Sixteen screws (12), washers (16), and locknuts (13)	Remove.	Back panel assembly (10) disassembled. Discard locknuts (13).
6.	Back panel assembly (10) and rubber seal (15)	Remove.	Discard rubber seal (15).
7.	Sixteen screws (12), washers (16), and new locknuts (13)	Install on cab body (14).	Do not tighten.



# 11-6. HARDTOP KIT REPLACEMENT (Cont'd)

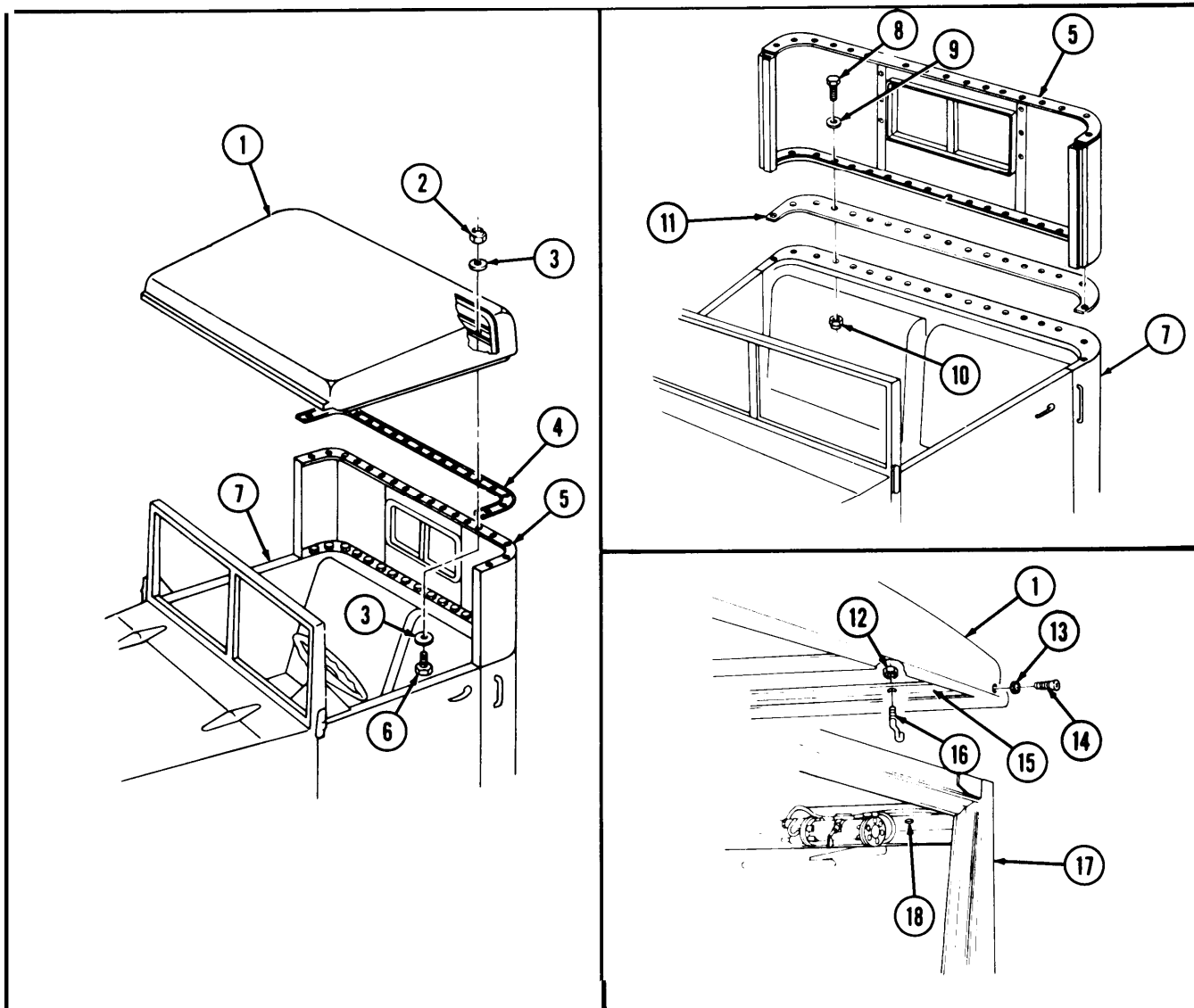
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				

## 11-6. HARDTOP KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
8.		Sixteen screws (8), washers (9), and new locknuts (10)	Remove from cab body (7).	
9.		New rubber seal (11)	Position on back of cab body (7).	
10.		Back panel assembly (5)	a. Position over rubber seal (11). b. Aline holes of panel (5), rubber seal (11), and cab body (7). c. Install with sixteen screws (8), washers (9), and new locknuts (10).	Do not tighten. Assembly must be loosely installed until entire kit is in position.
11.		New rubber seal (4)	Position on top of back panel assembly (5) with screw holes alined.	
12.		Roof assembly (1)	a. Position on top of rubber seal (4) and back panel assembly (5). b. Install with sixteen screws (6), thirty-two washers (3), and sixteen new locknuts (2).	Do not tighten. Assembly must be loosely installed until entire kit is in position.
13.		Four hook bolts (16)	a. Insert threaded end through holes in channel bracket (15) and hook end through holes in upper windshield frame (18). b. Install with four nuts (12).	Do not tighten.
14.		Hardtop kit	Inspect all panels for alinement and seating.	Adjust as required.
15.		Cab windows	Close and inspect for alinement with roof (1).	Adjust as required.

# 11-6. HARDTOP KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
16.		Four hook bolts (16) and nuts (12), sixteen screws (6), thirty-two washers (3), sixteen new locknuts (2), sixteen screws (8), washers (9), and sixteen new locknuts (10)	Tighten.	
17.		Two screws (14) and new lockwashers (13)	Install through roof (1) and into corner post (17) and tighten.	



END OF TASK!

11-7. ENGINE COOLANT HEATER REPLACEMENT

This task covers:

- a. Removal
b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
Test Equipment	Para. 4-25	Battery ground cable disconnected.
None	Para. 11-8	Engine coolant heater pump removed.
Special Tools	Special Environmental Conditions	
None	None	
Materials/Parts	General Safety Instructions	
Cotter pin	None	
Four locknuts		
Adhesive sealant (Appendix D, Item 2)		
Personnel Required		
Light-wheeled vehicle repairman MOS 63B		
Manual References		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Engine coolant heater (2)	Engine coolant heater harness (3)	Disconnect.	
2.		Cotter pin (21) and exhaust tube (20)	Remove.	Discard cotter pin (21).
3.	Engine coolant heater fuel pump elbow (11)	Fuel line (10)	Disconnect.	
4.	Adapter (7)	Hose clamp (8) and hose (9)	Remove.	
5.	Toolbox (1)	Four screws (16), locknuts (22), bracket (14), and engine coolant heater (2)	Remove.	Discard locknuts (22).
6.	Engine coolant heater (2) and two saddle brackets (13)	Two clamps (12)	Loosen.	
7.	Adapter (18)	Hose clamp (17) and hose (15)	Remove.	

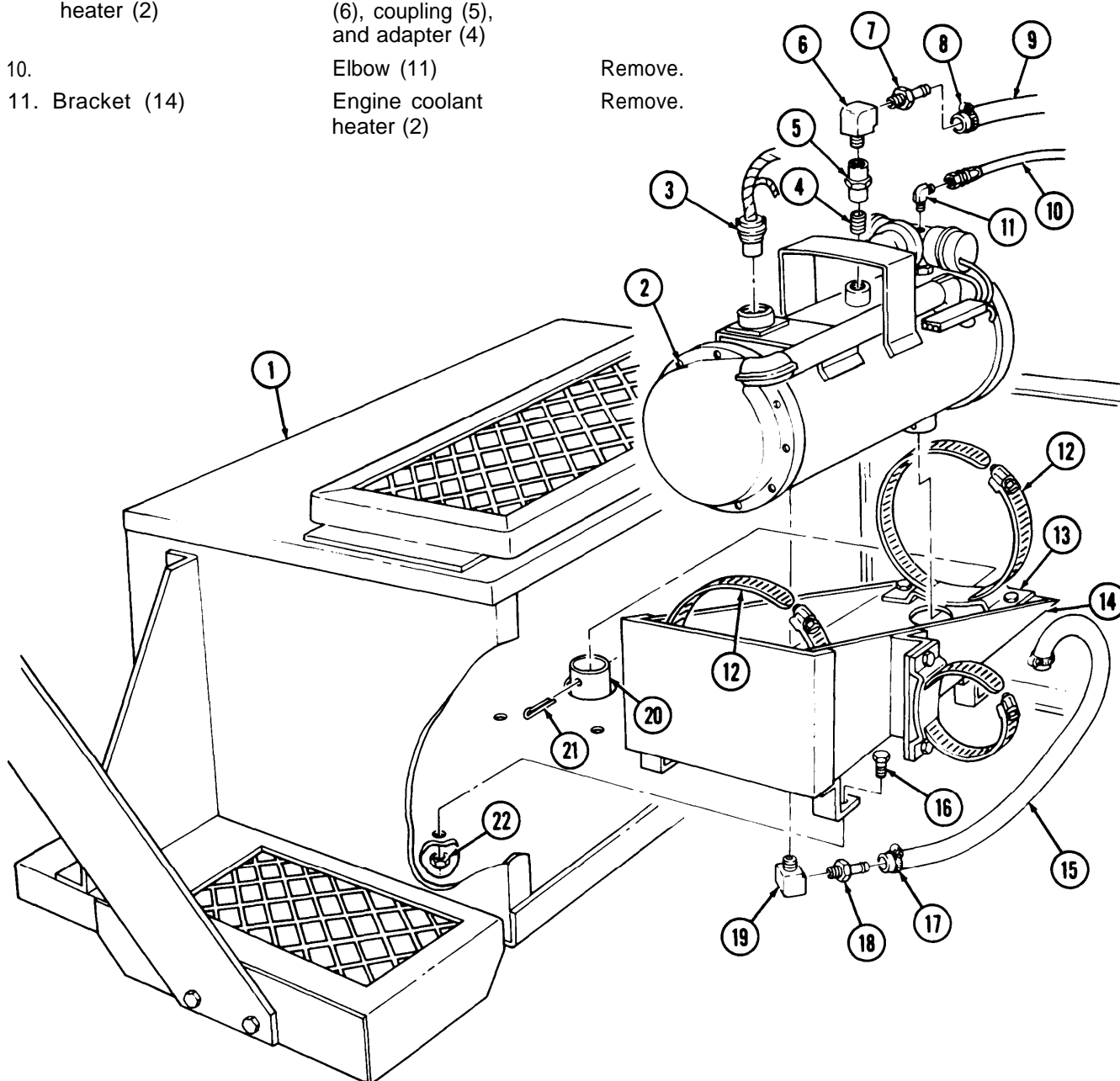
# 11-7. ENGINE COOLANT HEATER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Mark position of each elbow for installation.

- |     |                           |   |         |
|-----|---------------------------|---|---------|
| 8.  |                           | Adapter (18) and elbow (19)                           | Remove. |
| 9.  | Engine coolant heater (2) | Adapter (7), elbow (6), coupling (5), and adapter (4) | Remove. |
| 10. |                           | Elbow (11)  | Remove. |
| 11. | Bracket (14)              | Engine coolant heater (2)                             | Remove. |

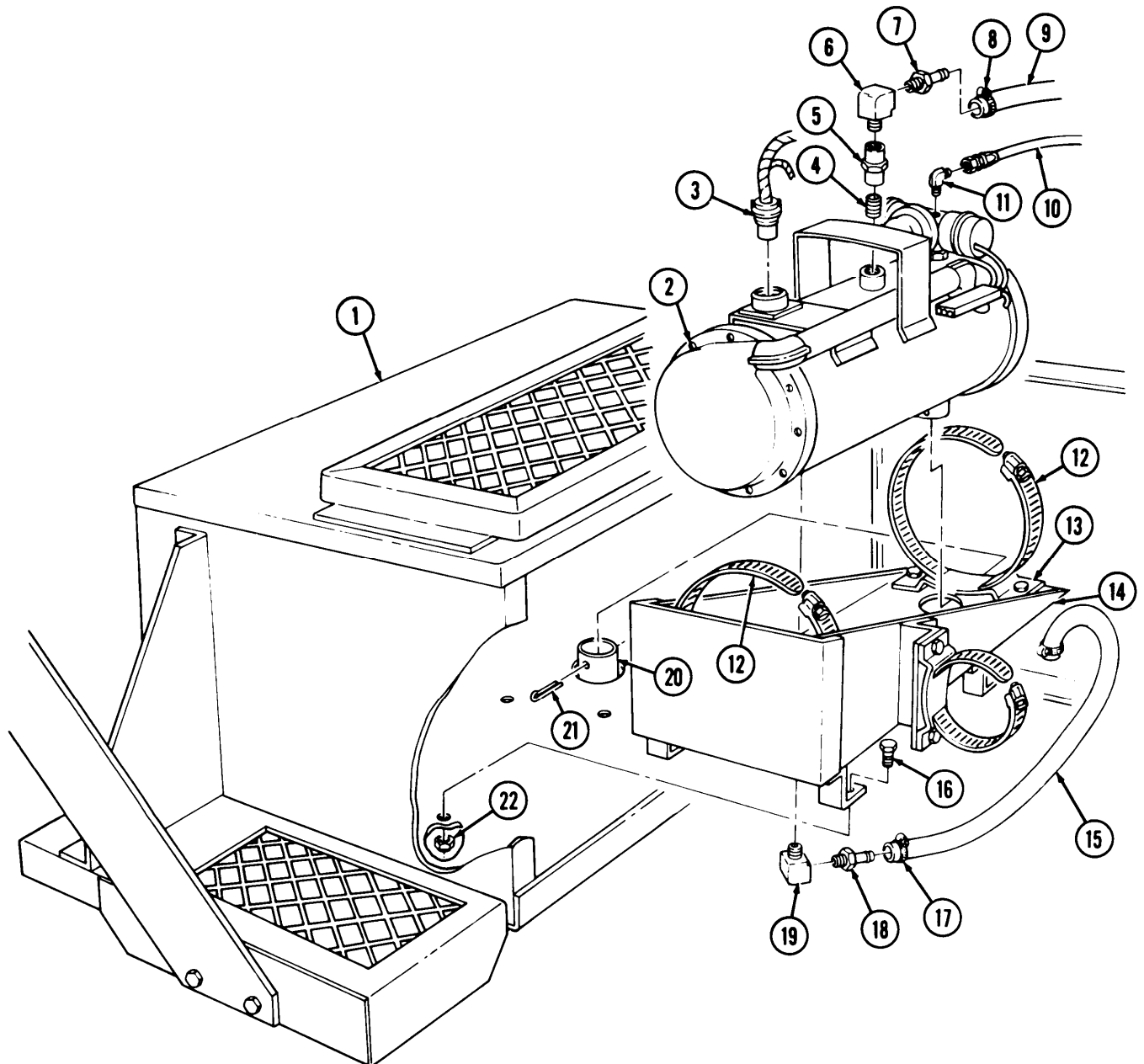


## 11-7. ENGINE COOLANT HEATER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
<b><u>CAUTION</u></b>				
Heater shell can be damaged. Use two wrenches when installing fittings in heater.				
<b><u>NOTE</u></b>				
Apply adhesive sealant to all male threads before installation.				
12.		Elbow (19)	Install on engine coolant heater (2).	
13.		Elbow (11)	Install on engine coolant heater (2).	
14.		Coupling (5)	Install on adapter (4).	
15.		Elbow (6)	Install on coupling (5).	
16.		Adapter (7)	Install on elbow (6).	
17.		Adapter (4)	Install on engine coolant heater (2).	
18.		Coolant heater bracket (14)	Install engine coolant heater (2) on two saddle brackets (13) with two clamps (12).	
19.		Adapter (18)	Install on elbow (19).	
20.		Coolant heater bracket (14)	Install on toolbox (1) with four screws (16) and new locknuts (22).	
21.		Coolant outlet hose (15)	Install on adapter (18) with hose clamp (17).	
22.		Fuel line (10)	Install on engine coolant heater fuel pump elbow (11).	
23.		Exhaust tube (20)	Install on engine coolant heater (2) with new cotter pin (21).	
24.		Engine coolant heater harness (3)	Connect to engine coolant heater (2).	
25.		Pump outlet hose (9)	Install on adapter (7) with hose clamp (8).	

# 11-7. ENGINE COOLANT HEATER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: • Connect battery ground cables (para. 4-25).  
• Install engine coolant heater pump (para. 11-8).

## 11-8. ENGINE COOLANT HEATER PUMP REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Two lockwashers		
Adhesive sealant (Appendix D, Item 2)		
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

- |    |  |        |
|----|--|--------|
| 1. | Water manifold drain-cock (1) and coolant outlet draincock (2) | Close. |
| 2. | Toolbox door (5)   | Open.  |

#### NOTE

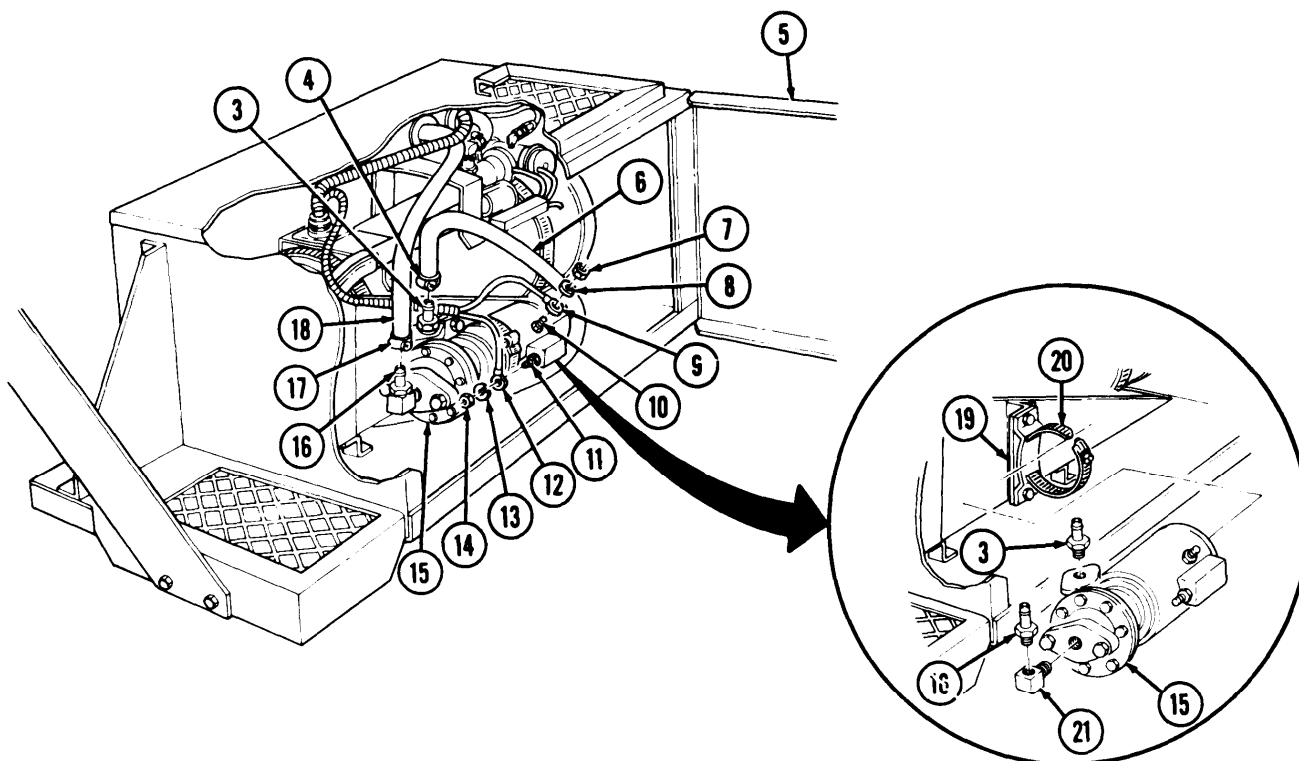
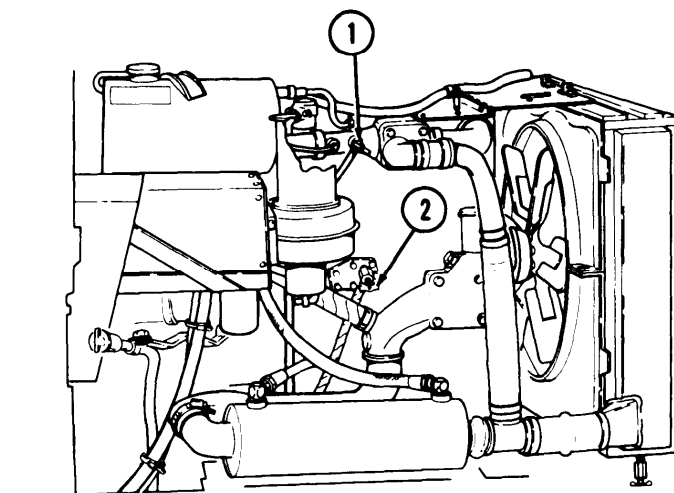
Have drainage container ready for steps 3 and 4.

- |                                   |   |  |                          |
|-----------------------------------|---|--|--------------------------|
| 3. Heater pump elbow adapter (16) | Manifold inlet hose (18) and clamp (17) | Remove.  |                          |
| 4. Heater pump adapter (3)        | Pump outlet hose (6) and clamp (4)      | Remove.  |                          |
| 5. Heater pump (15)               | Nut (7) and lockwasher (8)              | Remove from terminal stud (10) and disconnect ground wire (9). | Discard lockwasher (8).  |
| 6.                                | Nut (14) and lockwasher (13)            | Remove from terminal stud (11) and disconnect wire (12).       | Discard lockwasher (13). |



# 11-8. ENGINE COOLANT HEATER PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Pump bracket (19)	clamp (20) and heater pump (15)	Remove.	
8.	Heater pump (15)	Adapter (16), elbow (21), and adapter (3)	Remove.	

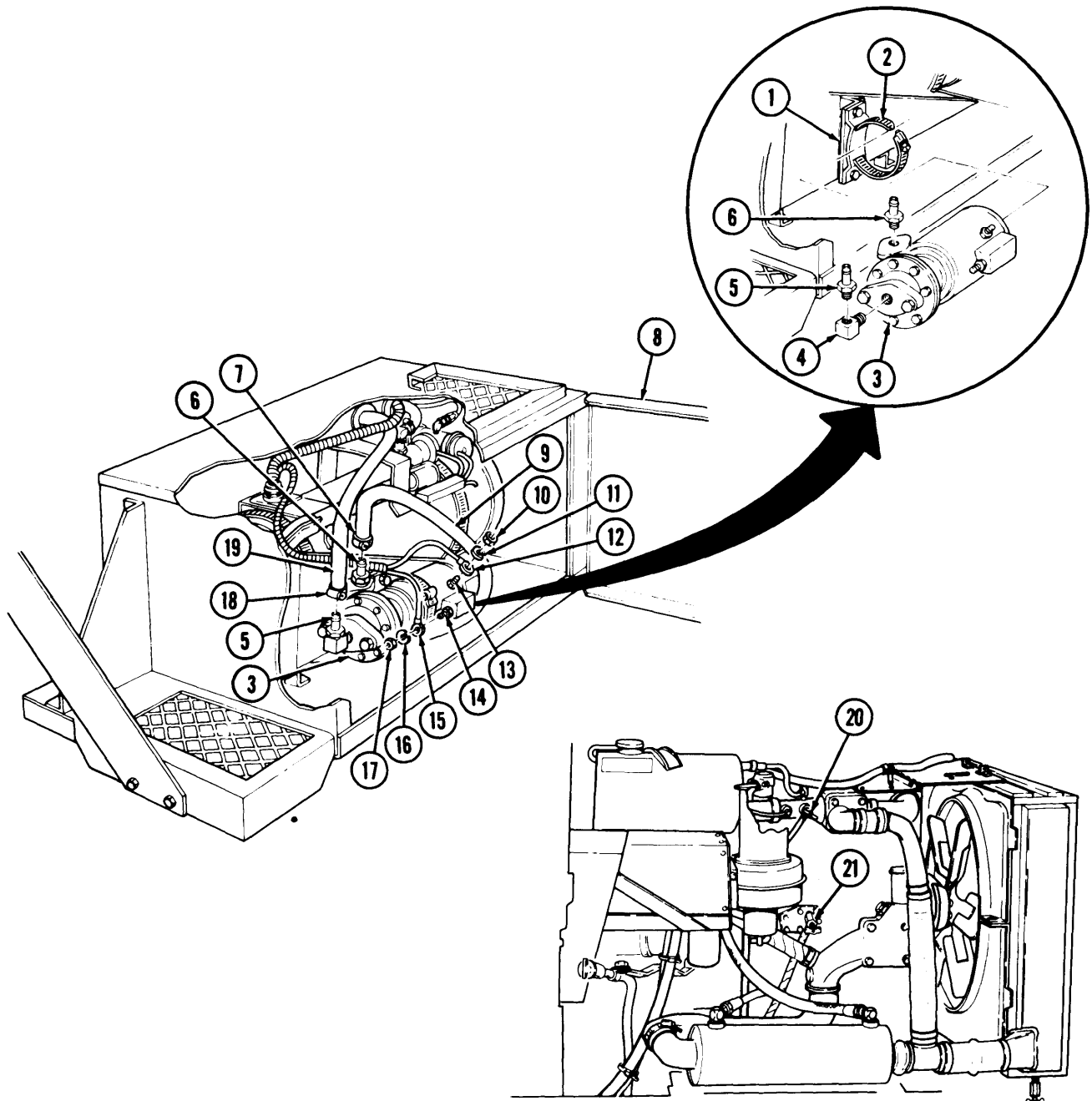


<b>11-8. ENGINE COOLANT HEATER PUMP REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Apply adhesive sealant to all male pipe threads before installation.</p>				
9.		Adapter (6)	Install on heater pump (3).	
10.		Elbow (4)	Install on heater pump (3).	
11.		Adapter (5)	Install on elbow (4).	
12.		Heater pump (3)	Position against pump bracket (1) and install with clamp (2).	
13.		Ground wire (12)	Install on terminal stud (13) with new lockwasher (11) and nut (10).	
14.		Wire (15)	Install on terminal stud (14) with new lockwasher (16) and nut (17).	
15.		Pump outlet hose (9)	Install on heater pump adapter (6) with clamp (7).	
16.		Manifold inlet hose (19)	Install on heater pump adapter (5) with clamp (18).	
17.		Water manifold draincock (20) and coolant outlet draincock (21)	Open.	
18.		Toolbox door (8)	Close.	

# 11-8. ENGINE COOLANT HEATER PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: **Ž**Fill cooling system to proper level (para. 3-46).  
**Ž**Check engine coolant heater for proper operation (TM 9-2320-272-10).

## 11-9. ENGINE COOLANT HEATER CONTROL BOX REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cables disconnected.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Two lockwashers Two locknuts		None
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

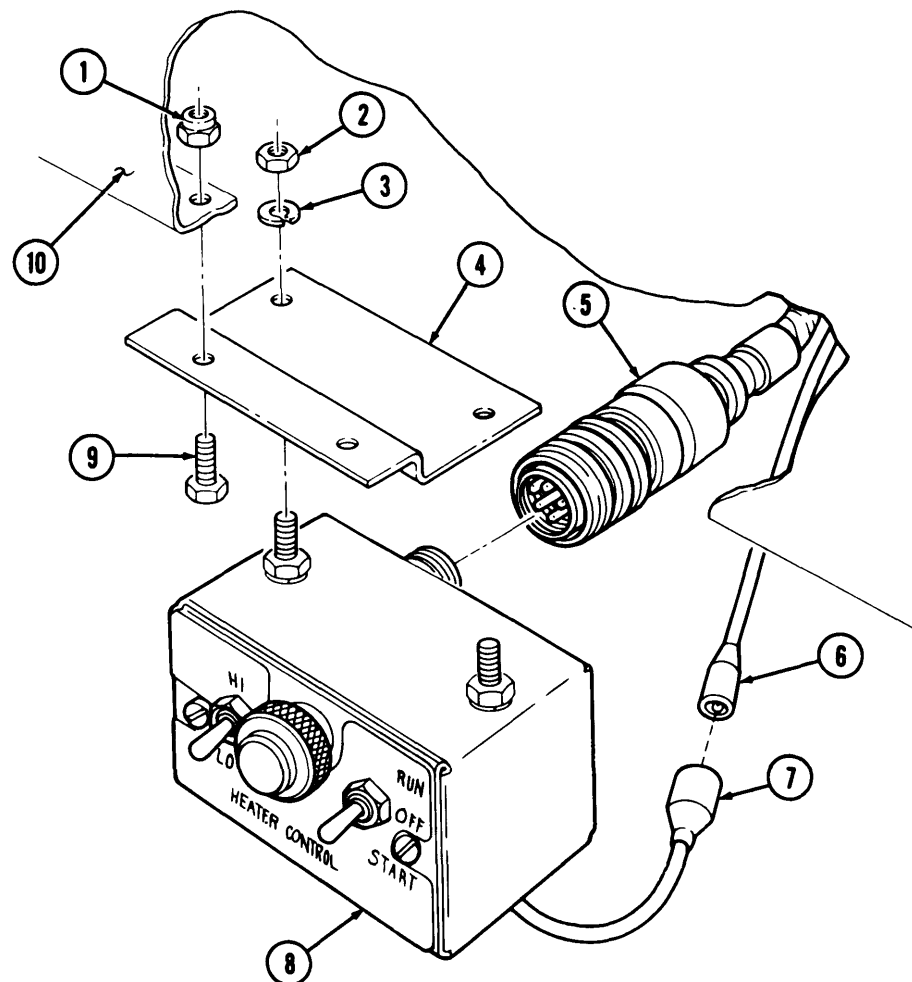
- |                                   |   |                                       |                          |
|-----------------------------------|---|---------------------------------------|--------------------------|
| 1. Coolant heater control box (8) | Coolant heater harness connector (6)                              | Disconnect.                           |                          |
| 2.                                | Connector (6)   | Disconnect from control box wire (7). |                          |
| 3. Control mounting bracket (4)   | Two nuts (2), lockwashers (3), and coolant heater control box (8) | Remove.                               | Discard lockwashers (3). |
| 4. Instrument panel (10)          | Two locknuts (1), screws (9), and control mounting bracket (4)    | Remove.                               | Discard locknuts (1).    |

#### b. Installation

- |    |                              |  |
|----|------------------------------|--|
| 5. | Control mounting bracket (4) | Install on instrument panel (10) with two screws (9) and new locknuts (1). |
|----|------------------------------|--|

# 11-9. ENGINE COOLANT HEATER CONTROL BOX REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Coolant heater control box (8)	Install on control mounting bracket (4) with two new lockwashers (3) and nuts (2).	
7.		Connector (6)	Connect to control box wire (7).	
8.		Coolant heater harness (5)	Connect to control box (8).	



END OF TASK!

FOLLOW-ON TASKS:

- Connect battery ground cables (para. 4-25).
- Check engine coolant heater for proper operation (TM 9-2320-272-10).

## 11-10. ENGINE COOLANT HEATER HARNESS REPLACEMENT

This task covers:

**a. Removal**

**b. Installation**

**INITIAL SETUP:**

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
<u>Test Equipment</u>	Para. 4-25	Battery ground cables disconnected.
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>	<u>General Safety Instructions</u>	
Two lockwashers	None	
Ten tiedown straps (Appendix D, Item 19)		
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

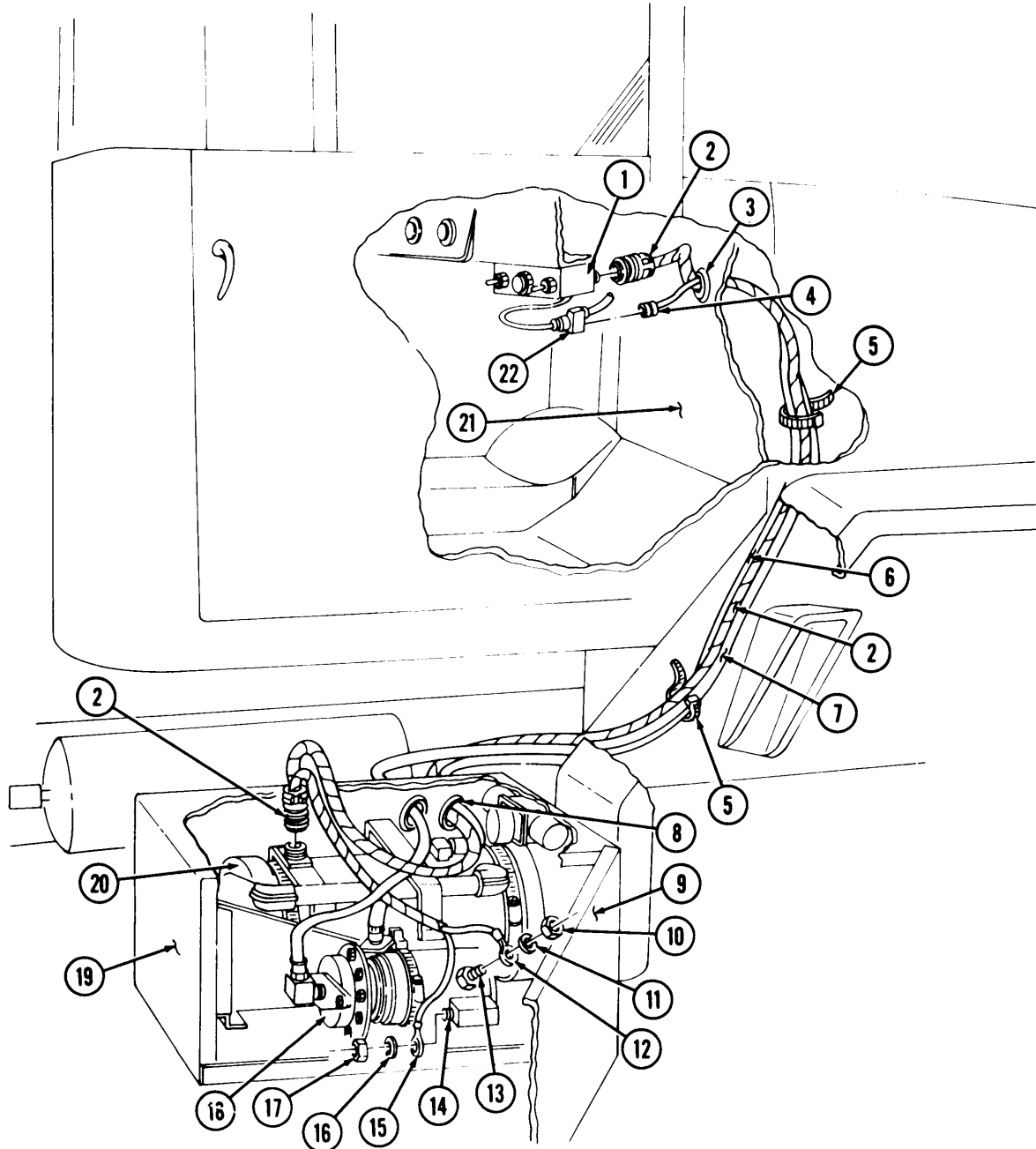
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**a. Removal**

- |  |                                   |   |                             |
|--|-----------------------------------|---|-----------------------------|
| 1.   | Toolbox door (9)                  | Open.   |                             |
| 2. Engine coolant heater (20)  | Engine coolant heater harness (2) | Disconnect.   |                             |
| 3. Terminal stud (13)  | Nut (10) and lockwasher (11)      | Remove from terminal stud (13) and disconnect (11). ground wire (12). | Discard lockwasher          |
| 4. Terminal stud (14)  | Nut (17) and lockwasher (16)      | Remove from terminal stud (14) and disconnect (16). wire (15).        | Discard lockwasher          |
| 5. Engine coolant heater harness (2), fuel pump cable (6), hose (7), and lead (22) | Ten tiedown straps (5)            | Remove.   | Discard tiedown straps (5). |
| 6. Engine coolant heater harness lead (4)  | Lead (22)                         | Disconnect.   |                             |

# 11-10. ENGINE COOLANT HEATER HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Control box (1)	Engine coolant heater harness (2)	Disconnect and slide through grommet (3) in firewall (21) and grommet (8) in toolbox (19) and remove from vehicle.	



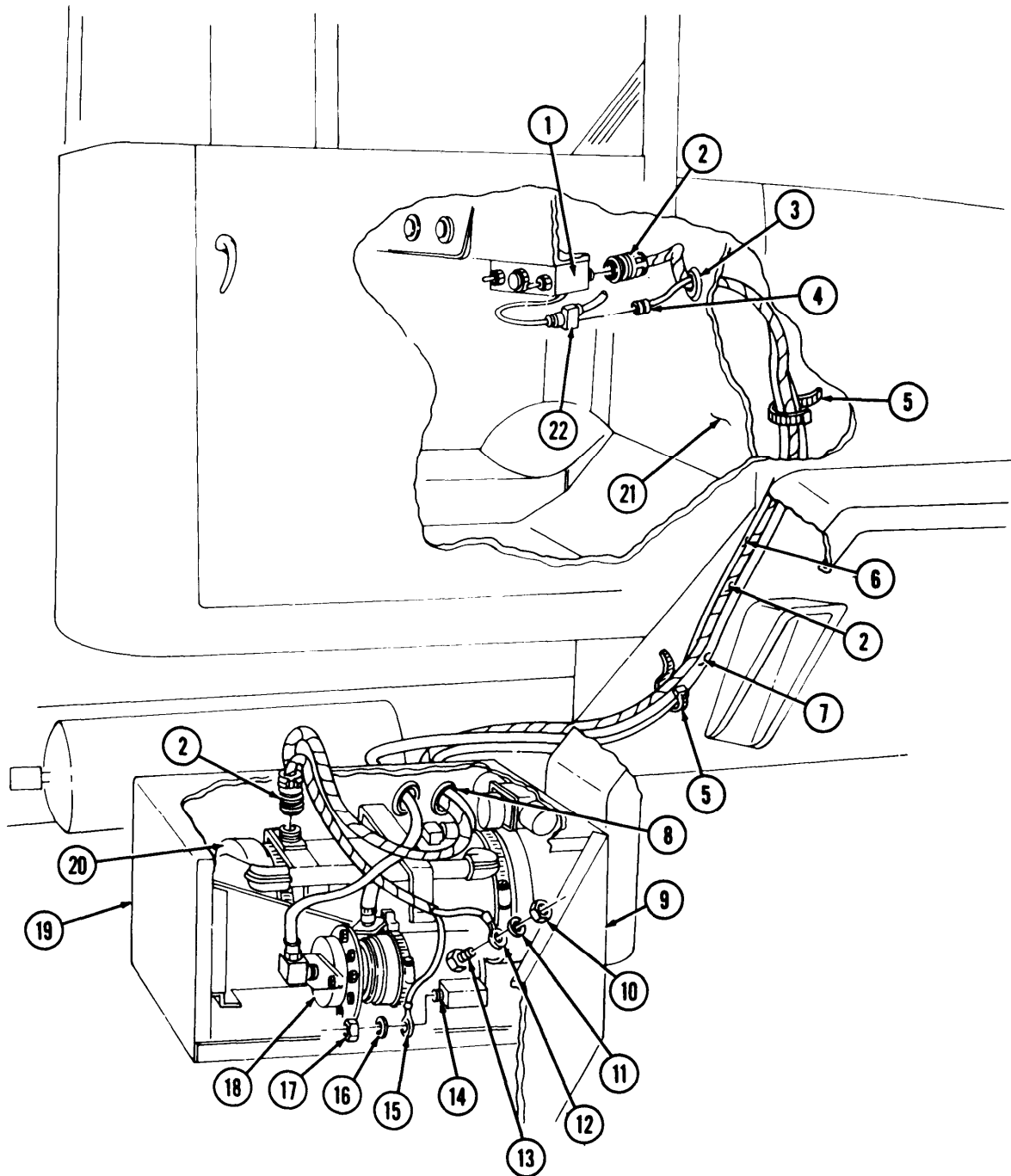
11-10. ENGINE COOLANT HEATER HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
b. Installation				
8.		Engine coolant heater harness (2)	a. Slide through grommet (3) in firewall (21) and through grommet (8) in toolbox (19).	
			b. Connect to heater control box (1).	
		Lead (22)	c. Connect to lead (4).	
			d. Install on hose (7), fuel pump cable (6), and lead (22) with ten new tiedown straps (5).	
			e. Connect to engine coolant heater (20).	
9.		Wire (15)	Install on terminal stud (14) with new lockwasher (16) and nut (17) on right side of heater pump (18).	
10.		Ground wire (12)	Install on terminal stud (13) with new lockwasher (11) and nut (10) on front of pump (18).	
11.		Toolbox door (9)	Close.	



# 11-10. ENGINE COOLANT HEATER HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: Connect battery ground cables (para. 4-25).  
Check engine coolant heater for proper operation (TM 9-2320-272-10).

11-11. ENGINE COOLANT OIL PAN SHROUD AND EXHAUST TUBE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Three cotter pins Four lockwashers Two locknuts		None
<u>Personnel Required</u>	Light-wheeled vehicle repairman MOS 63B	
<u>Manual References</u>	TM 9-2320-272-10 TM 9-2320-272-20P	

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

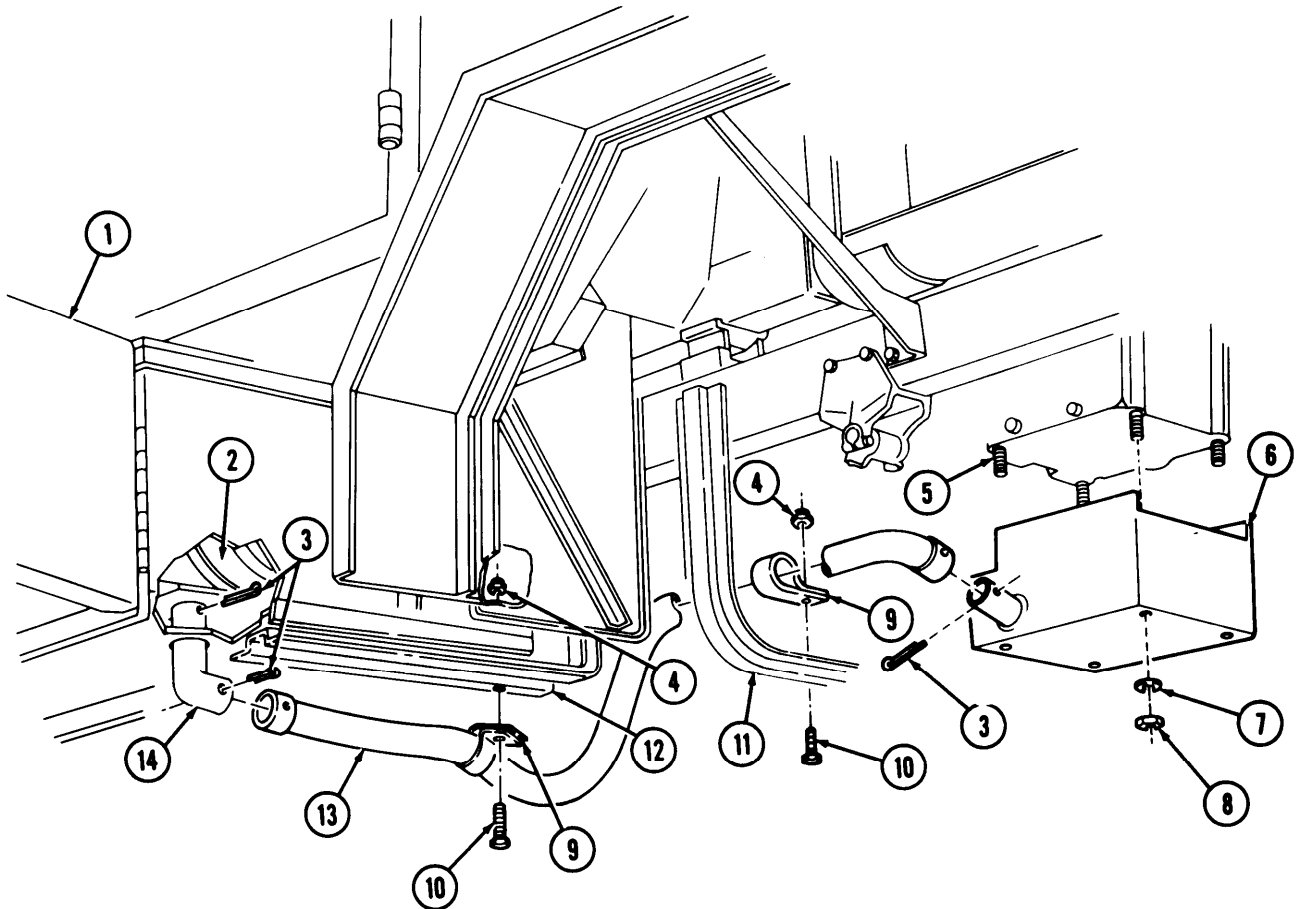
1.	Exhaust tube (13), crossmember (11), and bracket (12)	Two locknuts (4), screws (10), and clamps (9)	Remove.	Discard locknuts (4).
2.		Toolbox door (1)	Open.	
3.	Engine coolant heater (2) and oil pan shroud (6)	Three cotter pins (3), exhaust tube (13), and elbow (14)	Remove.	Discard cotter pins (3). Exhaust tube (13) and elbow (14) can be separated.
4.	Oil pan studs (5)	Four nuts (8), lockwashers (7), and oil pan shroud (6)	Remove.	Discard lockwashers (7).

b. Installation

5.	Oil pan shroud (6)	Install on oil pan studs (5) with four nuts (8) and new lockwashers (7).
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**11-11. ENGINE COOLANT OIL PAN SHROUD AND EXHAUST TUBE REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Exhaust tube (13) and elbow (14)	Install on engine coolant heater (2) and oil pan shroud (6) with three new cotter pins (3).	Bend both sides of cotter pins (3).
7.		Toolbox door (1)	Close.	
8.		Two clamps (9)	Install on exhaust tube (13), bracket (12), and crossmember (11) With two screws (10) and new locknuts (4).	



END OF TASK!

11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
Test Equipment	TM 9-2320-272-10	Hood raised and secure.
	TM 9-2320-272-10	Right side splash shield removed.
None		
Special Tools	Special Environmental Conditions	
None	None	
Materials/Parts	General Safety Instructions	
Lockwasher	None	
Locknut		
Nine tiedown straps (Appendix D, Item 18)		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B		
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

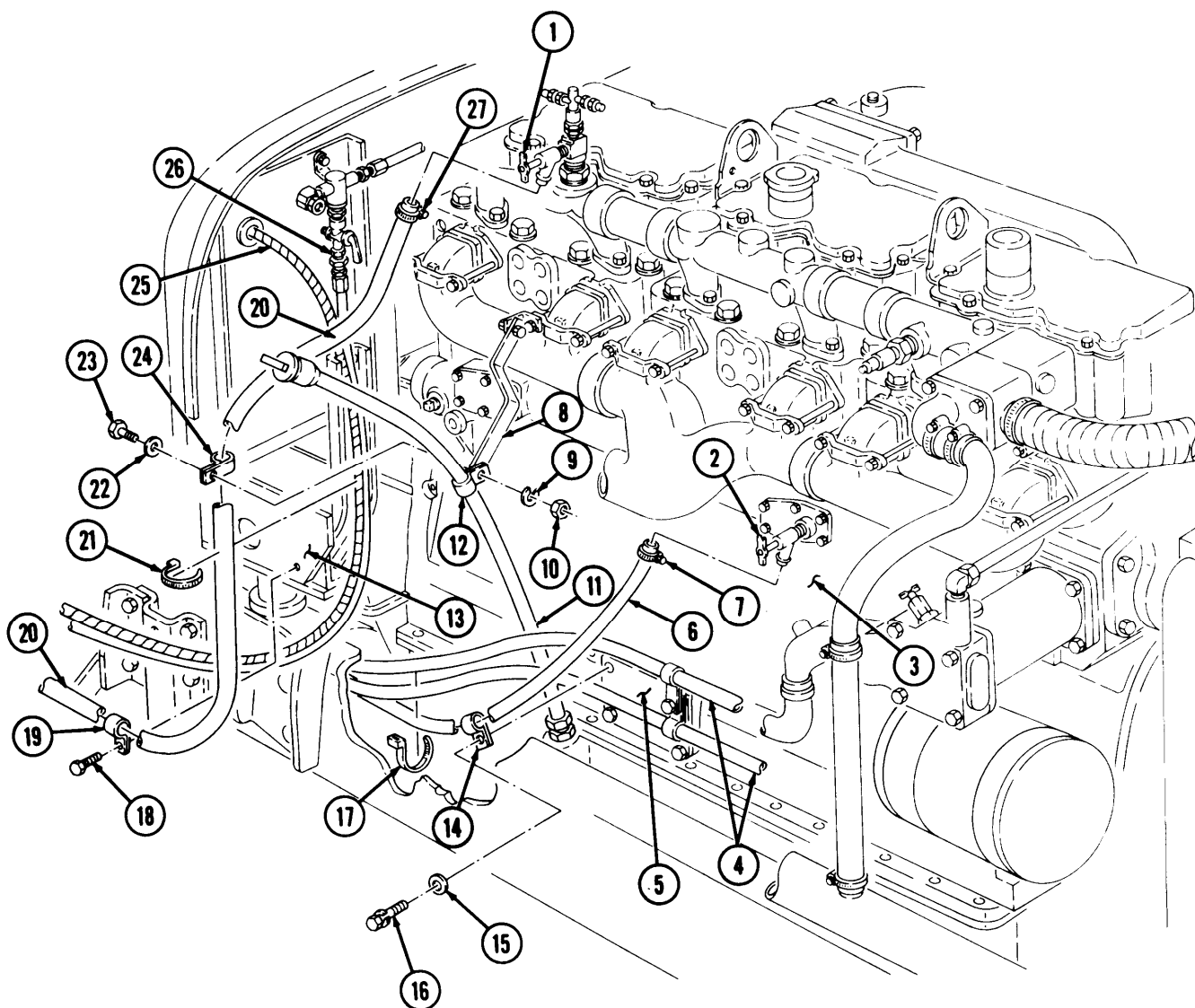
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Right side of engine (3)	Water manifold drain-cock (1)	Close.	
2.		Coolant outlet drain-cock (2)	Close.	
<b>NOTE</b> Have drainage container ready to catch excess coolant.				
3.	Water manifold drain-cock (1)	Clamp (27)	Loosen and remove hose (20).	
4.	Oil dipstick tube (11)	Nut (10), lockwasher (9), two clamps (12) and (24), washer (22), and screw (23)	Remove from oil dipstick tube bracket (8).	Discard lockwasher (9).
5.	Cab support (13)	Screw (18) and clamp (19)	Remove.	
6.	Hose (20), fuel line (26), and electrical harness (25)	Three tiedown straps (21)	Cut and remove.	Discard tiedown straps (21).

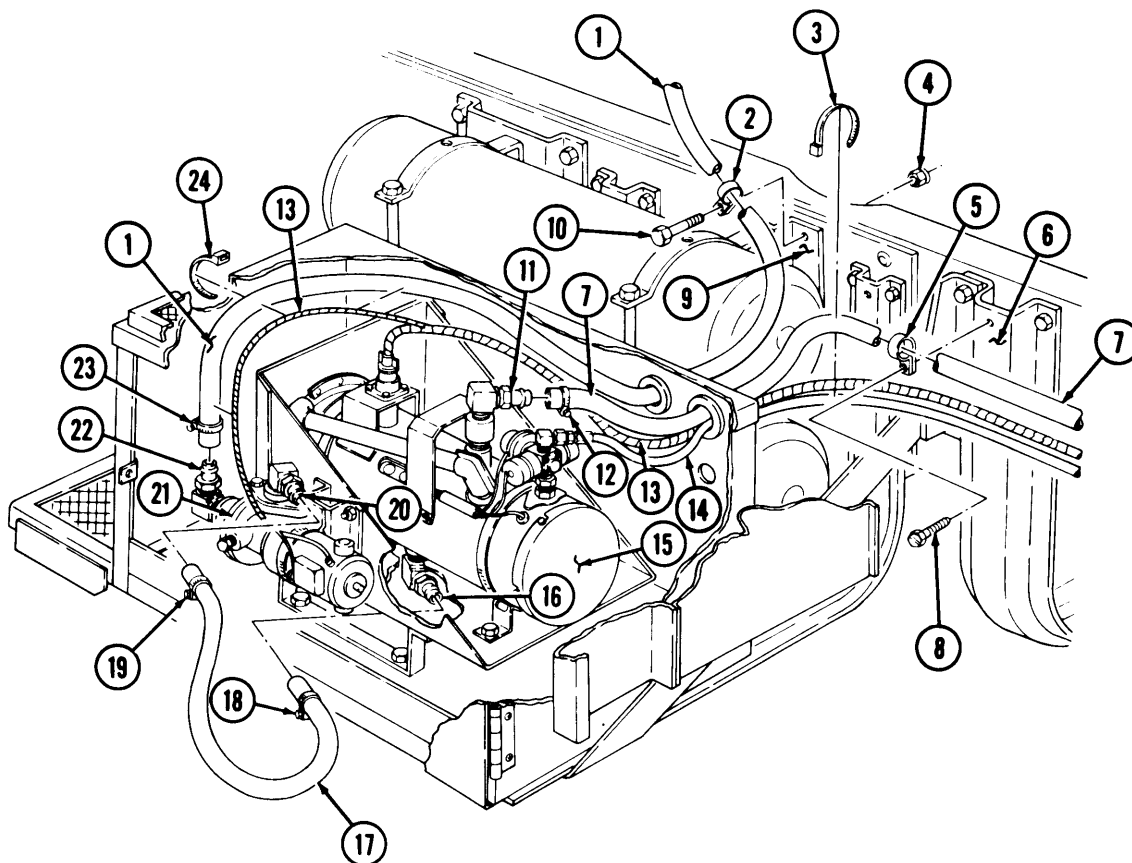
# 11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Coolant outlet draincock (2)	Clamp (7)	Loosen and remove hose (6).	
8.	Engine access cover (5)	Screw (16), washer (15), and clamp (14)	Remove.	
9.	Hose (6) and two trans-mission oil cooler lines (4)	Two tiedown straps (17)	Cut and remove.	Discard tiedown straps (17).



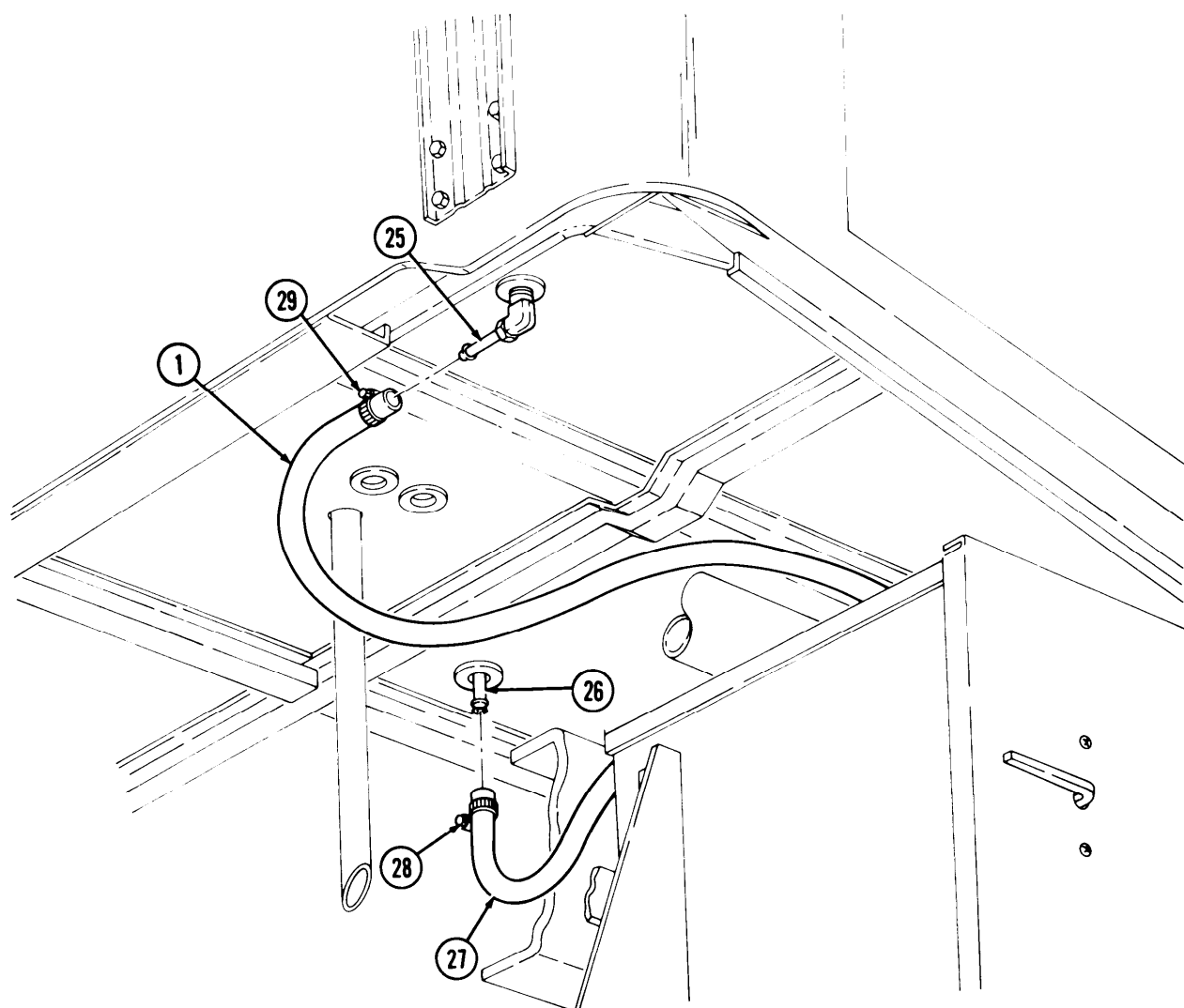
# 11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Hose (7), fuel line (14), and electrical harness (13)	Two tiedown straps (3)	Cut and remove.	Discard tiedown straps (3).
11.	Crossmember (6)	Screw (8), clamp (5), and hose (7)	Remove.	
12.	Coolant heater (15)	Clamp (12)	Loosen and remove hose (7) from adapter (11).	Remove hose (7) from vehicle.
13.	Air tank bracket (9)	Screw (10), clamp (2), hose (1), and locknut (4)	Remove.	Discard locknut (4).
14.	Hose (1) and electrical harness (13)	Two tiedown straps (24)	Cut and remove.	Discard tiedown straps (24).
15.	Coolant heater pump (21)	Clamp (23)	Loosen and remove hose (1) from adapter (22).	
16.		Clamp (19)	Loosen and remove hose (17) from adapter (20).	
17.	Coolant heater (15)	Clamp (18)	Loosen and remove hose (17) from adapter (16).	



# 11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	I T E M	ACTION	REMARKS
18. Hose (1)		Clamp (29)	Loosen and remove hose (1) from adapter (25).	Remove hose (1) from vehicle.
19. Hose (27)		clamp (28)	Loosen and remove hose (27) from nipple (26).	Remove hose (27) from vehicle.



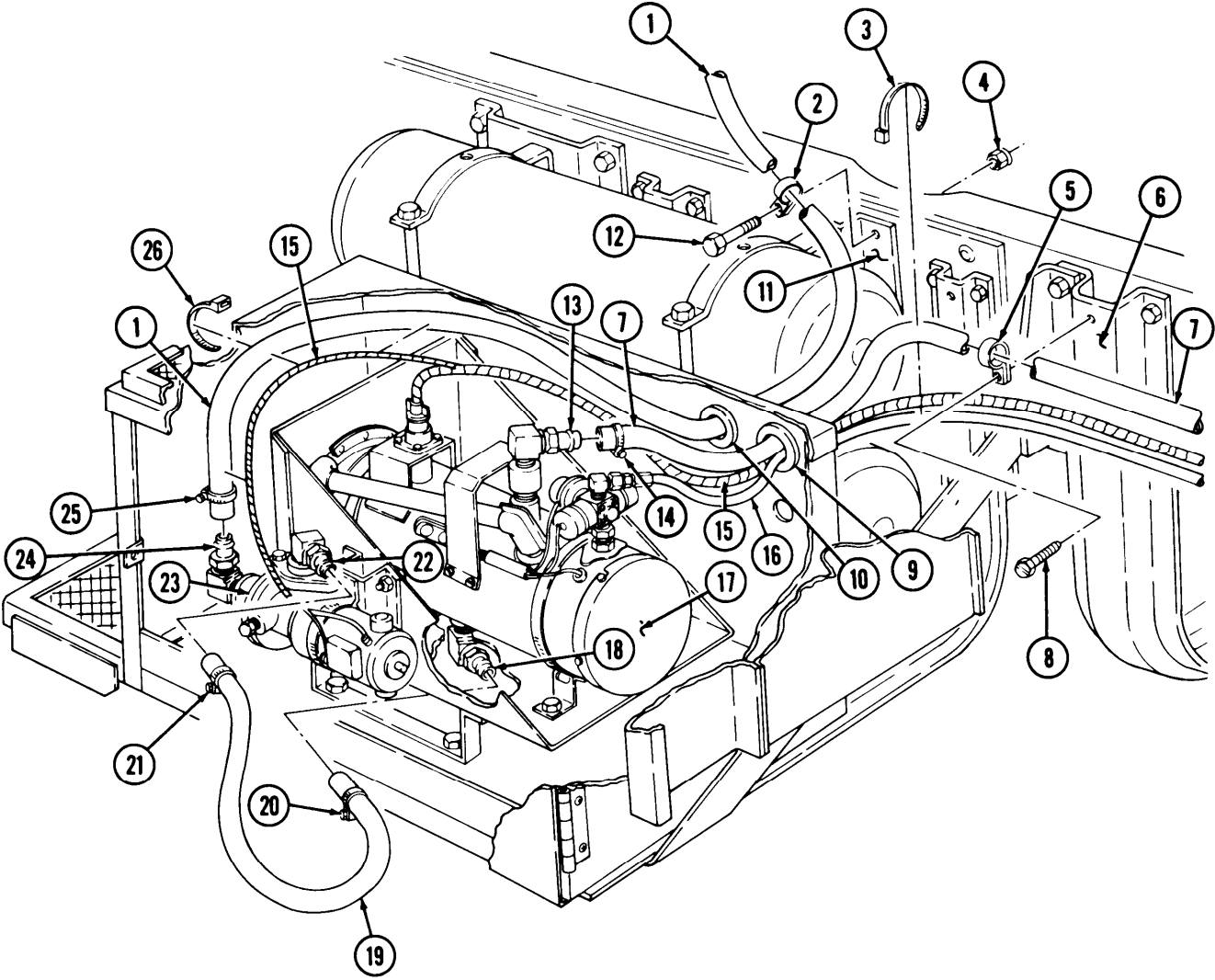
I 11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
20.		Hose (19)	Install on adapter (22) with clamp (21).	
21.			Install on adapter (18) with clamp (20).	
22.		Hose (1)	Install on adapter (24) with clamp (25).	
23.			Route through grommet (10) and back towards batteries.	
24.			Install on air tank bracket (11) with clamp (2), screw (12), and new lock-nut (4).	
25.		Two new tiedown straps (26)	Secure hose (1) and electric harness (15).	
26.		Hose (7)	Install on adapter (13) with clamp (14).	
27.			Route through grommet (9) and forward towards engine.	
28.		Two new tiedown straps (3)	Secure hose (7), electric harness (15), and fuel line (16).	
29.		Hose (7)	Install on crossmember (6) with screw (8) and clamp (5).	



11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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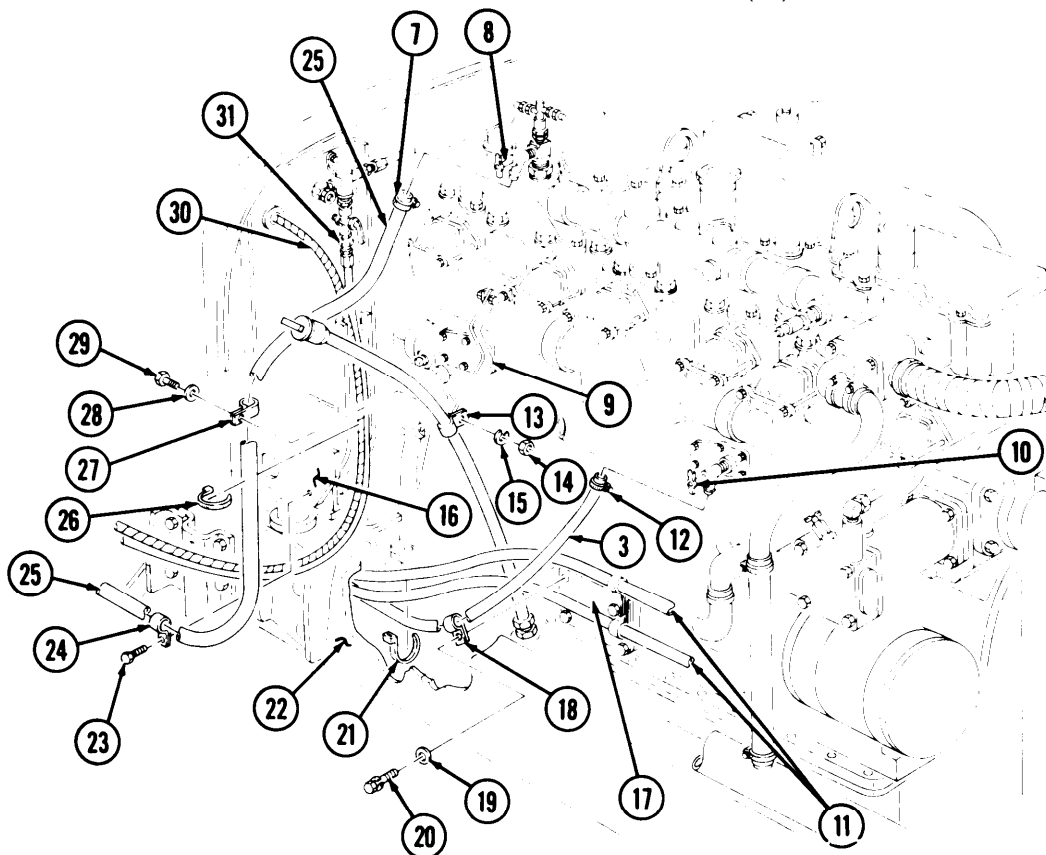


11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)

STEP	LOCATION	ITEM	ACTION	REMARKS
30.		Hose (5)	Install on adapter (1) with clamp (6).	
31.		Hose (3)	Install on nipple (2) with clamp (4).	
32.		Hose (3)	Route forward along right side frame rail (22).	
33.			Install on coolant outlet draincock (10) with clamp (12).	
34.			Install on engine access cover (17) with screw (20), washer (19), and clamp (18).	
35.		Two new tiedown straps (21)	Secure hose (3) and two transmission oil cooler lines (11).	

# 11-12. ENGINE COOLANT HEATER HOSE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
36.		Hose (25)	Install on water manifold draincock (8) with clamp (7).	
37.			Install on oil dipstick tube bracket (9) with screw (29), washer (28), two clamps (13) and (27), new lockwasher (15), and nut (14).	
38.			Install on cab support (16) with screw (23) and clamp (24).	
39.		Three new tiedown straps (26)	Secure hose (25), fuel line (31), and electrical harness (30).	



END OF TASK!

FOLLOW-ON TASKS:

- | Fill cooling system to proper level (para. 3-46).
- | Start engine (TM 9-2320-272-10) and check hose connections for leaks.
- | Install right side splash shield (TM 9-2320-272-10).

# 11-13. ENGINE COOLANT BATTERY BOX HEATER PAD REPLACEMENT

This task covers:

## a. Removal

## b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-24	Parking brake set. Batteries removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

### a. Removal

- |  |  |                                   |
|--|--|-----------------------------------|
| 1. Engine coolant heater pad (1) and adapter (6) | Two hose clamps (3), inlet hose (5), and outlet hose (4) | Loosen two clamps (3) and remove. |
| 2. Elbow (7)                                     | Adapter (6)  | Remove.                           |

### NOTE

Mark position of elbow for installation.

- |                                      |  |         |
|--------------------------------------|--|---------|
| 3. Heater pad (1) at floor panel (8) | Elbow (7) and nipple (12)  | Remove. |
| 4. Battery box (2)                   | Engine coolant heater pad (1), two blocks (10), four blocks (9), and two blocks (11) | Remove. |

### b. Installation

- |    |  |                              |
|----|--|------------------------------|
| 5. | Two blocks (11), four blocks (9), two blocks (10), and engine coolant heater pad (1) | Position in battery box (2). |
|----|--|------------------------------|

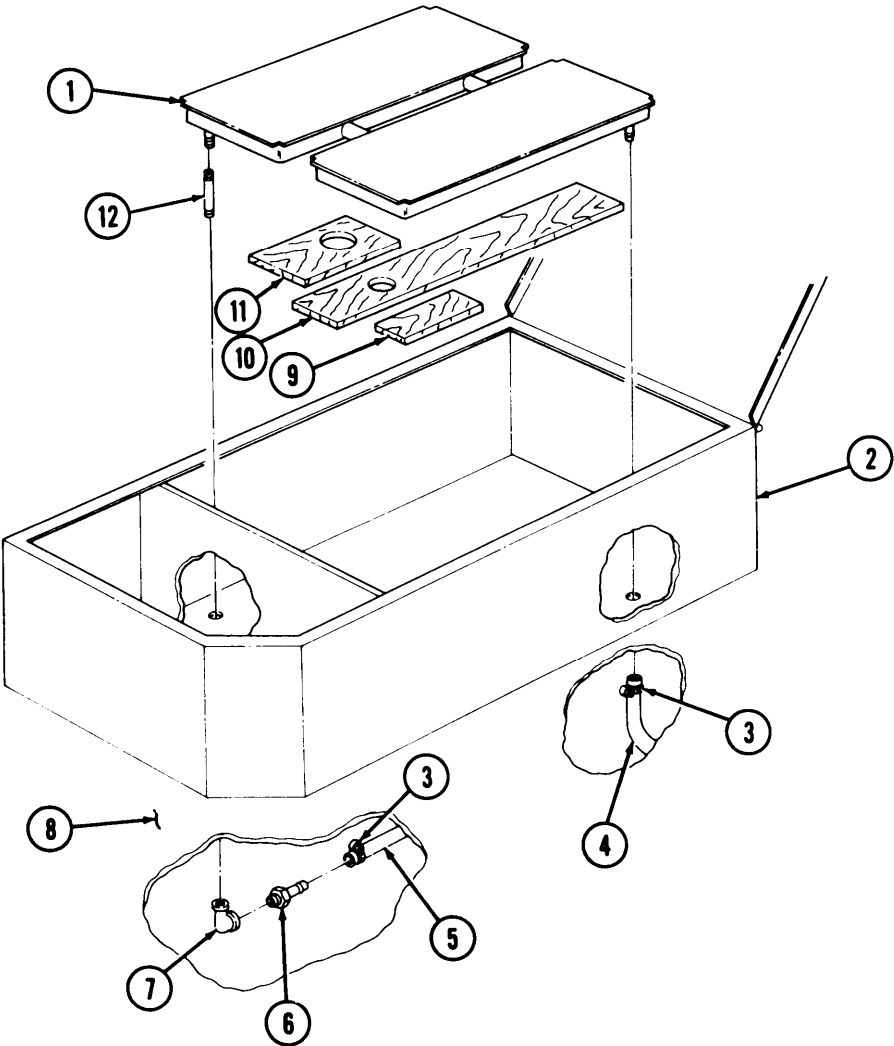
11-13. ENGINE COOLANT BATTERY BOX HEATER PAD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Wrap all male pipe threads with sealing tape before installation.

- |    |                                    |   |
|----|------------------------------------|---|
| 6. | Nipple (12) and elbow (7)          | Install on engine coolant heater pad (1).                                     |
| 7. | Adapter (6)                        | Install on elbow (7).   |
| 8. | Inlet hose (5) and outlet hose (4) | Install on engine coolant heater pad (1) and adapter (6) with two clamps (3). |



END OF TASK!

FOLLOW-ON TASK: Install batteries (para. 4-24).

## 11-14. SWINGFIRE HEATER PUMP REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
	Para. 4-25	Battery ground cables disconnected.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Two lockwashers		None
Two locking tabs		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

### a. Removal

- |   |                        |         |
|---|------------------------|---------|
| 1. Heater pump (6) and ground terminal (12) | Nut (7) and wire (8)   | Remove. |
| 2. Heater pump relay (9)                    | Nut (11) and wire (10) | Remove. |

#### NOTE

Have drainage container ready to catch excess coolant.

- |   |                                       |         |
|---|---------------------------------------|---------|
| 3. Connector (15) and pump outlet tube (24) | Clamp (23), clamp (27), and hose (26) | Remove. |
| 4. Elbow (29)                               | Connector (15) and adapter (28)       | Remove. |

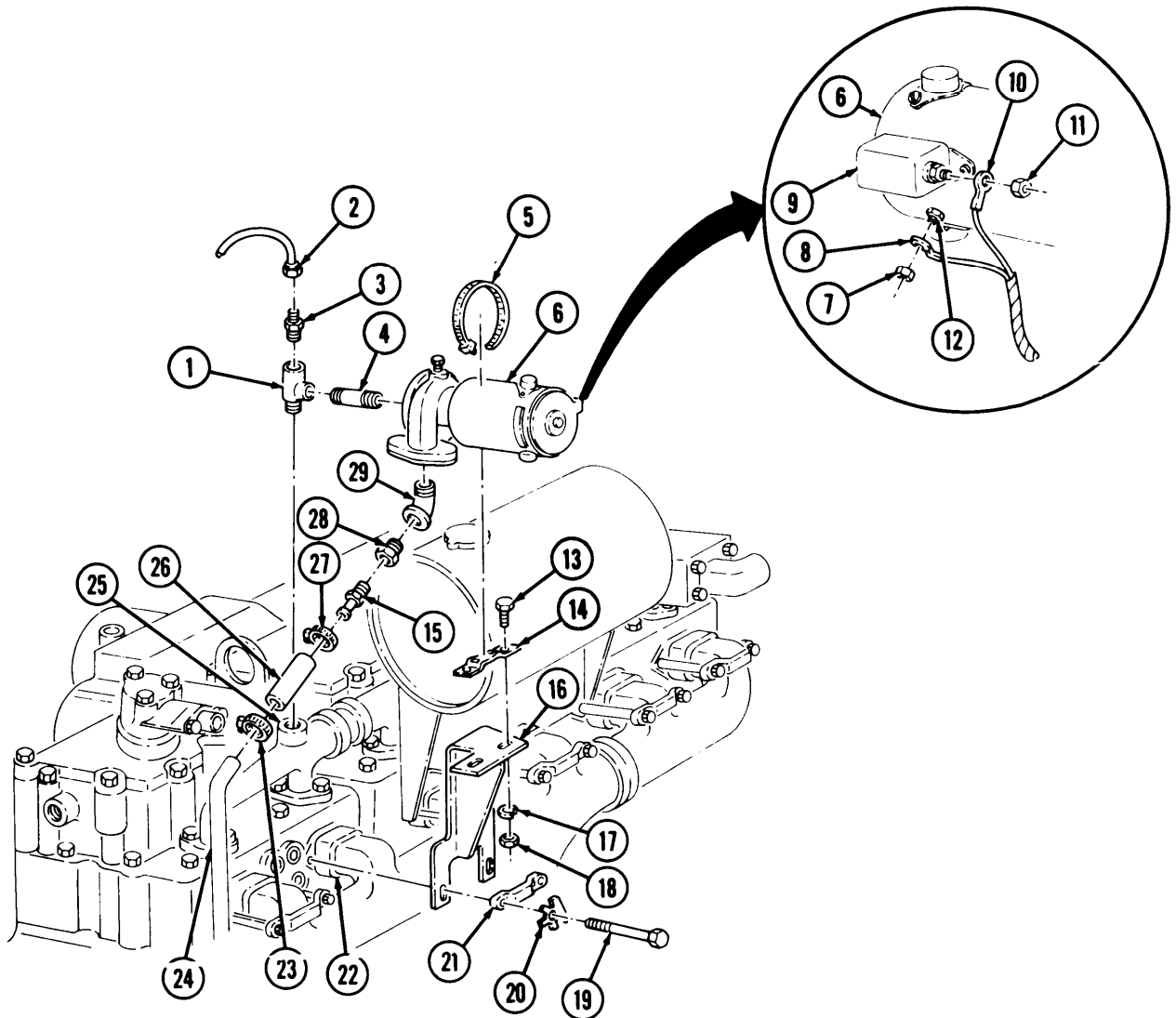
#### NOTE

Mark position of elbow for installation.

- |                    |                                |         |
|--------------------|--------------------------------|---------|
| 5. Heater pump (6) | Elbow (29)                     | Remove. |
| 6. Tee (1)         | Heater pump (6) and nipple (4) | Remove. |

# 11-14. SWINGFIRE HEATER PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Bracket (14) and support (16)	Clamp (5) and heater pump (6)	Remove.	
8.	Support bracket (16)	Two nuts (18), lockwashers (17), screws (13), and bracket (14)	Remove.	Discard lockwasher (17).
9.	Exhaust port (22)	Two screws (19), locking tabs (20), bracket (21), and support (16)	Remove.	Bend locking tabs (20) back and remove. Discard locking tabs (20).
10.	Water manifold (25)	Tee (1), thermacloz valve (3), and reducer bushing (2)	Remove.	



# 11-14. SWINGFIRE HEATER PUMP REPLACEMENT (Cont'd)

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

### NOTE

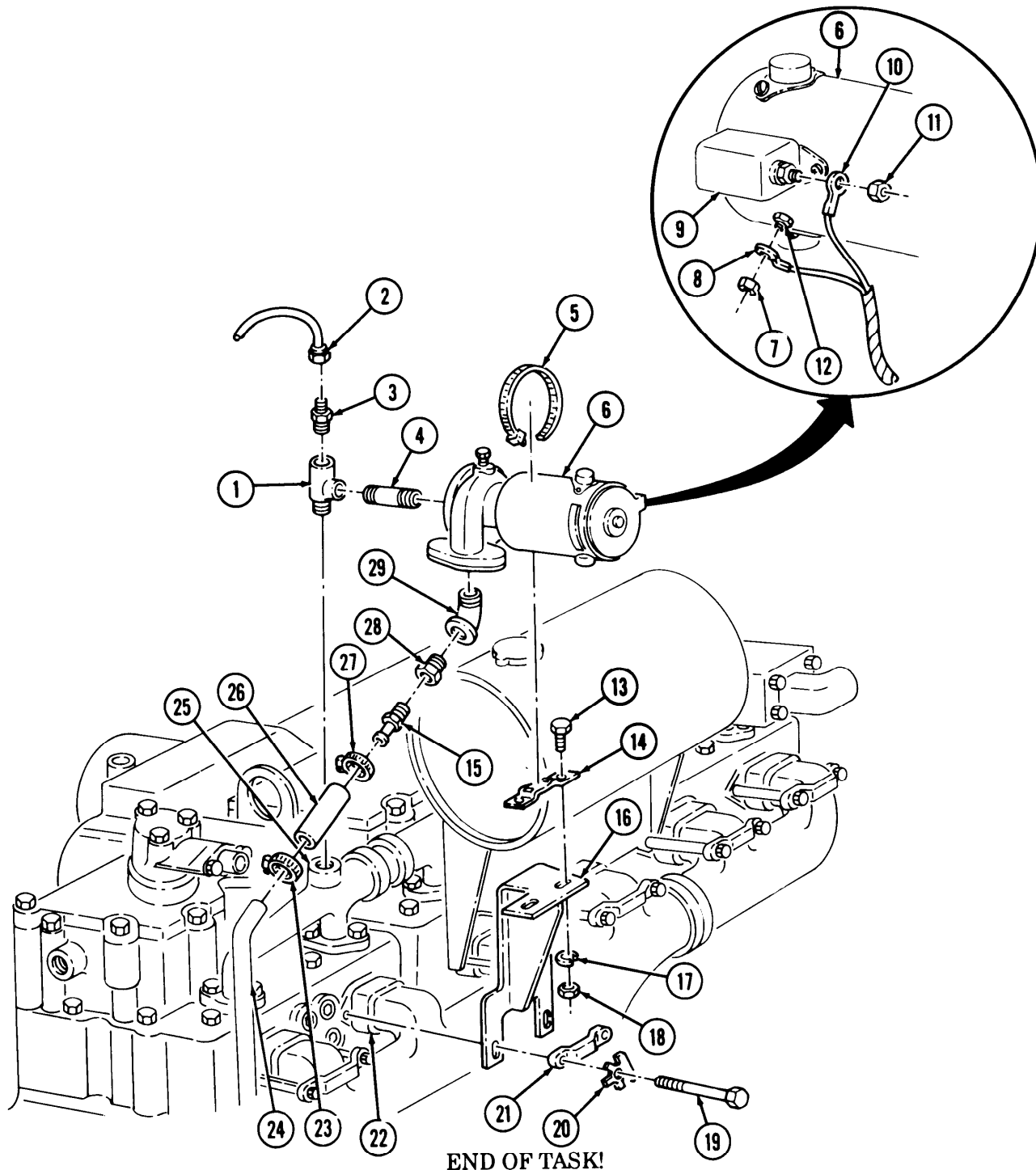
Wrap all male pipe threads with sealing tape before installation.

1.		Tee (1)	Install on water manifold (25).	
2.		Thermacloz valve (3)	Install on tee (1).	
3.		Reducer bushing (2)	Install on thermacloz valve (3).	
4.		Nipple (4)	Install on tee (1).	
5.		Elbow (29), adapter (28), and connector (15)	Install on heater pump (6).	
6.		Heater pump (6)	Install on nipple (4).	
7.		Bracket (14)	Install on support (16) with two screws (13), new lockwasher (17), and nuts (18).	
8.		Support (16)	Install on exhaust port (22) with bracket (21), two new locking tabs (20), and screws (19).	Tighten screws (19) 25 lb-ft (34 N.m). Bend locking tabs (20) on two screws (19).
9.		Heater pump (6)	Install on bracket (14) with clamps (5).	
10.		Hose (26) and two clamps (23) and (27)	Install on pump outlet tube (24) and connector (15).	
11.		Wire (10) and nut (11)	Install on heater pump relay (9).	
12.		Ground wire (8) and nut (7)	Install on terminal (12).	



## 11-14. SWINGFIRE HEATER PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- FOLLOW-ON TASKS:
- Fill cooling system to proper level (para. 3-46).
  - Connect battery ground cables (para. 4-25).

11-15. SWINGFIRE HEATER AND MOUNTING BRACKET REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tool</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Seventeen lockwasher		
Six locknuts		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

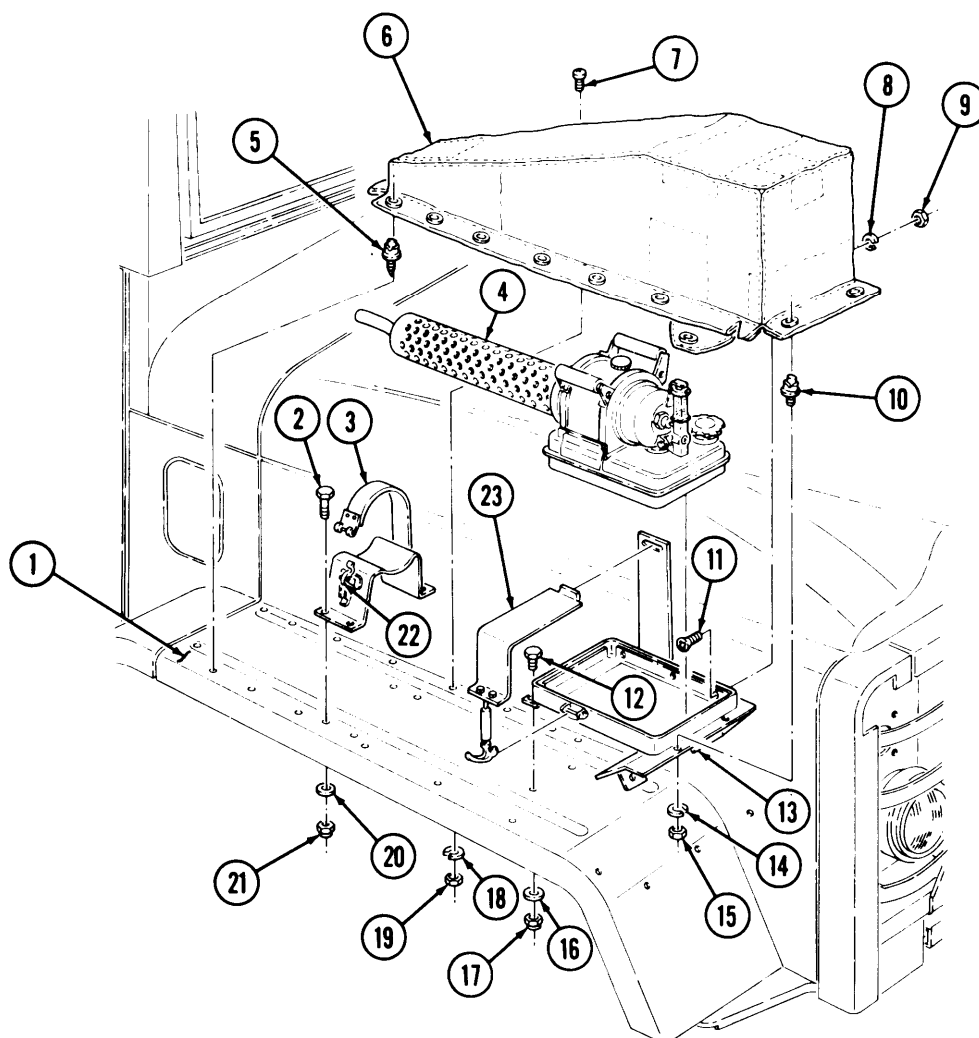
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Right front fender (1) and stowage bracket (13)	Three turn buttons (5) and eight turn buttons (10)	Turn to release cover (6).	Position cover (6) to gain access to inner panel.
2.		Six nuts (19), lockwasher (18), and screws (7), three nuts (9), lockwasher (8), and screws (11), and cover (6)	Remove.	Discard lockwasher (18) and (8).
3.	Rest bracket (3)	Clamp (22)	Open.	
4.	Stowage bracket (13)	Clamp (23)	Remove.	
5.		Swingfire heater (4)	Remove.	
6.	Right front fender (1)	Four locknuts (21), washers (20), screws (2), and rest bracket (3)	Remove.	Discard locknuts (21).

# 11-15. SWINGFIRE HEATER AND MOUNTING BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Right front fender (1)	Two locknuts (17), screws (12), washers (16), and stowage bracket (13)	Remove.	Discard locknuts (17).
8.		Three turn buttons (5)	Remove.	
9.		Six nuts (15), lockwasher (14), and turn buttons (10)	Remove.	Discard lockwasher (14).
10.	Stowage bracket (13)	Two nuts (15), lockwasher (14), and turn buttons (10)	Remove.	Discard lockwasher (14).

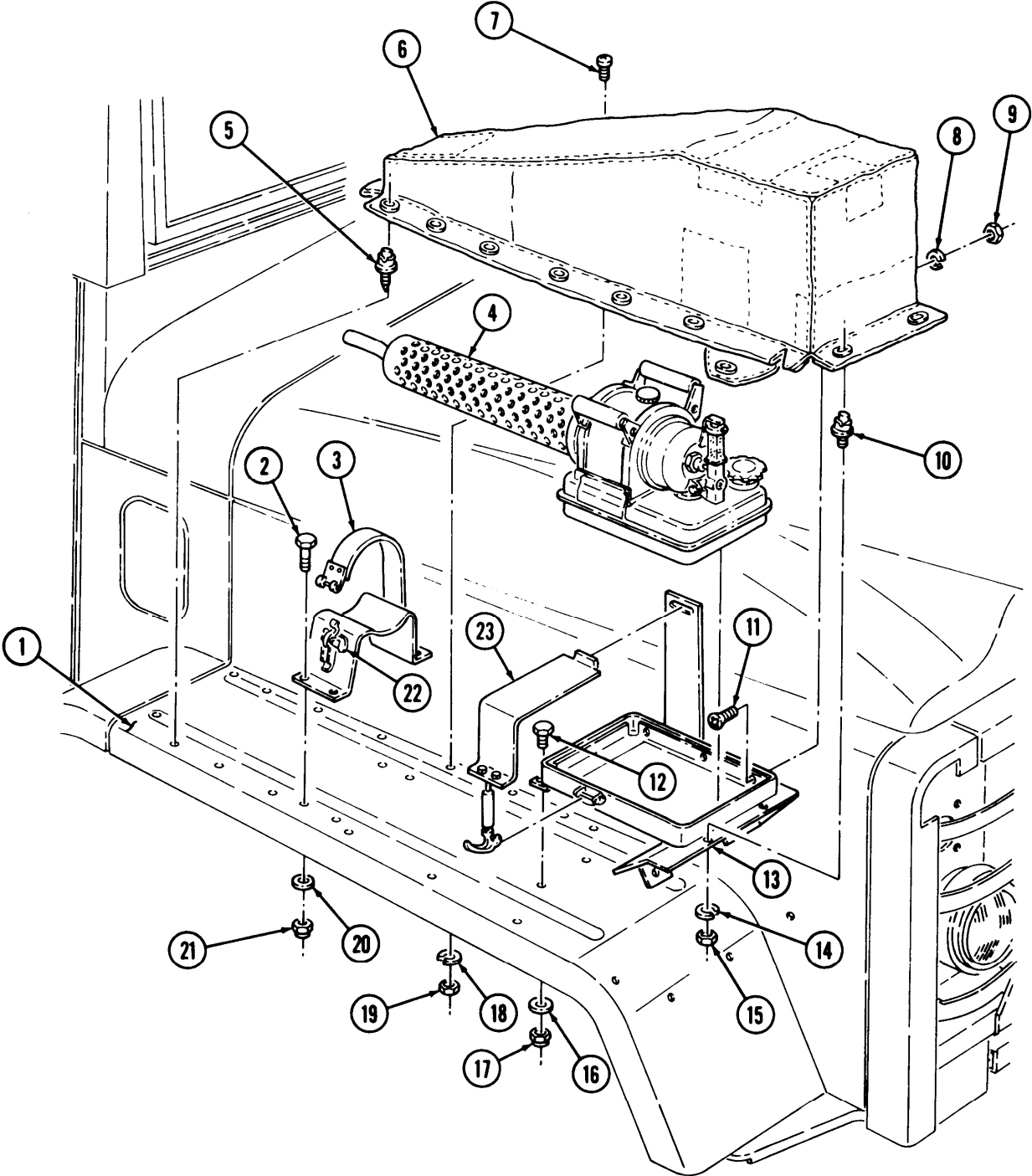


## 11-15. SWINGFIRE HEATER AND MOUNTING BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
11.		Two turn buttons (10)	Install on stowage bracket (13) with two new lockwasher (14) and nuts (15).	
12.		Six turn buttons (10)	Install on right front fender (1) with six new lockwasher (14) and nuts (15).	
13.		Three turn buttons (5)	Install on right front fender (1).	
14.		Stowage bracket (13)	Install on right front fender (1) with two screws (12), washers (16), and new locknuts (17).	
15.		Rest bracket (3)	Install on right front fender (1) with four screws (2), washers (20), and new locknuts (21).	
16.		Swingfire heater (4)	Position on stowage bracket (13) and rest bracket (3).	
17.		Clamps (22) and (23)	Install clamp (23) on stowage bracket (13). Close clamps (22) and (23).	
18.		Cover (6)	Install on right front fender (1) with six screws (7), new lockwasher (18), and nuts (19).	
19.			Install on stowage bracket (13) with three screws (11), new lockwasher (8), and nuts (9).	
20.			Position over swingfire heater (4) and install on fender (1) with three turn buttons (5) and eight turn buttons (10).	

11-15. SWINGFIRE HEATER AND MOUNTING BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT

This task covers:

- a. Electrical Connector Removal

b. Relay Removal

c. Circuit Breaker Removal

d. Thermal Switch Removal
- e. Thermal Switch Installation

f. Circuit Breaker Installation

g. Relay Installation

h. Electrical Connector Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cables disconnected.
Test Equipment		Special Environmental Conditions
None		None
Special Tool		General Safety Instructions
None		None
Materials/Parts		
Lockwasher Five locknuts Sealing compound (Appendix D, Item 22)		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B		
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Electrical Connector Removal

1. Electrical connector (11)

Screw (10) and wire (9)

Loosen screw (10), and remove wire (9).
2. Cab panel (14)

Nut (13), lockwasher (12), and electrical connector (11)

Remove.

Discard lockwasher (12).

b. Relay Removal

NOTE

Tag all wires for installation.

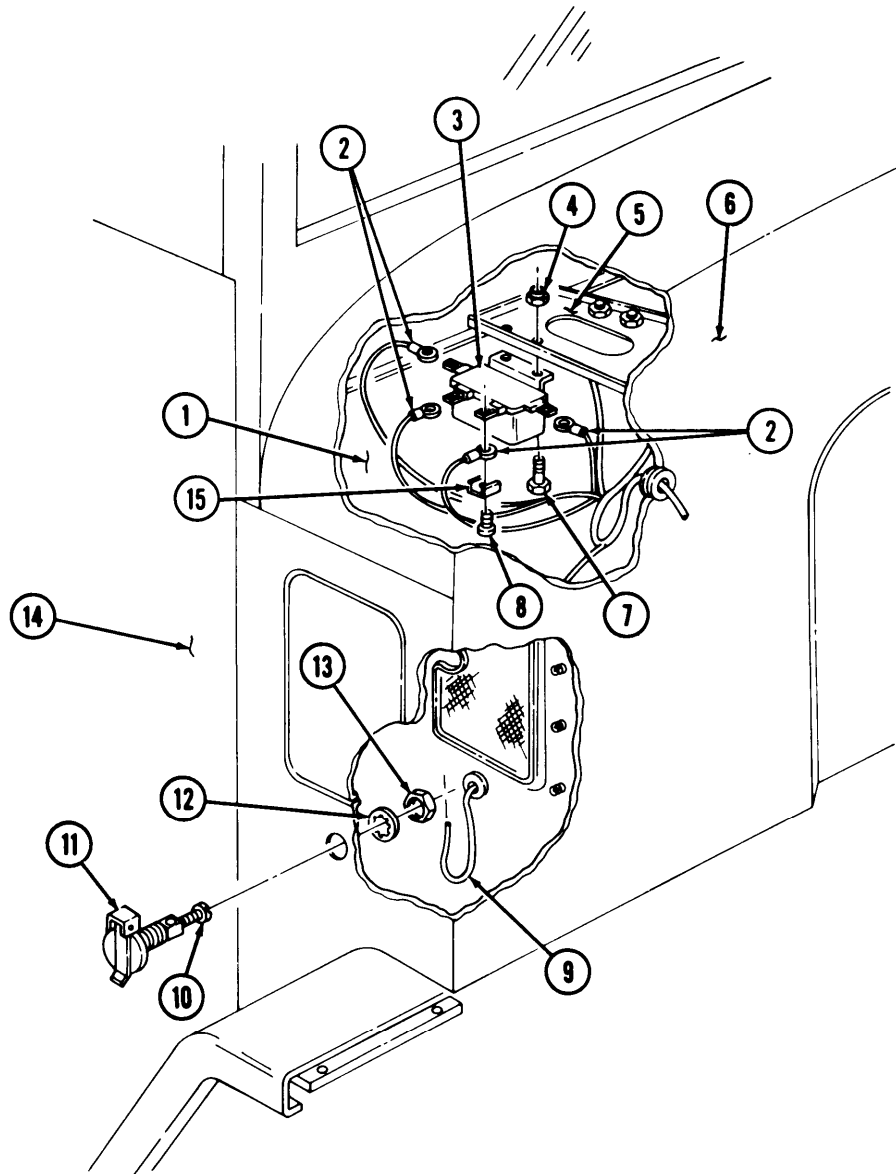
3. Between dash panel (1) and firewall (6)

Four screws (8), clips (15), and wires (2)

Remove.

## 11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Bracket (5)	Two screws (7) and locknuts (4)	Remove relay (3).	Discard locknuts (4).



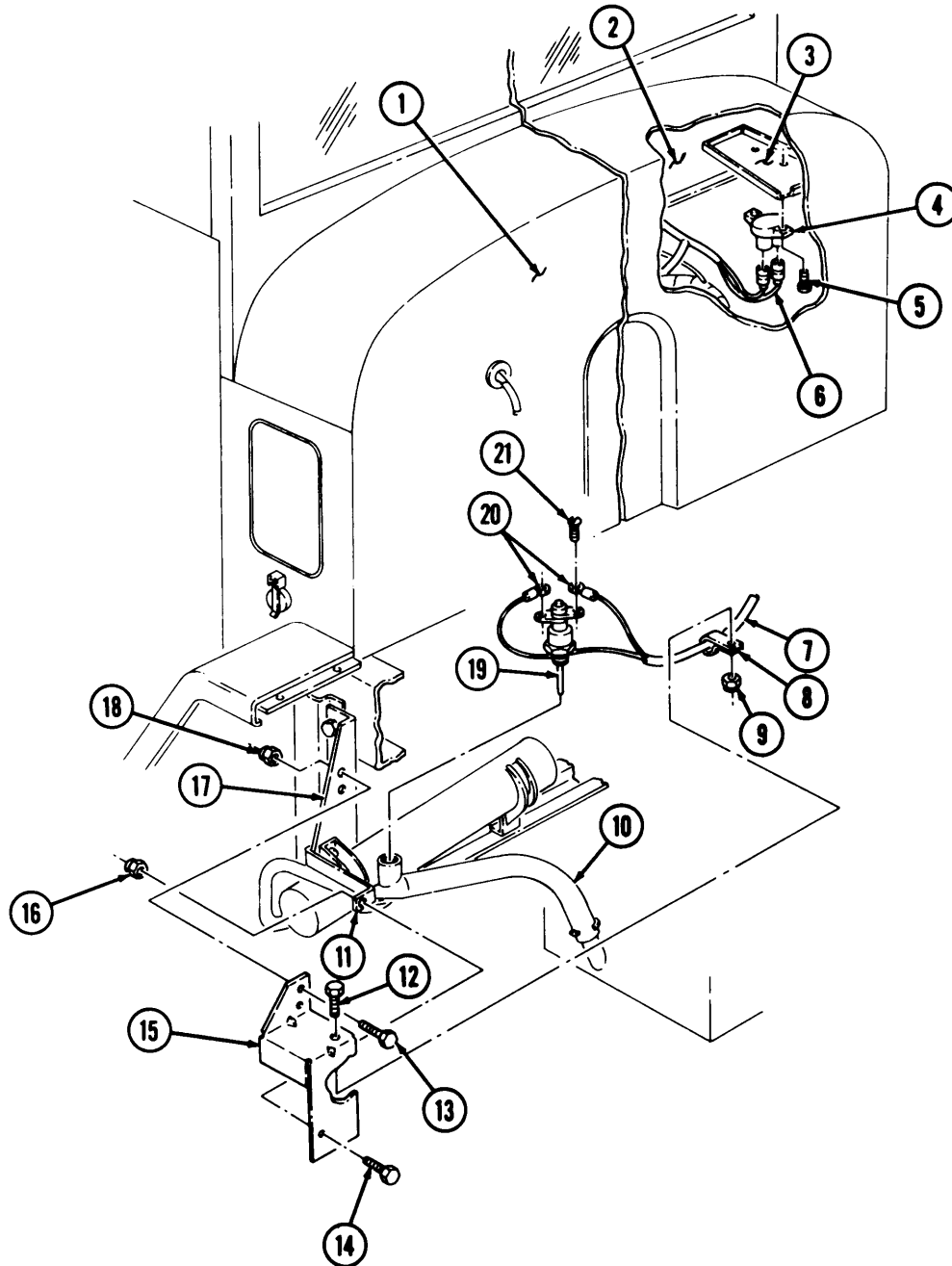
<b>11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>  c. Circuit Breaker Removal  </b>				
5.	Circuit breaker (4) between dash panel (2) and firewall (1)	Two wires (6)	Disconnect.	
6.	Bracket (3)	Two screws (5) and circuit breaker (4)	Remove.	
<b>  d. Thermal Switch Removal  </b>				
7.	Thermal switch shield (15)	Screw (12), wire (7), clamp (8), and locknut (9)	Remove.	Discard locknut (9).
8.	Thermal switch shield bracket (11) and water jacket mounting bracket (17)	Two screws (13), screw (14), two locknuts (18), locknut (16), and shield (15)	Remove.	Discard locknuts (16) and (18).
9.	Thermal switch (19)	Two screws (21) and wires (20)	Remove.	Remove sealing compound from thermal switch (19).
10.	Water jacket exhaust tube (10)	Thermal switch (19)	Remove.	



11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)</b>
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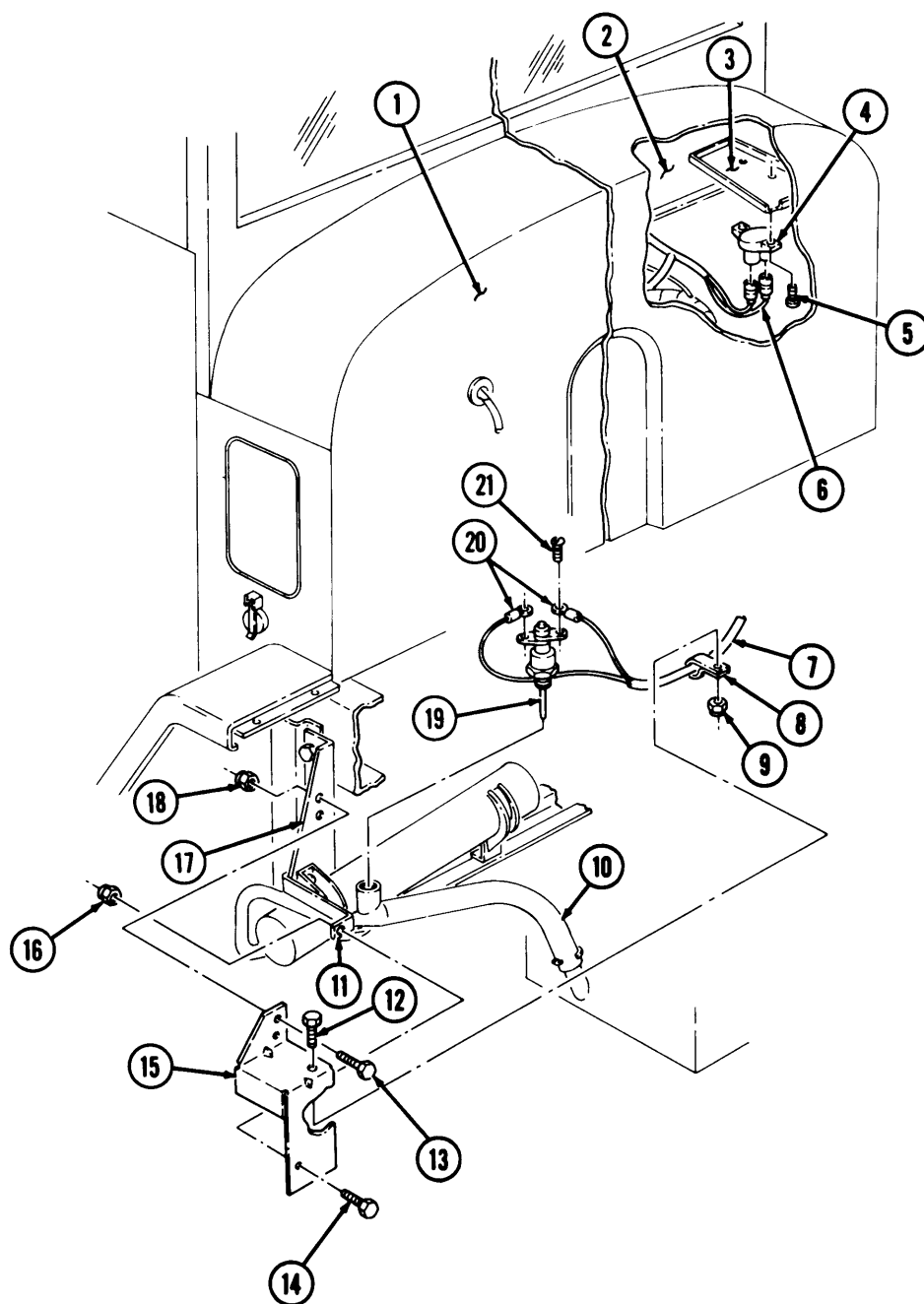
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>e. Thermal Switch Installation</b>				
11.		Thermal switch (19)	Install in water jacket exhaust tube (10).	
12.		Two wires (20)	Install on thermal switch (19) with two screws (21).	Apply liberal coating of sealing compound to both terminals.
13.		Clamp (8) and wire (7)	Install on thermal switch shield (15) with screw (12) and new locknut (9).	
14.		Thermal switch shield (15)	Install on thermal switch shield bracket (11) and water jacket mounting bracket (17) with two screws (14) and (13) and new lock-nuts (18) and (16).	

<b>f. Circuit Breaker Installation</b>
--

15.		Circuit breaker (4)	Install between dash panel (2) and firewall (1) on bracket (3) with two screws (5).	
16.		Two wires (6)	Install on circuit breaker (4).	

# 11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>g. Relay Installation I</b>
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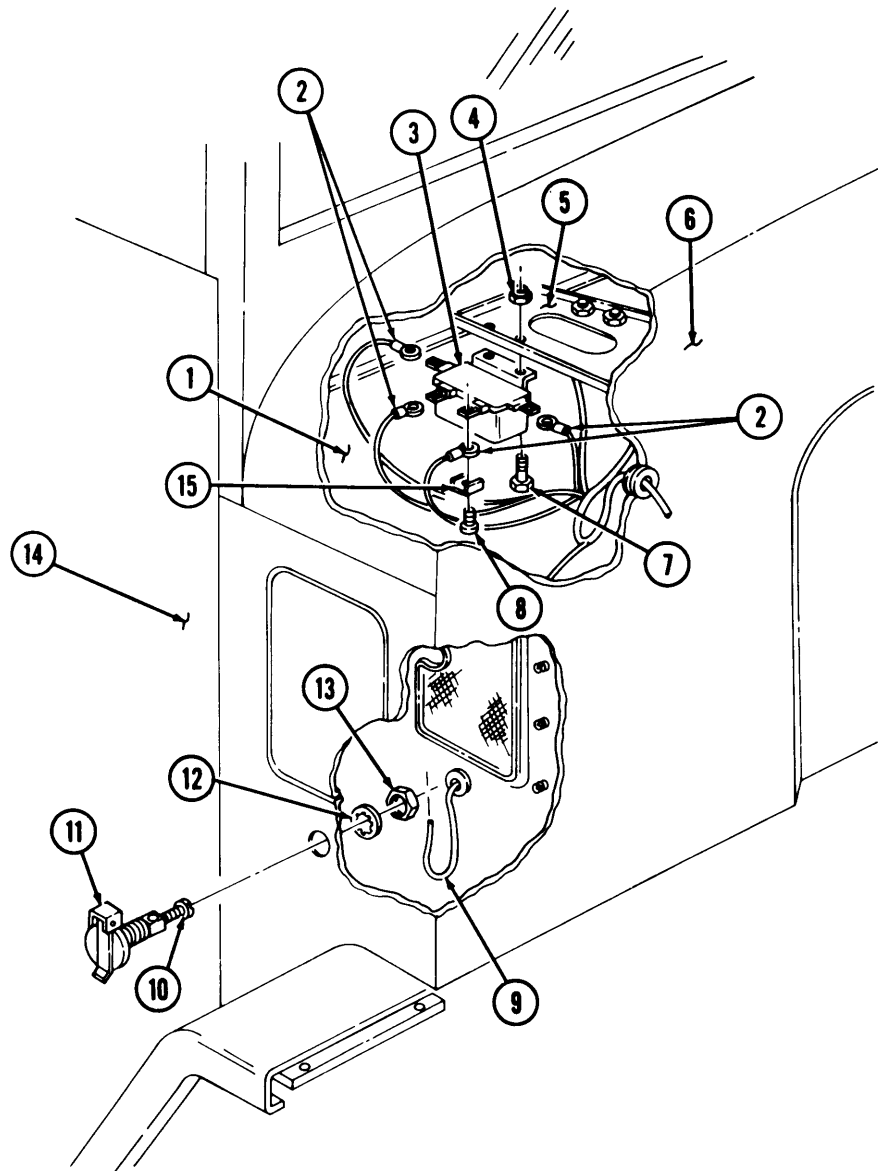
17.		Relay (3)	Install on bracket (5) between dash panel (1) and firewall (6) with two screws (7) and new locknuts (4).	
18.		Four wires (2)	Install on relay (3) with four clips (15) and screws (8).	

<b>h. Electrical Connector Installation</b>
---

19.		Electrical connector (11)	Install on cab panel (14) with new lockwasher (12) and nut (13).	
20.		Wire (9)	Install on electrical connector (11) and tighten screw (10).	

11-16. SWINGFIRE HEATER ELECTRICAL COMPONENTS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Connect battery ground cables (para. 4-25).

## 11-17. SWINGFIRE HEATER HARNESS REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cables disconnected.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Three lockwasher Three locknuts Sealing compound (Appendix D, Item 22) Eleven tiedown straps (Appendix D, Item 19)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

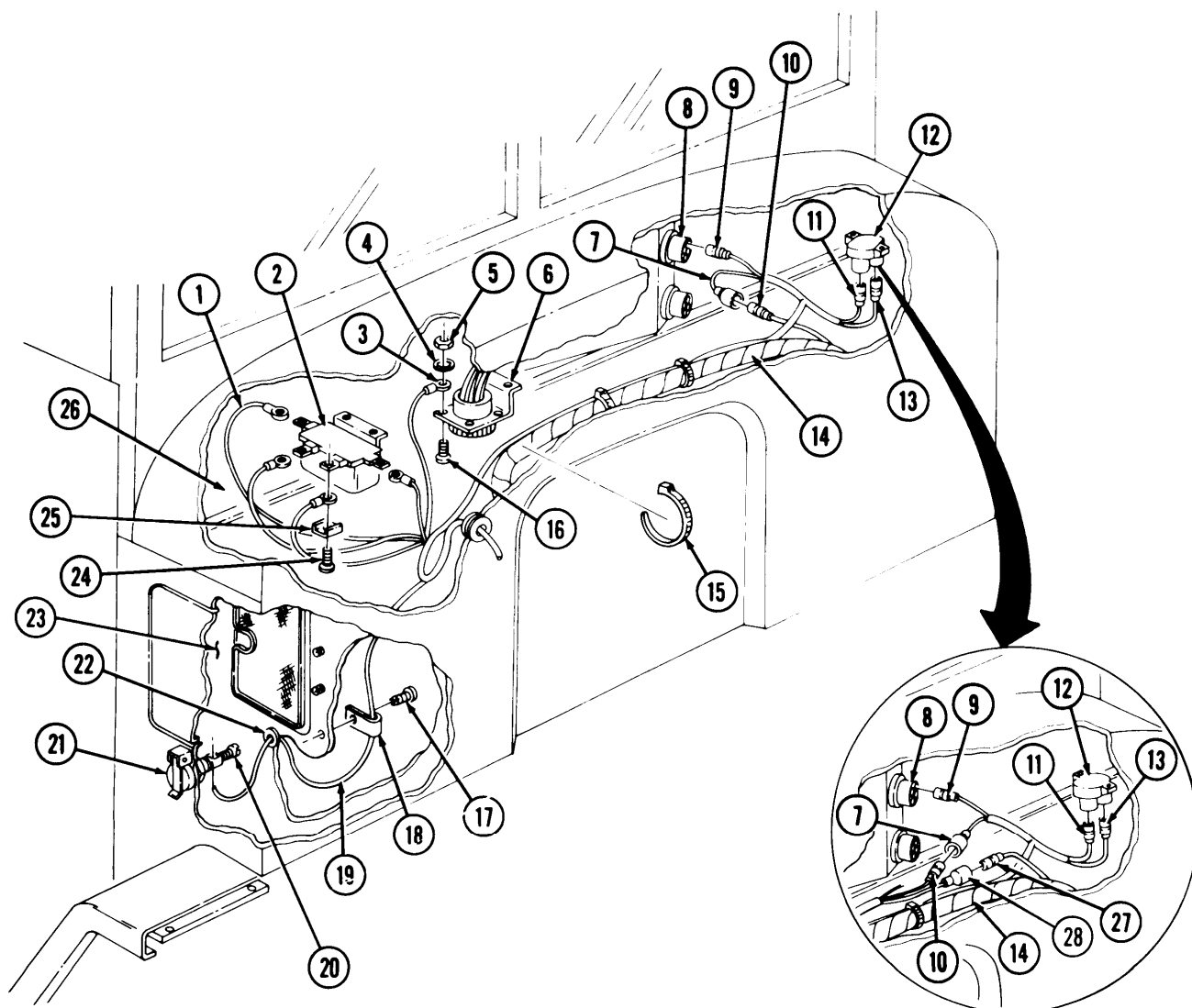
#### NOTE

If vehicle is equipped with a personnel heater perform step 1.

1. Behind cab dash panel (26)	Personnel heater wiring harness wires (27) and (28)	Disconnect.	
2. Circuit breaker (12)	Two wires (11) and (13)	Disconnect.	
3. Behind cab dash panel (26)	Wire (7) and front wiring harness lead (10)	Disconnect.	
4. Battery switch (8)	Wire (9)	Disconnect.	
5. Front wiring harness (14)	Six tiedown straps (15)	Cut and remove.	Discard six tiedown straps (15).
6. Diagnostic connector (6)	Wire (3), screw (16), nut (5), and lock-washer (4)	Remove.	Discard lockwasher (4).

# 11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Relay (2)	Four screws (24), clips (25), and wires (1)	Remove.	
8.	Cab (23)	Screw (17), wire (19), and clamp (18)	Remove.	
9.	Swingfire heater electrical connector (21)	Wire (19)	Loosen screw (20) and remove wire (19) from heater electrical connector (21) and grommet (22).	



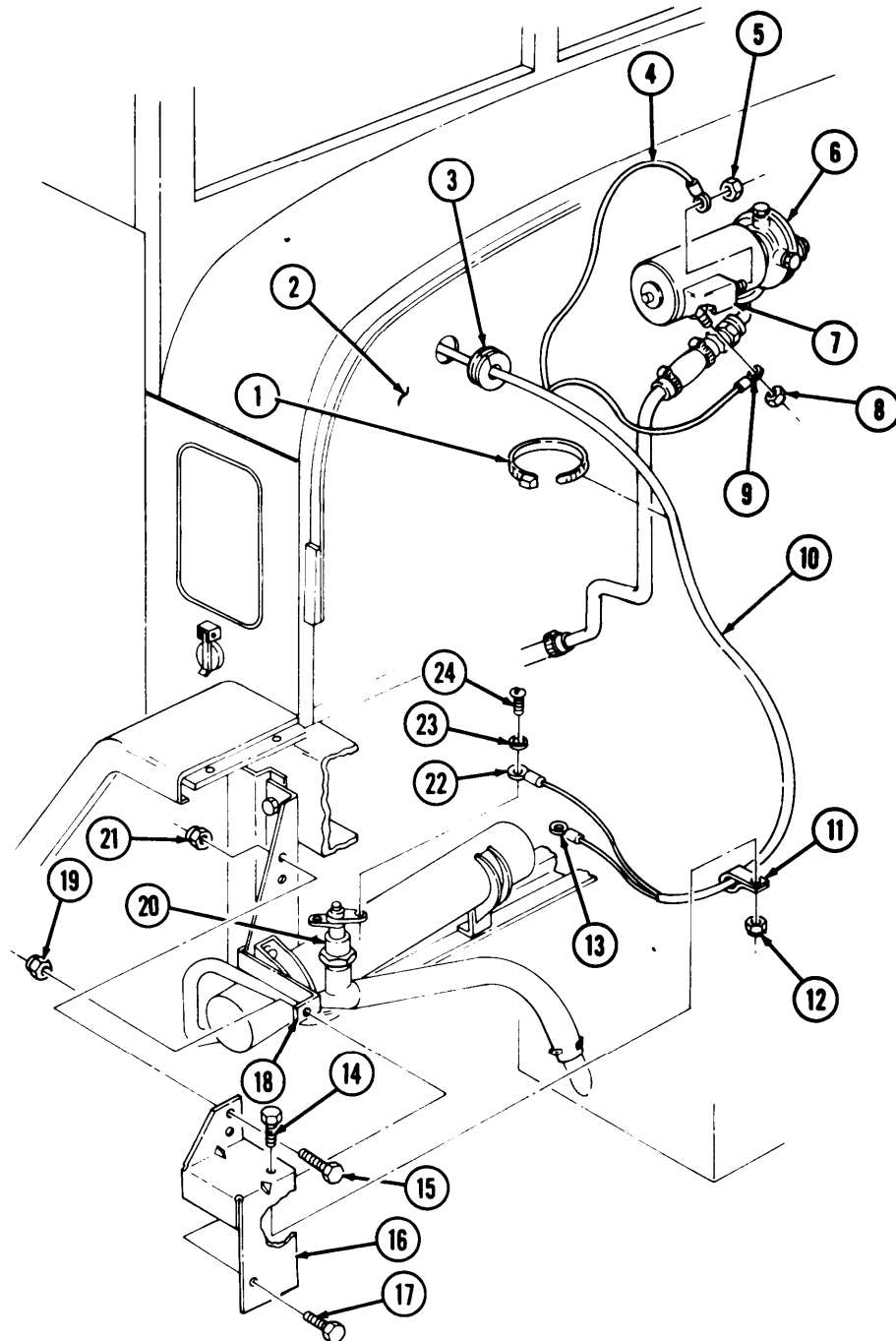
<b>11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Swingfire heater harness (10)	Five tiedown straps (1)	Cut and remove.	Discard tiedown straps (1).
11.	Swingfire heater fuel pump (6) and fuel pump solenoid (7)	Nut (5) and wire (4)	Remove.	
12.	Fuel pump (6)	Nut (8) and wire (9)	Remove.	
13.	Thermal switch (20)	Two screws (24), lockwasher (23), and wires (22) and (13)	Remove.	Discard lockwasher (23). Remove sealing compound from thermal switch (20).
14.	Mounting bracket (18)	Two locknuts (21), screws (15), locknut (19), screw (17), and shield (16)	Remove.	Discard locknuts (19) and (21).
15.	Thermal switch shield (16)	Screw (14), clamp (11), locknut (12), and harness (10)	Remove.	Discard locknut (12).
16.	Firewall (2)	Grommet (3)	Remove.	
17.		Heater harness (10)	Push through firewall (2).	



# 11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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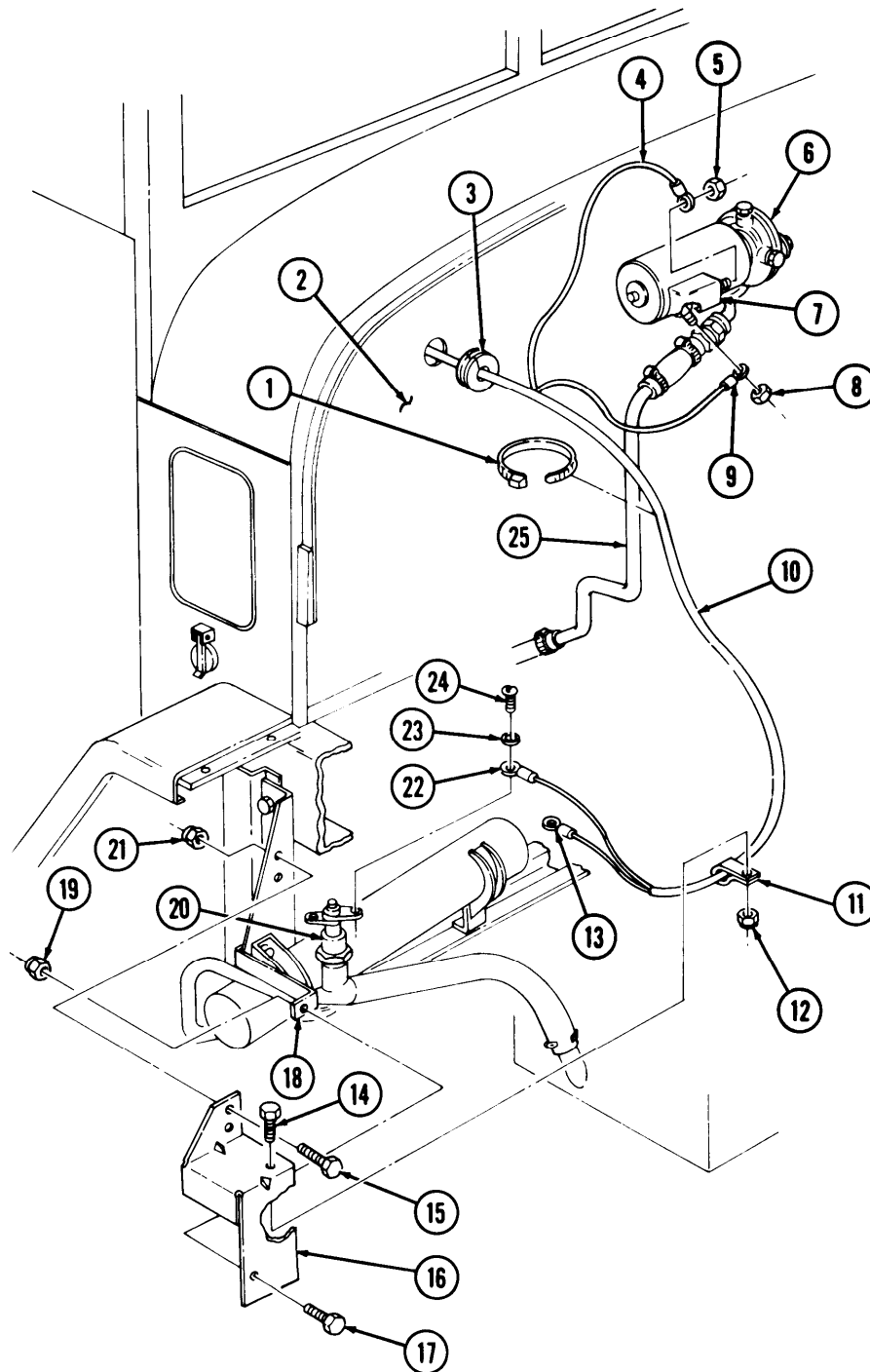


# 11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)

STEP No.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
18.		Grommet (3)	Install on firewall (2).	
19.		Swingfire heater harness (10)	Install through fire-wall (2) and grommet (3).	
20.		Two wires (22) and (13), washers (23), and screws (24)	Install on thermal switch (20).	Apply sealing compound to both terminals.
21.		Clamp (11) and wire (10)	Install on shield (16) with screw (14) and new locknut (12).	
22.		Shield (16)	Install on bracket (18) with two screws (15), new locknuts (21), screw (17), and new locknut (19).	
23.		Wire (9)	Install on swingfire heater fuel pump (6) and fuel pump solenoid (7) with nut (8).	
24.		Wire (4)	Install on swingfire heater fuel pump (6) and fuel solenoid (7) with nut (5).	
25.		Five new tiedown straps (1)	Install on heater harness (10) and pump outlet tube (25).	

11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)

STEP No.	LOCATION	ITEM	ACTION	REMARKS
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<b>11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
26.		Wire (19)	Insert through grommet (22) and install on swing-fire heater electrical connector (21).	Tighten screw (20).
27.		Wire (19)	Install on cab (23) with clamp (18) and screw (17).	
28.		Relay (2)	Install four wires (1) and clips (25) with screws (24).	
29.		Diagnostic connector (6)	Install wire (3), new lockwasher (4), screw (16), and nut (5).	
30.		Wire (9)	Install on battery switch (8).	
31.		Wires (7) and (10)	Connect.	
32.		Circuit breaker (12)	Install two wires (11) and (13).	

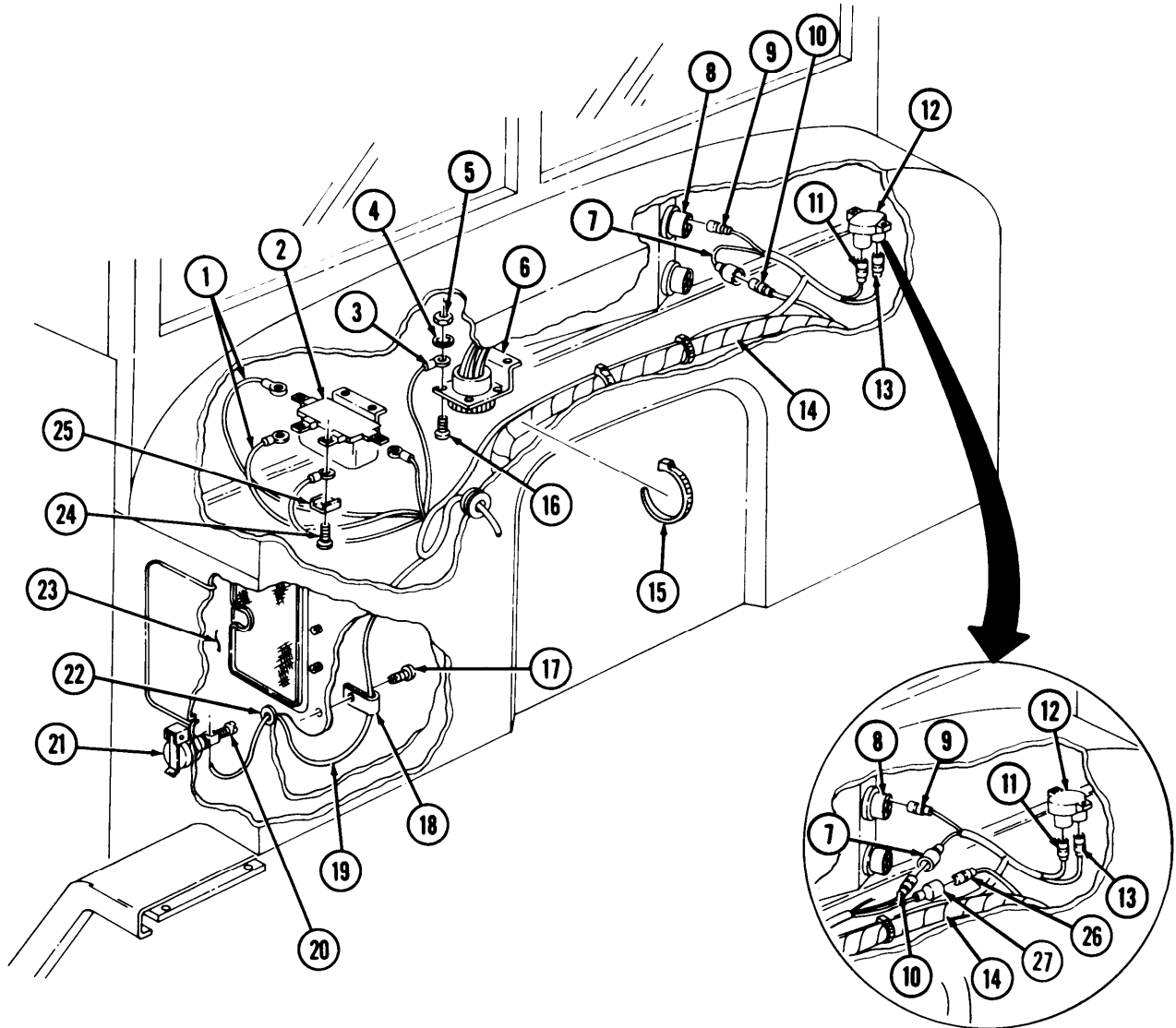
**NOTE**

If vehicle is equipped with personnel heater perform step 33.

33.		Two wires (26) and (27)	Connect.	
34.		Six new tiedown straps (15)	Install on swingfire heater harness lead (10) and front wiring harness (14).	

# 11-17. SWINGFIRE HEATER HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Connect battery ground cables (para. 4-25).

# 11-18. SWINGFIRE HEATER OIL PAN SHROUD AND EXHAUST TUBE REPLACEMENT

This task covers:

## a. Removal

## b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 11-16	Parking brake set. Thermal switch removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Cotter pin Six lockwashers		
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

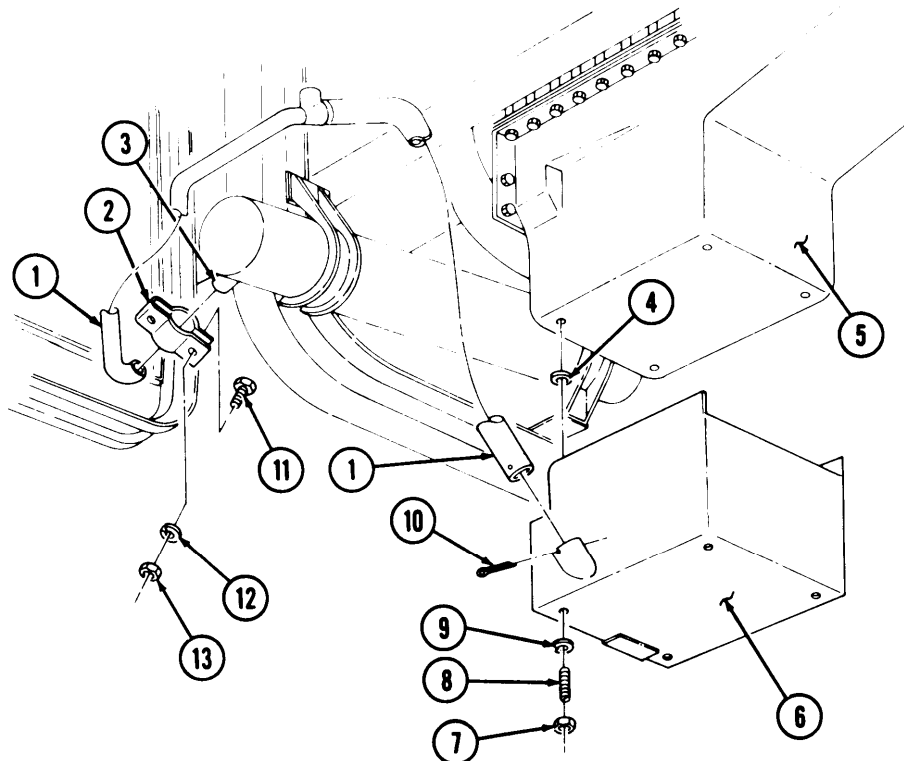
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### a. Removal

- |    |   |   |         |                           |
|----|---|---|---------|---------------------------|
| 1. | Oil pan shroud (6) and exhaust tube (1)             | Cotter pin (10)   | Remove. | Discard cotter pin (10).  |
| 2. | Exhaust tube (1) and water jacket outlet (3)        | Two nuts (13), lockwashers (12), screws (11), and clamp halves (2)  | Remove. | Discard lockwashers (12). |
| 3. | Water jacket outlet tube (3) and oil pan shroud (6) | Exhaust tube (1)  | Remove. |                           |
| 4. | Oil pan (5)   | Four nuts (7), lockwashers (9), washers (4), and oil pan shroud (6) | Remove. | Discard lockwashers (9).  |
| 5. |   | Four studs (8)  | Remove. |                           |

# 11-18. SWINGFIRE HEATER OIL PAN SHROUD AND EXHAUST TUBE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
6.		Four studs (8)	Install on oil pan (5).	
7.		Oil pan shroud (6)	Install on oil pan (5) with four washers (4), new lockwasher (9), studs (8), and nuts (7).	
8.		Exhaust tube (1)	Position on water jacket outlet (3) and oil pan shroud (6).	
9.		Two clamp halves (2)	Install on exhaust tube (1) and water jacket outlet (3) with two screws (11), new lockwasher (12), and nuts (13).	
10.		New cotter pin (10)	Install through exhaust tube (1) and oil pan shroud (6).	Bend ends of new cotter pin (10).



END OF TASK!

FOLLOW-ON TASK: Install thermal switch (para. 11-16).

# 11-19. SWINGFIRE HEATER BATTERY BOX HEATER PAD REPLACEMENT

This task covers:

## a. Removal

## b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-24	Parking brake set. Batteries removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		
Light-wheeled vehicle repairman MOS 63B		
<u>Manual References</u>		
TM9-2320-272-20P		

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

## a. Removal

- |                             |  |                                   |
|-----------------------------|--|-----------------------------------|
| 1. Swingfire heater pad (1) | Two hose clamps (2), inlet hose (4), and outlet hose (3) | Loosen two clamps (2) and remove. |
|-----------------------------|--|-----------------------------------|

### NOTE

Mark position of elbow for installation.

- |                    |  |         |
|--------------------|--|---------|
| 2.                 | Adapter (5), elbow (6), and nipple (11)  | Remove. |
| 3. Battery box (7) | Swingfire heater pad (1), two blocks (10), four blocks (8), and two blocks (9) | Remove. |

## b. Installation

- |    |  |                              |
|----|--|------------------------------|
| 4. | Two blocks (9), four blocks (8), two blocks (10), and swingfire heater pad (1) | Position in battery box (7). |
|----|--|------------------------------|



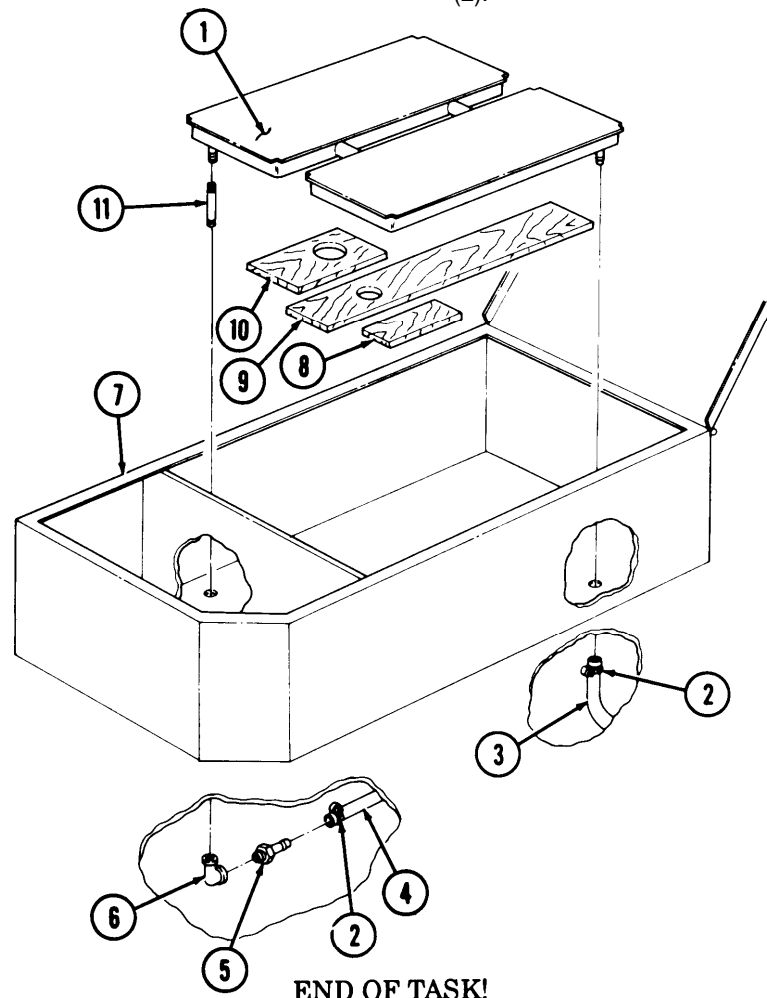
# 11-19. SWINGFIRE HEATER BATTERY BOX HEATER PAD REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Wrap all male pipe threads with sealing tape before installation.

- |    |                 |   |
|----|-----------------|---|
| 5. | Nipple (11)     | Install on swingfire heater pad (1).                            |
| 6. | Elbow (6)       | Install on nipple (11).   |
| 7. | Adapter (5)     | Install on elbow (6).   |
| 8. | Inlet hose (4)  | Install on adapter (5) and tighten hose clamp (2).              |
| 9. | Outlet hose (3) | Install on swingfire heater pad (1) and tighten hose clamp (2). |



FOLLOW-ON TASK: Install batteries (para. 4-24).

## 11-20. SWINGFIRE HEATER WATER JACKET REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<b><u>Applicable Models</u></b>	<b><u>Equipment Condition Reference</u></b>	<b><u>Condition Description</u></b>
All	TM 9-2320-272-10 Para. 11-18	Parking brake set. Swingfire heater oil pan shroud and exhaust tube removed.
<b><u>Test Equipment</u></b>		
None		
<b><u>Special Tools</u></b>		<b><u>Special Environmental Conditions</u></b>
None		None
<b><u>Materials/Parts</u></b>		<b><u>General Safety Instructions</u></b>
Four locknuts		None
<b><u>Personnel Required</u></b>		
Light-wheeled vehicle mechanic MOS 63B		
<b><u>Manual References</u></b>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

### a. Removal

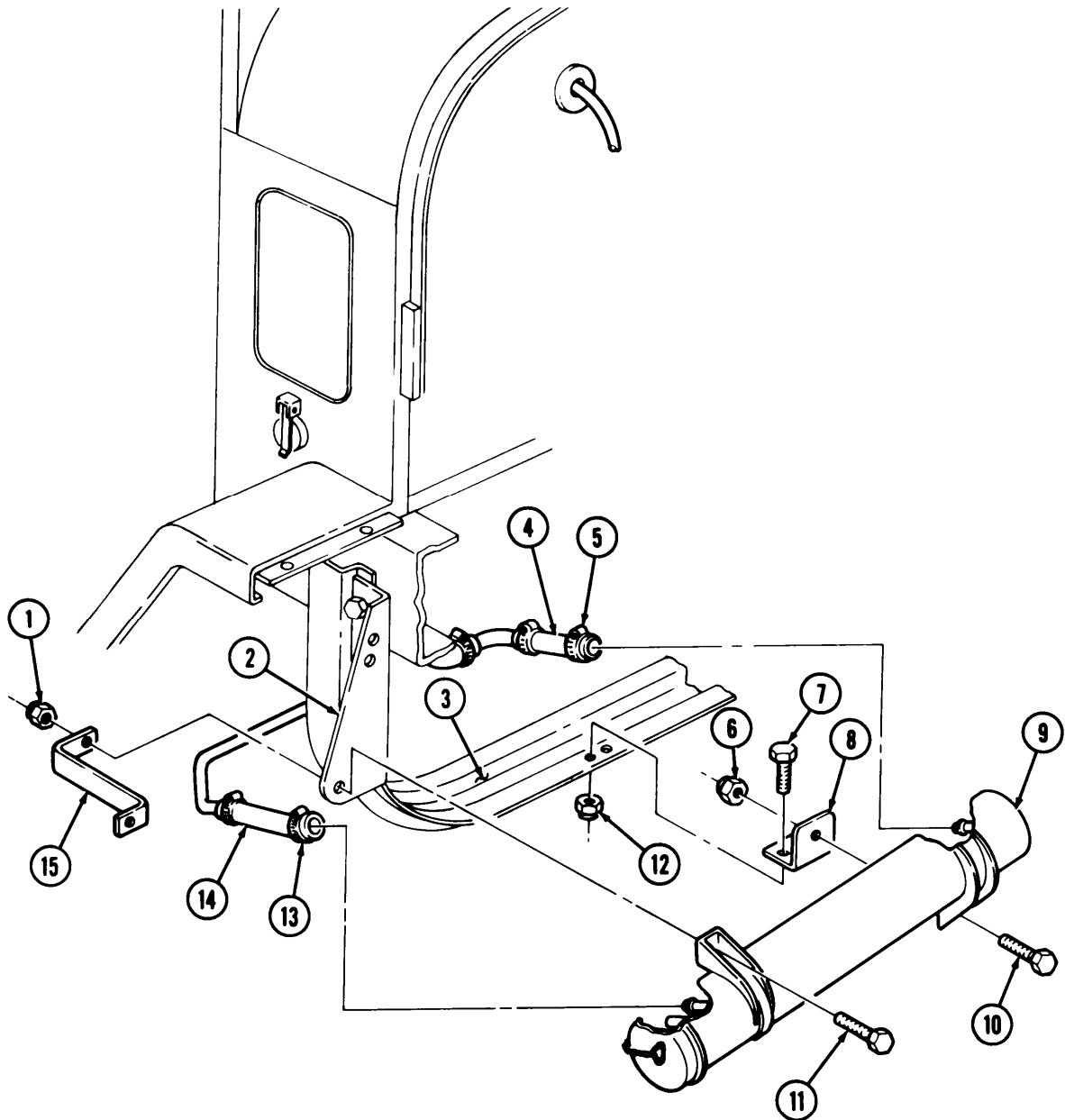
#### NOTE

Have drainage container ready to catch excess coolant in step 1.

- |                                      |  |   |                      |
|--------------------------------------|--|---|----------------------|
| 1. Swingfire heater water jacket (9) | Two clamps (5) and (13)                          | Loosen and remove two hoses (4) and (14). |                      |
| 2. Bracket (2) and water jacket (9)  | Screw (11), locknut (1), and shield support (15) | Remove.                                   | Discard locknut (1). |

## 11-20. SWINGFIRE HEATER WATER JACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Bracket (8)	Screw (10), locknut (6), and water jacket (9)	Remove.	Discard locknut (6).
4.	Crossmember (3)	Two screws (7), bracket (8), and two locknuts (12)	Remove.	Discard locknuts (12).



11-20. SWINGFIRE HEATER WATER JACKET REPLACEMENT (Cont'd)

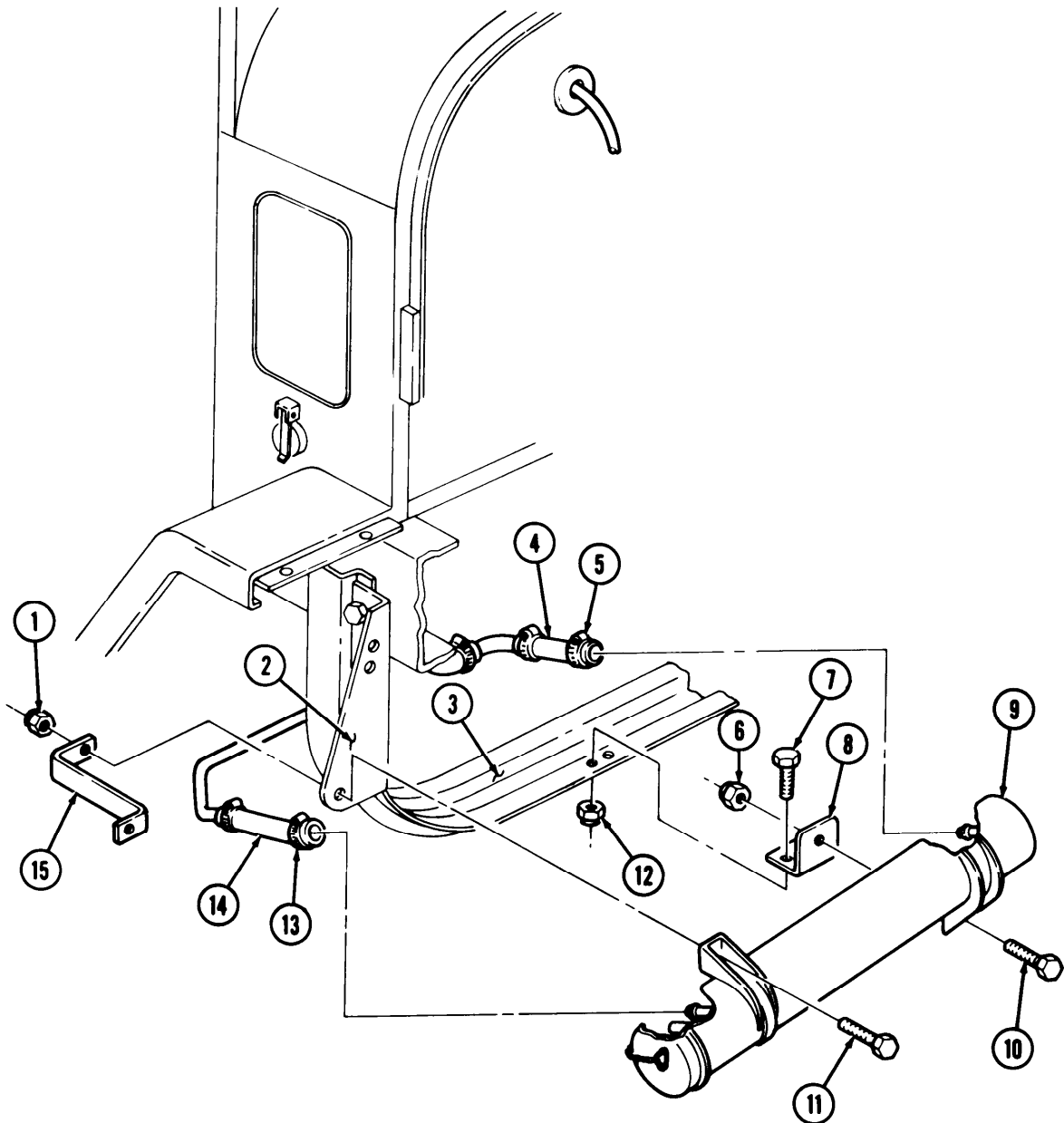
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

5.		Bracket (8)	Install on cross-member (3) with two screws (7) and new locknuts (12).	
6.		Water jacket (9)	Install on bracket (8) with screw (10) and new locknut (6).	
7.			Install shield support (15) and water jacket (9) on bracket (2) with screw (11), and new locknut (1).	
8.		Two hoses (14) and (4)	Install on water jacket (9) with two clamps (13) and (5).	

# 11-20. SWINGFIRE HEATER WATER JACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install swingfire heater oil pan shroud and exhaust tube (para. 11-18).

## 11-21. FUEL BURNING PERSONNEL HEATER REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
<u>Test Equipment</u>	TM 9-2320-272-10	Fuel shutoff valve off.
None	Para. 4-25	Battery ground cable disconnected.
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
One lockwasher		Diesel fuel is flammable. Do not perform this procedure near open flames.
Four locknuts		
One cotter pin		
Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

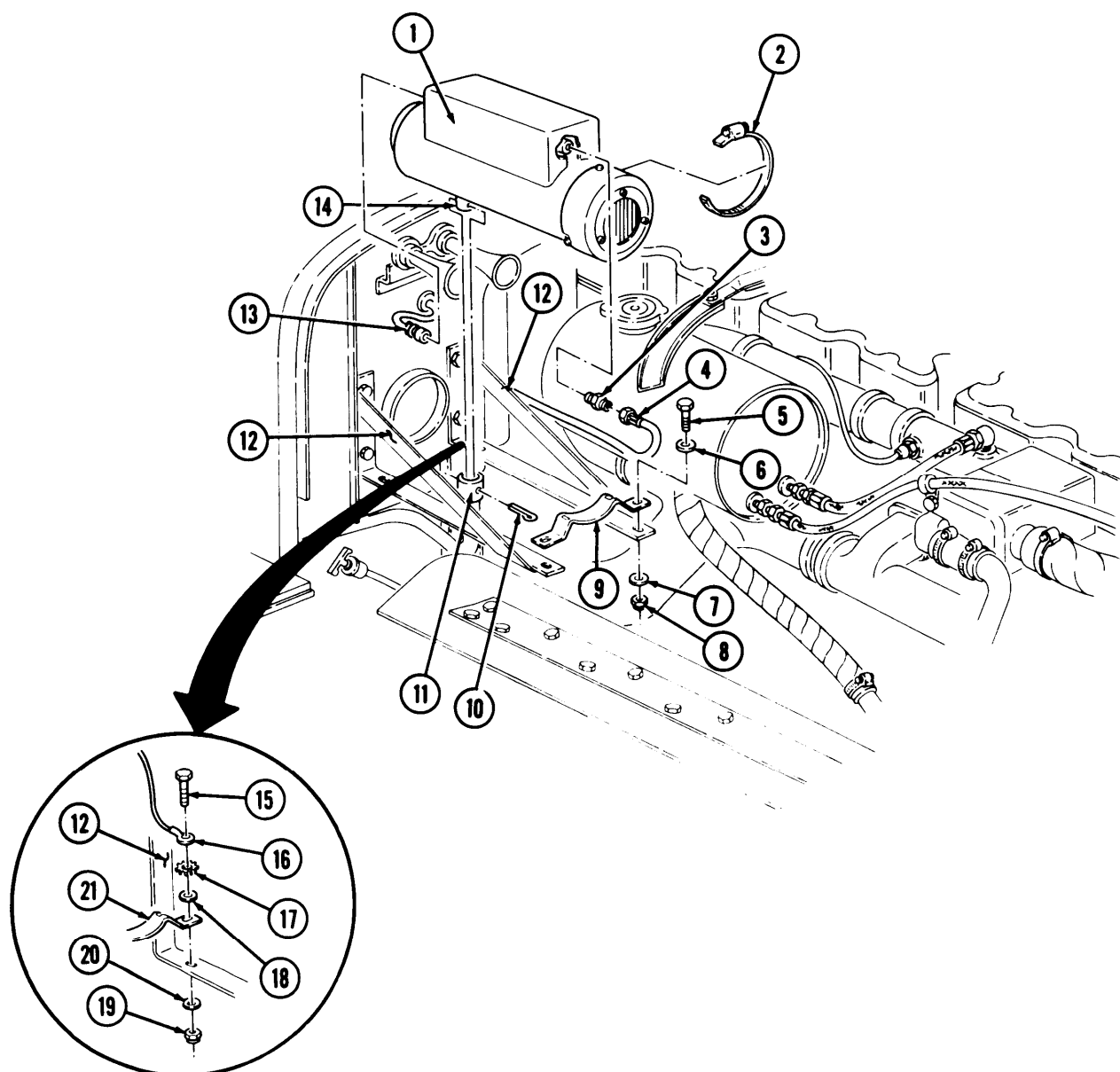
#### WARNING

Diesel fuel is flammable. Do not perform fuel system procedures near open flames. Injury to personnel may result.

- |   |             |                          |
|---|-------------|--------------------------|
| 1. Fuel burning personnel Heater harness (13) heater (1)  | Disconnect. |                          |
| 2. Adapter (3) Hose (4)   | Disconnect. |                          |
| 3. Fuel burning personnel Adapter (3) heater (1)  | Remove.     |                          |
| 4. Elbow (11) and exhaust port (14) Cotter pin (10)   | Remove.     | Discard cotter pin (10). |
| 5. Fuel burning personnel Two clamps (2) and fuel heater (1) and two angle burning personnel brackets (9) and (21) heater (1) | Remove.     |                          |

# 11-21. FUEL BURNING PERSONNEL HEATER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Two mounting brackets (12)	Three screws (5), washers (6) and (7), locknuts (8) and angle bracket (9)	Remove.	Discard locknuts (8).
7.		Screw (15), ground wire (16), lockwasher (17), washers (18) and (20), angle bracket (21), and locknut (19)	Remove.	Discard lockwasher (17) and locknut (19).



# 11-21. FUEL BURNING PERSONNEL HEATER REPLACEMENT (Cont'd)

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

### NOTE

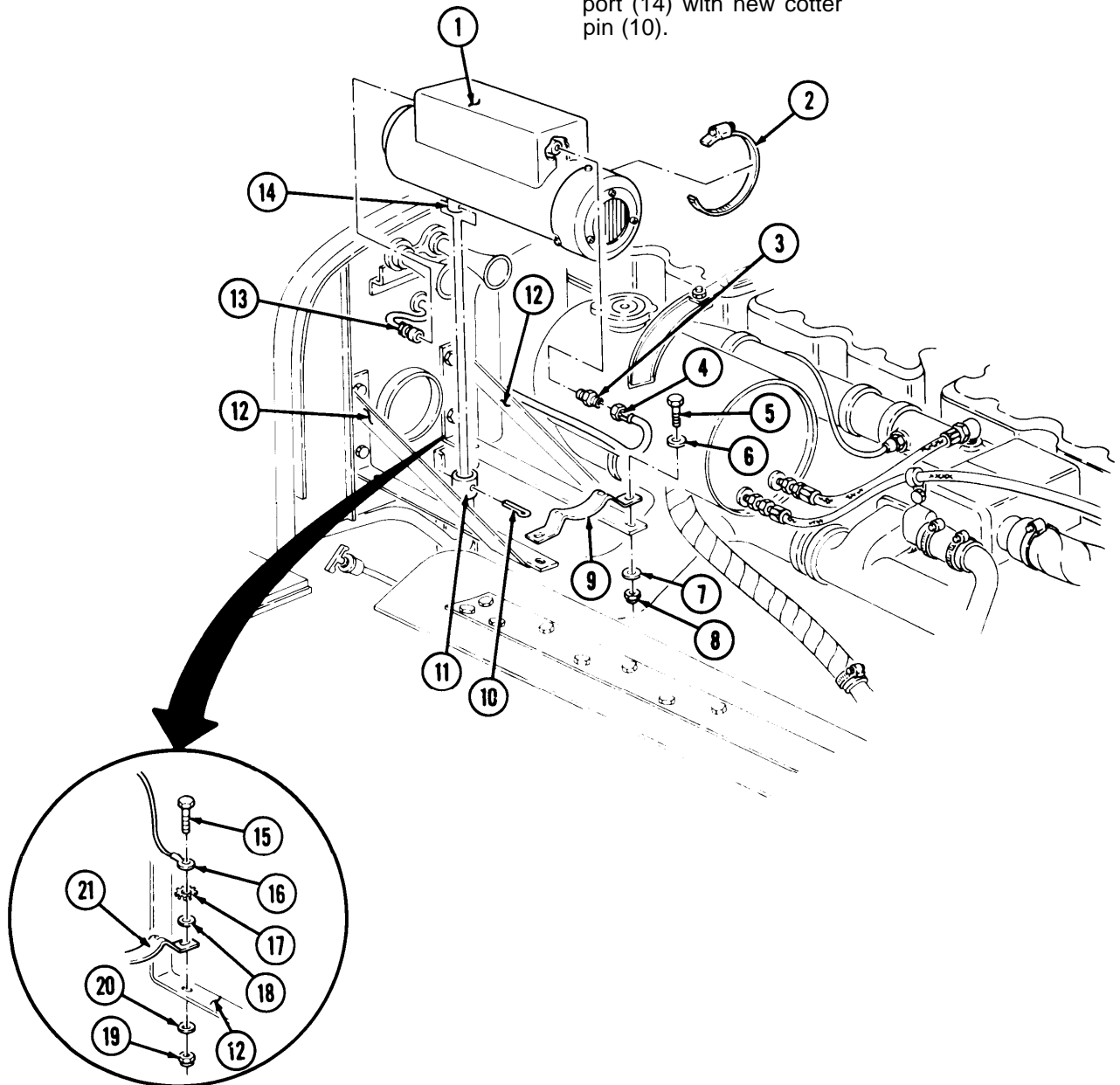
Clean all male pipe and hose threads and wrap with sealing tape before installation.

8.		Two angle brackets (9) and (21)	Install on mounting brackets (12) with three screws (5), washers (6) and (7), and new lock-nuts (8).
9.		Angle bracket (21) and ground wire (16)	Install on mounting bracket (12) with screw (15), new lockwasher (17), washers (18) and (20), and new locknut (19).
10.		Two clamps (2)	Position on two angle brackets (9) and (21).
11.		Fuel burning personnel heater (1)	Install on two angle brackets (9) and (21) with two clamps (2).
12.		Adapter (3)	Install on fuel burning personnel heater (1).
13.		Hose (4)	Install on adapter (3).



# 11-21. FUEL BURNING PERSONNEL HEATER REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
14.		Heater harness (13)	Connect to fuel burning personnel heater (1).	
15.		Elbow (11)	Install on fuel burning personnel heater exhaust port (14) with new cotter pin (10).	



END OF TASK!

FOLLOW-ON TASKS:

- Connect battery ground cable (para. 4-25).
- Fuel shutoff valve open (TM 9-2320-272-10).

11-22. PERSONNEL HEATER MOUNTING BRACKET REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<b>Applicable Models</b>	<b>Equipment Condition Reference</b>	<b>Condition Description</b>
All	TM 9-2320-272-10	Parking brake set.
<b>Test Equipment</b>	TM 9-2320-272-10	Hood raised and secured.
None	Para. 11-21	Fuel burning personnel heater removed.
<b>Special Tools</b>		<b>Special Environmental Conditions</b>
None		None
<b>Materials/Parts</b>		<b>General Safety Instructions</b>
Four locknuts		None
<b>Personnel Required</b>		
Light-wheeled vehicle mechanic MOS 63B		
<b>Manual References</b>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

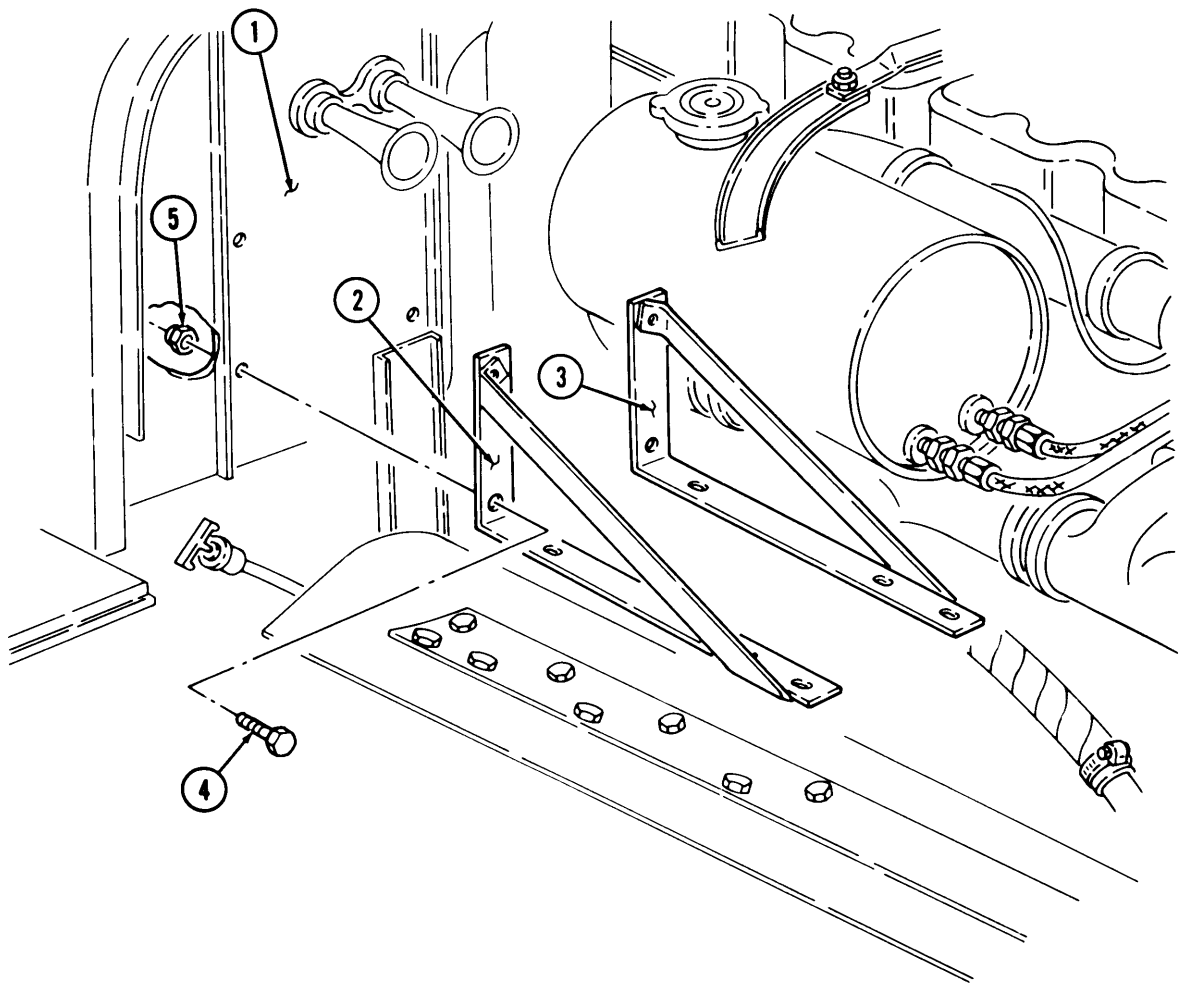
1. Firewall (1)
- Two mounting brackets (2) and (3), four screws (4), and locknuts (5)
- Remove.
- Discard locknuts (5).

I b. Installation I

2.
- Two mounting brackets (2) and (3)
- Install on firewall (1) with four screws (4) and new locknuts (5).

11-22. PERSONNEL HEATER MOUNTING BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install fuel burning personnel heater (para. 11-21).

## 11-23. PERSONNEL HEATER FUEL PUMP REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cable disconnected.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		Diesel fuel is flammable. Do not perform this procedure near open flames.
<u>Materials/Parts</u>		
Two locknuts Sealing tape (Appendix D, Item 26) Cap and plug set (Appendix D, Item 5)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Diesel fuel is flammable. Do not perform fuel system procedures near open flames. Injury to personnel may result.

#### a. Removal

- Electrical wire clip (4)      Two wires (5) and (6)      Disconnect.

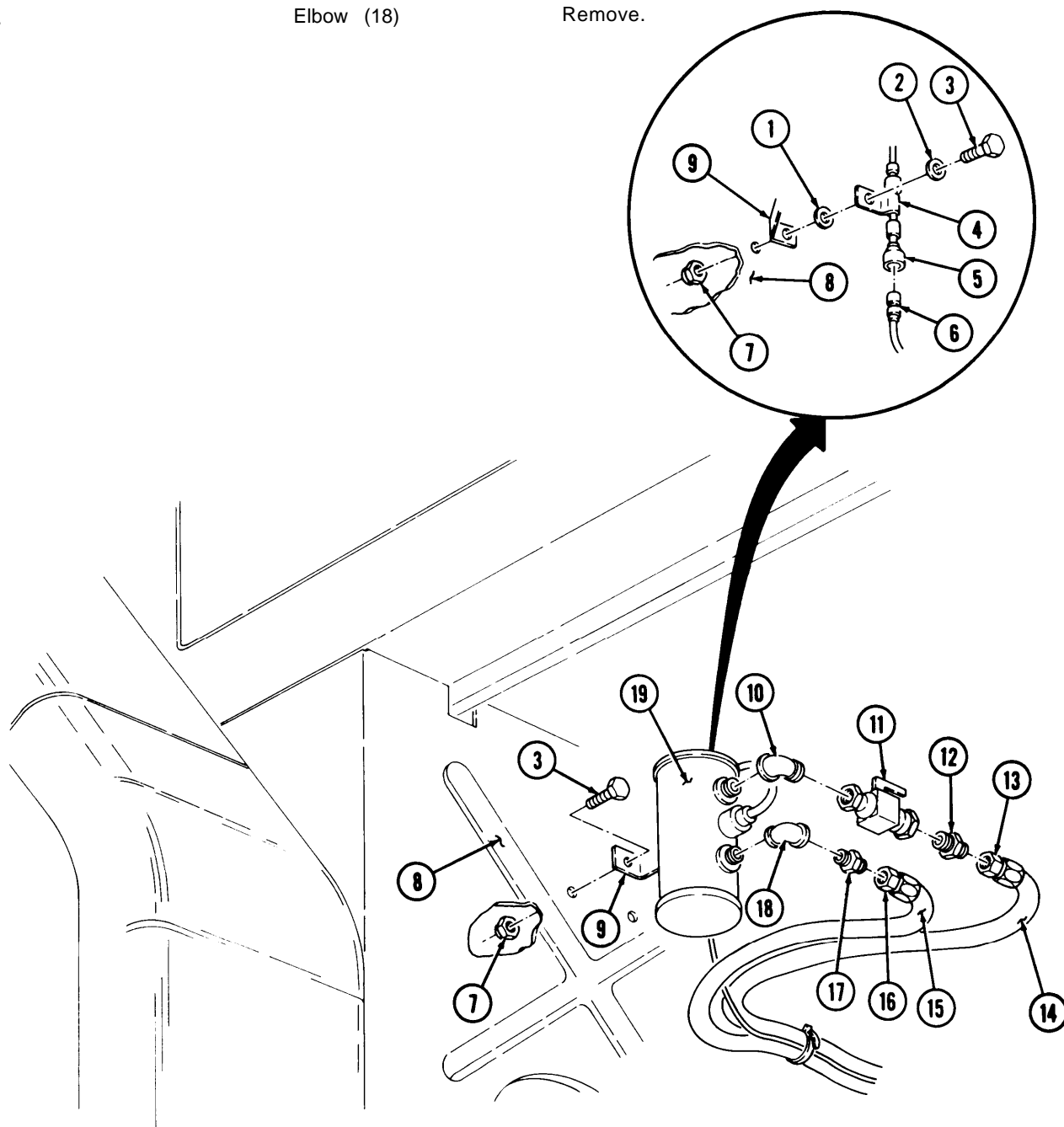
#### CAUTION

Cap or plug all openings after disconnecting lines and hoses to prevent contamination. Failure to do so may result in fuel pump damage.

- Hose (14)      Nut (13)      Disconnect from adapter (12).
- Hose (15)      Nut (16)      Disconnect from adapter (17).
- Left hand splash panel (8) and fuel pump mounting bracket (9)      Two screws (3), washers (1) and (2), locknuts (7), fuel pump (19), and electrical wire clip (4)      Remove.      Discard locknuts (7).
- Elbow (18)      Adapter (17)      Remove.

# 11-23. PERSONNEL HEATER FUEL PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Fuel shutoff valve (11)	Adapter (12)	Remove.	
7.	Elbow (10)	Fuel shutoff valve (11)	Remove.	
8.	Fuel pump (19)	Elbow (10)	Remove.	
9.		Elbow (18)	Remove.	



<b>11-23. PERSONNEL HEATER FUEL PUMP REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
------------------------

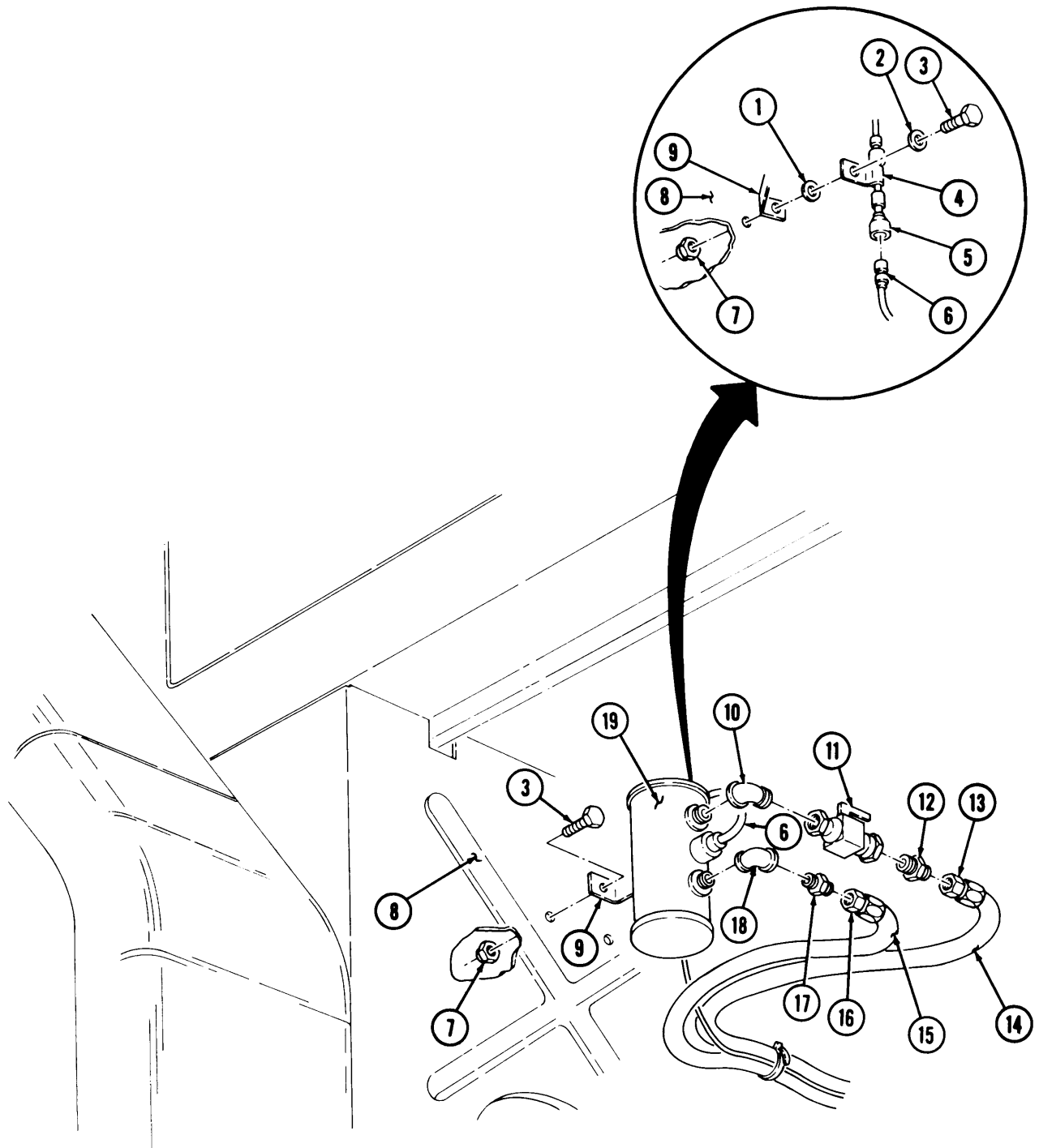
**NOTE**

Clean all male pipe threads and wrap with sealing tape before installation.

10.		Two elbows (10) and (18)	Install on fuel pump (19).
11.		Adapter (17)	Install on elbow (18).
12.		Fuel shutoff valve (11)	Install on elbow (10).
13.		Adapter (12)	Install on fuel shutoff valve (11).
14.		Fuel pump mounting bracket (9)	Install on left hand splash panel (8) with two screws (3), washer (1), electrical wire clip (4), washer (2), and two new locknuts (7).
15.		Hose (14)	Install on adapter (12) with nut (13).
16.		Hose (15)	Install on adapter (17) with nut (16).
17.		Two wires (5) and (6)	Connect.

11-23. PERSONNEL HEATER FUEL PUMP REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Connect battery wound cable (para. 4-25).

## 11-24. PERSONNEL HEATER FUEL SHUTOFF VALVE REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		Diesel fuel is flammable. Do not perform this procedure near open flame.
<u>Materials/Parts</u>		
Sealing tape (Appendix D, Item 26) Cap and plug set (Appendix D, Item 5)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### WARNING

Diesel fuel is flammable. Do not perform fuel system procedures near open flame. Injury to personnel may result.

#### a. Removal

### CAUTION

Cap or plug all openings immediately after disconnecting lines and hoses to prevent contamination. Failure to do so may result in fuel pump damage.

- |                           |                        |                            |
|---------------------------|------------------------|----------------------------|
| 1. Adapter (3)            | Hose (5)               | Loosen nut (4) and remove. |
| 2. Fuel shutoff valve (2) | Adapter (3)            | Remove.                    |
| 3. Elbow (1)              | Fuel shutoff valve (2) | Remove.                    |

#### **b. Installation**

### **NOTE**

Clean all male pipe threads and wrap with sealing tape before installation.

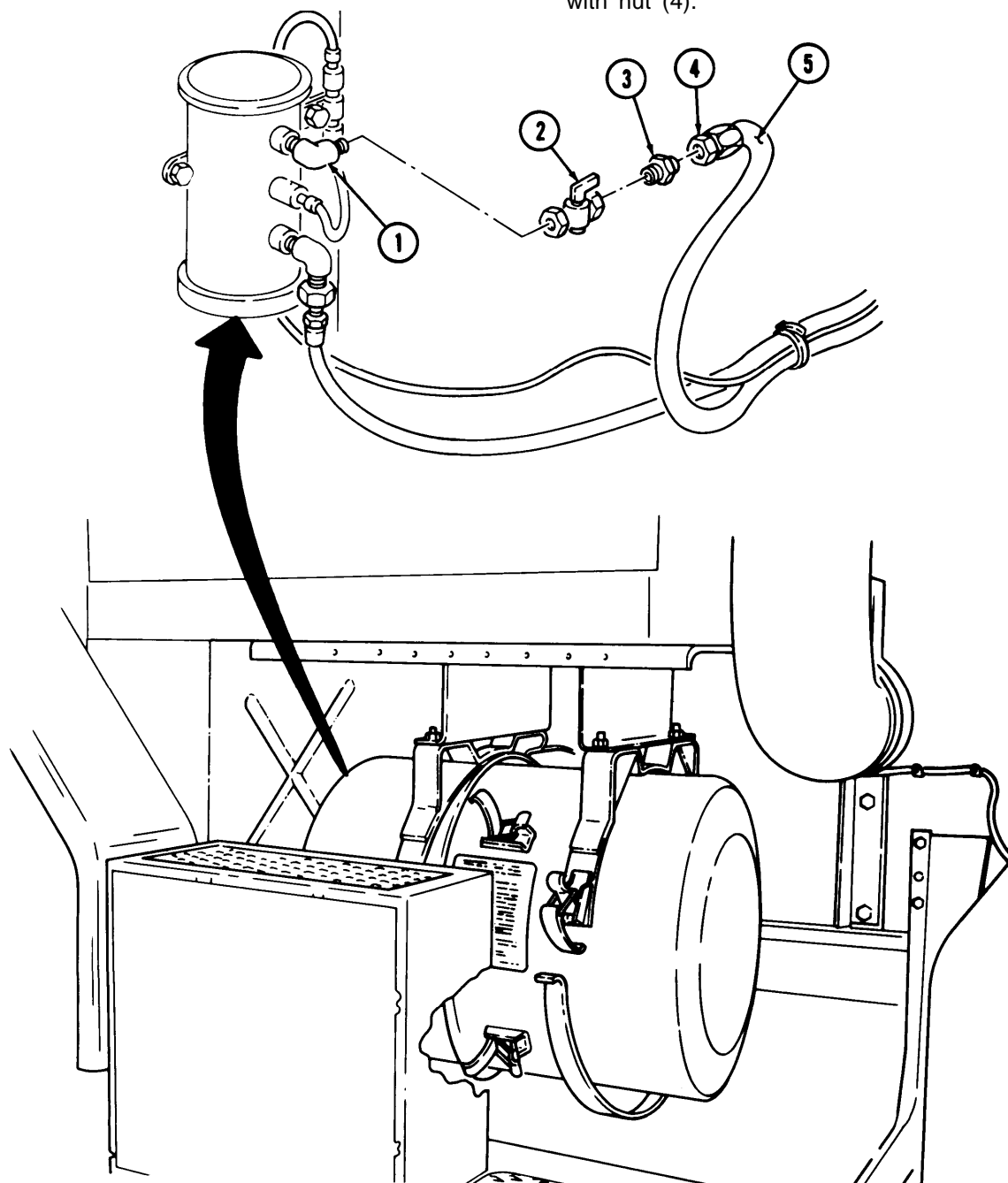
- |    |                        |                       |
|----|------------------------|-----------------------|
| 4. | Fuel shutoff valve (2) | Install on elbow (1). |
|----|------------------------|-----------------------|



# 11-24. PERSONNEL HEATER FUEL SHUTOFF VALVE REPLACEMENT (Cont'd)

S T E P NO.	LOCATION	ITEM	ACTION	REMARKS
----------------	----------	------	--------	---------

- |    |  |             |                                      |  |
|----|--|-------------|--------------------------------------|--|
| 5. |  | Adapter (3) | Install on fuel shutoff valve (2).   |  |
| 6. |  | Hose (5)    | Install on adapter (3) with nut (4). |  |



END OF TASK!

## 11-25. PERSONNEL HEATER CONTROL BOX REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cable disconnected.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Two locknuts Two lockwasher		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

Tag all wires and harnesses for installation.

#### a. Removal

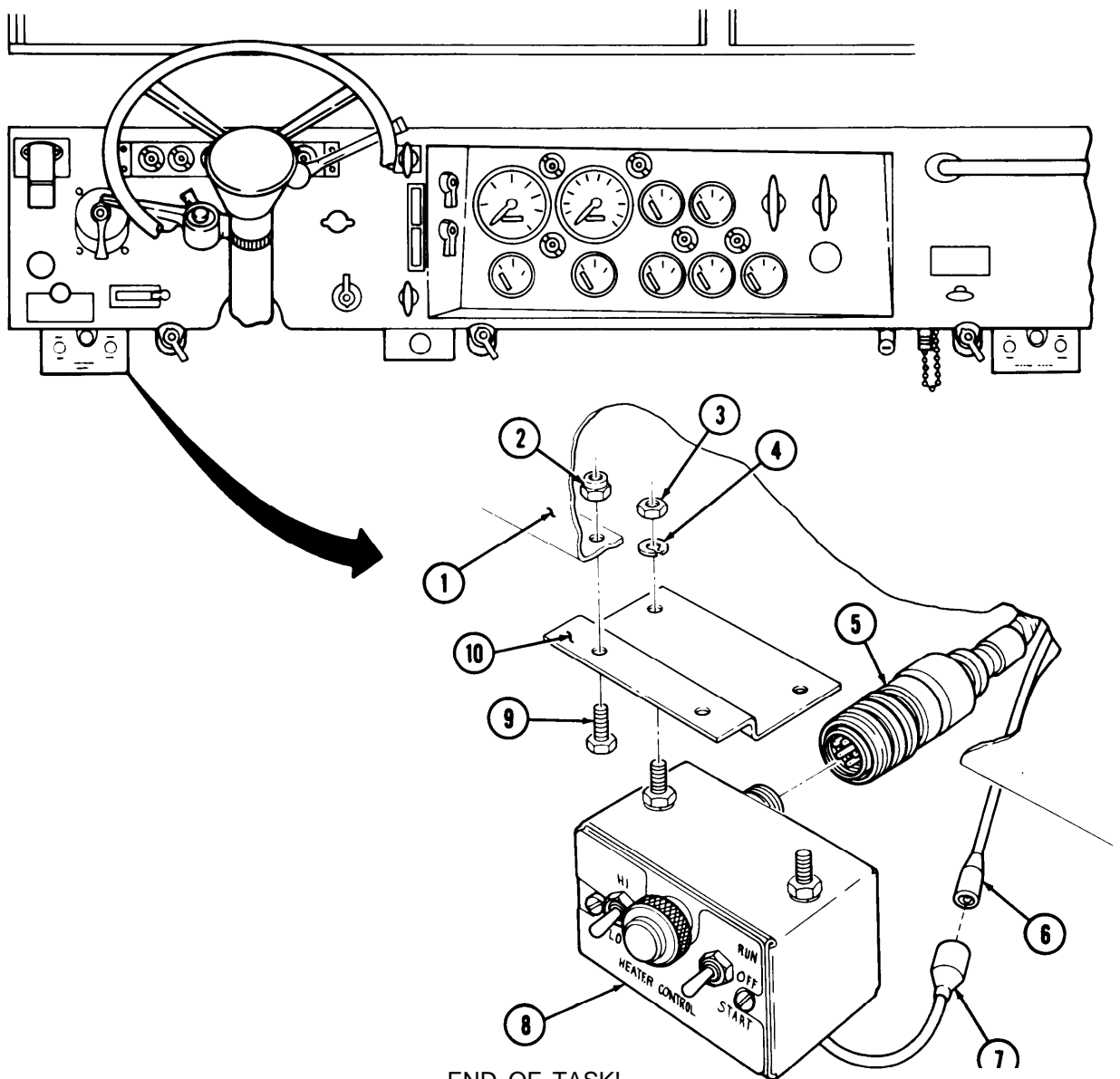
- |                                      |   |             |                         |
|--------------------------------------|---|-------------|-------------------------|
| 1. Personnel heater control box (8)  | Harness connector (5)   | Disconnect. |                         |
| 2.                                   | Two leads (6) and (7)   | Disconnect. |                         |
| 3. Control box mounting bracket (10) | Two nuts (3), lockwashers (4), and control box (8)                  | Remove.     | Discard lockwasher (4). |
| 4. Instrument panel (1)              | Two screws (9), locknuts (2), and control box mounting bracket (10) | Remove.     | Discard locknuts (2).   |

#### b. Installation

- |    |                                   |   |
|----|-----------------------------------|---|
| 5. | Control box mounting bracket (10) | Install on instrument panel (1) with two screws (9) and new locknuts (2). |
|----|-----------------------------------|---|

# 11-25. PERSONNEL HEATER CONTROL BOX REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Control box (8)	Install on control box mounting bracket (10) with two new lockwasher (4) and nuts (3).	
7.		Two leads (6) and (7)	Connect.	
8.		Harness connector (5)	Install on personnel heater control box (8).	



END OF TASK!

FOLLOW-ON TASK: Connect battery ground cable (para. 4-25).

11-26. PERSONNEL HEATER EXHAUST TUBE REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Three locknuts		
Two cotter pins		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

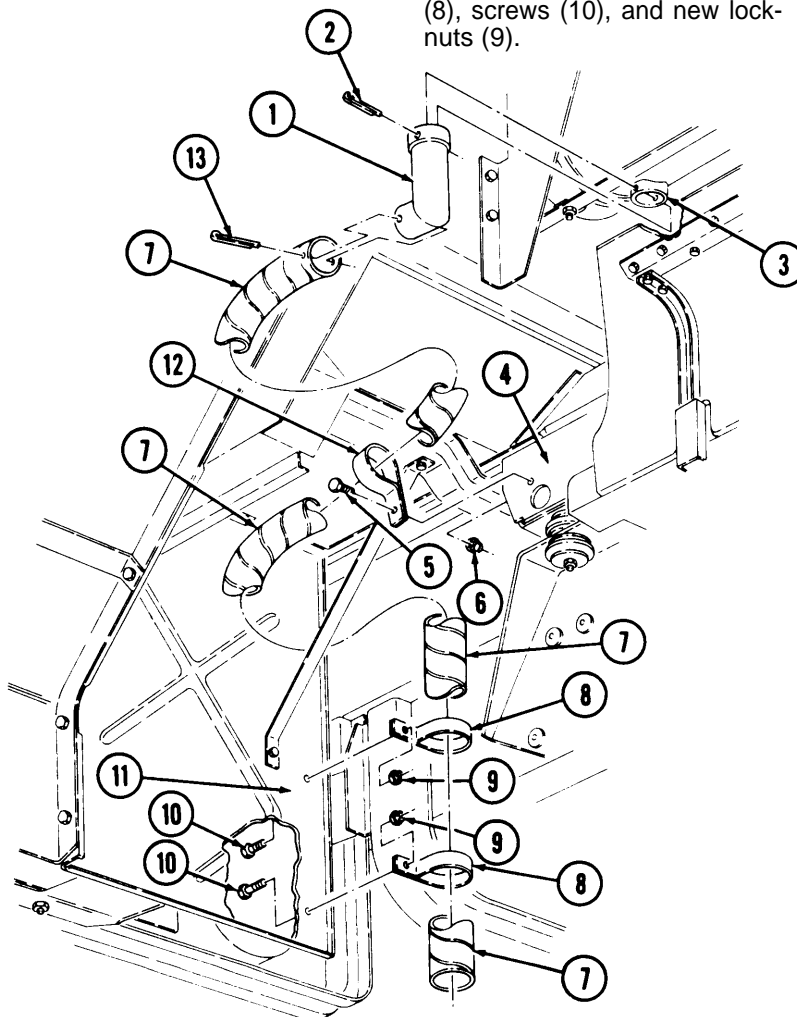
1.	Fuel burning heater exhaust port (3)	Cotter pin (2)	Remove.	Discard cotter pin (2).
2.	Exhaust tube (7)	Elbow (1) and cotter pin (13)	Remove.	Discard cotter pin (13).
3.	Right side cab support channel (4)	Screw (5), locknut (6), clamp (12), and exhaust tube (7)	Remove.	Discard locknut (6).
4.	Right hand splash panel (11)	Exhaust tube (7), two clamps (8), screws (10), and locknuts (9)	Remove.	Discard locknuts (9).

# 11-26. PERSONNEL HEATER EXHAUST TUBE REPLACEMENT (Cont'd)

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

5. Elbow (1) Install on exhaust port (3) with new cotter pin (2).
6. Exhaust tube (7) Install on elbow (1) with new cotter pin (13).
7. Exhaust tube (7) Install on right side cab support channel (4) with clamp (12), screw (5), and new locknut (6).
8. Exhaust tube (7) Install on right side splash panel (11) with two clamps (8), screws (10), and new locknuts (9).



END OF TASK!

11-27. PERSONNEL HEATER WIRING HARNESS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
Test Equipment	TM 9-2320-272-10	Right and left splash shields removed.
None	Para. 4-25	Battery ground-cable disconnected.
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		General Safety Instructions
Lockwasher		None
Locknut		
Eleven tiedown straps (Appendix D, Item 19)		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B (2)		
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

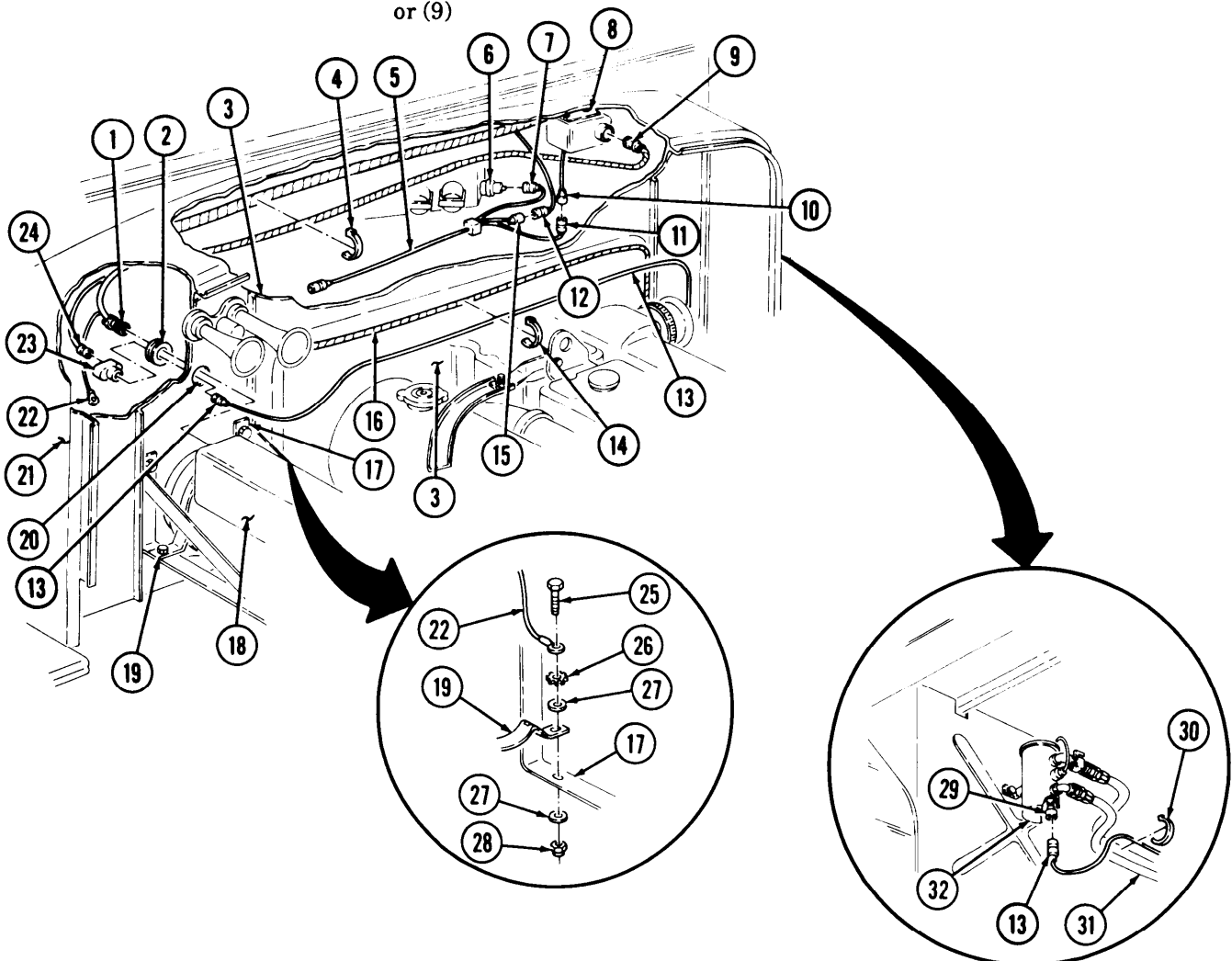
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Fuel burning personnel heater mounting bracket (17) and angle bracket (19)	Screw (25), ground wire (22), lockwasher (26), two washers (27), and locknut (28)	Remove.	Discard lockwasher (26) and locknut (28).
2.	Fuel burning personnel heater (18)	Heater harness connector (1)	Disconnect and push harness (1) into cab through firewall knockout (20).	Remove grommet (2) from firewall knockout (20).
3.	Engine compartment firewall (3)	Four tiedown straps (14)	Remove from fuel pump lead (13) and front harness (16).	Discard tiedown straps (14).
4.	Cab (21)	Two wires (13) and (24) and connector (23)	Disconnect and push fuel pump lead (13) through firewall (3) and into engine compartment.	

# 11-27. PERSONNEL HEATER WIRING HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Fuel pump fuel lines (31)	Three tiedown straps (30)	Remove.	Discard tiedown straps (30).
6.	Fuel pump (32)	Two leads (29) and (13)	Disconnect and remove.	
7.	Heater control box (8)	Harness connector (9) and two wires (10) and (11)	Disconnect.	
8.	Wiring harness (5)	Two wires (12) and (15)	Disconnect.	
9.	cab (21)	Four tiedown straps (4)	Remove from harness (9).	Discard tiedown straps (4).
10.	Battery switch (6)	Wire (7)	Disconnect from pin A and remove wires (5), (7), and (15) from cab (21).	
11.	cab (21)	Heater harness connector (9)	Remove from cab (21).	



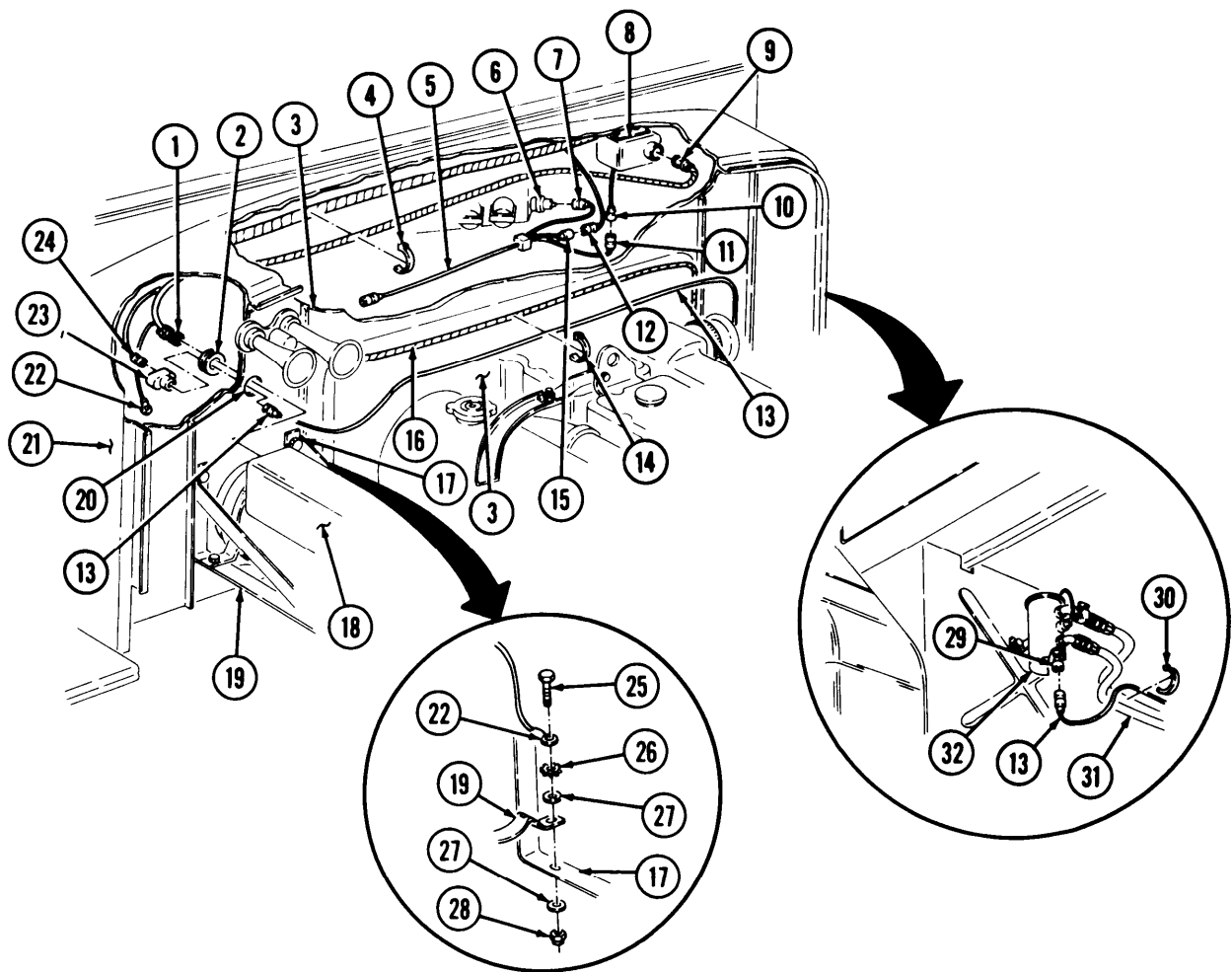
<b>11-27. PERSONNEL HEATER WIRING HARNESS REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
12.		Grommet (2)	Install on heater harness (1).	
13.		Heater harness connector (1)	Push through firewall knockout (20) and into engine compartment and install grommet (2).	
14.		Fuel pump lead (13)	Push through grommet (2), firewall (3), and into cab (21).	
15.		Two wires (13) and (24)	Install on connector (23).	
16.		Heater harness connector (1)	Install on fuel burning personnel heater (18).	
17.		Ground wire (22)	Install on fuel burning personnel heater mounting bracket (17) and angle bracket (19) with screw (25), new locknut (28), two washers (27), and new lockwasher (26).	
18.		Fuel pump lead (13)	Position along front harness (16) and secure with four tie-down straps (14).	
19.		Heater harness connector (9)	Connect to heater control box (8).	
20.			Position along underside of dash panel and secure to wiring harness (5) with four tiedown straps (4).	



11-27. PERSONNEL HEATER WIRING HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
21.		Two wires (12) and (15)	Connect	
22.		Two wires (10) and (11)	Connect.	
23.		Wire (7)	Install on battery switch (6) pin A	
24.		Fuel pump lead (13)	Connect to lead (29) on fuel pump (32) and secure on fuel pump fuel lines (31) with three new tiedown straps (30).	



END OF TASK!

FOLLOW-ON TASK: • Connect battery ground cable (para. 4-25).  
• Install left and right splash shields (TM 9-2320-272-10).



### Section III. AIR DRYER KIT MAINTENANCE

#### **11-28. GENERAL**

- a. This section provides maintenance procedures assigned to the organizational maintenance level for the Air Dryer Kits. To find a specific maintenance procedure, see the maintenance task summary below.
- b. For fabrication instructions of air lines, refer to TM 9-243.
- c. For schematic representation of air line locations and routing, see Appendix G of this manual.

#### **11-29. AIR DRYER KIT MAINTENANCE TASK SUMMARY**

<b>TASK PARA.</b>	<b>PROCEDURES</b>	<b>PAGE NO.</b>
11-30.	Air Dryer Kit Replacement (M923, M924, M925, M926, M927, M928, M934)	11-88
11-31.	Air Dryer Kit Replacement (M929, M930, M931, M932, M936)	11-104

11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934)

This task covers:		
a. Removal		b. Installation
INITIAL SETUP:	Equipment Condition Reference	Condition Description
Applicable Models		
M923, M924, M925, M926, M927, M928, M934	TM 9-2320-272-10 TM 9-2320-272-10 Para. 4-25	Parking brake set. Air reservoirs drained. Battery ground cables disconnected.
Test Equipment		Special Environmental Conditions
None		None
Special Tools		General Safety Instructions
None		None
Materials/Parts		
Nine locknuts (M923, M924, M925, M926) Two lockwasher One capnut Ten locknuts (M927, M928, M934) Five tiedown straps (Appendix D, Item 18) (M923, M924, M925, M926) Seven tiedown straps (Appendix D, Item 18) (M927, M928, M934) Sealing tape (Appendix D, Item 26)		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B		
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

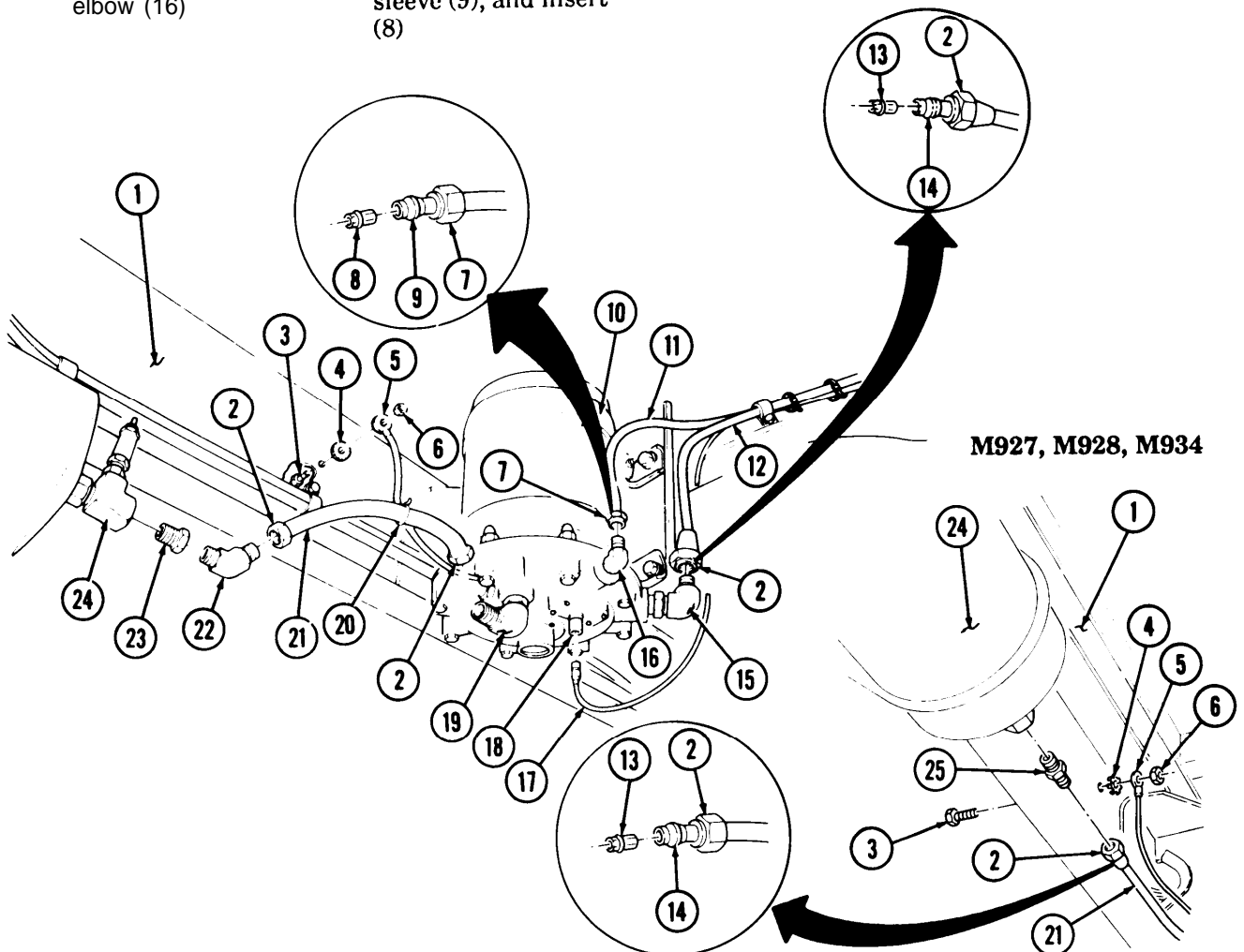
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Air dryer (10)	Wire (17)	Disconnect from thermo-stat connector (18).	
NOTE				
Perform steps 2, 3, and 4 for cargo trucks M923, M924, M925, and M926.				
2.	Elbow (22)	Tube (21), nut (2), sleeve (14), and insert (13)	Remove.	
3.	Bushing (23)	Elbow (22)	Remove.	
4.	Wet reservoir adapter (24)	Bushing (23)	Remove.	
NOTE				
Perform steps 5 and 6 for cargo trucks with XLWB M927, M928, and expansible van M934.				
5.	Adapter (25)	Tube (21), nut (2), sleeve (14), and insert (13)	Remove.	

**11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)**

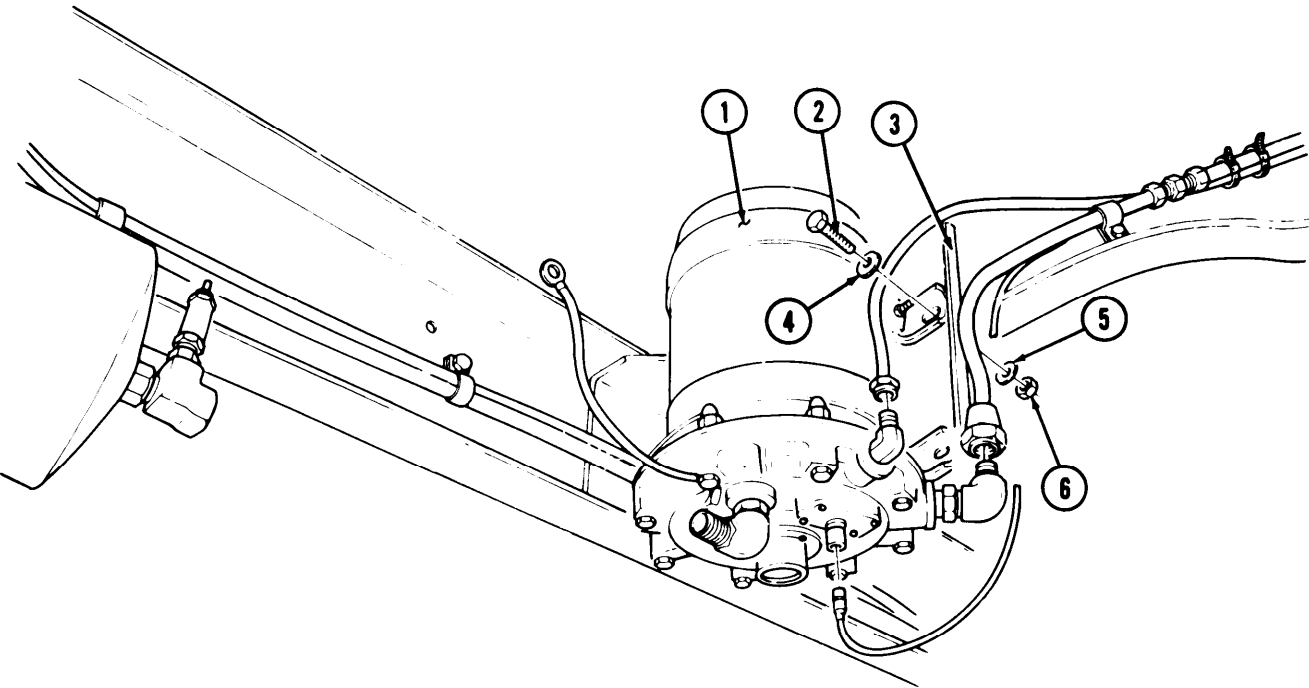
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Wet reservoir adapter (24)	Adapter (25)	Remove.	
7.	Outlet port elbow (19)	Tube (21), nut (2), sleeve (14), and insert (13)	Remove.	
8.	Tube (21) and ground wire (5)	Tiedown strap (20)	Cut and remove.	Discard tiedown strap (20).
9.	Right-hand frame rail (1)	Locknut (6), lockwasher (4), screw (3), and ground wire (5)	Remove?	Discard lockwasher (4) and locknut (6).
10.	Air dryer inlet port elbow (15)	Nut (2), tube (12), sleeve (14), and insert (13)	Remove.	
11.	Air dryer control port elbow (16)	Nut (7), line (11), sleeve (9), and insert (8)	Remove.	



11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934] (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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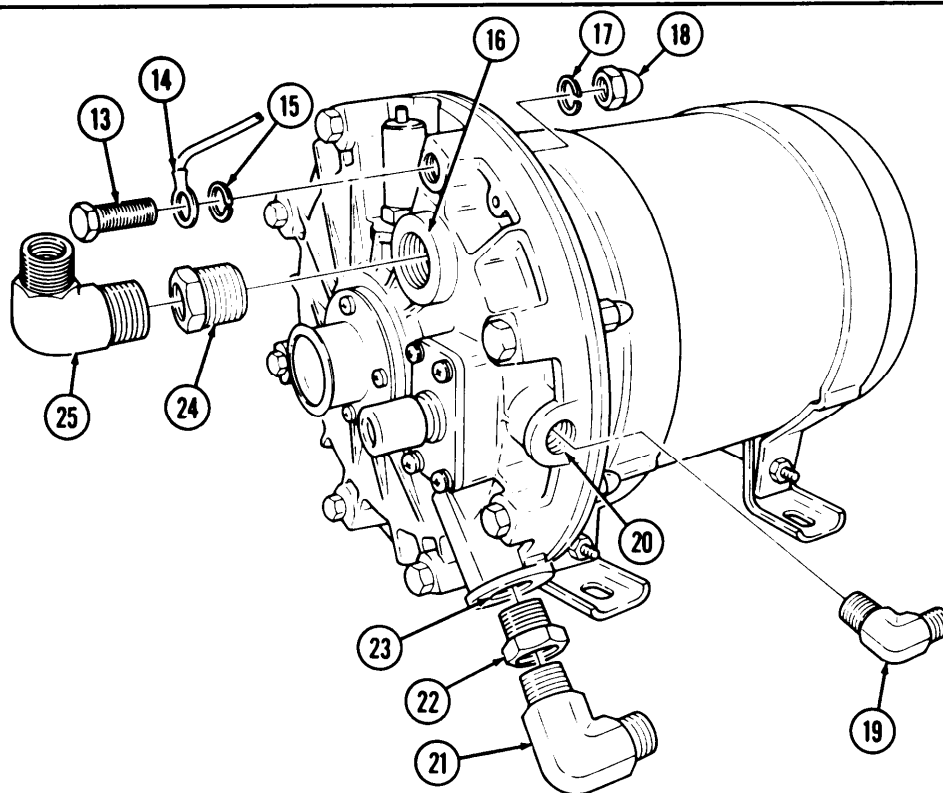
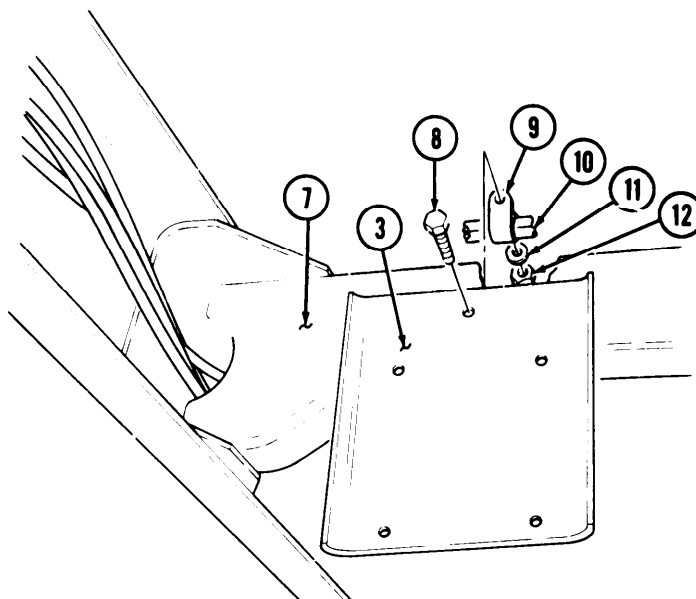
12.	Air dryer (1) and mounting bracket (3)	Four screws (2), lock-nuts (6), and eight washers (4) and (5)	Remove.	Discard locknuts (6).
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13.	Frame crossmember (7)	Three screws (8), lock-nuts (12), washers (11), clamp (9), mounting bracket (3), and two airlines (10).	Remove.	Discard locknuts (12).
14.	Air dryer (1)	Screw (13), ground wire (14), washer (15), lockwasher (17), and capnut ( 18)	Remove.	Discard capnut (18) and lockwasher (17).
15.	Bushing (24)	Outlet port elbow (25)	Remove.	
16.	Air dryer outlet port (16)	Bushing (24)	Remove.	
17.	Bushing (22)	Inlet port elbow (21)	Remove.	
18.	Air dryer inlet port (23)	Bushing (22)	Remove.	
19.	Air dryer control port (20)	Control port elbow (19)	Remove.	

11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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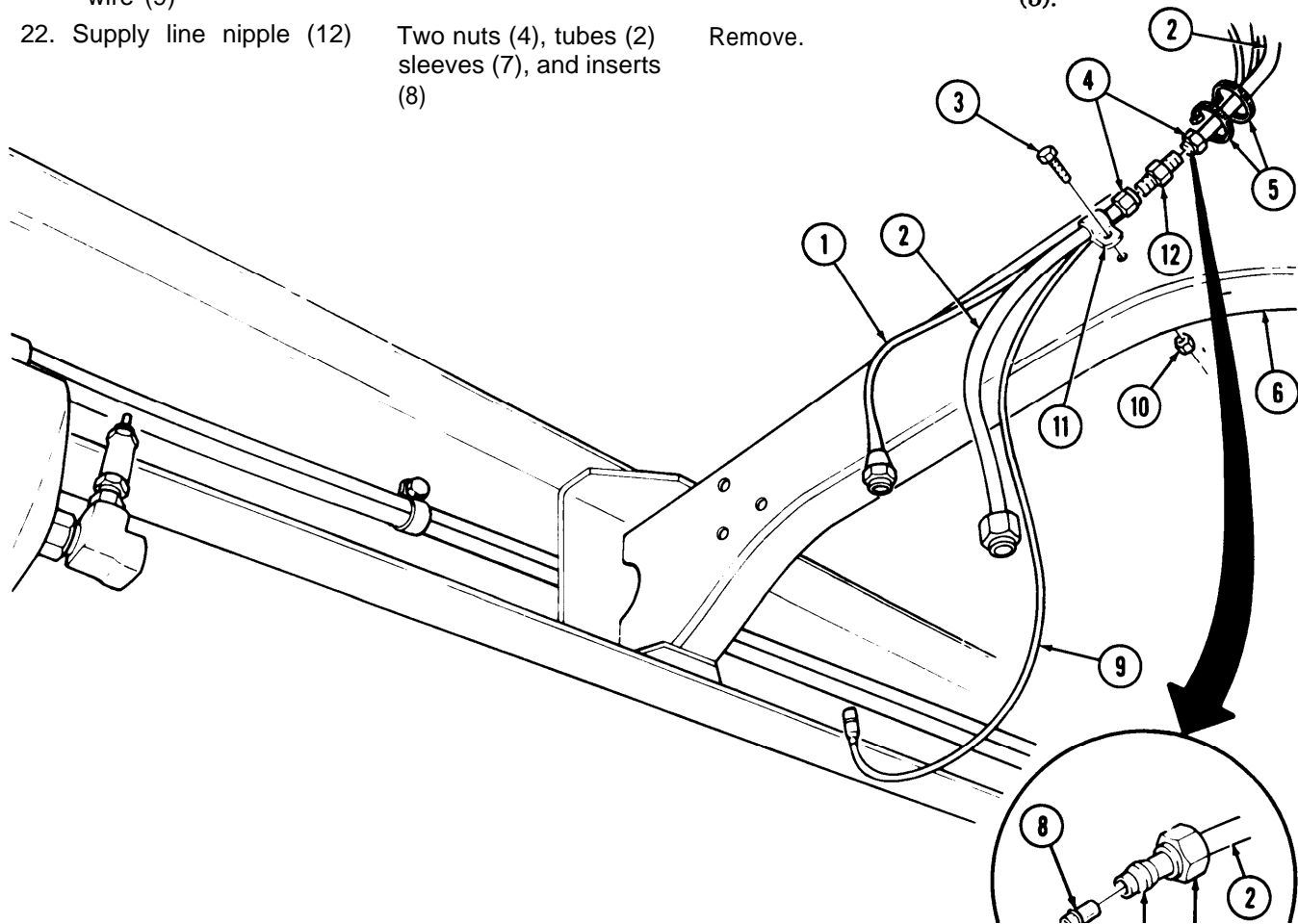
11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934] (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Perform steps 20 through 22 for cargo trucks M923, M924, M925, and M926.

20. Frame crossmember (6)	Screw (3), clamp (11), wire (9), tube (2), and locknut (10)	Remove.	Discard locknut (10).
21. Tube (2), line (1), and wire (9)	Two tiedown straps (5)	Cut and remove.	Discard tiedown straps (5).
22. Supply line nipple (12)	Two nuts (4), tubes (2) sleeves (7), and inserts (8)	Remove.	



NOTE

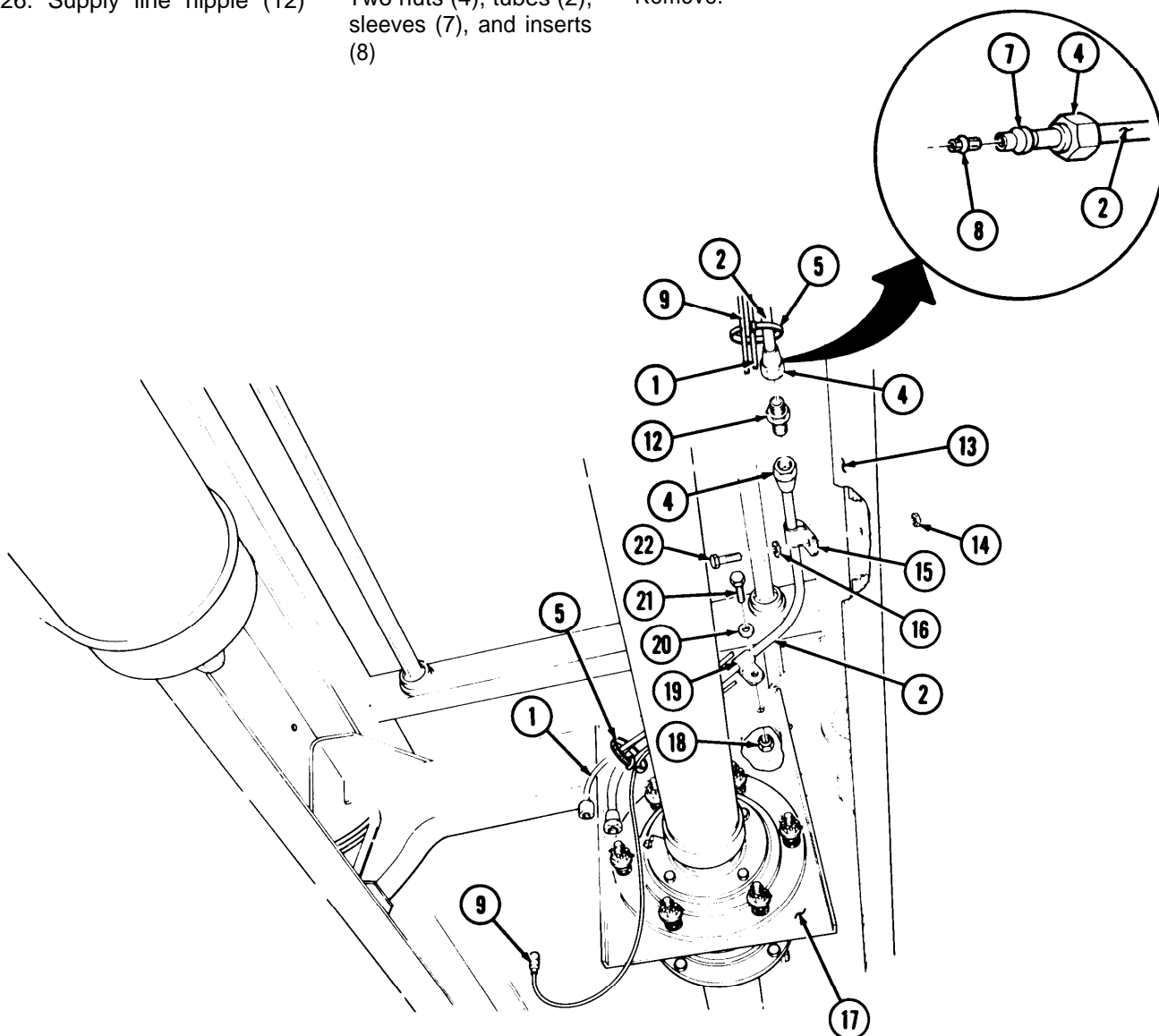
Perform steps 23 through 25 for cargo truck with XLWB M927 M928 and expansible van M934

23. Center bearing mounting bracket (17)	Screw (21), washer (20), clamp (19), tube (2), and locknut (18).	Remove.	Discard locknut (18).
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**11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
24.	Left-hand frame rail (13)	Locknut (14), screw (22), washer (16), clamp (15), and tube (2)	Remove.	Discard locknut (14).
25.	Tube (2), line (1), and wire (9)	Four tiedown straps (5)	Cut and remove.	Discard tiedown straps (5).
26.	Supply line nipple (12)	Two nuts (4), tubes (2), sleeves (7), and inserts (8)	Remove.	

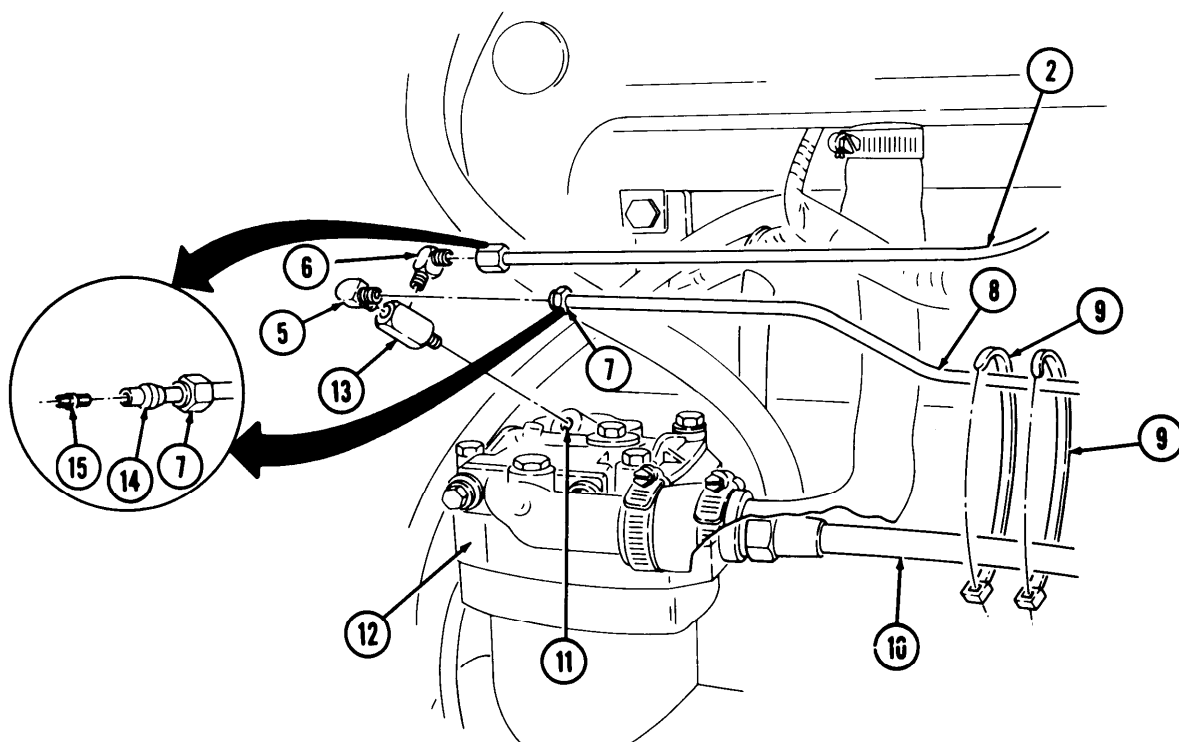
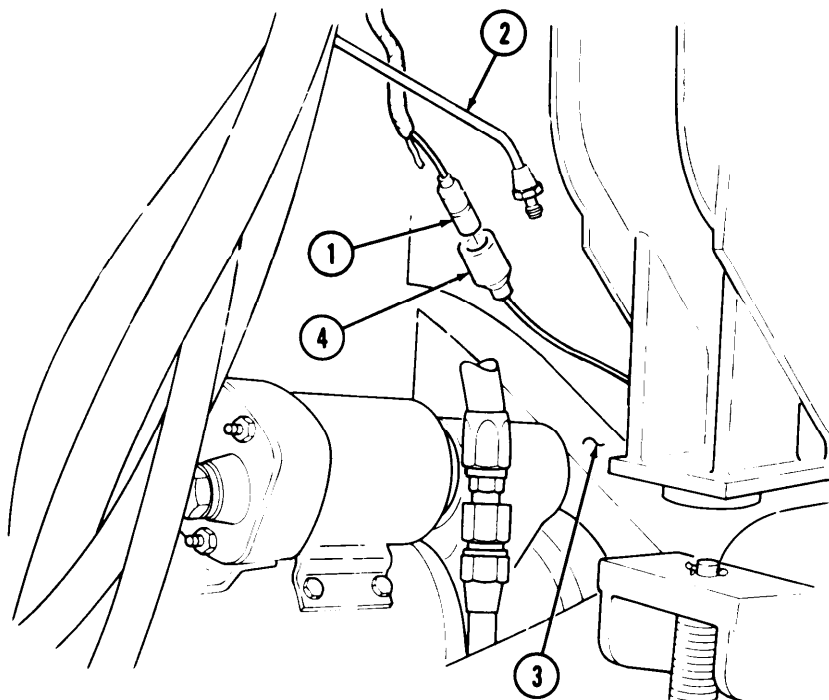


**11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
27.	Frame crossmember (3)	Two wires (1) and (4)	Disconnect.	
28.	Air compressor discharge line (10j and supply line (8)	Two tiedown straps (9)	Cut and remove.	Discard tiedown straps (9).
29.	Elbow (5)	Nut (7), line (8), sleeve (14), and insert (15)	Remove.	
30.	Elbow (6)	Nut (7), tube (2), sleeve (14), and insert (15)	Remove.	
31.	Tee (13)	Two elbows (5) and (6)	Remove.	
32.	Air compressor (12) and unloader port (11)	Tee (13)	Remove.	
33.	Frame crossmember (3)	Tube (2)	Remove.	

11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934] (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
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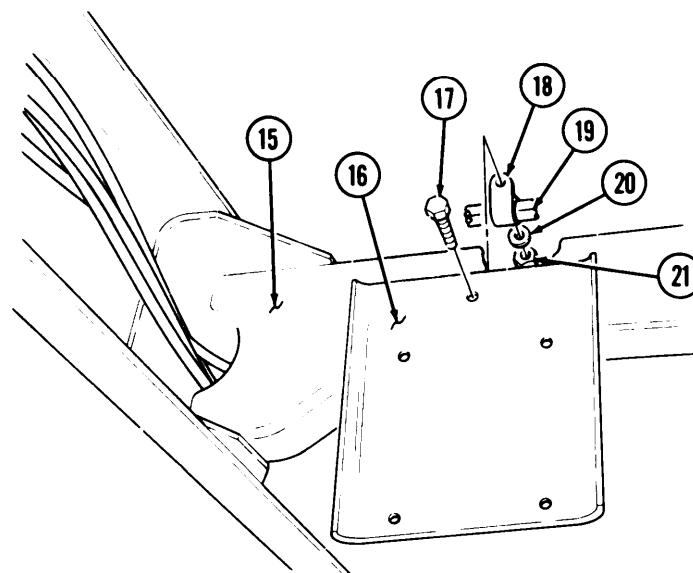
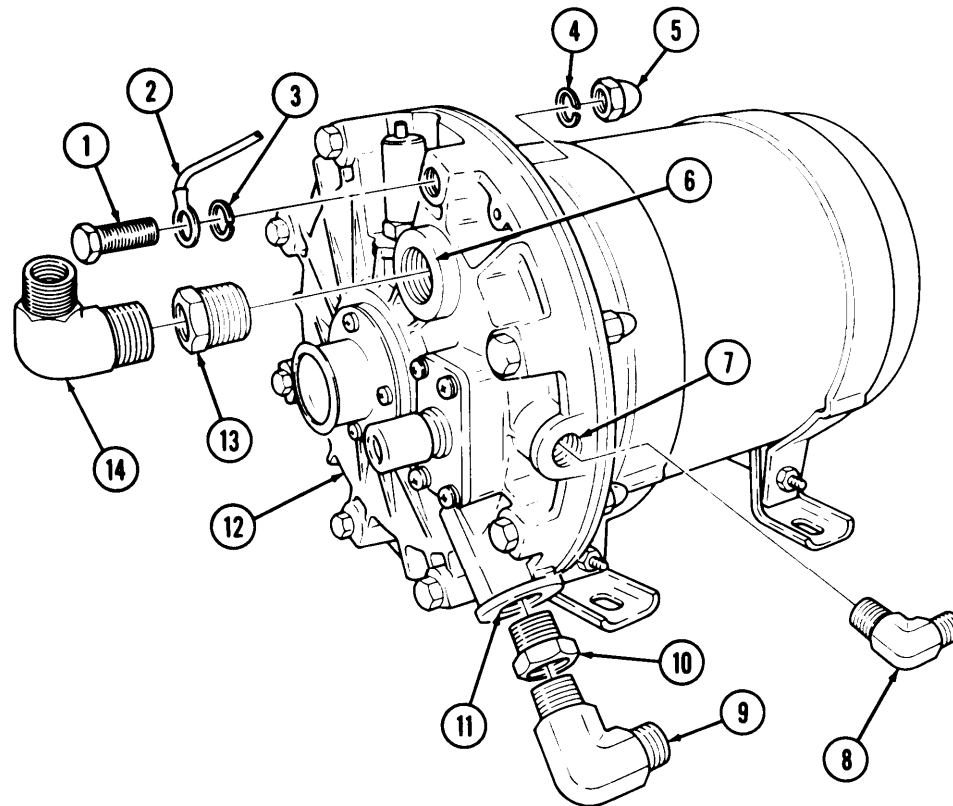
**NOTE**

Clean all male pipe threads and wrap with sealing tape before Installation

34.		<b>Inlet port bushing (10)</b>	Install in inlet port (11).	
35.		<b>Outlet port bushing (13)</b>	Install in outlet port (6).	
36.		<b>Control port elbow (8)</b>	Install in control port (7).	
37.		<b>Inlet port elbow (9)</b>	Install in inlet port bushing (10).	
38.		<b>Outlet port elbow (14)</b>	Install in outlet port bushing (13).	
39.		<b>Ground wire (2)</b>	Install on air dryer (12) with screw (1), washer (3), new lockwasher (4), and new capnut (5).	Tighten capnut (5) 270-330 lb-in.
40.		<b>Mounting bracket (16)</b>	Install on crossmember (15) with clamp (18), two air lines (19), three screws (17), washers (20), and new locknuts (21).	

11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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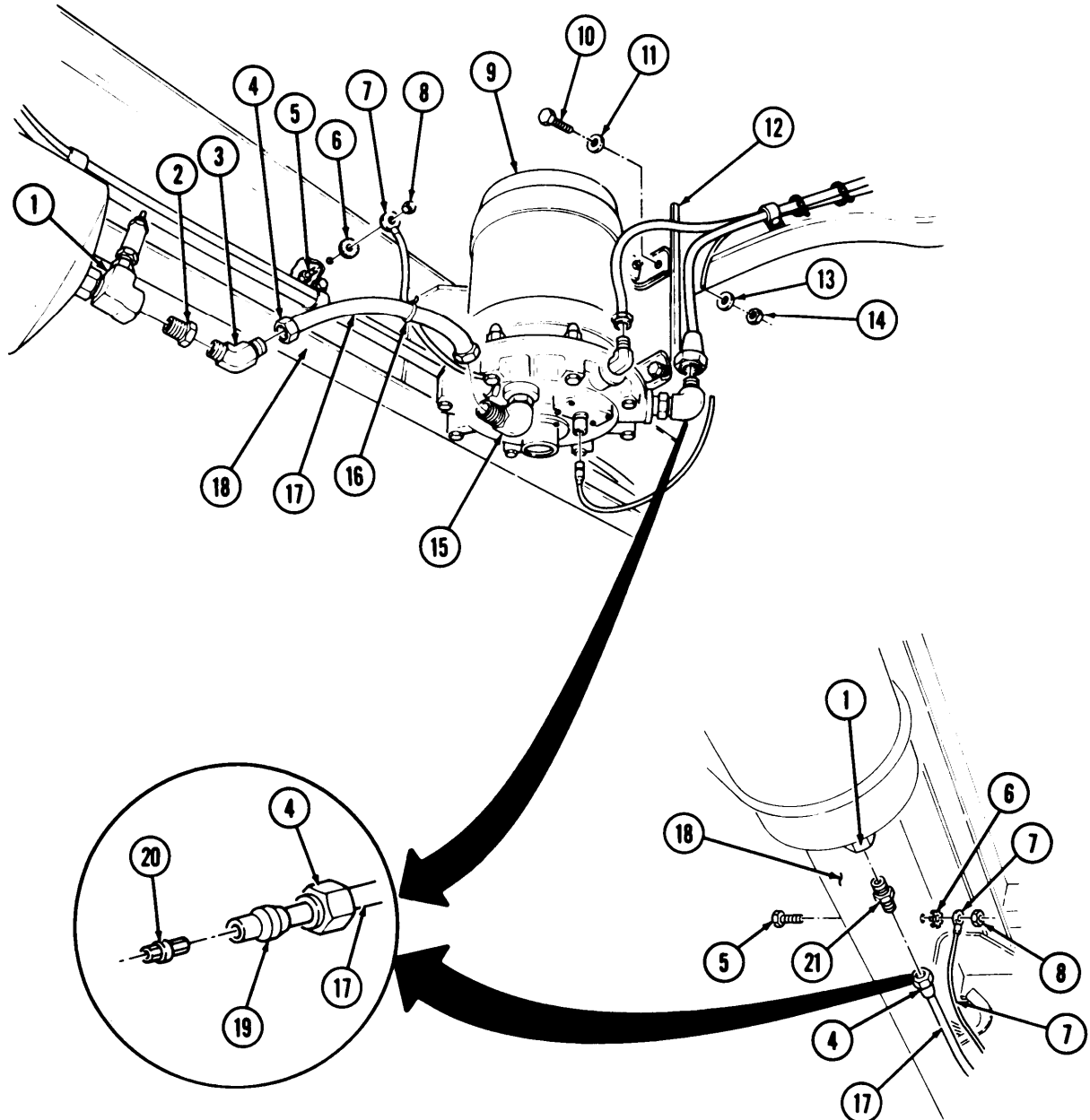


**11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
41.		Air dryer (9)	Install on mounting bracket (12) with four screws (10), washers (11) and (13), and new lock-nuts (14).	
<b>NOTE</b>				
Perform steps 42 through 46 for cargo trucks M923, M924, M925 and M926.				
42.		Bushing (2)	Install on wet reservoir adapter (1).	
43.		Elbow (3)	Install on bushing (2).	
44.		Tube (17)	Install on elbow (3) with nut (4), sleeve (19), and insert (20).	
45.			Install on air dryer outlet port elbow (15) with nut (4), sleeve (19), and insert (20).	
46.		Ground wire (7)	Install on right-hand frame rail (18) with screw (5), new lockwasher (6), and new lock-nut (8).	
<b>NOTE</b>				
Perform steps 47 through 50 for cargo trucks with XLWB M927 and M928 and expansible van M934.				
47.		Adapter (21)	Install on wet reservoir adapter (1).	
46.		Tube (17)	Install on adapter (21) with nut (4), sleeve (19), and insert (20).	
49.			Install on air dryer outlet port elbow (15) with nut (4), sleeve (19), and insert (20).	
50.		Ground wire (7)	Install on right-hand flame rail (18) with screw (5), new lockwasher (6), and new locknut (8).	
51.		Tiedown strap (16)	Install on ground wire (7) and tube (17).	

11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd]

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)**

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

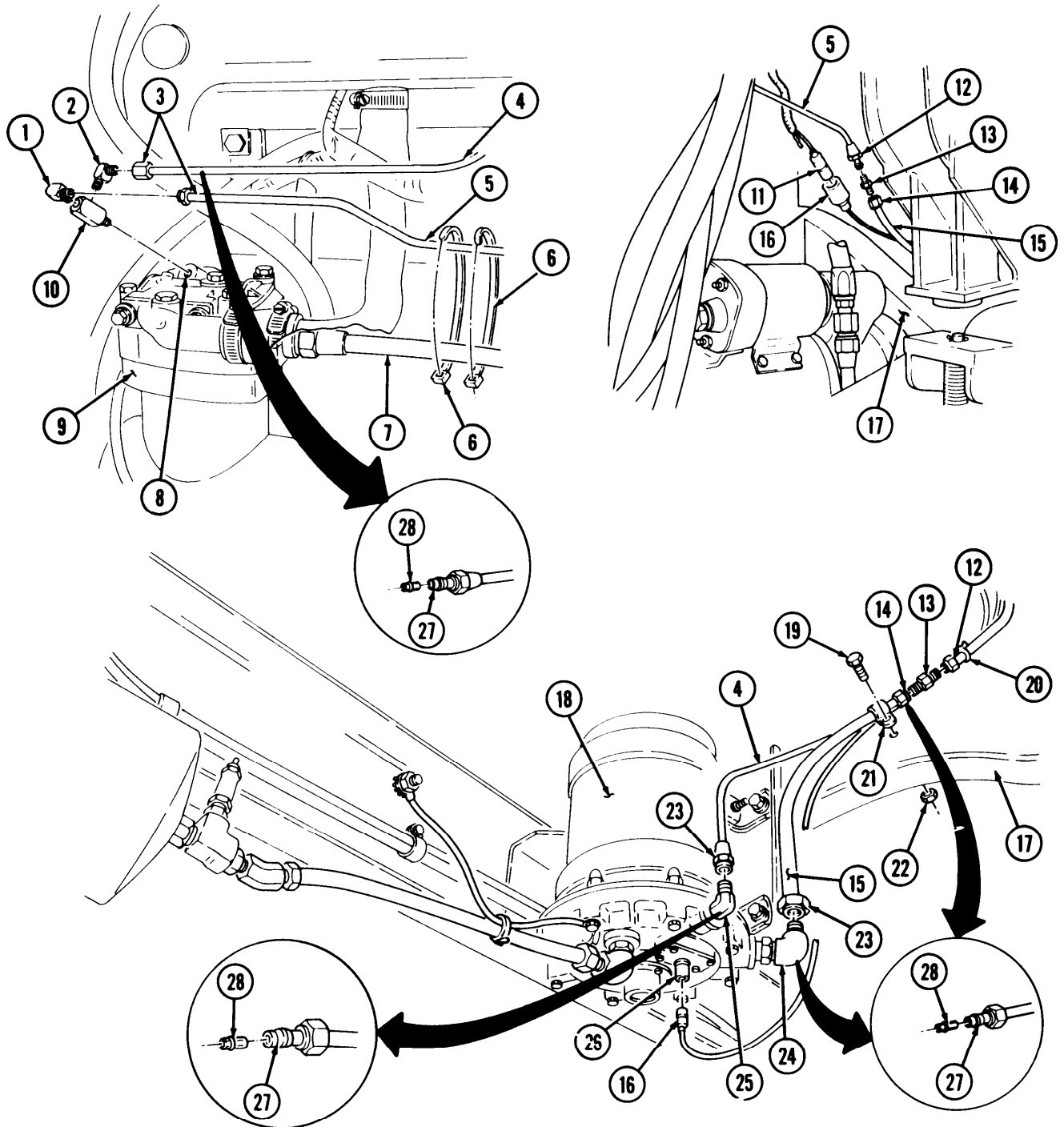
Perform steps 52 through 63 for cargo trucks M923, M924, M925, and M926.

52.		Line (5) and tube (4)	Route from air compressor (9) over crossmember (17) to air dryer (18).
53.		Tee (10)	Install on air compressor unloader port (8).
54.		Two elbows (1) and (2)	Install on tee (10).
55.		Line (5)	Install on elbow (1) with nut (3), sleeve (27), and insert (28).
56.		Tube (4)	Install on elbow (2) with nut (3), sleeve (27), and insert (28).
57.		Line (5)	Secure to air compressor discharge line (7) with two tiedown straps (6).
58.		Supply line nipple (13)	Connect two tubes (5) and (15) with nuts (12) and (14).
59.		Tube (4)	Install on elbow (25) with nut (23), sleeve (27), and insert (28).
60.		Line (15)	Install on elbow (24) with nut (23), sleeve (27), and insert (28).
61.		Wire (16)	Install at connector assembly (11) and route to thermostat connector (26) and install.
62.		Clamp (21)	Place on tube (15), wire (16) and install on crossmember (17) with screw (19) and new locknut (22).
63.		Two tiedown straps (20)	Install on tube (15), line (4), and wire (16).



11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<p style="text-align: center;"><b>NOTE</b></p> <p>Perform steps 64 through 76 for cargo trucks with XLWB M927 and expansible van M934.</p>				
64.		Line (5) and tube (4)	Route from air compressor (9) over crossmember (17) to air dryer (32).	
65.		Tee (10)	Install on air compressor unloader port (8).	
66.		Two elbows (1) and (2)	Install on tee (10).	
67.		Line (5)	Install on elbow (1) with nut (3), sleeve (33), and insert (34).	
68.		Tube (4)	Install on elbow (2) with nut (3), sleeve (33), and insert (34).	
69.		Line (5)	Secure to air compressor discharge line (7) with two tiedown straps (6).	
70.		Supply line nipple (13)	Connect two tubes (5) and (15) with nuts (12) and (14).	
71.		Tube (4)	Install on elbow (25) with nut (3), sleeve (33), and insert (34).	
72.		Line (15)	Install on elbow (26) with nut (3), sleeve (33), and insert (34).	
73.		Wire (16)	Install at connector assembly (11) and route to thermostat connector (27) and install.	
74.		Line (15)	Install on center bearing mounting bracket (24) with clamp (28), screw (30), washer (29), and new locknut (23).	
75.			Install on left-hand frame rail (19) with clamp (21), screw (32), washer (22), and new locknut (20).	
76.		Line (4) and wire (16)	Secure to tube (15) with four new tiedown straps (18).	

# 11-30. AIR DRYER KIT REPLACEMENT (M923, M924, M925, M926, M927, M928, M934) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS

END OF TASK!

- FOLLOW-ON TASKS:
- Connect battery ground cables (para. 4-25).
  - Start engine and allow air system to reach normal operating pressure and check air system for leaks (TM 9-2320-272-10).

11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936)

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
M929, M930, M931, M932, M936	TM 9-2320-272-10	Parking brake set.
Test Equipment	TM 9-2320-272-10	Air reservoirs drained.
None	Para. 10-42	Fifth wheel deck plate removed (M931, M932 only).
Special Tools	Para. 4-25	Battery ground cables disconnected.
None		Special Environmental Conditions
Material/Parts		None
Nine locknuts (M929, M930, M931, and M932)		General Safety Instructions
Six locknuts (M936)		None
Three lockwasher		
Sealing tape (Appendix D, Item 26)		
Seven tiedown straps (Appendix D, Item 18)		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B		
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
a. Removal				
1.	Air dryer (12)	Wire (13)	Disconnect from thermostat connector (14).	
NOTE				
Perform steps 2,3, and 4 for trucks M929, M930, M931, and M932.				
2.	Elbow (6)	Nut (9), tube (8), sleeve (20), and insert (21)	Remove.	
3.	Wet reservoir (10)	Elbow (6)	Remove.	
4.	Tube (8) and ground wire (1)	Tiedown strap (7)	Remove.	Discard tiedown strap (7).
NOTE				
Perform steps 5, 6, and 7 for medium wrecker M936.				
5.	Wet reservoir adapter (17)	Tube (19), nut (18), sleeve (20) and insert (21)	Remove.	

# 11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Wet reservoir (10)	Wet reservoir adapter (17)	Remove.	
7.	Tube (19) and winch hydraulic line (16)	Three tiedown straps (15)	Remove.	Discard tiedown straps (15).
8.	Right hand frame rail (11)	Locknut (5), screw (2), clamp (4), ground wire (1), and lockwasher (3)	Remove.	Discard lockwasher (3) and locknut (5).

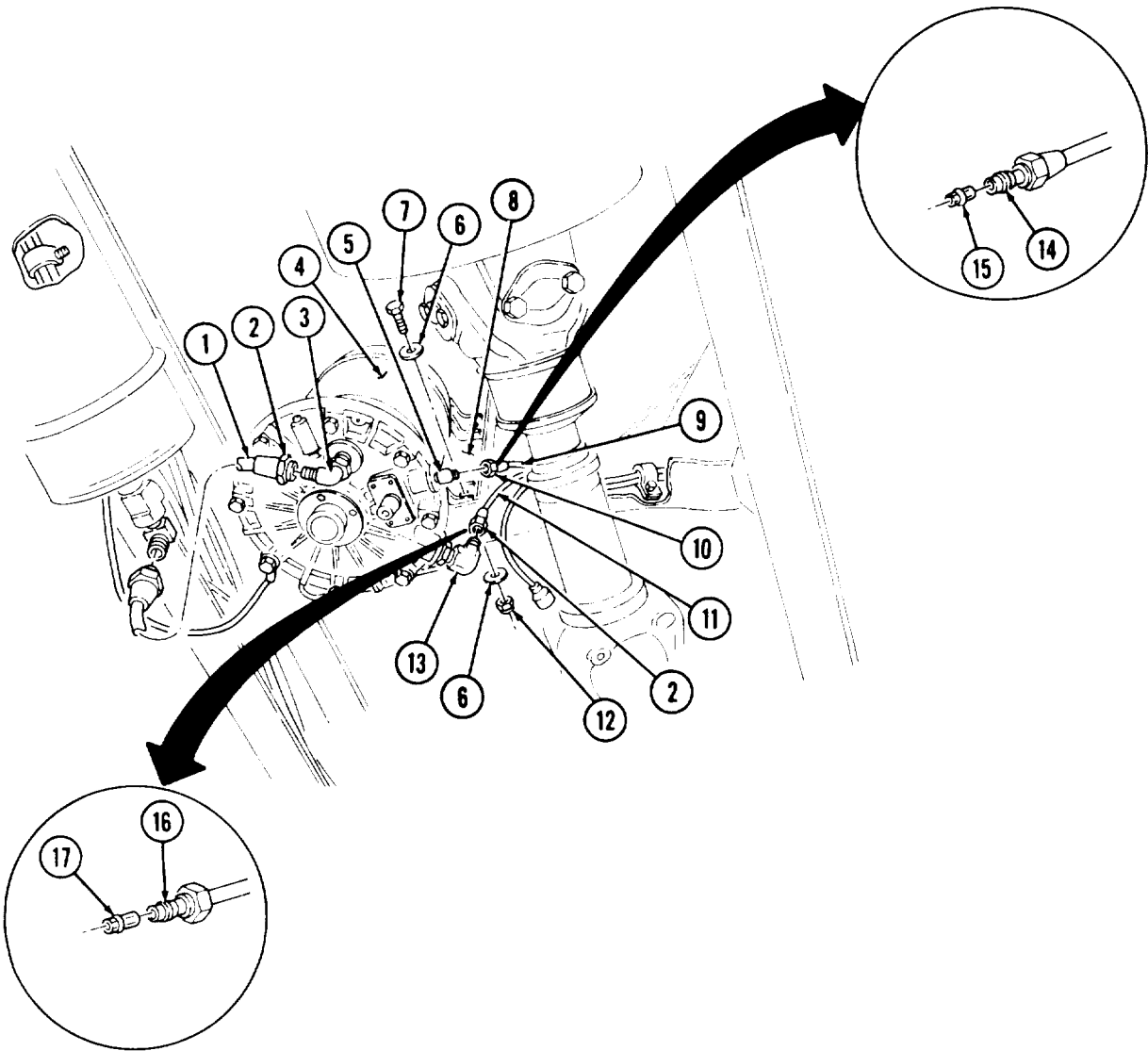
**M936**

**M936**

11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)

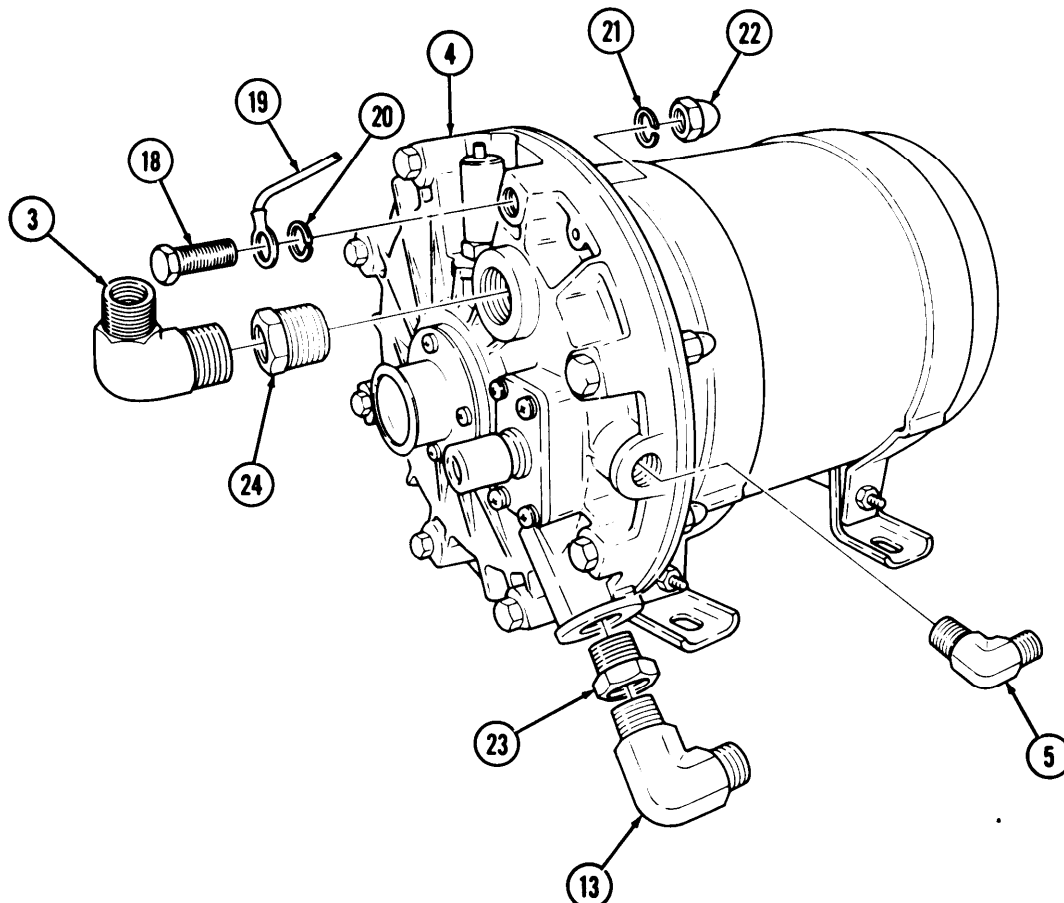
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.	Air dryer outlet port elbow (3)	Nut (2), tube (1), sleeve (16), and insert (17)	Remove.	
10.	Air dryer inlet port elbow (13)	Nut (2), tube (11), sleeve (16) and insert (17)	Remove.	
11.	Air dryer control port elbow (5)	Nut (10), tube (9), sleeve (14), and insert (15)	Remove.	
12.	Air dryer mounting bracket (8)	Four screws (7), eight washers (6), four locknuts (12), and air dryer (4)	Remove.	Discard locknuts (12).



# 11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931 , M932 M936 (Cont'd

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.	Air dryer outlet port bushing (24)	Outlet port elbow (3)	Remove.	
14.	Air dryer (4)	Outlet port bushing (24)	Remove.	
15.	Air dryer inlet port bushing (23)	Inlet port elbow (13)	Remove.	
16.	Air dryer (4)	Inlet port bushing (23)	Remove.	
17.		Control port elbow (5)	Remove.	
18.		Screw (18), ground wire (19), lockwasher (20) and (21), and capnut (22)	Remove.	Discard lockwasher (20) and (21).



11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) [Cont'd]

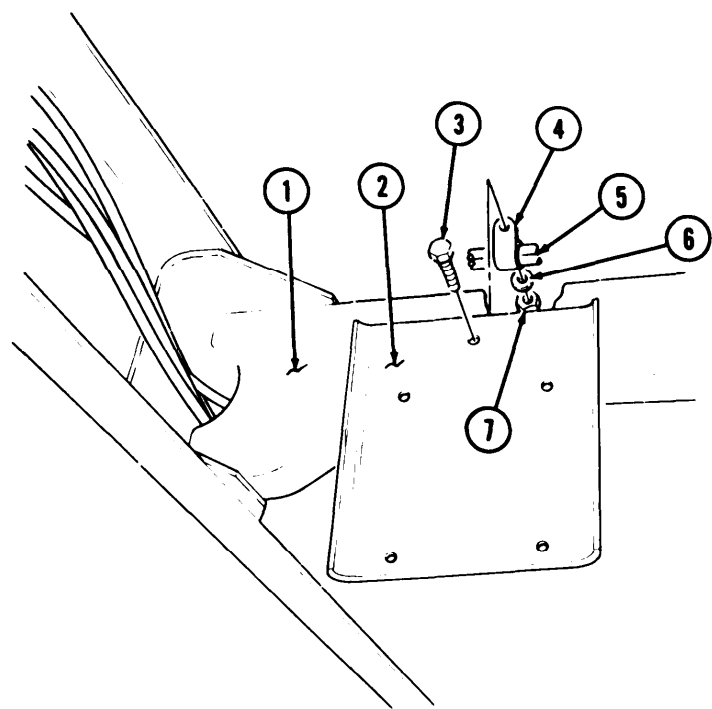
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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19. Frame crossmember (1) Two wires (16) Disconnect.

NOTE

Perform steps 20 through 23 for trucks M929, M930, M931, and M932.

20. Frame crossmember (1) Three screws (3), washers (6), locknuts (7), clamp (4), two air lines (5), and mounting bracket (2). Remove. Discard locknuts (7).



21. Two tiedown straps (8) Remove. Discard tiedown straps (8).

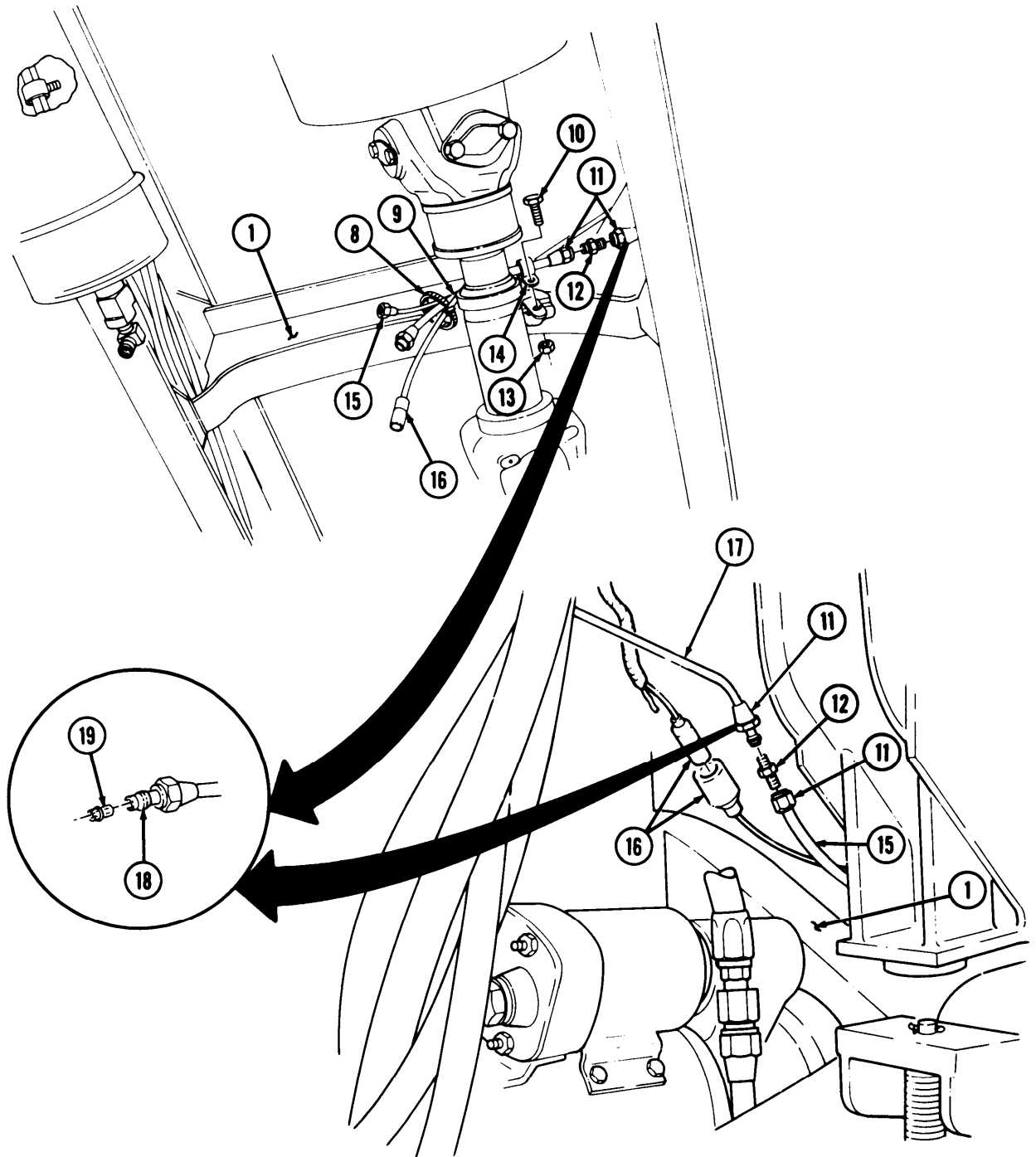
22. Frame crossmember (1) Locknut (13), screw (10), tube (15), clamp (14), wire (16), and line (9) Remove. Discard locknut (13).

23. Supply line nipple (12) Two nuts (11), tubes (15) and (17), sleeves (18), and inserts (19) Remove.



# 11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

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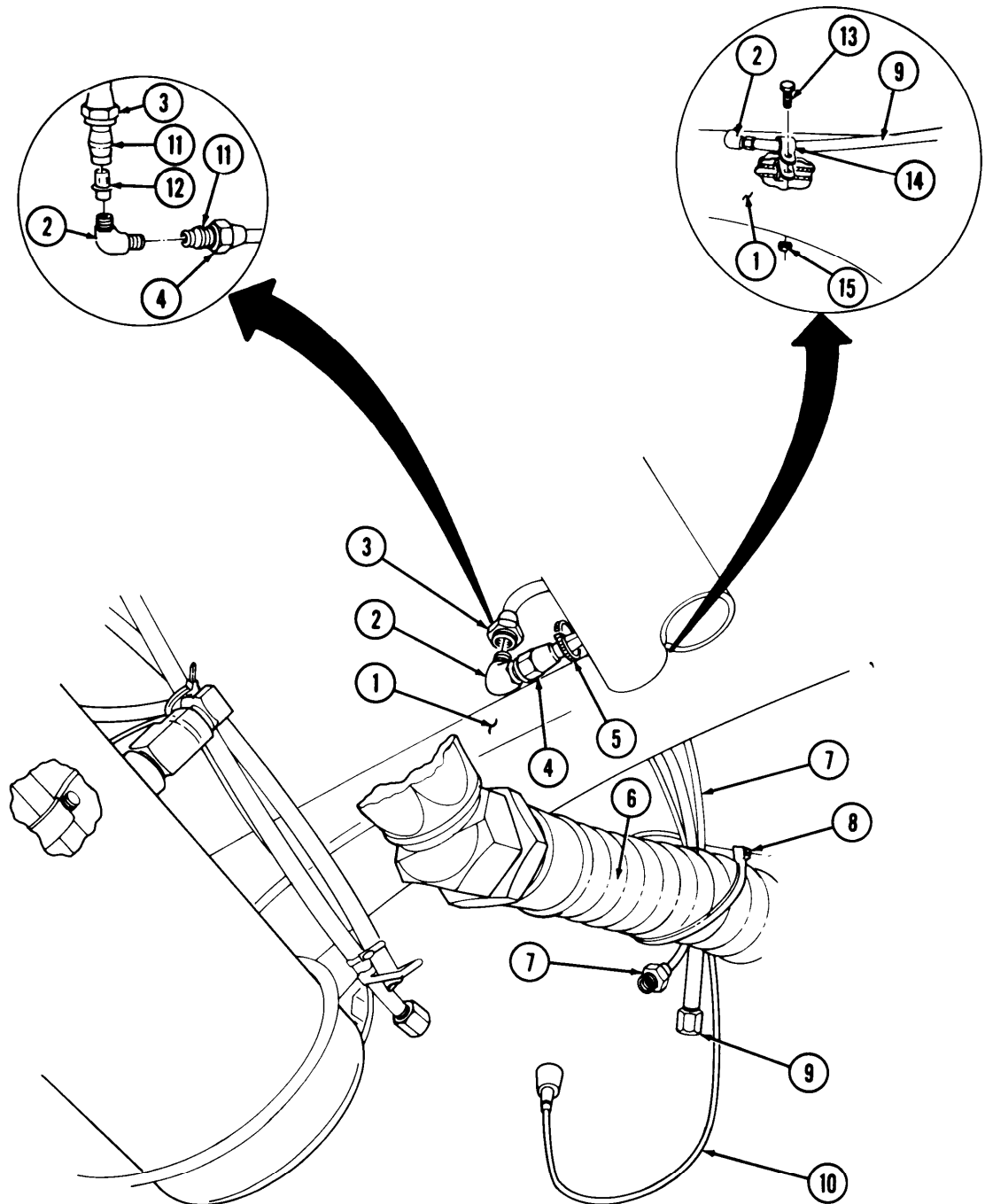
**NOTE**

Perform steps 24 through 27 for medium wrecker M936.

24.	Frame crossmember (1)	Four tiedown straps (5)	Remove.	Discard tiedown straps (5).
25.	Hydraulic hose (6), line (9), tube (7), and wire (10)	Tiedown strap (8)	Remove.	Discard tiedown <b>strap</b> (8).
26.	Elbow (2)	Two nuts (3) and (4), tube (7), line (9), sleeves (11), and inserts (12).	Remove.	
27.	Frame crossmember (1)	Locknut (15), screw (13), clamp (14), and line (9)	Remove.	Discard locknut (15).

**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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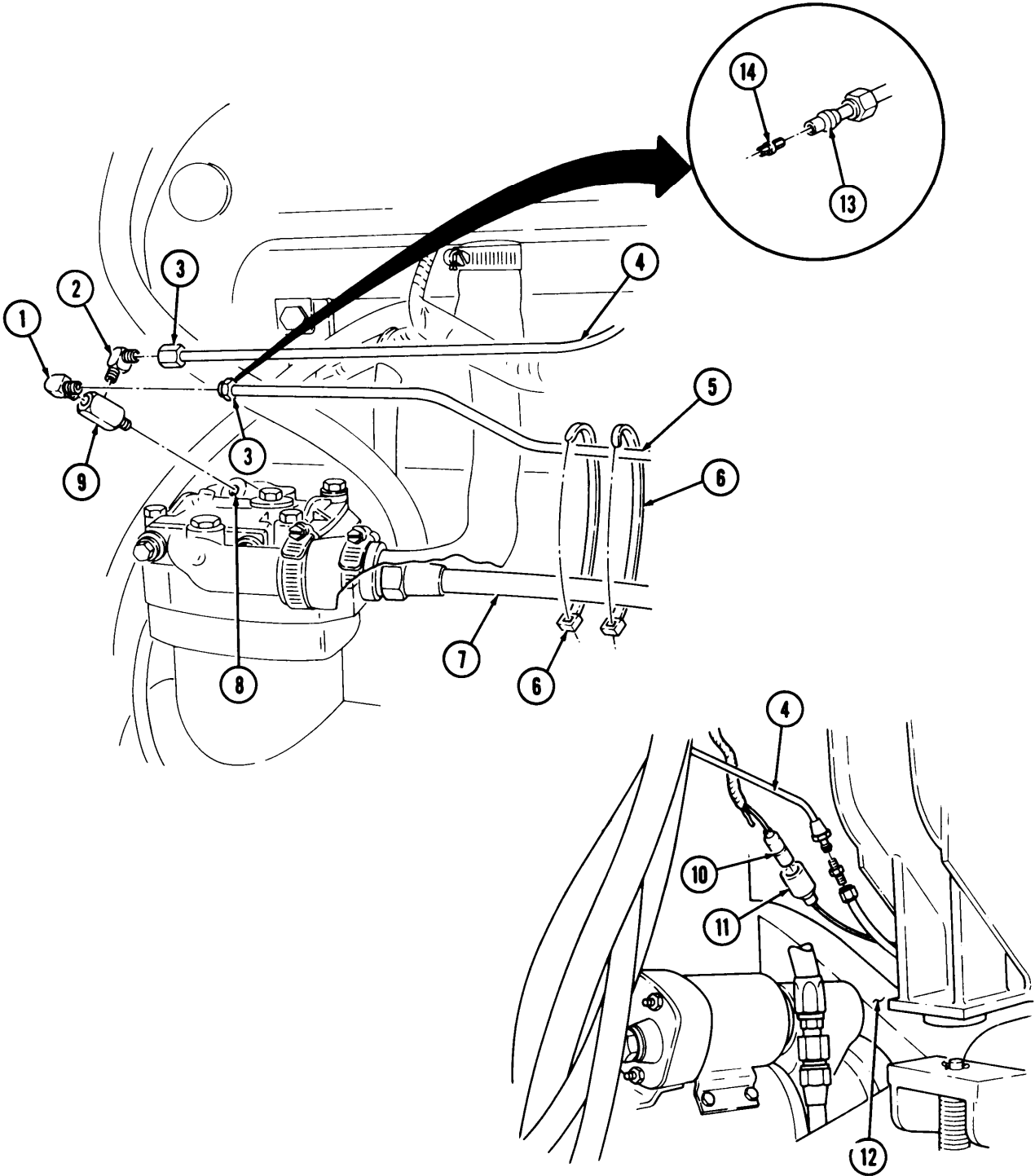


<b>11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
28.	<b>Air compressor discharge line (5) and (7)</b>	Two tiedown straps (6)	Remove.	Discard tiedown straps (6).
29.	<b>Elbow (1)</b>	Nut (3), line (5), sleeve (13), and insert (14)	Remove.	
30.	<b>Elbow (2)</b>	Nut (3), tube (4), sleeve (13), and insert (14)	Remove.	
31.	<b>Tee (9)</b>	Two elbows (1) and (2)	Remove.	
32.	<b>Air compressor unloader port (8)</b>	'lke (9)	Remove.	
33.	<b>Frame crossmember (12)</b>	Tube (4) and line (5)	Remove from vehicle.	

11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

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

Clean all male pipe threads and wrap with sealing tape before installation.

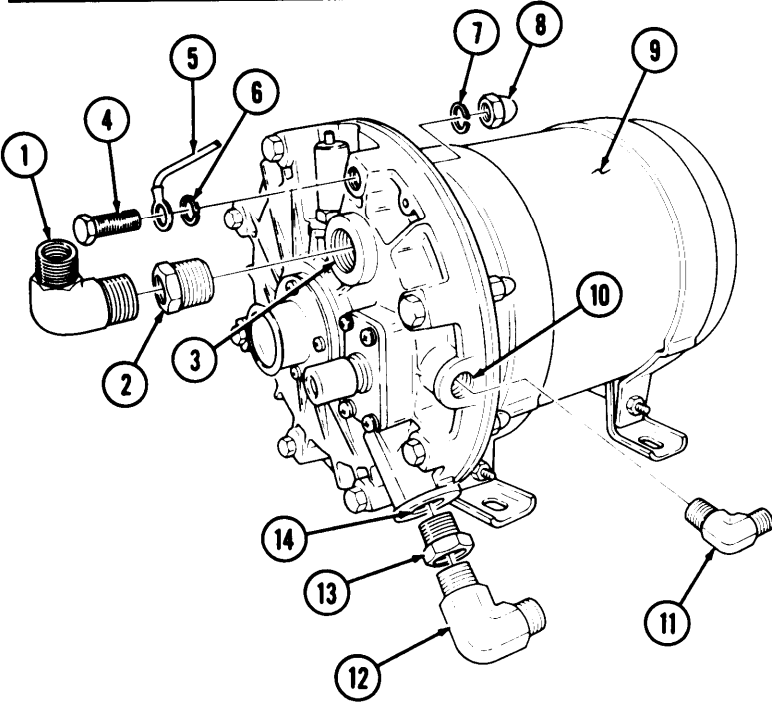
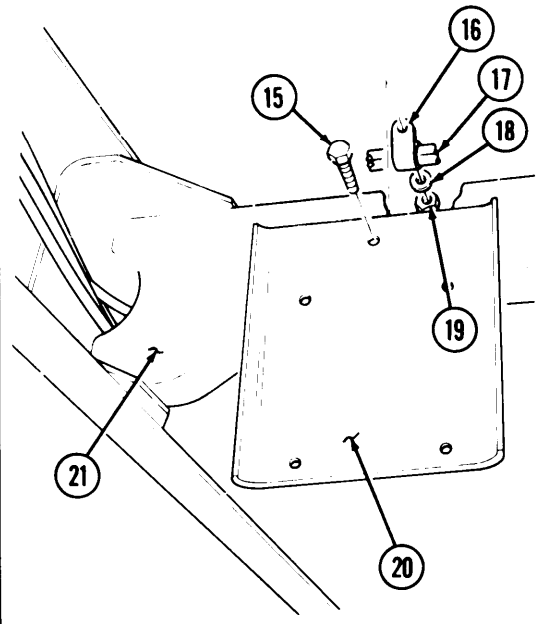
34.		Inlet port bushing (13)	Install in inlet port (14).	
35.		Outlet port bushing (2)	Install in outlet port (3).	
36.		Control port elbow (11)	Install in control port (10).	
37.		Inlet port elbow (12)	Install in inlet port bushing (13).	
38.		Outlet port elbow (1)	Install in outlet port bushing (2).	
39.		Ground wire (5)	Install on air dryer (9) with screw (4), new lock-washers (6) and (7), and capnut (8).	Tighten capnut (8) 270-330 lb-in. (31-37 N • m).

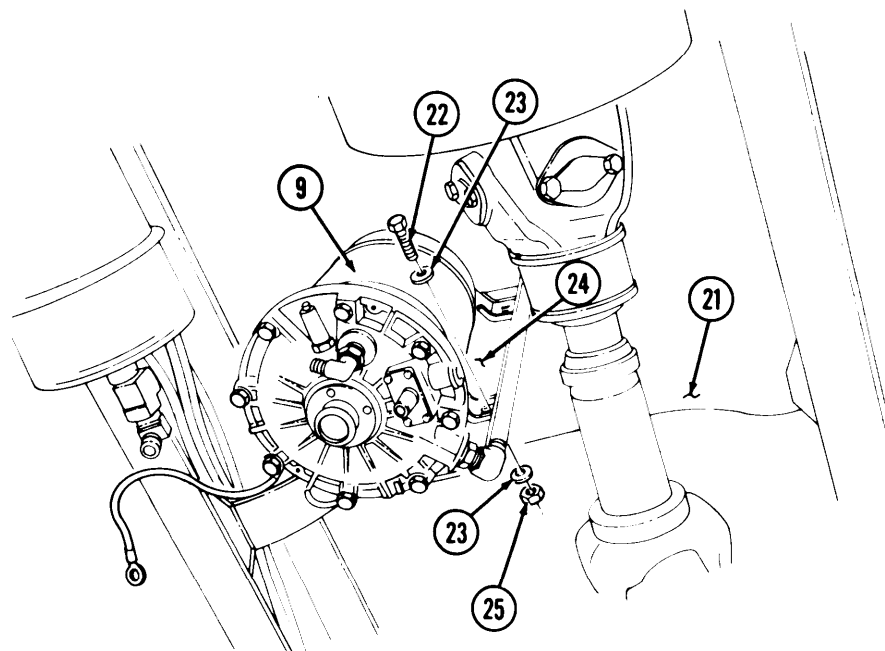
**NOTE**

Do not perform step 40 for medium wrecker M936, go to step 41.

40.		Mounting bracket (20)	Install on crossmember (21) with clamp (16), two air lines (17), screws (15), three washers (18), and new locknuts (19).	
41.		Air dryer (9)	Install on mounting bracket (24) with four screws (22), eight washers (23), and four new locknuts (25).	

11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
 				



**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

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

Perform steps 42 through 46 for trucks M929, M930, M931, and M932.

42.		Elbow (6)	Install on wet reservoir adapter (7).
43.		Tube (11)	Install on elbow (6) with nut (10), sleeve (14), and insert (15).
44.			Install on air dryer outlet port elbow (9) with nut (10), sleeve (14), and insert (15).
45.		Ground wire (2)	Install on right-hand frame-rail (8), with screw (3), new lockwasher (4), clamp (1), and new locknut (5).
46.		Tiedown strap (12)	Install on tube (11) and ground wire (2).

**NOTE**

Perform steps 47 through 51 for medium wrecker M936.

47.		Adapter (13)	Install on wet reservoir (7).
48.		Tube (11)	Install on adapter (13) with nut (10), sleeve (14), and insert (15).
49.			Install on air dryer outlet port elbow (9) with nut (10), sleeve (14), and insert (15).
50.		Ground wire (2)	Install on right-hand frame rail (8) with screw (3), new lockwasher (4), clamp (1), and new lock-nut (5).



**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
51.	Three tiedown straps (12)	Install on ground wire (2) and tube (11).		

**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
52.		Line (5) and tube (4)	Route from air compressor (9) over crossmember (15) to air dryer (17).	
53.		Tee (10)	Install on air compressor port (8).	
54.		Two elbows (1) and (2)	Install on tee (10).	
55.		Line (5)	Install on elbow (1) with nut (3), sleeve (25), and insert (26) and secure with two tiedown straps (6) to air compressor discharge line (7).	
56.		Tube (4)	Install on elbow (2) with nut (3), sleeve (25), and insert (26).	

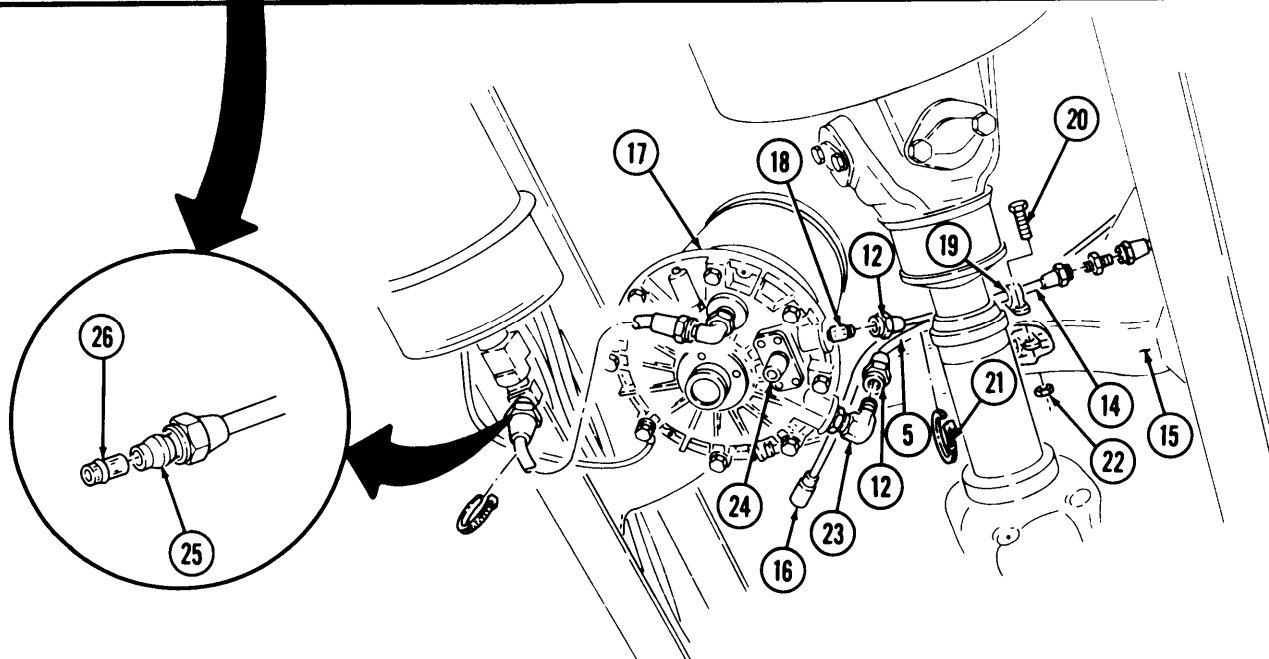
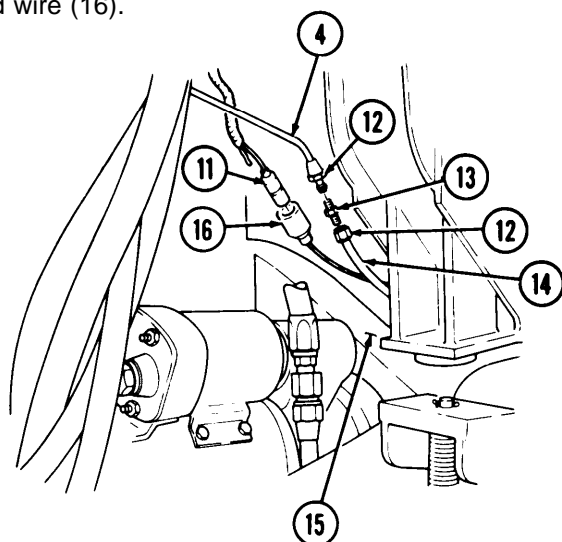
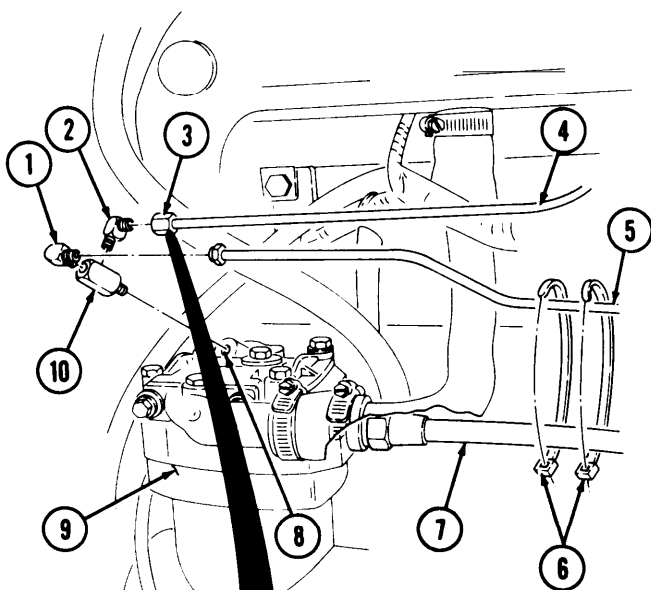
**NOTE**

Perform steps 57 through 62 for trucks M929, M930, M931, and M932. For medium wrecker (M936), go to step 63.

57.		Two wires (11) and (16)	Connect and route from connector assembly (11) to thermostat connector (24) and connect.	
58.		Supply line nipple (13)	Connect two tubes (4) and (14) with two nuts (12), sleeves (25), and inserts (26).	
59.		Tube (14)	Install on elbow (18) with nut (12), sleeve (25), and insert (26).	
60.		Line (5)	Install on elbow (23) with nut (12), sleeve (25), and insert (26).	

# 11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cent'd)

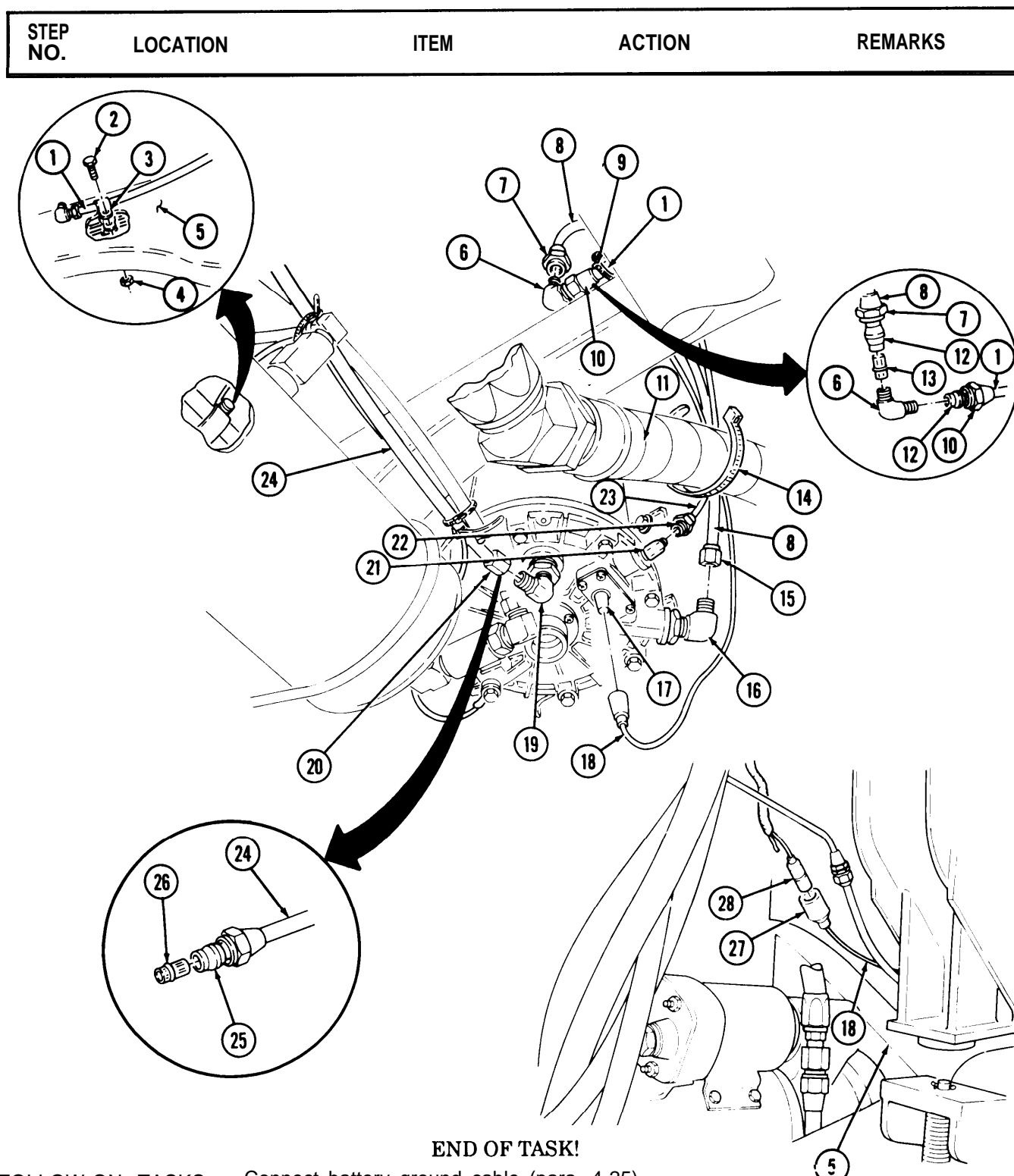
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
61.		Wire (16), line (5), and tube (14)	Install on frame cross-member (15) with clamp (19), screw (20), and new locknut (22).	
62.		Two tiedown straps (21)	Secure tube (14), line (5), and wire (16).	



**11-31. AIR DRYER KIT REPLACEMENT (M929, M930, M931, M932, M936) (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Perform steps 63 through 71 for medium wrecker M936.</p>				
63.		Elbow (6)	Install on line (1) with nut (10), sleeve (12), and insert (13).	
64.		Line (8)	Install on elbow (6) with nut (7), sleeve (12), and insert (13).	
65.		Line (1)	Install on crossmember (5) with clamp (3), screw (2), and new locknut (4).	
66.		Tube (23)	Install on elbow (21) with nut (22), sleeve (25), and insert (26).	
67.		Line (8)	Install on elbow (16) with nut (15), sleeve (25), and insert (26).	
68.		Two wires (27) and (28)	Connect and route wire (18) to thermostat connector (17) and connect.	
69.		Four tiedown straps (9)	Install on line (8), line (1), tube (23), and wire (18).	
70.		Tiedown strap (14)	Install on line (8), tube (23), wire (18), and hydraulic hose (11).	
71.		Tube (24)	Install on elbow (19) with nut (20), sleeve (25), and insert (26).	

# 11-31. AIR DRYER KIT REPLACEMENT (M929 M930, M931, M932, M936) (Cont'd)



FOLLOW-ON TASKS:

- Connect battery ground cable (para. 4-25)
- Start engine and check air system for leaks (TM 99-2320-272-10).
- Install fifth wheel deck plate (M931, M932 only) (para 10-42).

## Section IV. A-FRAME KIT MAINTENANCE

## 11-32. A-FRAME KIT 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>
M925, M926, M928, M932,	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10	Cab paulin removed (task c. only).
None	TM 9-2320-272-10	Windshield lowered (task c. only).
<u>Special Tools</u>	Paras. 10-49 and 10-58	Tailgate removed (except M932) (task c. only).
None	Para. 9-3	Front lifting shackles removed (task c. only).
<u>Materials/Parts</u>		<u>Special Environmental Conditions</u>
Lockwasher		None
Two locknuts		
<u>Personnel Rewired</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		Do not perform this procedure near high voltage wires.
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

Vehicle will become charged with electricity if A-frame contacts or breaks high voltage wire. Do not leave vehicle while high voltage line is in contact with A-frame or vehicle. Failure to do so may result in injury to personnel.

**a. Removal**

- |  |                     |                           |
|--|---------------------|---------------------------|
| 1. A-frame spreader tube (1)                       | Snatch block (2)    | Remove.                   |
| 2. A-frame leg (8) to lifting shackle bracket (10) | Adjusting screw (9) | Remove from each leg (8). |

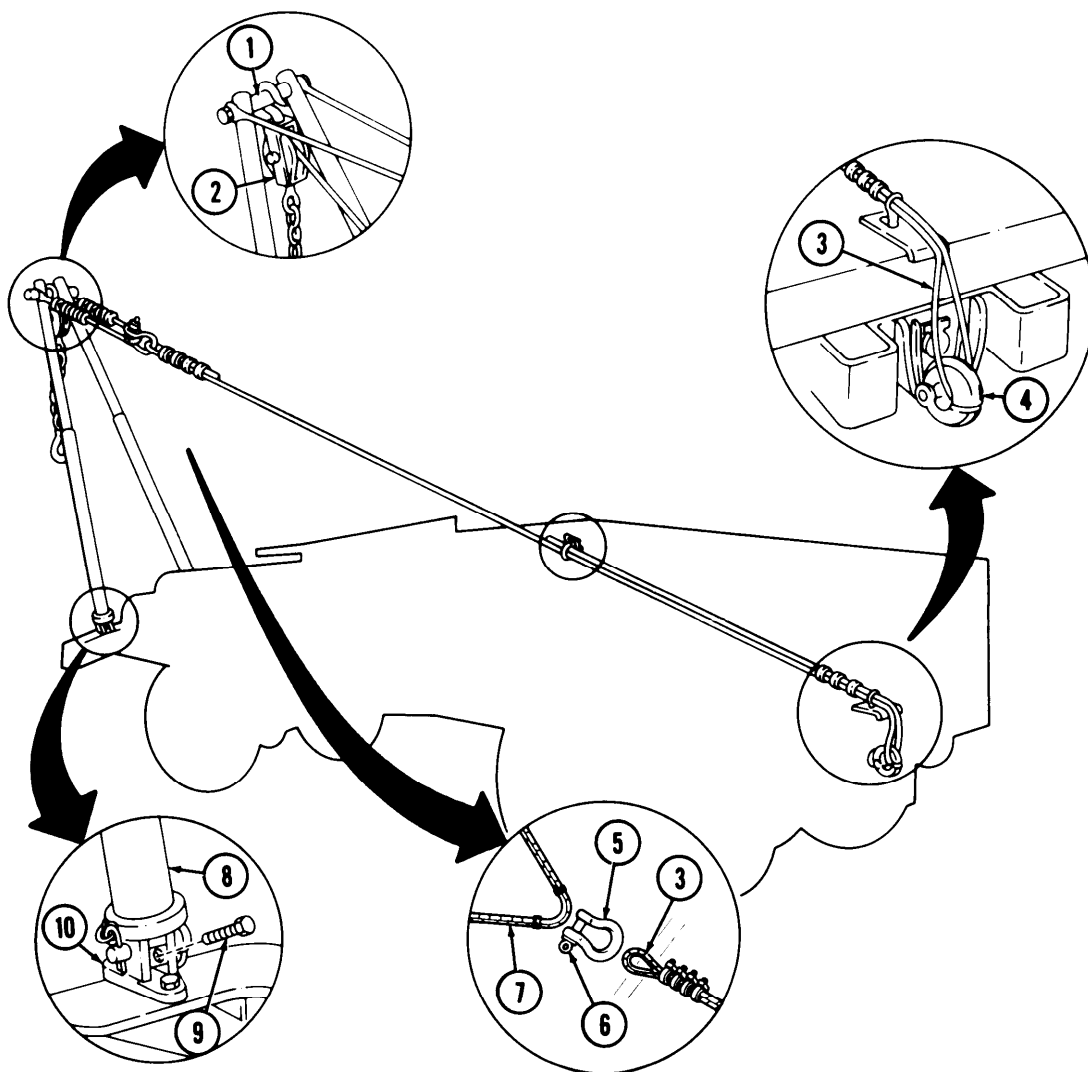
# 11-32. A-FRAME KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Assistant will push A-frame toward cab during steps 3 and 4.

- |                    |                 |   |
|--------------------|-----------------|---|
| 3. Shackle (5)     | Shackle pin (6) | Remove and separate cable (3) and harness (7) from shackle (5). |
| 4. Pintle hook (4) | Cable (3)       | Remove.   |



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**11-32. A-FRAME KIT MAINTENANCE (Cont'd)**


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

Step 5 is not required for M932 tractor truck.

5.	Rear cargo bed (5)	Nut (4), lockwasher (3), two washers (2), eyebolt plate (6), and eyebolt (1)	Remove.	Discard lockwasher (3). Reconnect remaining hardware to eyebolt (1) to prevent loss.
6.	Front bumper (14)	A-frame legs (13) and (18)	Lower to ground.	
7.	Spreader tube stud (10)	Locknut (22), nut (7), washer (8), harness (21) and leg spacer (9)	Remove from each end.	Discard locknut (22).
8.	Two leg extension tubes (11)	Spreader tube stud (10) and spreader tube (12)	Remove.	
9.	Two pins (20)	Two safety pins (19)	Remove from pins (20).	
10.		Two pins (20)	Remove and detach leg extension tubes (11) from A-frame legs (13) and (18).	
11.	Two pins (17)	Two safety pins (16)	Remove from pins (17).	
12.	Two front lifting shackle brackets (15)	Two pins (17)	Remove.	
13.		A-frame legs (13) and (18)	Remove.	

---

**b. Inspection**


---

14.	A-frame kit	a. Inspect all metal components for bends, cracks, and breaks.	If bent, cracked, or broken, replace.
		b. Inspect harness (21) for frays, breaks, and loose or missing clamps.	If harness (21) or cable is frayed or broken, replace.  If clamps are loose or missing, replace.

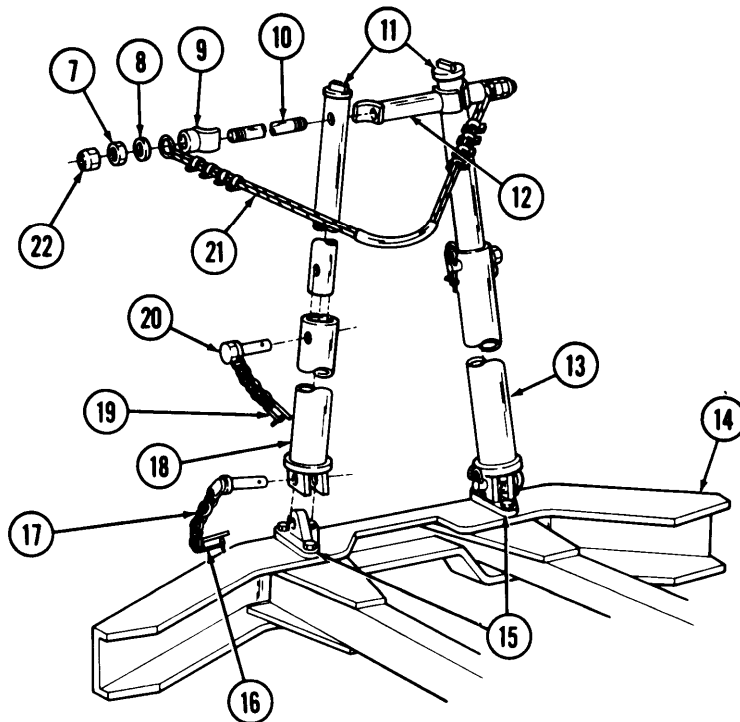
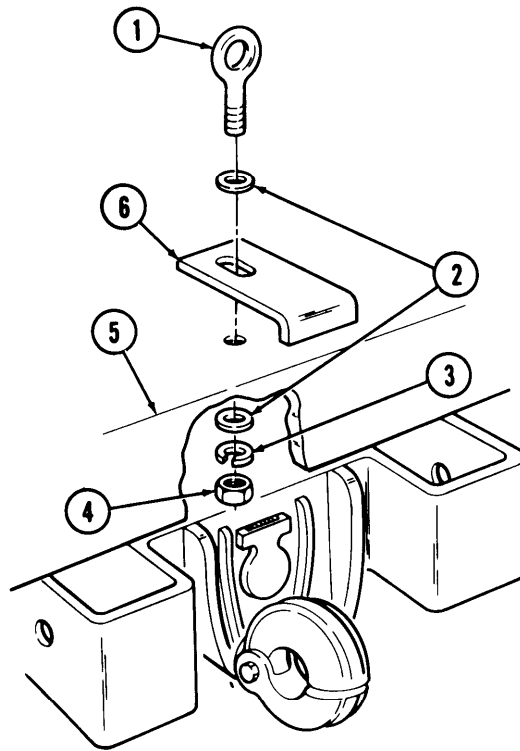
**NOTE**

If A-frame kit is not to be installed, perform follow-on tasks. Do not perform steps 15 through 25.



11-32. A-FRAME KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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11-32. A-FRAME KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. Installation

WARNING

Vehicle will become charged with electricity if A-frame contacts or breaks high voltage wire. Do not leave vehicle while high voltage line is in contact with A-frame or vehicle. Failure to do so may result in injury to personnel.

NOTE

Steps 15 through 17 are not required for M932 tractor truck.

15.

Eyebolt plate (1)

Position over hole (8) in cargo bed (7).
16.

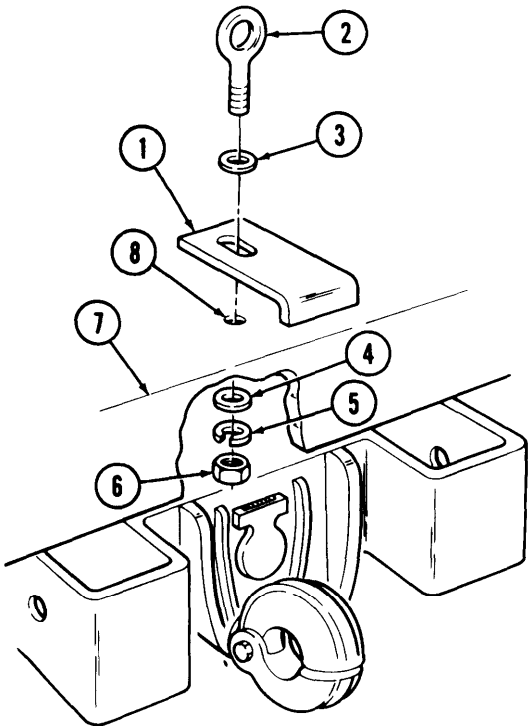
Washer (3)

Install on eyebolt (2).
17.

Eyebolt (2)

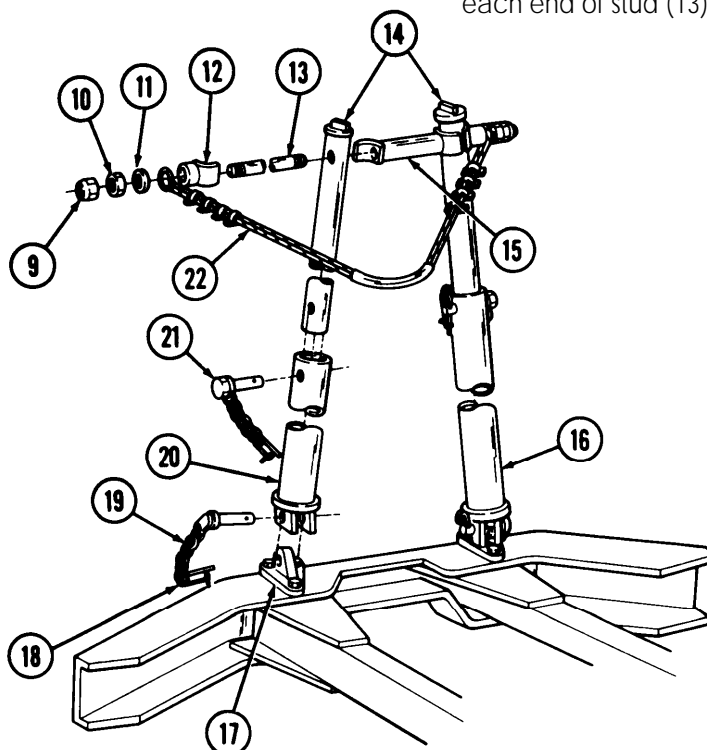
a. Insert through eyebolt plate (1) and hole (8).

b. Install with washer (4), new lockwasher (5), and nut (6).



## 11-32. A-FRAME KIT MAINTENANCE [Cont'd]

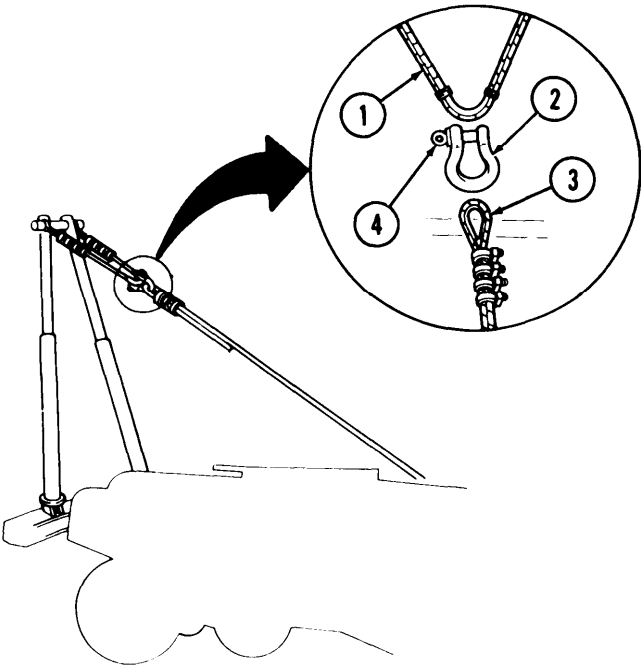
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
18.		A-frame leg, l.h. (20)	Position to lifting shackle bracket (17) and install with retaining pin (19) and safety pin (18).	
19.		A-frame leg, r.h. (16)	Position to lifting shackle bracket (17) and install with retaining pin (19) and safety pin (18).	
20.		Two leg extension tubes (14)	a. Insert into each A-frame leg (20) and (16) with holes alined. b. Install each with pin (21) and safety pin (18).	
21.		Spreader tube stud (13)	Position through spreader tube (15) and install with leg spacer (12), harness (22), washer (11), nut (10), and new locknut (9) on each end of stud (13).	Position so ends of studs (13) extend equally through holes in two extension tubes (14).



11-32. A-FRAME KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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22.		Shackle (2)	Install around cable (3) and harness (1) with shackle pin (4).	
-----	--	-------------	--	--



NOTE

Assistant will raise A-frame legs from ground toward cab so cable can be attached to pintle hook. M932 tractor truck does not have eyebolt, plate, or attaching hardware. Cable is passed directly over rear crossmember and attached to pintle hook.

23.		Cable (3)	Thread through eye-bolt (7) and install on pintle hook (8).	Pintle hook (8) must be rotated upside down.
-----	--	-----------	---	--

NOTE

A-frame must be angled approximately 60° from horizontal. Do not insert adjusting screws until adjustment is made.

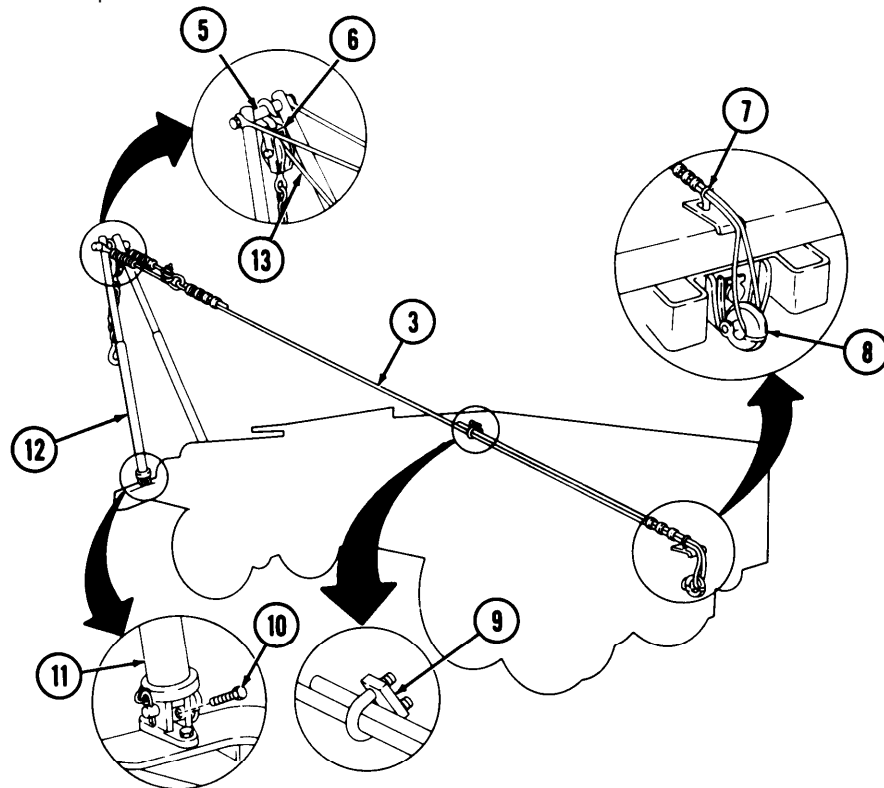
24.		A-frame (12)	Adjust as follows: a. Loosen clamp (9) at cut end of cable (3). b. After 60° angle is obtained, tighten clamp (9).	
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## 11-32. A-FRAME KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
25.		Snatch block (6)	<p>c. Insert adjusting screw (10) at base of each leg (11) and tighten until cable (3) slack is taken up.</p> <p>a. Open and place winch cable (13) over roller, then close.</p> <p>b. Attach snatch block (6) to spreader tube (5).</p>	

## NOTE

Do not perform follow-on tasks if A-frame kit has been installed.



END OF TASK!

FOLLOW-ON TASKS:

- Install front lifting shackles (para. 9-3).
- Install tailgate (except M932) (paras. 10-49 and 10-58).
- Raise windshield (TM 9-2320-272-10).
- Install cab paulin (TM 9-2320-272-10).

## Section V. MOUNTING KIT MAINTENANCE

### 11-33. GENERAL

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

### 11-34. MOUNTING KIT MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
11-35.	Pioneer Tool Kit Mounting Bracket Replacement	11-132
11-36.	Fire Extinguisher Mounting Bracket Kit Replacement	11-136
11-37.	Chemical Agent Alarm Mounting Bracket Kit Replacement	11-138
11-38.	Machine Gun Mounting Kit Maintenance	11-148
11-39.	Decontamination (M13) Apparatus Mounting Bracket Kit Replacement	11-156
11-40.	Mud Guard Kit Replacement	11-160
11-41.	Rifle Mounting Kit Replacement	11-162

## 11-35. PIONEER TOOL KIT MOUNTING BRACKET REPLACEMENT

This task covers:

- |   |   |
|---|---|
| <p>a. Bracket Removal (M923, M924, M925, M926, M927, M928)</p> <p>b. Bracket Installation (M923, M924, M925, M926, M927, M928)</p> <p>c. Bracket Removal (M931, M932)</p> | <p>d. Bracket Installation (M931, M932)</p> <p>e. Bracket Removal (M929, M930)</p> <p>f. Bracket Installation (M929, M930)</p> <p>g. Bracket Removal (M929A1, M930A1)</p> <p>h. Bracket Installation (M929A1, M930A1)</p> |
|---|---|

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety instructions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts (M923, M924, M925, M926, M927, M928, M929A1, M930A1)		
Five locknuts (M931, M932)		
Six locknuts (M929, M930)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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#### a. Bracket Removal (M923, M924, M925, M926, M927, M928)

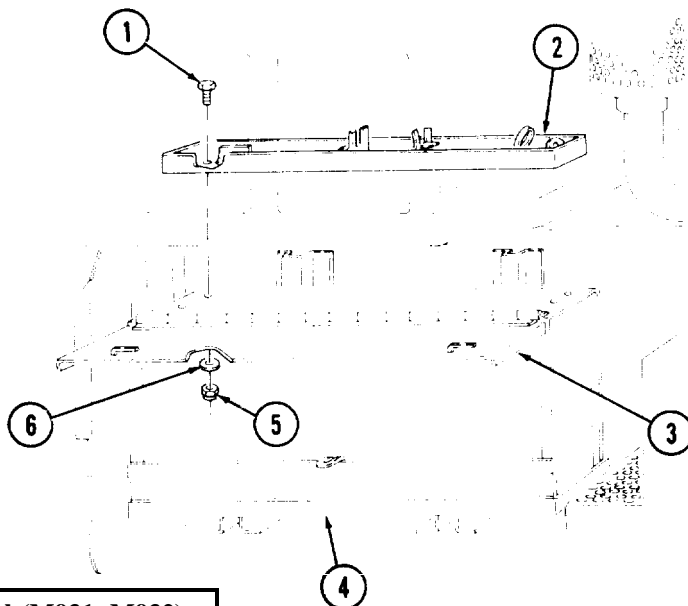
- |    |             |  |         |                       |
|----|-------------|--|---------|-----------------------|
| 1. | Toolbox (4) | Toolbox door (3)   | Open.   |                       |
| 2. |             | Four locknuts (5), washers (6), screws (1) and bracket (2) | Remove. | Discard locknuts (5). |

#### b. Bracket Installation (M923, M924, M925, M926, M927, M928)

- |    |             |   |
|----|-------------|---|
| 3. | Bracket (2) | Install on toolbox (4) with four screws (1), washers (6), and new locknuts (5). |
|----|-------------|---|

11-35. PIONEER TOOL KIT MOUNTING BRACKET REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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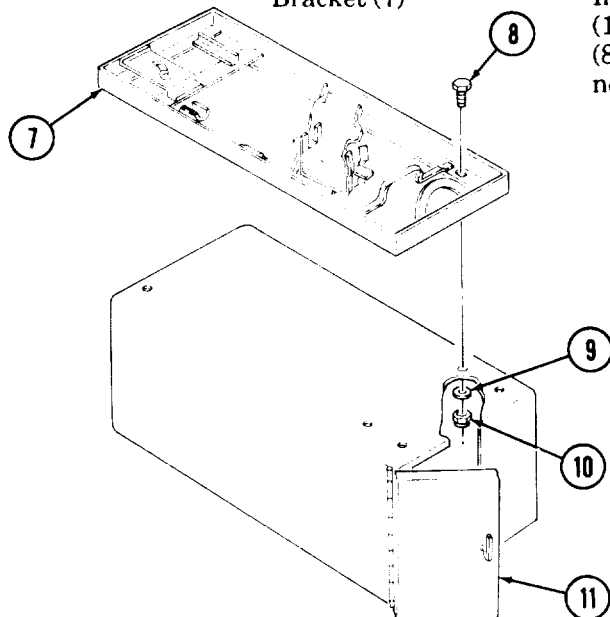


**c. Bracket Removal (M931, M932)**

4. Toolbox (11)	Five locknuts (10), washers (9), screws (8), and bracket (7)	Remove.	Discard locknuts (10).
-----------------	--	---------	------------------------

**d. Bracket Installation (M931, M932)**

5. Bracket (7)
- Install on toolbox (11) with five screws (8), washers (9), and new locknuts (10).





11-35. PIONEER TOOL KIT MOUNTING BRACKET REPLACEMENT (Cont'd)

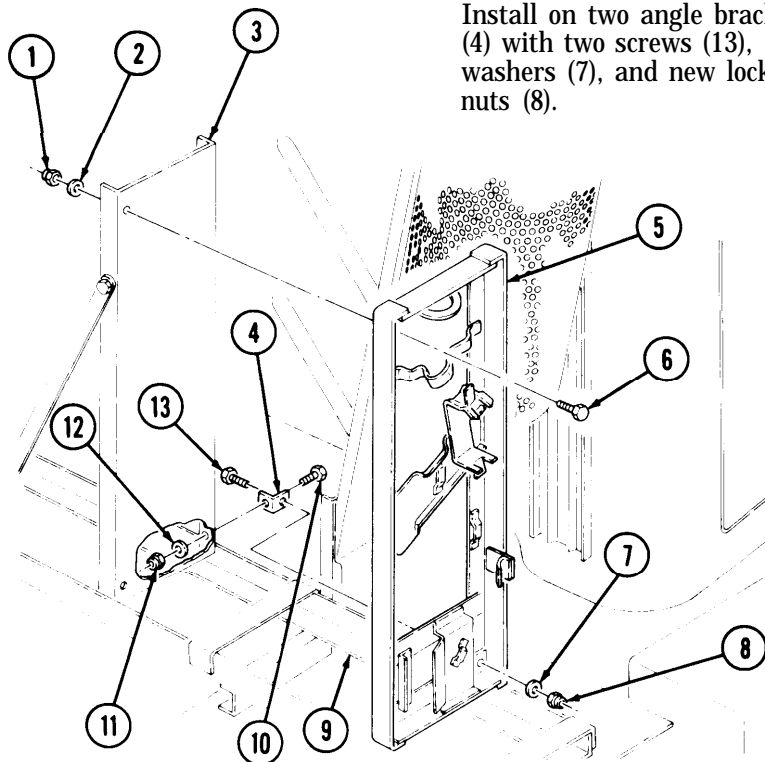
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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e. Bracket Removal (M929, M930)

6.	Spare tire support (3) and bracket (5)	Four locknuts (1), washers (2), and screws (6)	Remove.	Discard locknuts (1).
7.	Spare tire support (3) and brackets (9)	Two locknuts (8), washers (7), screws (13), and bracket (5)	Remove.	Discard locknuts (8).
8.		Two locknuts (11), washers (12), screws (10), and angle brackets (4)	Remove.	Discard locknuts (11).

f. Bracket Installation (M929, M930)

9.	Two angle brackets (4)	Install on spare tire support (3) with two screws (10), washers (12), and new locknuts (11).
10,	Bracket (5)	Install on spare tire support (3) with four screws (6), washers (2), and new locknuts (1).
11.		Install on two angle brackets (4) with two screws (13), washers (7), and new locknuts (8).



# 11-35. PIONEER TOOL KIT MOUNTING BRACKET REPLACEMENT (Cont'd)

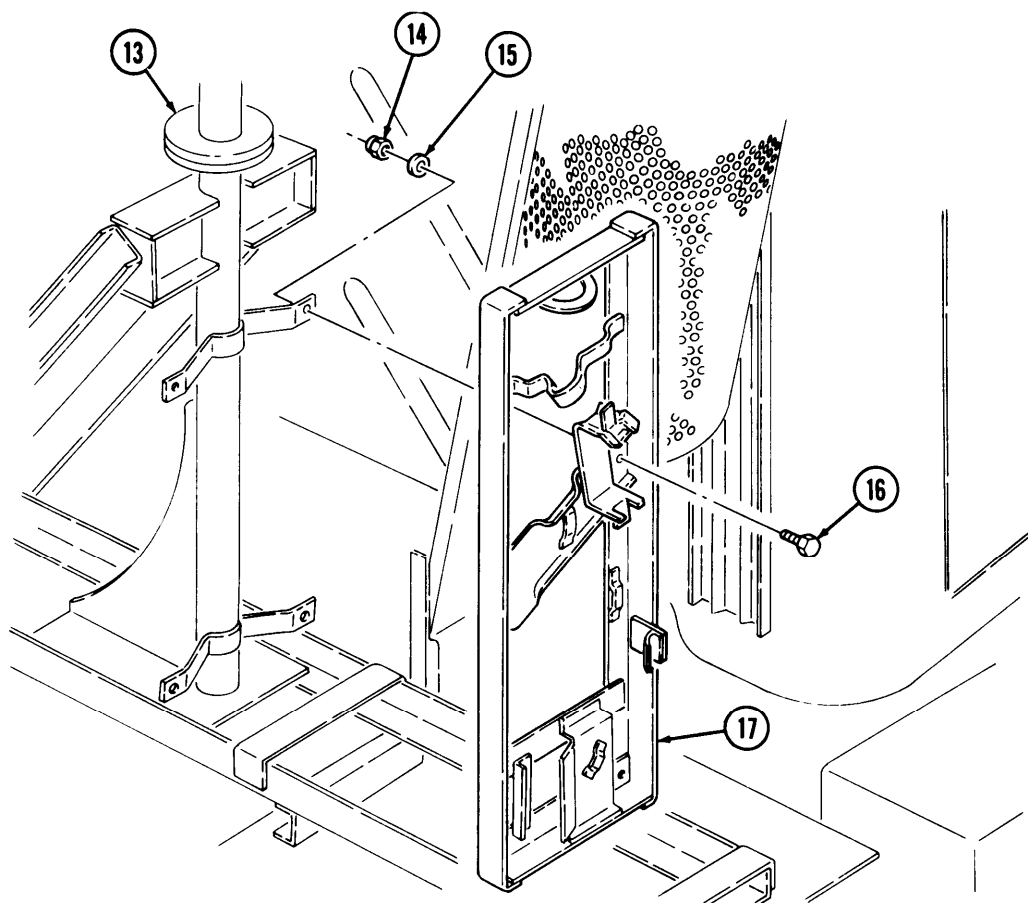
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## g. Bracket Removal (M929A1, M930A1)

12. Lower davit (13)		Four locknuts (14), washers (15), screws (16), and bracket (17)	Remove.	Discard locknuts (14).
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## h. Bracket Installation (M929A1, M930A1)

13.		Bracket (17)	Install on lower davit (13) with four screws (16), washers (15), and new locknuts (14).	
-----	--	--------------	---	--



END OF TASK!

11-36. FIRE EXTINGUISHER MOUNTING BRACKET KIT REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

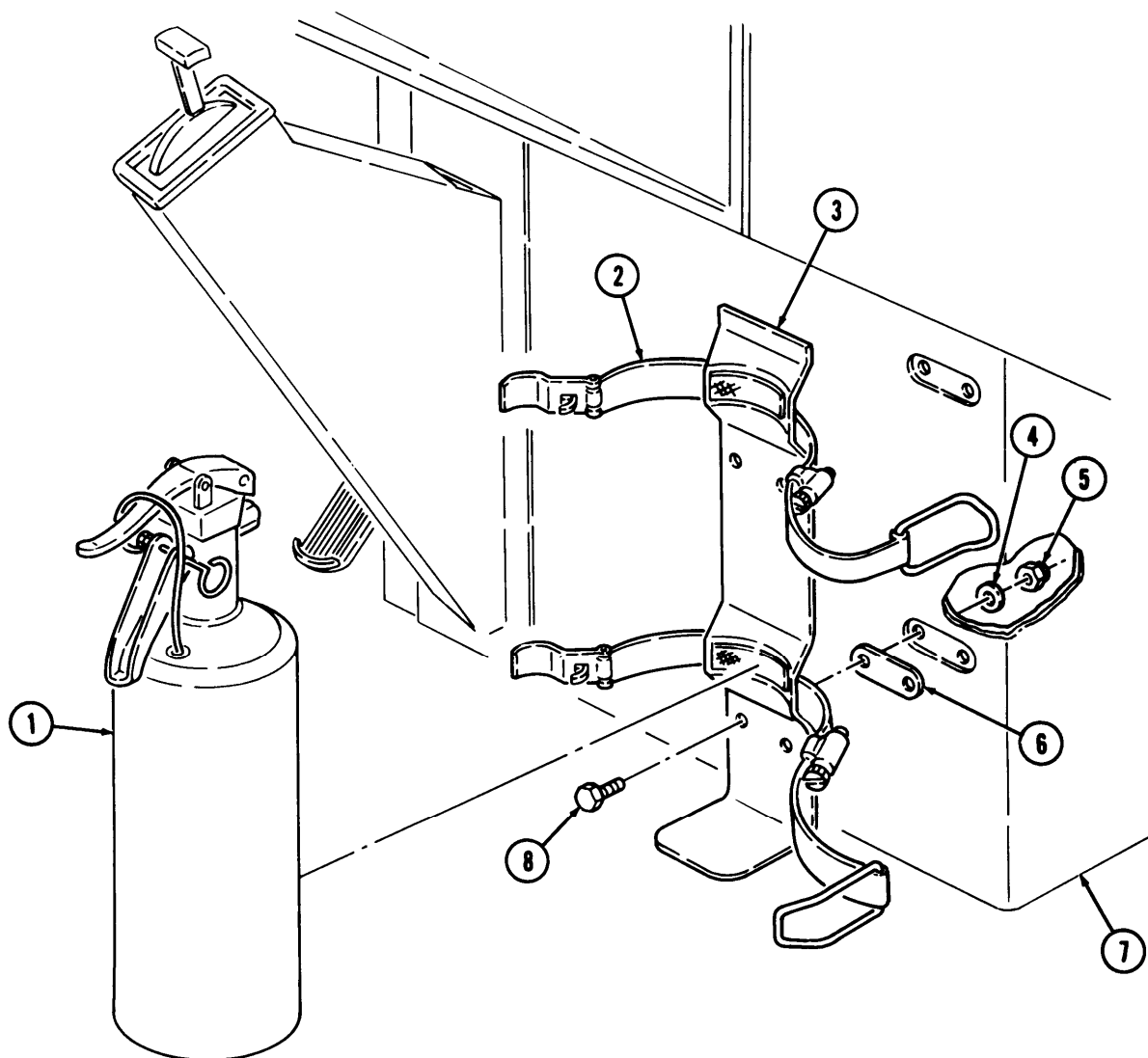
1. Bracket (3)	Two clamps (2)	Loosen.	
2.	Fire extinguisher (1)	Remove.	
3. Engine cover (7)	Four locknuts (5), washers (4), screws (8), bracket (3), and two spacers (6)	Remove.	Discard locknuts (5).

b. Installation

4.	Two spacers (6) and bracket (3)	Install on engine cover (7) with four screws (8), washers (4), and new lock-nuts (5).
5.	Fire extinguisher (1)	Install on bracket (3) with two clamps (2).

# 11-36. FIRE EXTINGUISHER MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

## 11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT

This task covers:

- |  |   |
|--|---|
| a. Chemical Alarm Wiring Harness Removal | co Detector and Alarm Bracket Installation    |
| b. Detector and Alarm Bracket Removal    | d. Chemical Alarm Wiring Harness Installation |

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
<u>Test Equipment</u>	Para. 4-25	Battery ground cable disconnected.
None	Para. 9-26	Driver's seat removed.
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/parts</u>		<u>General Safety Instructions</u>
Six locknuts		None
Lockwasher		
Tiedown strap (Appendix D, Item 18)		
Electrical tape (Appendix D, Item 27.1)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### a. Chemical Alarm Wiring Harness Removal

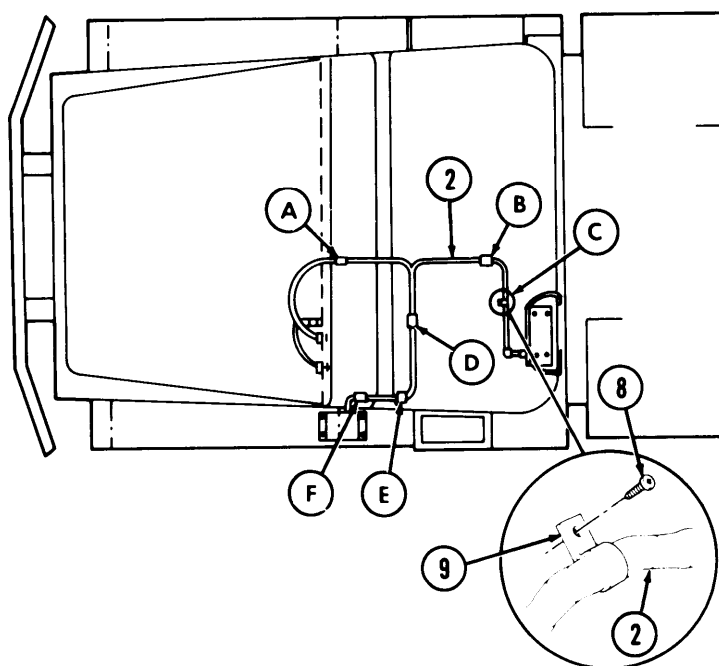
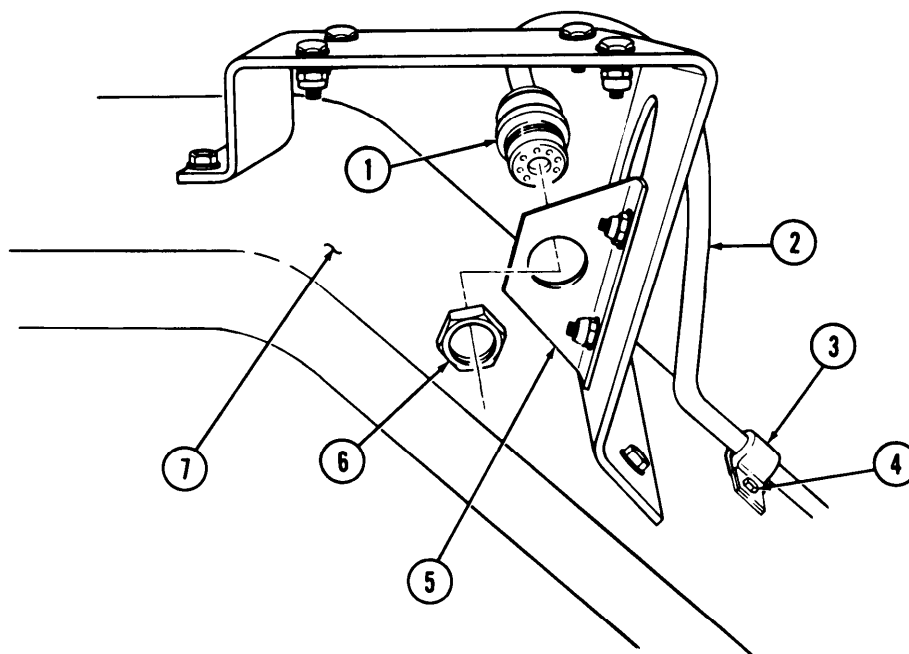
#### NOTE

The cable is provided in two sections. A short wire harness with a screw-on receptacle completes the circuit for the detector and alarm units to the main power source. This harness is only supplied when both chemical detector and alarm units are issued to the field.

- |    |   |                            |  |
|----|---|----------------------------|--|
| 1. | Detector bracket (5)  | Nut (6) and receptacle (1) | Remove.                                      |
| 2. | Left side fender (7)  | Screw (3) and clamp (4)    | Remove from cable (2).                       |
| 3. | Cable clamp locations A, B, C, D, E, and F along fender and under-side of vehicle | Six screws (8)             | Remove horn clamps (9) to release cable (2). |
| 4. |   | Six cable clamps (9)       | Remove from cable (2).                       |

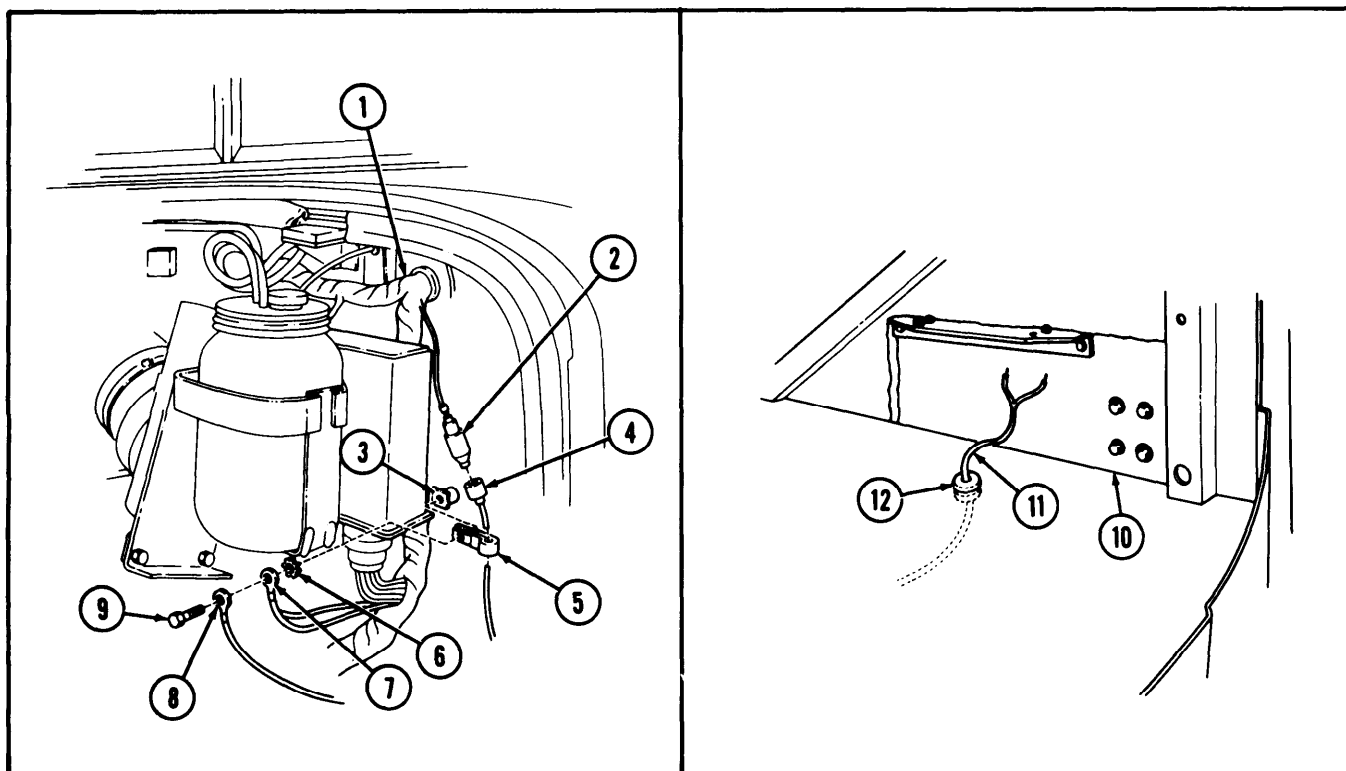
11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd]

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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# 11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cent'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Engine compartment, left side	Harness cable positive wire (4)	Disconnect from power circuit wire (2).	
6.	Protective control box (3)	Screw (9), chemical detector ground wire (8), main harness ground wire (7), lockwasher (6), and clamp (5)	Remove.	Discard lockwasher (6).
7.		New lockwasher (6) and main harness ground wire (7)	Install on protective control box (3) with screw (9).	Do not tighten screw (9).
8.	Control box (3)	Power circuit wire (2)	Fold along wiring harness (1) and install with tiedown strap.	
9.	Floor (10) behind driver's seat	Alarm unit connector wire (11)	Remove through grommet (12).	



# 11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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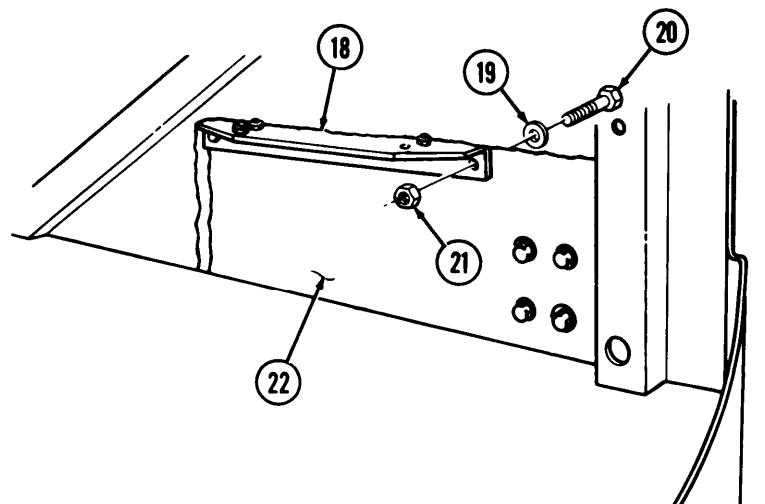
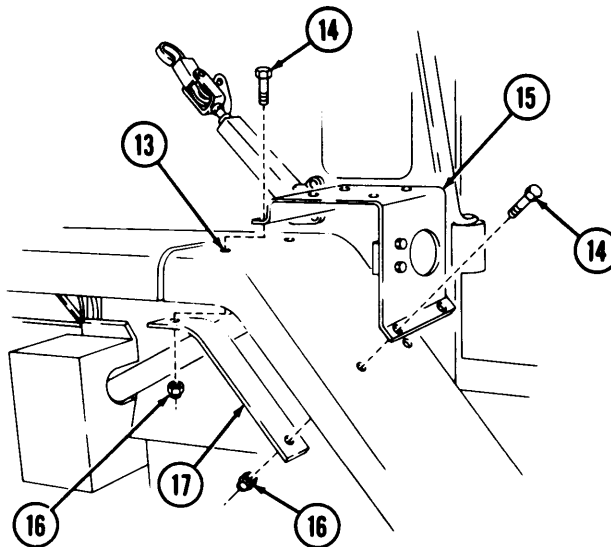
## b. Detector and Alarm Bracket Removal

- |                            |  |         |                        |
|----------------------------|--|---------|------------------------|
| 10. Left front fender (13) | Four screws (14), lock-nuts (16), support plate (17), and bracket (15) | Remove. | Discard locknuts (16). |
|----------------------------|--|---------|------------------------|

**NOTE**

Assistant will help with step 10.

- |                   |   |         |                        |
|-------------------|---|---------|------------------------|
| 11. Cab body (22) | Two screws (20), washers (19), locknuts (21), and alarm unit bracket (18) | Remove. | Discard locknuts (21). |
|-------------------|---|---------|------------------------|





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**11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)**


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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>c. Detector and Alarm Bracket Installation</b>				
12.		Detector bracket (1)	a. Position to four holes (2) in left front fender (3) and hold in place with four screws (4). b. Install two new locknuts (5) on inner two screws (4).	Do not tighten.
13.		Support plate (6)	a. Position under fender (3) to outside two screws (4) and install with two new locknuts (5). b. Tighten four new locknuts (5).	
<p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>•Alarm unit bracket is mounted to the cab behind driver's seat.</li> <li>•Assistant will help with step 13.</li> </ul>				
14.		Alarm bracket (7)	Position against cab body (11) with mounting holes (12) aligned and install with two screws (9), washers (8), and new locknuts (13).	
15.		Cab floor matting (10)	Starting at left rear corner of cab, peel back to expose wiring harness knockout plug (14).	
16.		Wiring harness knockout plug (14)	Remove.	
17.		Grommet (15)	Install in knockout plug (14) hole.	
18.		Cab floor matting (10)	a. Reposition on floor of cab. b. Puncture at grommet (14) location.	

### 11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

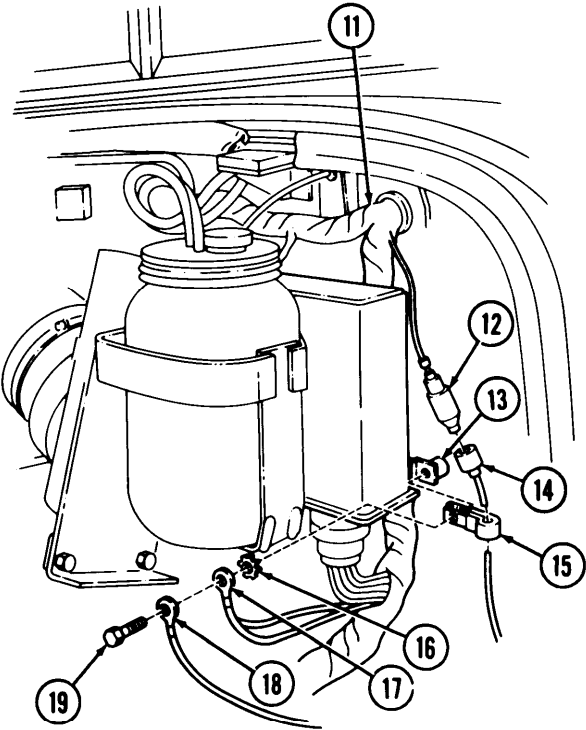
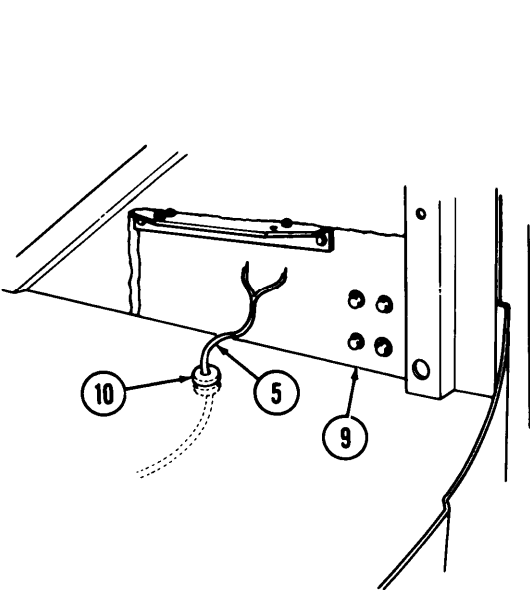
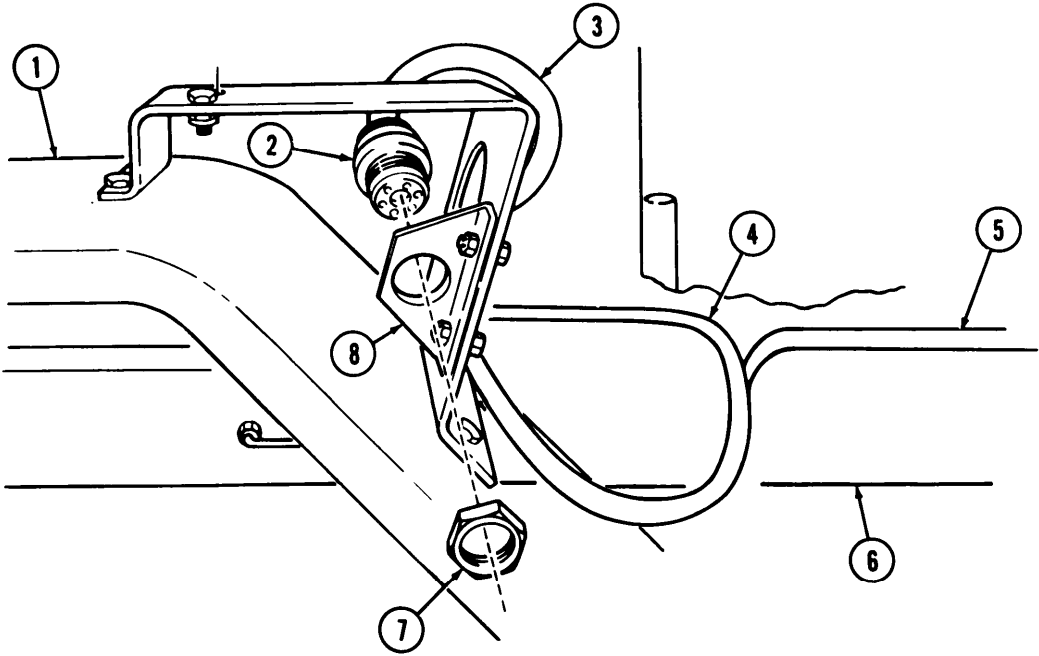
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
1	UNDER THE CHASSIS	1	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
2	UNDER THE CHASSIS	2	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
3	UNDER THE CHASSIS	3	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
4	UNDER THE CHASSIS	4	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
5	UNDER THE CHASSIS	5	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
6	UNDER THE CHASSIS	6	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
7	UNDER THE CHASSIS	7	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
8	UNDER THE CHASSIS	8	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
9	UNDER THE CHASSIS	9	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
10	UNDER THE CHASSIS	10	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
11	UNDER THE CHASSIS	11	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
12	UNDER THE CHASSIS	12	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
13	UNDER THE CHASSIS	13	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
14	UNDER THE CHASSIS	14	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER
15	UNDER THE CHASSIS	15	TIGHTEN THE LOCKWASHER	TIGHTEN THE LOCKWASHER

# 11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
<b>d. Chemical Alarm Wiring Harness Installation</b>			
19.	Wiring harness receptacle (2)	Remove wiring harness receptacle nut (7).	
20.	Wiring harness receptacle (2)	Insert into detector bracket (8) and install with nut (7).	
21.	Harness cable (3)	Feed opposite end alongside offender (1) and beneath cab along splash shield to left cab support rail (6).	
22.	Alarm unit connector wire (5)	a. Insert split, tinned ends up-through grommet (10) and floor matting (9). b. Tape tinned ends together for protection.	Tinned ends will connect to alarm unit when issued.
23.	Harness cable wire (4) splits along left cab support rail (6)	Feed forward along left cab support rail (6) to left side engine compartment.	
24.	Clamp (15)	Position around harness cable positive wire (14).	Harness cable wire (4) has a positive wire (14) and ground wire (18).
25.	Screw (19)	a. Remove and insert through chemical detector ground wire (18), main harness ground wire (17), lockwasher (16), and clamp (15). b. Install in protective control box (13).	
26.	Harness cable positive wire (14)	Connect to wire (12) from wiring harness (11).	

11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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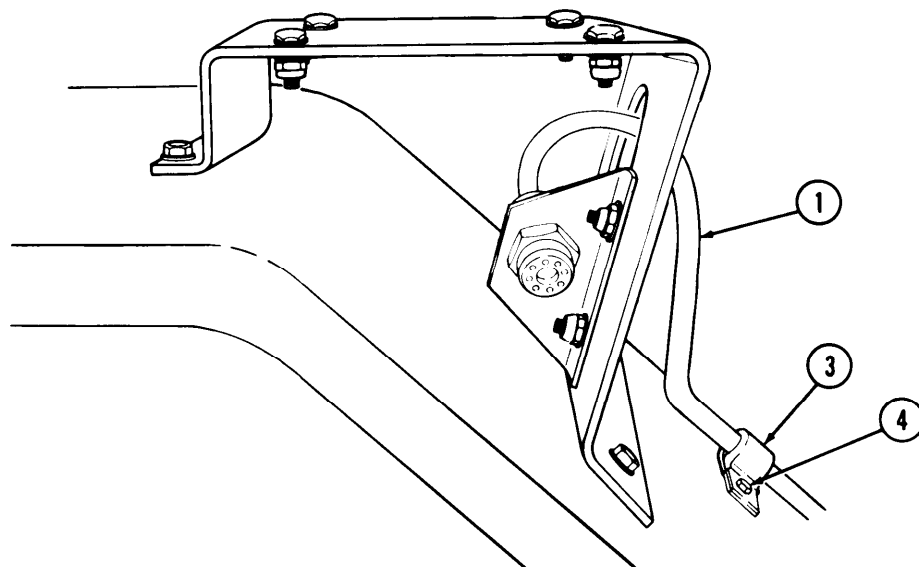
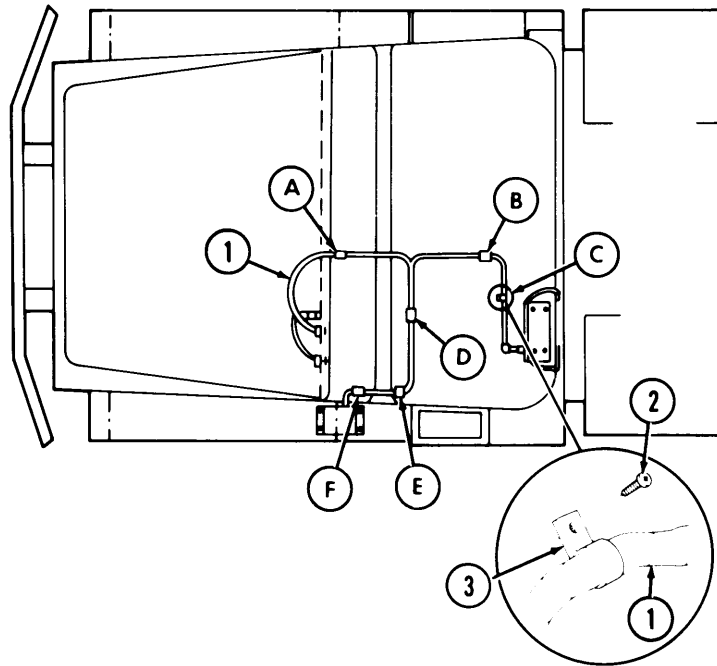
NOTE

Six clamp positions are provided to support a split cable harness routing to the underside of the vehicle.

27.		Cable clamp locations A, B, C, D, E, and F	a. Position six clamps (3) over harness cable (1) and install with six screws (2). b. Remove slack in cable (1) for tightening.	
28.		Harness cable (1)	Position along fender and install with clamp (3) and screw (4).	

# 11-37. CHEMICAL AGENT ALARM MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASKS: • Install driver's seat (para. 9-26).  
• Connect battery ground cable (para. 4-25).

11-38. MACHINE GUN MOUNTING KIT MAINTENANCE

This task covers:

- a. Removal
- b. Disassembly
- c. Reassembly
- d. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M923, M924, M925, M926, M927, M928, M931, M932, M936	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Cab top removed (task d. only). Windshield lowered (task d. only).
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Forty locknuts Two cotter pins		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B		None
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

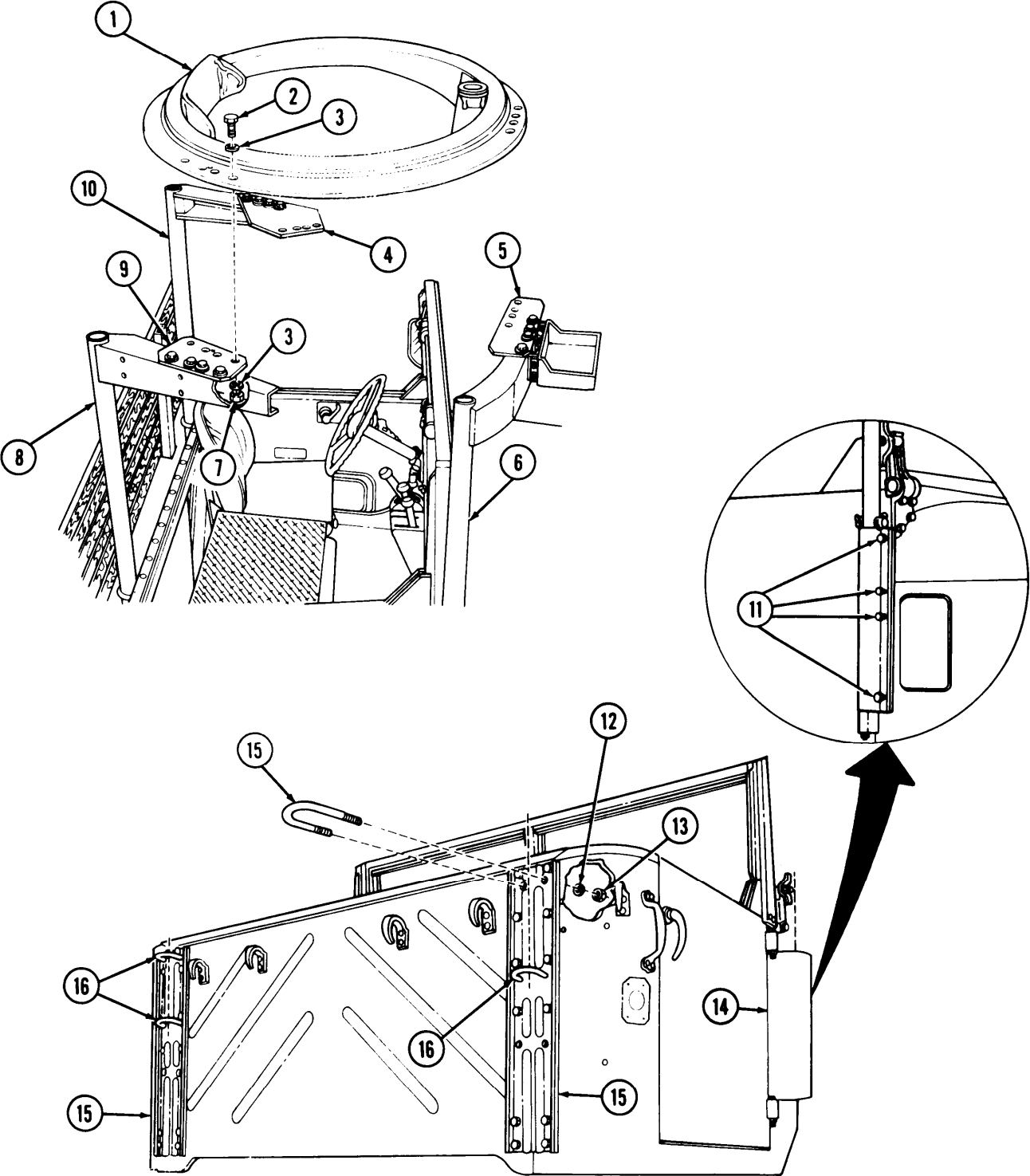
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

- |    |  |   |   |   |
|----|--|---|---|---|
| 1. | Ring mount (1) to adapters (4), (5), and (9) | Twelve locknuts (7), twenty-four washers (3), twelve screws (2), and ring mount (1)                       | Remove.   | Discard locknuts (7).   |
| 2. | Front gun mount bracket (14)                 | Four screws (11)  | Loosen and remove right front bracket and post (6). | Tighten four screws (11) after bracket and post (6) is removed. |
| 3. | Rear gun mount brackets (15)                 | Eight locknuts (13), washers (12), four U-bolts (16), left rear (10) and right rear (8) brackets and post | Remove.   | Discard locknuts (13).  |

11-38. MACHINE GUN MOUNTING KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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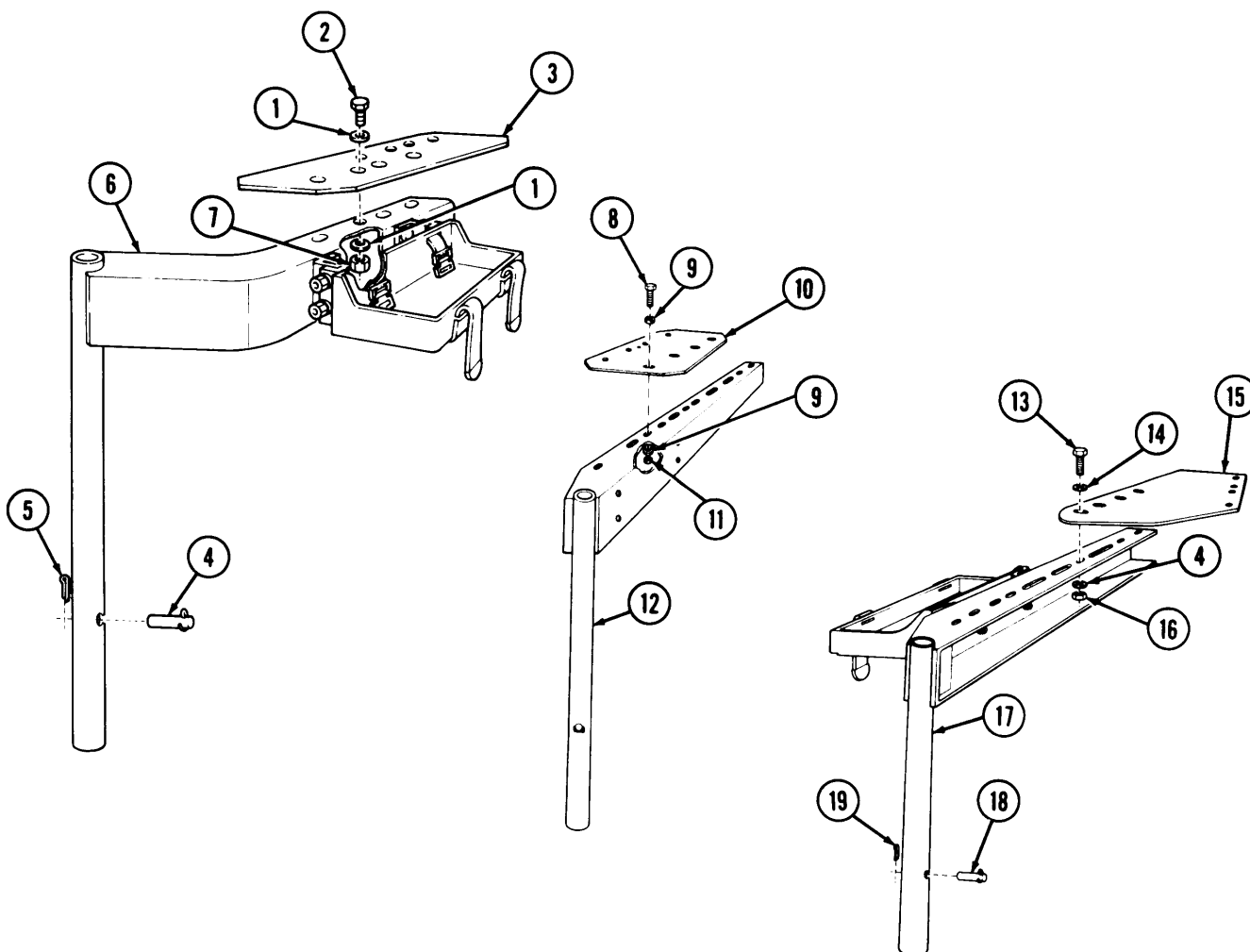


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## 11-38. MACHINE GUN MOUNTING KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Disassembly</b>				
4.	Adapters (3), (10), and (15) to bracket and post (6), (12), and (17)	Four locknuts (7), (11), (16), eight washers (1), (9), (14), and four screws (2), (8), and (13)	Remove from each.	Discard locknuts (7), (11), and (16).
5.		Adapters (3), (10), and (15)	Remove.	
6.	Right front bracket and post (6)	Cotter pin (5) and pin (4)	Remove.	Discard cotter pin (5).
7.	Left rear bracket and post (17)	Cotter pin (19) and pin (18)	Remove.	Discard cotter pin (19).



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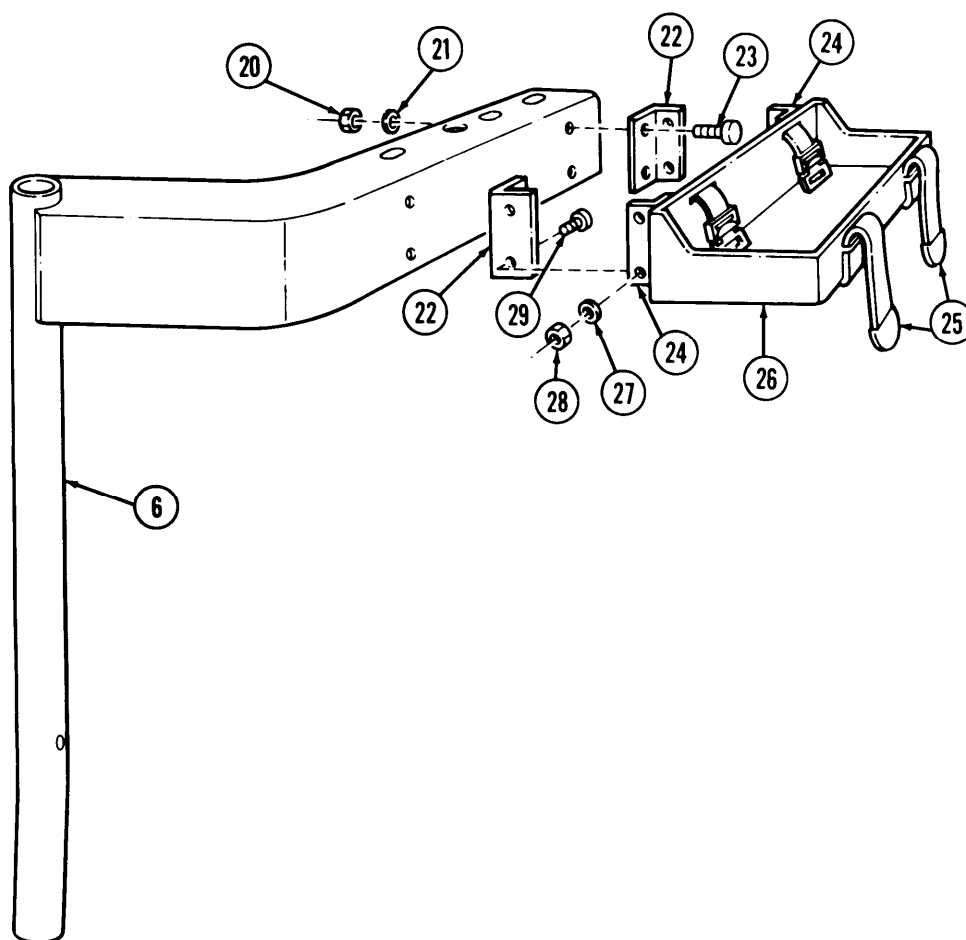
## 11-38. MACHINE GUN MOUNTING KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

- Steps 8, 9, and 10 are identical for removing ammunition trays from both-right front bracket and post and left rear bracket and post. These steps cover the right front bracket and post.

8. Ammunition tray (26)	Two straps (25)	Remove.	
9. Right front bracket and post (6)	Four locknuts (20), washers (21), screws (23), and ammunition tray (26)	Remove.	Discard locknuts (20).
10. Ammunition tray extensions (24)	Four locknuts (28), washers (27), screws (29), and two tray brackets (22)	Remove.	Discard locknuts (28).



# 11-38. MACHINE GUN MOUNTING KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## c. Reassembly

### NOTE

Steps 11, 12, and 13 are identical for installing ammunition trays on both right front bracket and post and left rear bracket and post. This procedure shows reassembly of the right front bracket and post only.

11.		Two tray brackets (10)	Install In two ammunition tray extensions (6) with four screws (9), washers (7), and new locknuts (8).	Screws (9) must be installed through tray brackets (10) first.
12.		Ammunition tray (5)	Position to holes in right front bracket and post (11) and install with four screws (3), washers (16), and new locknuts (15).	
13.		Two straps (4)	Install on ammunition tray (5).	
14.		Right front adapter (2)	Position slotted holes to top of bracket and post (11) and install with four screws (1), eight washers (17), and four new locknuts (14).	Finger tighten.
15.		Pins (12) and (30)	a. Insert through bottom of bracket and posts (11) and (29). b. Install with new cotter pins (13) and (31).	
16.		Right rear adapter (20)	Position between fourth (21) and ninth (24) holes in right rear bracket and post (23) and install with four screws (18), eight washers (19), and four new locknuts (22).	Finger tighten.
17.		Left rear adapter (27)	Position over first four holes in left rear bracket and post (29) and install with four screws (25), eight washers (26), and four new locknuts (28).	Finger tighten.

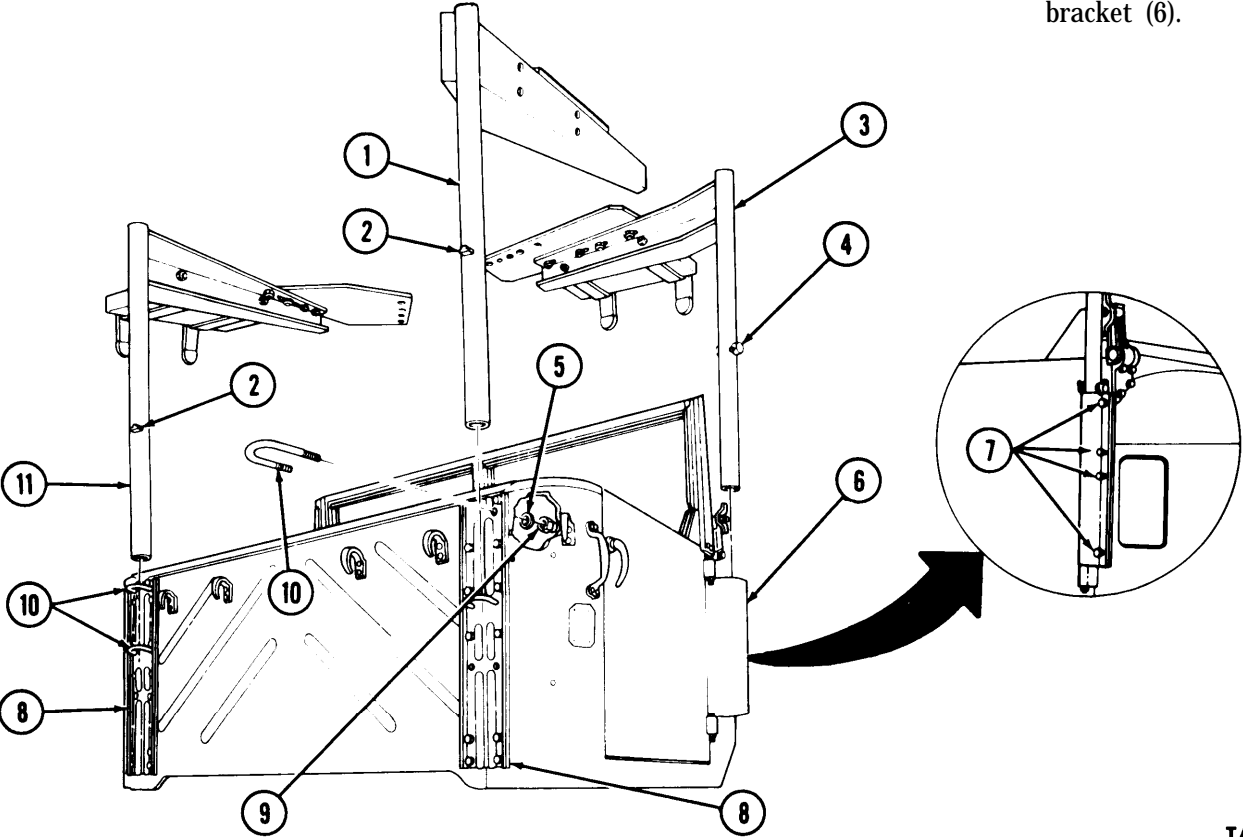
## 11-38. MACHINE GUN MOUNTING KIT MAINTENANCE Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
	RIGHT FRONT INSTALLATION			
	RIGHT REAR INSTALLATION			
	LEFT REAR INSTALLATION			

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11-38. MACHINE GUN MOUNTING KIT MAINTENANCE (Cont'd)

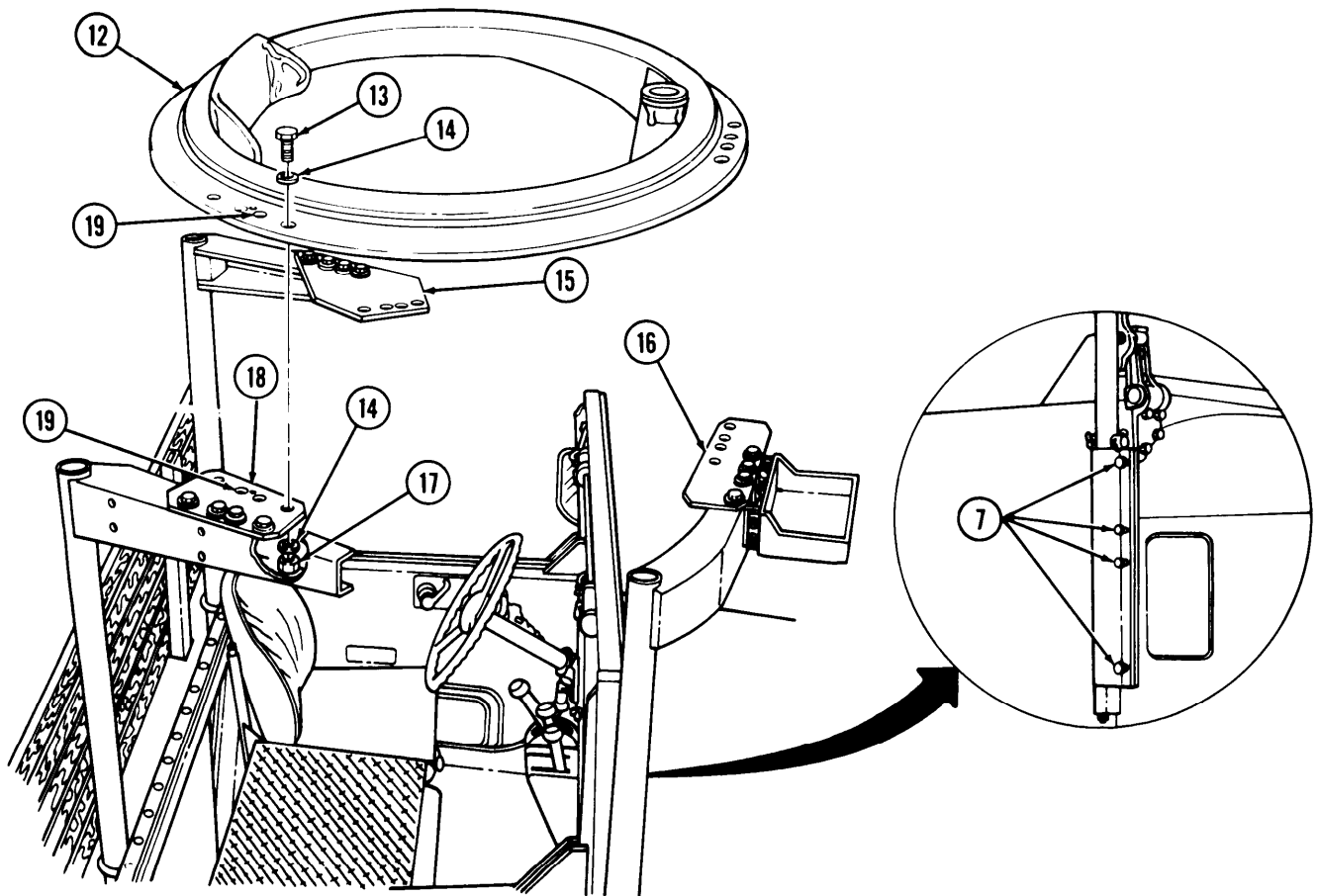
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>d. Installation</b>				
18.		Four U-bolts (10)	Install two in each rear gun mount bracket (8) with eight washers (5) and new locknuts (9).	Install new locknuts (9) finger tight. It maybe necessary to remove some insula-tion material from inside of cab.
19.		Right rear bracket and post (1)	Install through U-bolts (10) and rear gun mount bracket (8).	Make sure welded post nib (2) rests on top of U-bolt (10) and bracket and post (1) turns freely.
20.		Left rear bracket and post (11)	Install through U-bolts (10) and rear gun mount bracket (8).	Make sure nib (2) rests on top of U-bolt (10) and bracket and post (11) turns freely.
21. Front gun mount bracket (6)		Four screws (7)	Loosen.	
22.		Right front bracket and post (3)	Install in right front gun mount bracket (6).	Make sure pin (4) rests on top of gun mount bracket (6).



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## 11-38. MACHINE GUN MOUNTING KIT MAINTENANCE (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
23.		Ring mount (12)	<p>a. Position to left rear (15), right rear (18), and right front (16) adapters.</p> <p>b. Install on three adapters (15), (16), and (18) with twelve screws (13), twenty-four washers (14), and twelve new locknuts (17).</p> <p>c. Tighten screws (7).</p> <p>d. Tighten all attaching hardware fastening gun mount.</p>	Align locating hole (19) to locating hole in rear adapter (18).



END OF TASK!

## 11-39. DECONTAMINATION (M13) APPARATUS MOUNTING BRACKET KIT REPLACEMENT

This task covers:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>a. Removal (M929, M930, M931, M932)</li> <li>b. Installation (M929, M930, M931, M932)</li> <li>c. Removal (M934, M935)</li> <li>d. Installation (M934, M935)</li> </ul> | <ul style="list-style-type: none"> <li>e. Removal (M936)</li> <li>f. Installation (M936)</li> <li>g. Removal (M923, M924, M925, M926, M927, M928)</li> <li>h. Installation (M923, M924, M925, M926, M927, M928)</li> </ul> |
|--|--|

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Spare fire removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Four locknuts (M929, M930, M931, M932)		None
Eight locknuts (M934, M935, M936)		
Seventeen locknuts (M923, M924, M925, M926, M927, M928)		
Four lockwashers (M929, M930, M931, M932)		
Twelve lockwashers (M934, M935)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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#### a. Removal (M929, M930, M931, M932)

- |                   |  |         |   |
|-------------------|--|---------|---|
| 1. Deck plate (4) | Four locknuts (5), screws (2), lockwashers (3), mounting bracket (1), and two supports (6) | Remove. | Discard locknuts (5) and lockwashers (3). |
|-------------------|--|---------|---|

#### b. Installation (M929, M930, M931, M932)

- |    |   |  |
|----|---|--|
| 2. | Two supports (6) and mounting bracket (1) | Install on deck plate (4) with four screws (2), new lockwashers (3), and new locknuts (5). |
|----|---|--|

# 11-39. DECONTAMINATION (MI 3) APPARATUS MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

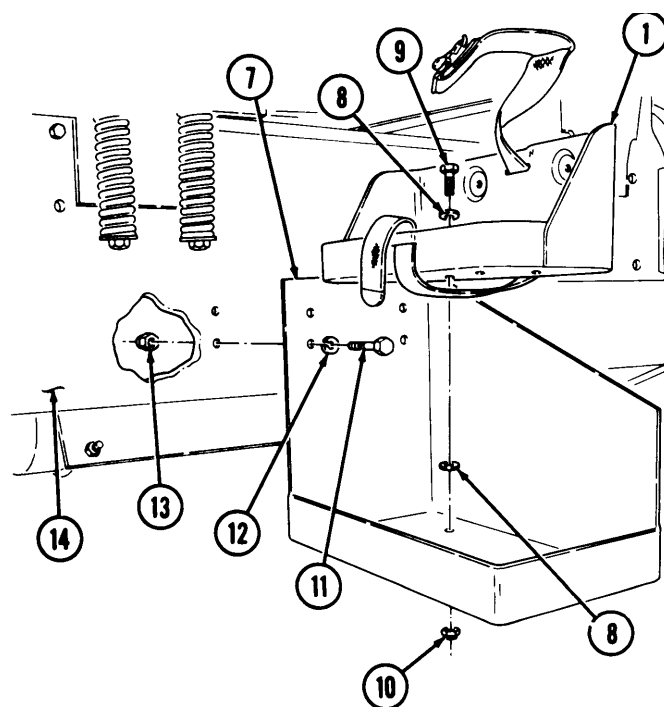
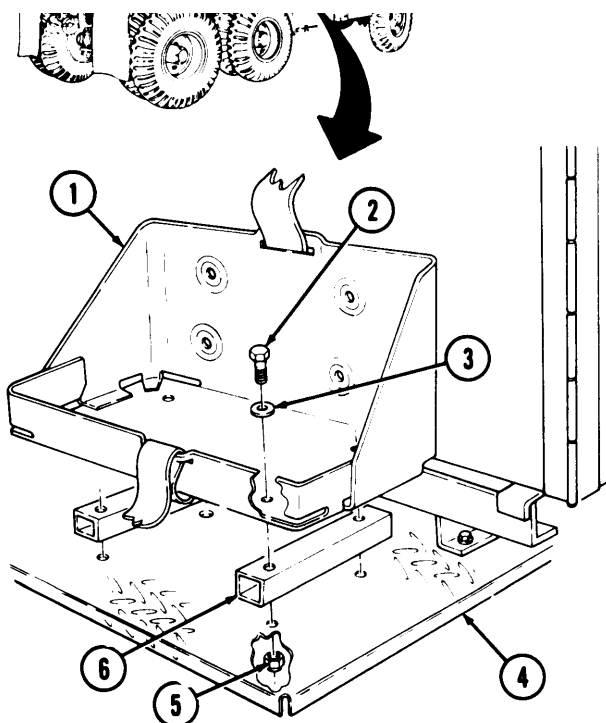
LOCATION	ITEM	ACTION	REMARKS
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## c. Removal (M934, M935)

3. Support bracket (7)	Four locknuts (10), screws (9), eight lockwashers (8), and mounting bracket (1)	Remove.	Discard locknuts (10) and lockwashers (8).
4. Right frame rail (14)	Four locknuts (13), lockwashers (12), screws (11), and support bracket (7)	Remove.	Discard locknuts (13) and lockwashers (12).

## d. Installation (M934, M935)

5.	Support bracket (7)	Install on right frame rail (14) with four new lockwashers (12), screws (11), and new locknuts (13).
6.	Mounting bracket (1)	Install on support bracket (7) with four screws (9), eight new lockwashers (8), and four new locknuts (10).





# 11-39. DECONTAMINATION (MI 3) APPARATUS MOUNTING BRACKET KIT REPLACEMENT (Cent'd)

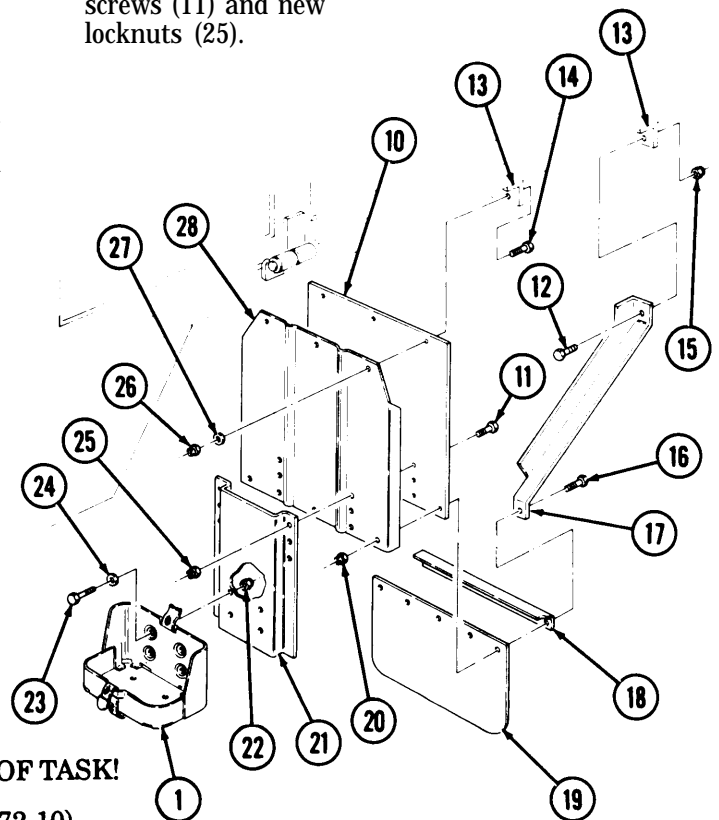
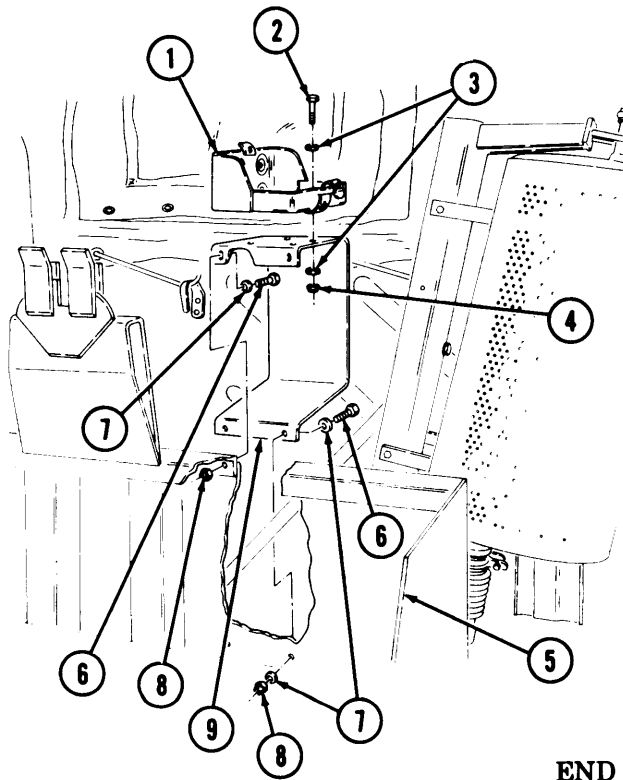
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>e. Removal (M936)</b>				
7.	Support bracket (9)	Four locknuts (4), eight washers (3), four screws (2), and mounting bracket (1)	Remove.	Discard locknuts (4).
8.	Body (5)	Four locknuts (8), six washers (7), four screws (6), and support bracket (9)	Remove.	Discard locknuts (8).
<b>f. Installation (M936)</b>				
9.		Support bracket (9)	Install on body (5) with six washers (7), four screws (6), and new locknuts (8).	
10.		Mounting bracket (1)	Install on support bracket (9) with four screws (2), eight washers (3), and four new locknuts (4).	
<b>g. Removal (M923, M924, M925, M926, M927, M928)</b>				
11.	Upper splash guard (28)	Six locknuts (25), screws (11), and support bracket (21) with mounting bracket (1)	Remove.	Discard locknuts (25).
12.	Support bracket (21)	Four locknuts (22), washers (24), screws (23), and mounting bracket (1)	Remove.	Discard locknuts (22).
13.	Upper splash guard (28)	Three locknuts (20), screws (16), brace (17), retainer (18), and lower splash guard (19)	Remove.	Discard locknuts (20).
14.	Cargo body (13)	Locknut (15), screw (12), and brace (17)	Remove.	Discard locknut (15).
15.		Three locknuts (26), washers (27), screws (14), upper splash guard (28), and reinforcement plate (10).	Remove.	Discard locknuts (26).

# 11-39. DECONTAMINATION [M13] APPARATUS MOUNTING BRACKET KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## h. Installation (M923, M924 M925, M926, M927, M928)

- |     |  |   |
|-----|--|---|
| 16. | Reinforcement plate (10) and upper splash guard (28)   | Install on cargo body (13) with three screws (14), washers (27), and new locknuts (26).     |
| 17. | Brace (17)   | Install on cargo body (13) with screw (12) and new locknut (15).                            |
| 18. | Lower splash guard (19), retainer (18), and brace (17) | Install on upper splash guard (28) with three screws (16) and new locknuts (20).            |
| 19. | Mounting bracket (1)                                   | Install on support bracket (21) with four screws (23), washers (24), and new locknuts (22). |
| 20. | Support bracket (21)                                   | Install on upper splash guard (28) with six screws (11) and new locknuts (25).              |



END OF TASK!

FOLLOW-ON TASK: Install spare tire (TM 9-2320-272-10).

11-40. MUD GUARD KIT REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

	Equipment Condition Reference	Condition Description
<u>Applicable Models</u> M931, M932	TM 9-2320-272-10 Para. 11-35	Parking brake set. Pioneer tool bracket removed.
<u>Test Equipment</u> None		
<u>Special Tools</u> None		<u>Special Environmental Conditions</u> None
<u>Materials/Parts</u> Five locknuts		<u>General Safety Instructions</u> None
<u>Personnel Required</u> Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u> TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

NOTE

The left and right mud guards are replaced the same way. This procedure cover; the left mud guard.

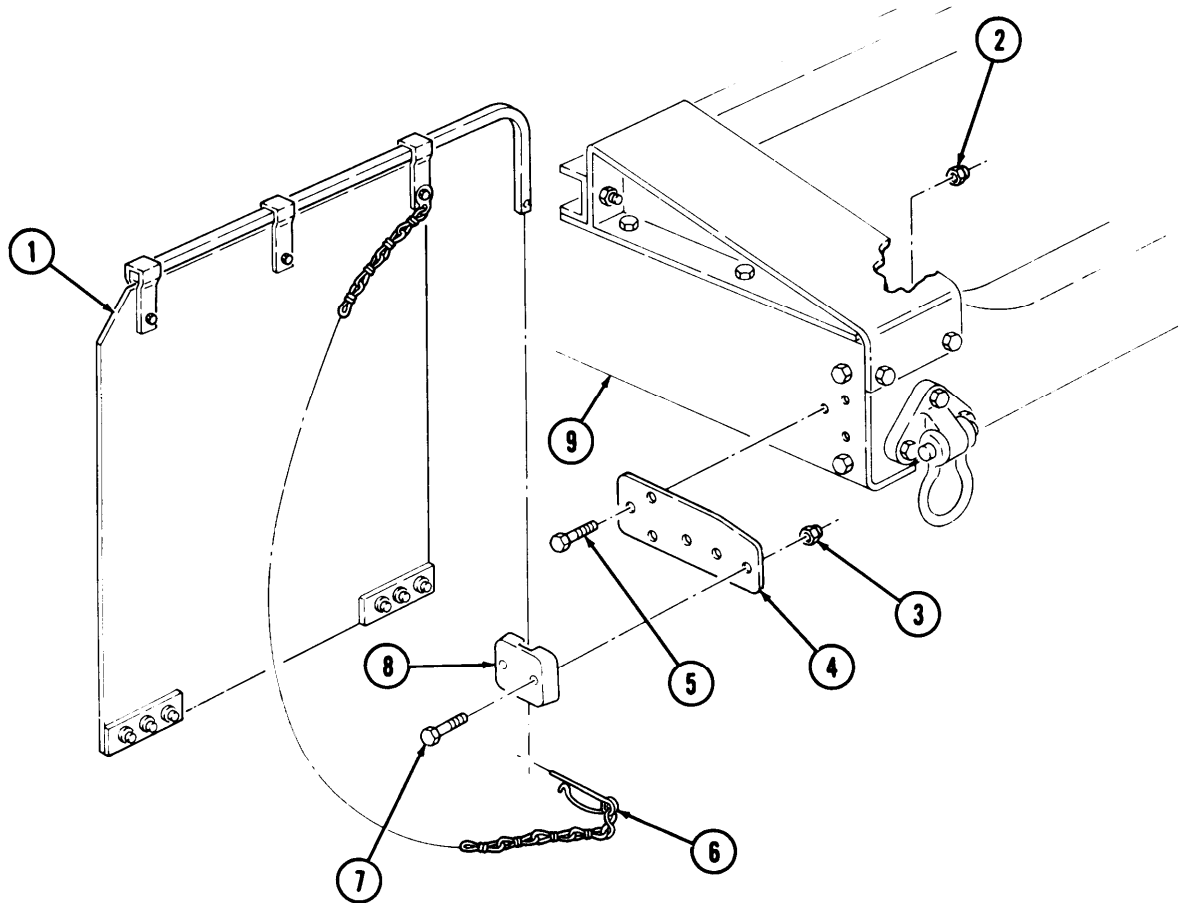
- |    |                |   |         |                       |
|----|----------------|---|---------|-----------------------|
| 1. | Bracket (8)    | Pin (6) and mud guard (1)                     | Remove. |                       |
| 2. | Plate (4)      | Two locknuts (3), screws (7), and bracket (8) | Remove. | Discard locknuts (3). |
| 3. | Frame rail (9) | Three locknuts (2), screws (5), and plate (4) | Remove. | Discard locknuts (2). |

b. Installation

- |    |               |  |
|----|---------------|--|
| 1. | Plate (4)     | Install on end of frame rail (9) with three screws (5) and new locknuts (2). |
| 2. | Bracket (8)   | Install on plate (4) with two screws (7) and new locknuts (3).               |
| 3. | Mud guard (1) | Install on bracket (8) with pin (6).   |

# 11-40. MUD GUARD KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install pioneer tool bracket (para. 11-35).

11-41. RIFLE MOUNTING KIT REPLACEMENT

- This task covers:
- a. Removal from left Door

b. Removal from Dash and Floor

c. Installation on Left Door

d. Installation on Dash and Floor

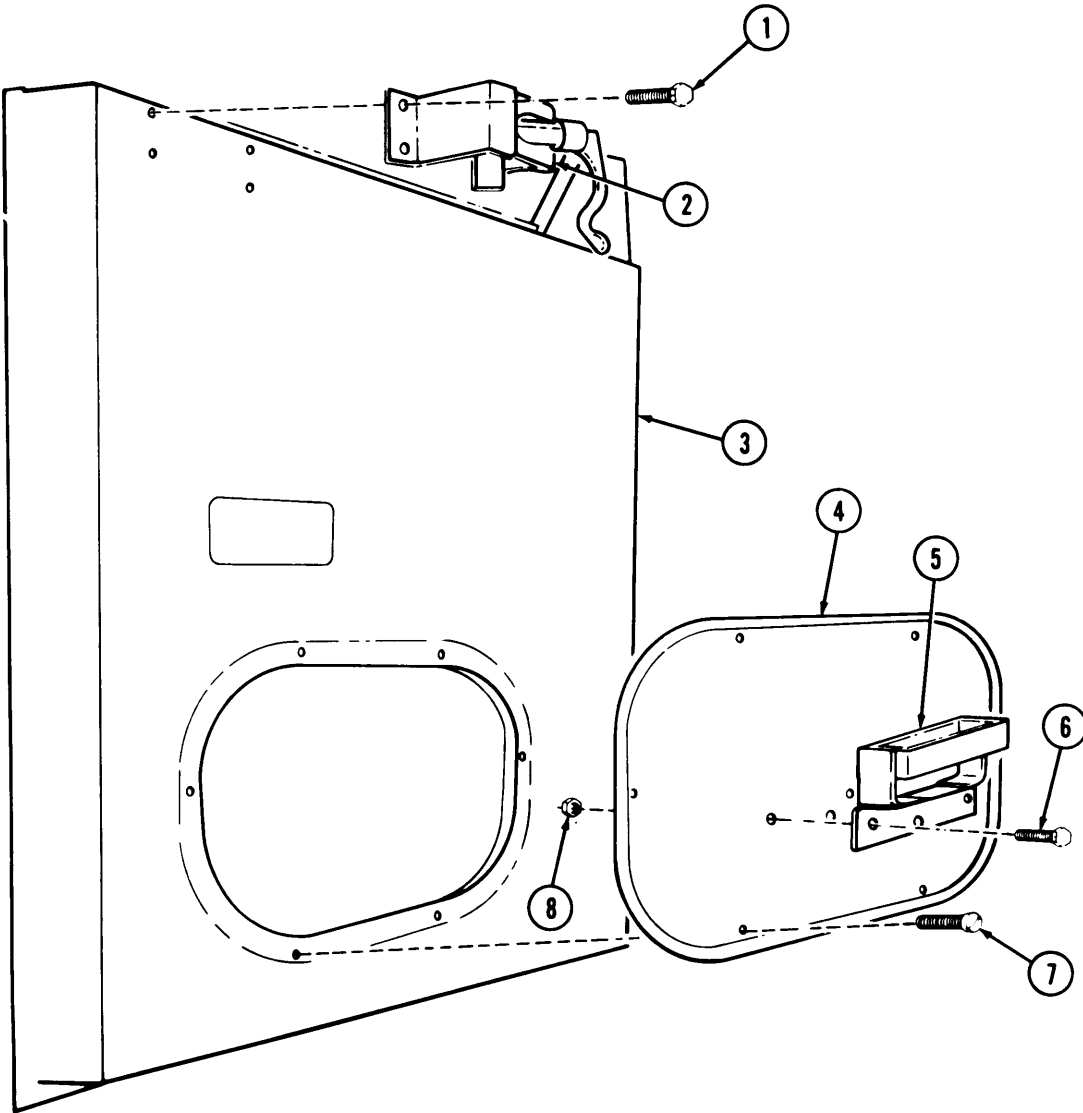
INITIAL SETUP:		
<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
Seven locknuts		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
Light-wheeled vehicle mechanic MOS 63B (2)		None
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal from left Door

1.	Door (3)	Four screws (1) and bracket (2)	Remove.	
2.		Six screws (7) inspection cover (4)	Remove.	
3.	Inspection cover (4)	Three screws (6) and locknuts (8), and rifle support (5)	Remove.	Discard locknuts (8).

11-41. RIFLE MOUNTING KIT REPLACEMENT (Cont'd)				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS

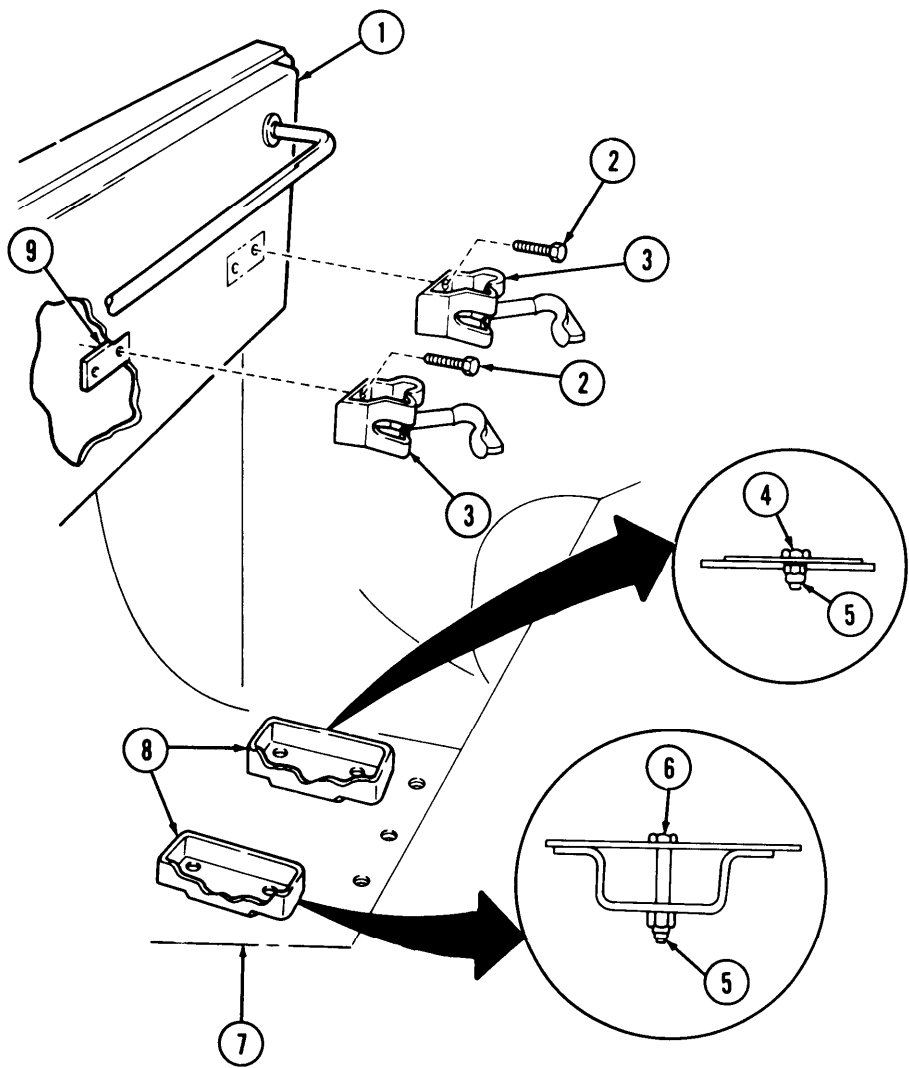


11-41. RIFLE MOUNTING KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Removal from Dash and Floor

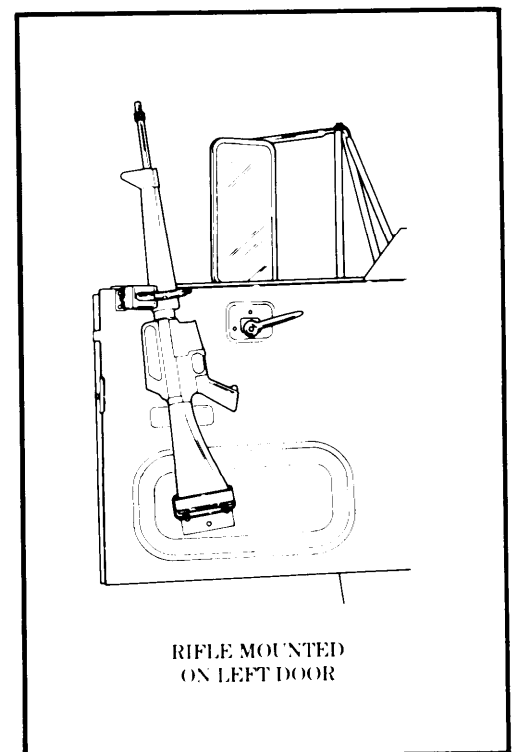
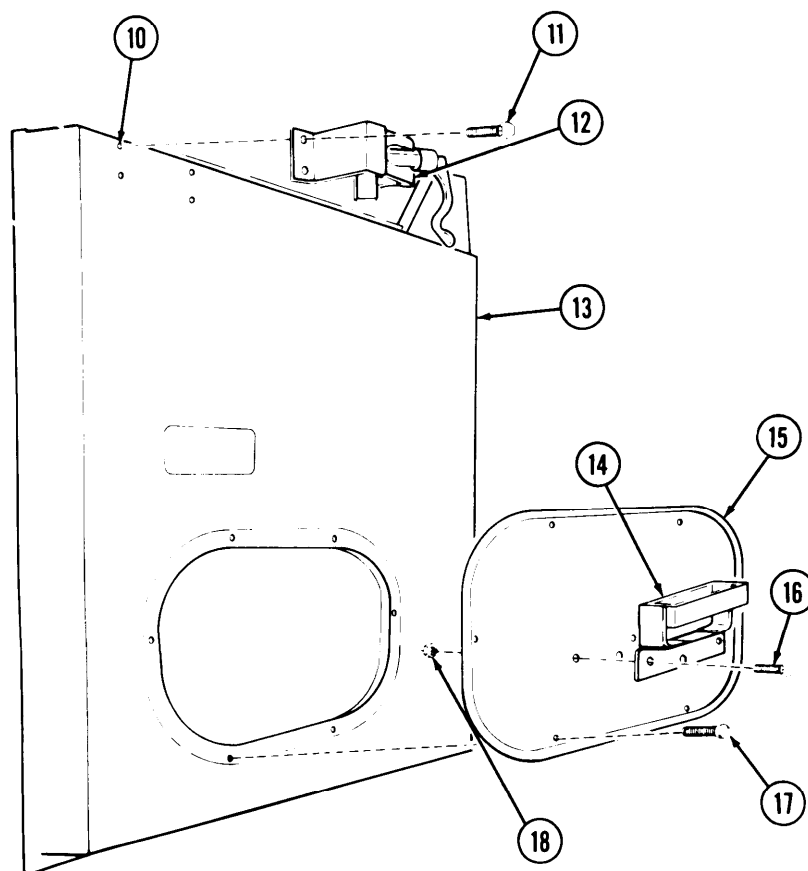
4. Dash (1)	Four screws (2), two reinforcements (9), and rifle catch brackets (3)	Remove.		
<b>NOTE</b> Assistant will help with step 5.				
5. Floor (7)	Two screws (4) or (6), locknuts (5), and rifle supports (8)	Remove		Discard locknuts (5).



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# 11-41. RIFLE MOUNTING KIT REPLACEMENT (Cont'd)

LOCATION	ITEM	ACTION	REMARKS
<b>c. Installation on Left Door</b>			
6.	Rifle catch bracket (12)	Position to holes (10) in door (13) and install with four screws (11).	
7. Door (13)	Six screws (17) and inspection cover (15)	Remove.	
8.	Rifle support (14)	Install on inspection cover (15) with three screws (16) and new locknuts (18).	
9.	Inspection cover (15)	Install on door (13) with six screws (17).	



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11-41. RIFLE MOUNTING KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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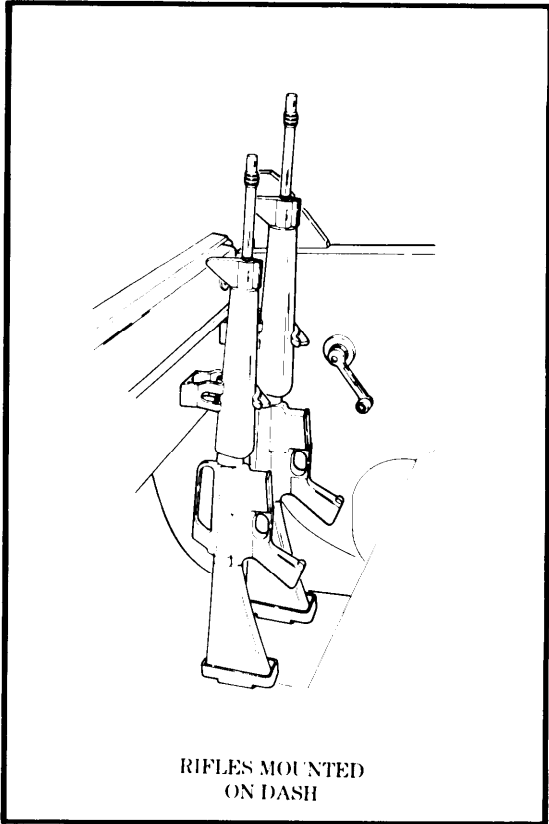
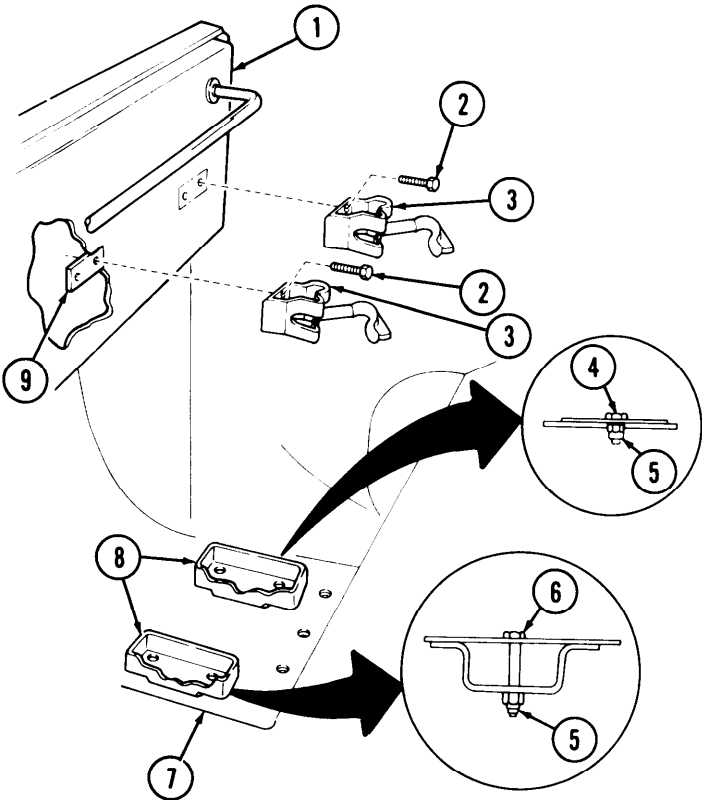
d. Installation on Dash and Floor

11.		Two rifle catch brackets (3)	a. Position two reinforcements (9) behind dash (1) and align holes.  b. Position two brackets (3) to dash (1) and install with four screws (2).	
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NOTE

Assistant will help with step 11.

11.		Two rifle supports (8)	Position to holes in floor (7) and install with two screws (4) or (6) and new locknuts (5).	
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END OF TASK!

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## Section VI. HAND AIRBRAKE KIT MAINTENANCE

### 11-42. GENERAL

a. This section provides maintenance procedures assigned to the organizational maintenance level for the Hand Airbrake Kit. Installation drawings are provided with the kit. To find a specific maintenance procedure, see the maintenance task summary below.

b. For fabrication instructions of air lines, refer to TM 9-243.

c. For schematic representation of air line locations and routing, see Appendix G of this manual.

### 11-43. HAND AIRBRAKE KIT MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
11-44.	Hand Airbrake Air Supply Valve Replacement	11-167
11-45.	Hand Airbrake Controller Valve Replacement	11-170
11-46.	Hand Airbrake Doublecheck Valves Replacement	11-174
11-47.	Hand Airbrake Tractor Protection Valve Replacement	11-178

### 11-44. HAND AIRBRAKE AIR SUPPLY VALVE REPLACEMENT

This task covers:

#### a. Removal

#### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All (except M931, M932, M933, and M936)	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tool</u>		
None		
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Two locknuts Two lockwashers Sealing (Appendix D, Item 26)		Do not disconnect air lines before draining air reservoirs.
<u>personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

11-44. HAND AIRBRAKE AIR SUPPLY VALVE REPLACEMENT (Cont'd)

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

a. Removal

WARNING

Do not disconnect airlines before draining air reservoirs. Small parts under pressure may shootout with high velocity, causing injury to personnel.

NOTE

Tag air lines for installation.

1. Two elbows (9) and air supply valve (12)	Two air lines (11)	Loosen two connector nuts (10) and remove.	
2. Air supply valve (12)	Two elbows (9)	Remove.	
3. Button (5)	Pin (4)	Remove.	
4. Mounting bracket (7) and air supply valve (12)	Button (5) and nut (6)	Remove.	
5. Mounting bracket (7)	Air supply valve (12)	Remove.	
6. Instrument panel (1)	Two locknuts (2), lockwashers (3), screws (8), and bracket (7).	Remove.	Discard locknuts (2) and lockwasher (3).

b. Installation

7.	Mounting bracket (7)	Install on instrument panel (1) with two screws (8), new lockwashers (3), and new locknuts (2).	
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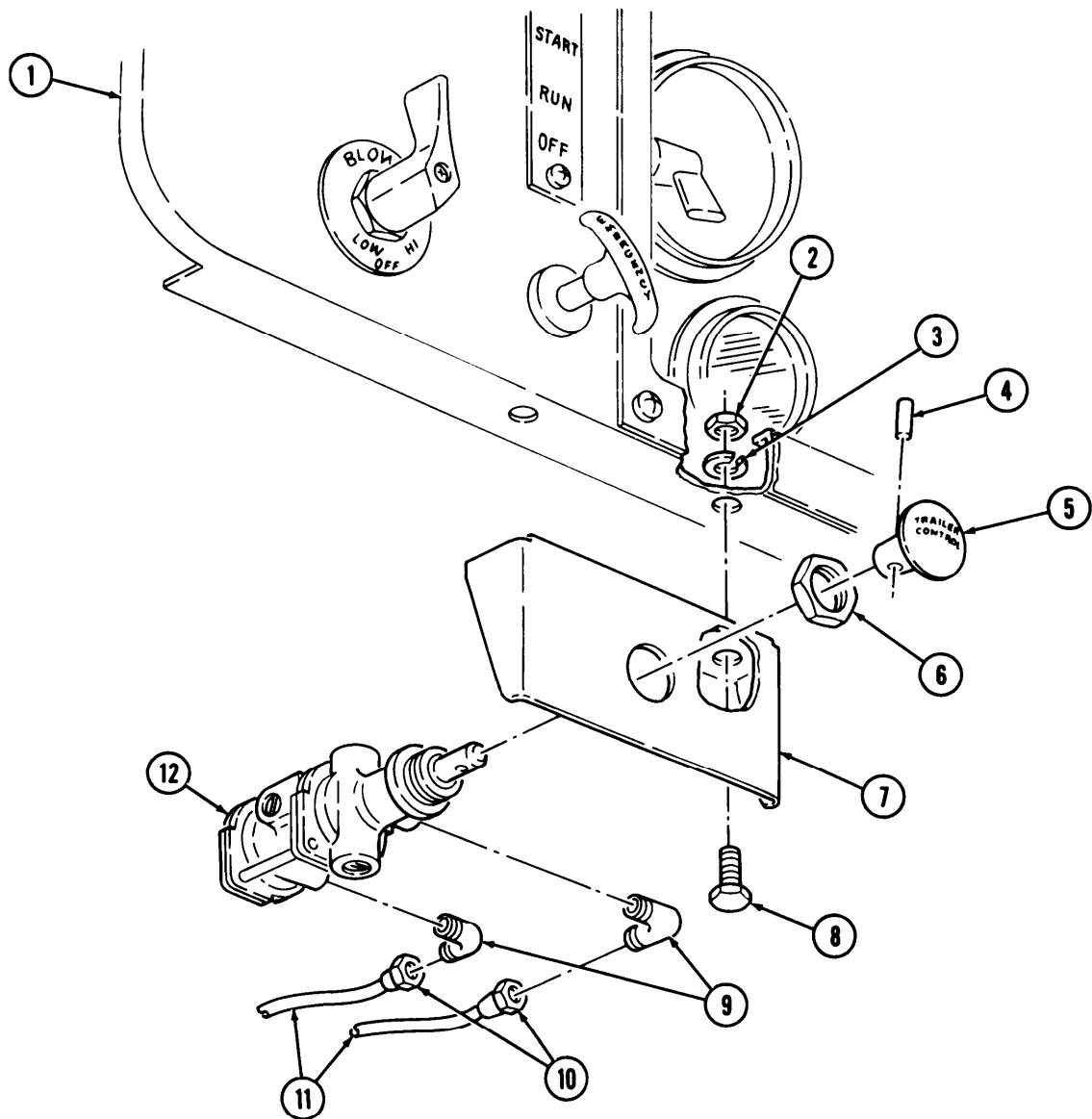
NOTE

Male pipe threads must be wrapped with sealing tape before installation.

8.	Air supply valve (12)	Install on mounting bracket (7) with nut (6), button (5), and pin (4).	
9.	Two elbows (9)	Install on air supply valve (12).	
10.	Two air lines (11)	Install on elbows (9) with connector nuts (10).	

11-44. HAND AIRBRAKE AIR SUPPLY VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10). Allow for normal air pressure and check for leaks (TM 9-2320-272-10).

11-45. HAND AIRBRAKE CONTROLLER VALVE REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All except M931, M932, M933, and M936	TM 9-2320-272-10 TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Hood raised and secured. Air reservoirs drained.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		Do not disconnect air lines before draining air reservoirs.
<u>Materials/Parts</u>		
Two locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

a. Removal

WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

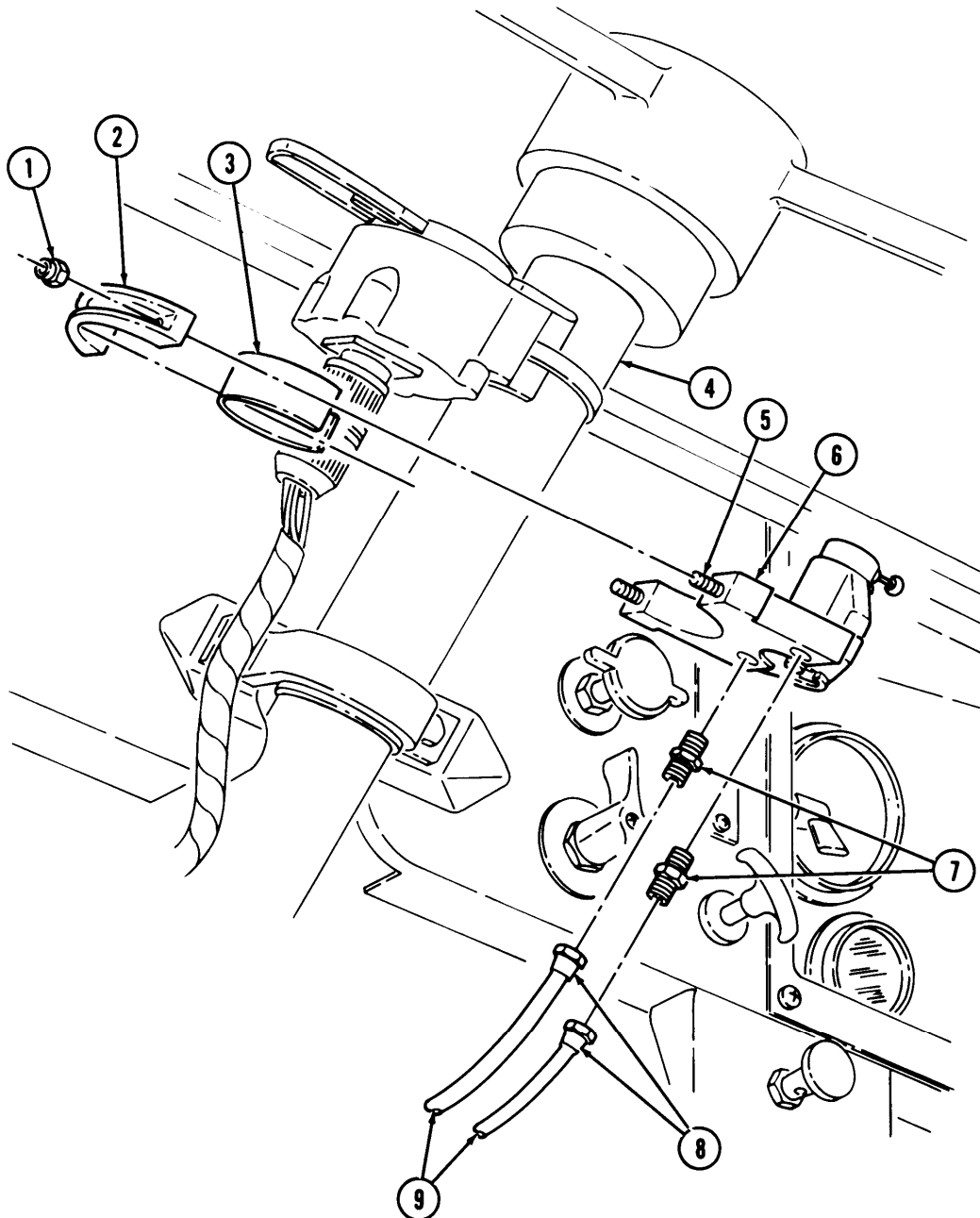
NOTE

Tag air lines for installation.

1. Two adapters (7)	Two air lines (9)	Loosen connector nuts (8) and remove.	
2. Controller valve (6)	Two adapters (7)	Remove.	
3. Retainer bracket (2) and valve studs (5)	Two locknuts (1)	Remove.	Discard locknuts (1).
4. Steering column (4)	Retainer bracket (2), strap (3), and controller valve (6)	Remove.	

11-45. HAND AIRBRAKE CONTROLLER VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**11-45. HAND AIRBRAKE CONTROLLER VALVE REPLACEMENT (Cont'd)**

<b>STEP NO.</b>	<b>LOCATION</b>	<b>ITEM</b>	<b>ACTION</b>	<b>REMARKS</b>
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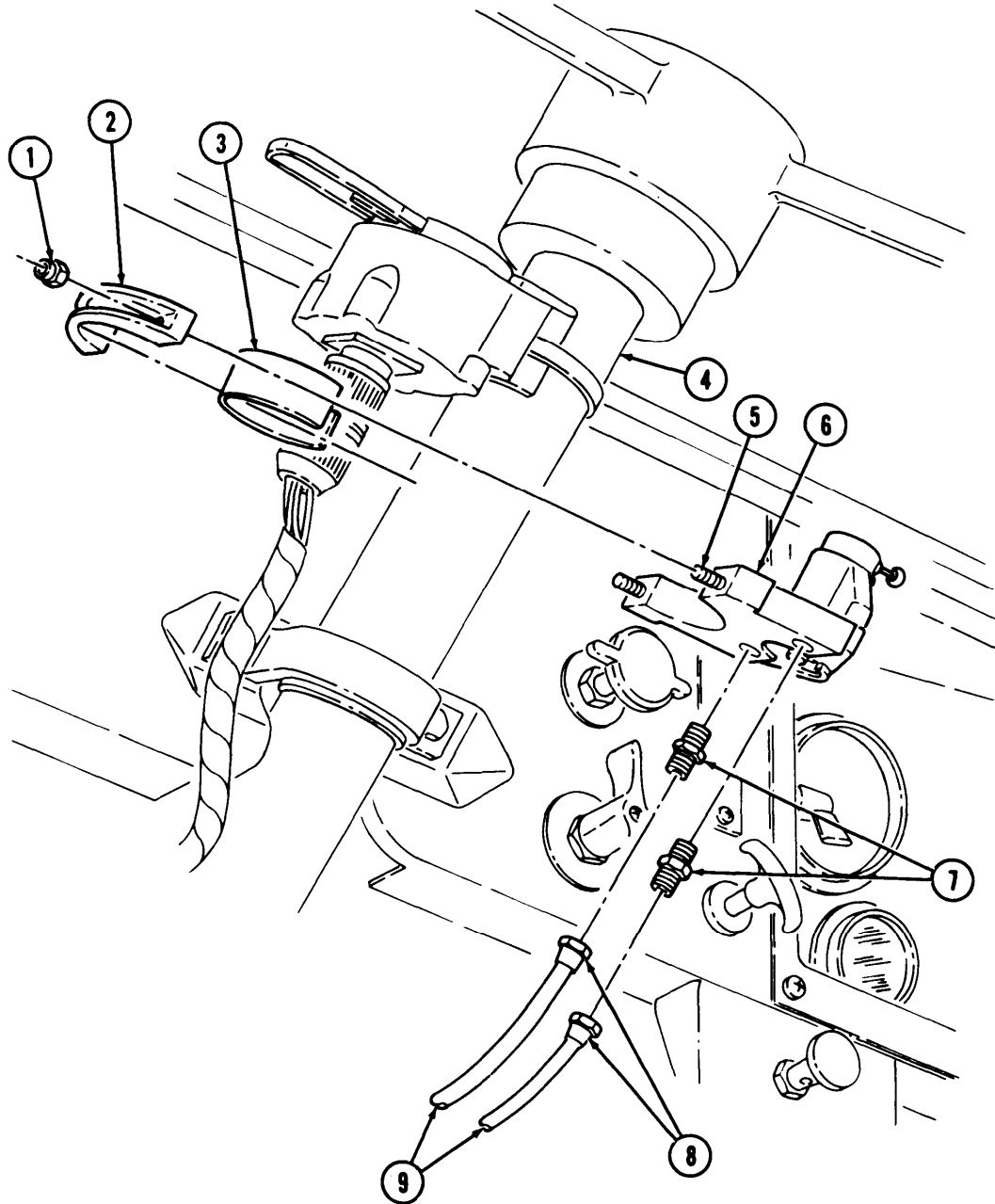
**b. Installation****NOTE**

Male pipe threads must be wrapped with sealing tape before installation.

- |    |  |   |  |
|----|--|---|--|
| 5. |  | Retainer bracket (2), strap (3), and controller valve (6) | Position on steering column (4).                     |
| 6. |  | Two new locknuts (1)                                      | Install on valve studs (5).                          |
| 7. |  | Two adapters (7)  | Install on controller valve (6).                     |
| 8. |  | Two air lines (9)   | Install on two adapters (7) with connector nuts (8). |

# 11-45. HAND AIRBRAKE CONTROLLER VALVE REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10). Allow for normal air pressure and check for leaks (TM 9-2320-272-10).



11-46. HAND AIRBRAKE DOUBLECHECK VALVES REPLACEMENT

This task covers:

- a. Removal (Forward-Rear Axle Doublecheck Valve)
- b. Installation (Forward-Rear Axle Doublecheck Valve)
- c. Removal (Rear-Rear Axle Doublecheck Valve)
- d. Installation (Rear-Rear Axle Doublecheck Valve)

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All except M931, M932, M933, and M936	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
Test Equipment		Special Environmental Conditions
None		None
Special Tools		General Safety Instructions
None		Do not disconnect air lines before draining air reservoirs.
Materials/Parts		
Two locknuts Sealing tape (Appendix D, Item 26)		
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B		
Manual References		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal (Forward-Rear Axle Doublecheck Valve)

WARNING

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot with high velocity, causing injury to personnel.

NOTE

Tag air lines for installation.

- |                          |                   |                                       |
|--------------------------|-------------------|---------------------------------------|
| 1. Adapter (13)          | Air line (11)     | Loosen connector nut (12) and remove. |
| 2. Two elbows (3)        | Two air lines (1) | Loosen connector nuts (2) and remove. |
| 3. Doublecheck valve (8) | Two elbows (3)    | Remove.                               |

# 11-46. HAND AIRBRAKE DOUBLECHECK VALVES REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
4.	Tee (10)	Switch (9) and adapter (13)	Remove.	
5.	Doublecheck valve (8)	Tee (10)	Remove.	
6.	Frame rail (6)	Locknut (4), washer (5), bolt (7), and doublecheck valve (8)	Remove.	Discard locknut (4).

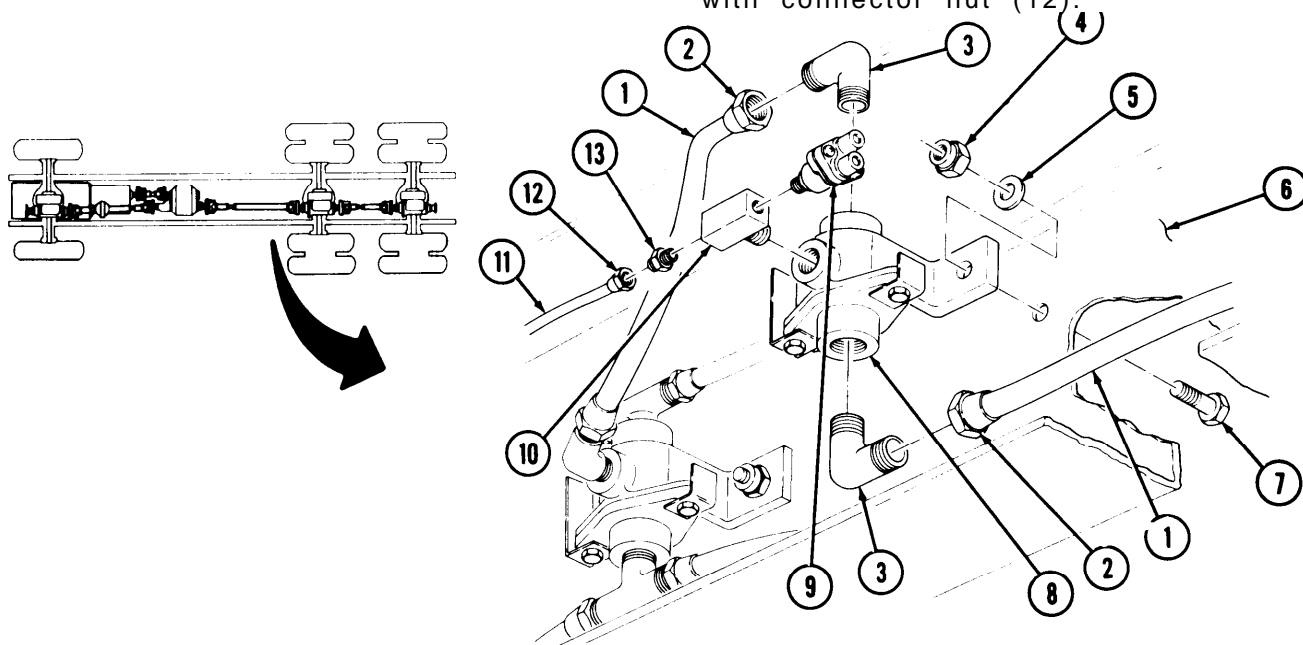
## b. Installation (Forward-Rear Axle Doublecheck Valve)

- |    |                       |   |
|----|-----------------------|---|
| 7. | Doublecheck valve (8) | Install on frame rail (6) with bolt (7), washer (5), and new locknut (4). |
|----|-----------------------|---|

### NOTE

Male pipe threads must be wrapped with sealing tape before installation.

- |     |                             |  |
|-----|-----------------------------|--|
| 8.  | Tee (10)                    | Install on doublecheck valve (8).                |
| 9.  | Switch (9) and adapter (13) | Install on tee (10).                             |
| 10. | Two elbows (3)              | Install on doublecheck valve (8).                |
| 11. | Two air lines (1)           | Install on elbows (3) with connector nuts (2).   |
| 12. | Air line (11)               | Install on adapter (13) with connector nut (12). |



# 11-46. HAND AIRBRAKE DOUBLECHECK VALVES REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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## c. Removal (Rear-Rear Axle Doublecheck Valve)

### **WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

13. Adapter (5)	Air line (3)	Loosen connector nut (4) and remove.	
14. Two elbows (6)	Two air lines (1)	Loosen two connector nuts (2) and remove.	
15. Doublecheck valve (7)	Two elbows (6) and adapter (5)	Remove.	
16. Frame rail (9)	Locknut (10), bolt (8), and doublecheck valve (7)	R e m o v e .	Discard locknut (10).

## d. Installation (Rear-Rear Axle Doublecheck Valve)

17.	Doublecheck valve (7)	Install on frame rail (9) with bolt (8) and new locknut (10).
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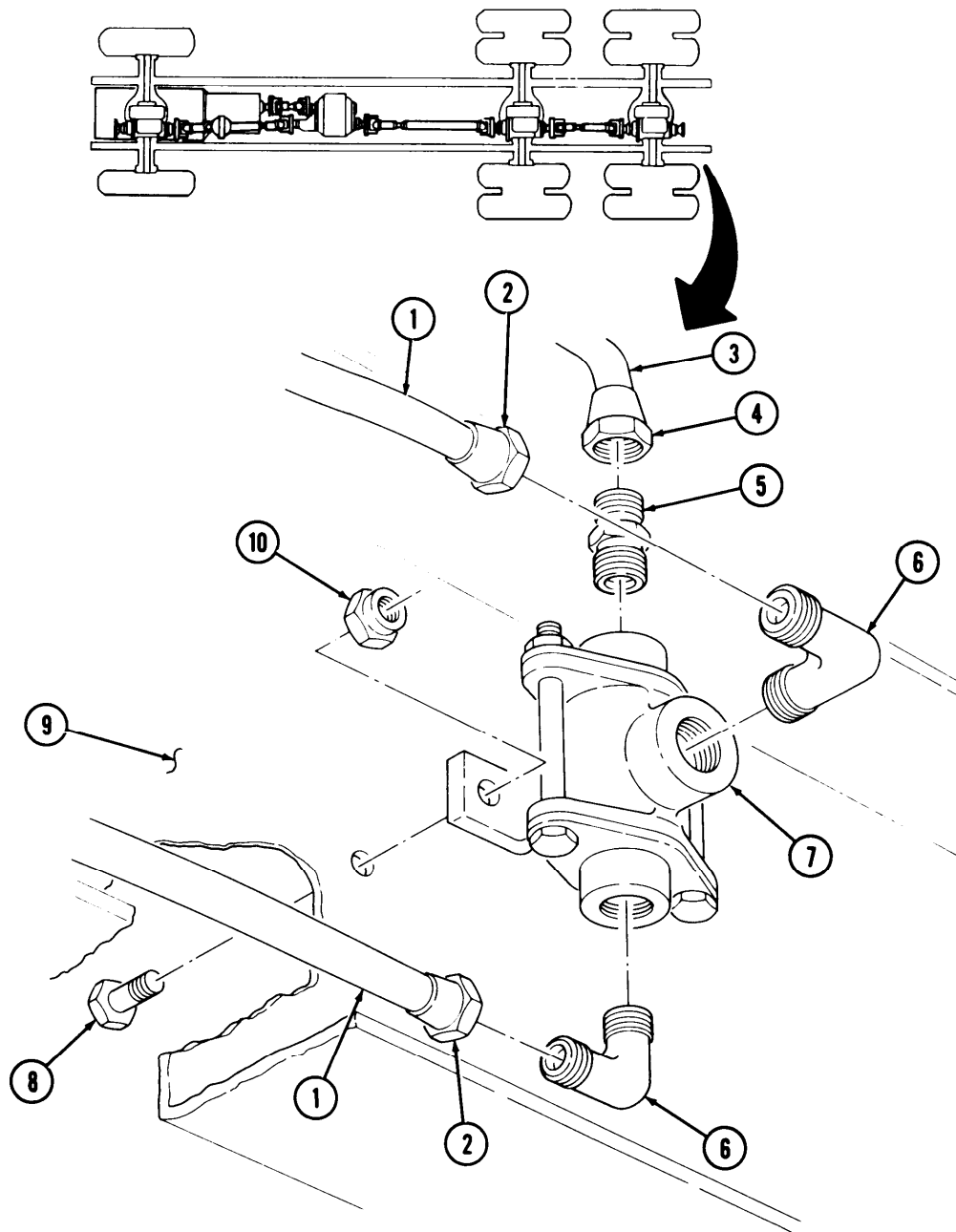
### **NOTE**

Male pipe threads must be wrapped with sealing tape before installation.

18.	Two elbows (6) and adapter (5)	Install on doublecheck valve (7).
19.	Two air lines (1)	Install on elbows (6) with connector nuts (2).
20.	Air line (3)	Install on adapter (5) with connector nut (4).

11-46 HAND AIRBRAKE DOUBCHECK VALVES REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
---------------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10). Allow for normal air pressure and check for leaks (TM 9-2320-272-10).

## 11-47. HAND AIRBRAKE TRACTOR PROTECTION VALVE REPLACEMENT

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All except M931, M932, M933, and M936	TM 9-2320-272-10 TM 9-2320-272-10	Parking brake set. Air reservoirs drained.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		Do not disconnect air lines before draining air reservoirs.
<u>Materials/Parts</u>		
Two locknuts Sealing tape (Appendix D, Item 26)		
<u>Personnel Rewired</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

**a. Removal****WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

**NOTE**

Tag air lines for installation.

1. Four elbows (1)	Four air lines (3)	Loosen four connector nuts (2) and remove.	
2. Valve (4)	Four elbows (1)	Remove.	
3. Frame rail (5)	Two locknuts (7), bolts (6), and valve (4)	Remove.	Discard locknuts (7).

**b. Installation**

4.	Valve (4)	Install on frame rail (5) with two bolts (6) and new locknuts (7).
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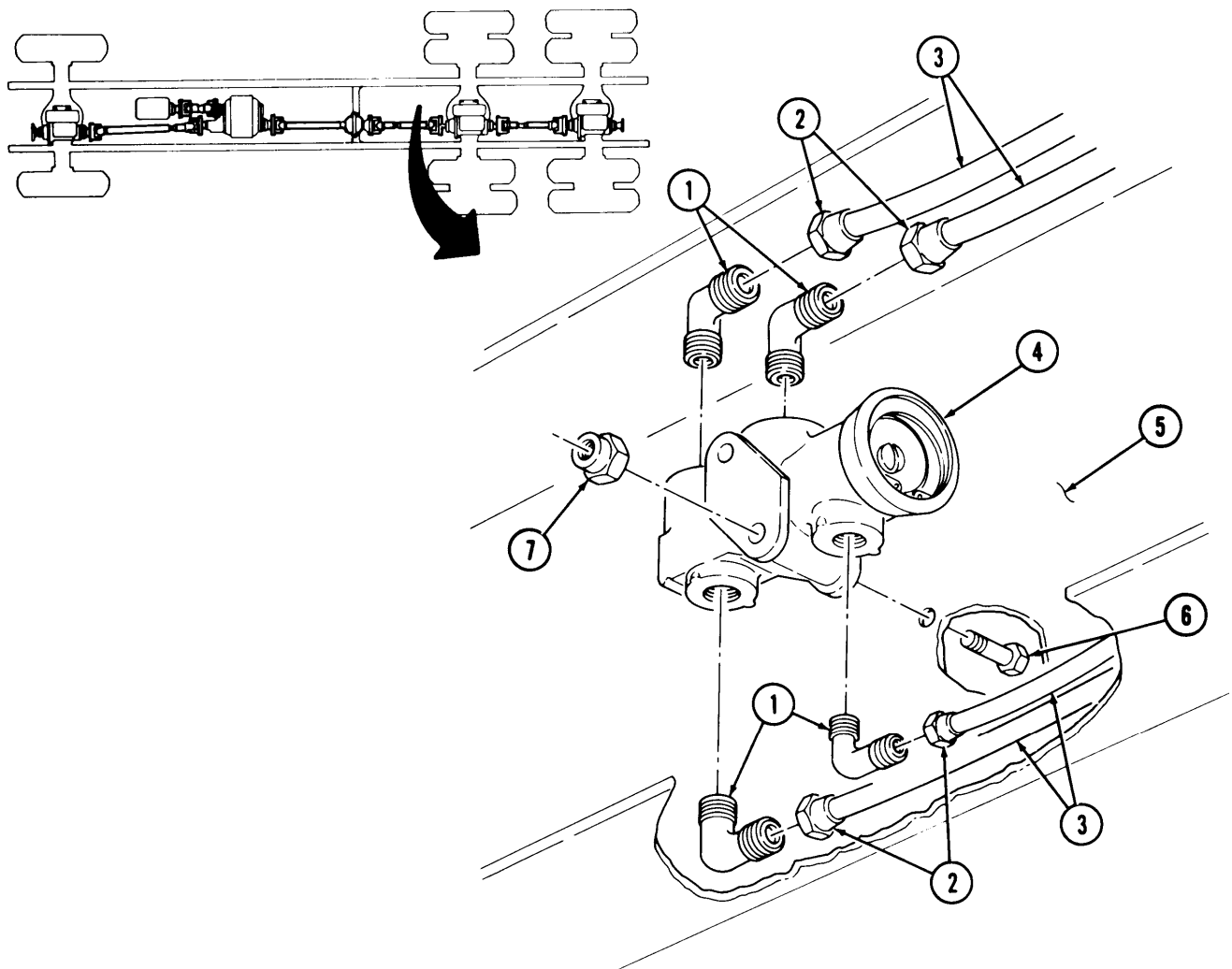
# 11-47. HAND AIRBRAKE TRACTOR PROTECTION VALVE REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
---------------	----------	------	--------	---------

## NOTE

Male pipe threads must be wrapped with sealing tape before installation.

- |    |                    |  |
|----|--------------------|--|
| 5. | Four elbows (1)    | Install on valve (4).                          |
| 6. | Four air lines (3) | Install on elbows (1) with connector nuts (2). |



END OF TASK!

FOLLOW-ON TASK: Start engine (TM 9-2320-272-10). Allow for normal air pressure and check for leaks (TM 9-2320-272-10).

Section VII. 100 AMP ALTERNATOR KIT MAINTENANCE

11-48. GENERAL

This section provides maintenance procedures assigned to the organizational level for the 100 Amp Alternator Kit. To find a specific procedure, see the maintenance task summary below:

11-49. 100 AMP ALTERNATOR KIT MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
11-50.	100 Amp Alternator Replacement	11-180
11-51.	100 Amp Alternator Harness Replacement	11-184
11-52.	100 Amp Voltage Regulator Replacement	11-188

11-50. 100 AMP ALTERNATOR REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
Test Equipment	TM 9-2320-272-10	Hood raised and secured.
None	TM 9-2320-272-10	Left and right splash shields removed.
Special Tools	Para. 4-25	Battery ground cables disconnected.
None	Para. 4-8	Alternator drivebelts removed
Materials/Parts		Special Environmental Conditions
Lockwasher		None
Personnel Required		General Safety Instructions
Light-wheeled vehicle mechanic MOS 63B (2)		None
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1. Alternator (11)
- Harness connector (12) Disconnect.
2. Alternator (11) to mounting bracket (10)
- Two screws (7), washers (8), and nuts (9) Remove.

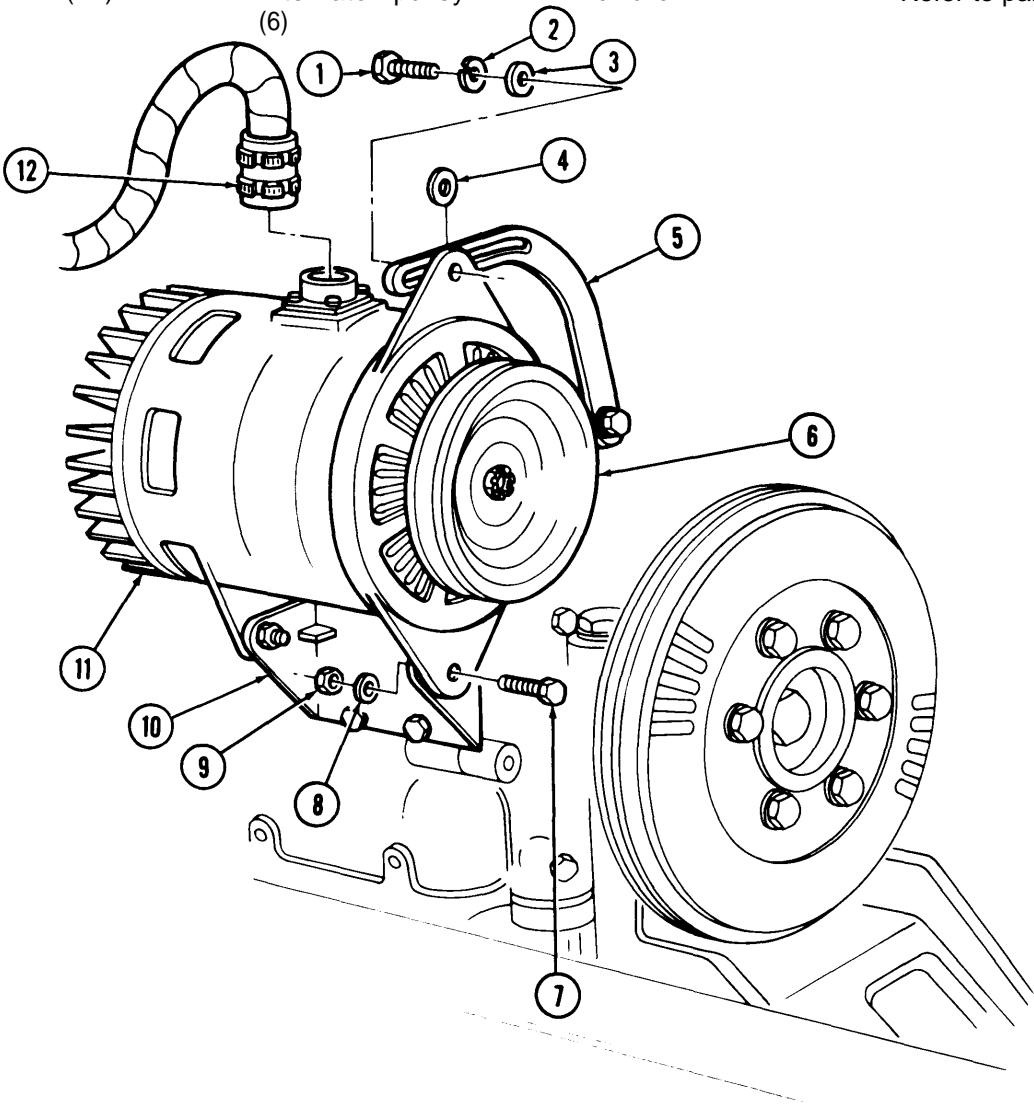
11-50. 100 AMP ALTERNATOR REPLACEMENT (Cont'd)

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

NOTE

Assistant will help support alternator in step 3.

- |    |   |  |         |                            |
|----|---|--|---------|----------------------------|
| 3. | Alternator (11)<br>to alternator<br>adjusting arm (5) | Screw (1), lock washer<br>(2), washers (3) and (4),<br>and alternator (11) | Remove. | Discard lockwasher<br>(2). |
| 4. | Alternator (11)                                       | Alternator pulley<br>(6)   | Remove. | Refer to para. 4-10.       |





<b>11-50.100 AMP ALTERNATOR REPLACEMENT (Cont'd)</b>
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STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
------------------------

5.		Alternator pulley (6)	Install on alternator (11).	Refer to para. 4-10.
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**NOTE**

Assistant will help with step 6.

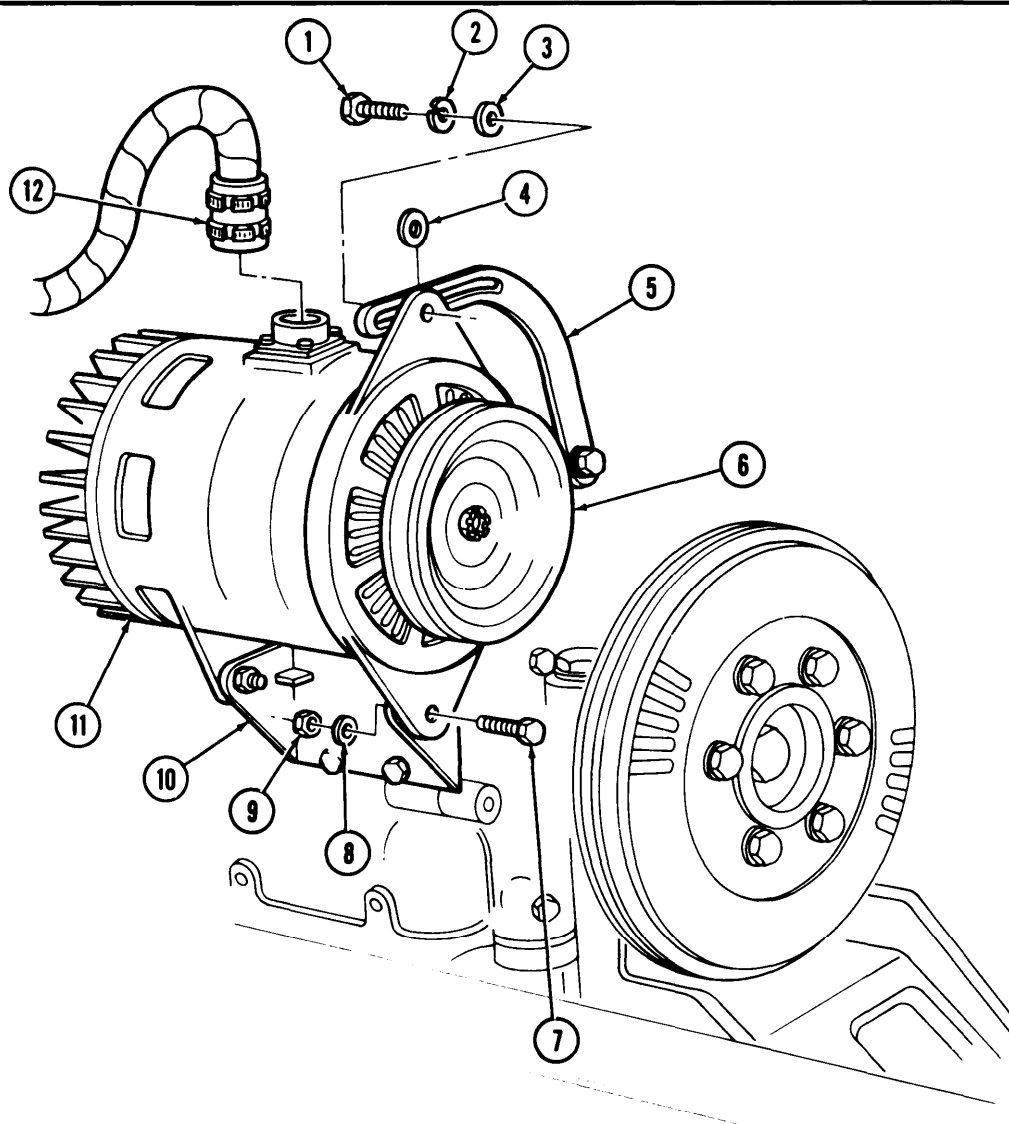
6.		Alternator (11)	Install on mounting bracket (10) with two screws (7), washers (8), and nuts (9).	Finger tighten only.
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7.		Alternator (11)	Install on alternator adjusting arm (5) with screw (1), washer (3), new lockwasher (2), and washer (4).	Washer (4) is installed between arm (5) and alternator (11).  Finger tighten only
----	--	-----------------	--	---

8.		Harness connector (12)	Connect to alternator (11).	
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# 11-50.100 AMP ALTERNATOR REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Install alternator drivebelts (para. 4-8).
  - Connect battery ground cables (para. 4-25).
  - Install left and right splash shields (TM 9-2320-272-10).

11-51. 100 AMP ALTERNATOR HARNESS REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10	Hood raised and secured.
None	TM 9-2320-272-10	Right and left engine splash shields removed.
<u>Special Tools</u>	Para. 4-25	Battery ground cables disconnected.
None		
<u>Materials/Parts</u>	<u>Special Environmental Conditions</u>	
Five tiedown straps (Appendix D, Item 18)	None	
Four lockwashers		
<u>Personnel Required</u>	<u>General Safety Instructions</u>	
Light-wheeled vehicle mechanic MOS 63B	None	
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

NOTE

Tag wires, connectors, and cables for installation.

1. Front wiring harness (22) and voltage regulator wiring harness (3) to firewall (2)

Three screws (6), washers (5), and clamps (4)

Remove.
2.

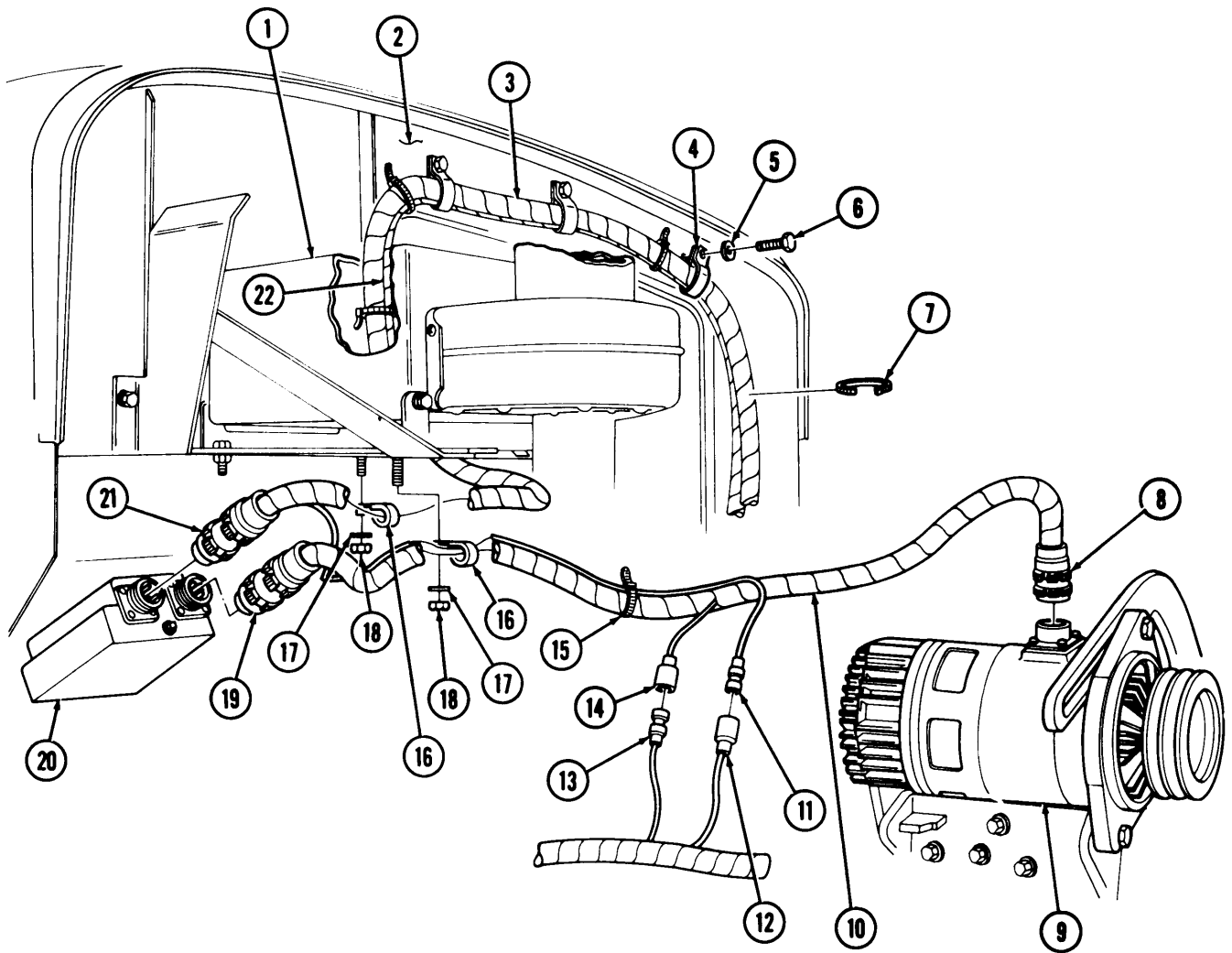
Four tiedown straps (7)

Cut and remove.

Discard tiedown straps (7).

# 11-51. 100 AMP ALTERNATOR HARNESS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
3.	Personnel heater (1)	Two nuts (18), washers (17), and clamps (16)	Remove.	
4.	Wiring harness (10)	Tiedown strap (15)	Cut and remove.	Discard tiedown strap (15).
5.	Alternator (9)	Harness connector (8)	Disconnect	
6.	Wires (11) and (13)	Connectors (12) and (14)	Disconnect.	
7.	Regulator (20)	Harness connectors (19) Disconnect and (21)		

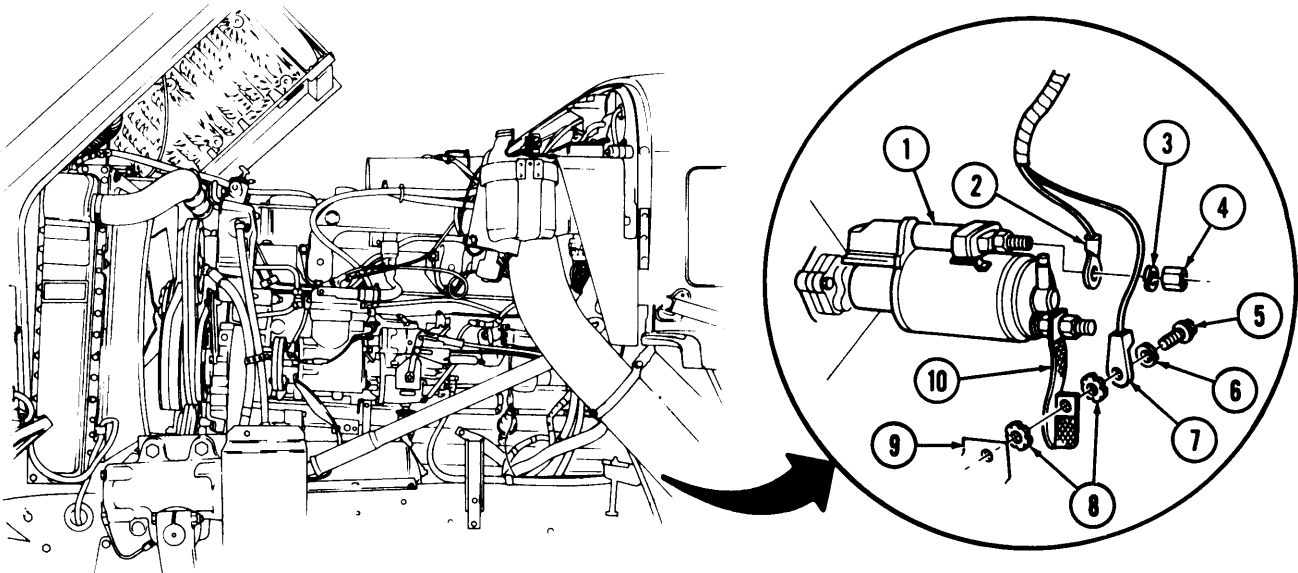


11-51.100 AMP ALTERNATOR HARNESS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
8.	Engine (9)	Screw (5), lockwasher (6), ground wire (7), two lockwashers (8), and starter motor ground strap (10)	Remove.	Discard lockwashers (6) and (8).
9.	Starter solenoid (1)	Nut (4), lockwasher (3), and wire (2)	Remove.	Discard lockwasher (3).

b. Installation

10.		Starter motor ground strap (10) and ground wire (7)	Install on engine (9) with two new lockwashers (8) and (6), and screw (5).
11.		Wire (2)	Install on starter solenoid (1) with new lockwasher (3) and nut (4).



12.		Harness connector (18)	Connect to alternator (19).
13.		Connectors (22) and (24)	Connect to wires (21) and (23).
14.		Harness connectors (29) and (31)	Connect to voltage regulator (30).

# 11-51. 100 AMP ALTERNATOR HARNESS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
15.		Three clamps (14)	Install on harness (13), front wiring harness (32), and firewall (12) with three washers (15) and screws (16).	
16.		Voltage regulator wiring harness (13)	Attach to front wiring harness (32) with four new tiedown straps (17).	
17.		Two clamps (26)	Install on harness (13) and harness (20), and personnel heater (11) with two washers (27) and nuts (28).	
18.		New tiedown strap (25)	Install on harness (20) and wire (21).	

END OF TASK!

- FOLLOW-ON TASK:
- Connect battery ground cables (para. 4-25).
  - Install right and left engine splash shield (TM 9-2320-272-10).

11-52. 100 AMP VOLTAGE REGULATOR REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
All	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Hood raised and secured.
Test Equipment	TM 9-2320-272-10	Right engine splash shield removed.
None	Para. 4-25	Battery ground cables disconnected.
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		General Safety Instructions
Four lockwashers		None
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B (2)		
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

NOTE

Tag wires, connectors, and cables for installation.

- |                          |                                    |             |
|--------------------------|------------------------------------|-------------|
| 1. Voltage regulator (8) | Two harness connectors (6) and (7) | Disconnect. |
|--------------------------|------------------------------------|-------------|

NOTE

Assistant will help with step 2.

- |   |  |         |                          |
|---|--|---------|--------------------------|
| 2. Voltage regulator (8) to floorboard (1o) | Four screws (1), washers (3), and lockwashers (2)  | Remove. | Discard lockwashers (2). |
| 3. Voltage regulator (8)                    | Four screws (4), washers (5), and two brackets (9) | Remove. |                          |

# 11-52. 100 AMP VOLTAGE REGULATOR REPLACEMENT (Cont'd)

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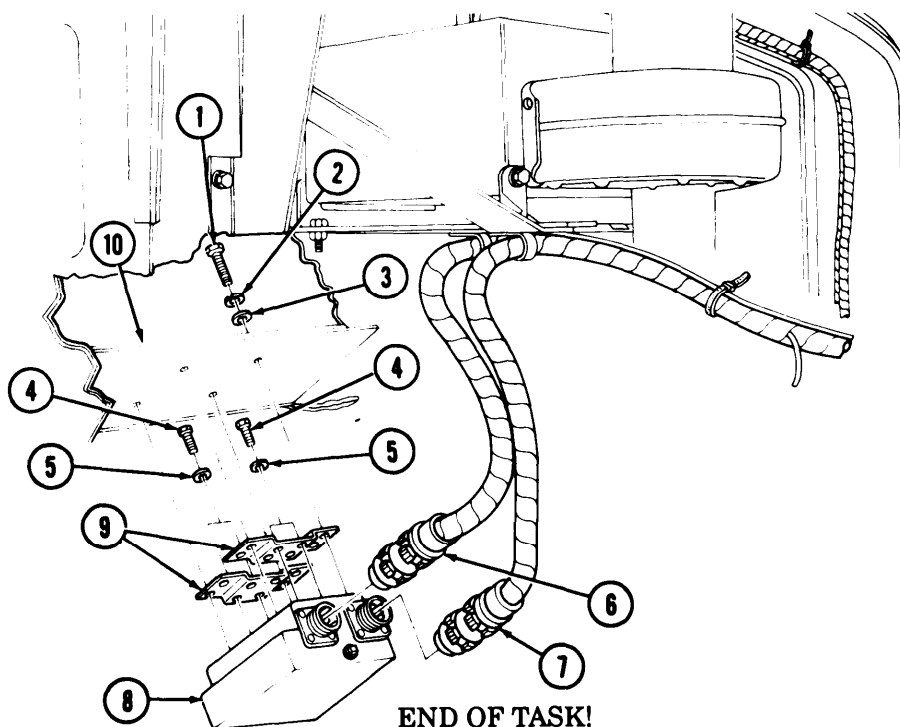
## b. Installation

- |    |                   |  |
|----|-------------------|--|
| 4. | 11%0 brackets (9) | Install on voltage regulator (8) with four washers (5) and screws (4). |
|----|-------------------|--|

### NOTE

Assistant will help with step 5.

- |    |                                |  |   |
|----|--------------------------------|--|---|
| 5. | Voltage regulator (8)          | Install on floorboard (10) with four new lockwashers (2), washers (3), and screws (1). |   |
| 6. | Harness connectors (6) and (7) | Connect to voltage regulator (8).  |   |
| 7. | Battery ground cables          | Connect.   | Refer to para. 4-25.                                |
| 8. | Engine                         | Start.   | Refer to TM 9-2320-272-10.                          |
| 9. | Instrument panel               | Check battery generator indicator to ensure it is in green area.                       | If adjustment is necessary, notify your supervisor. |



FOLLOW-ON TASK: Install right engine splash shield (TM 9-2320-272-10).



Section VIII. TROOP SEAT AND SIDERACK KIT MAINTENANCE

11-53. GENERAL

This section provides maintenance procedures assigned to the organizational level for the Troop Seat Kit.

11-54. TROOP SEAT AND SIDE RACK KIT REPAIR (M929A1, M930A1)

This task covers:

- a. Troop Seat Disassembly
- b. Side Rack Disassembly
- c. Side Rack Assembly
- d. Troop Seat Assembly

INITIAL SETUP:

Applicable Models	Equipment Condition Reference	Condition Description
M929A1, M930A1	TM 9-2320-272-10	Parking brake set.
Test Equipment	TM 9-2320-272-10	Troop seat and side rack removed.
None		
Special Tools		Special Environmental Conditions
None		None
Materials/Parts		General Safety Instructions
Thirteen locknuts		None
Personnel Required		
Light-wheeled vehicle mechanic MOS 63B (2)		
Manual References		
TM 9-2320-272-10		
TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Troop Seat Disassembly

NOTE

- Assistant will help when necessary.
- All troop seats and side racks are replaced the same way. This procedure covers the right side only.

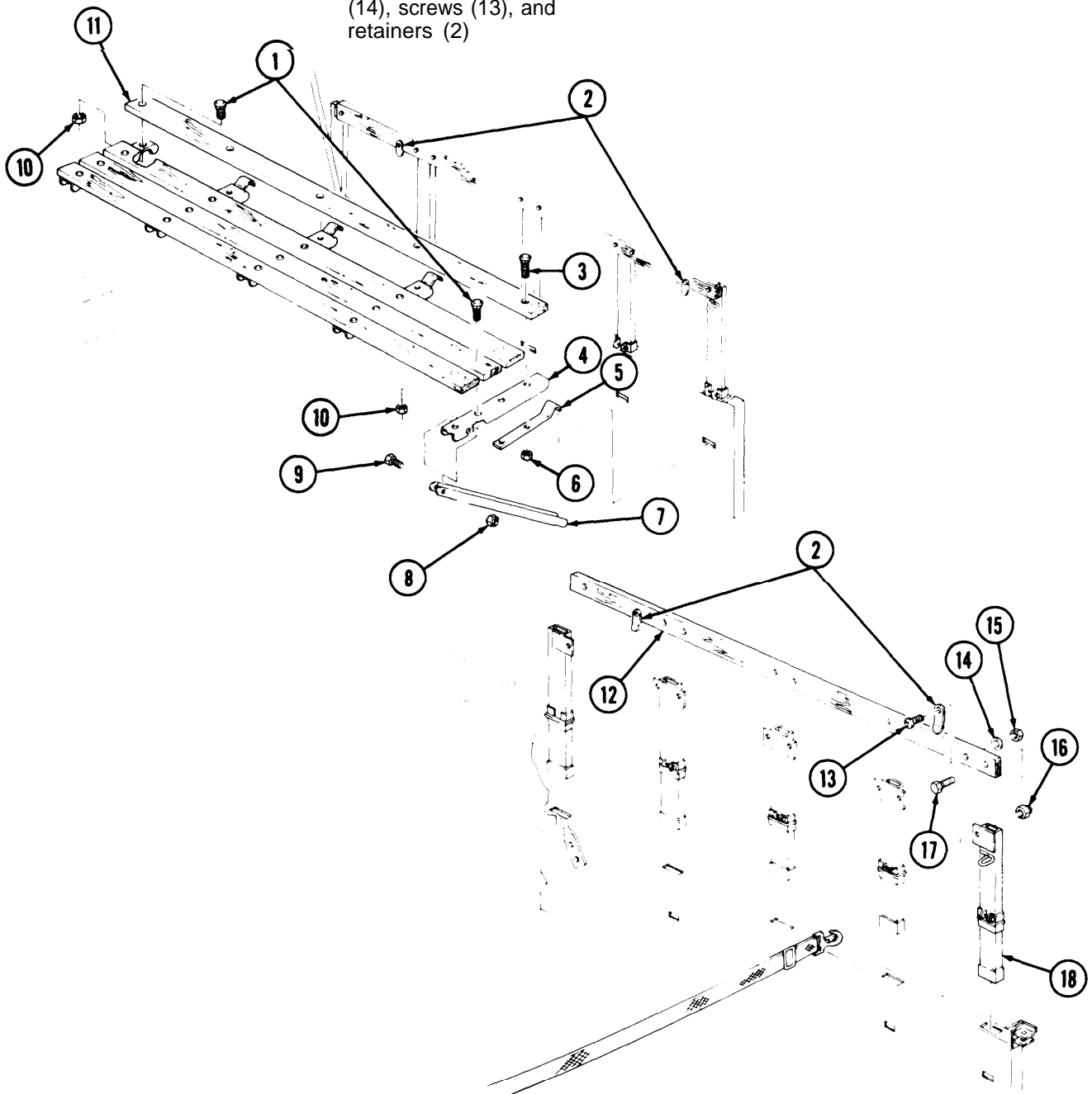
1.	Five channels (4)	Five locknuts (8), screws (9), and legs (7)	Remove.	Discard locknuts (8).
2.		Eight nuts (6), screws (3), and four hinges (5)	Remove.	
3.	Board (11)	Twelve nuts (10), screws (1), and five channels (4)	Remove.	

11-54. TROOP SEAT AND SIDE RACK KIT REPAIR (M929A1, M930A1) (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
---------------	----------	------	--------	---------

**b. Side Rack Disassembly**

- |    |            |   |         |                        |
|----|------------|---|---------|------------------------|
| 4. | Board (12) | Eight locknuts (16), screws (17), and five pockets (18)     | Remove. | Discard locknuts (16). |
| 5. |            | Two nuts (15), washers (14), screws (13), and retainers (2) | Remove. |                        |



11-54. TROOP SEAT AND SIDE RACK KIT REPAIR (M929A1, M930A1) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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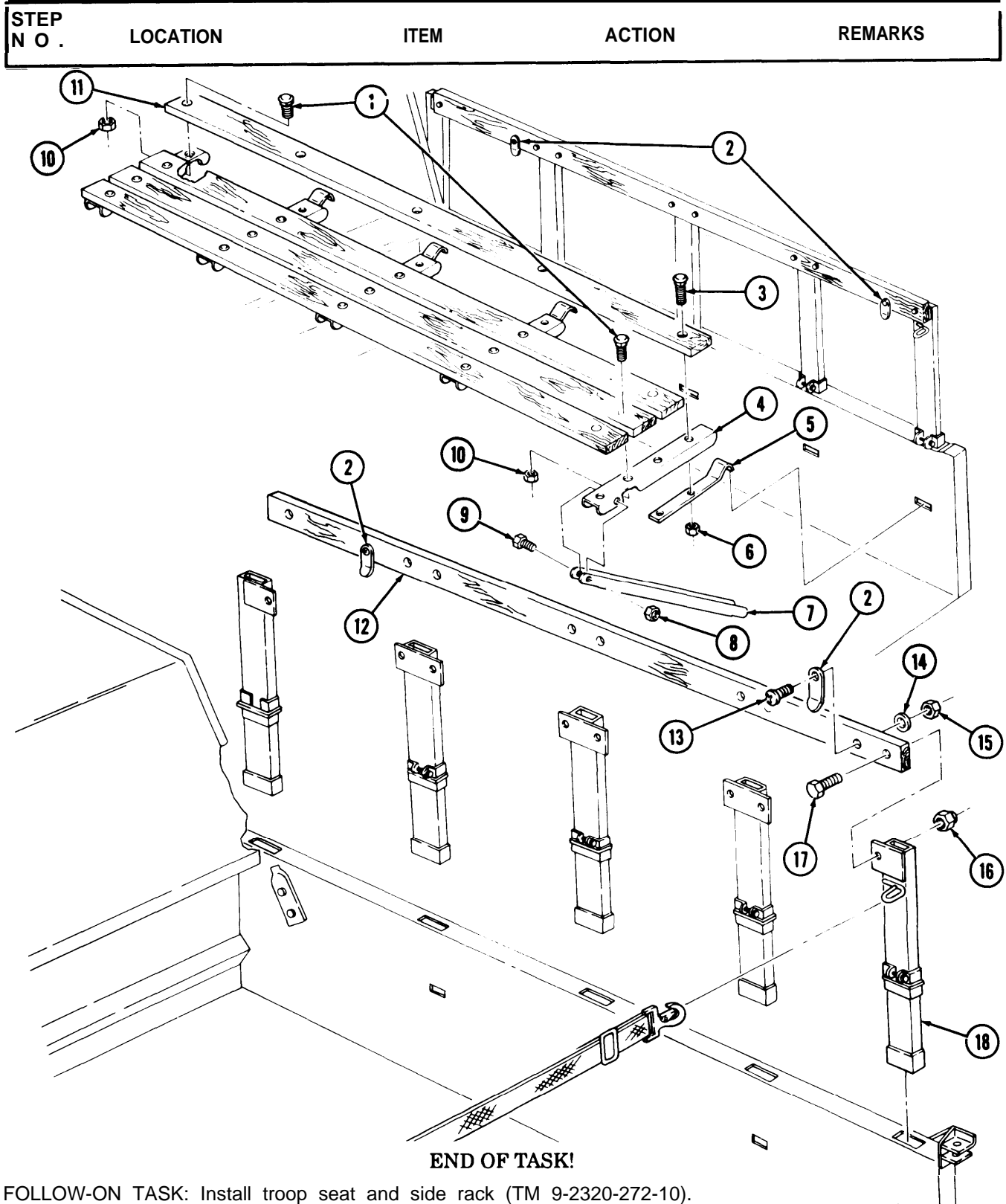
c. Side Rack Assembly

6.		Two retainers (2)	Install on board (12) with two screws (13), washers (14), and nuts (15).	
7.		Five pockets (18)	Install on board (12) with eight screws (17) and new lock-nuts (16).	

d. Troop Seat Assembly

8.		Five channels (4)	Install on board (11) with twelve screws (1) and nuts (10).	
9.		Four hinges (5)	Install on channels (4) with eight screws (3) and nuts (6).	
10.		Five legs (7)	Install on channels (4) with five screws (9) and new locknuts (8).	

# 11-54. TROOP SEAT AND SIDE RACK KIT REPAIR (M929A1, M930A1) (Cont'd)





## Section IX. CONVOY WARNING LIGHT KIT MAINTENANCE

### 11-55. GENERAL

- a. This section provides maintenance procedures assigned to the organizational maintenance level for the Convoy Warning Light Kit. Installation drawings are provided with the kit. To find a specific maintenance procedure, see the maintenance task summary below.
- b. For schematic representation of electrical line locations and routing, see Appendix G of this manual.

### 11-56. CONVOY WARNING LIGHT KIT MAINTENANCE TASK SUMMARY

TASK PARA.	PROCEDURES	PAGE NO.
11-57.	Convoy Warning Light Mount Replacement	11-196
11-58.	Convoy Warning Light Mount Replacement (M934, M935)	11-200
11-59.	Convoy Warning Light Mount Replacement (M929, M930)	11-204
11-60.	Convoy Warning Light Harness Replacement	11-206
11-61.	Convoy Warning Light Harness Replacement (M929, M930)	11-210
11-62.	Convoy Warning Light Harness Replacement (M934, M935)	11-214
11-63.	Convoy Warning Light Resistor and Leads Replacement	11-218
11-64.	Convoy Warning Light Replacement	11-222
11-65.	Convoy Warning Light Switch Replacement	11-226

## 11-57. CONVOY WARNING LIGHT MOUNT REPLACEMENT

This task covers:

### a. Removal

### b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All (except M929, M930, M934, M935)	TM 9-2320-272-10 Para. 11-64	Parking brake set. Convoy warning light removed,
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Ten locknuts Screw-assembled lockwasher		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

The left and right convoy warning light mounts are replaced the same way. This procedure covers the left light mount only.

#### a. Removal

1. Two connectors (14)	Two leads (13)	Disconnect.	
2. Gun mount bracket (9)	Screw-assembled lockwasher (12), washer (11), clamp (10), and cable (22)	Remove.	Discard screw assembled lockwasher (12).
3. Mounting plate (1) and support tube (2)	Cable (22)	Remove.	
4. Bracket tube (16) and bracket (19)	Wing screw (20), pin (21), and support tube (2)	Remove.	
5. Bracket tube (16)	Two locknuts (18), washers (17), U-bolt (6), locknut (5), washer (4), screw (3), and bracket (19)	Remove.	Discard locknuts (5) and (18).

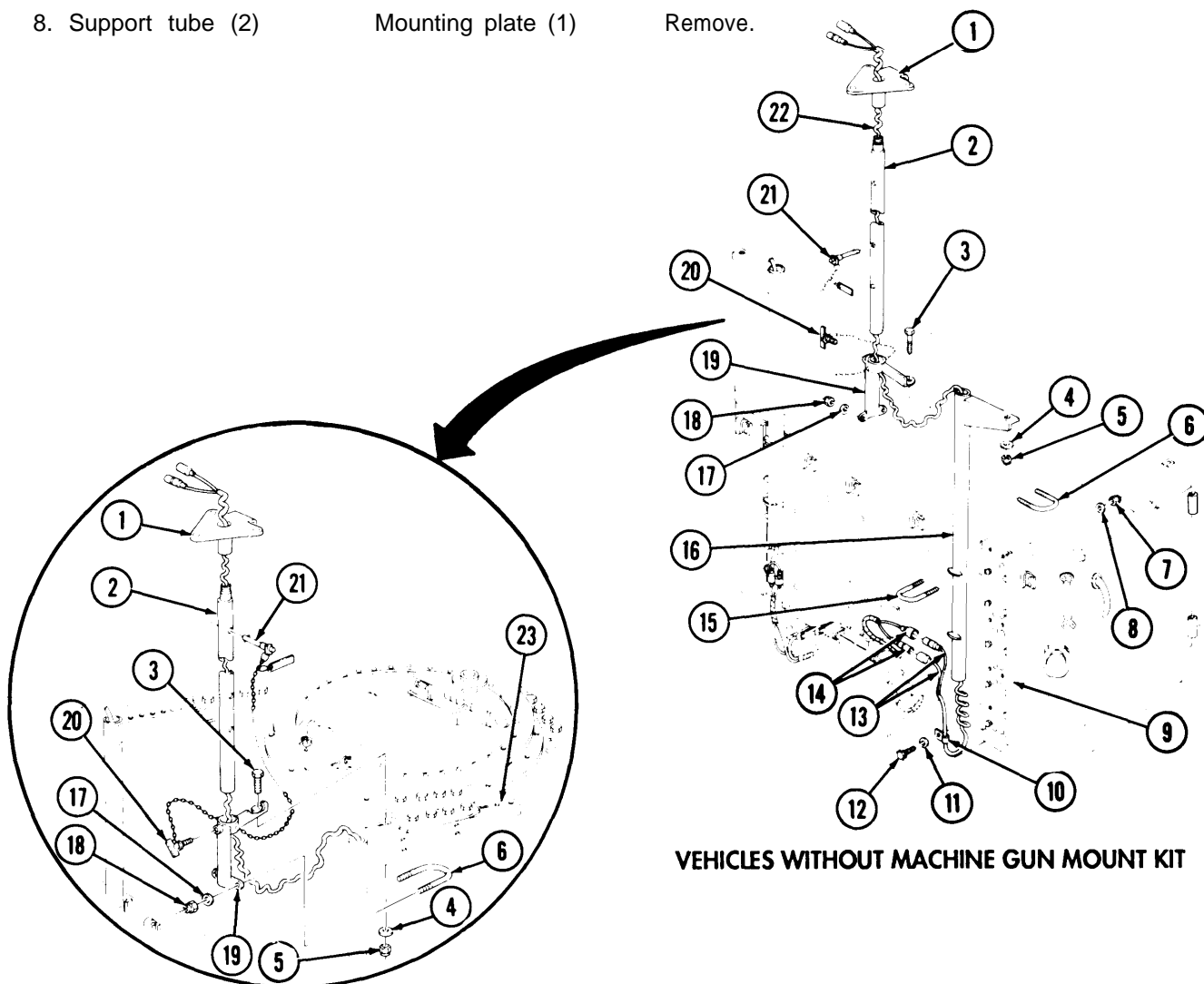
# 11-57. CONVOY WARNING LIGHT MOUNT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

Perform step 6 for vehicles equipped with machine gun mount kit.

6. Bracket post (23)	Two locknuts (18), washers (17), U-bolt (6), locknut (5), washer (4), screw (3), and bracket (19)	Remove.	Discard locknuts (5) and (18).
7. Gun mount bracket (9)	Four locknuts (7), washers (8), two U-bolts (15), and bracket tube (16)	Remove.	Discard locknuts (7).
8. Support tube (2)	Mounting plate (1)	Remove.	



VEHICLES WITH MACHINE GUN MOUNT KIT

VEHICLES WITHOUT MACHINE GUN MOUNT KIT



# 11-57. CONVOY WARNING LIGHT MOUNT REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
---------------	----------	------	--------	---------

## b. Installation

- |    |                    |                              |
|----|--------------------|------------------------------|
| 9. | Mounting plate (1) | Install on support tube (2). |
|----|--------------------|------------------------------|

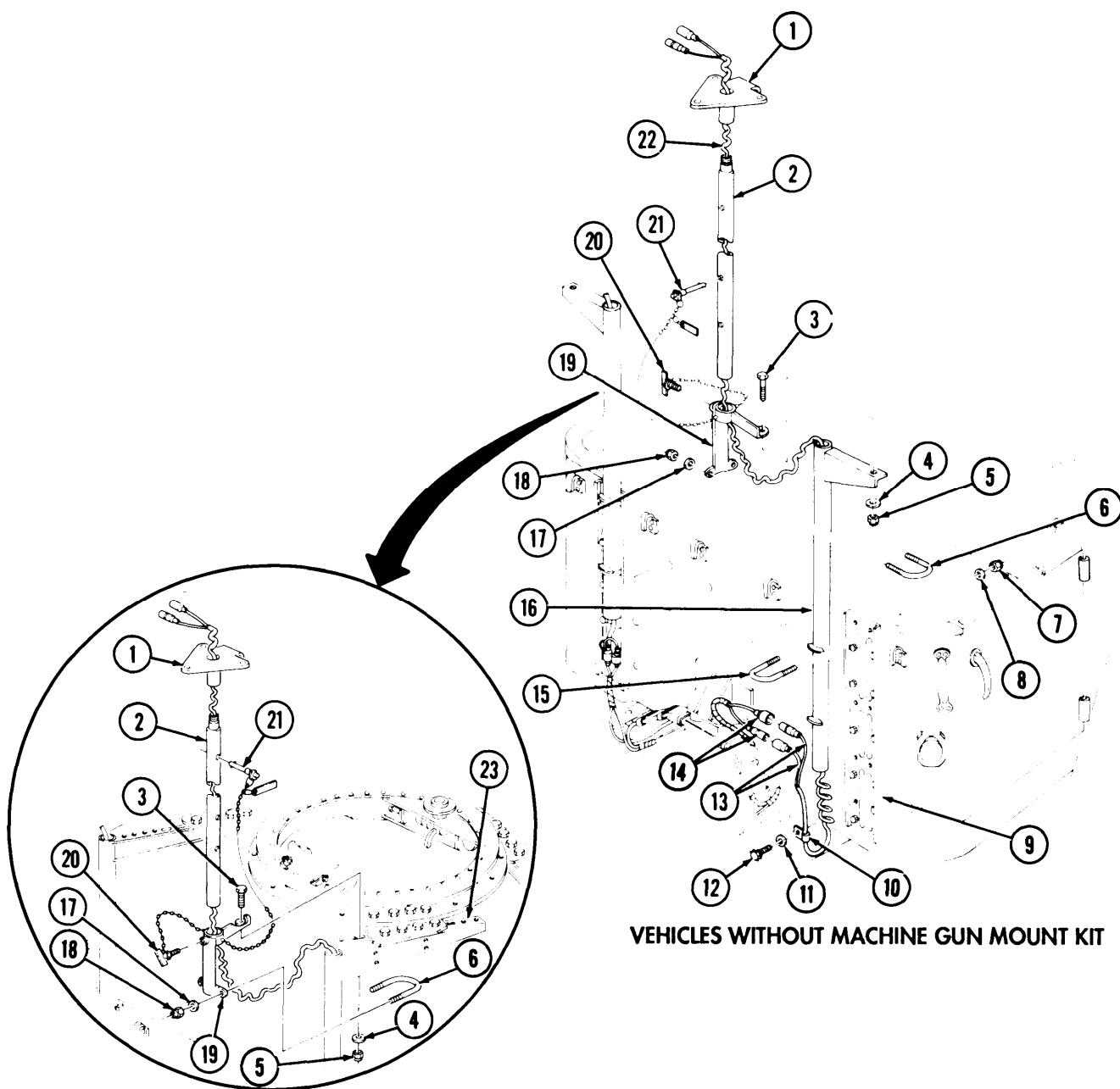
### NOTE

Perform step 10 for vehicles equipped with machine gun mount kit.

- |     |                                 |  |
|-----|---------------------------------|--|
| 10. | Bracket (19)                    | Install on bracket post (23) with U-bolt (6), two washers (17), new locknuts (18), screw (3), washer (4), and new locknut (5). |
| 11. | Bracket tube (16)               | Install on gun mount bracket (9) with two U-bolts (15), four washers (8), and new locknuts (7).                                |
| 12. | Bracket (19)                    | Install on bracket tube (16) with screw (3), washer (4), new locknut (5), U-bolt (6), two washers (17), and new locknuts (18). |
| 13. | Cable (22)                      | Insert through hole in mounting plate (1) and support tube (2).  |
| 14. | Cable (22) and support tube (2) | a. Insert through bracket tube (16).<br>b. Install with pin (21) and wing screw (20).  |
| 15. | Cable (22)                      | Install on gun mount bracket (9) with clamp (10), washer (11), and new screw-assembled lockwasher (12).                        |
| 16. | Two leads (13)                  | Connect on two connectors (14).  |

# 11-57. CONVOY WARNING LIGHT MOUNT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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VEHICLES WITH MACHINE GUN MOUNT KIT

VEHICLES WITHOUT MACHINE GUN MOUNT KIT

END OF TASK!

FOLLOW-ON TASK: Install convoy warning light (para. 11-64).

# 11-58. CONVOY WARNING LIGHT MOUNT REPLACEMENT (M934, M935)

This task covers:

a. Removal

b. Installation

## INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10 Para. 11-64	Parking brake set. Convoy warning light removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Eight lockwashers Two tiedown straps (Appendix D, Item 18)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

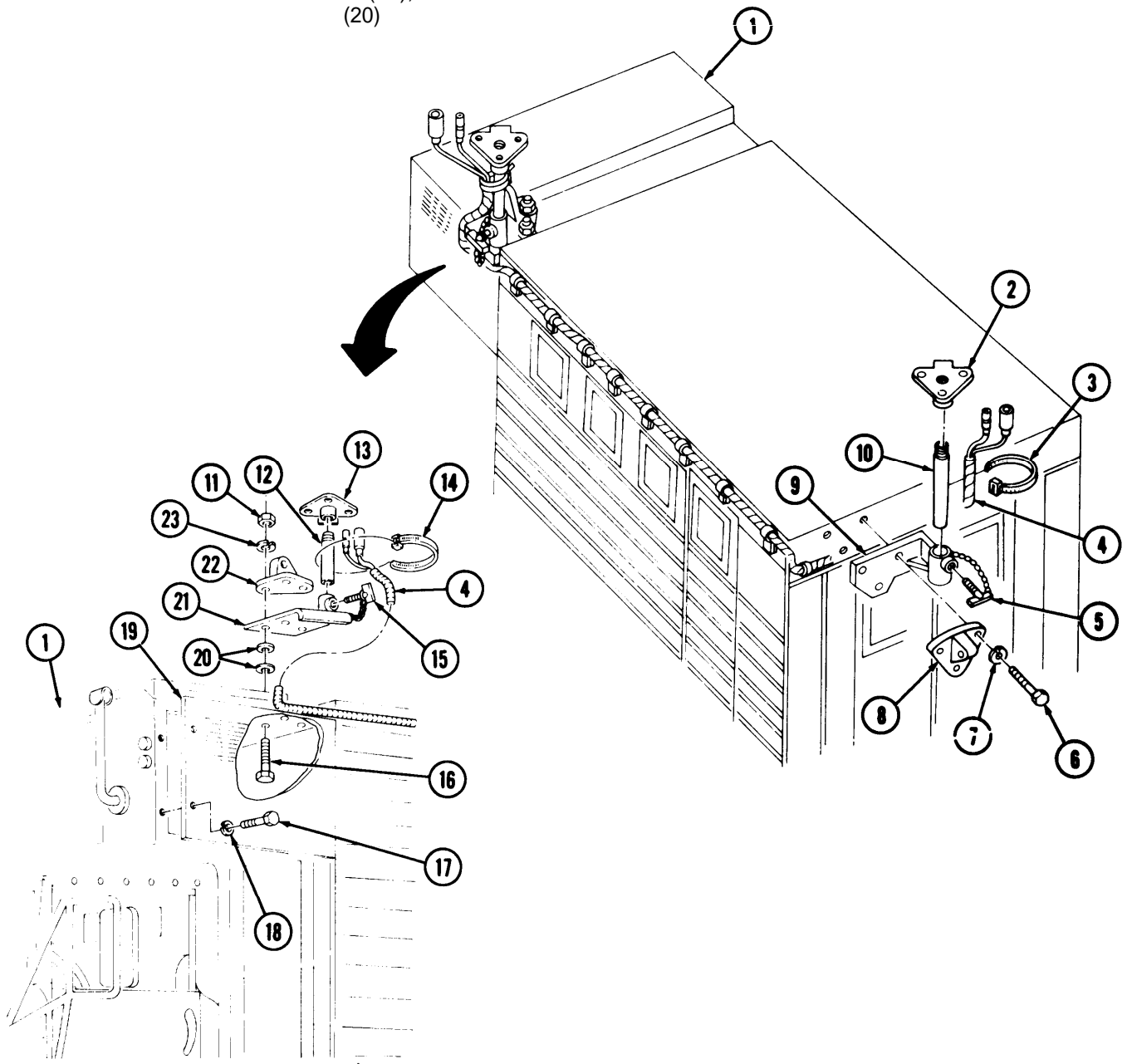
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## a. Removal

- |    |                       |  |         |                             |
|----|-----------------------|--|---------|-----------------------------|
| 1. | Support tube (10)     | Tiedown strap (3) and harness (4)  | Remove. | Discard tiedown strap (3).  |
| 2. | Mounting bracket (9)  | Wing screw (5) and support tube (10)   | Remove. |                             |
| 3. | Support tube (10)     | Mounting plate (2)   | Remove. |                             |
| 4. | Van body (1)          | Three screws (6), lockwashers (7), lifting bracket (8), and mounting bracket (9) | Remove. | Discard lockwashers (7).    |
| 5. | Support tube (12)     | Tiedown strap (14) and harness (4)   | Remove. | Discard tiedown strap (14). |
| 6. | Mounting bracket (21) | Wing screw (15) and support tube (12)  | Remove. |                             |
| 7. | Support tube (12)     | Mounting plate (13)  | Remove. |                             |

# 11-58. CONVOY WARNING LIGHT MOUNT REPLACEMENT (M934, M935) (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
8.	Heater access door (19)	Two screws (17) and lockwashers (18)	Remove.	Open door (19). Discard lockwashers (18).
9.	Van body (1)	Three nuts (11), lockwashers (23), screws (16), lifting bracket (22), mounting bracket (21), and six washers (20)	Remove.	Discard lockwashers (23).



<b>11-58. CONVOY WARNING LIGHT MOUNT REPLACEMENT (M934, M935) (Cont'd)</b>
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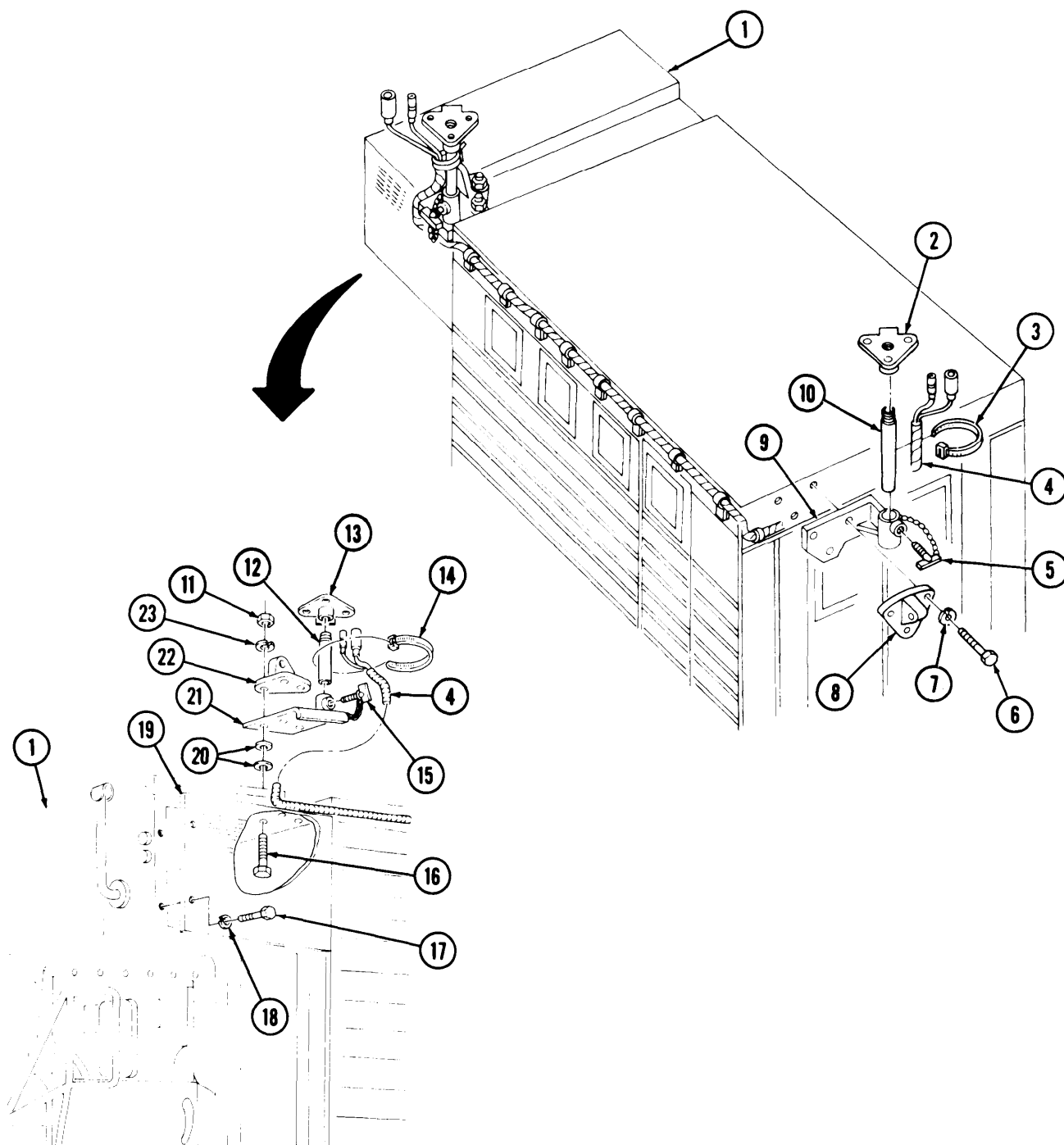
STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
------------------------

10.		Six washers (20), mounting bracket (21), and lifting bracket (22)	Install on van body (1) with three screws (16), new lockwashers (23), and nuts (11).	
11.		Heater access door (19)	Close and secure with two new lockwashers (18) and screws (17).	
12.		Mounting plate (13)	Install on support tube (12).	
13.		support tube (12)	Install on mounting bracket (21) with wing screw (15).	
14.		Harness (4)	Install on support tube (12) with new tiedown strap (14).	
15.		Mounting bracket (9) and lifting bracket (8)	Install on van body (1) with three new lockwashers (7) and screws (6).	
16.		Mounting plate (2)	Install on support tube (10).	
17.		Support tube (10)	Install on mounting bracket (9) with wing screw (5).	
18.		Harness (4)	Install on support tube (10) with new tiedown strap (3).	

11-58. CONVOY WARNING LIGHT MOUNT REPLACEMENT (M934, M935) (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
---------------	----------	------	--------	---------



END OF TASK!

FOLLOW-ON TASK: Install convoy warning light (para. 11-64).

# 11-59. CONVOY WARNING LIGHT MOUNT REPLACEMENT (M929, M930)

This task covers:

a. Removal

b. Installation

## INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M929, M930	TM 9-2320-272-10 Para. 11-64	Parking brake set. Convoy warning light removed.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Four locknuts		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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## NOTE

The left and right convoy warning light mounts are replaced the same way. This procedure covers the left light mount only.

## a. Removal

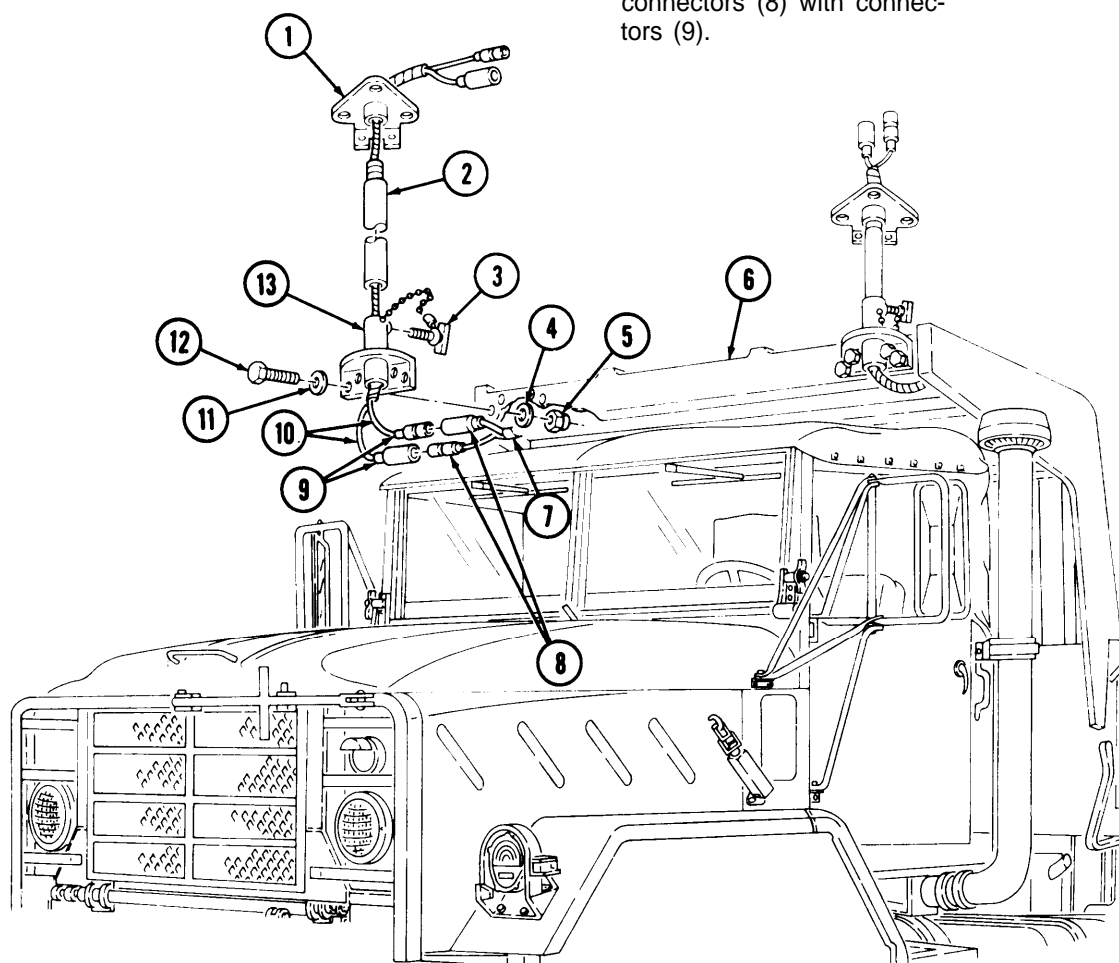
1.	Harness (7) at connectors (8)	Two cable leads (10) and connectors (9)	Disconnect.	
2.	Support tube (2) and mounting bracket (13)	Two cable leads (10)	Remove.	
3.	Mounting bracket (13)	Support tube (2)	Loosen wing screw (3) and remove.	
4.	Support tube (2)	Mounting plate (1)	Remove.	
5.	Cab protector (6)	Four locknuts (5), screws (12), eight washers (4) and (11), and mounting bracket (13)	Remove.	Discard locknuts (5).

# 11-59. CONVOY WARNING LIGHT MOUNT REPLACEMENT (M929, M930) (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

- |     |                       |   |
|-----|-----------------------|---|
| 6.  | Mounting bracket (13) | Install on cab protector (6) with eight washers (4) and (11), four screws (12), and new locknuts (5). |
| 7.  | Mounting plate (1)    | Install on support tube (2).  |
| 8.  | Two cable leads (10)  | Insert through mounting plate (1) and support tube (2).   |
| 9.  | Support tube (2)      | Install on mounting bracket (13) with wing screw (3).   |
| 10. | No cable leads (10)   | Connect to harness (7) and connectors (8) with connectors (9).  |



END OF TASK!

FOLLOW-ON TASK: Install convoy warning light (para. 11-64).



## 11-60. CONVOY WARNING LIGHT HARNESS REPLACEMENT

This task covers:

a. Removal

b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All (except M929, M930, M934, M935)	TM 9-2320-272-10 TM 9-2320-272-10 Para. 9-45 Para. 4-25	Parking brake set. Hood raised and secured. Toolbox removed. Battery ground cable disconnected.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Material/Parts</u>		<u>General Safety Instructions</u>
Locknut Lock washer Twenty-one tiedown straps (Appendix D, Item 18)		None
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

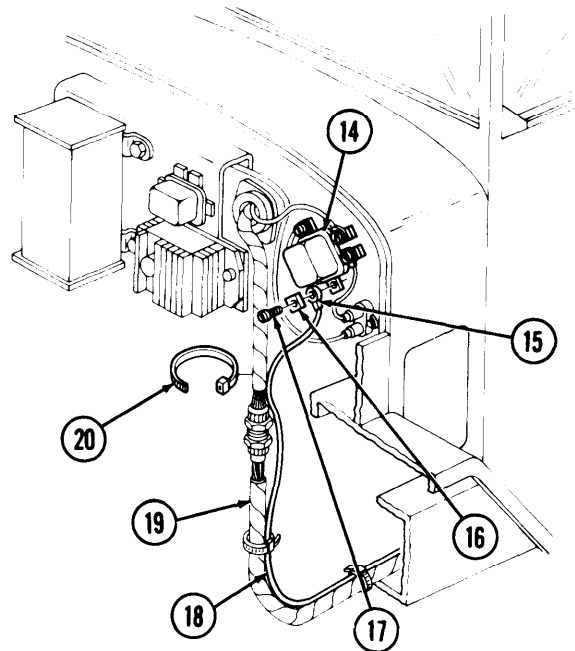
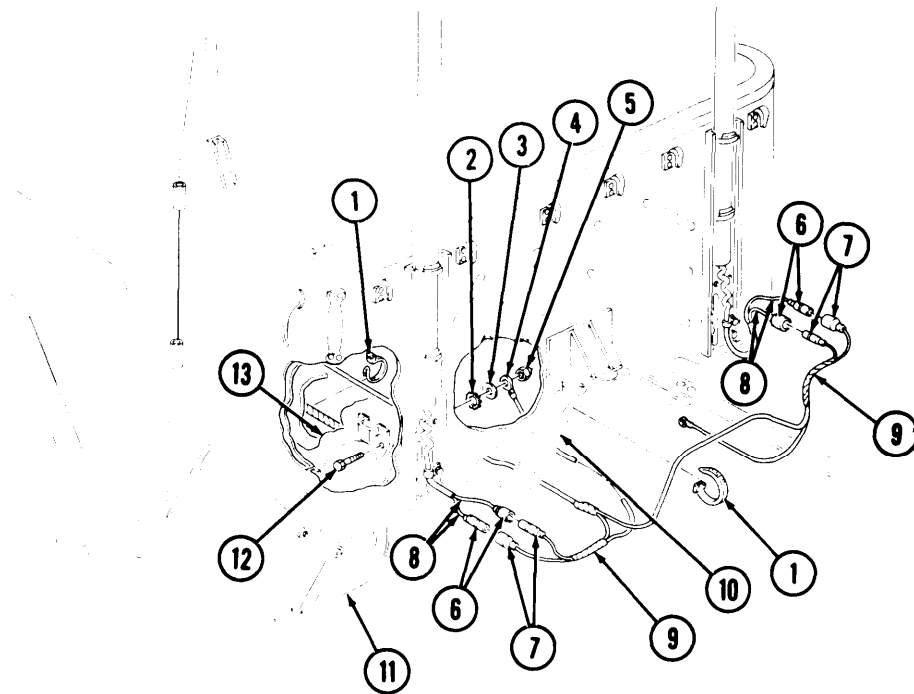
#### NOTE

Perform steps 1 and 2 for left and right rear of cab.

1.	Harness (9) at connectors (7)	Four cable leads (8) and Disconnect connectors (6)		
2.	Frame (13) and rear step hanger (11)	Locknut (5), ground lead (4), washer (3), lockwasher (2), and screw (12)	Remove.	Discard locknut (5) and lockwasher (2).
3.	Cab crossmember (10)	Six tiedown straps (1) and harness (9)	Remove.	Discard tiedown straps (1).
4.	Front main wiring harness (19)	Fifteen tiedown straps (20) and harness (18)	Remove.	Discard tiedown straps (20).
5.	Relay (14)	Screw (17), clip (16), and lead (15)	Remove.	

11-60. CONVOY WARNING LIGHT HARNESS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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11-60. CONVOY WARNING LIGHT HARNESS REPLACEMENT (Cont'd)

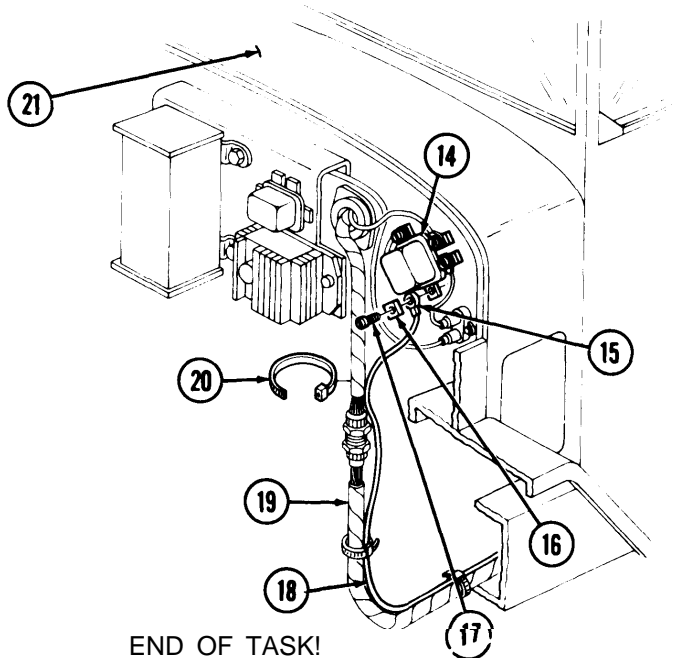
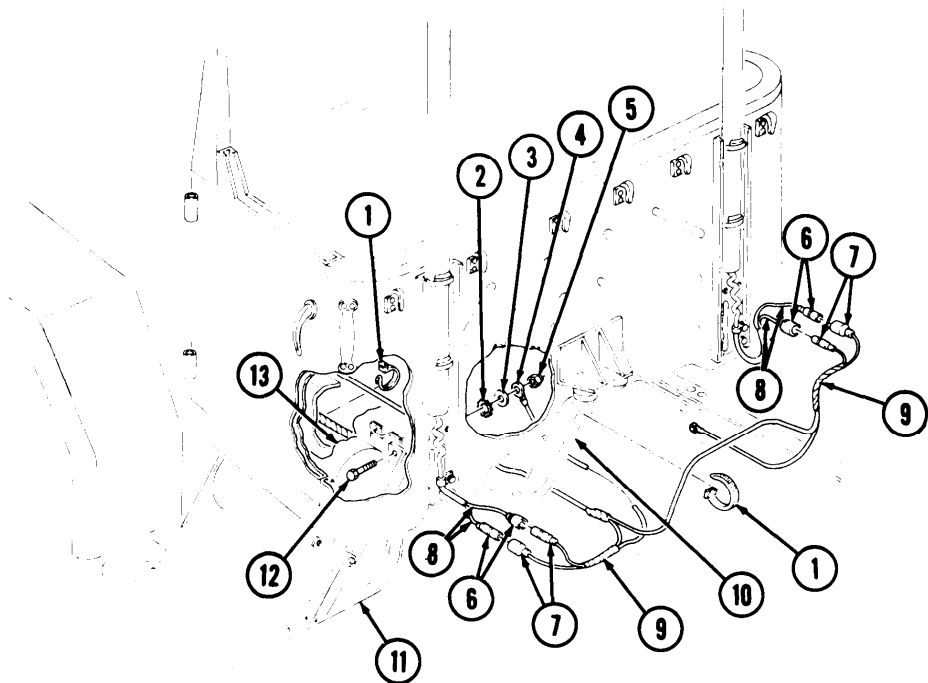
STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

6.		Lead (15)	Install on relay (14) with clip (16) and screw (17).	
7.		Harness (18)	Route under cab (21) along front main wiring harness (19) and cab crossmember (10).	
<b>NOTE</b> Perform steps 3 and 4 for left and right rear of cab.				
8.		Four cable leads (8)	Connect to harness (9) and connectors (7) with connectors (6).	
9.		Ground lead (4)	Install on frame (13) and rear step hanger (11) with screw (12), new lockwasher (2), washer (3), and new locknut (5).	
<b>NOTE</b> Tiedown straps must be installed 10 in. (25 cm) apart.				
10.		Harness (9)	Install on cab crossmember (10) with six new tiedown straps (1).	
11.		Harness (18)	Install on front main wiring harness (19) with fifteen new tiedown straps (20).	

11-60. CONVOY WARNING LIGHT HARNESS REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Connect battery ground cable (para. 4-25).
  - Install toolbox (para. 9-45).

11-61. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M929, M930)

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M929, M930	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Thirty locknuts		
Lockwasher		
Two tiedown straps (Appendix D, Item 18)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

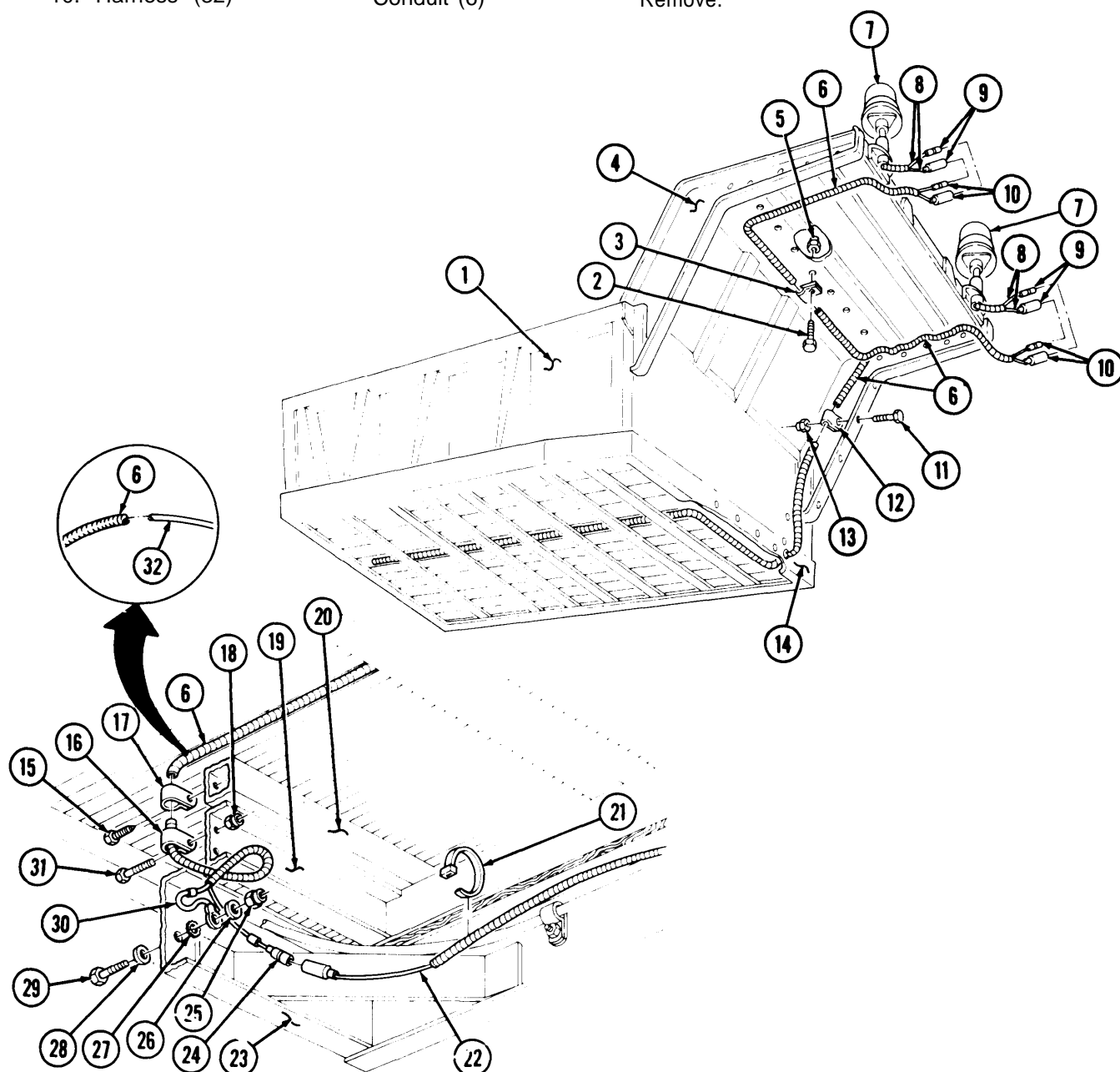
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1.	Two convoy warning lights (7) at four cable leads (8) and connectors (9)	Four connectors (10)	Disconnect.	
2.	Cab protector (4)	Eighteen locknuts (5), screws (2), clamps (3), and conduit (6)	Remove.	Discard locknuts (5).
3.	Dump body frame (14) and left front of cab protector (4)	Ten locknuts (13), screws (11), clamps (12), and conduit (6)	Remove.	Discard locknuts (13).
4.	Cable (22)	Lead (24)	Disconnect.	
5.	Crossmember (23)	Locknut (25), washer (26), ground lead (30), lockwasher (27), screw (29), and washer (28)	Remove.	Discard lockwasher (27) and locknut (25).
6.	Crossmember (19)	Locknut (18), screw (31), clamp (16), and conduit (6)	Remove.	Discard locknut (18).

# 11-61. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M929, M930) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Frame (20)	Screw (15), clamp (17), and conduit (6)	Remove.	
8.	Conduit (6)	Two tiedown straps (21)	Remove.	Discard tiedown straps (21).
9.	Front of cab protector (4) and dump body (1)	Conduit (6)	Remove.	
10.	Harness (32)	Conduit (6)	Remove.	

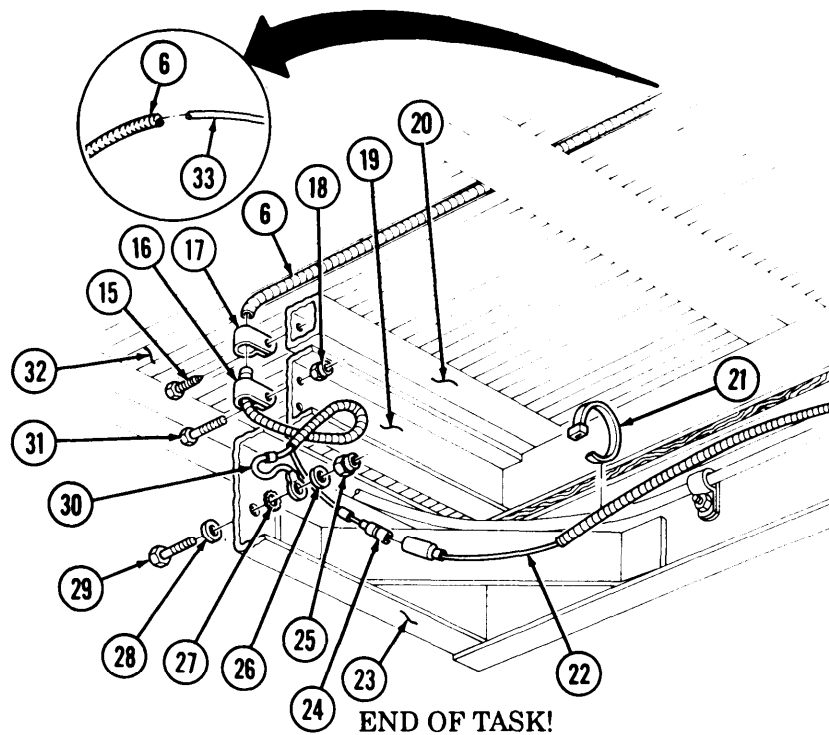
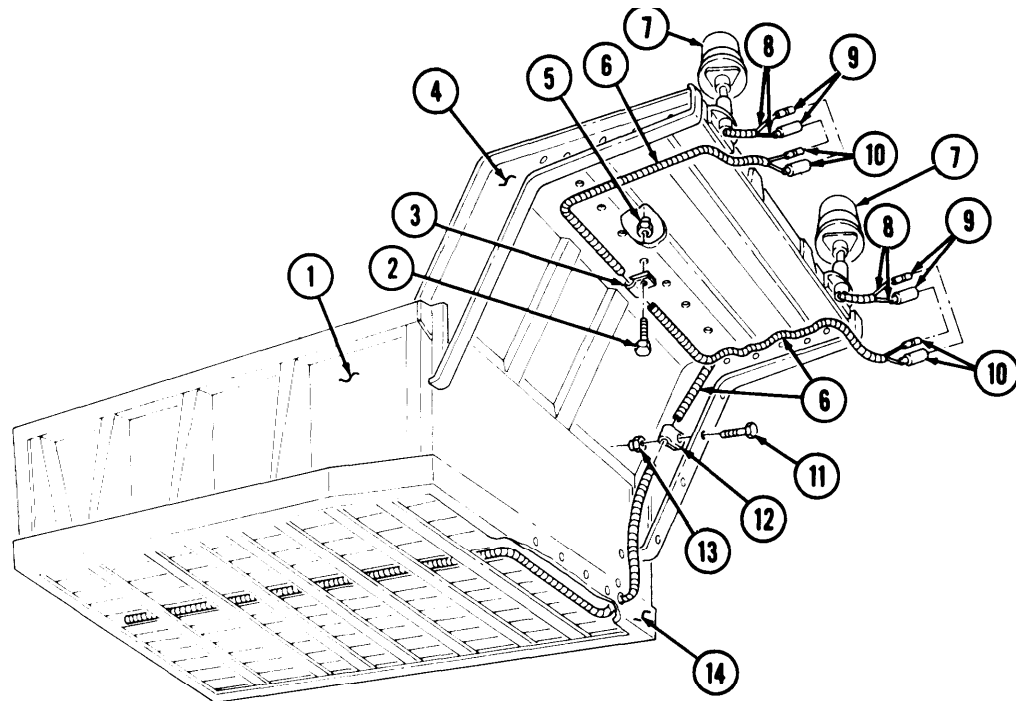


<b>11-61. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M929, M930) (Cont'd)</b>
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STEP N O .	LOCATION	ITEM	ACTION	REMARKS
b. Installation				
11.		Harness (33)	Install through conduit (6).	
12.		Four connectors (10)	Connect to four connectors (9) and cable leads (8) on two convoy warning lights (7).	
13.		Conduit (6)	Route along inside of cab protector (4) and install with eighteen clamps (3), screws (2), and new lock-nuts (5).	
14.		Conduit (6)	Route along left front of upper cab protector (4) and insert through dump body frame (14) on cab protector (4).	
15.		Conduit (6)	Install on cab protector (4) with ten clamps (12), screws (11), and new locknuts (13).	
16.		Conduit (6)	Route to rear of dump body (1) through corrugation of floor (32).	
17.		Lead (24)	Connect to cable (22).	
18.		Ground lead (30)	Install on crossmember (23) with washer (28), screw (29), new lockwasher (27), washer (26), and new locknut (25).	
19.		Conduit (6)	Pull tight and install on frame (20) with clamp (17) and screw (15).	
20.		Conduit (6)	Install on crossmember (19) with clamp (16), screw (31), and new locknut (18).	
21.		Conduit (6)	Secure with two new tiedown straps (21).	

11-61. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M929, M930) (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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# 11-62. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M934, M935)

This task covers:

## a. Removal

## b. Installation

## INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M934, M935	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	Para. 11-64	Convoy warning lights removed.
None	Para. 4-25	Battery ground cable disconnected.
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Seven screw-assembled lockwashers		None
Locknut		
Two tiedown straps (Appendix D, Item 18)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

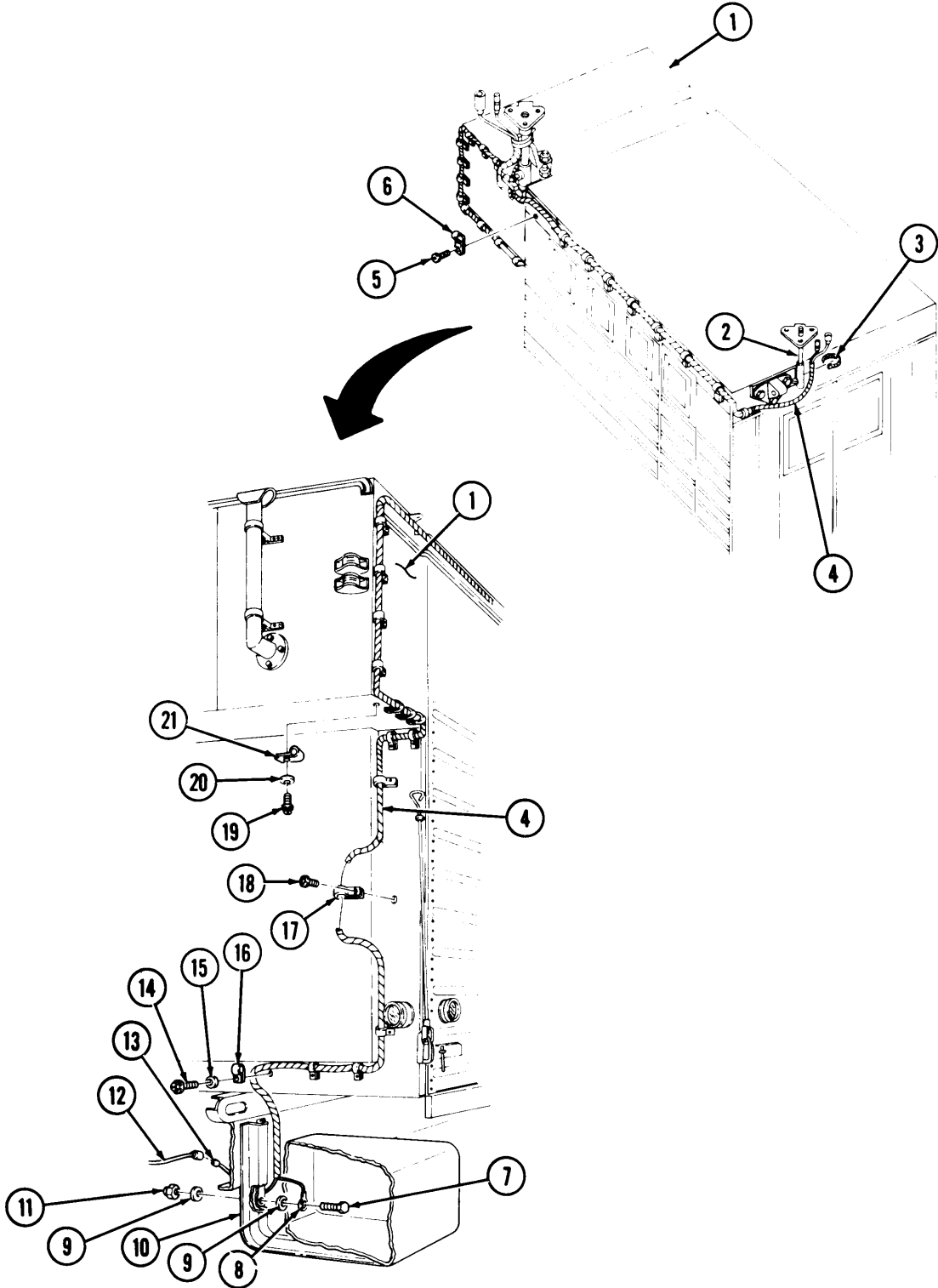
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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## a. Removal

1. Two support tubes (2) and van body (1)	No tiedown straps (3) and harness (4)	Remove.	Discard tiedown straps (3).
2. Van body (1)	Twenty-five screws (5), clamps (6), and harness (4)	Remove.	
3.	Four screw-assembled lockwashers (19), washer (20), clamps (21), and harness (4)	Remove.	Discard screw-assembled lockwashers (19).
4.	Five screws (18), clamps (17), and harness (4)	Remove.	
5.	Three screw-assembled lockwashers (14), washers (15), clamps (16), and harness (4)	Remove.	Discard screw-assembled lockwashers (14).
6. Wire (12)	Lead (13)	Disconnect.	
7. Fuel tank support (10)	Locknut (11), screw (7), two washers (9), and ground lead (8)	Remove.	Discard locknut (11).

11-62. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M934, M935) (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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# 11-62. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M934, M935) (Cont'd)

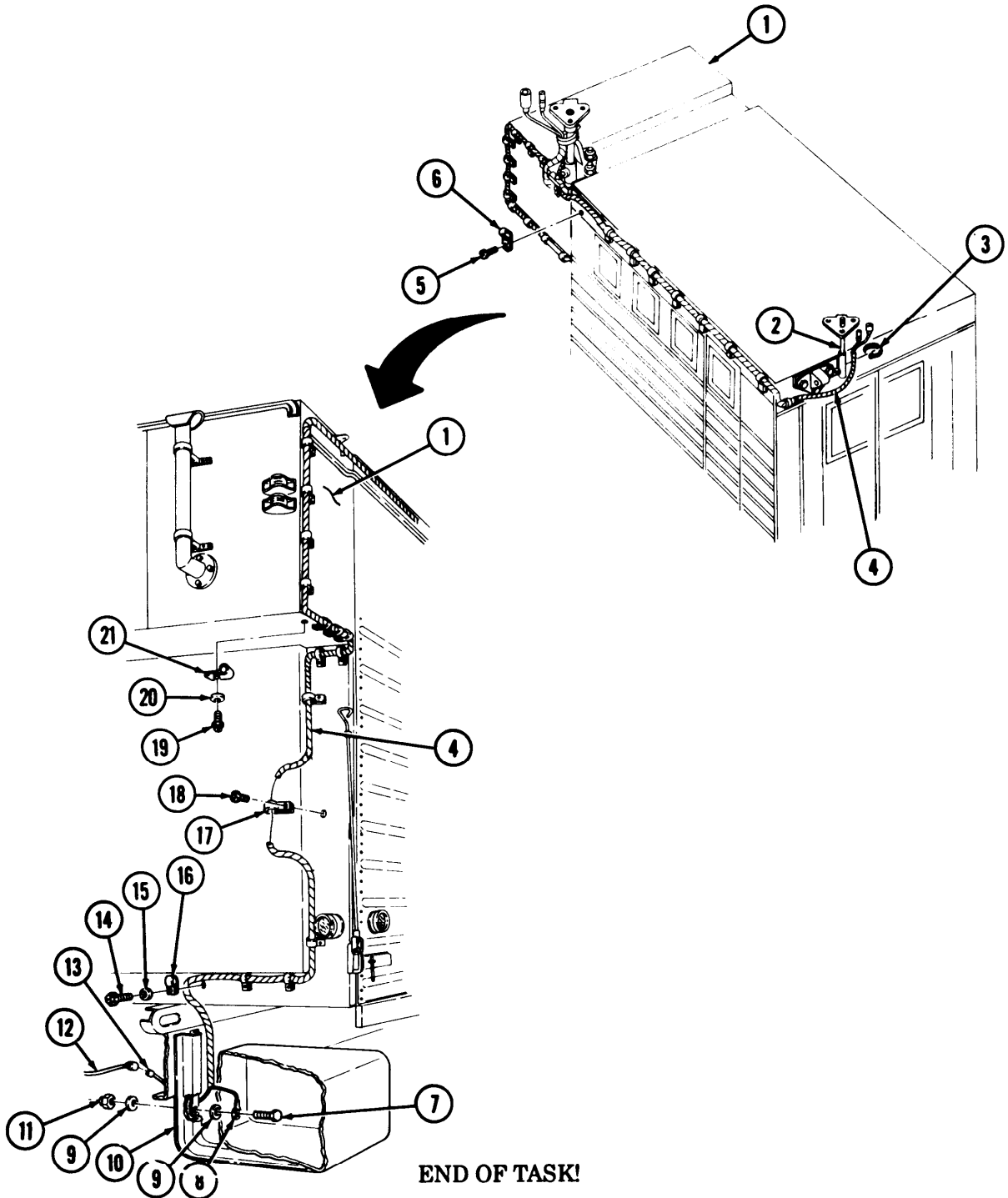
STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

8.		Lead (13)	Connect to wire (12).	
9.		Ground bad (8)	Install on fuel tank support (10) with two washers (9), screw (7), and new locknut (11).	
10.		Harness (4)	a. Route to front of van body (1). b. Install on van body (1) with three clamps (16), washers (15), and new screw-assembled lock-washers (14). c. Install on van body (1) with five clamps (17) and screws (18). d. Route to top of van body (1). e. Install on van body (1) with four clamps (21), washers (20), and new screw-assembled lock-washers (19). f. Route to rear of van body (1). g. Install on van body (1) with twenty-five clamps (6) and screws (5). h. Install on two support tubes (2) with two tie-down straps (3).	

11-62. CONVOY WARNING LIGHT HARNESS REPLACEMENT (M934, M935) (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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FOLLOW-ON TASKS: • Connect battery ground cable (para. 4-25).  
• Install convoy warning lights (para. 11-64).

# 11-63. CONVOY WARNING LIGHT RESISTOR AND LEADS REPLACEMENT

This task covers:

## a. Removal

## b. Installation

## INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10 Para. 4-25	Hood raised and secured. Battery ground cable disconnected.
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>	<u>General Safety Instructions</u>	
Two locknuts Three lockwashers Tiedown strap (Appendix D, Item 18)	None	
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

## NOTE

Tag all leads for installation.

- |   |                    |            |                             |
|---|--------------------|------------|-----------------------------|
| 1. warning light switch (3)                               | Leads (1) and (2)  | Disconnect |                             |
| 2. Front main wiring harness (21) and leads (17) and (20) | Tiedown strap (27) | Remove.    | Discard tiedown strap (27). |

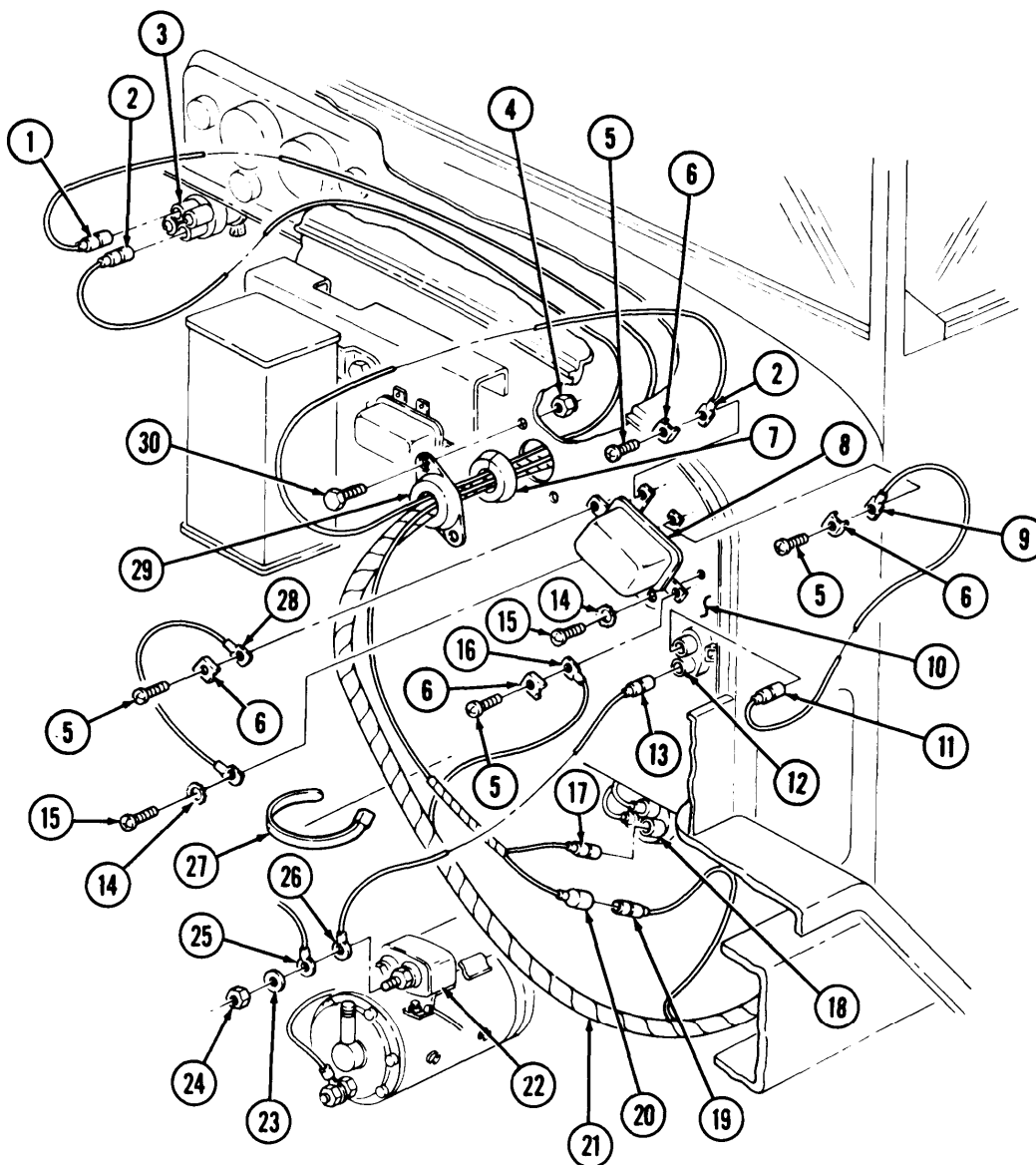
## NOTE

Assistant will help with step 3.

- |                  |  |                                      |                       |
|------------------|--|--------------------------------------|-----------------------|
| 3. Firewall (10) | Two locknuts (4), screws (30), retainer (29), and grommet (7)  | Remove.                              | Discard locknuts (4). |
| 4.               | Two leads (1) and (2)  | Pull through hole in fire-wall (10). |                       |
| 5. Resistor (8)  | Four screws (5), clips (6), and leads (2), (9), (16), and (28) | Remove.                              |                       |

# 11-63. CONVOY WARNING LIGHT RESISTOR AND LEADS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
6.	Firewall (10)	Two screws (15), lockwashers (14), lead (28), and resistor (8)	Remove.	Discard lockwashers (14).
7.	High beam selector switch (18)	Lead (17)	Disconnect.	
8.	Circuit breaker (12)	Leads (11) and (13)	Disconnect.	
9.	Starter solenoid (22)	Nut (24), lockwasher (23), wires (25), and (26)	Remove.	Discard lockwasher (23).
10.	Connector (20)	Lead (19)	Disconnect.	



# 11-63. CONVOY WARNING LIGHT RESISTOR AND LEADS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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## b. Installation

11.		Lead (19)	Connect to connector (20).	
12.		Two wires (25) and (26)	Install on starter solenoid (22) with new lockwasher (23) and nut (24).	
13.		Leads (11) and (13)	Connect to circuit breaker (12).	
14.		Lead (17)	Connect to headlight high beam selector switch (18).	
15.		Resistor (8) and lead (28)	Install on firewall (10) with two new lockwashers (14) and screws (15).	
16.		Leads (2), (9), (16), and (28)	Install on resistor (8) with four clips (6) and screws (5).	
17.		Leads (1) and (2)	a. Insert through hole in fire-wall (10). b. Connect to warning light switch (3).	
18.		Leads (17) and (20)	Install on front main wiring harness (21) with new tiedown strap (27).	

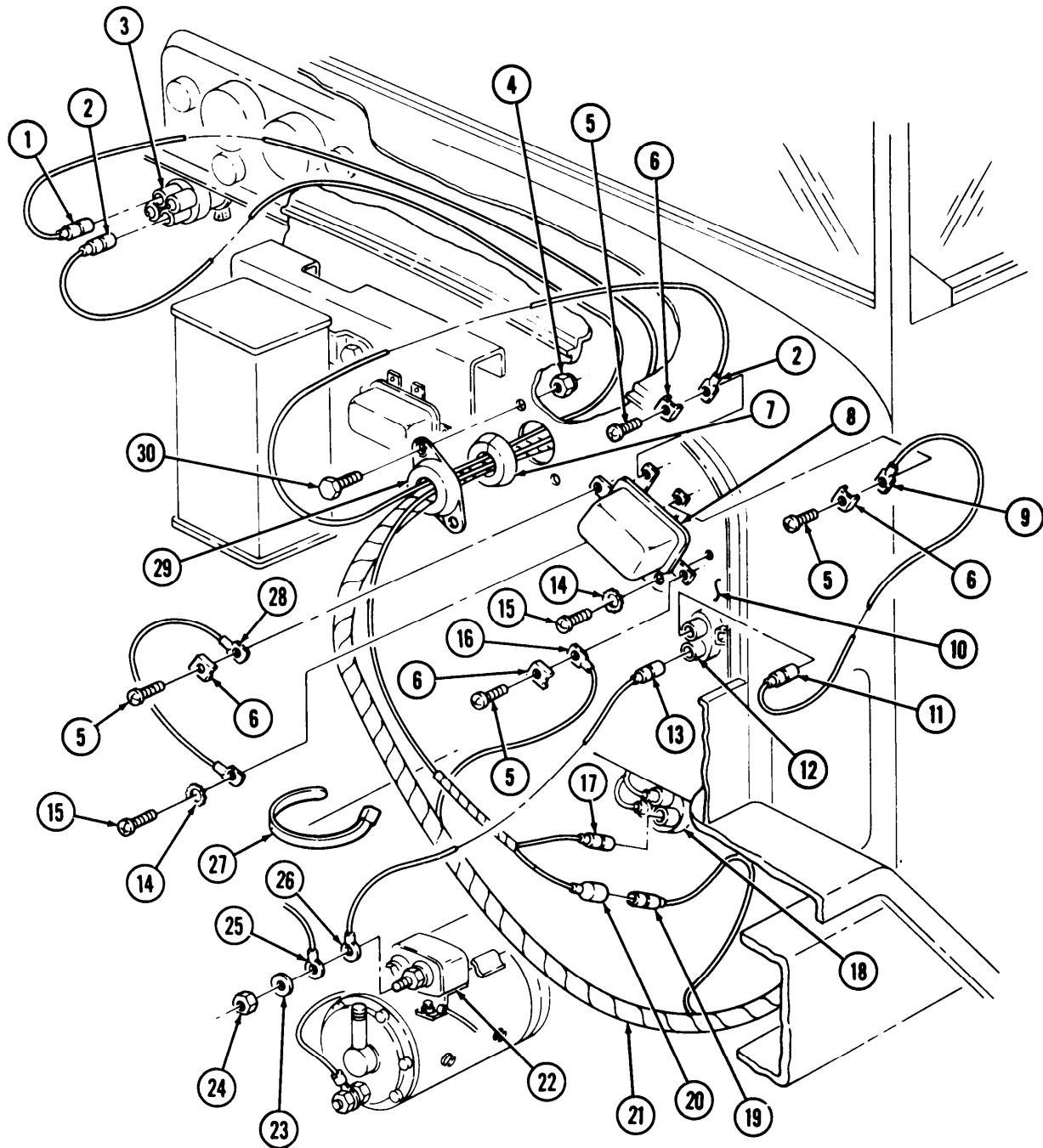
### NOTE

Assistant will help with step 19.

19.		Grommet (7) and retainer (29)	a. Place around front main wiring harness (21) and leads (1) and (2). b. Install on firewall (10) with two screws (30) and new locknuts (4).	
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# 11-63. CONVOY WARNING LIGHT RESISTOR AND LEADS REPLACEMENT (Cont'd)

STEP N O .	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK Connect battery ground cable (para. 4-25).



# 11-64. CONVOY WARNING LIGHT REPLACEMENT

This task covers:

## a. Removal

## b. Installation

### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cable disconnected.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Three lockwashers		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

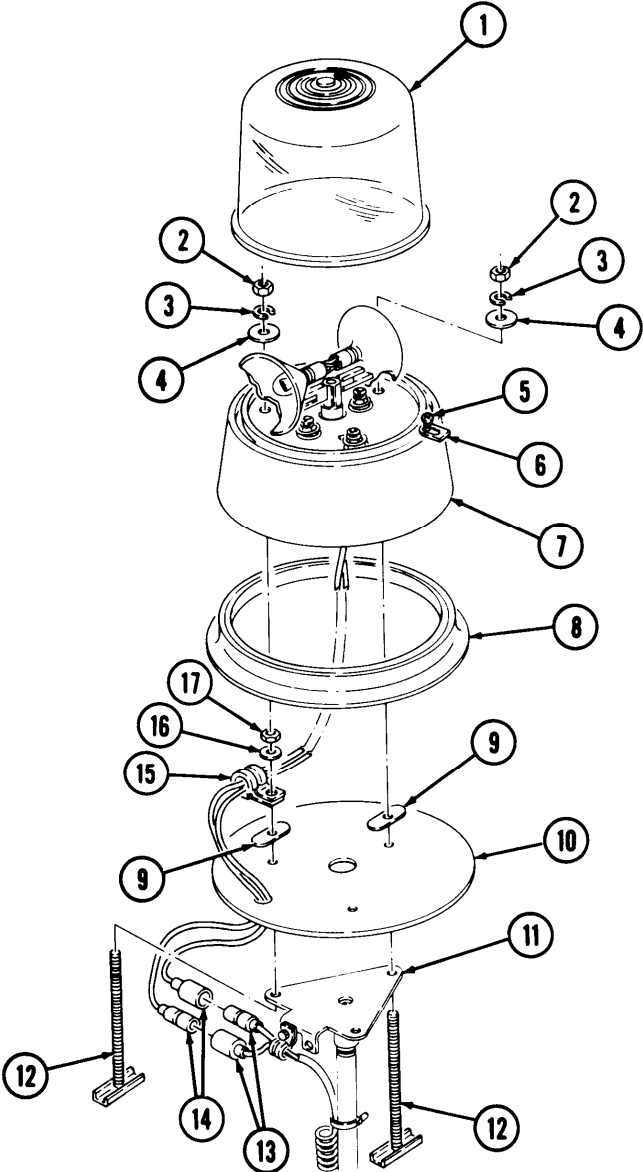
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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### a. Removal

1. Cable leads (13)	Two leads (14)	Disconnect.	
2. Base (7)	Dome (1)	Loosen three screws (5), rotate clamps (6) 1/2 turn counterclockwise, and remove.	
3. Support plate (10)	Three nuts (2), lockwashers (3), washers (4), and base (7)	Remove.	Discard lockwashers (3).
4. Toggle bolt (12)	Nut (17), washer (16), clamp (15), and two leads (14)	Remove.	
5. Support plate (10)	Two leads (14) and seal (8)	Remove.	
6. Mounting plate (11)	Three oval nuts (9), toggle bolts (12), and support plate (10)	Remove.	

11-64. CONVOY WARNING LIGHT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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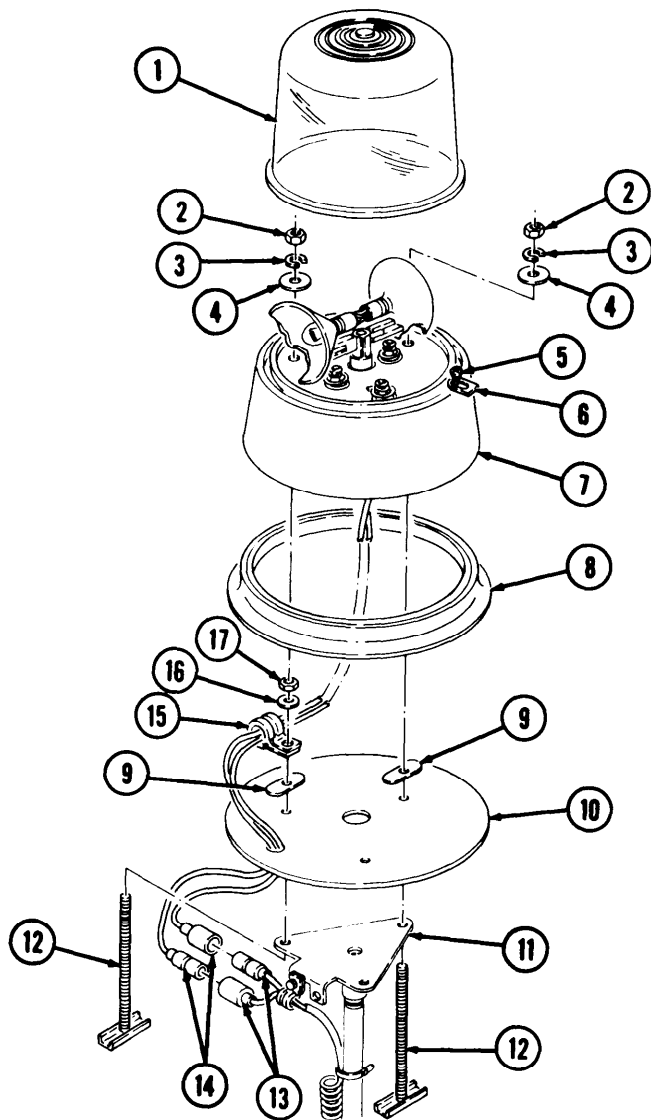


<b>11-64. CONVOY WARNING LIGHT REPLACEMENT (Cont'd)</b>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<b>b. Installation</b>				
7.		Support plate (10)	Install on mounting plate (11) with three toggle bolts (12) and oval nuts (9).	
8.		Seal (8)	Position on support plate (10).	
9.		Two leads (14)	a. Insert through hole in support plate (10). b. Install on toggle bolt (12) with clamp (15), washer (16), and nut (17).	
10.		Base (7)	Install on support plate (10) with three washers (4, new lockwashers (3), and nuts (2).	
11.		Dome (1)	a. Position on base (7). b. Rotate three clamps (6) 1/2 turn clockwise. c. Tighten three screws (5).	
12.		Two leads (14)	Connect to cable leads (13).	

11-64. CONVOY WARNING LIGHT REPLACEMENT (ICont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Connect battery ground cable (para. 4-25).

11-65. CONVOY WARNING LIGHT SWITCH REPLACEMENT

This task covers:

a. Removalb. Installation

INITIAL SETUP:

<b>Applicable Models</b>	<b>Equipment Condition Reference</b>	<b>Condition Description</b>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cable disconnected.
<b>Test Equipment</b>		<b>Special Environmental Conditions</b>
None		None
<b>Special Tools</b>		<b>General Safety Instructions</b>
None		None
<b>Materials/Parts</b>		
Two locknuts Two lockwashers		
<b>Personnel Required</b>		
Light-wheeled vehicle mechanic MOS 63B		
<b>Manual References</b>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

1. Switch (11)	Screw (8), lockwasher (7), and lever (6)	Remove.	Discard lockwasher (7).
2. Bracket (9)	Nut (5), lockwasher (4), identification plate (3), and switch (11)	Remove.	Discard lockwasher (4).
3. Switch (11)	Two leads (12)	Disconnect.	
4. Instrument panel (1)	Two locknuts (2), screws (10), and bracket (9)	Remove.	Discard locknuts (2).

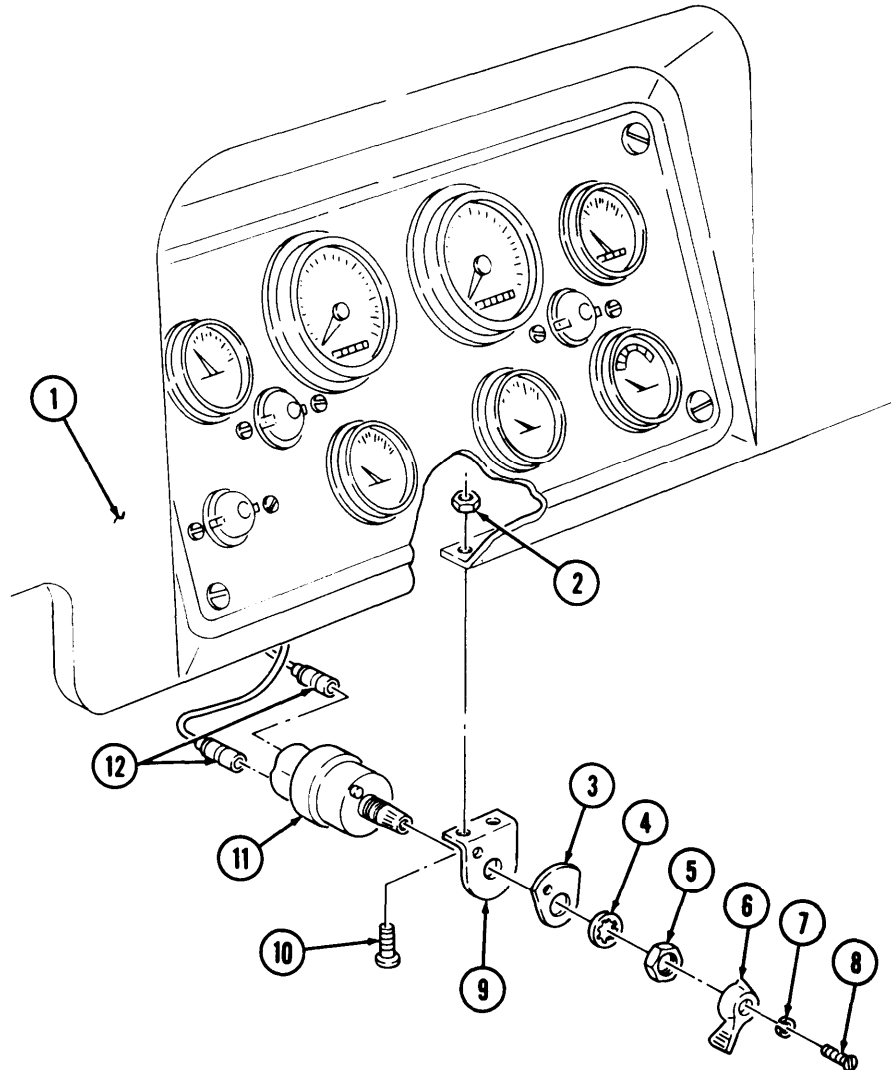
b. Installation

5.	Bracket (9)	Install on instrument panel (1) with two screws (10) and new locknuts (2).
6.	Two leads (12)	Connect to switch (11).
7.	Switch (11) and identification plate (3)	Position and install on bracket (9) with new lockwasher (4) and nut (5).

# 11-65. CONVOY WARNING LIGHT SWITCH REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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8.		Lever (6)	Install on switch (11) with new lockwasher (7) and screw (8).	
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END OF TASK!

FOLLOW-ON TASK: Connect battery ground cable (para. 4-25).

Section X. EUROPEAN MINI-LIGHTING KIT MAINTENANCE

11-66. EUROPEAN MINI-LIGHTING KIT REPLACEMENT

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10 Para. 4-25	Parking brake set. Battery ground cable disconnected.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Five locknuts Lockwasher Two screw-assembled lockwashers Two O-rings		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

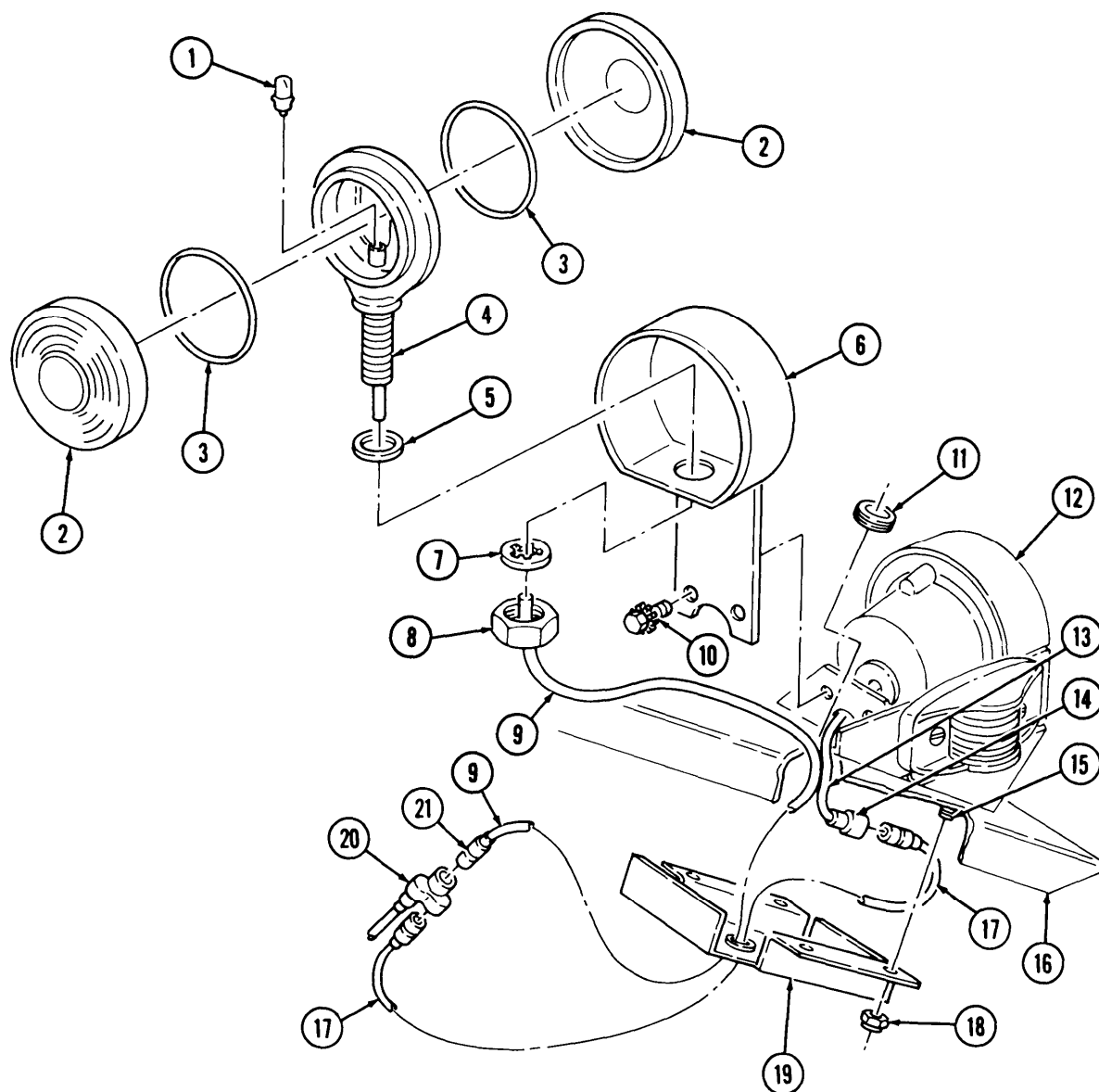
Right and left European mini-lights are replaced the same way.  
This procedure covers the right side only.

a. Removal

1. Lamp housing (4)	Two lenses (2), O-rings (3), and lamp (1)	Remove.	Discard O-rings (3).
2. Fender (16) at four screws (15)	Four locknuts (18) and protector box (19)	Remove.	Discard locknuts (18).
3. Connector (20)	Lead (9) with shell (21) and cable (17)	Disconnect.	
4. Connector (14)	Cable (17)	Disconnect.	
5. Leads (9) and (13) and fender (16)	Grommet (11)	Remove.	

# 11-66. EUROPEAN MINI-LIGHTING KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Brush guard (6)	Locknut (8), lockwasher (7), washer (5), and lamp-housing (4)	Remove.	Discard lockwasher (7) and locknut (8).
7.	Brush guard (12)	Two screw-assembled lockwashers (10) and brush guard (6)	Remove.	Discard screw assembled lockwashers (10).





<b>11-66. EUROPEAN MINI-LIGHTING KIT REPLACEMENT (Cont'd)</b>
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S T E P NO.	LOCATION	ITEM	ACTION	REMARKS
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<b>b. Installation</b>
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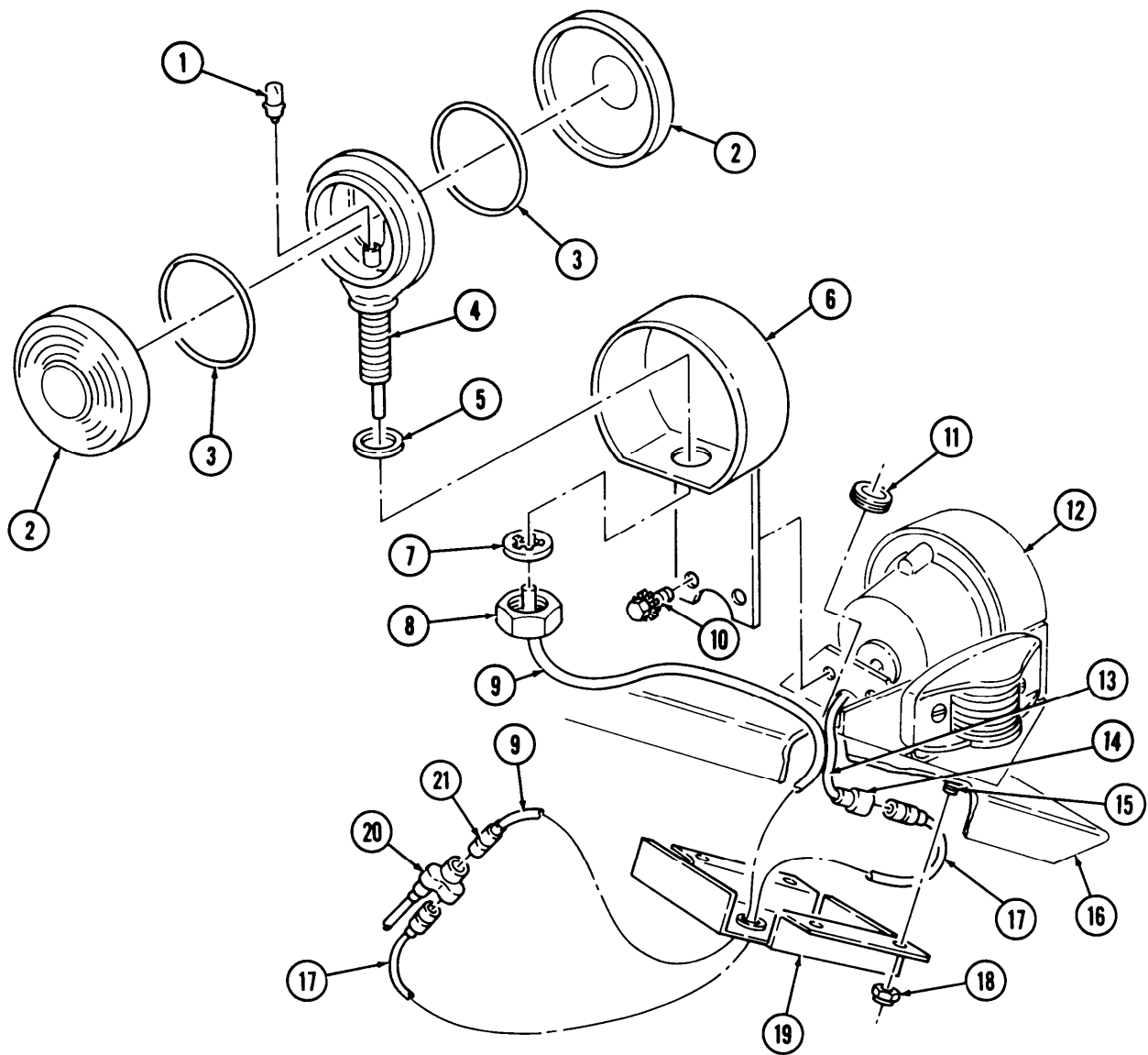
**NOTE**

Ensure red lens of light assembly is installed facing rear of vehicle.

8.	Brush guard (6)	Install on brush guard (12) with two new screw-assembled lockwashers (10).
9.	Washer (5) and lamp housing (4)	Install on brush guard (6) with new lockwasher (7) and new locknut (8).
10.	Grommet (11)	a. Place around leads (9) and (13). b. Install on fender (16).
11.	Lead (9) with shell (21)	a. Insert through hole in fender (16). b. Connect to connector (20).
12.	Cable (17)	Connect to connectors (14) and (20).
13.	Protector box (19)	Install on fender (16) and four screws (15) with four new locknuts (18).
14.	Lamp (1), two new O-rings (3), and lenses (2)	Install on lamp housing (4).

11-66. EUROPEAN MINI-LIGHTING KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Connect battery ground cable (para. 4-25).

## Section XI. AUTOMATIC THROTTLE KIT MAINTENANCE

## 11-67. AUTOMATIC THROTTLE KIT REPLACEMENT

This task covers:

## a. Removal

## b. Installation

## INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M936, M936A1	TM 9-2320-272-10	Parking brake set.
	TM 9-2320-272-10	Air reservoirs drained.
	Para. 3-16	Air cleaner, air cleaner hose, air intake pipe, and hump hose removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		
None		
<u>Materials/Parts</u>		
Four cotter pins		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B (2)		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		
		<u>Special Environmental Conditions</u>
		None
		<u>General Safety Instructions</u>
		Do not disconnect air lines before draining air reservoirs.

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

**WARNING**

Do not disconnect air lines before draining air reservoirs. Small parts under pressure may shoot out with high velocity, causing injury to personnel.

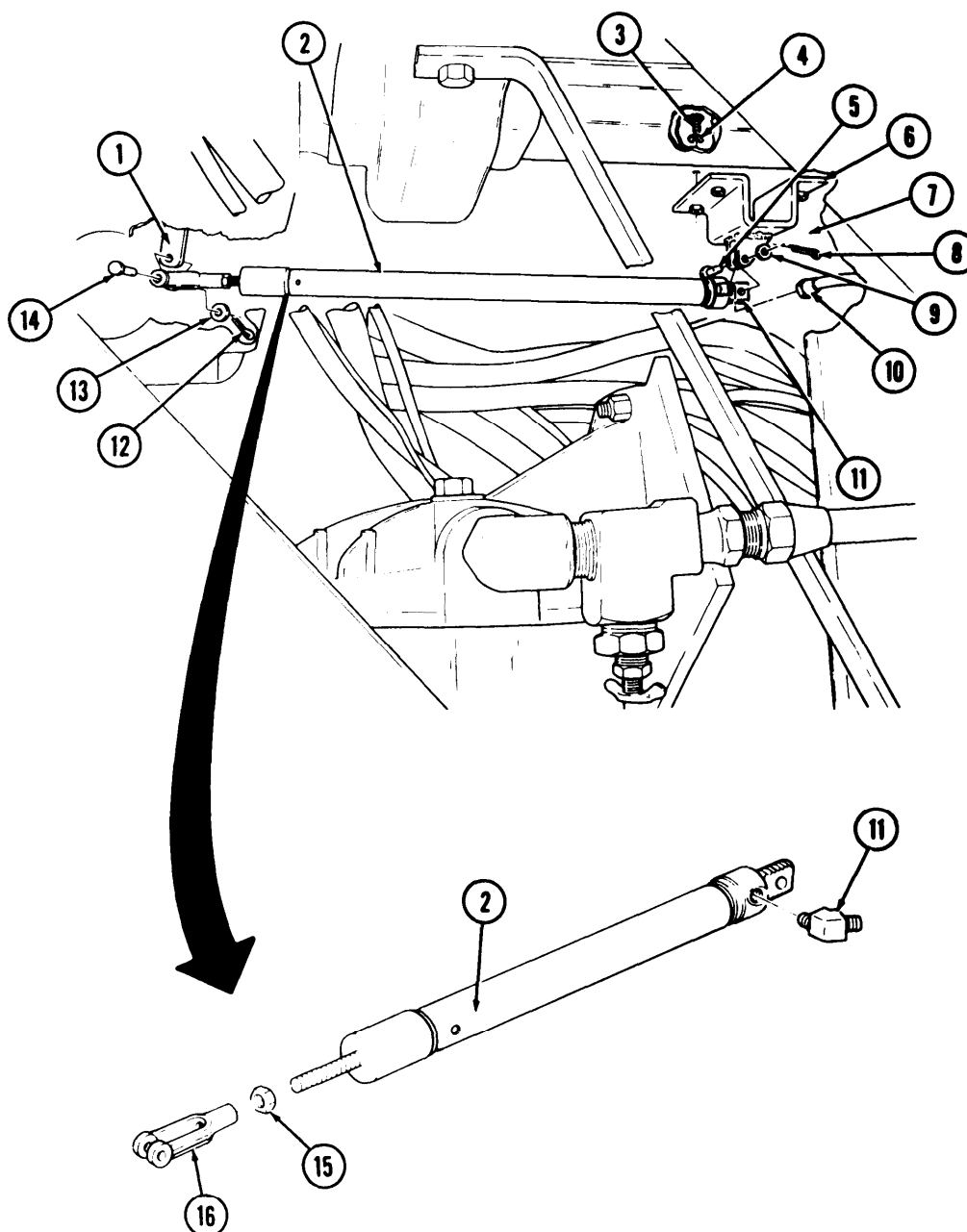
- |                       |   |         |                          |
|-----------------------|---|---------|--------------------------|
| 1. Throttle lever (1) | Cotter pin (12), washer (13), and straight-head pin (14)                | Remove. | Discard cotter pin (12). |
| 2. Elbow (11)         | Tube (10)   | Remove. |                          |
| 3. Bracket (6)        | Cotter pin (8), washer (9), straight-head pin (5), and air cylinder (2) | Remove. | Discard cotter pin (8).  |
- NOTE
- Assistant will help with step 4.
- |                  |   |         |  |
|------------------|---|---------|--|
| 4. Cab floor (7) | Four screws (3), washers (4), and bracket (6) | Remove. |  |
|------------------|---|---------|--|

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**11-67. AUTOMATIC THROTTLE KIT REPLACEMENT (Cont'd)**

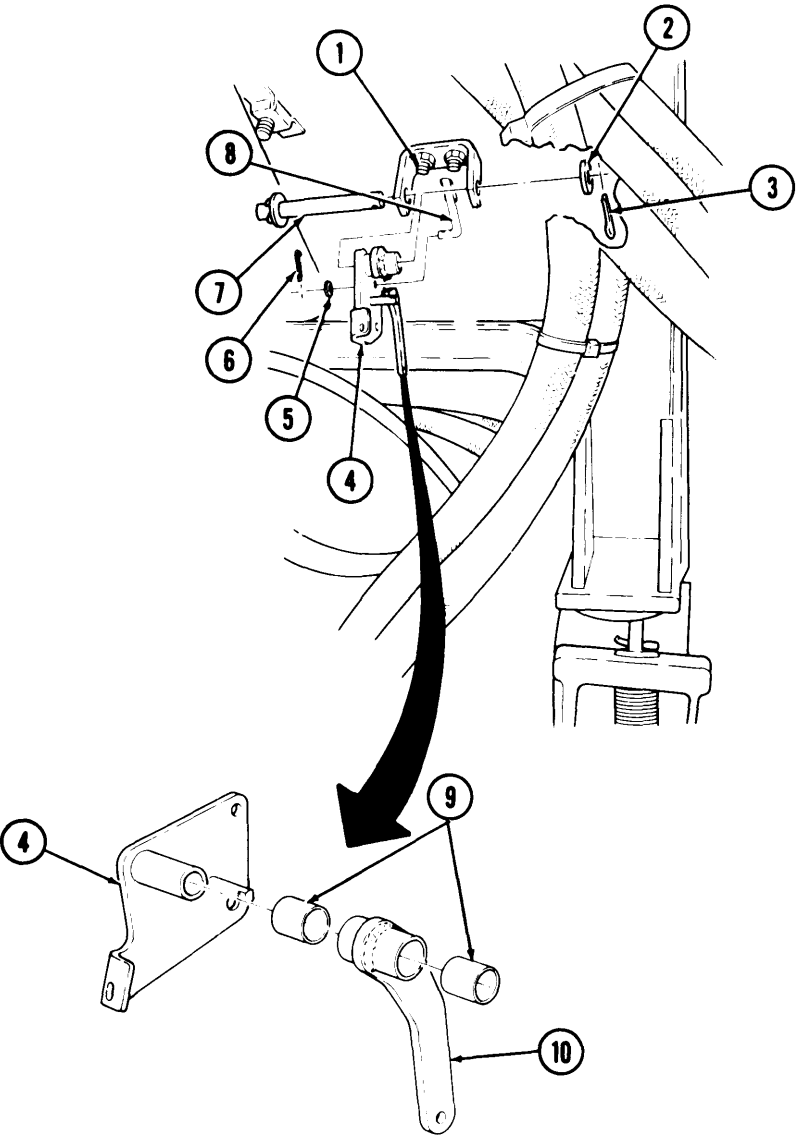

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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Air cylinder (2)	Jamnut (15), clevis (16), and elbow (11)	Remove.	



11-67. AUTOMATIC THROTTLE KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Bellcrank link (4)	Cotter pin (6), washer (5), and accelerator pedal pushrod (8)	Remove.	Discard cotter pin (6).
7.		Two bushings (9) and throttle lever (10)	Remove.	
8.	Throttle bracket (1)	Cotter pin (3), washer (2),throttle shaft (7), and bellcrank link (4)	Remove.	Discard cotter pin (3).



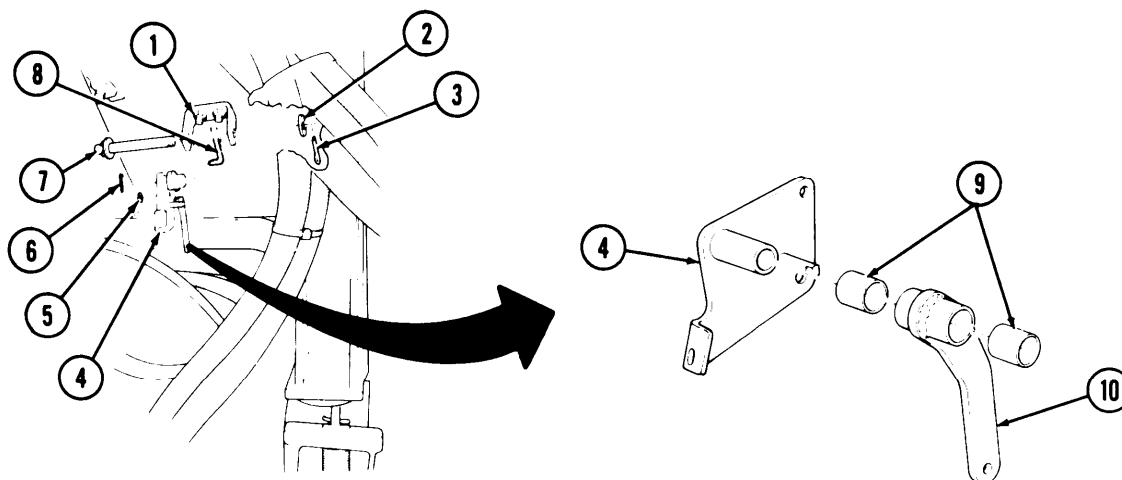
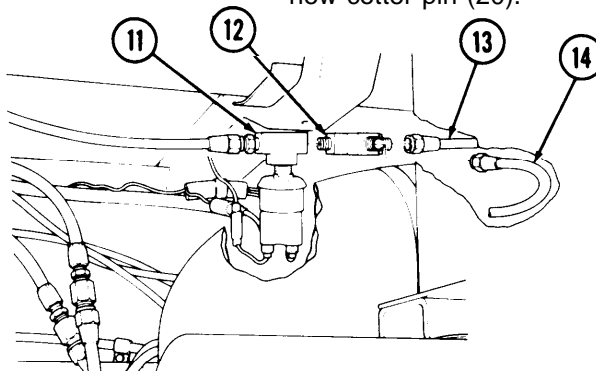
# 11-67. AUTOMATIC THROTTLE KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.	Tee (12)	Tubes (13) and (14)	Remove.	
10.	Air pressure stitch tee (11)	Tee (12)	Remove.	
b. Installation				

## NOTE

Clean all male pipe threads and wrap with sealing tape before installation.

- |     |   |  |
|-----|---|--|
| 11. | Tee (12)                                    | Install on air pressure switch tee (11).                                   |
| 12. | Tubes (13) and (14)                         | Install on tee (12).   |
| 13. | Throttle shaft (21) and bellcrank link (18) | Install on throttle bracket (15) with new cotter pin (17) and washer (16). |
| 14. | Two bushings (23) and throttle lever (24)   | Install on bellcrank link (18).  |
| 15. | Accelerator pedal push-rod (22)             | Install on bellcrank link (18) with washer (19) and new cotter pin (20).   |



<b>11-67. AUTOMATIC THROTTLE KIT REPLACEMENT (Cont'd)</b>
---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
16.		Clevis (16), jamnut (15), and elbow (11)	Install on air cylinder (2).	Tighten jamnut (15) to .25 in. (6.350 mm) on space (17).
<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Assistant will help with step 17.</p>				
17.		Bracket (6)	Install on cab floor (7) with four screws (3) and washers (4).	
18.		Air cylinder (2)	Install on bracket (6) with new cotter pin (8), washer (9), and straight-head pin (5).	
19.		Tube (10)	Install on elbow (11).	
20.		Throttle lever (1)	Install on clevis (16) with new cotter pin (12), washer (13), and straight-head pin (14).	

# 11-67. AUTOMATIC THROTTLE KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS

END OF TASK!

FOLLOW-ON TASKS:

- Install air cleaner, air cleaner hose, air intake pipe, and hump hose (para. 3-16).
- Start engine (TM 9-2320-272-10) and allow air pressure to buildup to normal operating range. Check for air leaks at service brake chamber.



## Section XII. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT MAINTENANCE

### 11-68. GENERAL

This section provides maintenance procedures assigned to the organizational maintenance of the Atmospheric Fuel Tank Vent System Kit.

b. For fabrication instructions of air lines, refer to TM 9-243.

### 11-69. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT REPLACEMENT

This task covers:

a. Removal

b. Installation

#### INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10 Para. 4-25	Hood raised and secured. Battery ground cable disconnected.
None		
<u>Special Tools</u>	<u>Special Environmental Conditions</u>	
None	None	
<u>Materials/Parts</u>	<u>General Safety Instructions</u>	
Two locknuts Sealing tape (Appendix D, Item 26)	None	
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

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

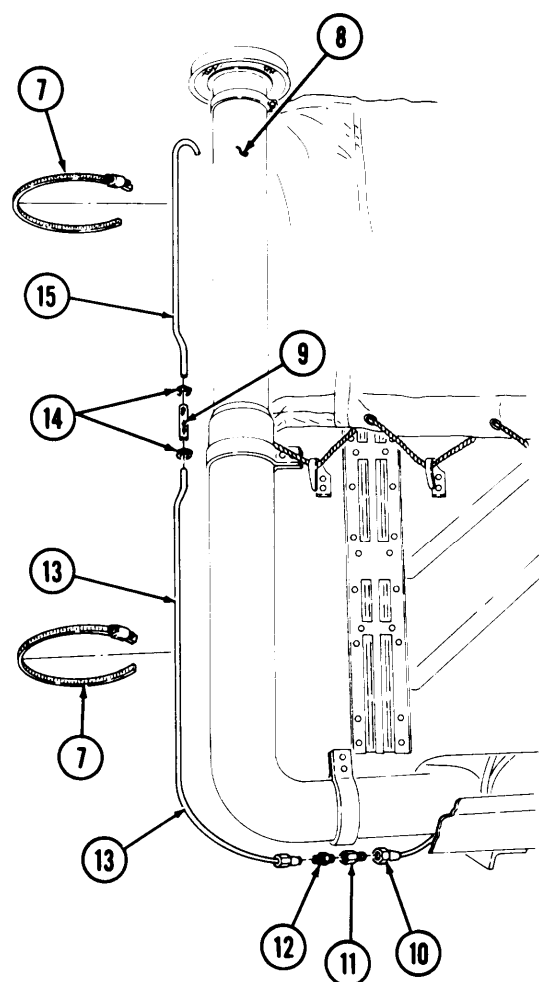
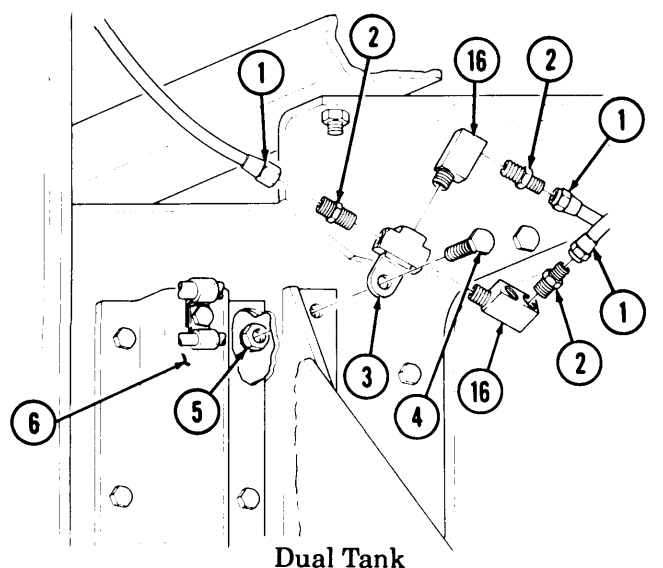
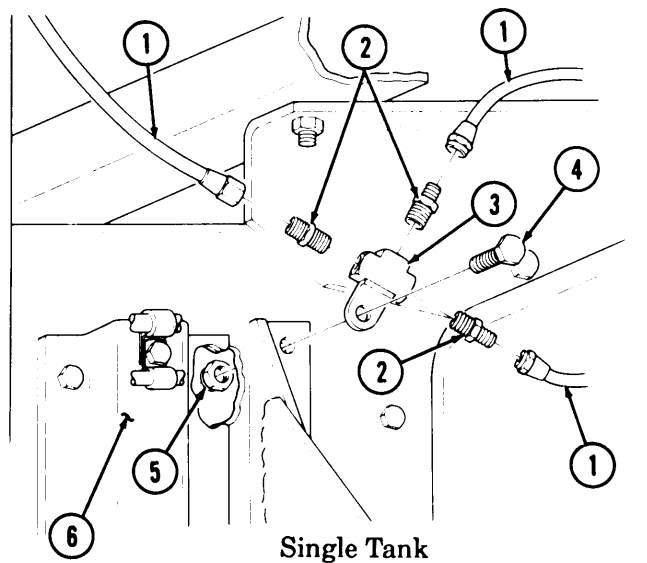
#### NOTE

Perform steps 1 through 3 for single fuel tank system only.

- |                                |                                     |         |                      |
|--------------------------------|-------------------------------------|---------|----------------------|
| 1. Three adapters (2)          | Three fuel lines (1)                | Remove. |                      |
| 2. Rail (6)                    | Locknut (5), screw (4), and tee (3) | Remove. | Discard locknut (5). |
| 3. Tee (3)                     | Three adapters (2)                  | Remove. |                      |
| 4. Three adapters (2)          | Three fuel lines (1)                | Remove. |                      |
| 5. Rail (6)                    | Locknut (5), screw (4), and tee (3) | Remove. | Discard locknut (5). |
| 6. Two elbows (16) and tee (3) | Three adapters (2)                  | Remove. |                      |

# 11-69. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7. Tee (3)		Two elbows (16)	Remove.	
8. Adapter (11)		Vent line (10)	Remove.	
9. Adapter (12)		Adapter (11)	Remove.	
10. Tube (13)		Adapter (12)	Remove.	
11. Air intake pipe (8)		Four clamps (7), tubes (15) and (13), and hose (9)	Remove.	
12. Hose (9)		Two clamps (14) and tubes (15) and (13)	Remove.	



**11-69. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.	Fuel return line (1) and fuel supply line (14)	Two clamps (12), nuts (13), and screws (11)	Remove.	
14.	Elbows (16) and (9)	Fuel return line (1)	Disconnect.	
15.	Elbow (15) and fuel pump (6)	Fuel supply line (14)	Disconnect.	
16.	Elbow (3) and tee (5)	Tube (4)	Disconnect.	
17.	Engine (10)	Screw (7) and bracket (8) with check valve (2)	Remove.	
18.	Two bushings (18)	Elbows (3) and (9)	Remove.	
19.	Check valve (2)	Two bushings (18)	Remove.	
20.		Locknut (21), screw (19), two washers (20), clamp (17), and bracket (8)	Remove.	Discard locknut (21).

**b. Installation**

21.	Bracket (8) and clamp (17)	Install on check valve (2) with screw (19), two washers (20), and new locknut (21).
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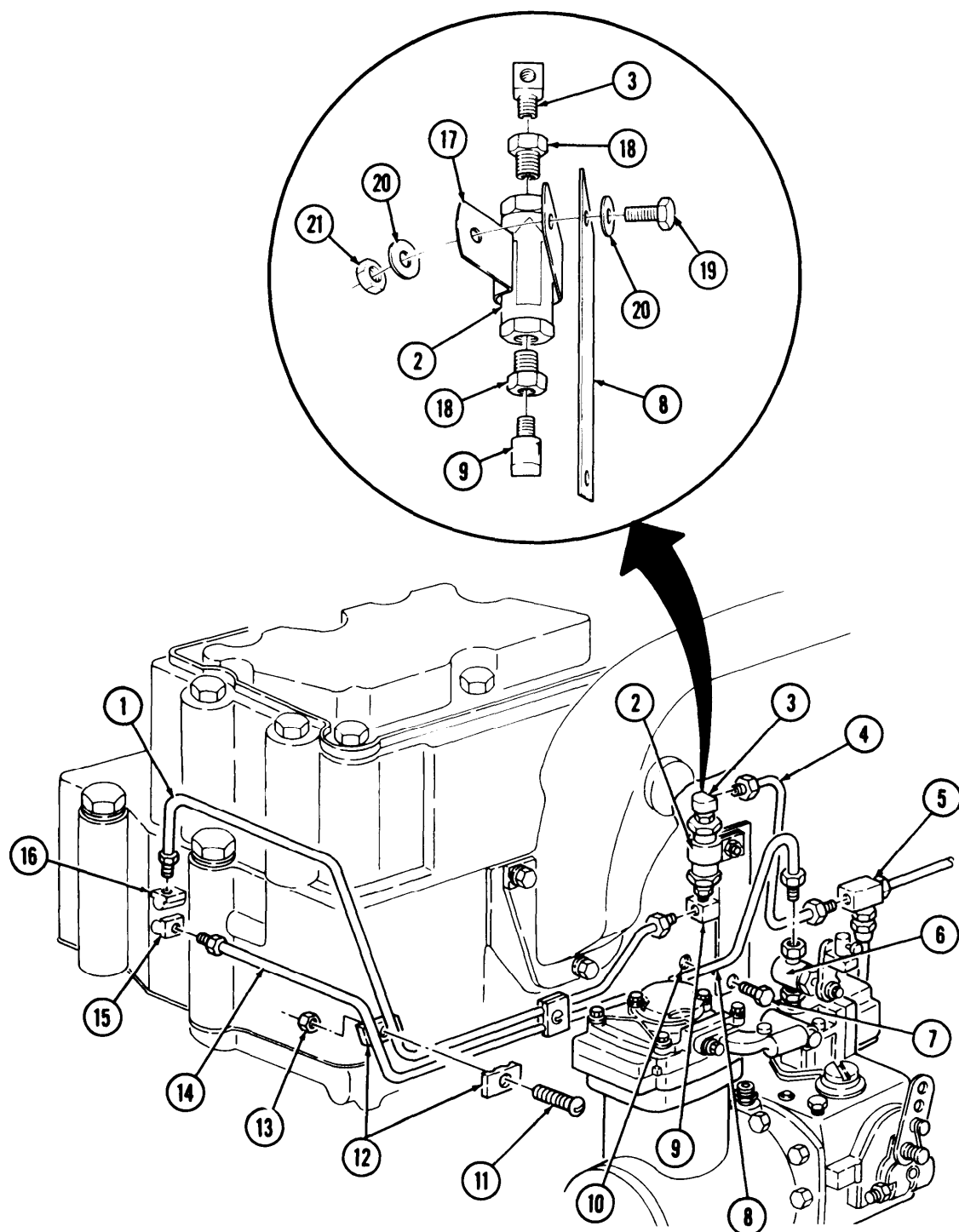
**NOTE**

Male pipe threads must be wrapped with sealing tape before installation.

22.	Two bushings (18) and elbows (3) and (9)	Install on check valve (2).
23.	Bracket (8) with check valve (2)	Install on engine (10) with screw (7).
24.	Tube (4)	Connect to elbow (3) and tee (5).
25.	Fuel supply line (14)	Connect to elbow (15) and fuel pump (6).
26.	Fuel return line (1)	Connect to elbows (16) and (9).
27.	Fuel supply line (14) and fuel return line (1)	Install two clamps (12) with screws (11) and nuts (13).

# 11-69. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT REPLACEMENT (Contd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**11-69. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT REPLACEMENT (Cont'd)**

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
28.		Hose (3)	Connect to tube (9) and tube (7) with two clamps (8).	
29.		Tube (9), hose (3), and tube (7)	Install on air intake pipe (2) with four clamps (I).	
30.		Adapters (6) and (5)	Install on tube (7).	
31.		Vent line (4)	Connect to adapter (5).	
32.		Two elbows (12) and three adapters (11)	Install on tee (14).	
33.		Tee (14)	Install on rail (16) with screw (13) and new lock-nut (15).	
34.		Three fuel lines (10)	Install on three adapters (11).	

**NOTE**

Perform step 35 through 37 for single fuel tank system only.

35.		Three adapters (11)	Install on tee (14).	
36.		Tee (14)	Install on rail (16) with screw (13) and new locknut (15).	
37.		Three fuel lines (10)	Install on three adapters (11).	

11-69. ATMOSPHERIC FUEL TANK VENT SYSTEM KIT REPLACEMENT (Cont'd]

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<p>END OF TASK!</p> <p>FOLLOW-ON TASK: Connect battery ground cable (para. 4-25).</p>				

Section XIII. VEHICLE TIEDOWN KIT MAINTENANCE

11-70. VEHICLE TIEDOWN KIT REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None
<u>Special Tools</u>		<u>General Safety Instructions</u>
None		None
<u>Materials/Parts</u>		
Twenty-four locknuts (M923, M924, M929 M931, M936) Twenty-eight locknuts (M925, M926, M930 M932) Thirty-two locknuts (M927, M934, M935) Thirty-six locknuts (M928)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10 TM 9-2320-272-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. Removal

NOTE

- Depending on vehicle model as few as 12 or as many as 18 tiedowns may exist.
- Tiedowns are located alongside vehicle frame rail.
- Left side and right side tiedowns are installed the same. This procedure covers left side tiedowns.
- All vehicles have two tiedowns installed with spacers, mark position for installation.

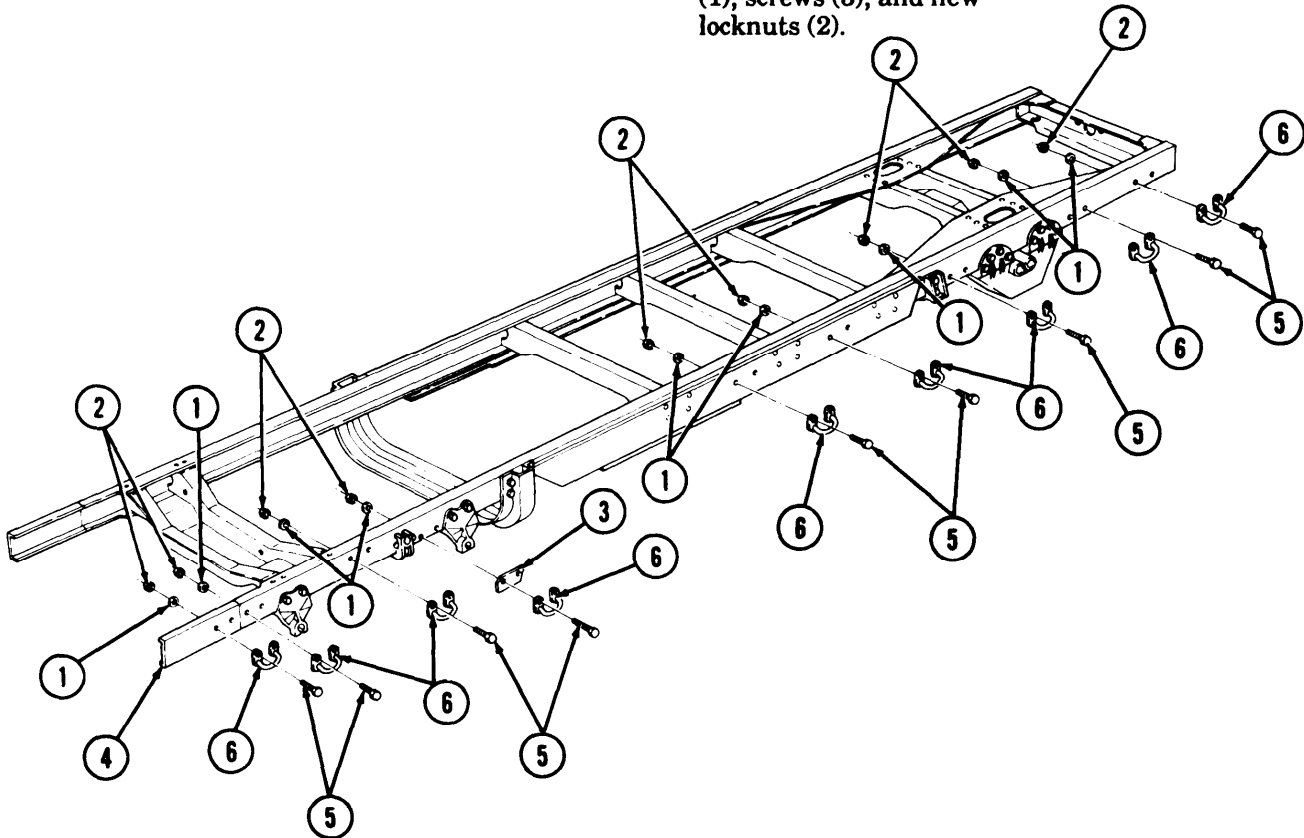
1. Left side frame rail (4)	Two locknuts (2), wash- ers (1), screws (5), and tiedown (6)	Remove.  Discard locknuts (2) and remove spacer (3) as required.
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11-70. VEHICLE TIEDOWN KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. Installation

2.
- Tiedown (6)
- Install on left side frame Install spacer (3) as rail (4) with two washers required. (1), screws (5), and new locknuts (2).



END OF TASK!



## Section XIV. HYDRAULIC HOSE CHAFE GUARD KIT MAINTENANCE

## 11-71. HYDRAULIC HOSE CHAFE GUARD KIT REPLACEMENT

This task covers:

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

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M929, M930	TM 9-2320-272-10	Parking brake set.
<u>Test Equipment</u>	TM 9-2320-272-10	Dump body raised and support braces in position.
None	LO 9-2320-272-12	Drain hydraulic oil reservoir.
<u>Special Tool</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Two packings		Dump body must be raised and secured with safety braces.
Two locknuts		
One tiedown strap (Appendix D, Item 18)		
Sealant (Appendix D, Item 22)		
Cap and plug set (Appendix D, Item 5)		
<u>Personnel Required</u>		
Light-wheeled vehicle mechanic MOS 63B		
<u>Manual References</u>		
TM 9-2320-272-10		
TM 9-2320-272-20P		

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

Dump body must be raised and secured with safety braces before removal and installation of chafe guard kit. Failure to do this may result in injury to personnel.

**NOTE**

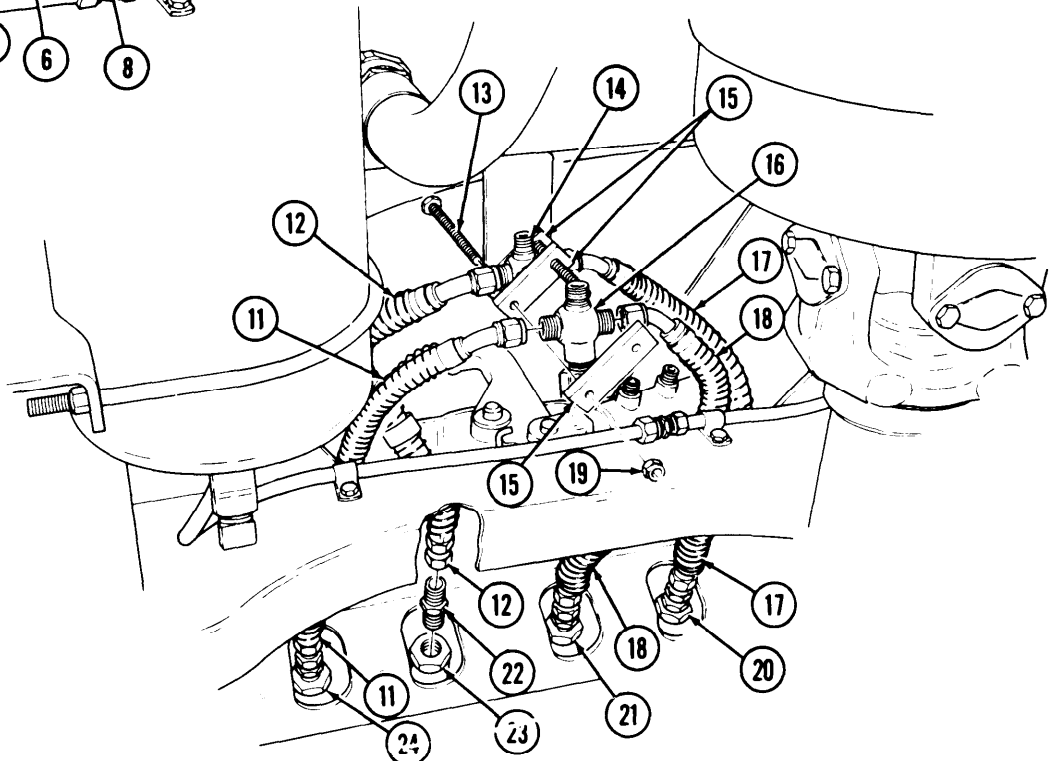
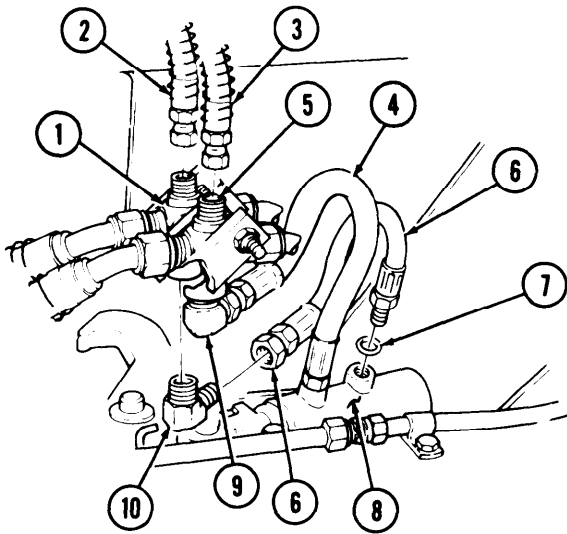
- Tag all hoses and tubes for proper installation.
- Plug all hydraulic openings and hoses to prevent contamination.

**a. Removal**

1. Two elbows (9) and (10)	Two hoses (4) and (6)	Disconnect.	
2. Safety lock cylinder (8)	Two hoses (4) and (6) and packings (7)	Remove.	Discard packings (7).
3. Two cross ports (1) and (5)	Two hoses (2) and (3)	Remove.	
4. Four connectors (22)	Four hoses (11), (12), (18), and (17)	Remove	

11-71. HYDRAULIC HOSE CHAFE GUARD KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Four cylinder ports (20), (23), (21), and (24)	Four connectors (22)	Remove.	
6.	Cross port (16)	Two hoses (11) and (18)	Remove.	
7.	Cross port (14)	Two hoses (12) and (17)	Remove.	
8.	Two screws (13)	Two locknuts (19), three plates (15), and two cross ports (14) and (16)	Remove.	Discard locknuts (19).
9.	Two cross ports (1) and (5)	Two elbows (9) and (10)	Remove.	



11-71. HYDRAULIC HOSE CHAFE GUARD KIT REPLACEMENT (Cont'd)

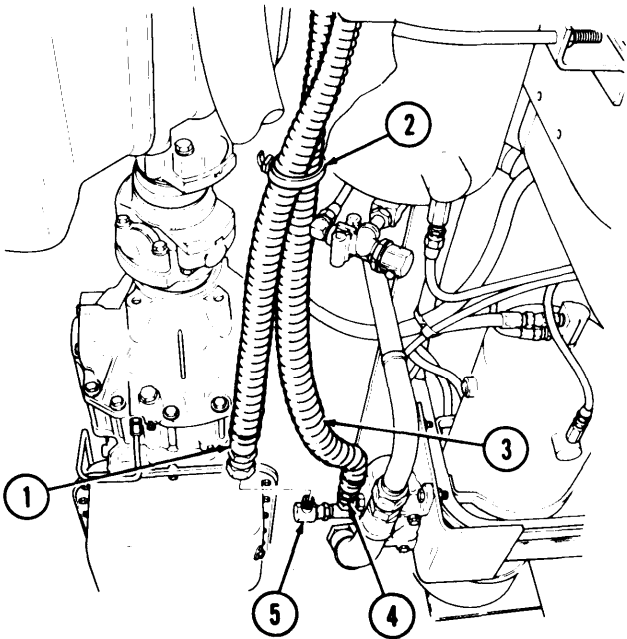
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Control valve port (5) and (4)	Two hoses (1) and (3)	Remove.	
11.	Two hoses (1) and (3)	Tiedown strap (2)	Cut and <b>remove</b> .	Discard tiedown strap (2).

b. Installation

NOTE

Clean all male pipe threads and apply pipe sealant before installation.

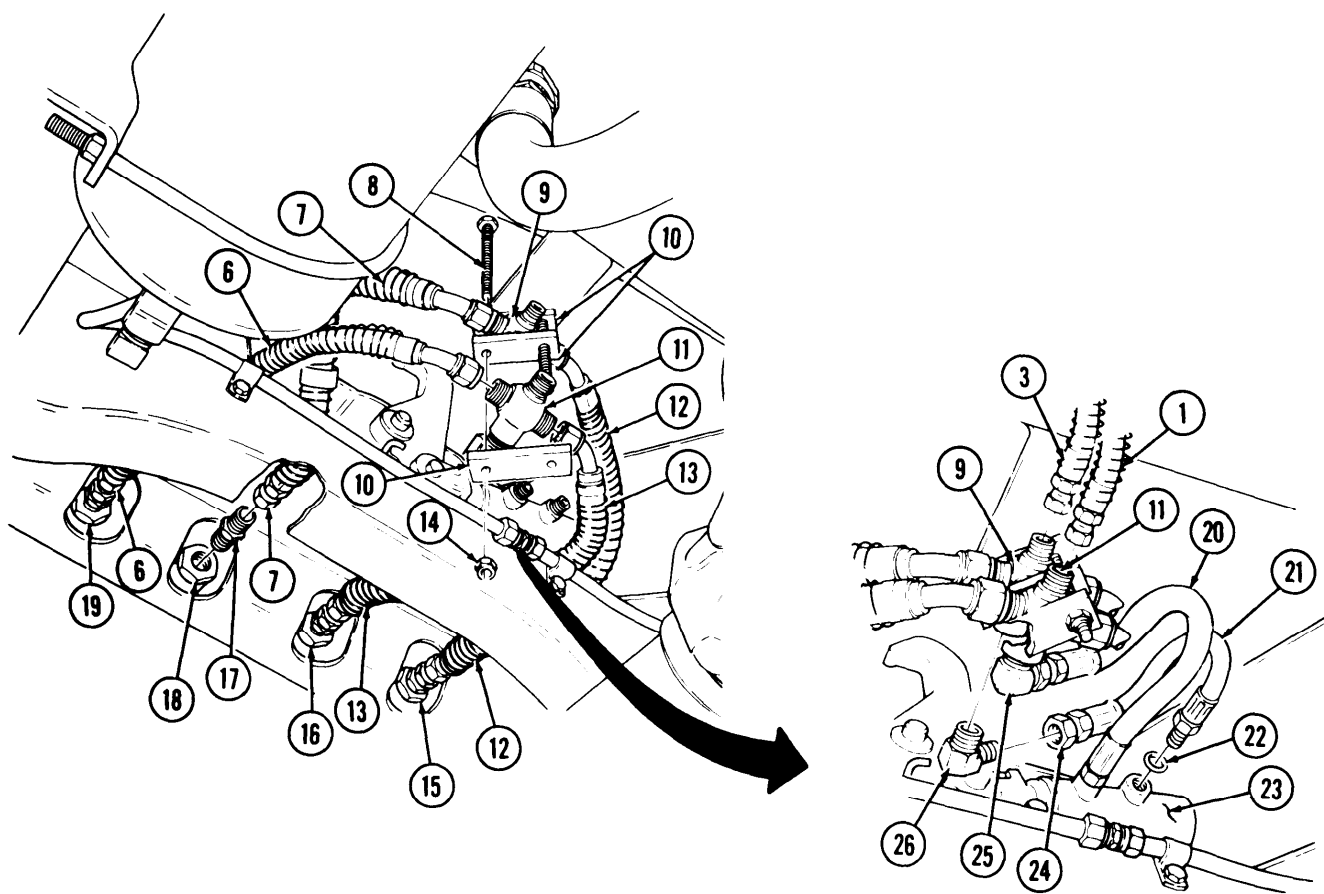
12.	Two hoses (1) and (3)	Install on control valve ports (5) and (4).
13.	New tiedown strap (2)	Install on two hoses (1) and (3).



14.	Two elbows (25) and (26)	Install on two cross ports (9) and (11).
15.	Three plates (10) and two cross ports (9) and (11)	Install on two screws (8) with new locknuts (14).
16.	Two hoses (7) and (12)	Install on cross port (9).
17.	Two hoses (6) and (13)	Install on cross port (11).

## 11-71. HYDRAULIC HOSE CHAFE GUARD KIT REPLACEMENT (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
18.		Four connectors (17)	Install on four cylinder ports (15), (16), (18), and (19).	
19.		Four hoses (6), (7), (12), and (13)	Install on four connectors (17).	
20.		Two hoses (20) and (21)	Install on two elbows (25) and (26).	
21.		Two new packings (22) and hoses (20) and (21)	Install on safety lock cylinder (23).	
22.		Two hoses (1) and (3)	Install on two cross ports (9) and (11).	



END OF TASK!

FOLLOW-ON TASKS:

- Fill hydraulic oil reservoir (LO 9-2320-272-12).
- Remove support braces and lower dump body (TM 9-2320-272-10).
- Check for proper operation of hydraulic system (TM 9-2320-272-10).



## CHAPTER 12

### SHIPMENT AND LIMITED STORAGE

#### Section I. GENERAL PREPARATION OF VEHICLE

##### **12-1. SCOPE**

This section outlines requirements for preparation and stowage for shipment of vehicles and components, Government Furnished Equipment (GFE), Basic Issue Items (BII), and containers.

##### **12-2. PREPARATION OF VEHICLE**

When vehicles are shipped, the officer in charge of shipment is responsible for furnishing the vehicles to transport carriers in a serviceable condition. Vehicles must be properly cleaned, preserved, painted, and lubricated. Vehicles and BII must be prepared and protected so they won't deteriorate or become damaged during shipment. Specific procedures for performing these actions are prescribed in the applicable requirements in this chapter and in MIL-V-62038.

##### **12-3. CLEANING**

Clean all surfaces of corrosion, soil, grease, or other acid and alkali residues prior to application of preservatives.

##### **WARNING**

Cleaning fluids are flammable and toxic. Keep them away from flame. Don't use in enclosed area. Avoid breathing fumes. Wear rubber gloves, protective clothing, and goggles to prevent skin contact. Failure to do this may result in injury to personnel.

**a. Interior.** Remove all dirt and foreign matter with cleaning fluid. Use warm water, not solvent, to clean electrical equipment, plastic, decals, and any rubber parts.

##### **CAUTION**

Cleaning materials or paints containing chlorinated hydrocarbon class solvents are not to be used on composite taillights and parking lights. Damage to taillight and parking light lenses may result.

**b. Exterior.** Clean vehicle exterior surfaces of all foreign matter and excess cleaning material.

##### **NOTE**

After cleaning, let part air dry or wipe with clean, dry, lint-free cloth.



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## 12-4. LUBRICATION

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After cleaning, wipe all grease fittings clean with drycleaning solvent. Lubricate vehicle in accordance with LO 9-2320-272-12. Remove excess grease after lubrication and before processing.

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## 12-5. PRESERVATION

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All critical unpainted metal surfaces must be protected during shipment. Coat unpainted, exposed machined surfaces on the vehicle exterior with corrosion-preventive compound. If such a compound isn't available, oil or grease referenced in LO 9-2320-272-12 maybe used. Coat all unpainted, machined metal surfaces on the inside of vehicle with GAA automotive and artillery grease. Be sure to select preservatives that won't harm vehicle interior.

**a. Battery Cables.** Clean each battery cable terminal and jumper wire end. Coat with GAA automotive and artillery grease and wrap with pressure-sensitive adhesive tape. Then fasten jumper wires to the battery-to-ground cable with tape.

**b. Lenses.** Cover all lamp lenses and reflectors with grease-proof barrier material and fasten with pressure-sensitive tape.

**c. Electrical Openings.** Cover exposed electrical receptacle connectors with pressure-sensitive tape. Plastic caps that provide equal protection may also be used.

**d. Tires.** When shipping by any method except over the road, inflate tires mounted on the wheels (road tires) 10 psi (69 kPa) above recommended pressure for a maximum load. Inflate tires mounted on rims and wheels (spare tires and mounted tires removed from vehicles) to normal operating pressure.

**e. Storage Boxes.**

- (1) Remove all padlocks and keys from steel storage boxes to prevent theft during transit.
- (2) Coat padlocks and keys with preservative engine oil (grade 1).
- (3) Wrap in grease-proof barrier material.
- (4) Place in shipping container with accessories.
- (5) Fasten storage box lids by wiring the hasp to prevent damage.

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## 12-6. PREPARATION OF GOVERNMENT FURNISHED EQUIPMENT (GFE) AND BASIC ISSUE ITEMS (BII)

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Wrap, pack, mark, and stow uninstalled GFE and BII in accordance with MIL-B-12841, or other documents designated by the responsible agency.

**a. Battery, Battery Box, and Electrolyte Preservation.**

When vehicle isn't being shipped directly to a port of embarkation, disconnect battery cables from battery. Clean if necessary as follows:

- (1) To clean outside of battery, use solution of 1/2 pound (.2 kilograms) commercial grade baking soda (sodium bicarbonate) and 1 gallon (3.8 liters) water.
- (2) Rinse with cool water.
- (3) Scrape cable terminals with the cleaning solution.
- (4) Rinse with cool water,

After cleaning, wrap cable terminals and battery posts with non-hydroscopic adhesive tape. Fasten battery cables to battery carrier with 3/4-inch tape conforming to A-A-1685A.

**b. Publications.** Package technical manuals in accordance with method IC-3 in TM 38-230-1. Use heavy-duty, type 1, heat-sealable, grade A, waterproof, class B bags. Pack in BII container. Pack publications from other technical services in exterior BII containers containing the items to which they apply.

**c. Packages.**

**(1) Intermediate Packages.** Whenever possible, group unit packages of related items into intermediate packages. Place in fiberboard cartons. Seal cartons by using water-resistant gummed paper tape on all seams. When gross weight of intermediate package exceeds 20 pounds (9.1 kilograms) use a water-resistant adhesive for sealing fiberboard cartons in addition to sealing tape.

**(2) Unit Packages.** Overwrap non-water resistant unit packages that can't be grouped into an intermediate package with flexible waterproof barrier material. Seal with waterproof water-resistant material.

## 12-7. EXTERIOR CONTAINERS

**a.** Keep number of exterior containers to a minimum. Size is governed by cubic displacement of packaged BII. Container dimensions are limited by overall cubage of vehicle and by use of lifting devices. When assembled in required sets and stowed in vehicle, containers should not increase vehicle size nor block lifting devices.

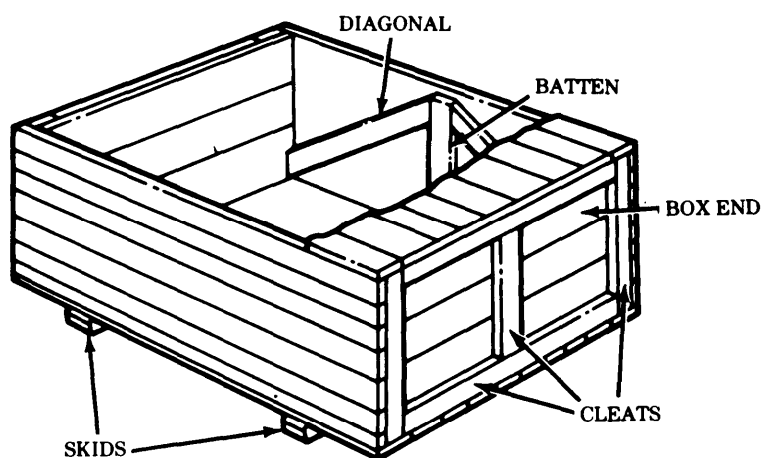
**b.** Place heavy material and equipment in bottom of exterior containers. Block and brace so items won't damage other contents. Pack fragile material and canvas items at top of containers. Be sure to pack BII items and their canvas covers in the same exterior container.

**c.** Pack unit and intermediate packages in accordance with TM 38-230-2.

**d.** Exterior containers weighing over 200 pounds (90.1 kilograms) must have a 2 x 4 inch (5 x 10.2 centimeter) end cleats. Place beveled end skids of 2 x 4 inch (5 x 10.2 centimeter) lumber flat, parallel to the ends of containers and approximately 6 inches (15.2 centimeters) from each end. Distance between skids must not exceed 36 inches (91.4 centimeters).

**e.** Fasten skids to container bottom by driving nails through container floor into skid.

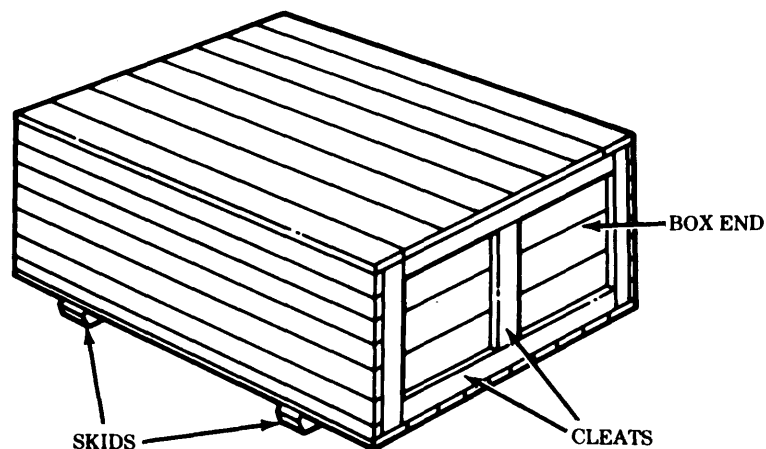
**f.** When required, fasten additional battens to inside faces of container top and side panels. Also fasten battens to inside face of bottom panel when skids aren't required.



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g. Construct container top with matched lumber. Nail top to side and end panels. Weatherproof, strap, and mark container in accordance with MIL-P-116.



h. Cover exterior surfaces, except tops of BII exterior containers, with one coat of green 383 enamel paint.

## 12-8. CONTAINER STOWAGE

a. Stow all BII containers inside body, cab, or other suitable location that doesn't increase cubic size of vehicle. Strap, block, or brace all containers to prevent movement.

### NOTE

BII containers, made without skids and subject to stowage in exposed locations on platforms, floors, or on other boxes, must be secured to prevent damage. Place container on 1 x 4 inch (2.5 x 10.2 centimeter) wood cleats to minimize surface contact.

b. Package and pack all spare parts, tools, equipment, and other loose items to prevent damage. If vehicle toolboxes and storage boxes are available, they can be used for BII or loose parts, after proper processing.

c. Provide necessary identification and precautionary markings in accordance with instructions in MIL-STD-129.

d. Prepare all Army shipping documents in accordance with current regulations,

## Section II. SPECIFIC SHIPPING REQUIREMENTS

### 12-9. SCOPE

This section describes the requirements for inspecting, marking, processing, and loading vehicles and accompanying materials for various types of shipment.

### 12-10. SHIPMENT TO PORTS

**a. Inspection.** Process all used vehicles for overseas shipment in accordance with applicable requirements of MIL-V-62038.

#### NOTE

Ports of embarkation will perform any necessary supplementary or previously omitted processing upon receipt of vehicle.

**b. Army Shipping Documents.** Prepare all army shipping documents in accordance with current regulations.

### 12-11. LOADING REQUIREMENTS

#### NOTE

The height and width of vehicles prepared for rail transportation must not exceed limitations indicated in loading table in AR 700-15 (see 11). Whenever possible, consult local transportation officers about limitations of particular railroad lines to be used.

**a. Rail Shipment.** Load wheeled vehicles on open top railroad cars in accordance with applicable requirements of Section 1, Association of American Railroad rules, "Loading of Commodities on Open Top Cars," and the applicable figure number(s) 88, 88A, and 88B of Section 6 of AAR rules, "Loading of Department of Defense Material on Open Top Cars." Number of units to be loaded on each railcar, type of railcar, and applicable transportation data shall be as authorized by the responsible Government transportation office.

#### **b. Deck Loading.**

- (1) Fasten doors to prevent accidental opening.
- (2) Seal all openings in closed cabs, vans, and other closed-type bodies with tape conforming to MIL-T-22085.
- (3) Cover radiator grills with a minimum 3/8 inch (.9 centimeter) three-ply exterior plywood.
- (4) Install plywood with strapping conforming to type 1, class B of QQ-S-781.
- (5) Protect fold-down windshields as specified in MIL-V-62038

**c. Highway Shipment.** Load vehicles for highway shipment in accordance with Interstate Commerce Commission Publication "Motor Carrier Safety Regulations" and applicable military publications. Use rules in same publications for shipment by driveaway or towaway.

**d. Special Equipment Loading.** To ease loading on vehicle carrier, perform cube reduction, disassembly, and preparation of disassembled items in accordance with MIL-V-62038 requirements.

### Section III. VEHICLE BLOCKING AND FASTENING ON RAILROAD FLATCARS

#### 12-12. SCOPE

This section describes methods for blocking and fastening vehicles on railroad flatcars.

#### 12-13. GENERAL BLOCKING REQUIREMENTS FOR WOODEN FLOOR FLATCARS

Blocking instructions are minimum and in accordance with Association of American Railroads General Rules Governing 'Loading of Commodities on Open Top Cars.' Additional blocking maybe used, as required, at the discretion of the officer in charge. Cement coated nails in accordance with Fed. Spec. FF-N-105, type H, style 9, can be used.

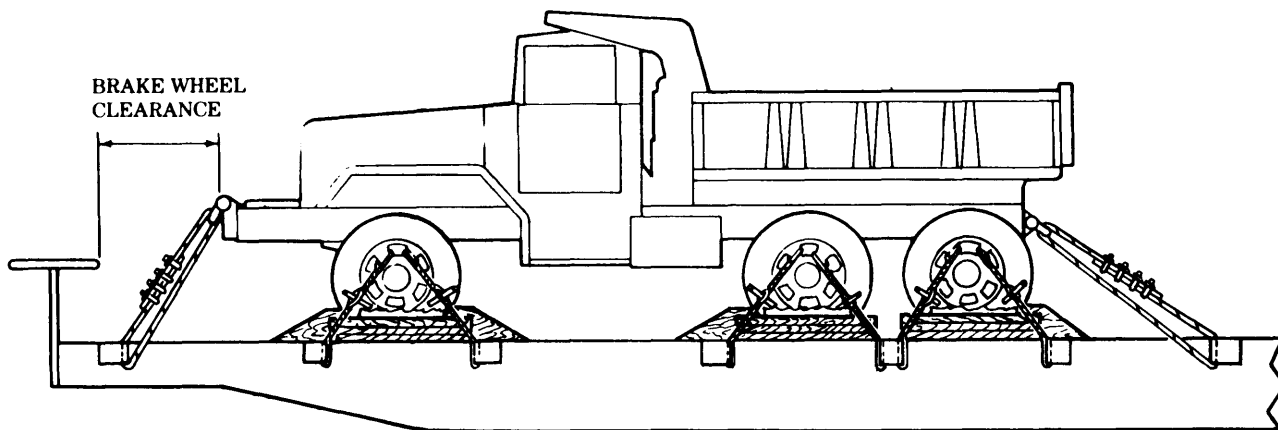
##### NOTE

Submit any loading instructions, regardless of source, that appear to be in conflict with this publication or existing carrier loading rules for approval to Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-G, Warren, MI 48397-5000.

- a. Make sure parking brake is not set.
- b. Place transmission selector lever in "N" (neutral) position.
- c. Inflate tires to 10 psi (69 kPa) above normal highway operating pressure.
- d. Face vehicles in same direction on flatcar. Place with uniform spacing along length of car to allow sufficient space at each car end and between vehicles for fastening.
- e. Make sure load on flatcar doesn't exceed load limit stenciled on its side.
- f. Disconnect battery ground to prevent engine from starting in transit.
- g. Tighten tire valve caps to prevent loss or loosening in transit.
- h. Cover red and amber lights and reflectors to avoid being mistaken for train operating lights or signals.

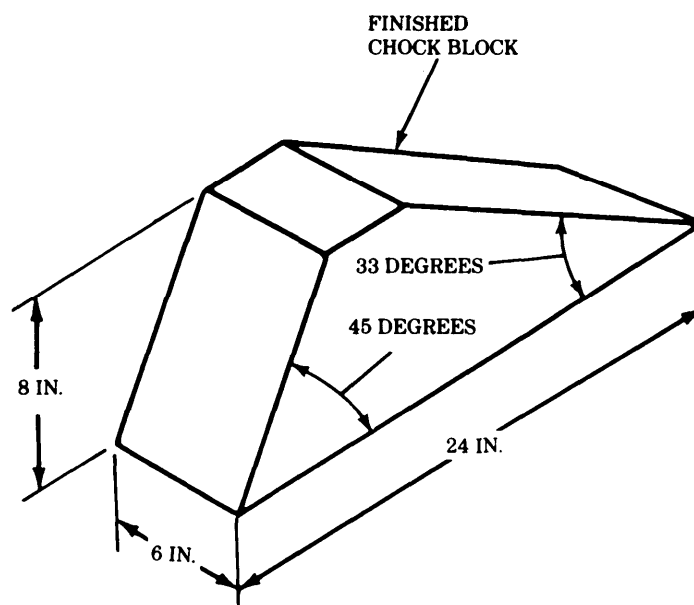
#### 12-14. SPECIFIC BLOCKING REQUIREMENT ON WOODEN FLOOR FLATCARS

- a. Brake Wheel Clearance. Load trucks on flatcars with a minimum clearance of at least 6 inches (15.2 centimeters) behind brake wheel, as shown below.

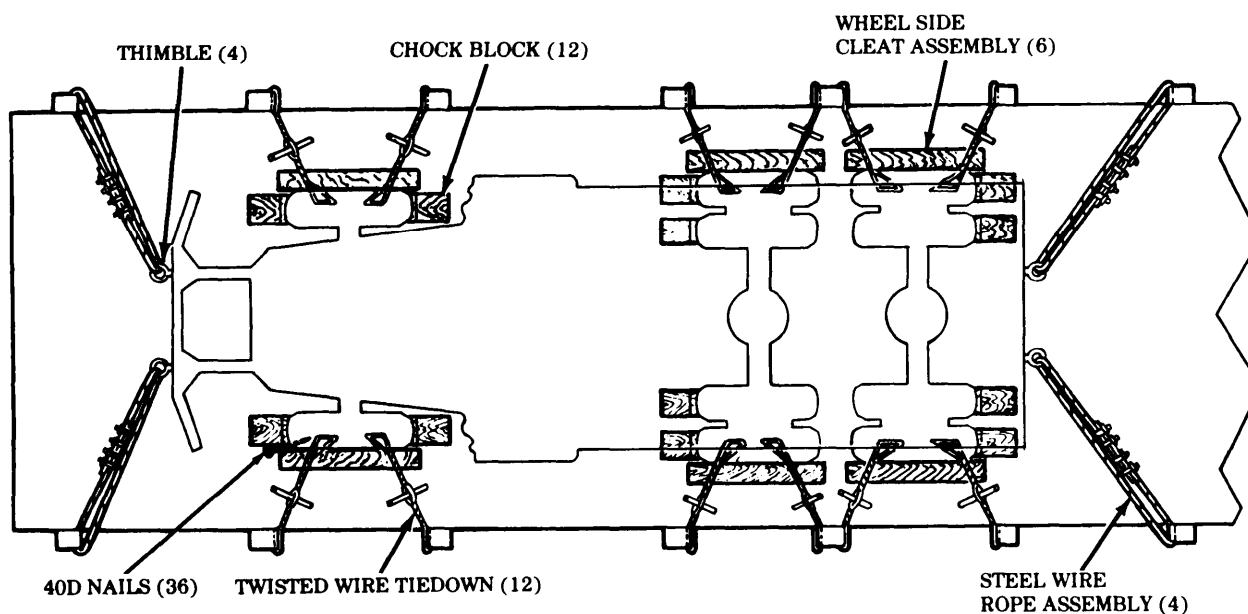


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**b. Chock Blocks.** Twelve 6 x 8 x 24 inch (15.2 x 20.3 x 61 centimeter) blocks as shown below are required.



(1) Locate 45 degree portion of block against front and rear of front wheels, in front of inside and outside intermediate wheels, and in back of inside and outside rear wheels, as shown below.



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(2) Nail heel of block to car floor with three 40d nails. Toenail that portion of block under tire to car floor with two 40d nails. Nail before waterproof paper and wheel side cleat are applied.

**c. Waterproof Paper.** Six 10 x 36 inch (25.4 x 91.4 centimeter) pieces of suitable protective material, such as waterproof paper or burlap, are required. Locate bottom portion under wheel side cleat. Locate top portion to extend 2 inches (5 centimeters) above cleat, as shown.

**d. Wheel Side Cleats.** Six 6 x 5 x 36 inch (14.2 x 12.7 x 91.4 centimeter) assemblies. Each cleat must consist of one piece of 2 x 6 x 36 inch (5 x 15.2 x 91.4 centimeter) lumber and three pieces of 2 x 4 x 36 inch (5 x 10.2 x 91.4 centimeter) lumber, in accordance with Fed. Spec. MM-L-751.

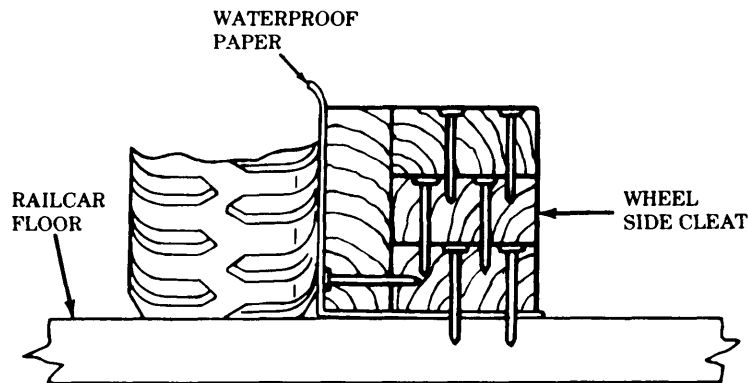
(1) Nail one edge of 2 x 6 x 36 inch (5x 15.2x 91.4 centimeter) piece to side of bottom 2 x 4 x 36 inch (5 x 10.2x 91.4 centimeter) piece. Use five 12d nails.

(2) Position waterproof paper between tire and cleat.

(3) Position cleat against waterproof paper and tire.

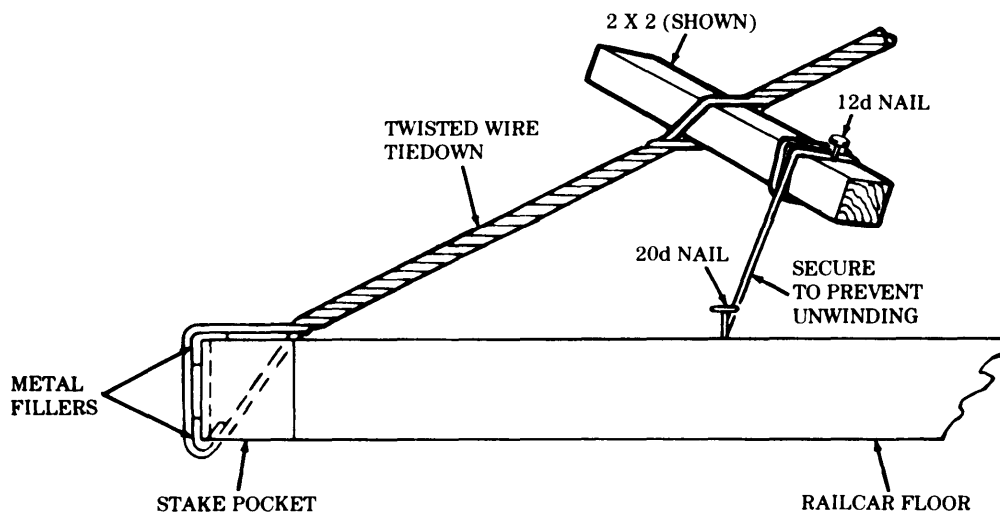
(4) Nail to car floor through the 2 x 4 inch (5x 10.2 centimeter) piece with four 20d nails,

(5) Nail the other two 2 x 4 x 36 inch (5x 10.2x 91.4 centimeter) pieces to the one below in the same manner.



**e. Twisted Wire Tiedowns.** Twelve twisted wire tiedowns are required for the positions shown.

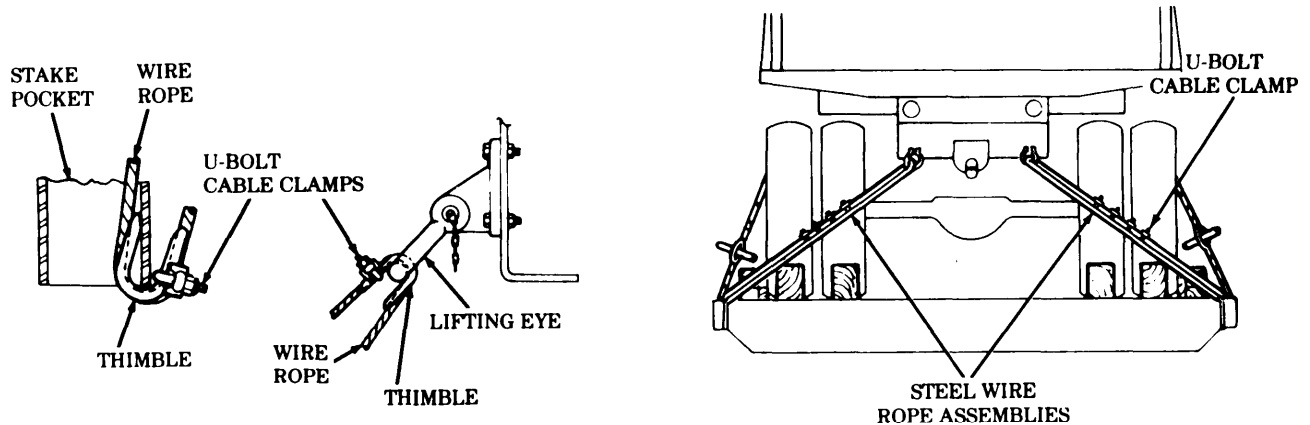
Assemblies consist of eight strands of no. 8 gage, black, annealed wire. Pass tiedowns through holes in wheels and through car stake pockets. Use metal fillers or thimbles big enough to protect wire at stake pockets. Make sure they are fastened. Twist tight with a rod, bolt, or suitable length 2 x 2 inch (5 x 5 centimeter) lumber and fasten to prevent unwinding as shown below.



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**f. Steel Wire Rope Assemblies.** Four wire rope assemblies are required for each vehicle. Assemblies consist of four 5/8 inch x 20 feet long (1.58 centimeter x 6.1 meter) wire ropes and 24 U-bolt cable clamps. Attach one wire rope to each lifting attachment eye as shown.

Wire rope must pass through stake pockets over 5/8 inch (1.58 centimeter) thimbles and over 5/8 inch (1.58 centimeter) thimbles at lifting eyes, as shown below.



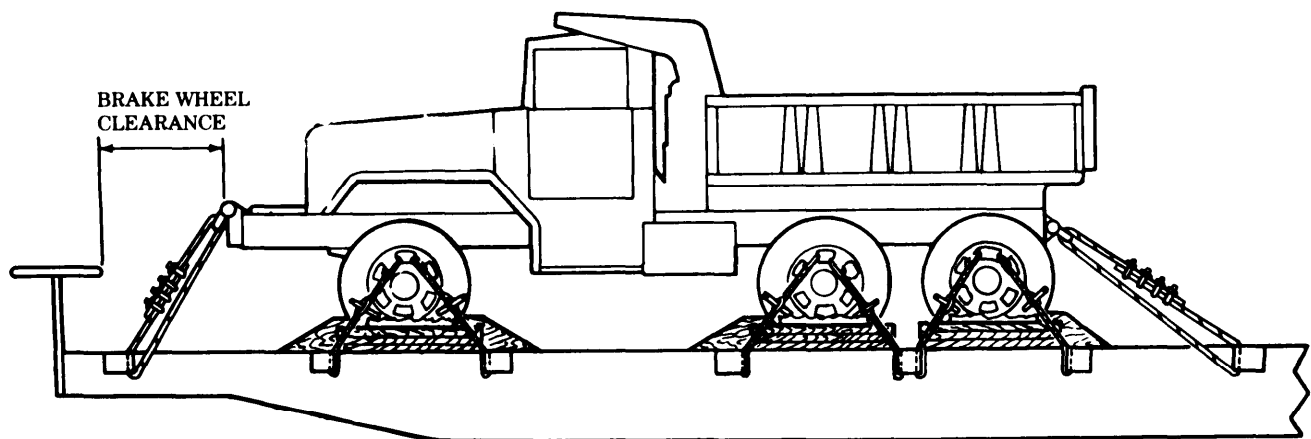
## 12-15. GENERAL FASTENING REQUIREMENTS FOR CUSHIONED RUB-RAIL FLATCARS OR SIMILAR RAILROAD FLATCARS

Tiedown instructions are minimum and in accordance with Association of American Railroads General Rules Governing "Loading of Commodities on Open Top Cars."

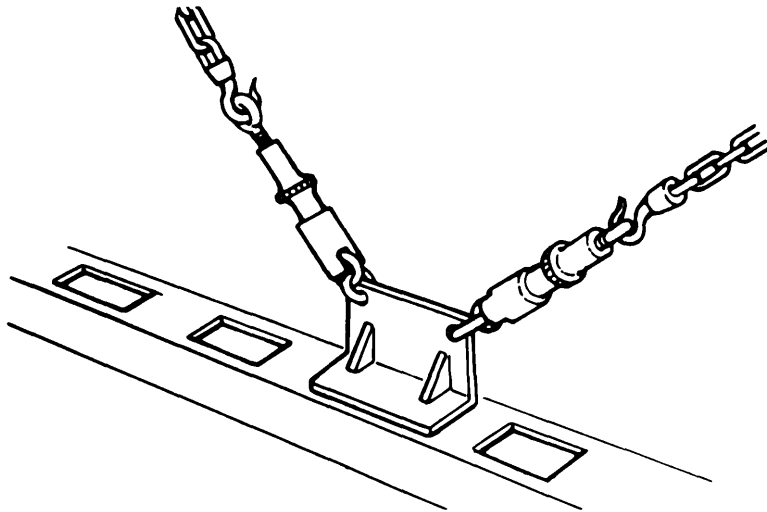
### NOTE

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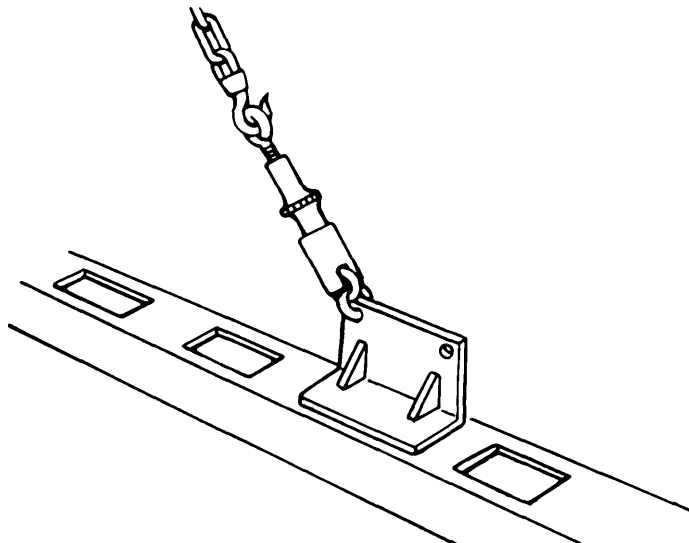
**a. Brake Wheel Clearance.** Load trucks on flatcars with a minimum clearance of at least 6 inches (15.2 centimeters) behind brake wheel, as illustrated below.



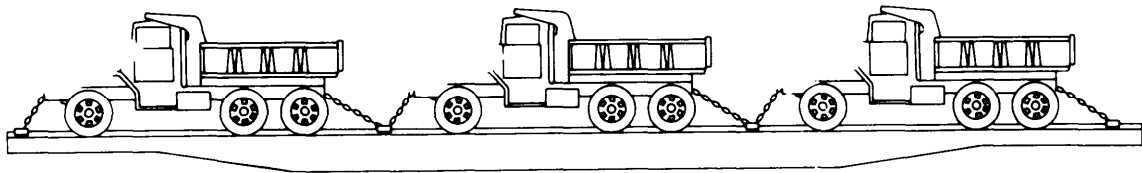
**b. Brandon Double Chain Tiedown Devices.** These devices, illustrated below, are fabricated from 1/2 inch (1.3 centimeter) diameter Excelloy chain or a similar material proof-tested at 27,500 pounds (12,485 kilograms)



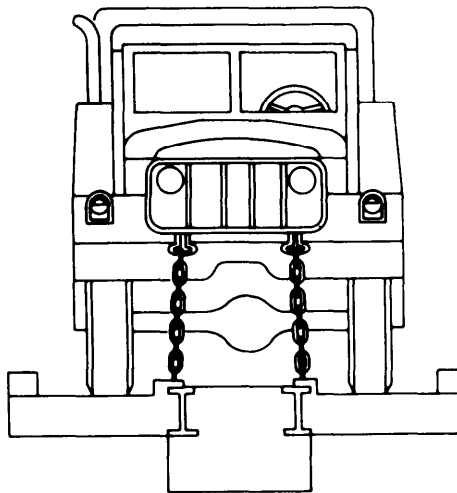
**c. Brandon Single Chain Tiedown.** These devices, shown below, are fabricated from 1/2 inch (1.3 centimeter) diameter Excelloy chain or a similar material proof-tested at 27,500 pounds (12,485 kilograms).



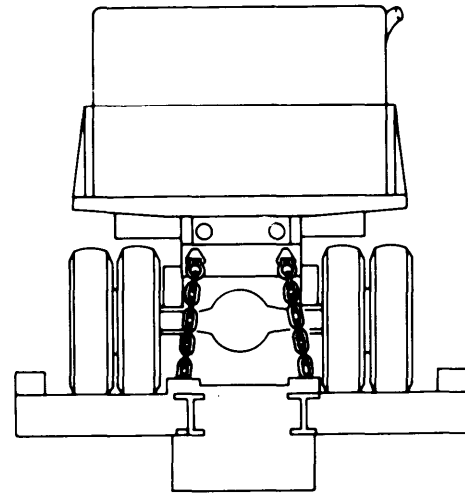
(1) Locate between vehicles as shown below. Attach one chain to vehicle front lifting attachment eye and the other chain through lifting attachment eye located at rear of other vehicle. Attach center fixture of chain to railroad car tiedown facility.



**SIDE VIEW**

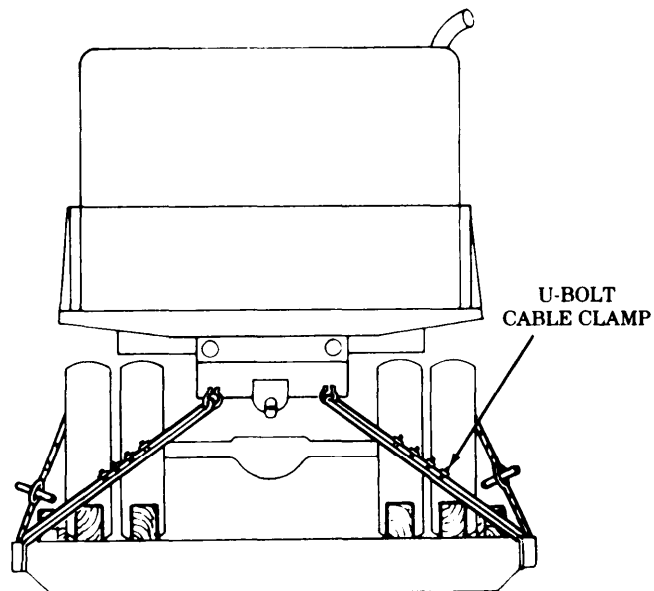


**FRONT VIEW**



**REAR VIEW**

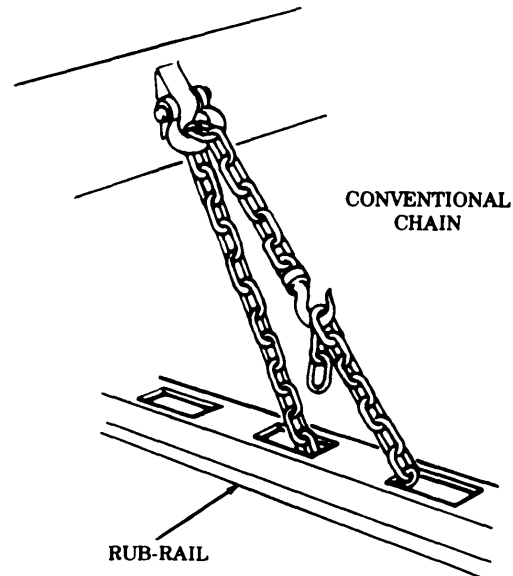
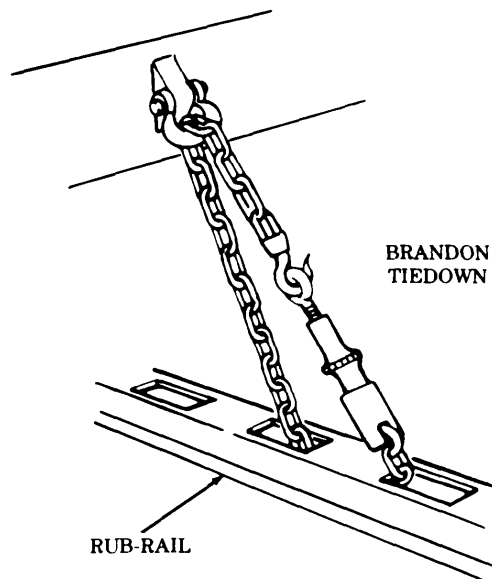
(2) Use a coffin hoist (come-a-long) and cable grips to tighten wire ropes prior to fastening rope ends with four 5/8 inch (1.58 centimeter) U-bolt cable clamps as shown below:



**REAR VIEW**

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#### d. Fastening and Tensioning Tiedown Devices.

(1) Fasten open hooks with wire over opening to prevent hook from becoming disengaged from chain link to which it is fastened.

(2) Wire or lock turnbuckles to prevent them from turning during transit.

(3) Avoid tensioning conventional tiedown chains to a point where the rub-rail starts to rise. When Brandon or similar tiedown devices are attached to vehicle tiedown shackles, don't tension beyond the point where vehicle springs start to compress. Strike tightened chains with a hammer or bar to eliminate any misalignment of links. Once link alignment is completed, further tightening maybe required to take up any slack.

(4) Don't attach Brandon tiedown devices from recessed trailer hitches to railcar slots in cushioned rub-rails if it is noted that the flange edge of the device will come in contact with the hitch. This would restrict the action of the rub-rail. Whenever vehicle placement on railcars cause fastening points to locate in this area, use conventional chains (with or without turnbuckles) placed through rub-rail slots instead of the Brandon device shown.

## Section IV. LIMITED STORAGE INSTRUCTIONS

### **12-16. SCOPE**

In some cases, unit commanders may have to place vehicles in limited storage. Limited storage is a period not exceeding 90 days. Storage, inspection, and removal instructions are contained in this section.

### **12-17. GENERAL STORAGE INSTRUCTIONS**

Commanders are responsible for ensuring all vehicles under their command are maintained in a serviceable condition and properly cared for, and that subordinate personnel follow technical instructions. Sometimes lack of time, trained personnel, or proper tools make it impossible for a unit to perform required maintenance. Unit commanders may then, with the approval of major commanders, place vehicles in limited storage or return them to supply agencies. When preparing vehicles for storage or shipment, the unit commander is responsible for processing vehicles, tools, and equipment to protect them against corrosion, deterioration, and physical damage.

- a. Don't reprocess vehicles received for storage already processed for domestic shipment as indicated on DD Form 1397 unless inspection on receipt of vehicle reveals corrosion, deterioration, physical damage, etc.
- b. Completely process vehicle upon receipt from manufacturing facilities or if processing data recorded on tag indicates that preservatives have been rendered ineffective by operation or freight shipping damage.
- c. Inspect and service vehicles immediately upon receipt as prescribed in section II, chapter 2.
  - (1) Perform a systematic inspection.
  - (2) Replace or repair all missing or broken parts.
  - (3) Store vehicles in limited storage status if repairs are beyond the scope of unit and vehicle will not be used for a long period.
  - (4) Mark with tags specifying required repair.
  - (5) Unit commander will submit reports of these conditions for action by direct support maintenance.
- d. Limited storage is restricted to a 90-day period. It must not be extended unless vehicle is processed in accordance with instructions in TM 740-90-1.

### **12-18. STORAGE PROCEDURE**

- a. Limit disassembly to cleaning and preserving surfaces. Place vehicle in limited storage as completely assembled as practicable; and to the maximum extent consistent with safe storage procedure. Install and adjust equipment so vehicle can be quickly placed in serviceable condition.
- b. Store vehicle on level ground in an area that protects it from bad weather and theft.
- c. Perform an "S" (semiannual) preventive maintenance checks and services (PMCS) on vehicles intended for limited storage. See table 2-1 in chapter 2.
- d. Remove storage batteries. Place in protected area.
- e. Store vehicle with enough room to permit inspection, service, and subsequent removal from storage.
- f. Mark "Limited Storage" on vehicle windshield or use a tag so marked and place it in a convenient location. Marked vehicles will not be operated while in this category.

#### **NOTE**

Preferred type of storage for vehicles is under cover in open sheds or warehouses.

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### **12-19. INSPECTION IN LIMITED STORAGE**

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a. Conduct visual inspection of vehicles in limited storage at least once a month and immediately following hard rains, heavy snowstorms, windstorms, or other severe weather conditions. Perform disassembly as required to fully ascertain the extent of any discovered deterioration or damage. Maintain a record of these inspections for each vehicle. Attach record to vehicle so it is protected from the weather.

b. Perform necessary reprocessing for limited storage when rust or deterioration is found on any unpainted area. Immediately repair damage caused to vehicle by severe weather conditions. Repair damage to on-equipment material (OEM) as necessary. Thoroughly clean, dry, and repaint painted surfaces showing evidence of wear.

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### **12-20. REMOVAL FROM LIMITED STORAGE**

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a. Direct support will reprocess and service all vehicles that have exceeded the limited standby storage period.

b. Any vehicle damaged in transit will be reprocessed upon reaching its destination. Vehicles arriving without damage within the limited storage period do not require processing.

## 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.

##### **Military Publications:**

Consolidated Index of Army Publications and Blank Forms . . . . .	DA PAM 310-1
Index of Army Equipment Modification Work Orders . . . . .	DA PAM 310-10
Equipment Improvement Report and Maintenance Digest . . . . .	TB 43-0001-39

#### **A-2. SUPPLY CATALOGS**

The following Department of the Army Supply Catalogs pertain to this manual:

Shop Equipment, Automotive Maintenance and Repair, Organizational: Common No. 2. (NSN 4910-00-754-0650) . . . . .	SC 4910-95-CL-A72
Shop Equipment, Automotive Maintenance and Repair, Organizational: Common No. 1. (NSN 4910-00-754-0654) . . . . .	SC 4910-95-CL-A74
Tool Set, Vehicle, Full Tracked, Organizational: Supplemental No. 2. (NSN 4940-00-754-0743) . . . . .	SC 4940-95-CL-A08

#### **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 explanation on use.

DA Form 2028. Recommended Changes to Publications
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 Condition Status Report
DA Form 2407. Maintenance Request
DA Form 2407-1. Maintenance Request — Continuation Sheet
DA Form 2408. Equipment Log Assembly (Records)
DA Form 2408-9. Equipment Control Record
DA Form 2408-10. Equipment Component Register
DA Form 2409. Equipment Maintenance Log — (Consolidated)
DA Form 348. Equipment Operator's Qualification Record (Except Aircraft)
DA Form 285. U.S. Army Accident Investigation Report
DD Form 314. Preventive Maintenance Schedule and Record
DD Form 518. Accident — Identification Card
DD Form 1397. Processing and Reprocessing Record for Shipment, Storage, and Issue of Vehicles
Standard Form 46. U.S. Government Motor Vehicle Operator's Identification Card
Standard Form 91. Operator Report on Motor Vehicle Accidents
Standard Form 368. Quality Deficiency Report

#### **A-4. OTHER PUBLICATIONS**

The following publications contain information pertinent to major item materiel and associated equipment

##### **a. Vehicle**

Lubrication Order-Truck, 5-Ton, 6x6, M939 Series . . . . .	LO 9-2320-272-12
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**A-4. OTHER PUBLICATIONS (Cont'd)**

Operator's Manual-Truck, 5-Ton, 6x6, M939 Series .....	TM 9-2320-272-10
Organizational, Direct Support and General Support Maintenance Including Repair Parts and Special Tools List, Truck, 5-Ton, 6X6 M939A2 Series .....	TM 9-2320-358-24&P
Organizational Maintenance Repair Parts-Truck, 5-Ton, 6x6, M939 Series .....	TM 9-2320-272-20P

**b. Camouflage**

Camouflage, Field Manufacturing Techniques .....	TM 5-200
Color, Marking, and Camouflage Painting of Military Vehicles, Construction Equipment, and Materials Handling Equipment .....	TB 43-0209

**c. Decontamination**

Chemical, Biological, and Radiological (CRR) Decontamination .....	TM 3-220
Chemical, Biological, Radiological, and Nuclear Defense .....	FM 21-40

**d. General**

Accident Reporting and Records .....	AR 385-40
Manual for the Wheeled Vehicle Driver .....	FM 21-305
Deep-Water Fording of Ordnance Materiel .....	TM 9-238
Destruction of Tank-Automotive Equipment to Prevent Enemy Use .....	TM 750-244-6
First Aid for Soldiers .....	FM 21-11
Northern Operations .....	FM 31-71
Operation and Maintenance of Army Materiel in Extreme Cold Weather (0°F to -65°F) .....	FM 9-207
Principles of Automotive Vehicles .....	TM 9-8000
Prevention of Motor Vehicle Accidents .....	AR 385-55
Functional Grouping Codes .....	TB 750-93-1
Warranty Procedures for Cummins Engine and Allison Transmission .....	TB 9-2300-295-15/21
Warranty Program for Truck, 5-Ton, 6X6 M939A2 Series .....	TB 9-2320-358-24

**e. Maintenance and Repair****Combat Vehicles and Tactical Transport Vehicles:**

Metal Body Repair .....	FM 43-2
Tactical Wheeled Vehicles: Repair of Frames .....	TB 9-2300 -247-40

**General Supply**

Care, Maintenance, and Repair of Pneumatic Tires, Inner Tubes, and Radial Tires .....	TM 9-2610-200-20
Chemical Agent Alarm Maintenance .....	TM 3-6665 -225-12
Decontaminating Apparatus Maintenance .....	TM 3-4230-204-12&P
Generator Assembly .....	TM 9-2920-225 -34
Inspection and Classification of Tires .....	TM 9-2610-201-14
Inspection, Care, and Maintenance of Antifriction Bearings .....	TM 9-214
Lead-Acid Storage Battery Maintenance .....	TM 9-6140 -200-14
Load-Testing Vehicles Used to Handle Missiles and Rockets .....	TB 9-352
Machine Gun Mount Maintenance .....	TM 9-1005-245-14
Mandatory Brake Hose Inspection and Replacement .....	TB 9-2300-405-14
Materials Used for Cleaning, Preserving, Abrading, and Cementing .....	TM 9-247
Nonaeronautical Equipment Army Oil Analysis Program (AOAP) .....	TB 43-0210
Safety Inspection and Testing of Lifting Devices .....	TB 43-0142
Simplified Test Equipment for Internal Combustion Engines .....	TM 9-4910-571-12&P
Use and Care of Hand Tools and Measuring Tools .....	TM 9-243
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems .....	TB 750-651
Welding Theory and Application .....	TM 9-237
Winterization Kits for Army Tank-Automotive Materiel .....	SB 9-16

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**A-4. OTHER PUBLICATIONS (Cont'd)**

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Marking for Shipment and Storage ..... MIL-STD-129

Methods of Preservation ..... MIL-P-116

Packaging of Materiel ..... AR 700-15

Preparation for Shipment and Storage of Basic Issue Items ..... MIL-B-12841

Preservation, Packaging, and Packing of Military  
Supplies and Equipment ..... TM 38-230-1 and TM 38-230-2

Shipment and Limited Storage ..... MIL-V-62038

Softwood Lumber ..... MM-L-751

The Army Maintenance Management System (TAMMS) ..... DA PAM 738-750



## APPENDIX B

### MAINTENANCE ALLOCATION CHART

#### Section I. INTRODUCTION

##### **B-1. GENERAL**

- a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.
- b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.
- c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from section II.
- d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

##### **B-2. MAINTENANCE FUNCTIONS.** Maintenance functions will be limited to and defined as follows:

- a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).
- b. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.
- c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.
- d. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.
- e. Aline. To adjust specified variable elements of an item to bring about optimum or desired performance.
- f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
- g. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner To allow the proper functioning of an equipment Or system.
- h. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3d position code of the SMR code.
- i. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.
- j. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
- k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurement (hours/miles, etc.) considered in classifying Army equipment/components.



**B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II**

**a. Column (1) - Group Number.** Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "00."

**b. Column (2) - Component/Assembly.** Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

**c. Column (3) - Maintenance Function.** Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

**d. Column (4) - Maintenance Category.** Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C . . . . .	Operator or Crew
O . . . . .	Organizational Maintenance
F . . . . .	Direct Support Maintenance
H . . . . .	General Support Maintenance
D . . . . .	Depot Maintenance

**e. Column (5) - Tools and Equipment.** Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

**f. Column (6) - Remarks.** This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

**B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III**

**a. Column (1) - Reference Code.** The tool and test equipment reference code correlates with a code used in the MAC, Section II, column 5.

**b. Column (2) - Maintenance Category.** The lowest category of maintenance authorized to use the tool or test equipment.

**c. Column (3) - Nomenclature.** Name or identification of the tool or test equipment.

**d. Column (4) - National Stock Number.** The National stock number of the tool or test equipment.

**e. Column (5) - Tool Number.** The manufacturer's part number.

**B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV**

**a. Column (1) - Reference Code.** The code recorded in column 6, Section II.

**b. Column (2) - Remarks.** This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Took and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
0 1 0100	ENGINE Engine Assembly	Inspect	0.1						
		Test		1.5				1 thru 5	A
		Service		2.0				1 thru 4	A
		Replace			8.0			6 thru 9	
		Repair				16.0		7, 10 thru 14	
		Overhaul					40.0		B
	Mount, Engine, Lifting	Inspect		0.2					
		Replace			2.0			6 thru 9	
	Bracket, Engine Mounting	Inspect		0.2					
		Replace			2.0			6 thru 9	
0101	Head, Cylinder Assembly	Inspect			0.2				
		Replace			4.0			6 thru 9	
	Sleeve, Cylinder	Inspect				5.0		6 thru 9	
		Replace				0.3			
		Inspect				2.0		7, 10 thru 13	
		Replace							
0102	Crankshaft	Inspect				1.5			
		Replace				5.0		7, 10 thru 13	
		Repair				6.0		7, 10 thru 13	
		Damper, Vibration		0.2					
	Flange, Crankshaft	Inspect			1.0			6 thru 9	
		Replace			0.2				
	Flywheel, Ring Gear	Adjust			0.5			6 thru 9	
		Replace			0.4			6 thru 9	
0103	Housing, Flywheel Gear	Inspect			1.0				
		Replace			1.0			6 thru 9	
		Inspect	0.5						
		Replace			4.0			6 thru 9	
0104	Rod, Connecting	Inspect				0.3			
		Replace				2.0		7, 10 thru 13	
0105	Spring Valve	Inspect			0.3				
		Replace			0.5			6 thru 9	
	Valves, Intake and Exhaust	Inspect			0.2				
		Replace			1.5			6 thru 9	
		Repair			0.5			6 thru 9	
		Arm, Valve Rocker			0.5				
	Intake/Exhaust	Adjust			0.5			6 thru 9	
		Replace			1.5			6 thru 9	
	Lever, Injector Rocker/ valve Rocker	Inspect			0.3				
		Adjust			0.5			6 thru 9	
		Replace			1.5			6 thru 9	

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
0105	<b>ENGINE (Cont'd)</b>								
	Shaft Assembly, Rocker Arm	Inspect Replace			0.3 2.0			6 thru 9	
	Bearing, Camshaft	Inspect Replace				0.5 2.0		7, 10 thru 13	
	Camshaft	Inspect Replace				0.2 1.0		7, 10 thru 13	
0106	Timing Gear Cover and Seal	Inspect Replace			0.3 2.0			6 thru 9	
	Pump, Oil	Replace Repair			2.0	4.0		6 thru 9 7, 10 thru 13	
	Pan, Oil	Inspect Replace		0.2	1.0			6 thru 9	
	Filter, Oil	Inspect Replace		0.1 0.5				1 thru 4	
	Oil Cooler, Engine	Inspect Replace Repair			0.5 0.7 1.0			6 thru 9 6 thru 9	
	Breather, Crankcase	Inspect Replace		0.5 1.0				1 thru 4	
	Oil (Dipstick) Tube	Inspect Replace		0.2 0.3				1 thru 4	
	Manifold, Intake	Inspect Replace			0.5 3.0			6 thru 9	
03	<b>FUEL SYSTEM</b>								
0301	Injectors, Fuel	Test				0.5		7, 10 thru 13	
		Adjust				0.5		7, 10 thru 13	
		Replace Repair			0.5	1.0		6 thru 9 7, 10 thru 13	
		Calibrate				2.0		7, 10 thru 13	
		Overhaul				1.0		7, 10 thru 13	

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) <b>Component/Assembly</b>	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
0302	<b>FUEL SYSTEM (Cont'd)</b> Pump, Fuel Supply	Inspect			0.5			6 thru 9 7, 10 thru 13 7, 10 thru 13 7, 10 thru 13 7, 10 thru 13	
		Replace			2.0				
		Adjust				2.0			
		Repair				4.0			
		Calibrate				2.0			
		Overhaul				4.0			
0304	Cleaner, Air	Inspect	0.2					1 thru 4	A
		Replace		0.5					
	Element	Service	0.5					1 thru 4	A
		Replace		0.5					
	Lines and Connections, Vent	Inspect		0.5				1 thru 4	D
		Replace		1.0					
	Indicator, Air Cleaner	Inspect	0.2					1 thru 4	A
		Replace		0.5					
	Hoses and Clamps	Inspect	0.1					1 thru 4	A
		Replace		0.5					
)306	Tank, Fuel	Inspect	0.1					1 thru 4 6 thru 9	A c
		Replace		1.0	1.0				
		Repair							
	Bracket, Fuel Tank Mounting	Inspect	0.1					1 thru 4	A
		Replace		1.0					
	Lines and Fittings, Fuel	Inspect	0.1					1 thru 4	D
		Replace		1.5					
	Valve, Fuel Selector	Inspect	0.1					1 thru 4	A
		Replace		1.0					
	Lines and Fittings, Fuel Pump to Engine	Inspect	0.1					1 thru 4	A
		Replace		1.0					
)308	Governor, Fuel Pump (AFC)	Inspect				0.5		7, 10 thru 13 7, 10 thru 13	
		Test				1.2			
		Replace				2.5			
	Spring Pack, Fuel Pump	Inspect				0.5		7, 10 thru 13 7, 10 thru 13	
		Test				1.0			
		Replace				2.0			

### Change 3

(1) Group Number	(2) component/assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit				Depot		
			c	o	F	H	D		
0308	FUEL SYSTEM (Cont)								
	Governor, Fuel Pump (VS)	Inspect				0.5			
		Test				1.0		7, 10 thru 13	
		Replace				2.0		7, 10 thru 13	
	Lower Spring Pack, Fuel Pump	Inspect				0.5		7, 10 thru 13	
		Test				1.0		7, 10 thru 13	
		Replace				2.0		7, 10 thru 13	
	Upper Spring Pack, Fuel Pump	Inspect				0.5		7, 10 thru 13	
		Test				1.0		7, 10 thru 13	
		Replace				2.0		7, 10 thru 13	
0309	Filter, Fuel Water Separator	Service	0.1						
		Replace		0.5				1 thru 4	A
0311	Aids, Engine Starting								
	Lines and Fittings	Inspect		0.5				1 thru 4	
		Replace		1.0				1 thru 4	D
	Pump, Hand Primer	Inspect		0.1				1 thru 4	
		Replace		1.0				1 thru 4	
	Harness and Switch	Inspect		0.1				1 thru 4	
		Test		0.2				1 thru 4	
		Replace		1.0				1 thru 4	
0312	Controls, Accelerator and Throttle Control Linkage	Inspect		0.2				1 thru 4	
		Adjust		0.5				1 thru 4	
		Replace		1.0				1 thru 4	
04	EXHAUST SYSTEM								
0401	Pipe, Exhaust and Tail	Inspect		0.2					
		Replace		2.0				1 thru 4	A
	Muffler	Inspect		0.2				1 thru 4	
		Replace		2.0				1 thru 4	
	Shield, Vertical Exhaust	Inspect		0.1				1 thru 4	
		Replace		1.0				1 thru 4	
05	COOLING SYSTEM								
0501	Radiator	Inspect	0.2						A
		Service	0.3						A
		Replace		2.0	3.0			1 thru 4	E
		Repair						6 thru 9	
	Hoses, Radiator	Inspect	0.2						A
		Replace		0.5				1 thru 4	
0502	Shroud, Radiator Fan	Inspect	0.1						

## Section II MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
0502	<b>COOLING SYSTEM (Contd)</b>								
	Water Manifold and Headers	Inspect Replace		0.5	1.0			6 thru 9	
	Coolant Lines, Air Compressor	Inspect Replace		0.5	1.0			6 thru 9	D
)504	Actuator, Fan Clutch	Inspect Replace		0.2 0.4				1 thru 4	
	Pump, Water	Inspect Replace Repair		0.5	1.0 1.5			6 thru 9 6 thru 9	
	Belt, Water Pump	Inspect Adjust Replace	0.1	0.3 0.5				1 thru 4 1 thru 4	
0505	Belt, Fan Assembly	Inspect Adjust Replace	0.1	0.3 0.5				1 thru 4 1 thru 4	
	Fan Drive Clutch	Replace Repair		2.0	2.0			1 thru 4 6 thru 9	
	Fan Assembly	Inspect Replace		0.1 1.0				1 thru 4	
)6 0601	<b>ELECTRICAL SYSTEM</b>								
	Alternator	Inspect Adjust Test Replace Repair		0.1 0.5 1.0	0.6			6 thru 9 1 thru 4 1 thru 4 6 thru 9	
	Belt, Alternator	Inspect Adjust Replace	0.1	0.2 0.3				1 thru 4 1 thru 4	F A
)603	Starter	Inspect Test Replace Repair		0.1 0.5 1.5	1.0			1 thru 4 1 thru 4 6 thru 9	G
)606	Valve, Fuel Shutoff Electrical	Inspect Replace		0.1	0.7			6 thru 9	
	Switches and Circuit Breakers	Inspect Test Replace	0.2	0.7 1.0				1 thru 4 1 thru 4	
	Instruments and Gages	Inspect Test Replace	0.1	0.2 1.0				1 thru 4 1 thru 4	A
0608	Control, Directional Turn Indicator	Inspect Test Replace Repair	0.1	0.2 0.5 0.2				1 thru 4 1 thru 4 1 thru 4	A

## Section II MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
0608	ELECTRICAL SYSTEM (Cont'd)								
	Flasher	Inspect Replace	0.1	0.5				1 thru 4	
	Box, Protective Control	Test Replace		0.3 0.7				1 thru 4 1 thru 4	
0609	Lights	Inspect Adjust Replace	0.1	0.2 0.5				1 thru 4 1 thru 4	A
	Unit, Sending	Inspect Replace		0.1 0.3				1 thru 4	
	Switch, Stoplight	Inspect Replace		0.1 0.5				1 thru 4	
0610	Buzzer, Warning Control	Inspect Replace	0.1	0.3				1 thru 4	A
	Transponder, Fuel Pump	Inspect Replace		0.2 0.3				1 thru 4	
	Horn	Inspect Replace	0.1	0.5				1 thru 4	A
0611	Switch, Horn	Inspect Replace		0.1 0.5				1 thru 4	
	Battery	Inspect Test Service Replace Repair	0.1 0.5	0.5 0.5	1.0			1 thru 4 1 thru 4 1 thru 4 6 thru 9	A A H
	Cables, Battery	Inspect Replace Repair	0.1	0.8 0.5				1 thru 4 1 thru 4	A
0612	Box, Battery	Inspect Replace Repair	0.1	1.8 1.5				1 thru 4 1 thru 4	A
	Harness, Chassis Wiring	Inspect Test Replace Repair	0.1	0.5 1.0	4.5			1 thru 4 6 thru 9 1 thru 4	
	TRANSMISSION								
07									
0708	Torque Converter/Flywheel Assembly	Replace Repair			8.0	5.0		6 thru 9 7, 10 thru 13	
		Overhaul					5.0		I

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
710	TRANSMISSION (Cont'd) Transmission Assembly	Inspect	0.2						A
		Test			1.0			6 thru 9	
		Service	0.5	1.0				1 thru 4	A
		Adjust			2.5			6 thru 9	
		Replace			6.0			6 thru 9	
721	Linkage, Shift Cable	Repair			8.0	10.0		6 thru 13	
		Overhaul					20.0		I
		Inspect		0.1					
		Adjust			1.0			6 thru 9	
		Replace			1.0			6 thru 9	
801	Cooler, Transmission Oil	Inspect	0.1					6 thru 9	
		Replace			2.0				
803	Lines and Fittings	Inspect	0.2					6 thru 9	A
		Replace			1.0				D
803	TRANSFER CASE ASSEMBLY Transfer Case Assembly	Inspect		0.3					
		Service		0.5				1 thru 4	A
		Replace			5.0			6 thru 9	
		Repair			3.0	4.0		6 thru 13	
		Overhaul					9.5		J
		Inspect		0.3					
		Replace			1.0			6 thru 9	
		Inspect		0.3					
		Replace			1.0			6 thru 9	
		Inspect		0.2					
		Replace			1.0			6 thru 9	
		Inspect			0.2				
		Replace			0.5			6 thru 9	
		Inspect		0.5					
		Replace			2.0			6 thru 9	
803	Coupling, Yoke Input and output Flange, Output Cushion, Mounting Gear, Speedometer Seals, Input, and Output Shaft Bearings, Gears, and Shafts	Inspect				0.5			
		Replace				2.0		7, 10 thru 13	
		Repair				3.0		7, 10 thru 13	
		Inspect		0.5					
		Adjust			0.3			6 thru 9	
		Replace			1.5			6 thru 9	
		Repair			1.0			6 thru 9	
		Inspect		0.5					
		Replace			2.0			6 thru 9	
		Repair			0.7			6 thru 9	



## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
09 0900	PROPELLER SHAFTS Shafts, Propeller	Inspect Service Replace Repair		0.3 0.5 1.5 1.0				1 thru 4 1 thru 4 1 thru 4	A
	Joint, Universal	Inspect Service Replace		0.2 0.3 1.5				1 thru 4 1 thru 4	A
	Bearing, Center	Inspect Replace		0.2 1.5				1 thru 4	
10 1000	FRONT AXLE Front Axle Assembly	Inspect Service Replace Overhaul		0.5 1.0	5.0		10.0	1 thru 4 6 thru 9	A K
1002	Carrier Assembly, Differential	Inspect Service Replace Repair		0.5 0.5	7.0	4.0		1 thru 4 6 thru 9 7, 10 thru 13	A
	Seal, Pinion	Inspect Replace		0.2	2.0			6 thru 9	
	Flange, Companion	Inspect Replace Repair		0.3	2.0 1.6			6 thru 9 6 thru 9	
1004	Arms, Steering	Inspect Replace		0.2	2.5			6 thru 9	
	Boot, Dust (CV)	Inspect Replace		0.3 0.7				1 thru 4	
	Knuckle, Steering	Inspect Service Replace		0.1 0.2	2.5			1 thru 4 6 thru 9	A
11 1100	REAR AXLE Rear Axle Assembly	Inspect Service Replace Repair Overhaul		0.3 0.5	4.0 4.0		14.0	1 thru 4 6 thru 9 6 thru 9	A K
1102	Carrier Assembly, Differential	Inspect Service Replace Repair		0.5 0.5	7.0	4.0		1 thru 4 6 thru 9 7, 10 thru 13	A
	Seal, Pinion	Inspect Replace		0.2	1.0			6 thru 9	

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1)  Group Number	(2)  Component/Assembly	(3)  Maintenance Function	(4) Maintenance Category					(5)  Tools and Equipment	(6)  Remarks
			Unit				Depot		
			C	O	F	H	D		
102	REAR AXLE (Corntd) Flange, Companion	Inspect Replace Repair		0.2	1.0 1.6			6 thru 9 6 thru 9	A
2	BRAKES								
201	Drum, Handbrake	Inspect Replace		0.3 1.5				1 thru 4	
	Shoes, Handbrake	Inspect Adjust Replace Repair		0.3 0.5 2.0	1.0			1 thru 4 1 thru 4 6 thru 9	
	Linkage, Handbrake	Inspect Adjust Replace		0.3 0.5 1.0				1 thru 4 1 thru 4	
202	Shoes, Service Brake	Inspect Adjust  Replace  Repair		0.5 1.0  3.0	0.5			1 thru 4, 16 1 thru 4, 19 6 thru 9	
206	Valve, Treadle	Inspect Test Replace Repair	0.1	0.5 1.0	1.5			1 thru 4 1 thru 4 6 thru 9	
208	Chamber, Service Brake	Inspect Replace	0.1	0.7				1 thru 4	
	Chamber, Spring Brake	Inspect Replace	0.1	1.0				1 thru 4	
	Valve, Safety Air Pressure	Inspect Replace		0.1 0.5				1 thru 4	
	Valve, Front Airbrake Chamber (Limiting Valve)	Inspect Replace Repair		0.1 0.5	0.3			1 thru 4 6 thru 9	
	Reservoir, Air Primary/ Secondary	Inspect Replace		0.1 1.0				1 thru 4	
	Reservoir, Air Wet Tank Pressure and Spring Brake	Inspect Replace		0.2 1.5				1 thru 4	
	Valve, Hand Control	Test Replace		0.5 1.0				1 thru 4 1 thru 4	
	Valves, Brake Air Control Miscellaneous	Inspect Replace		0.5 1.0				1 thru 4	
	Valve, Brake Lock Control	Test Replace		0.5 0.5				1 thru 4 1 thru 4	

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) "Maintenance Category"					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
1208	<b>BRAKES (Cont'd)</b> Lines and Fittings, Airbrake System	Inspect Replace	0.1	0.5 1.0				1 thru 4	A,Q
1209	Compressor, Air	Inspect Test Replace Repair	0.1	0.5	1.5 2.5			1 thru 4 6 thru 9 6 thru 9	
	Governor, Air	Test Adjust Replace		0.5 0.3 0.5				1 thru 4 1 thru 4 1 thru 4	
	Evaporator, Alcohol	Inspect Service Replace	0.1 0.2	0.5				1 thru 4	
.211	Trailer Airbrake Connec- tions and Controls	Inspect Replace	0.1	0.3				1 thru 4	A
	Hose, Trailer Airbrake	Inspect Replace	0.1	0.5				1 thru 4	A
13	<b>WHEELS AND HUBS</b>								
.311	Wheel	Inspect Replace	0.1	1.0				1 thru 4	A
	Bearings, Wheel Hub	Inspect Service Adjust Replace		0.5 1.0 0.5 2.5				1 thru 4 1 thru 4 1 thru 4	
	Hub, Wheel	Inspect Replace		0.2 1.5				1 thru 4	
	Drum, Brake	Inspect Replace Repair		0.2 1.5	0.5			1 thru 4 6 thru 9	
1313	Tires	Inspect Service Replace	0.2 0.2	1.0				1 thru 4, 17,18	A A,L
		Repair Rebuild		1.0			2.0	1 thru 4	L L
	Tubes	Replace Repair		0.5 1.0				1 thru 4 1 thru 4	L
4	<b>STEERING</b>								
401	Link, Front Drag	Inspect Service Replace		0.2 0.2 1.0				1 thru 4 1 thru 4	

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
1401	<b>STEERING (Cont'd)</b>	Rod, Tie Assembly		0.2					
				0.2				1 thru 4	
				1.5				1 thru 4	
				1.5				1 thru 4	
		Arm, Pitman Steering		0.1					
				1.0				1 thru 5	
		Column, Steering		0.2					
					2.5			6 thru 9	
					2.0			6 thru 9	
		Wheel, Steering		0.2					
				1.0				1 thru 4	
1407	Gear, Steering Assembly	Inspect		0.2					
		Service		0.5				1 thru 4	
		Adjust			0.5			6 thru 9	
		Replace			3.0			6 thru 9	
		Repair			2.5			6 thru 9	
1410	Pump, Hydraulic and Reservoir	Inspect	0.1	0.2					A
		Service							
		Replace			1.5			6 thru 9	
1411	Lines and Fittings Power Steering	Inspect		0.1					
		Replace		0.5				1 thru 4	D
1412	Cylinder, Steering Assist	Inspect		0.2					
		Adjust		0.5				1 thru 4	
		Replace		1.5				1 thru 4	
		Repair			2.0			6 thru 9	
15	<b>FRAME AND TOWING ATTACHMENTS</b>								
1501	Frame	Inspect		0.5					
		Repair			1.0	2.5		6 thru 13	M
	Bumper, Front	Inspect		0.2					
		Replace		2.0				1 thru 4	
	Brackets, Frame	Inspect	0.1						A
		Replace		1.0				1 thru 4	
1503	Pintle	Inspect	0.1						A
		Service		0.1				1 thru 4	A
		Replace		0.5				1 thru 4	
1504	Carrier, Spare Wheel	Inspect	0.1						A
		Replace		1.0				1 thru 4	
1506	Wheel, Fifth	Inspect	0.2						A
		Service	0.5						A
		Replace		2.5				1 thru 4	
		Repair			2.0			6 thru 9	

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) "Maintenance Category"					(5) Tools and Equipment	(6) Remarks
			unit		Direct Support	General Support	Depot		
			c	o	F	H	D		
16	<b>SPRINGS AND SHOCK ABSORBERS</b>								
1601	Front Spring	Inspect Replace Repair	0.2	3.0 2.0				1 thru 5 1 thru 4	
	Shackles	Inspect Replace Repair	0.2	1.0 0.4				1 thru 4 1 thru 4	
	Springs, Rear and Seat	Inspect Replace Repair	0.1	4.0 2.0				1 thru 4 1 thru 4	
1604	Absorber, Front Shock	Inspect Replace	0.1	0.5				1 thru 4	
1605	Rod, Rear Torque	Inspect Replace		0.1 1.5				6 thru 9	
18	<b>BODY, HOOD, AND CAB</b>								
1801	Doors	Inspect Service Adjust Replace Repair	0.1	0.1 0.5 1.0	1.0			1 thru 4 1 thru 4 1 thru 4 6 thru 9, 15	A  N
	Cab	Inspect Replace	0.1		6.0			6 thru 9	A P
	Hood	Inspect Adjust Replace Repair	0.1	0.5	2.0 1.0			1 thru 4 6 thru 9 6 thru 9	N
.802	Fenders	Inspect Replace Repair	0.1		2.0 1.0			6 thru 9 6 thru 9	N
	Boards, Running	Inspect Replace	0.5	2.0				1 thru 4	
.806	Seats	Inspect Replace Repair	0.1	1.0	1.0			1 thru 4 6 thru 9	
810	Body, Cargo	Inspect Replace Repair	0.2		0.5 10.0			6 thru 9 6 thru 9	C,N
	Tailgate	Inspect Replace Repair	0.2	0.5	2.0			1 thru 4 6 thru 9	C,N

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			Unit		Support	Support	Depot		
			c	o	F	H	D		
1810	<b>BODY, HOOD, AND CAB (Cont'd)</b>								
	Troop Seat and Racks	Inspect	0.2						
		Replace		1.0				1 thru 4	
		Repair		1.0				1 thru 4	
	Doors	Replace		2.5				1 thru 4	
		Repair			5.0			6 thru 9, 15	N
	Roof, Ceiling, Sides, and Underframe	Replace				8.0		7, 10 thru 13	
		Repair				16.0		7, 10 thru 13	N
	Counterbalance	Service		1.0				1 thru 4	
		Replace		8.0				1 thru 4	
	Electrical Wiring	Replace			4.0			6 thru 9	
		Repair			4.0			6 thru 9	
	Heater	Replace		4.0				1 thru 4	
		Repair			1.0			6 thru 9	s
	Air Conditioner	Remove			4.0			6 thru 9	
		Install			4.0			6 thru 9	
	Boarding Ladders and Hardware	Inspect	0.1						A
		Replace	0.3						
	<b>HOIST, WINCH, AND POWER TAKEOFF</b>								
	Winch, Front and Rear	Inspect	0.1						A, R
2001		Service		0.5				1 thru 4	R
		Adjust		0.5				1 thru 4	
		Replace		3.0				1 thru 4	
		Repair			4.0			6 thru 9	
		Overhaul					11.0		0
	Band, Automatic	Adjust		0.5				1 thru 4	
		Replace			2.0			6 thru 9	
	Cable, Winch	Inspect	0.5						A
		Service	0.5						A, R
		Replace		1.0				1 thru 4	A, R
		Repair		0.5				1 thru 4	A, R
	Motor, Winch (Front)	Inspect		0.2				1 thru 4	
2001		Replace		2.0				1 thru 4	
	Drum, Brake (Front)	Adjust		1.0				1 thru 4	
		Replace			2.0			6 thru 9	
	Shaft, Hydraulic Pump	Inspect		0.3				1 thru 4	
	Drive Assembly	Replace		1.0				1 thru 4	
		Repair		2.0				1 thru 4	
2001	Lines and Fittings, Hydraulic	Inspect		0.2					
		Replace			0.5			6 thru 9	D

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category				(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support		
			c	o	F	H	D	
2001	<b>HOIST, WINCH, AND POWER TAKEOFF (Cont'd)</b>							
	Boom, Assembly	Inspect		0.2				
		Test			0.5			6 thru 9
		Service		0.3				1 thru 4
		Replace			15.0			6 thru 9
		Repair			8.0			6 thru 9
	Hoist Cylinders and Power Controls Hoist Cylinder	Replace			8.0			6 thru 9
		Repair				6.0		7, 10 thru 13
	Valve, Control	Replace			2.0			6 thru 9
		Repair				4.0		7, 10 thru 13
	Cylinder, Boom Elevating	Inspect	0.2					
		Replace			2.0			6 thru 9
		Repair				3.0		7, 10 thru 13
	Cylinder, Extension	Replace			3.5			6 thru 9
		Repair				4.0		7, 10 thru 13
2004	Motor and Gearbox, Hydraulic Swing	Replace			2.0			6 thru 9
		Repair				5.0		7, 10 thru 13
	Winch, Hoist Assembly	Inspect		0.2				
		Service		0.5				1 thru 4
		Adjust		0.5				1 thru 4
		Replace			4.5			6 thru 9
		Repair			4.0			6 thru 9
	Cable, Hoist Winch	Inspect	0.5					
		Service	0.5					
		Replace		2.0				
		Repair		0.5				
	Valve, Control Assembly	Replace			2.5			6 thru 9
		Repair			4.0			6 thru 9
	Motor, Hydraulic	Inspect		0.2				
		Replace			2.0			6 thru 9
	Reservoir, Hydraulic Oil	Inspect	0.1					
		Service	0.1					
		Replace			2.0			6 thru 9
	Power Takeoff, Transmission	Inspect		0.2				
		Adjust		0.2				1 thru 4
		<b>Replace</b>			1.0			<b>6 thru 9</b>
		<b>Repair</b>			3.0			6 thru 9
	Power Takeoff Shift Linkage	Adjust		0.3				1 thru 4
		Replace			1.0			6 thru 9

## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
22	<b>BODY CHASSIS AND ACCESSORY ITEMS</b>								
2201	<b>Bows</b>	Inspect Replace	0.1	1.0				1 thru 4	A
	Cover, Cab Top	Inspect Replace Repair	0.1	0.5	1.5			1 thru 4 6 thru 9	A A T
	Curtains, Body Cover	Inspect Replace Repair	0.1	1.0	1.0			1 thru 4 6 thru 9	A A T
2202	Motor, Windshield Wiper	Inspect Replace	0.1	0.7				1 thru 4	A
	Arm and Blade, Windshield	Inspect Adjust Replace	0.1	0.1 0.2				1 thru 4 1 thru 4	A
	Washer Bottle and Controls	Service Replace	0.1	1.0				1 thru 4	A
	Mirror, Rear View	Inspect Replace	0.1	0.5				1 thru 4	A
	Spotlight	Replace Repair		0.5 0.5				1 thru 4 1 thru 4	
2207	Heater, Personnel	Inspect Replace	0.2	3.0				1 thru 4	A
33	<b>SPECIAL PURPOSE KITS</b>								
3303	Winterization Kits								
	Kit, Engine Coolant Heater	Inspect Install	0.2		10.0			6 thru 9	A P
	Kit, Radiator Cover	Inspect Install	0.1		1.2			6 thru 9	A P
	Kit, Hardtop Cab	Inspect Install	0.1	3.5				1 thru 4	A P
	Kit, Fuel Burning Personnel Heater	Inspect Install	0.2		6.0			6 thru 9	A P
	Kit, Pioneer Tool Bracket	Install		1.0				1 thru 4	P
	Kit, Swingfire Heater	Inspect Install	0.2		3.6			6 thru 9	A P
3305	Kit, Deepwater Fording	Inspect Install	0.2		3.0			6 thru 9	A P
3307	Special Purpose Kits								
	Kit, Troop Seat and Rack	Inspect Install	0.1		1.0			6 thru 9	A P



## Section II. MAINTENANCE ALLOCATION CHART (Cont'd)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Category					(5) Tools and Equipment	(6) Remarks
			unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
3307	<b>SPECIAL PURPOSE KITS (Cont'd)</b>								
	Kit, Air Dryer	Inspect Install	0.2		8.0			6 thru 9	P
	Kit, A-Frame	Inspect Install	0.2	1.0				1 thru 4	A P
	Kit, Fire Extinguisher Mounting	Install		1.0				1 thru 4	P
	Kit, Chemical Agent Alarm Mounting	Install		4.0				1 thru 4	P
	Kit, Machine Gun Mounting	Install		3.5				1 thru 4	P
	Kit, Decontamination (M13) Apparatus Mounting	Install		3.0				1 thru 4	P
	Kit, Mud Guard	Install		0.5				1 thru 4	P
	Kit, Rifle Mounting	Inspect Install	0.1		2.0			6 thru 9	A P
	Kit, Hand Airbrake	Inspect Install	0.1	4.0				1 thru 4	A P
	Kit, 100 Amp Alternator	Install		2.0				1 thru 4	P
	Kit, Convoy Warning Light	Install		4.0				1 thru 4	P
	Kit, European Mini-Lighting	Install		1.4				1 thru 4	P
	Kit, Automatic Throttle	Install		2.5				1 thru 4	P
	Kit, Atmospheric Fuel Tank Vent System	Install		5.0				1 thru 4	P
	Kit, Vehicle Tiedown	Install		2.0				1 thru 4	P
	Kit, Hydraulic Hose Chafe Guard	Install		2.0				1 thru 4	P
17	<b>GAGES (NON-ELECTRICAL)</b>								
1701	Speedometer	Inspect Replace	0.1	1.0				1 thru 4	A
	Tachometer	Inspect Replace	0.1	1.0				1 thru 4	A
1702	Gage, Air Pressure	Inspect Replace	0.1	0.5				1 thru 4	

**Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS**

(1) REFERENCE CODE	(2) MAINTENANCE CATEGORY	(3) NOMENCLATURE	(4) NATIONAL/NATO STOCK NUMBER	(5) TOOL NUMBER
1	0	Tool Kit, General Mechanic's	5180-00-177-7033	SC5180-90LN26
2	0	Shop Equipment, No. 1 Common Organizational Maintenance and Repair	4910-00-754-0654	SC4910-95-CL-A74
3	0	Shop Equipment, No.1 Supplemental Organizational Maintenance and Repair	4910-00-754-0653	SC4910-95-CL-A73
4	0	Shop Equipment, No. 2 Common Organizational Maintenance and Repair	4910-00-754-0650	SC4910-95-CL-A72
5	0	Tool Kit, Organizational Maintenance	5180-00-762-1737	5704499
6	F	Tool Kit, General Mechanic's	5180-00-699-5273	SC5180-90-CL-N05
7	F	Shop Equipment, Automotive Field Maintenance and Repair	4910-00-754-0705	SC4910-95-CL-A31
8	F	Shop Equipment, Field Maintenance Welding	3470-00-357-7268	SC3470-95-CL-A08
9	F	Tool Kit, Direct Support	5180-00-762-1740	5704500
10	H	Shop Equipment, No. 1 Supplemental Field Maintenance and Repair	4910-00-754-0706	SC4910-95-CL-A62
11	H	Shop Equipment, No. 2 Supplemental Field Maintenance and Repair	4910-00-754-0707	SC4910-95-CL-A63
12	H	Tool Kit, General Support	5180-00-762-1741	5704501
13	H	Tool Kit, General Support	5180-01-147-5824	5704171
14	F	Engine Barring Tool	5120-01-285-5193	3377371
15	F	Tool Kit, Glass Cutting	5180-00-357-7737	SC4940-95-CL-A18
16	0	Adjusting Tool, Brake Shoe	5120-01-154-3029	J-34061
17	0	Tool, Wheel Assembly	4910-01-218-4490	J35193
18	0	Bolt, Inserter Tool	4910-01-220-1512	J35198
19	0	Pliers, Brake Repair	5120-01-152-2318	J-33111



REFERENCE CODE	REMARKS
A	Perform PMCS as shown in TM 9-2320-272-10.
B	Engine overhaul will be in accordance with DMWR 9-2815-500.
c	Welding will be in accordance with TM 9-237.
D	Repair of lines and fittings will be in accordance with TM 9-243.
E	Test and repair of radiator will be in accordance with TM 750-254.
F	Repair of alternator will be in accordance with TM 9-2920-225-34.
G	Repair of starter will be in accordance with TM 9-2920-243-34.
H	Repair of batteries will be in accordance with TM 9-6140-200-14.
I	Transmission overhaul will be in accordance with DMWR 9-2520-522.
J	Transfer overhaul will be in accordance with DMWR 9-2520-530.
K	Overhaul of front and rear axle will be in accordance with DMWR 9-2520-508.
L	<div>Tires/Tubes</div> <div>Repair</div> <div>TM 9-2610-200-24</div> <div>Inspection</div> <div>TM 9-2610-201-14</div> <div>Storage</div> <div>TM 743-200-1</div>
M	Repair of frames will be in accordance with TB 2300-247-40.
N	Metal body repair will be in accordance with FM 43-2.
O	Overhaul of front and rear winches will be in accordance with DMWR 9-3830-501.
P	Refer to kit installation instructions for kit installation.
Q	Inspection of brake lines will be in accordance with TB 9-2300-405-14.
R	Service/inspection of winch/hoist wire rope/cables will be in accordance with TB 43-1042 and TB 9-0352.
s	Repair of heaters will be in accordance with TM 9-2540-205-24&P.
T	Repair of canvas will be in accordance with FM 10-16.



## **APPENDIX C**

### **REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT**

Repair parts, special tools, and equipment for organizational maintenance are listed in TM 9-2320-272-20P, which is the authority for requesting replacements.



## APPENDIX D

### EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

#### SECTION L INTRODUCTION

##### **D-1 . SCOPE**

This appendix lists expendable./durable supplies and materials you will need to maintain the M939 and M939A1 series vehicles.

##### **D-2. EXPLANATION OF COLUMNS**

- a. Item Number. This number is assigned to each entry in the listing and is referenced in applicable tasks under the heading of Material/Parts.
- b. Level. This column identifies the lowest level of maintenance that requires the listed item. Codes used in this column are "C" and "O" (Operator/Crew and Organizational Maintenance Personnel).
- c. National Stock Number. This is the national stock number assigned to the item. Use it to request or requisition that item.
- d. Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item listing indicates the Federal Supply Code of Manufacturer (FSCM) in parentheses followed by the part number.
- e. Federal Supply Code for Manufacturer (FSCM).

Code	Manufacturer
19207	U.S. Army Tank-Automotive Command
58536	Federal Commercial Item Description Promulgated by General Services Administration.
77247	Permatex Co., Inc
78500	Rockwell Int. Corp.
79819	M.S. Ginn Co.
80244	General Services Administration
81348	Federal Specifications
81349	Military Standards
81755	General Dynamics Corp.
96906	Military Standards
97403	U.S. Army Mobility Research and Development Center
98308	Bray Oil Co., Inc.

- f. Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by an abbreviation; EA (each), OZ (ounce), GAL. (gallon). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.



## Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
1	0	8040-00-262-9005	ADHESIVE: synthetic rubber, MMM-A-1617, type II, gallon can (79819) 1357	GAL.
1.1	0	8040-00-543-7170	ADHESIVE: synthetic rubber, class II, 1 pint can (80244) MMM-A-189 CL	PT
2	0	8040-00-833-9563	ADHESIVE SEALANT: silicone rubber, Silastic 732 RTV (clear) non-hardening, MIL-A-46106, type I, 5 oz tube (97403) RTV-732	OZ
3	c	6850-00-174-1806	ANTIFREEZE: arctic grade, permanent type [-90°F (-68°C)] red in color, 55 gallon drum (81349) MIL-A-11755	GAL.
4	c	6850-00-181-7933	ANTIFREEZE: ethylene glycol, permanent type, inhibited (-60°F (-51°C)] yellow in color, single package, 5 gallon container (81349) MIL-A-46153	GAL.
5	0	5340-00-450-5718	CAP AND PLUG SET: (19207) 10935405	SET
6	0	7510-00-164-8893	CHALK: marking, white, 0.375 in. dia. x 3 in. long, 144./box (81348) SS-C-266	GR
7	0	5120-00-273-9793	CHALK LINE AND REEL: 50 ft line, self-chalking, hand crank rewind, (81349) GGG-C-291	EA
8	0	6850-00-598-7328	CLEANING COMPOUND: engine cooling system (oxalic acid/borax inhibitor, kit) (81349) MIL-C-10597	KIT
9	0	7920-00-044-9281	CLOTH: cleaning, lint-free, general purpose, white, 10 lb box (81349) MIL-C-85043	LB
10	0	8010-01-160-6741	COATING: aliphatic, polyurethane, chemical agent resistant, green 383, MIL-C-46168C, type II, 1 gallon can (19207) 5584154	GAL.
11	0	8010-00-959-4661	COATING: battery box (nondrying epoxy kit), MIL-C-22750, type I, class 2 (81349) MIL-C-22750	KIT
12	0	7930-00-282-9699	DETERGENT nonsudsing, general purpose, liquid, 1 gallon (80244) MIL-D-16791 type I	GAL.

## Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (Cont'd)

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
13	0	9150-00-190-0905	GAA GREASE: automotive and artillery, (MIL-G- 10924), 6-1/2 lb can (98308) BRAYCO TE610	LB
14	0	5330-01-052-5759	GASKET SEALANT silicone rubber, general purpose, Silastic 732 RTV (black), MIL-A-46106, type I, 5 oz tube (78500) 1199-T-3842	OZ
15	0	6850-00-753-4967	INHIBITOR, CORROSION: liquid cooling system, powder, 2 oz can (81348) 0-1-00490	OZ
16	c	9150-00-186-6668	OIL: lubricating, internal combustion engine, tactical service, OE/HDO 10, 5 gallon drum (81349) MIL-L-2104	GAL.
16.1	0	2640-00-261-7458	LUBRICANT, TIRE AND RIM: liquid, 1 gal (96980) AA18	GAL.
17	c	9150-00-188-9858	OIL: lubricating, internal combustion engine, tactical service, OE/HDO 30, 5 gallon drum (81349) MIL-L-2104	GAL.
18	0	5975-00-111-3208	PLASTIC STRAP: tiedown, self-locking, type I, class 1, 5 inches long (96906) MS3367-5-9	EA
19	0	5975-00-570-9598	PLASTIC STRAP: tiedown, self-locking, type I, class 1, 10 inches long (96906) MS3367-7-9	EA
20	0	9620-00-233-6712	POWDERED GRAPHITE: MIL-SS-G-659, 1 lb can (81348) SSG659	LB
21	0	7920-00-205-1711	RAG: wiping, unbleached cotton and cotton-synthetic, mixed colors, 50 lb bale (58536) A-A-531	LB
22	0	8030-00-252-3391	SEALING COMPOUND: nonhardening, MIL-S-45180, type 11, Permatex no. 2, 11 oz tube (77247) FORMAGASKET 2	OZ
23	0	6810-00-264-6618	SODIUM BICARBONATE: technical (baking soda) 1 lb box (81348) O-5-576	LB
24	0	3439-00-224-3567	SOLDER: rosin core, 60/40, 0.094 inch dia., 5 lb spool (81348) QQ-S-571	

## Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (Cont'd)

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
25	c	6850-00-664-5685	SOLVENT drycleaning, P-D-680, type II, 1 quart (58536) A-A-711	QT
26	0	8030-00-889-3535	TAPE: antiseizing, white, MIL-T-277730, 1/2 in. wide x 260 in. long x 0.0035 in. thick, snap-on shell (81755) P5025-2R	EA
27	0	4020-00-291-5901	TWINE: cotton (string), 16 ply, 375 yds, T-T-871, type 1 (81348) T-T-871	EA
27.1	0	5970-01-189-6927	TAPE: electrical 1.2 in. wide x 36 yds long x 0.0085 in. thick (81349) MIL-I-24391	EA 1 ROLL

## APPENDIX E

### ILLUSTRATED LIST OF MANUFACTURED ITEMS

An illustrated list of manufactured items is not applicable to this manual.



## APPENDIX F

### TORQUE LIMITS

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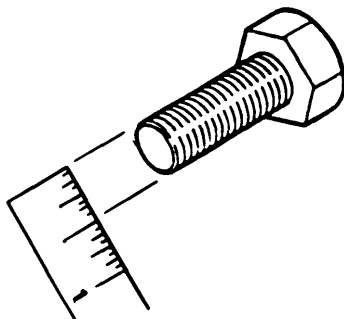
#### F-1. GENERAL

This section provides general torque limits for screws used on the M939 series vehicles. Special torque limits are indicated in the maintenance procedures for applicable components. The general torque limits given in this appendix shall be used when specific torque limits are not indicated in the maintenance procedure. These general torque limits cannot be applied to screws that retain rubber components. The rubber components will be damaged before the correct torque limit is reached. If a special torque limit is not given in the maintenance instructions, tighten the screw or nut until it touches the metal bracket then tighten it one more turn.

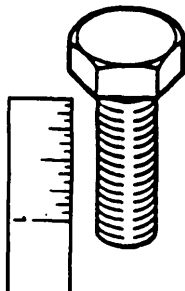
#### F-2. TORQUE LIMITS

Table F-1 lists dry torque limits. Dry torque limits are used on screws that do not have lubricants applied to the threads. Table F-2 lists wet torque limits. Wet torque limits are used on screws that have high pressure lubricants applied to the threads.

#### F-3. HOW TO USE TORQUE TABLE



- a. Measure the diameter of the screw you are installing.



- b. Count the number of threads per inch.

- c. Under the heading SIZE, look down the left hand column until you find the diameter of the screw you are installing (there will usually be two lines beginning with the same size).
- d. In the second column under SIZE, find the number of threads per inch that matches the number of threads you counted in step b.

#### CAPSCREW HEAD MARKINGS

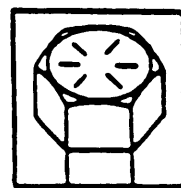
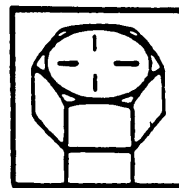
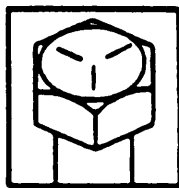
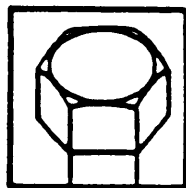
Manufacturer's marks may vary. These are all SAE Grade 5 (3-line).



- e. To find the grade screw you are installing, match the markings on the head to the correct picture of CAPSCREW HEAD MARKINGS on the torque table.
- f. Look down the column under the picture you found in step e. until you find the torque limit (in lb-ft or N•m) for the diameter and threads per inch of the screw you are installing.

**Table F-1. Torque Limits for Dry Fasteners**

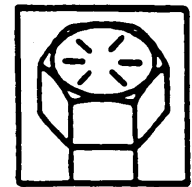
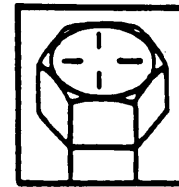
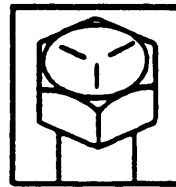
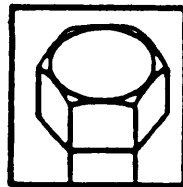
CAPSCREW HEAD MARKINGS



SIZE			TORQUE							
			SAE GRADE NO. 1 or 2		SAE GRADE NO. 5		SAE GRADE NO. 6 or 7		SAE GRADE NO. 8	
DIA. INCHES	THREADS PER INCH	MILLIMETERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS
1/4	20	6.35	5	6.78	8	10.85	10	13.56	12	16.27
1/4	28	6.35	6	8.14	10	13.56	—	—	14	18.98
5/16	18	7.94	11	14.92	17	23.05	19	25.76	24	32.52
5/16	24	7.94	13	17.63	19	25.76	—	—	27	36.61
3/8	16	9.63	18	24.41	31	42.04	34	46.10	44	59.66
3/8	24	9.53	20	27.12	35	47.46	—	—	49	66.44
7/16	14	11.11	28	37.97	49	66.44	55	74.58	70	94.92
7/16	20	—	30	40.68	55	74.58	—	—	78	105.77
1/2	13	12.70	39	52.88	75	101.70	85	115.26	105	142.38
1/2	20	—	41	56.60	85	115.26	—	—	120	162.78
9/16	12	14.29	51	69.16	110	149.16	120	162.72	155	210.18
9/16	18	—	55	74.58	120	162.72	—	—	170	230.52
6/8	11	15.88	63	85.43	150	203.40	167	226.45	210	284.76
5/8	18	—	95	128.82	170	230.52	—	—	240	325.44
3/4	10	19.05	105	142.38	270	366.12	280	379.68	375	508.50
3/4	16	—	115	155.94	295	400.02	—	—	420	596.52
7/8	9	22.23	160	216.96	395	535.62	440	596.64	605	820.38
7/8	14	—	175	237.30	435	589.86	—	—	675	915.30
1	8	25.40	235	318.66	590	800.04	660	894.96	910	1233.96
1	14	—	250	339.00	660	894.96	—	—	990	1342.44
1-1/8	—	25.58	—	—	800- 880	1084.8 - 1193.3	—	—	1280- 1440	1735.7 - 1952.8
1-1/4	—	31.75	—	—	—	—	—	—	1820- 2000	2467.9 - 2712.0
1 -3/8	—	34.93	—	—	1460- 1680	1979.8 - 2278.1	—	—	2380- 2720	3227.3 - 3688.3
1-1/2	—	38.10	—	—	1940- 2200	2630.6 - 2983.2	—	—	3160- 3560	4285.0 - 4827.4

Table F-2. Torque Limits for Wet Fasteners

CAPSCREW HEAD MARKINGS



SIZE			TORQUE							
			SAE GRADE NO. 1 or 2		SAE GRADE NO. 5		SAE GRADE NO. 6 or 7		SAE GRADE NO. 8	
DIA. INCHES	THREADS PER INCH	MILLIMETERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS
1/4	20	6.35	4.9	6.10	7.2	9.76	9.0	12.20	10.8	14.64
1/4	28	6.35	5.4	7.33	9.0	12.20	—	—	12.6	17.08
5/16	18	7.94	9.9	13.34	15.3	22.54	17.1	23.18	21.6	29.27
5/16	24	7.94	11.7	15.87	17.1	23.18	—	—	24.3	32.95
3/8	16	9.53	16.2	21.97	27.9	37.84	30.6	41.49	39.6	53.69
3/8	24	9.53	18.0	24.41	31.5	42.71	—	—	44.1	59.80
7/16	14	11.11	25.2	34.17	44.1	59.80	49.5	67.12	63.0	85.42
7/16	20	—	27.0	36.61	49.5	67.12	—	—	70.2	95.19
1/2	13	12.70	35.1	47.59	67.5	91.53	76.5	103.73	94.5	128.14
1/2	20	—	36.9	50.04	76.5	103.73	—	—	108.0	146.50
9/16	12	14.29	45.9	62.24	99.0	134.24	108.0	146.45	139.5	189.16
9/16	18	—	49.5	67.12	108.0	146.45	—	—	153.0	207.47
5/8	11	15.88	56.7	76.89	135.0	183.06	150.3	203.80	189.0	256.28
5/8	18	—	85.5	115.94	153.0	207.47	—	—	216.0	296.90
3/4	10	19.05	94.5	128.14	243.0	329.51	252.0	341.71	337.5	457.65
3/4	16	—	103.5	140.35	265.5	360.02	—	—	378.0	536.87
7/8	9	22.23	144.0	195.26	355.5	482.06	396.0	536.98	544.5	738.34
7/8	14	—	157.5	213.57	391.5	530.87	—	—	607.5	823.77
1	8	25.40	211.5	286.79	531.0	720.04	594.0	805.46	819.0	1110.56
1	14	—	225.0	305.10	594.0	805.46	—	—	891.0	1208.20
1-1/8	—	25.58	—	—	720.0 - 792.0	976.32 - 1073.97	—	—	1152.0 - 1296.0	1562.13 - 1757.52
1-1/4	—	31.75	—	—	—	—	—	—	—	2221.11 - 2440.80
1 -3/8	—	34.93	—	—	1314.0 - 1512.0	1781. \$2- 2050.29	—	—	2142.0 - 2448.0	2904.57 - 3319.47
1-1/2	—	38.10	—	—	1746.0 - 1980.0	2367.54 - 2684.88	—	—	2844.0 - 3204.0	3856.5 - 4344.66



APPENDIX F (Cont'd)

*Tubing Application Tightening Assembly Instructions*

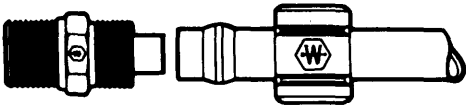
Slide tubing over barbed insert until bottomed on fitting.

MINI-BARB



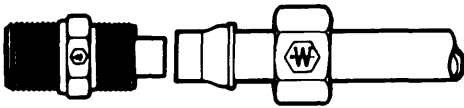
- 
1. Slide nut and then sleeve on tubing.
  2. Slide I.D. of tubing onto fitting insert until it bottoms.
  3. Assemble nut to fitting body.
  4. Tighten assembly finger tight to cover body threads.
- 

KNURL-ON



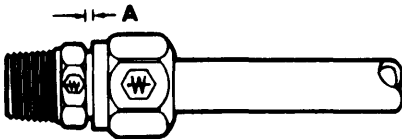
- 
1. Slide nut and then sleeve on tubing.
  2. Slide I.D. of tubing onto fitting insert until it bottoms.
  3. Assemble nut to fitting body.
  4. Tighten nut finger tight. From that point, tighten with a wrench two complete turns.
- 

SELF-ALINE-PTF



- 
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



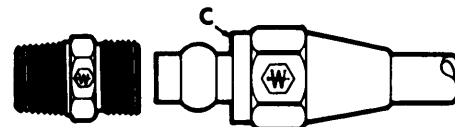
DISASSEMBLY — Remove nut and pull tubing out of fitting body. Insert will remain in tubing.

REASSEMBLY — Push tubing and insert into fitting body until it bottoms. Thread nut onto fitting body and tighten as in step 3.

TUBE 0.0. 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

## APPENDIX F (Cont'd)

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 hand 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



APPENDIX G

SCHEMATIC AND WIRING DIAGRAMS

Schematic and wiring diagram foldouts for M939 series vehicles are located in back of manual.

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By Order of the Secretaries of the Army and the Air Force:

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PAGE NO.	PARA- GRAPH	FIGURE NO.	TABLE NO.
8-34	8-11		
10-21	10-9		

IN THIS SPACE TELL WHAT IS WRONG  
AND WHAT SHOULD BE DONE ABOUT IT:

Step 4. Item reads: Drag Link (4) -  
Should read: Pitman arm (7).

Illustration callout number (7)  
shows frame rail extension -  
should show left mounting plate.

# SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBERS

Your Name, Rank, and Phone

SIGN HERE

PFC John A. Doe

**SAMPLE**

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DEPARTMENT OF THE ARMY

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PAGE  
NO.

PARA-  
GRAPH

FIGURE  
NO.

TABLE  
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TEAR ALONG PERFORATED LINE

**Legend:**

- CONNECTOR MALE (SMALL PLUG) REMAIN CONTACT
- CONNECTOR FEMALE (LARGE PLUG) MALE CONTACT
- 28 28 28 LEAD ELECTRICAL SHOWN AS CONNECTED
- BOILED CONNECTION
- GROUND

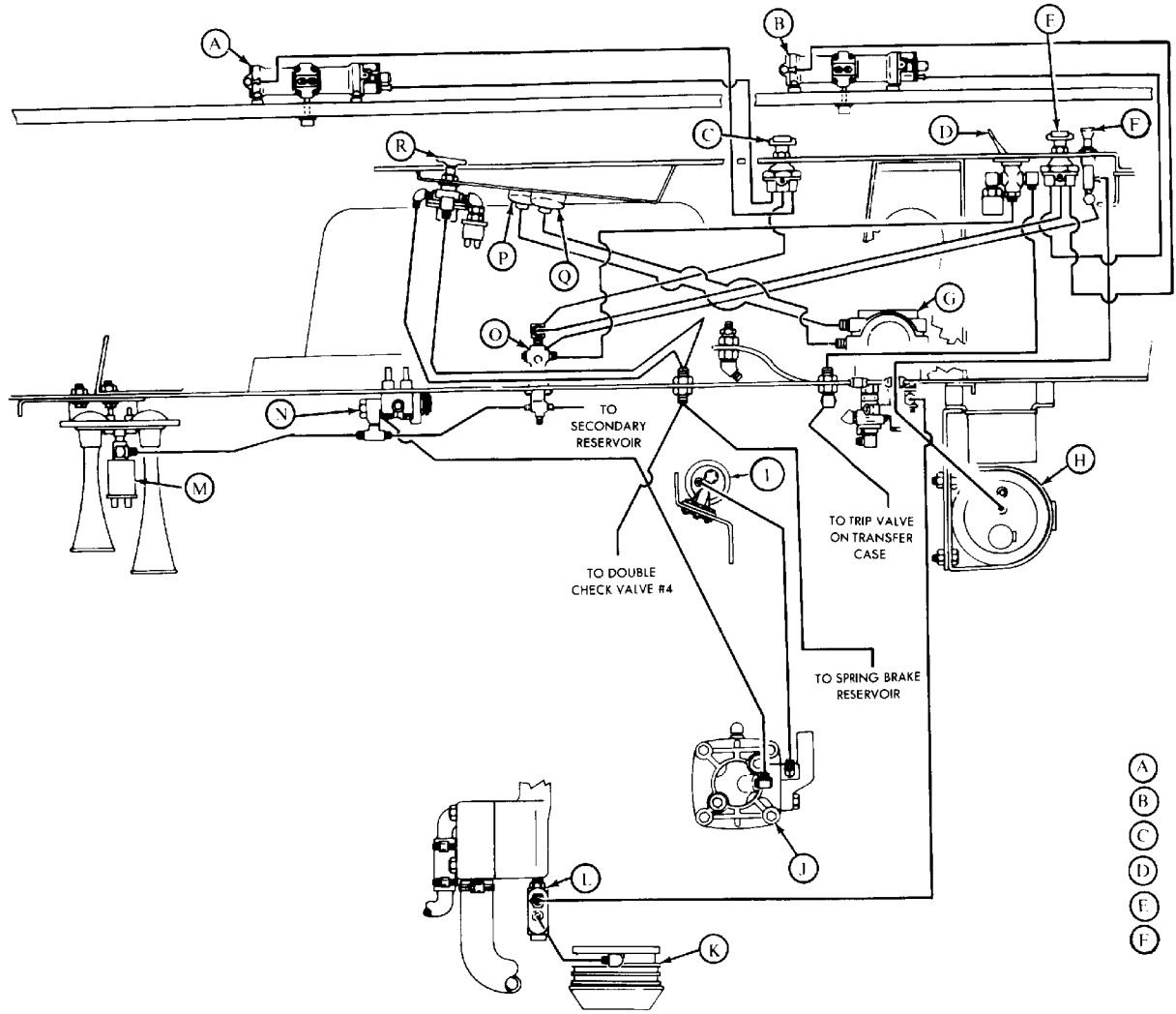
**Diagram Components and Connections:**

- Battery:** 100 AMP, 160 AMP, 100 AMP, 160 AMP. Connected to 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Alternator:** 100 AMP, 160 AMP. Connected to 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Engine:** 100 AMP, 160 AMP. Connected to 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Lights:** HEADLAMP, SIGNAL LAMP, BRIGHT SIDE MARKER LIGHT, LEFT SIDE MARKER LIGHT, RIGHT SIDE MARKER LIGHT, HOOD, FRONT END TRUNNION, GROUND STRAP HOOD, BLACKOUT HEADLAMP, HEADLAMP, SIGNAL LAMP. Connected to 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Sensors:** AIR PRESSURE, FUEL LEVEL, TEMPERATURE, etc. Connected to 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Other Components:** SWITCH, RELAY, FUSE, etc. Connected to 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

**Diagram Details:**

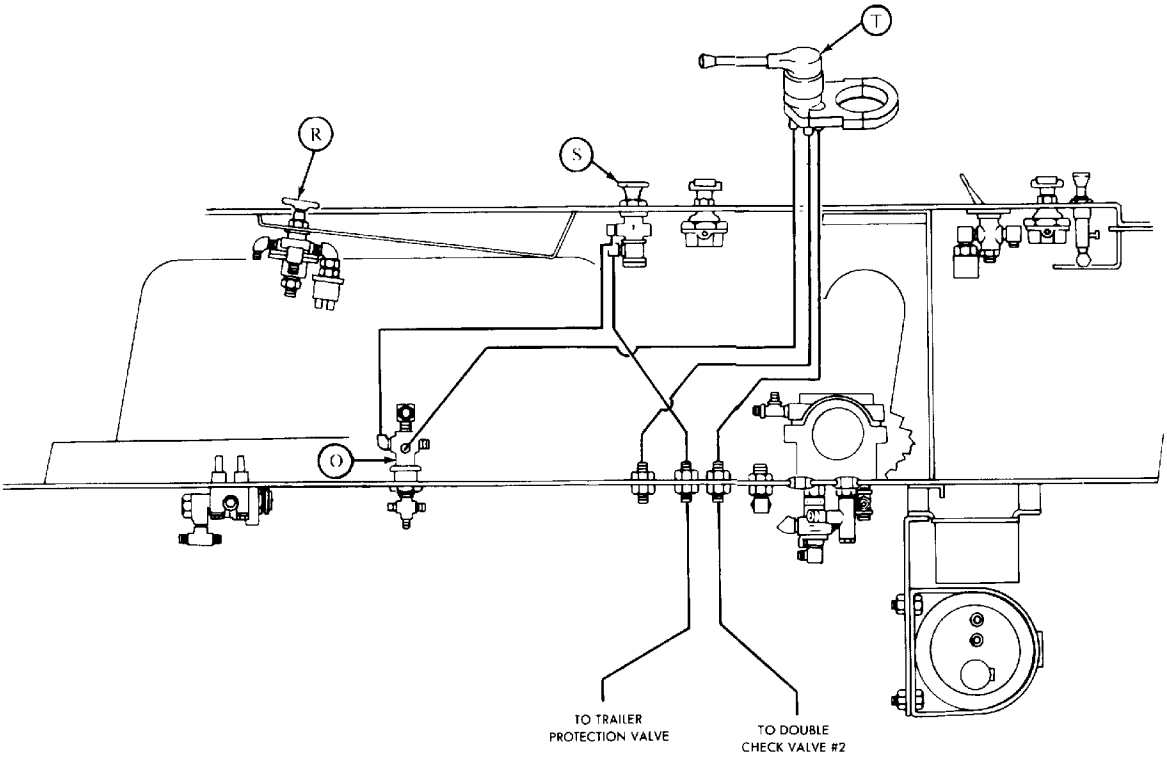
- The diagram shows a complex network of wires connecting various components. Each wire is labeled with a number (e.g., 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- Components are labeled with their names and specifications (e.g., BATTERY 100 AMP, ALTERNATOR 160 AMP, ENGINE 100 AMP, HEADLAMP, SIGNAL LAMP, BRIGHT SIDE MARKER LIGHT, LEFT SIDE MARKER LIGHT, RIGHT SIDE MARKER LIGHT, HOOD, FRONT END TRUNNION, GROUND STRAP HOOD, BLACKOUT HEADLAMP, HEADLAMP, SIGNAL LAMP).
- The diagram includes a legend for connector types and a list of components with their respective wire numbers and terminal connections.

ALL MODEL VEHICLES



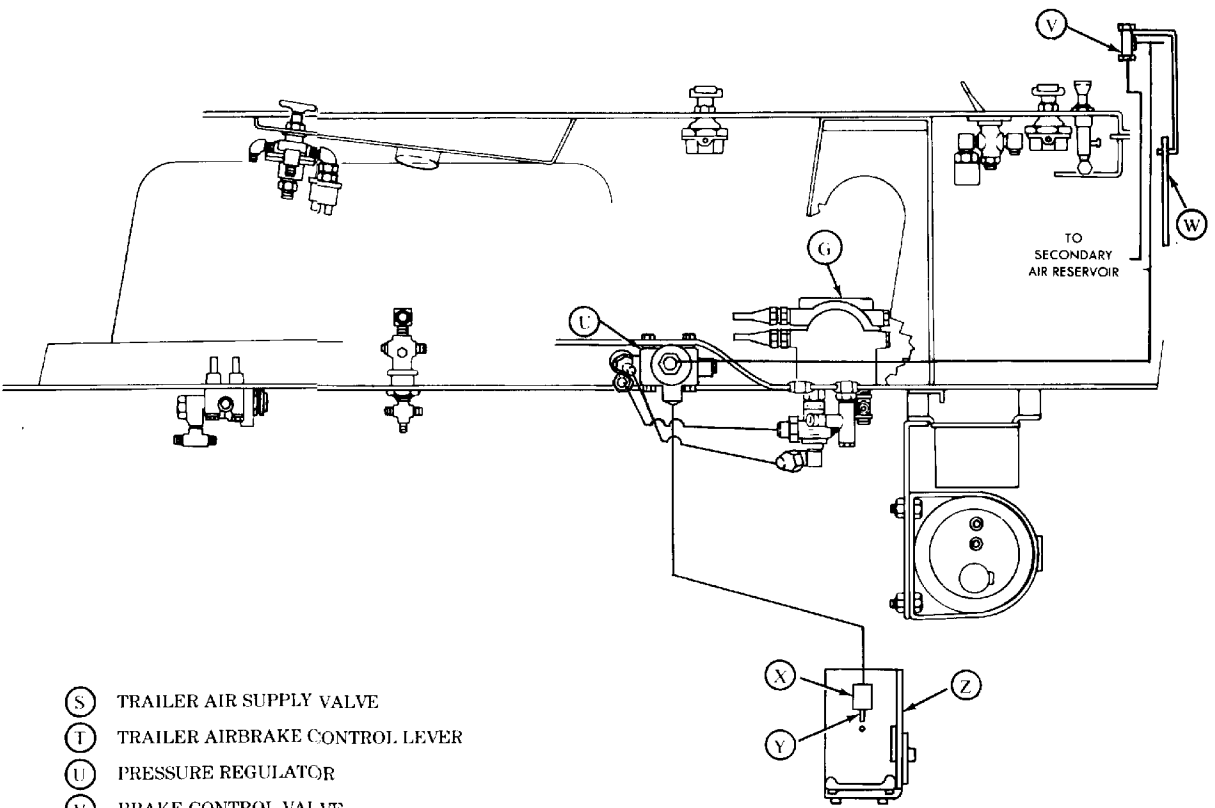
- (A) RIGHT WINDSHIELD WIPER MOTOR
- (B) LEFT WINDSHIELD WIPER MOTOR
- (C) RIGHT WINDSHIELD WIPER CONTROL SWITCH
- (D) FRONT WHEEL DRIVE LOCK-IN SWITCH
- (E) LEFT WINDSHIELD WIPER CONTROL SWITCH
- (F) WINDSHIELD WASHER CONTROL

MODELS M931 AND M932 (TRACTOR)



- (G) PEDAL (TREADLE) VALVE
- (H) WINDSHIELD WASHER RESERVOIR
- (I) ALCOHOL EVAPORATOR
- (J) AIR COMPRESSOR
- (K) FAN CLUTCH
- (L) FAN CLUTCH ACTUATOR
- (M) HORN
- (N) GOVERNOR
- (O) AIR ACCESSORY MANIFOLD
- (P) SECONDARY AIR GAGE
- (Q) PRIMARY AIR GAGE
- (R) SPRING BRAKE RELEASE CONTROL

MODEL M936 (WRECKER)

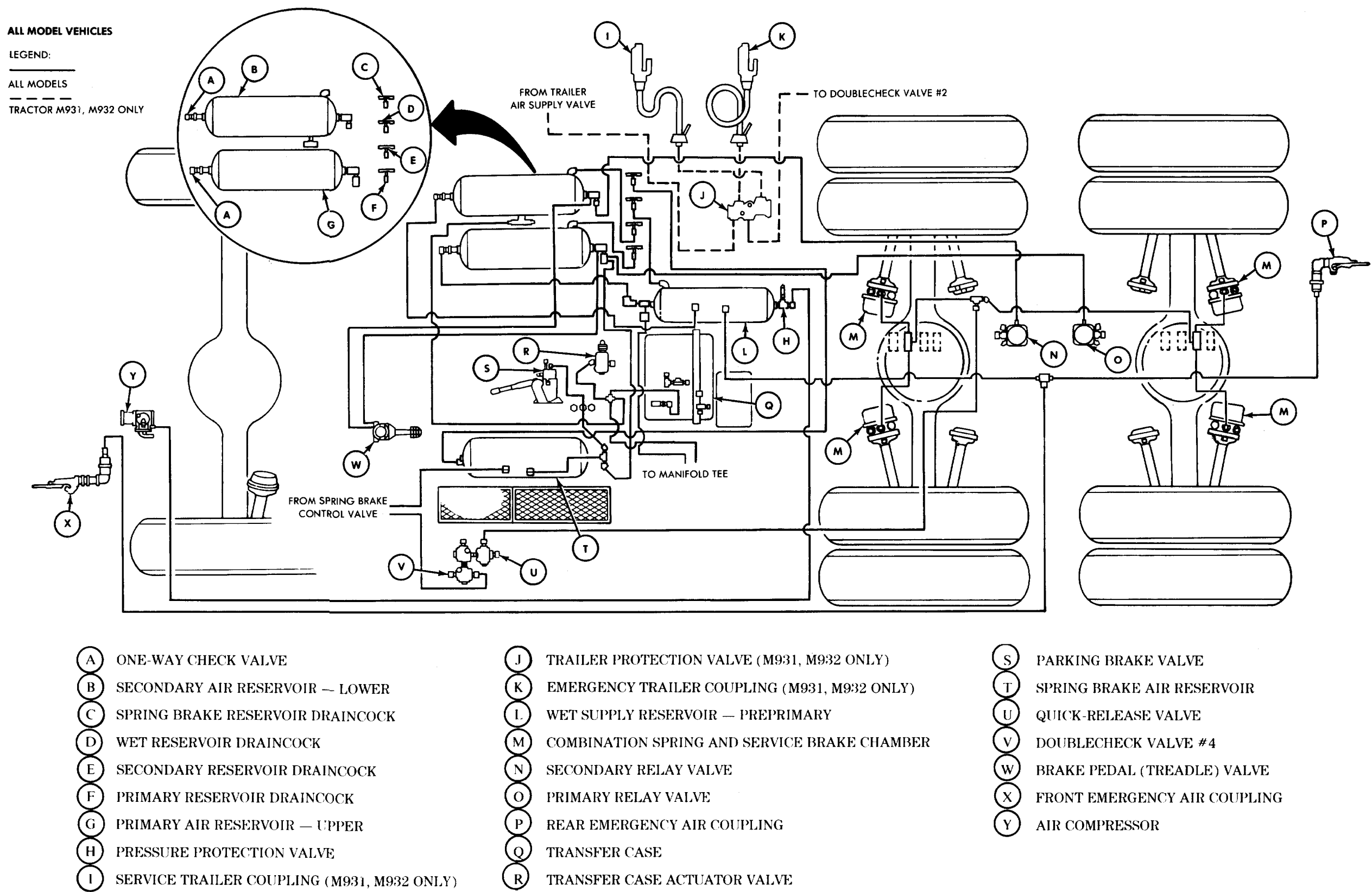


- (S) TRAILER AIR SUPPLY VALVE
- (T) TRAILER AIRBRAKE CONTROL LEVER
- (U) PRESSURE REGULATOR
- (V) BRAKE CONTROL VALVE
- (W) PTO ENGAGE LEVER
- (X) HIGH SPEED VALVE
- (Y) HIGH SPEED VALVE RAM
- (Z) VARIABLE SPEED FUEL PUMP

Foldout 2. Cab Air System Diagram

TA 094899

FP-3 (FP-4 blank)



Foldout 3. Air Supply Line Diagram

TA 094900



ALL MODEL VEHICLES

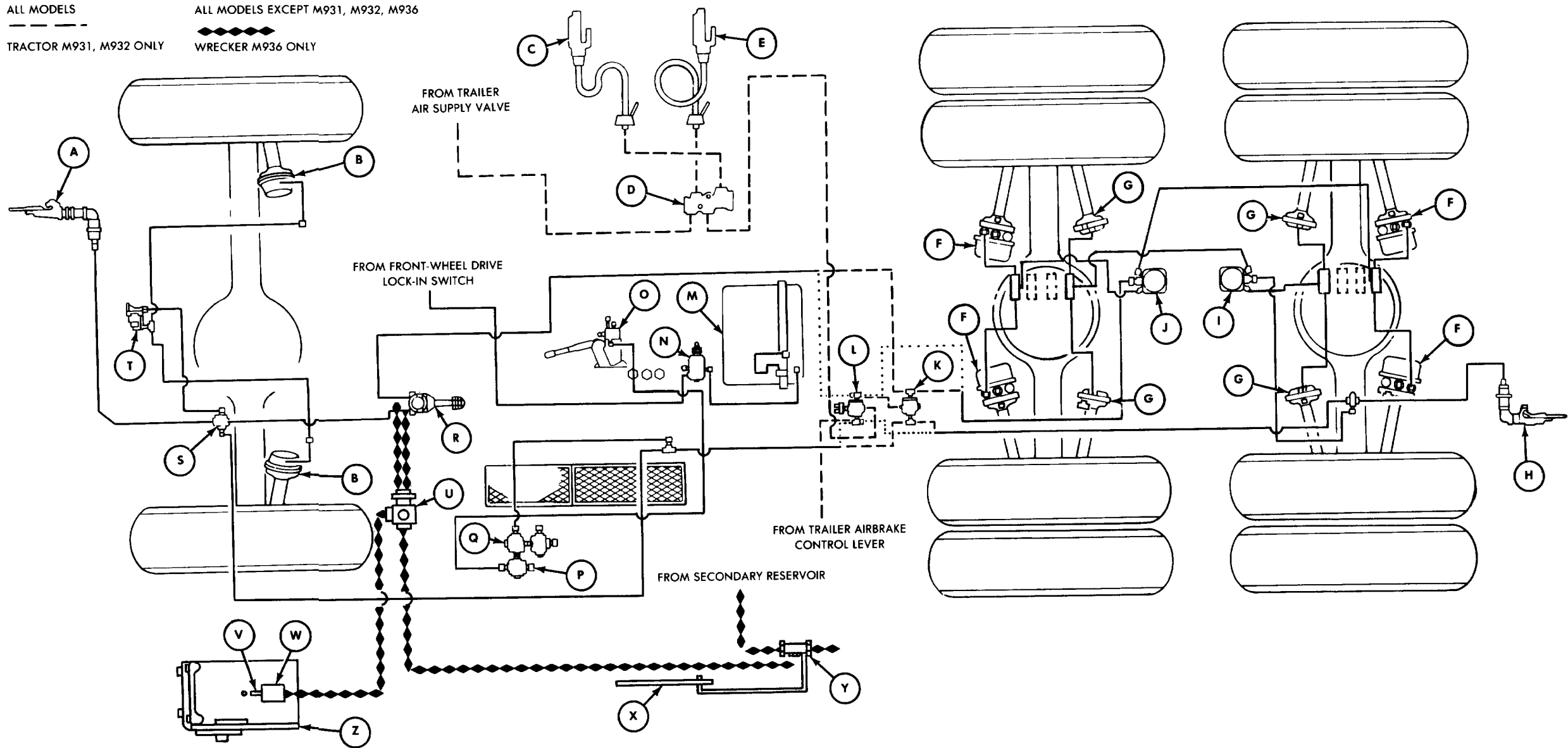
LEGEND:

ALL MODELS

TRACTOR M931, M932 ONLY

ALL MODELS EXCEPT M931, M932, M936

WRECKER M936 ONLY

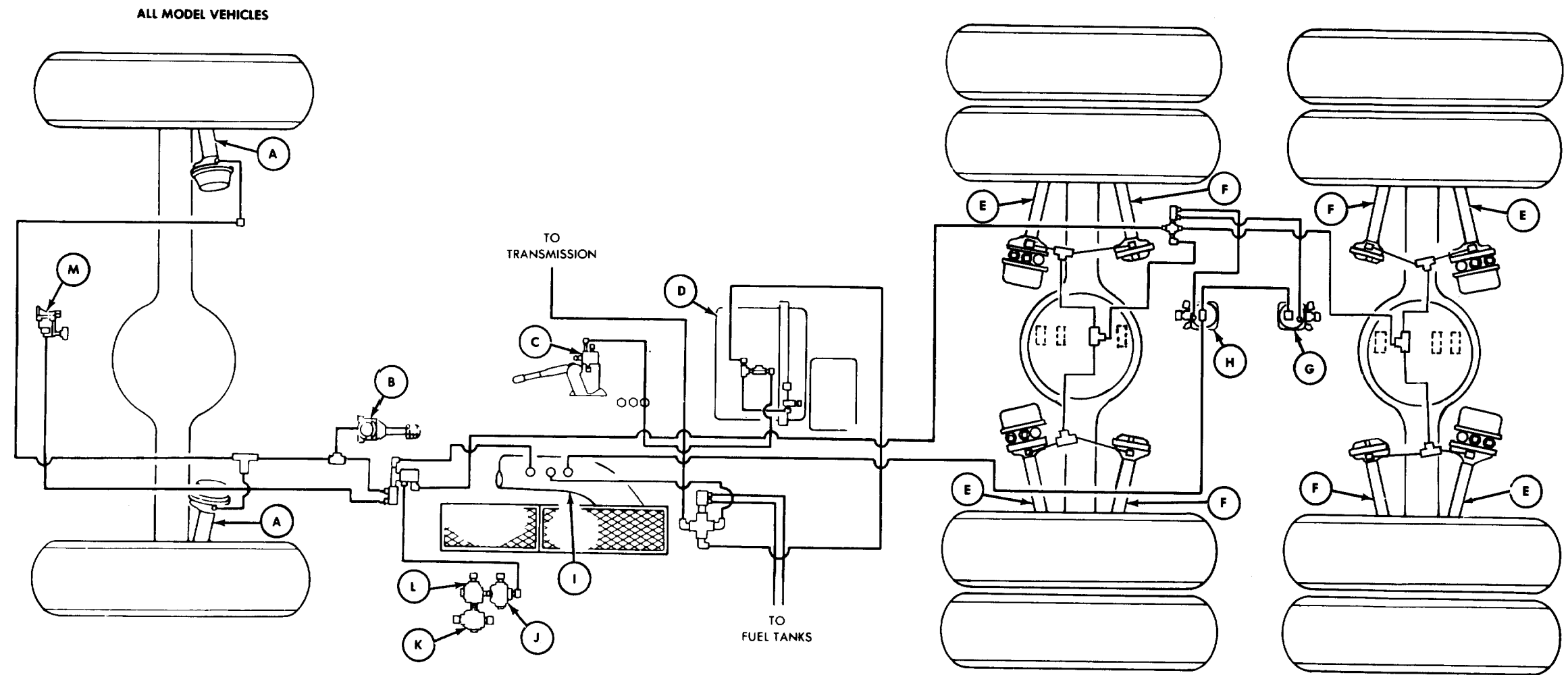


- |  |  |                                     |
|--|--|-------------------------------------|
| (A) FRONT SERVICE AIR COUPLING                   | (J) SECONDARY RELAY VALVE                | (S) DOUBCHECK VALVE #1              |
| (B) FRONT SERVICE BRAKE CHAMBER                  | (K) DOUBCHECK VALVE #5 (M931, M932 ONLY) | (T) FRONT LIMITING VALVE            |
| (C) SERVICE TRAILER COUPLING (M931, M932 ONLY)   | (L) DOUBCHECK VALVE #2                   | (U) PRESSURE REGULATOR              |
| (D) TRAILER PROTECTION VALVE (M931, M932 ONLY)   | (M) TRANSFER CASE                        | (V) HIGH SPEED VALVE RAM            |
| (E) EMERGENCY TRAILER COUPLING (M931, M932 ONLY) | (N) TRANSFER CASE ACTUATOR VALVE         | (W) HIGH SPEED VALVE                |
| (F) COMBINATION SPRING AND SERVICE BRAKE CHAMBER | (O) PARKING BRAKE VALVE                  | (X) PTO ENGAGE LEVER                |
| (G) REAR SERVICE BRAKE CHAMBER                   | (P) DOUBCHECK VALVE #4                   | (Y) BRAKE CONTROL VALVE (M936 ONLY) |
| (H) REAR SERVICE AIR COUPLING                    | (Q) DOUBCHECK VALVE #3                   | (Z) VARIABLE SPEED FUEL PUMP        |
| (I) PRIMARY RELAY VALVE                          | (R) BRAKE PEDAL (TREADLE) VALVE          |                                     |

TA 094901

Foldout 4. Air Control Line Diagram

FP-7 (FP-8 blank)



- |  |                           |
|--|---------------------------|
| (A) FRONT SERVICE BRAKE CHAMBER                  | (H) SECONDARY RELAY VALVE |
| (B) BRAKE PEDAL (TREADLE) VALVE                  | (I) AIR INTAKE STACK      |
| (C) PARKING BRAKE VALVE                          | (J) QUICK-RELEASE VALVE   |
| (D) TRANSFER CASE                                | (K) DOUBLECHECK VALVE #4  |
| (E) COMBINATION SPRING AND SERVICE BRAKE CHAMBER | (L) DOUBLECHECK VALVE #3  |
| (F) REAR SERVICE BRAKE CHAMBER                   | (M) FRONT LIMITING VALVE  |
| (G) PRIMARY RELAY VALVE                          |                           |

## 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

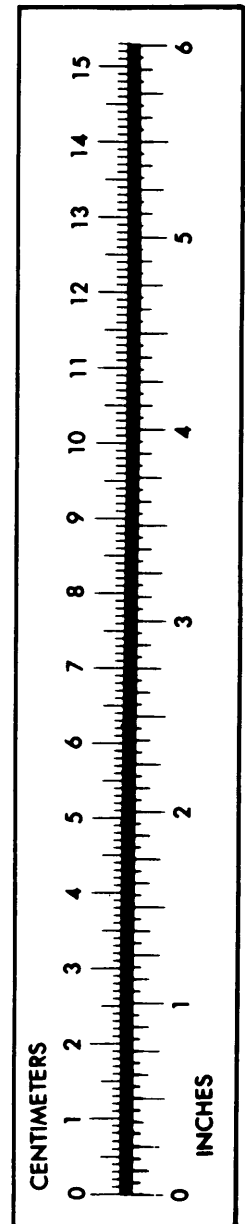
### TEMPERATURE

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



PIN: 051559-000