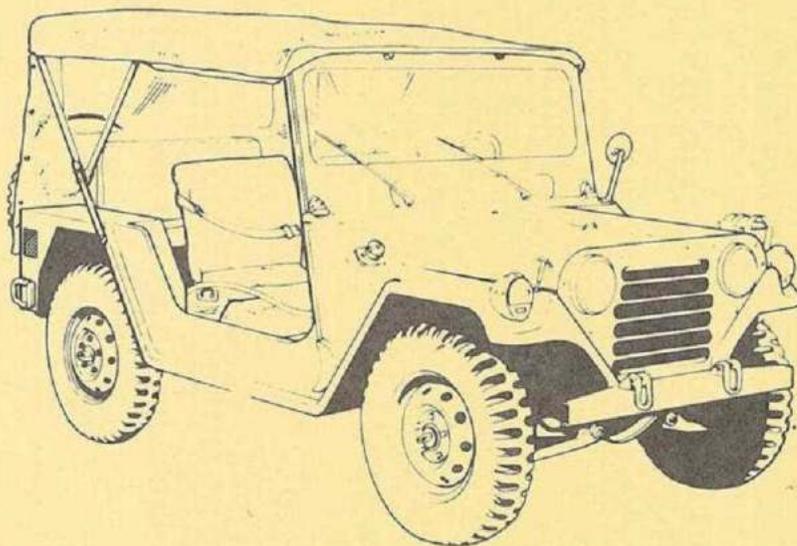


TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE

TRUCK, 1/4-TON, 4X4, M151A2 SERIES



TRUCK, UTILITY: 1/4-TON, 4X4,
M151A2 (2320-00-177-9258);

TRUCK, UTILITY: 1/4-TON, 4X4,
M825 (2320-00-177-9257) WITH
106MM RECOILLESS RIFLE;

TRUCK, AMBULANCE, FRONT LINE:
1/4-TON, 4X4, M718A1
(2310-00-177-9256).

This copy is a reprint which includes current pages from Changes 1 and 2.

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WARNING

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 FM 21-11.**

SUMMARY WARNINGS

WARNING

- Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.
- Do not loosen or disconnect any fuel line if engine is hot. Fuel vapors are highly flammable and will cause severe injury if ignited.
- Do not remove radiator cap before releasing internal pressure when radiator is too hot to touch. Internal pressure will blow out scalding fluid and vapor, causing severe injury.
- Hydraulic jack is used for raising and lowering, and is not used to support vehicle. Never work under vehicle unless wheels are blocked and properly supported. Severe injury will result if vehicle suddenly shifts or moves.
- Hot engine parts can cause severe burns. Be sure engine surface is not hot.
- When hooking up dwell meter or tachometer for testing, make sure all leads are securely connected. Failure to do so will result in severe injury.
- Fuel vapors are extremely flammable. Do not work on vehicle near sparks or open flame. Severe injury will result if fuel vapor is ignited.
- Fuel that leaks from fuel lines is extremely flammable. Do not work on vehicle near sparks or open flame. Severe injury will result if fuel is ignited.
- Compressed air source will not exceed 30 psi. When cleaning with compressed air, eyeshields must be worn. Failure to wear eyeshields may result in injury to the eyes and loss of sight.
- Do not touch hot exhaust pipes or muffler with bare hands. Severe injury can result.
- Use caution when testing thermostat. Hot water will cause severe burns.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or disconnected battery ground cable contacts battery terminal, a direct short can result, causing instant heating of tools, severe injury to personnel, or damage to equipment.
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and don't smoke while servicing batteries. Severe injury will result if acid contacts eyes or skin.
- Always wear safety goggles and rubber gloves, remove all jewelry such as rings, dog tags, bracelets, etc., and do not smoke while servicing batteries. Acid (electrolyte) contacting eyes and skin, or jewelry contacting terminals, will result in severe injury.
- Negative battery cable must always be disconnected first and reconnected last. This will prevent accidental short circuiting of wiring, damage to equipment, or injury to personnel.
- Use pliers to remove lamp door springs. Do not use screwdriver. Spring is under tension and will fly off and cause severe injury if incorrectly removed.
- Do not allow sparks or open flame near fuel tank when removing or installing fuel level sending unit. Explosion and fire will result.
- Always wear safety goggles when bleeding brakes. Severe eye injury will result if brake fluid comes in contact with eyes.

SUMMARY WARNINGS (Cont'd)

- Do not use any tool other than brake spring pliers when removing brakeshoe retracting springs. Springs can pop off and cause severe injury if proper tool is not used.
- Cleaning fluids are flammable and toxic. Keep them away from sparks and open flame. Use only in well-ventilated area and avoid prolonged inhalation of fumes or skin contact with fluids. Wear synthetic rubber gloves and protective clothing and goggles.
- The height and width of vehicles when prepared for rail transportation must not exceed the limitations indicated by the loading table in AR 700-15. Whenever possible, local transportation officers must be consulted about the limitations of the particular railroad lines to be used for the movement in order to avoid delays, dangerous conditions, or damage to equipment.
- Do not reuse wheel spindle cotter pin or substitute with any cotter pin other than NSN 5315-00-011-9120. Failure to use correct new cotter pin may result in wheel assembly falling off vehicle during operation, causing injury to personnel.
- Use part number 11669159 wheel cylinder, 1.00 in. diameter, for front brake assembly, and part number 11669158 wheel cylinder, 0.75 in. diameter, for rear brake assembly. Failure to use correct wheel cylinder may result in injury to personnel.
- After Nuclear, Biological, or Chemical (NBC) exposure of this vehicle, all air filters shall be handled with extreme caution. Unprotected personnel may experience injury or death if residual toxic agents or radioactive material are present. Servicing personnel will wear protective overgarments, mask, hood, and chemical protective gloves and boots. All contaminated air filters will be placed into double lined plastic bags and moved immediately to a temporary segregation area away from the work site. Oil contained in reservoir of oil bath type air filters is also to be taken to a segregation area and disposed of in accordance with FM 3-5. If contaminated by radioactive dust, the company NBC team will measure the radiation before removal. The NBC team will determine the extent of safety procedures required. The temporary segregation area will be marked with the appropriate NBC signs. Final disposal of contaminated air filters will be in accordance with local Standard Operating Procedures (SOP).
- Do not start engine when performing wheel stop check. Keep fingers from between wheel stops to avoid injury.
- Do not use a dry brush or compressed air to clean brakeshoes. There may be asbestos dust on brakeshoes which can be dangerous to your health if you breathe it. (Brakeshoe must be wet, and soft bristle brush must be used.)

CHANGE

NO. 2

C2
 HEADQUARTERS
 DEPARTMENT OF THE ARMY
 WASHINGTON, D.C., 1 August 1988

**ORGANIZATIONAL MAINTENANCE MANUAL
 FOR**

**TRUCK, UTILITY: 1/4-TON, 4X4,
 M151A2 (2320-00-177-9258);
 M151A2 (2320-01-264-4819) WITH
 ROLLOVER PROTECTION SYSTEM (ROPS);**

**TRUCK, UTILITY: 1/4-TON, 4X4,
 M825 (2320-00-177-9257) WITH
 106-MM RECOILLESS RIFLE;**

**TRUCK, AMBULANCE, FRONTLINE: 1/4-TON, 4X4,
 M718A1 (2310-00-177-9256).**

TM 9-2320-218-20-1-2, 14 May 1982, is changed as follows:

1. Remove old pages and insert new pages as indicated.
2. New or changed material is indicated by a vertical bar in the margin of the page.
3. Added or revised illustrations are indicated by a vertical bar adjacent to the illustration.
4. File this change sheet in front of this publication for reference purposes.

Remove pages	Insert pages	Remove pages	Insert pages
Warning b and Warning c i and ii	Warning b and Warning c i and ii	10-1 and 10-2	10-1 and 10-2
6-11 and 6-12	6-11 and 6-12	10-13 through 10-16	10-13 through 10-16
6-17 through 6-26	6-17 through 6-26	10-19 through 10-22	10-19 through 10-22
6-29 through 6-32	6-29 through 6-32	10-59 and 10-60	10-59 and 10-60
6-35 through 6-38	6-35 through 6-38	11-49 through 11-58	11-49 through 11-58
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8-33 through 8-38	8-33 through 8-38		11-223 through 11-253 (11-254 blank)
9-1 through 9-8	9-1 through 9-8	A-1 through A-3 (A-4 blank)	A-1 through A-3 (A-4 blank)
9-13 through 9-16	9-13 through 9-16	B-1 through B-4	B-1 through B-4
9-19 and 9-20	9-19 and 9-20		
	9-33 through 9-38		

CHANGE

NO. 2

Remove pages	Insert pages	Remove pages	Insert pages
E-1 through E-3 (E-4 blank)	E-1 through E-5 (E-6 blank)	Index 3 through Index 11	Index 3 through Index 11 (Index 12 blank)
G-3 (G-4 blank)	G-3 (G-4 blank)		

By Order of the Secretary of the Army:

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

Official:

R.L. DILWORTH
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-38, Unit Maintenance requirements for Truck, Utility, 1/4 Ton, 4x4, M151 Series, M718 Series.

CHANGE }

No. 1 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 30 July 1982

**Organizational Maintenance Manual
for**

TRUCK, UTILITY 1/4-Ton, 4X4, M151A2

(2320-00-177-9258)

TRUCK, UTILITY 1/4-Ton, 4X4 M825

(2320-00-177-9257)

106-MM RECOILLESS RIFLE:

TRUCK, AMBULANCE, FRONTLINE

1/4-Ton, 4X4, M718A1

(2310-00-177-9256)

TM 9-2320-218-20-1-2, 14 May 1982, is changed as follows

Cover 1. Lower right corner. Insert date, "MAY 1982".

Page i, following Washington, DC. Insert date, "14 May 1982".

Supersession Note should read:

*This manual, together with TM 9-2320-218-20-1-1, 14 May 1982, supersedes that portion of TM 9-2320-218-20, 23 September 1971, as pertains to M151A2, M825, and M718A1 vehicles.

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-38, Organizational Maintenance requirements for Vehicle 1/4 Ton Truck Utility: 1/4 Ton 4X4 M51, AI and A 2; w/106mm Recoilless Rifle: M151A1C, M825 Ambulance M718 and AI.

TECHNICAL MANUAL

NO. 9-2320-218-20-1-2

**HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 14 MAY 1982**

ORGANIZATIONAL MAINTENANCE MANUAL

**TRUCK, UTILITY: 1/4-TON, 4X4,
M151A2 (2320-00-177-9258),
M151A2 (2320-01-264-4819) WITH
ROLLOVER PROTECTION SYSTEM (ROPS);
TRUCK, UTILITY: 1/4-TON, 4X4,
M825 (2320-00-177-9257), 106MM RECOILLESS RIFLE;
TRUCK, AMBULANCE, FRONTLINE:
1/4-TON, 4X4, M718A1 (2310-00-177-9256).**

Current as of 1 June 1981

This manual is published in two parts. TM 9-2320-218-20-1-1 contains chapters 1 through 5, and TM 9-2320-218-20-1-2 contains chapters 6 through 12, appendixes A, B, C, D, E, F, and G. Each volume contains a separate table of contents and index.

Approved for public release; distribution is unlimited.

***This manual, together with TM 9-2320-218-20-1-1, supersedes that portion of TM 9-2320-218-20, dated September 1971, with change 5, applicable to M151A2, M825, and M718A1 vehicles.**

ORGANIZATIONAL MAINTENANCE MANUAL

TRUCK, 1/4-TON, 4X4, M151A2, M825, AND M718A1 VEHICLES

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a better way to improve the procedures, let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the 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 6 PROPELLER SHAFTS, UNIVERSAL JOINTS, DIFFERENTIALS, AND WHEEL MECHANISMS MAINTENANCE

6-1. Overview

a. This chapter provides maintenance of propeller shafts, universal joints, differentials, and wheel mechanisms authorized for the organizational level. Each component is covered in one of the following sections:

- Section I. Propeller Shafts and Universal Joints (page 6-1)
- Section II. Differentials and Wheel Mechanisms (page 6-10)

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

Section I. PROPELLER SHAFTS AND UNIVERSAL JOINTS MAINTENANCE

6-2. General

This section provides maintenance procedures assigned to the organizational level for the propeller shafts and universal joints. To find a specific procedure, see the maintenance task summary below.

6-3. Propeller Shafts and Universal Joints Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
6-4.	Front and Rear Propeller Shafts a. Removal b. Inspection c. Installation	6-2
6-5.	Propeller Shaft Universal Joint a. Disassembly b. Inspection c. Lubrication d. Reassembly	6-4

6-4. Front and Rear Propeller Shafts Maintenance

This task covers:

- a. Removal
- b. Inspection

c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P LO 9-2320-218-12</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u> Parking brake set. Vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
----------	----------	------	--------	---------

NOTE

The front propeller shaft (2) and rear propeller shaft (1) are removed and installed identically.

a. REMOVAL

- | | | |
|---|--|----------------------|
| 1. Front cross assembly (5) to companion flange (4) | Four capscrews (7) and lockwashers (6) | Remove. |
| 2. Rear propeller shaft cross assembly (10) to companion flange (3) | Four capscrews (8) and lockwashers (9) | Remove. |
| 3. | Propeller shaft (2) | Remove from vehicle. |

b. INSPECTION

- | | | | |
|----|---------------------|--------------------------------------|---|
| 4. | Propeller shaft (2) | Inspect for cracks, dents, and wear. | Replace shaft assembly if cracked, dented, or worn. |
|----|---------------------|--------------------------------------|---|

6-4. Front and Rear Propeller Shafts Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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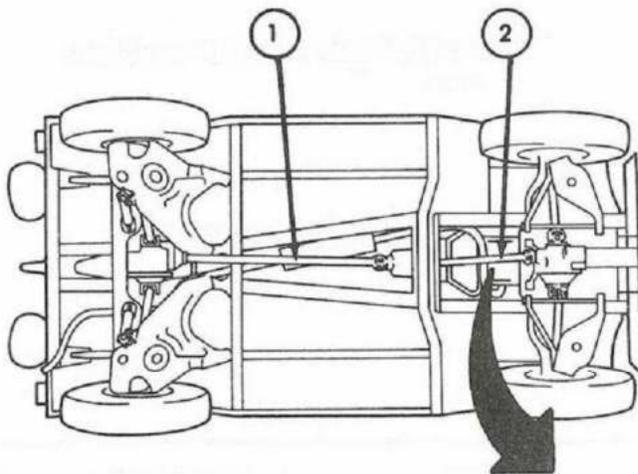
c. INSTALLATION

NOTE

Lubricate universal joints prior to installation. (See LO 9-2320-218-12.)

5.

Propeller shaft (2)



a. Aline rear shaft cross assembly (10) to four holes in companion flange (3).

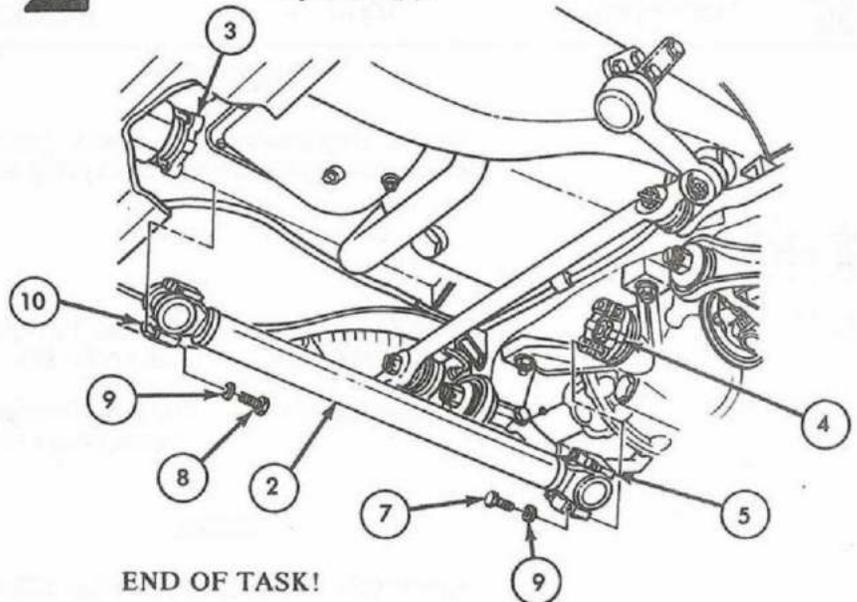
b. Secure with four lockwashers (9) and capscrews (8).

Tighten 15-20 lb-ft (20-27 N•m).

c. Aline front shaft cross assembly (5) to four holes in companion flange (4).

d. Secure with four lockwashers (6) and capscrews (7).

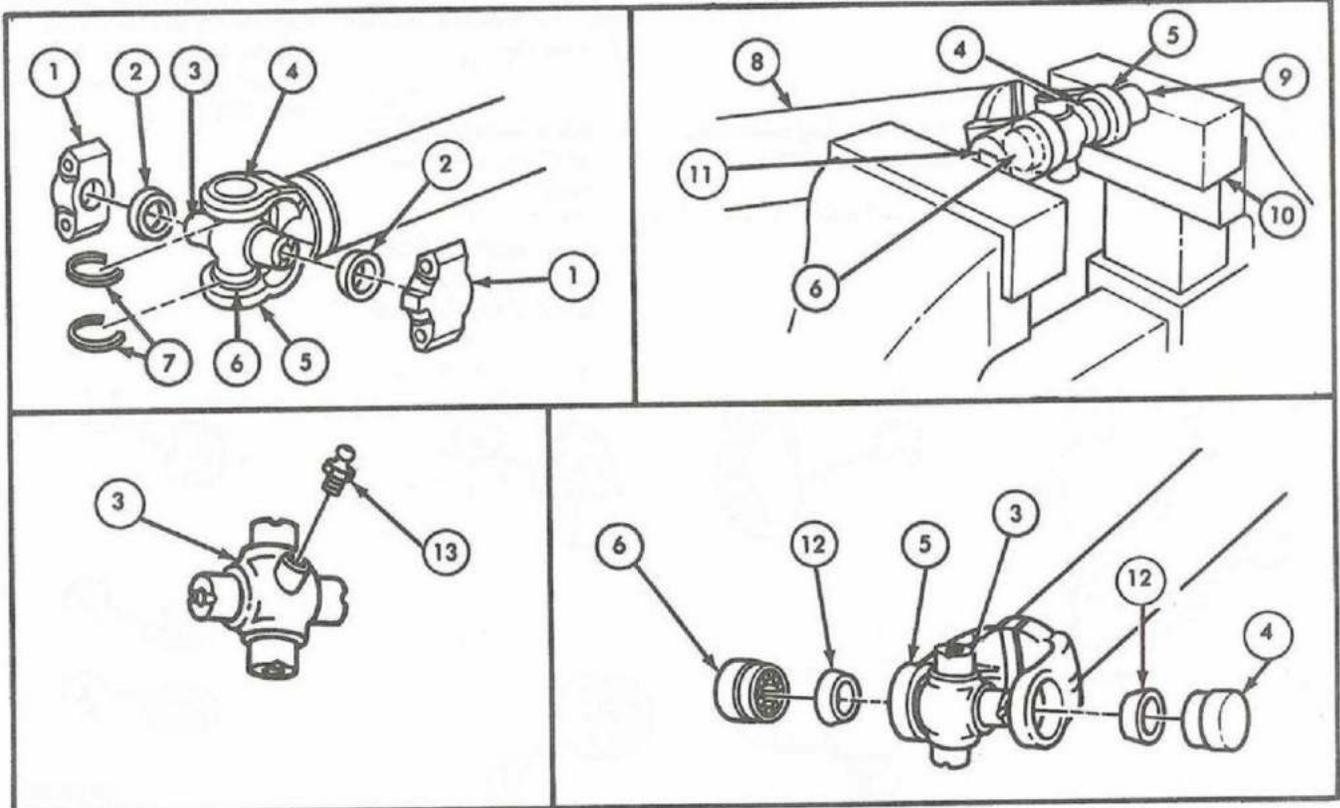
Tighten 15-20 lb-ft (20-27 N•m).



- FOLLOW-ON TASKS:**
- Lower vehicle (para 3-24).
 - Road test (TM 9-2320-218-10) and check propeller shaft for proper operation.

6-5. Propeller Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Propeller shaft (8)	<p>a. Position in vise (10) with 1 1/8 in. (28 mm) socket (11) between vise jaw and bearing race (6) being removed.</p> <p>b. Place 11/16 in. (17 mm) socket (9) between opposite bearing race (4) and vise jaw.</p> <p>c. Close vise (10) until bearing race (6) is pressed out of yoke (5).</p>	<p>Make sure open end of socket (11) is facing bearing race (6).</p> <p>Make sure open end of socket (9) is facing vise jaw.</p>
4.	Cross (3)	Two bearing races (4) and (6), and grease seals (12)	Remove.	
5.	Yoke (5)	Cross (3)	Remove.	
6.		Grease fitting (13)	Unscrew and remove from cross (3).	



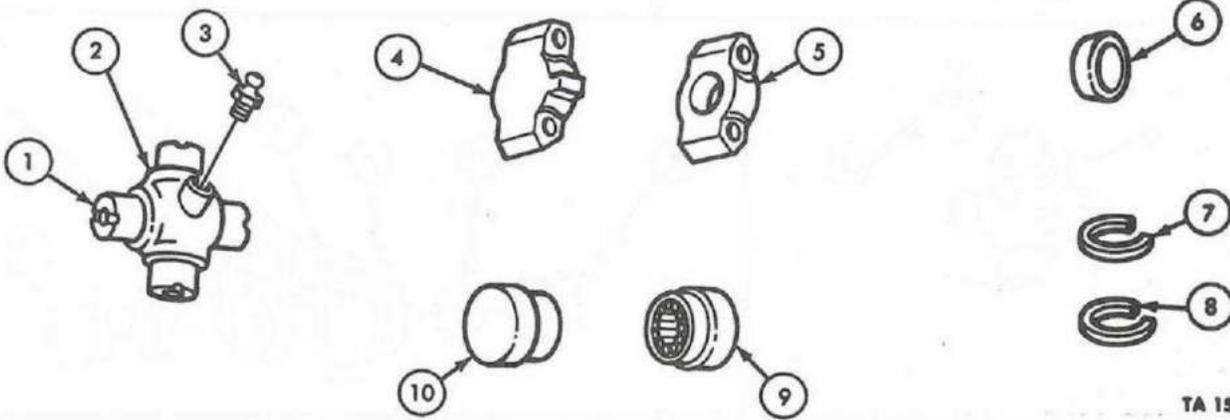
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6-5. Propeller Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
b. INSPECTION				
7.		Grease fitting (3)	Inspect for cracks, breaks, and stripped threads.	Replace if cracked, broken, or threads are stripped.
8.		Four bearing races (4) (5), (9) and (10), seals (6), and two snap rings (7) and (8)	Inspect for splits, cracks, breaks, wear, and missing or broken needle bearings.	If split, cracked, broken, worn, or needle bearings are missing or broken, replace with U-joint parts kit.
9.		Cross (2)	Inspect for score marks, cracks, breaks, wear, and stripped threads.	If cracked, broken, worn, score marked, or threads stripped, replace with U-joint parts kit.

c. LUBRICATION

10.		Grease fitting (3)	Screw onto cross (2).	
11.		Cross (2)	Insert GAA grease through grease fitting (3) until it oozes out at ends of cross (2).	Grease restrictor plugs (1) may partially pop out from ends of cross (2). If this occurs, push plugs (1) in until flush with ends of cross (2).
12.		Four bearing races (4), (5), (9) and (10)	<p>a. Place small amount of GAA grease in each.</p> <p>b. Coat outer surface of each with thin layer of GAA grease.</p>	



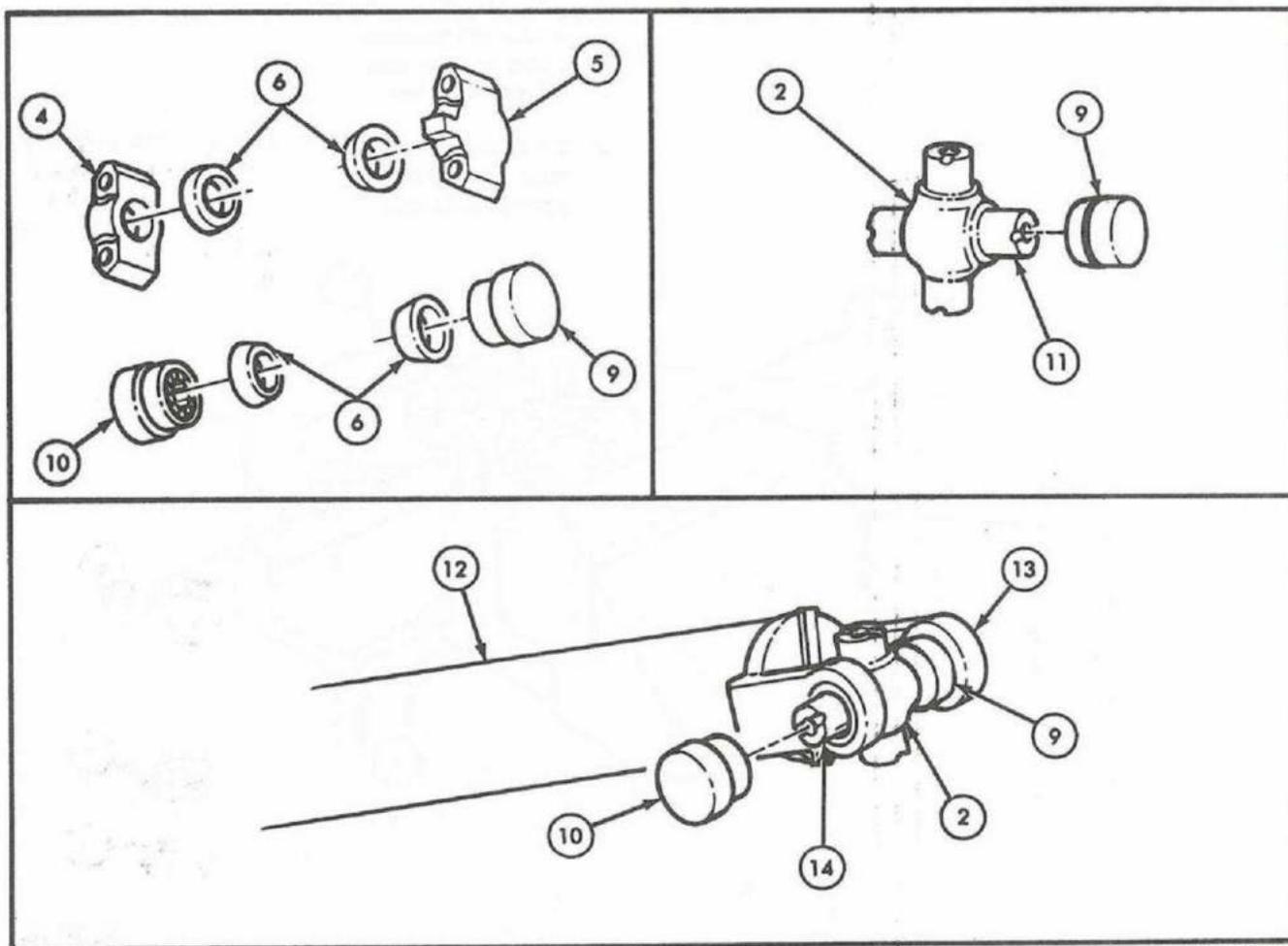
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6-5. Propeller Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. REASSEMBLY

13.		Four grease seals (6)	Install on four bearing races (4), (5), (9), and (10).	
14.		Bearing race (9)	Install on cross trunnion (11).	
15.		Cross (2)	Place in yoke (13) so bearing race (9) is aligned with inside of yoke eye.	Make sure grease fitting is toward prop shaft (12) and at same angle as grease fitting on opposite U-joint.
16.		Bearing race (10)	Place on opposite cross trunnion (14).	



TA 155460

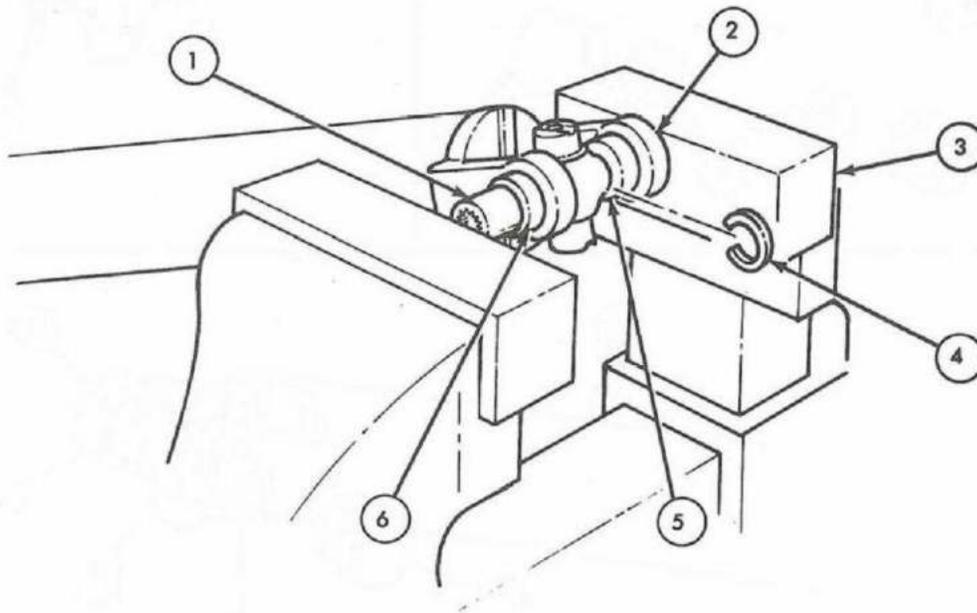
6-5. Propeller Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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CAUTION

Make sure inner bearing race (5) is perfectly alined with yoke eye before pressing in with vise. Damage to cross and bearing races will result if forced into yoke while not alined.

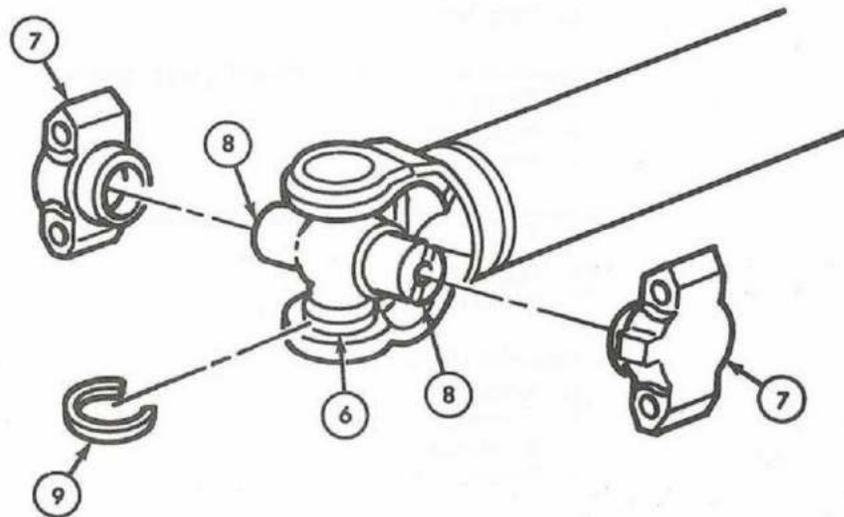
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|-----|--|---------------|--|--|
| 17. | | Yoke (2) | <ul style="list-style-type: none"> a. Place in vise (3) and close to start bearing races (5) and (6) into yoke eyes. b. Remove from vise (3). | Do not press bearing races (5) and (6) in all the way. |
| 18. | | Snap ring (4) | Install on inner bearing race (5). | |
| 19. | | Yoke (2) | <ul style="list-style-type: none"> a. Place in vise (3) with 11/16-in. (17 mm) socket (1) between outer bearing race (6) and vise jaw. b. Close vise (3) until snap ring (4) seats against yoke eye. | Make sure open end of socket (1) is facing vise jaw. |



TA 155461

6-5. Propeller Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
20.		Snap ring (9)	Install on bearing race (6).	
21.		Two bearing races (7)	Install one on each open cross trunnion (8).	



END OF TASK!

- FOLLOW-ON TASKS:**
- Check U-joint for binding. If binding is evident, use drift punch and tap on inner shoulder of cross. If binding is still evident, repeat procedure with new U-joint.
 - Install propeller shaft (para 6-4).

TA 155462

Section II. DIFFERENTIALS AND WHEEL MECHANISMS MAINTENANCE

6-6. General

This section provides maintenance procedures assigned to the organizational level for the differentials and wheel mechanisms. To find a specific procedure, see the maintenance task summary below.

6-7. Differentials and Wheel Mechanisms Maintenance Task Summary

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6-12.	Wheel Drive Shaft a. Removal b. Inspection c. Installation	6-35
6-13.	Wheel Drive Shaft Universal Joint a. Disassembly b. Inspection c. Lubrication d. Reassembly	6-38
6-14.	Wheel Drive Shaft Universal Joint Grease Fitting a. Removal b. Installation	6-44
6-15.	Wheel Spindle a. Removal b. Inspection c. Installation	6-46

6-7. Differentials and Wheel Mechanisms Maintenance Task Summary (Cont'd)
--

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6-16.		Wheel Drive Yoke Flange a. Removal b. Installation		6-50
6-17.		Front Wheel Spindle Support a. Removal b. Inspection c. Installation		6-52
6-18.		Rear Wheel Spindle Support a. Removal b. Inspection c. Installation		6-60
6-19.		Front Wheel Alinement a. Toe-in Check b. Toe-in Adjustment		6-64
6-20.		Wheel Seals, Bearings, and Cups a. Wheel Bearing Check b. Wheel Bearing Adjustment c. Removal d. Cleaning and Inspection e. Lubrication f. Installation		6-68

6-8. Differential Assembly Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> GO lubricating oil Two gaskets Sealing compound (NSN 8030-01-025-1692)</p> <p><u>Personnel Required</u> One mechanic One assistant</p> <p><u>Manual References</u> TM 9-2320-218-10 LO 9-2320-218-12 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u> Parking brake set. Front or rear of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

The front and rear differentials are interchangeable. Any differences in removal and installation will be noted prior to the step where differences are applicable.

a. REMOVAL

NOTE

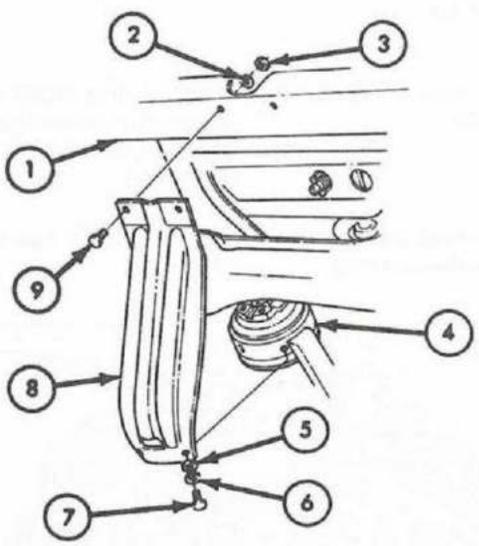
Steps 1, 2, and 3 are required for front differential only.

- | | | |
|---|---|-------------------------------|
| <p>1. Differential flange guard (8) to front differential (4)</p> <p>2. Differential flange guard (8) to front bumper (1)</p> | <p>Two capscrews (7), lockwashers (6), and flat washers (5)</p> <p>Two bolts (9), lockwashers (2), and nuts (3)</p> | <p>Remove.</p> <p>Remove.</p> |
|---|---|-------------------------------|

6-B. Differential Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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3. Differential flange guard (8) Remove.

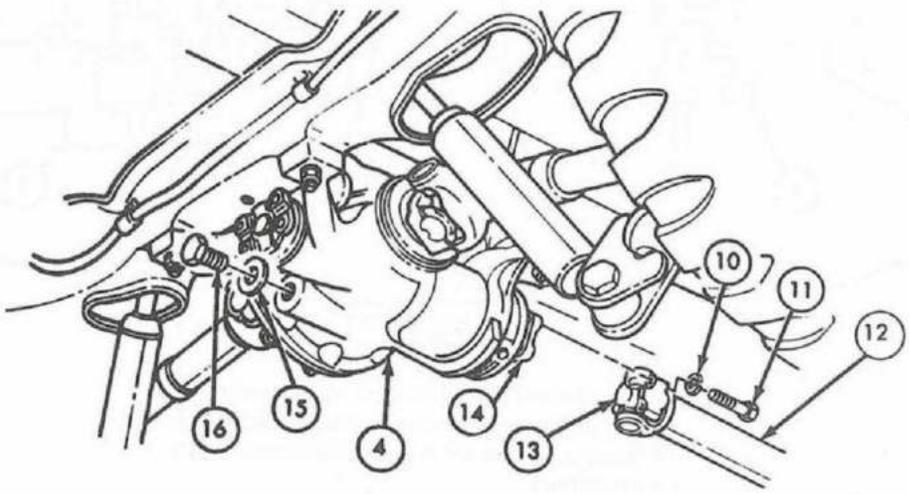


4. Bottom rear of differential (4) Magnetic drain plug (16) and gasket (15) Remove and drain lubricant. Use suitable container. Discard gasket (15).

5. New gasket (15) and magnetic drain plug (16) Install in differential (4) and secure. Tighten 25-35 lb-ft (34-47 N•m).

6. Propeller shaft cross assembly (13) to differential pinion flange (14) Four capscrews (11) and lockwashers (10) Remove.

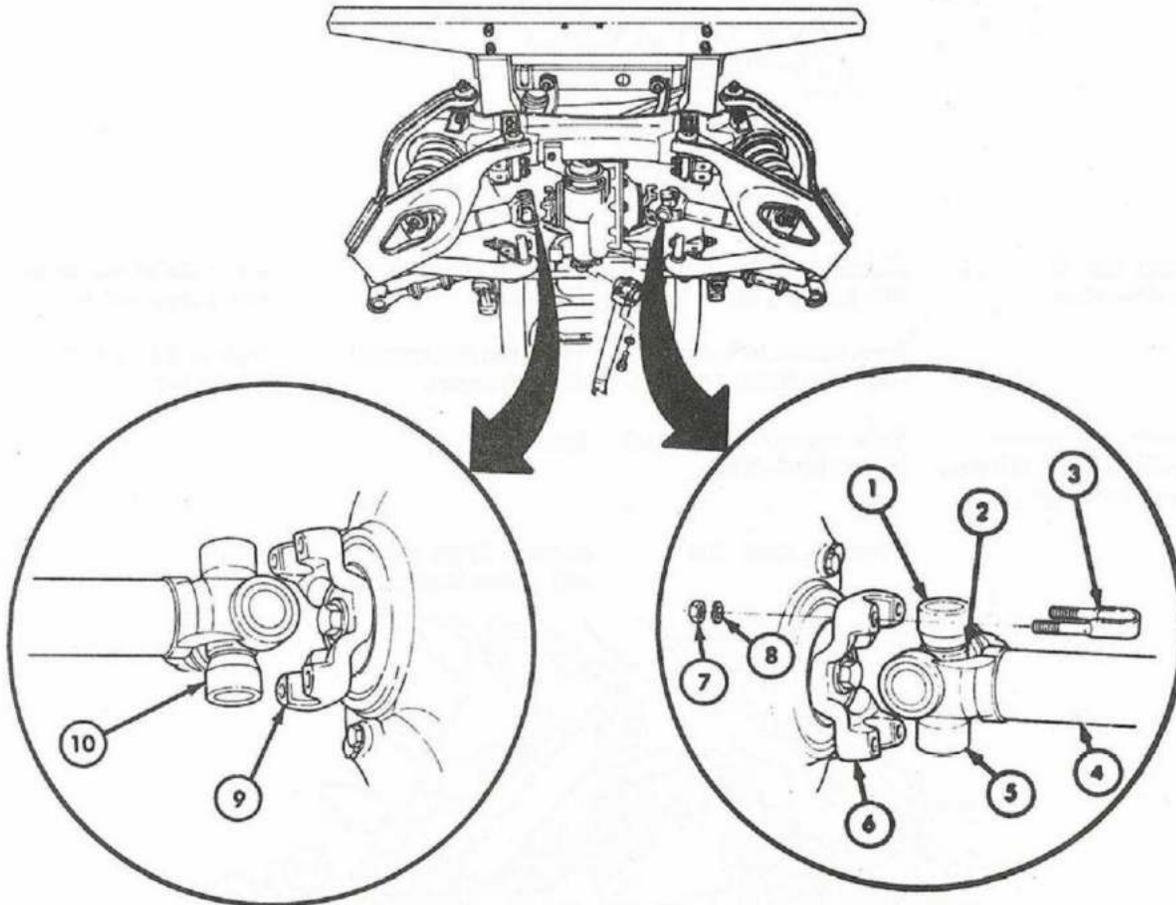
7. Propeller shaft (12) Remove from differential pinion flange (14).



TA 155463

6-8. Differential Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.	L.H. shaft sleeve yoke universal joint (5) to L.H. differential side gear flange (6)	Four nuts (7), lock-washers (8), and two U-bolts (3)	Remove.	Tape loose U-joint bearing races (1) to keep from falling off cross (2).
9.		Wheel drive shaft sleeve yoke (4)	Slide toward wheel to separate universal joint (5) from side gear flange (6).	
10.	R.H. differential side gear flange (9)	R.H. wheel drive shaft universal joint (10)	Repeat steps 8 and 9 to remove.	



WARNING

Differentials (13) and (20) are heavy and must be supported by assistant during steps 11 and 13. Serious injury will result if differential falls on personnel.

TA 155464

6-8. Differential Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

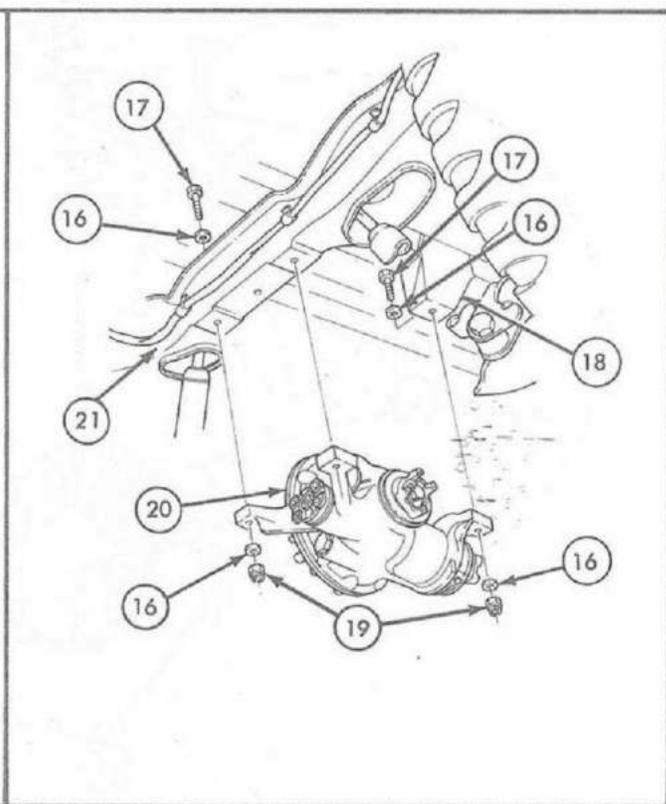
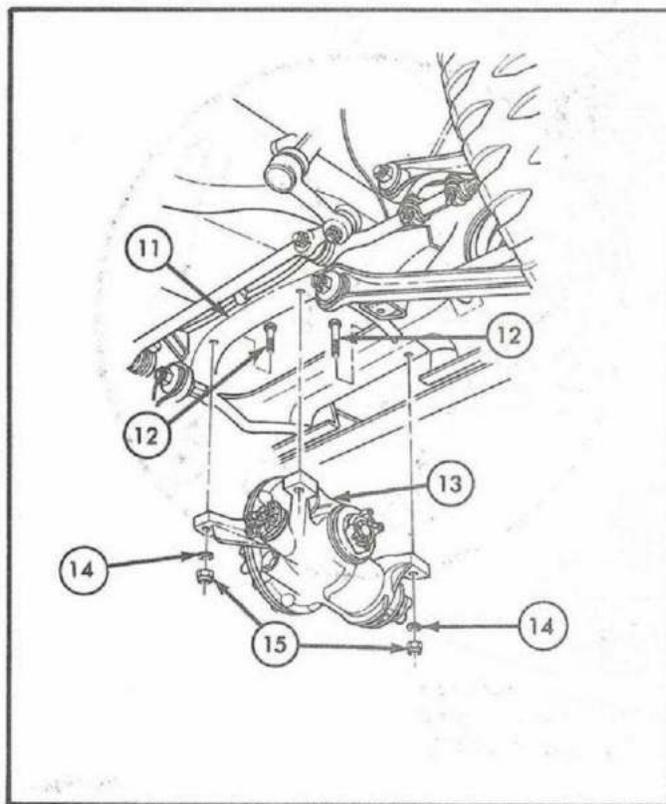
Steps 11 and 12 are required for front differential (13) only.

- | | | | | |
|-----|---|---|---------|--|
| 11. | Front differential (13) to front crossmember (11) | Three locknuts (15), washers (14), and capscrews (12) | Remove. | |
| 12. | | Front differential (13) | Remove. | |

NOTE

Steps 13 and 14 are required for rear differential (20) only.

- | | | | | |
|-----|---|---|---------|--|
| 13. | Rear differential (20) to rear crossmember (21) and body bracket (18) | Three locknuts (19), six washers (16), and three capscrews (17) | Remove. | |
| 14. | | Rear differential (20) | Remove. | |



TA 155465

6-8. Differential Assembly Maintenance (Cont'd)

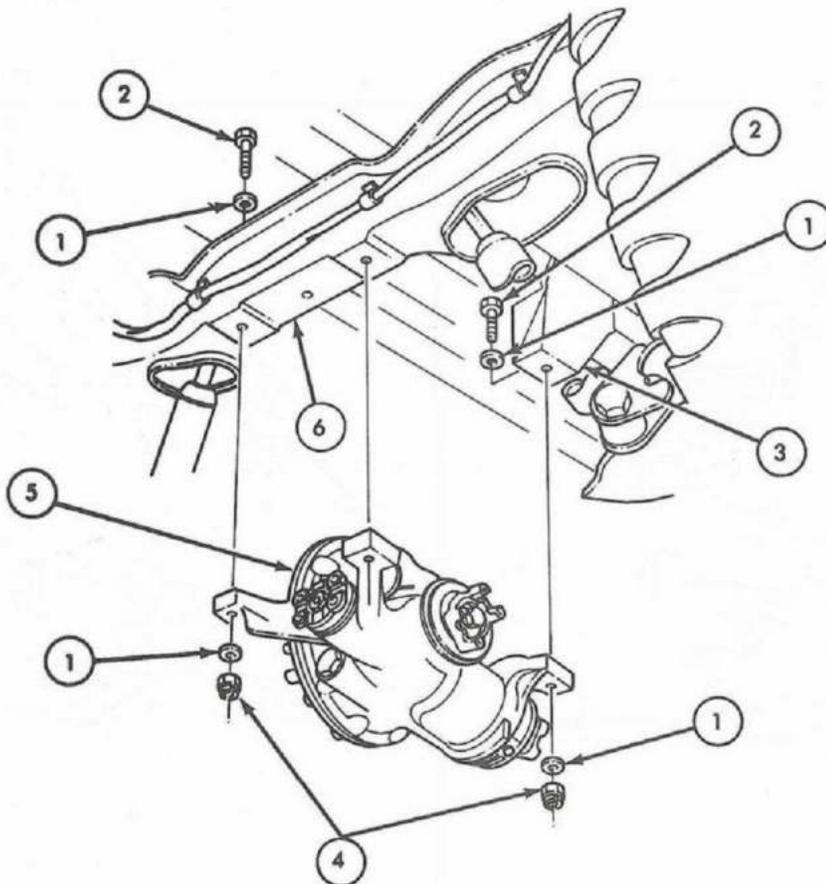
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

NOTE

- Step 15 is required for rear differential (5) only.
- Assistant will support differential (5) in place during step 15.

15.	Rear differential (5)	<p>a. Position to rear cross-member (6) and body bracket (3), and aline holes.</p> <p>b. Secure with three capscrews (2), six washers (1), and three locknuts (4).</p>	Tighten 35-45 lb-ft (47-61 N•m).
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TA 155466

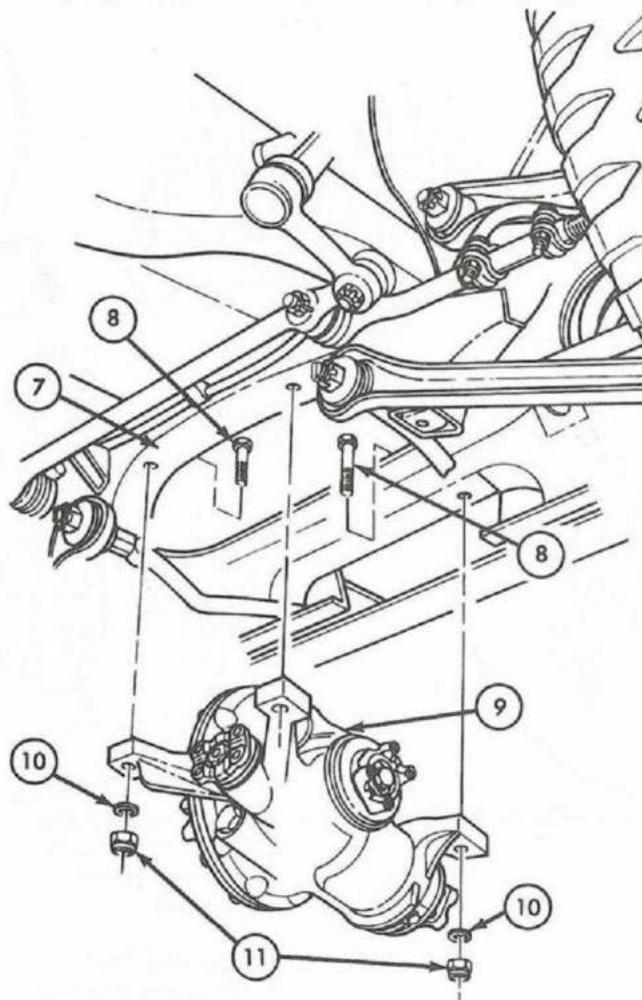
6-8. Differential Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

- Step 16 is required for front differential (9) only.
- Assistant will support differential (9) in place during step 16.

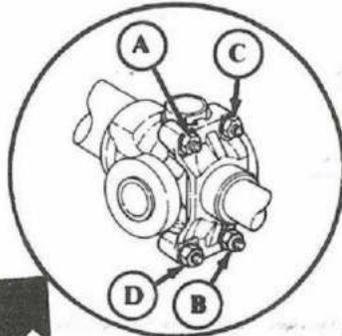
16.	Front differential (9)	<p>a. Position to front crossmember (7) and aline three holes.</p> <p>b. Secure with three capscrows (8), washers (10), and lock-nuts (11).</p>	Tighten 27-37 lb-ft (36-50 N•m).
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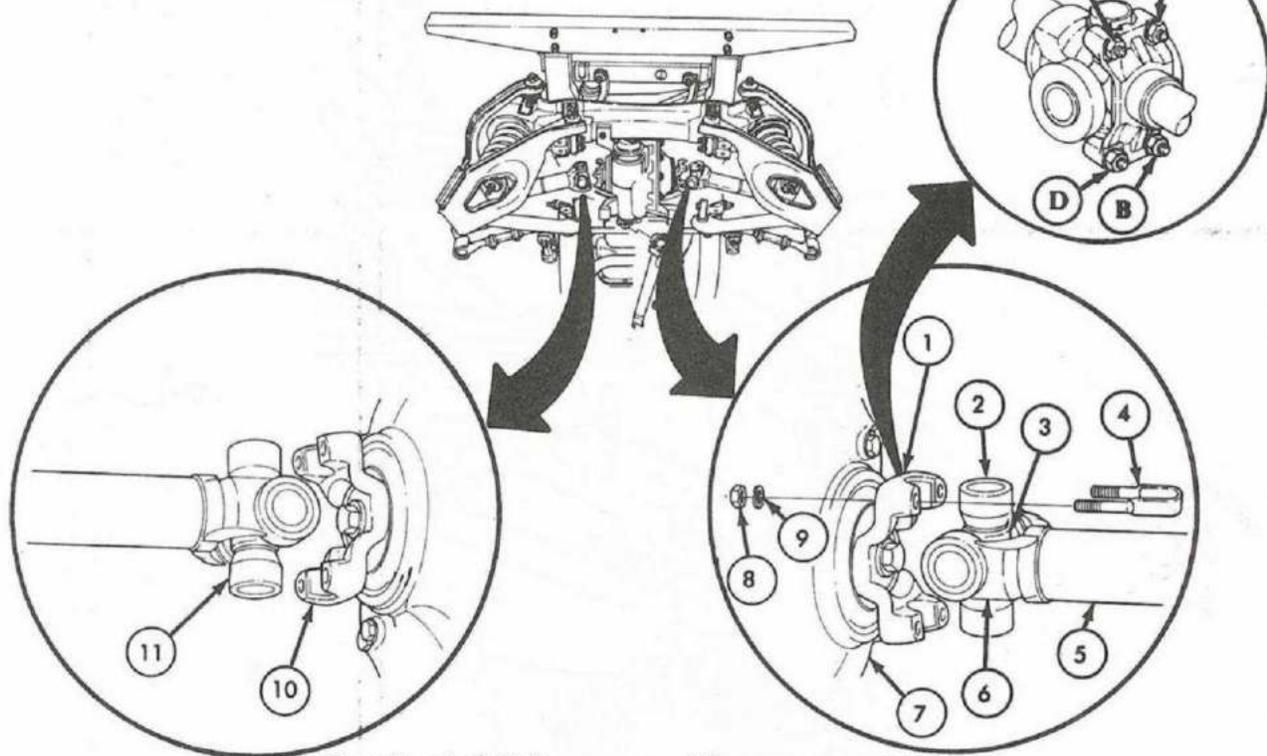
TA 155467

6-8. Differential Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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17.		L.H. shaft sleeve yoke universal joint (6)	<p>a. Slide sleeve yoke (5) toward differential (7) and place against side gear flange (1).</p> <p>b. Remove tape holding bearing races (2) to cross (3).</p> <p>c. Coat U-bolt (4) threads with sealing compound.</p> <p>d. Secure with two U-bolts (4), four lockwashers (9), and four nuts (8).</p>	<p>Tighten nuts (8) in sequence shown.</p> <p>U-BOLT NUT TIGHTENING SEQUENCE</p> 
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18.		R.H. shaft sleeve yoke universal joint (11)	Repeat step 17 to secure to R.H. side gear flange (10).	
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19.		Propeller shaft (14)	<p>a. Aline cross assembly (15) to four holes in differential pinion flange (16).</p> <p>b. Secure with four lockwashers (12) and capscrews (13).</p>	<p>Tighten 15-20 lb-ft (20-27 N•m).</p> <p>TA 484659</p>
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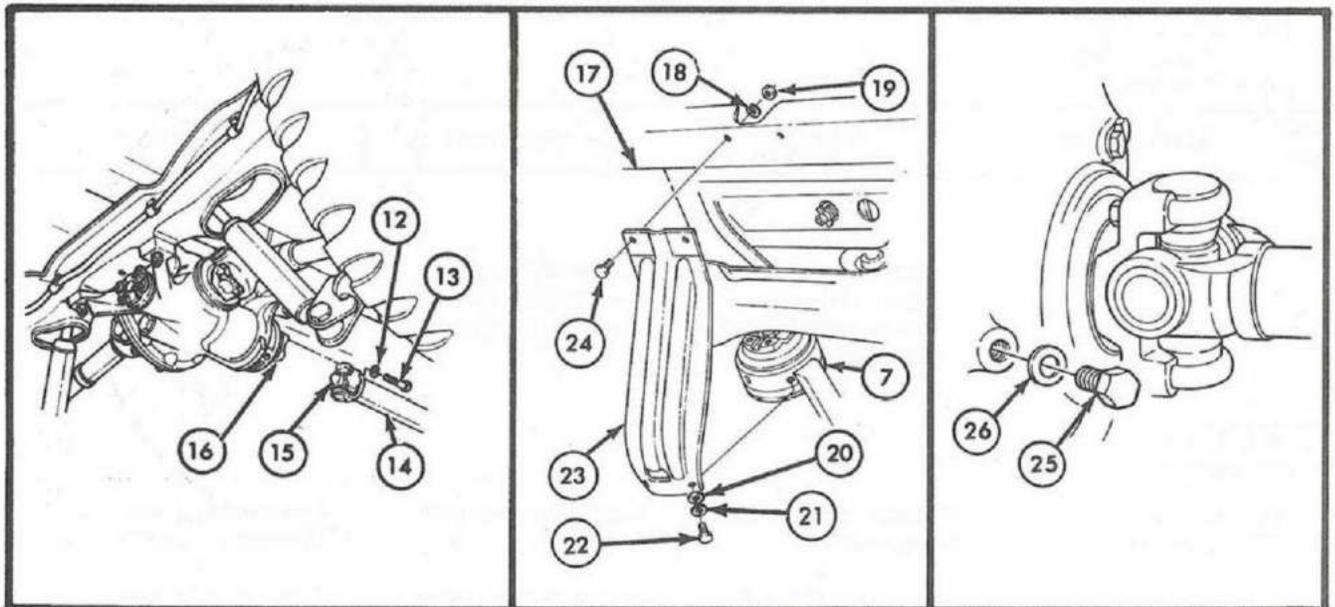
6-8. Differential Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Step 20 is required for front differential (7) only.

20.		Differential flange guard (23)	<p>a. Secure to underside of front bumper (17) with two bolts (24), lockwashers (18), and nuts (19).</p> <p>b. Secure to front differential (7) with two flat washers (20), lockwashers (21), and capscrews (22).</p>	
21.		Magnetic fill plug (25) and gasket (26)	Remove and fill with GO lubricating oil.	Discard gasket (26). See LO 9-2320-218-12.
22.		New gasket (26) and magnetic fill plug (25)	Install in differential (7) and secure.	Tighten 25-35 lb-ft (34-47 N•m).



END OF TASK!

- FOLLOW-ON TASKS:**
- Lower vehicle (para 3-24).
 - Road test (TM 9-2320-218-10) and check differential for proper operation. Some differential noise is normal. If noise level seems excessive, notify DS maintenance.

TA 155469

6-9. Differential Carrier Drive Pinion Flange and Seal Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10 Para 3-24	Parking brake set. Rear of vehicle raised and supported.

Test Equipment
None

Special Tools
Pinion seal replacer
Fabricated sleeve driver (see appendix E)

Special Environmental Conditions
None

Materials/Parts
Key washer
Sleeve and seal kit #5704848
Two gaskets
GAA grease
Compound sealer (NSN 8030-00-159-8176)
GO lubricating oil

Personnel Required
One mechanic

General Safety Instructions
None

Manual References
TM 9-2320-218-10
TM 9-2320-218-20P
LO 9-2320-218-12

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

There is a front and a rear pinion flange on each differential. This procedure covers removal and installation of pinion flanges on the rear differential.

a. REMOVAL

1.	Bottom rear of differential (6)	Magnetic drain plug (8) and gasket (7)	Remove and drain lubricant.	Use suitable container. Discard gasket (7).
2.		New gasket (7) and magnetic drain plug (8)	Install in differential (6) and secure.	Tighten 25-35 lb-ft (34-47 N•m).

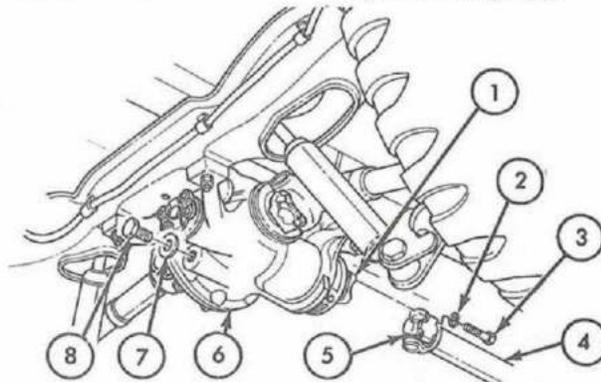
6-9. Differential Carrier Drive Pinion Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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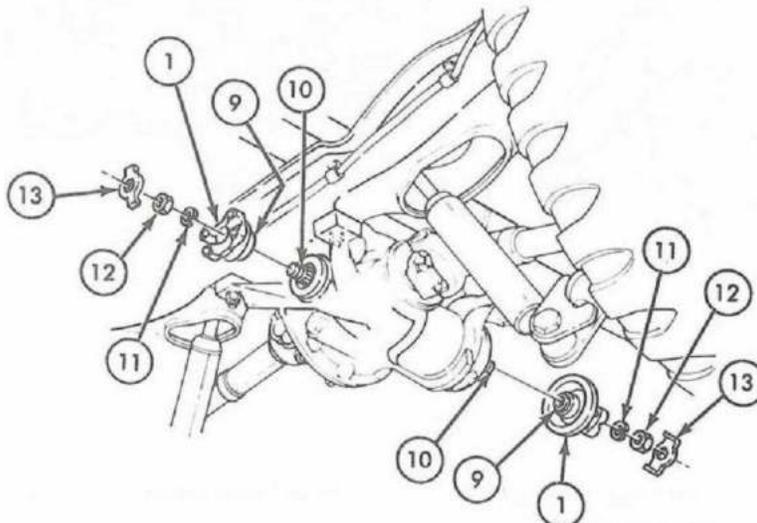
NOTE

Steps 3 and 4 are required for front pinion flange removal only.

- | | | | | |
|----|--|--|---|--|
| 3. | Propeller shaft cross assembly (5) to differential pinion flange (1) | Four capscrews (3) and lockwashers (2) | Remove. | |
| 4. | | Propeller shaft (4) | Remove from differential pinion flange (1). | |



- | | | | | |
|----|--|---------------------------------------|--------------------------------|--------------------------|
| 5. | Pinion flange (1) | Key washer (13) | Bend ends back and remove. | Discard key washer (13). |
| 6. | Pinion flange (1) to pinion shaft (10) | Nut (12) and washer (11) | Remove. | |
| 7. | | Pinion flange (1) and wear sleeve (9) | Remove from pinion shaft (10). | |



TA 155470

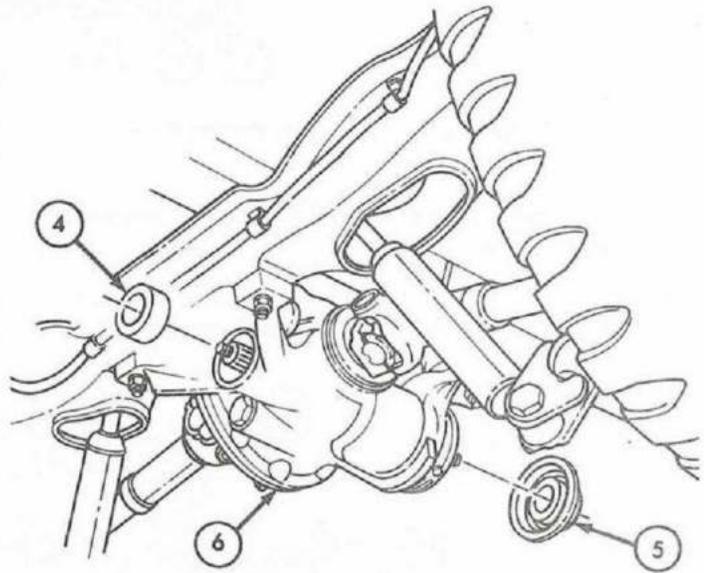
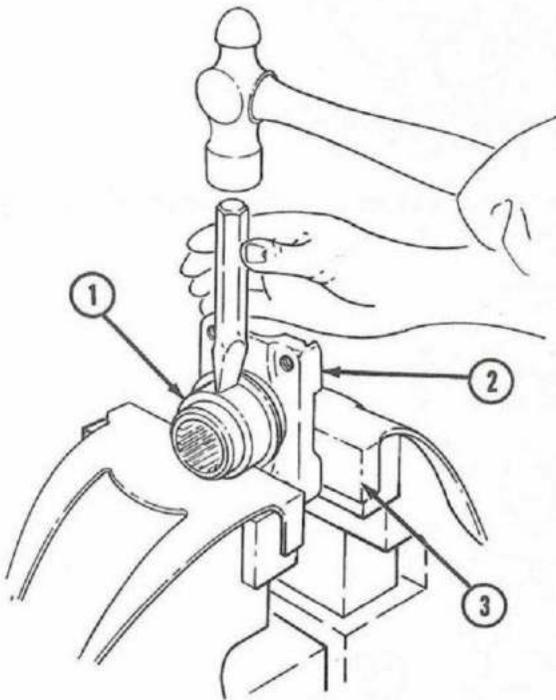
6-9. Differential Carrier Drive Pinion Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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CAUTION

Use care not to damage pinion flange (2) when placing in vise and when removing wear sleeve (1).

8.		Pinion flange (2)	Secure in bench vise (3).	
9.		Wear sleeve (1)	Split open and remove from pinion flange (2).	Use sharp chisel and hammer. Discard wear sleeve (1).



10. Differential (6)	Front seal (5) and rear seal (4)	Pry off to remove.	Discard seals (4) and (5).
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TA 484660

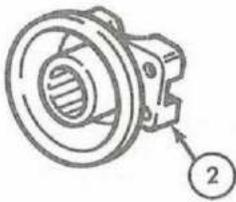
6-9. Differential Carrier Drive Pinion Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

11.

Pinion flange (2)



a. Inspect for scoring and roughness.

If scored or rough, smooth flange surface with fine file or crocus cloth.

b. Inspect for cracks, breaks, stripped threads, and worn splines.

Replace if cracked, broken, threads stripped, or splines worn.

c. INSTALLATION

CAUTION

Do not use hammer without block of wood on new sleeve. Damage to sleeve may result.

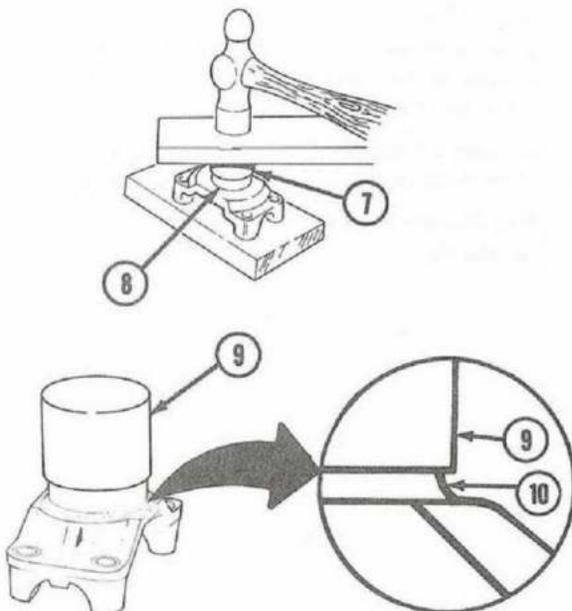
12.

New wear sleeve (7)

a. Position on each flange shaft (8).

b. Using block of wood and hammer, drive onto flange shaft (8) until flush with end of shaft (8).

c. Position fabricated tool (9) on wear sleeve (7) and tap tool (9) with hammer until tool (9) has bottomed on top of flange shaft (8) or sleeve (7) is positioned at start of radius (10).



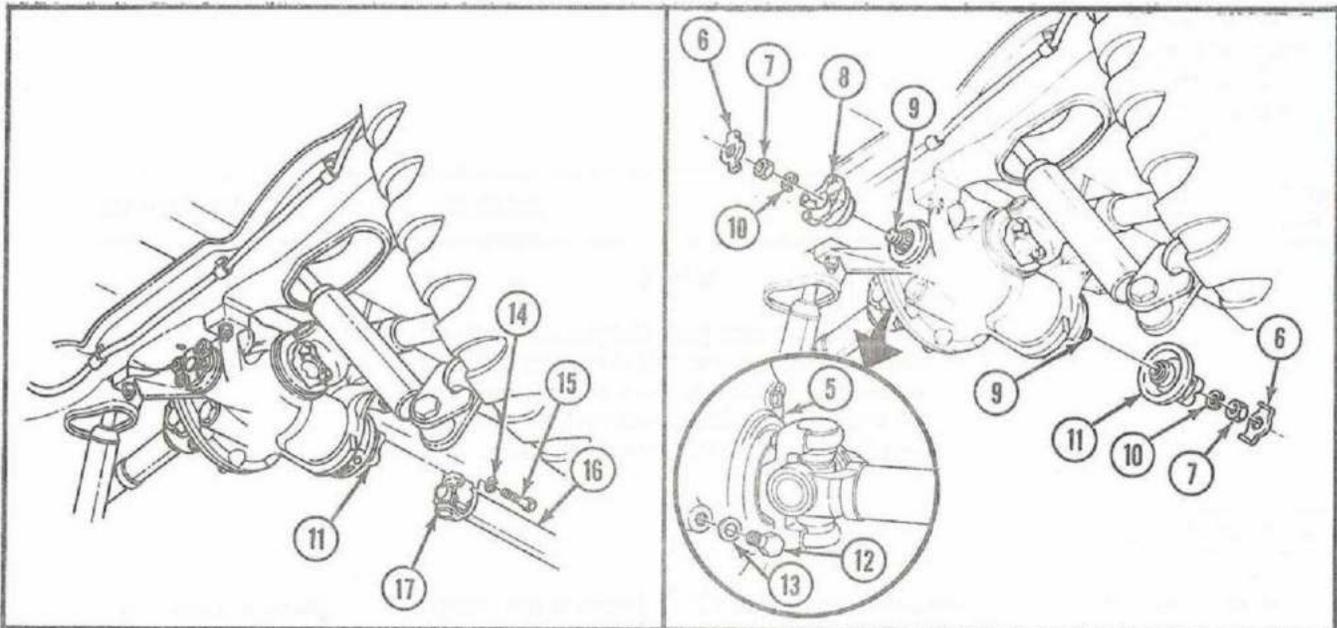
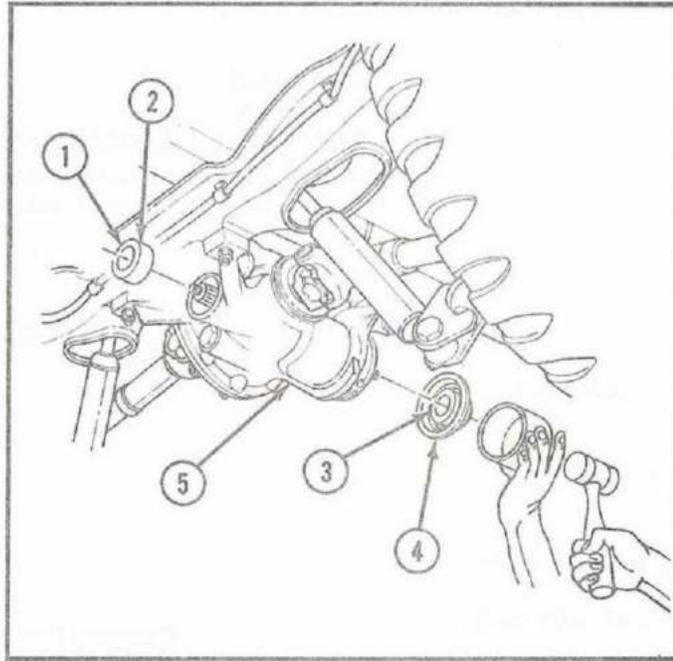
6-9. Differential Carrier Drive Pinion Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.		New front seal (4) and new rear seal (1)	<ul style="list-style-type: none"> a. Lubricate lips (3) with GAA grease. b. Coat sealing surface (2) with compound sealer. c. Install in differential (5). 	Use pinion seal replacer.
14.		Pinion flange (8) and pinion flange (11)	Install on pinion shaft (9) and secure each with washer (10) and nut (7).	<p>Tighten nut (7) securing pinion flange (11) 60-70 lb-ft (81-95 N•m).</p> <p>Tighten nut (7) securing pinion flange (8) 35-45 lb-ft (47-61 N•m).</p>
15.		New key washer (6)	Install on pinion flange nut (7) and bend ends down around flanges (8) and (11) to secure.	
NOTE				
Step 16 is required for front pinion flange installation only.				
16.		Propeller shaft (16)	<ul style="list-style-type: none"> a. Aline cross assembly (17) to four holes in differential pinion flange (11). b. Secure with four lockwashers (14) and capscrews (15). 	Tighten 15-20 lb-ft (20-27 N•m).
17.		Magnetic fill plug (12) and gasket (13)	Remove and fill with GO lubricating oil.	Discard gasket (13). See LO 9-2320-218-12.
18.		New gasket (13) and magnetic fill plug (12)	Install in differential (5) and secure.	Tighten 25-35 lb-ft (34-47 N•m).



6-9. Differential Carrier Drive Pinion Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 484662

END OF TASK!

FOLLOW-ON TASK: Replace differential carrier side gear flange wear sleeves and seals (para 6-10).

6-10. Differential Carrier Side Gear Flange and Seal Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Side gear seal replacer Fabricated sleeve driver (see appendix E)</p> <p><u>Materials/Parts</u> Sleeve and seal kit #5704848 Two gaskets GAA grease Compound sealer (NSN 8030-00-159-8176) GO lubricating oil Sealing compound (NSN 8030-01-025-1692)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P LO 9-2320-218-12</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u> Parking brake set. Rear of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

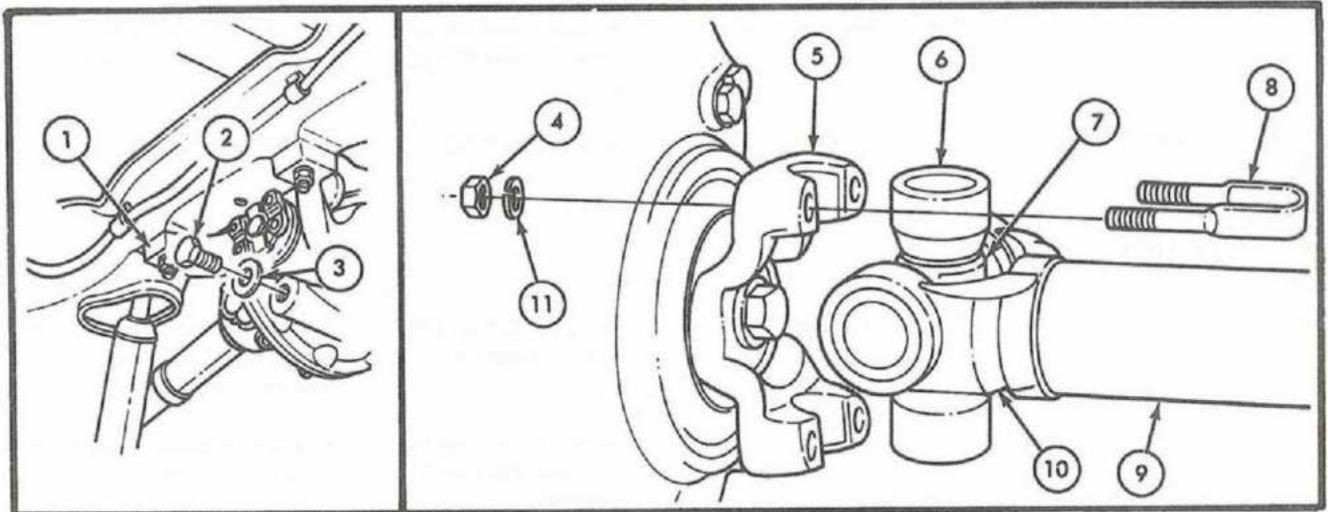
There are two side gear flanges and seals on each differential and all are removed and installed the same way. This procedure covers removal and installation of the R.H. side gear flange and seal on the rear differential.

a. REMOVAL

1.	Bottom rear of differential (1)	Magnetic drain plug (2) and gasket (3)	Remove and drain lubricant.	Discard gasket (3). Use suitable container.
2.		New gasket (3) and magnetic drain plug (2)	Install in differential (1) and secure.	Tighten 25-35 lb-ft (34-47 N•m). and secure.

6-10. Differential Carrier Side Gear Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Wheel drive shaft sleeve yoke universal joint (10) to side gear flange (5)	Four nuts (4), lock-washers (11), and two U-bolts (8)	Remove.	Tape loose U-joint bearing races (6) to keep from falling off cross (7).
4.	Wheel drive shaft sleeve yoke (9)	Wheel drive shaft sleeve yoke (9)	Slide toward wheel to separate universal joint (10) from side gear flange (5).	



5. Side gear flange (5) to differential side gear (12)

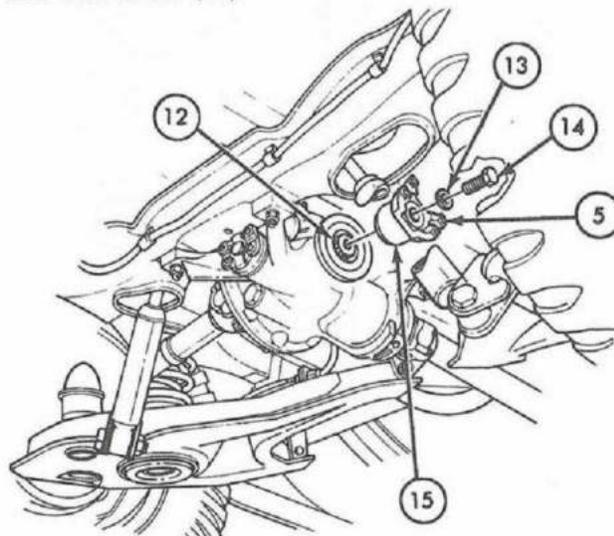
Capscrew (14) and lockwasher (13)

Remove.

6.

Side gear flange (5) and wear sleeve (15)

Pull from side gear (12).



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6-10. Differential Carrier Side Gear Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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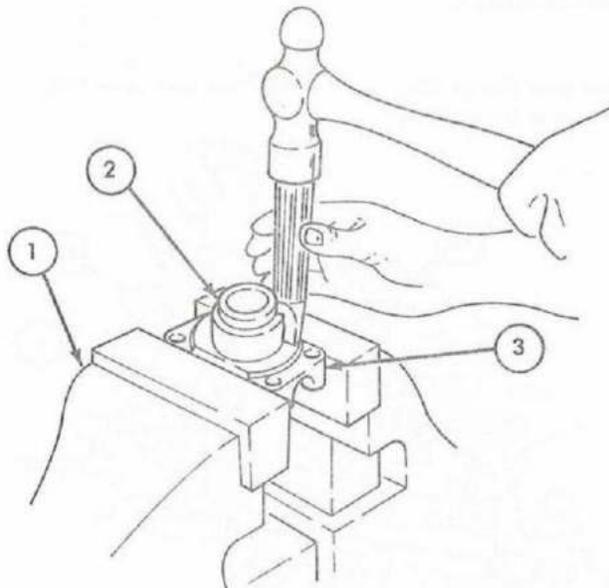
CAUTION

Use care not to damage side gear flange (3) when placing in vise and when removing wear sleeve (2).

7.		Side gear flange (3)	Secure in bench vise (1).	
8.		Wear sleeve (2)	Split open and remove from side gear flange (3).	Use sharp chisel and hammer. Discard wear sleeve (2).
9. Differential (4)		Side gear flange seal (5)	Pry off to remove.	Discard seal (5).

b. INSPECTION

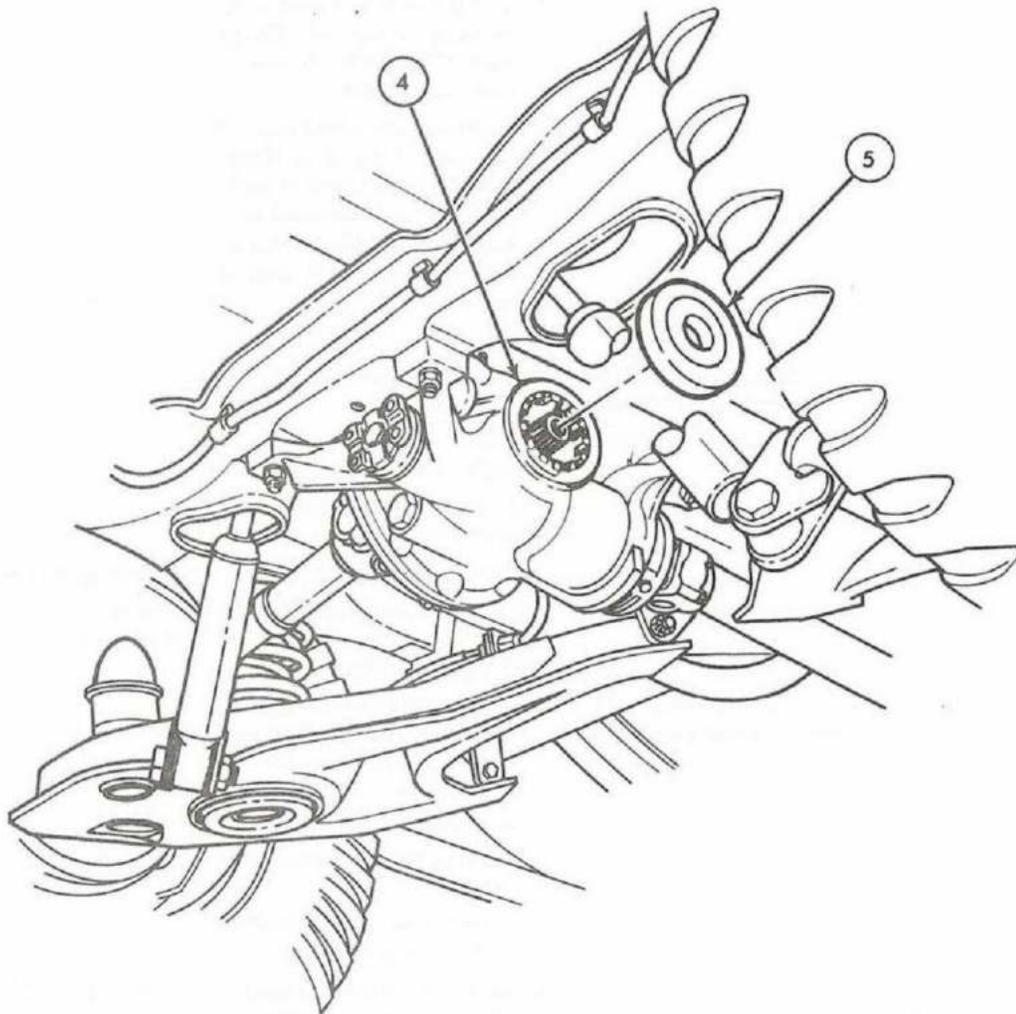
10.		Side gear flange (3)	<p>a. Inspect for scoring and roughness.</p> <p>b. Inspect for cracks, breaks, and worn splines.</p>	<p>If scored or rough, smooth flange surface with file or crocus cloth.</p> <p>Replace if cracked, broken, or splines worn.</p>
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TA 155475

6-10. Differential Carrier Side Gear Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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6-10. Differential Carrier Side Gear Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

CAUTION

Do not use hammer without block of wood on new sleeve. Damage to sleeve may result.

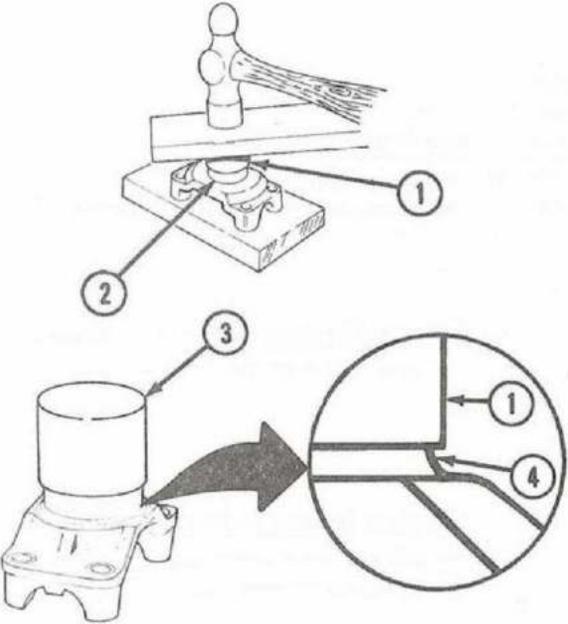
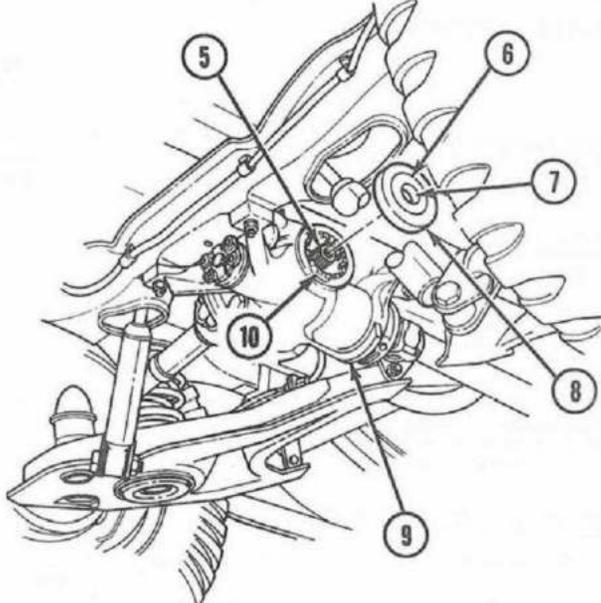
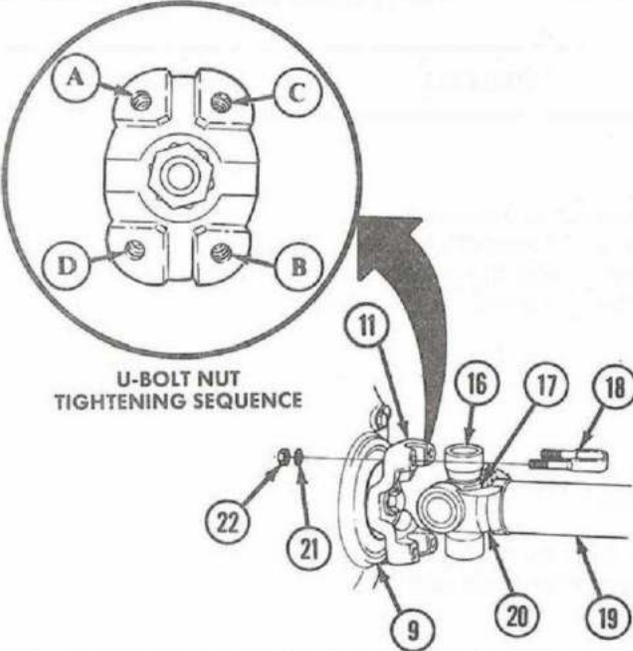
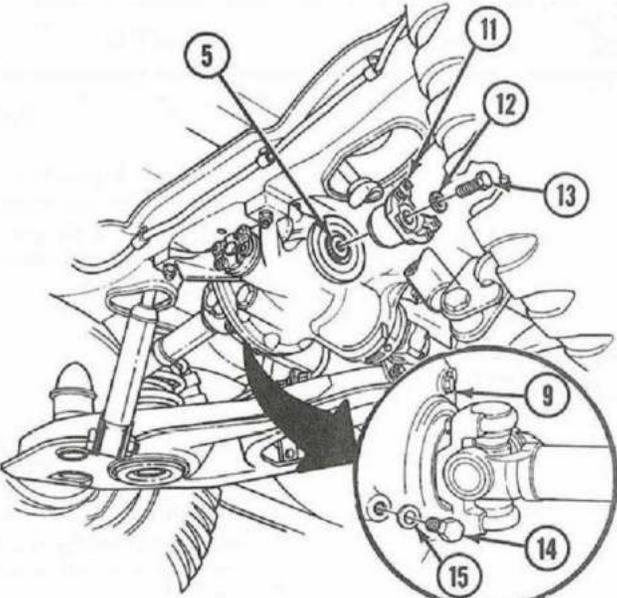
11.		New wear sleeve (1)	<ul style="list-style-type: none"> a. Position on flange shaft (2). b. Using block of wood and hammer, drive onto flange shaft (2) until flush with end of shaft (2). c. Position fabricated tool (3) on wear sleeve (1) and tap tool (3) with hammer until tool (3) has bottomed on top of flange (2), or sleeve (1) is positioned at start of radius (4). 	
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NOTE

Make sure that adjusting nut lock (10) is in place in differential (9) before installing seal (6).

12.		New side gear flange seal (6)	<ul style="list-style-type: none"> a. Lubricate lips (7) with GAA grease. b. Coat sealing surface (8) with compound sealer. c. Install in differential (9). 	Use side gear seal replacer.
13.		Side gear flange (11)	Install over side gear (5) and secure with lockwasher (12) and capscrew (13).	Tighten 40-45 lb-ft (54-61 N•m).
14		Wheel drive shaft sleeve yoke universal joint (20)	<ul style="list-style-type: none"> a. Slide sleeve yoke (19) toward differential (9) and place against side gear flange (11). b. Remove tape holding bearing races (16) to cross (17). c. Coat U-bolt (18) threads with sealing compound. d. Secure with two U-bolts (18), four lockwashers (21), and four nuts (22). 	Tighten nuts (22) in sequence shown.
15.	Left side of differential (9)	Magnetic fill plug (14) and gasket (15)	Remove and fill with GO lubricating oil.	Discard gasket (15). See LO 9-2320-218-12.

6-10. Differential Carrier Side Gear Flange and Seal Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				
	 <p data-bbox="267 1438 527 1480">U-BOLT NUT TIGHTENING SEQUENCE</p>			
				

TA 484663

END OF TASK!

- FOLLOW-ON TASKS:
- Lower vehicle (para 3-24).
 - Road test (TM 9-2320-218-10) and check for binding or oil leakage at side gear and pinion flanges.

6-11. Differential Breather Valve Maintenance

This task covers:

- | | |
|--------------------|------------------------|
| <i>a. Removal</i> | <i>c. Inspection</i> |
| <i>b. Cleaning</i> | <i>d. Installation</i> |

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Drycleaning solvent</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u></p> <p>TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u></p> <p>Parking brake set. Rear of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u></p> <p>Clean, well-ventilated work area.</p> <p><u>General Safety Instructions</u></p> <ul style="list-style-type: none"> • Always wear safety goggles when using compressed air. • Keep fire extinguisher nearby when using drycleaning solvent.
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

There is a breather valve on each differential. Both valves are removed and installed the same way. This procedure covers the rear differential breather valve removal and installation.

a. REMOVAL

CAUTION

Thoroughly clean area around breather valve before removing. Damage to differential will result if dirt enters lubricant.

- | | | |
|----------------------------|--------------------|---------------------|
| 1. Top of differential (2) | Breather valve (1) | Unscrew and remove. |
|----------------------------|--------------------|---------------------|

6-11. Differential Breather Valve Maintenance (Cont'd)

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

WARNING

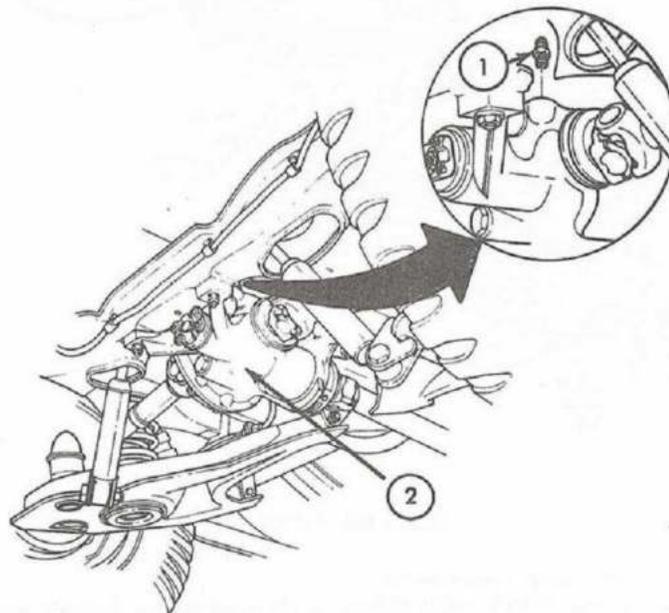
- Compressed air source will not exceed 30 psi. When cleaning with compressed air, eyeshields must be worn. Failure to wear eyeshields may result in injury to the eyes and loss of sight.
- Drycleaning solvent is flammable and will not be used near an open flame. A fire extinguisher will be kept nearby when the solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and/or damage to equipment.

2.

Breather valve (1)

Clean as follows:

- a. Completely immerse in drycleaning solvent.
- b. Blow out remaining dirt with compressed air.



6-11. Differential Breather Valve Maintenance (Cont'd)

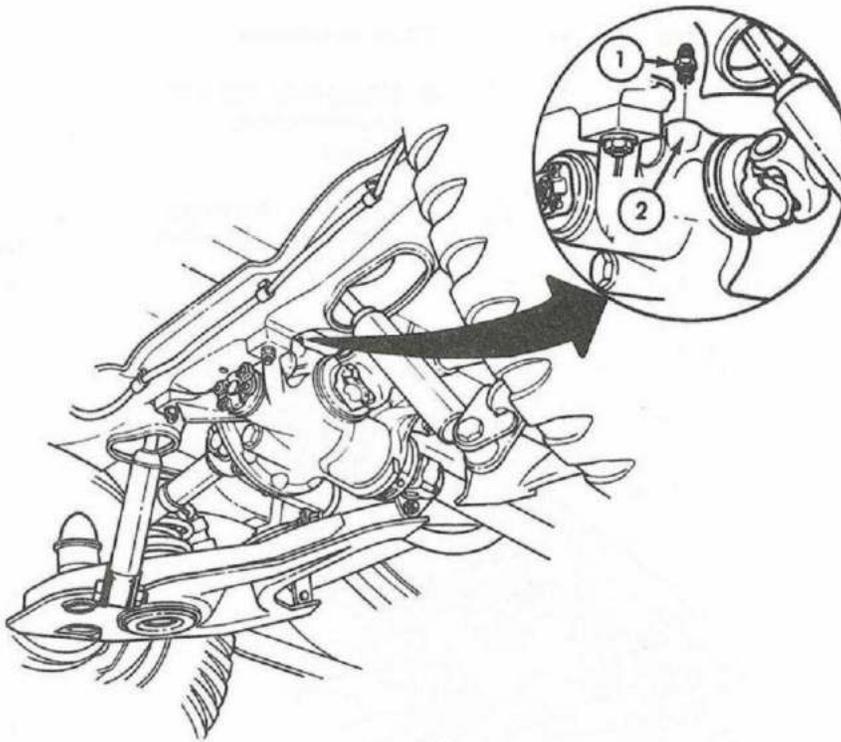
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSPECTION

3.		Breather valve (1)	Inspect as follows:	
			a. Inspect for cracks, breaks, and stripped threads.	Replace if cracked, broken, or threads stripped.
			b. Shake and listen for rattling noise.	Replace if no rattling noise is heard.

d. INSTALLATION

4.		Breather valve (1)	Screw into differential (2) and tighten.	Do not overtighten.
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END OF TASK!

- FOLLOW-ON TASKS:**
- Lower vehicle (para 3-24).
 - Road test (TM 9-2320-218-10) and check for oil leakage at breather valve.

TA 155479

6-12. Wheel Drive Shaft Maintenance

This task covers:

- a. Removal
- b. Inspection

- c. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
Para 3-24

Condition Description

Parking brake set.
Front of vehicle raised and supported.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

Sealing compound (NSN 8030-01-025-1692)

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P
LO 9-2320-218-12

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

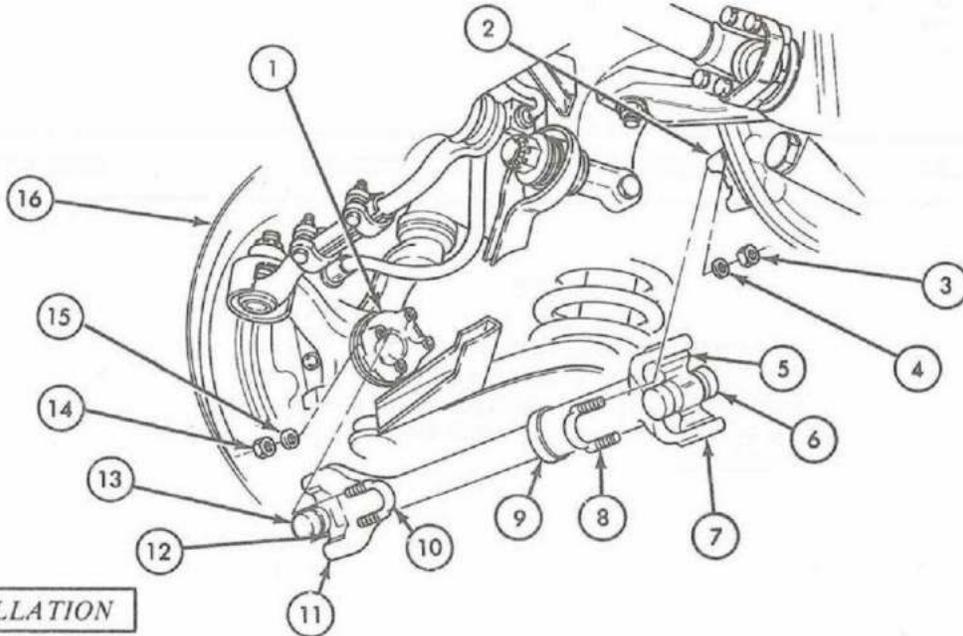
There is a wheel drive shaft for each wheel. All four wheel drive shafts are removed and installed the same way. This procedure covers the left front wheel drive shaft removal and installation.

6-12. Wheel Drive Shaft Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
a. REMOVAL				
1.	Wheel drive shaft universal joint (11) to wheel drive yoke flange (1)	Four nuts (14), lock-washers (15), and two U-bolts (10)	Remove.	Tape loose U-joint bearing races (13) to keep from falling off cross (12).
2.	Shaft sleeve yoke universal joint (7) to differential side gear flange (2)	Four nuts (3), lock-washers (4), and two U-bolts (8)	Remove.	Tape loose U-joint bearing races (6) to keep from falling off cross (5).
3.		Wheel drive shaft (9)	Slide shaft sleeve yoke (9) toward wheel (16) and remove.	

b. INSPECTION

4.	Wheel drive shaft (9)	Inspect for cracks, dents, and wear.	Replace if cracked, dented, or worn.
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c. INSTALLATION

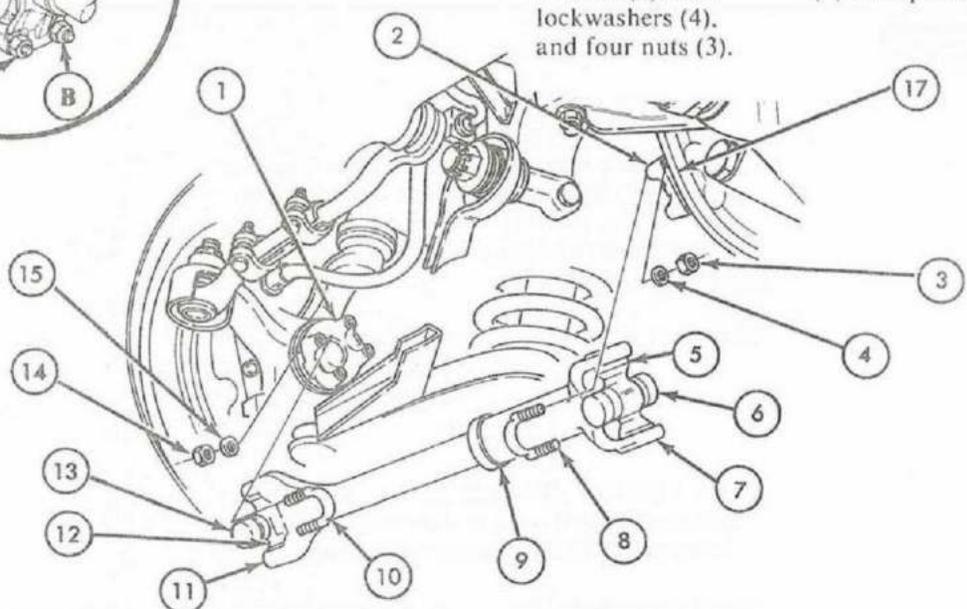
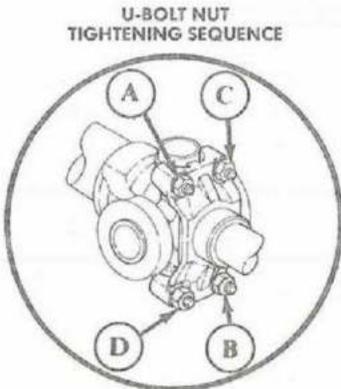
NOTE

- Shaft yoke sleeve (9) must be towards differential (17) during installation.
- Lubricate shaft and U-joints in accordance with LO 9-2320-218-12.

TA 155480

6-12. Wheel Drive Shaft Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Wheel drive shaft universal joint (11)	<ol style="list-style-type: none"> Position to wheel drive yoke flange (1). Remove tape holding bearing races (13) to cross (12). Coat U-bolt (10) threads with sealing compound. Secure with two U-bolts (10), four lockwashers (15), and four nuts (14). 	Tighten U-bolt nuts (14) in sequence shown.
6.		Shaft sleeve yoke universal joint (7)	<ol style="list-style-type: none"> Slide sleeve yoke (9) toward differential (17) and place against side gear flange (2). Remove tape holding bearing races (6) to cross (5). Coat U-bolt (8) threads with sealing compound. Secure with two U-bolts (8), four lockwashers (4), and four nuts (3). 	Tighten U-bolt nuts (3) in sequence shown.



END OF TASK!

- FOLLOW-ON TASKS:**
- Lower vehicle (para 3-24).
 - Road test (TM 9-2320-218-10) and check for proper operation.

TA 484664

6-13. Wheel Drive Shaft Universal Joint Maintenance

This task covers:

- | | |
|-----------------------|-----------------------|
| <i>a. Disassembly</i> | <i>c. Lubrication</i> |
| <i>b. Inspection</i> | <i>d. Reassembly</i> |

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para 6-12	Wheel drive shaft removed.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		
GAA grease		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-20P LO 9-2320-218-12		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. DISASSEMBLY

CAUTION

Do not drop bearing races. Needle bearings inside are very small and can be easily lost.

- | | | |
|--------------|--|--|
| 1. Cross (3) | Two loose bearing races (1) and grease seals (2) | Remove. |
| 2. Yoke (5) | Two snap rings (7) | Remove from groove of bearing races (4) and (6). |

NOTE

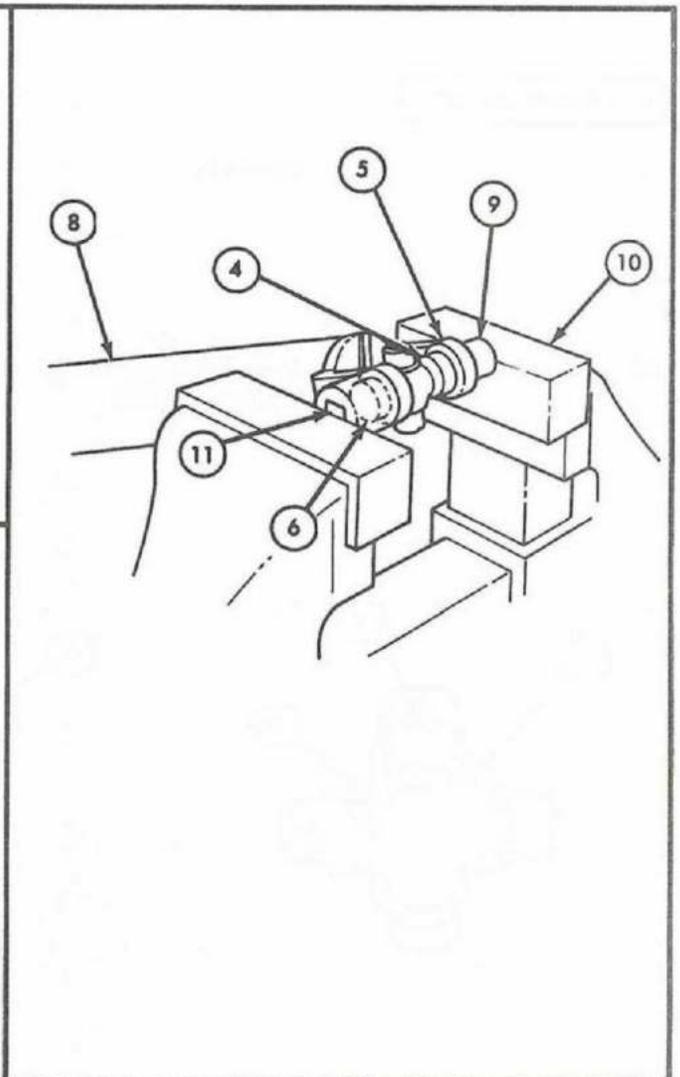
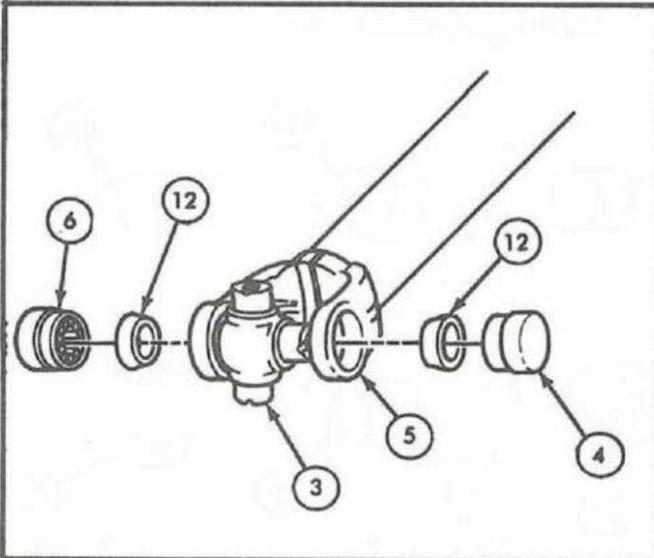
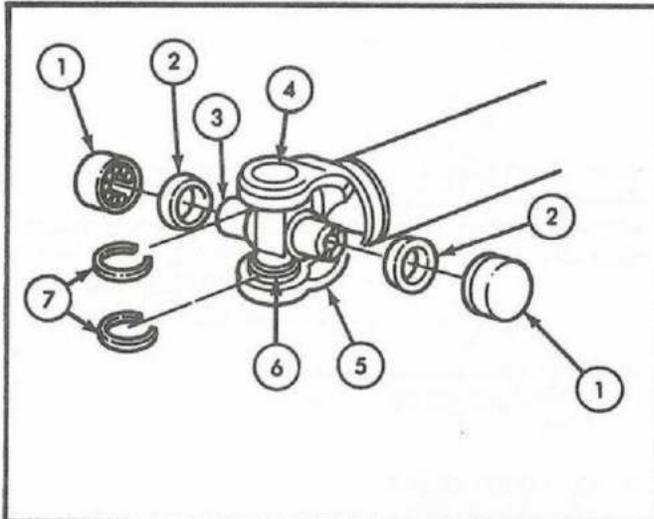
An 11/16 in. (17 mm) socket, a 1-1/8 in. (28 mm) socket, and a vise will be used to remove two bearing races from yoke.

- | | | | |
|----|-----------------------|---|---|
| 3. | Wheel drive shaft (8) | <i>a.</i> Position in vise (10) with 1-1/8 in. (28 mm) socket (11) between vise jaw and bearing race (6) being removed. | Make sure open end of socket (11) is facing bearing race (6). |
|----|-----------------------|---|---|

6-13. Wheel Drive Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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			<p>b. Place 11/16 in. (17 mm) socket (9) between opposite bearing race (4) and vise jaw.</p> <p>c. Close vise (10) until bearing race is pressed out of yoke (5).</p>	<p>Make sure open end of socket (9) is facing vise jaw.</p>
4.	Cross (3)	Two bearing races (4) and (6) and grease seals (12)	Remove.	
5.	Yoke (5)	Cross (3)	Remove.	



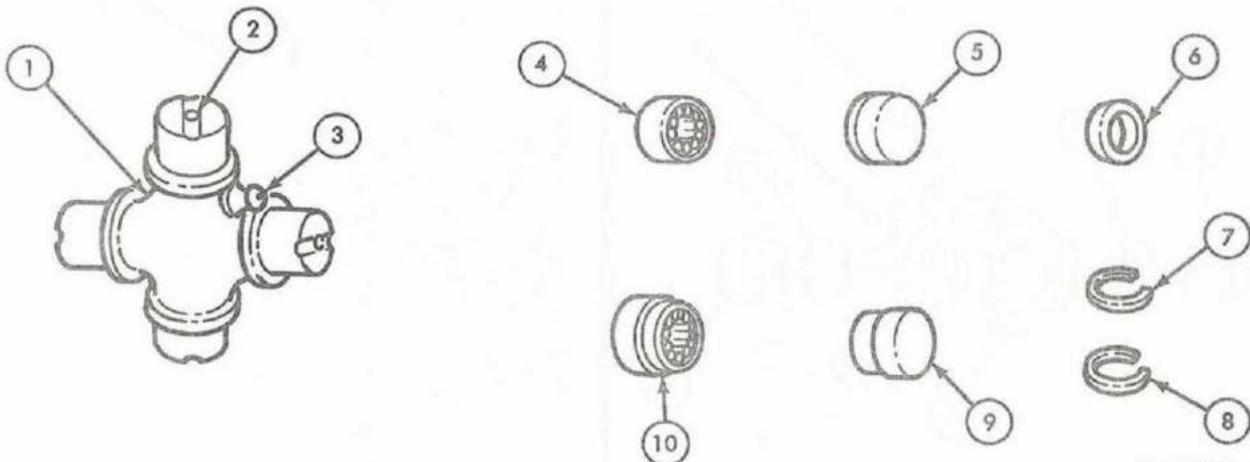
TA 155482

6-13. Wheel Drive Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
b. INSPECTION				
6.		Four bearing races (4), (5), (9), and (10), seals (6), and two snap rings (7) and (8)	Inspect for splits, cracks, breaks, wear, and missing or broken needle bearings.	If split, cracked, broken, worn, or needle bearings are missing or broken, replace with U-joint parts kit.
7.		Cross (1)	Inspect for score marks, cracks, breaks, and wear.	If cracked, broken, worn, or score marked, replace with U-joint parts kit.
8.		Grease fitting (3)	Inspect for cracks, breaks, and wear.	Replace if cracked, broken, or worn. (See para 6-14.)

c. LUBRICATION

9.		Cross (1)	Insert GAA grease through grease fitting (3) until it oozes out at ends of cross (1).	Grease restrictor plugs (2) may partially pop out from ends of cross (1). If this occurs, push plugs (2) in until flush with ends of cross (1).
10.		Four bearing races (4), (5), (9), and (10)	<p>a. Place small amount of GAA grease in each.</p> <p>b. Coat outer surface of each with thin layer of GAA grease.</p>	



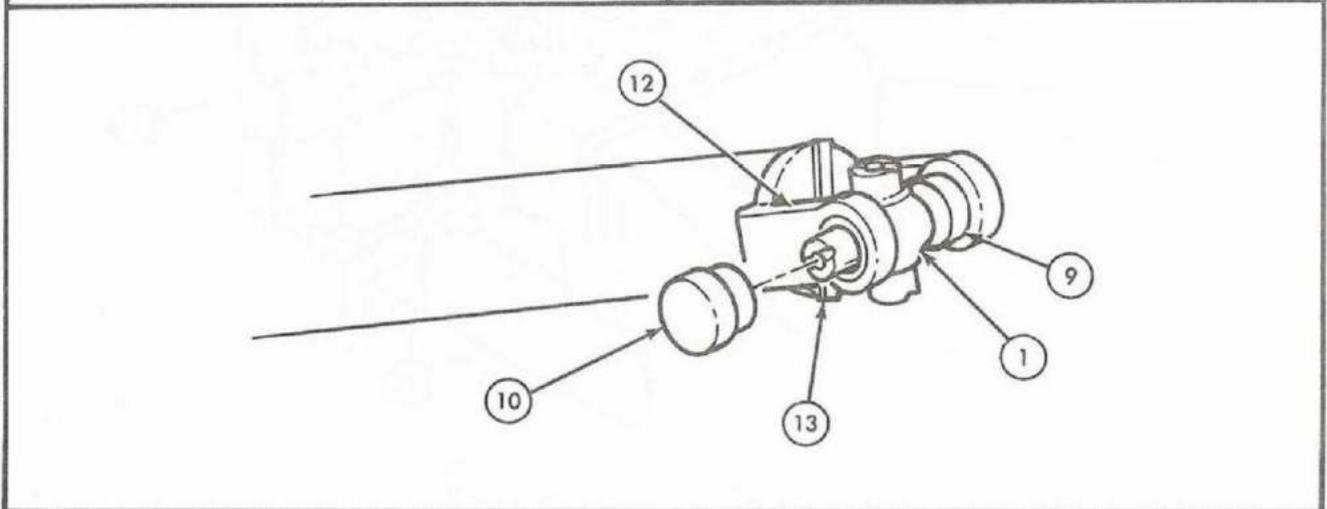
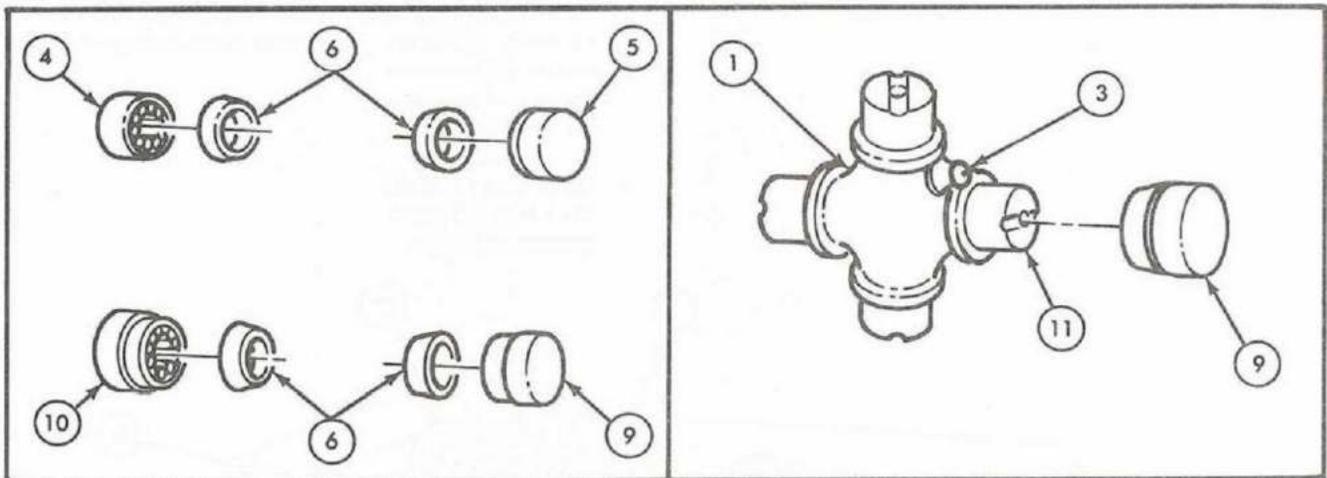
TA 155483

6-13. Wheel Drive Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. REASSEMBLY

11.		Four grease seals (6)	Install on four bearing races (4), (5), (9), and (10).	
12.		Bearing race (9)	Install on cross trunnion (11) with grease fitting (3).	
13.		Cross (1)	Place in yoke (12) so bearing race (9) is alined with inside of yoke eye.	Make sure grease fitting (3) is at same angle as grease fitting on opposite U-joint.
14.		Bearing race (10)	Place on opposite cross trunnion (13).	



TA 155484

6-13. Wheel Drive Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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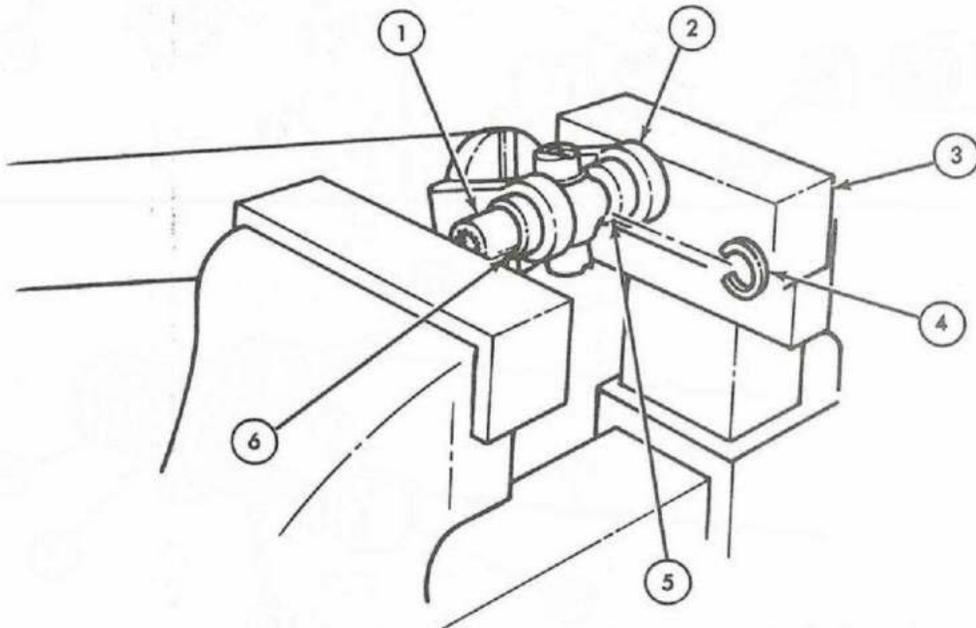
CAUTION

Make sure inner bearing race (5) is perfectly alined with yoke eye before pressing in with vise. Damage to cross and bearing races will result if forced into yoke while not alined.

- | | | | |
|-----|---------------|--|--|
| 15. | Yoke (2) | a. Place in vise (3) and close to start bearing races (5) and (6) into yoke eyes.

b. Remove from vise (3). | Do not press bearing races (5) and (6) in all the way. |
| 16. | Snap ring (4) | Install on inner bearing race (5). | |
| 17. | Yoke (2) | a. Place in vise (3) with 11/16-in. (17 mm) socket (1) between outer bearing race (6) and vise jaw.

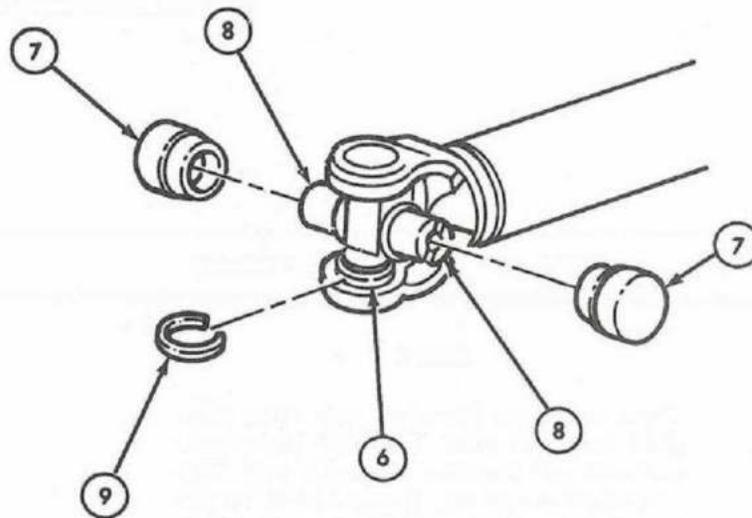
b. Close vise (3) until snap ring (4) seats against yoke eye. | Make sure open end of socket (1) is facing vise jaw. |



TA 155485

6-13. Wheel Drive Shaft Universal Joint Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
18.		Snap ring (9)	Install on bearing race (6).	
19.		Two loose bearing races (7)	Install one on each open cross trunnion (8).	



END OF TASK!

- FOLLOW-ON TASKS:**
- Check U-joint for binding. If binding is evident, use drift punch and tap on inner shoulder of cross. If binding is still evident, repeat procedure with new U-joint.
 - Install wheel driveshaft (para 6-12).

TA 155486

6-14. Wheel Drive Shaft Universal Joint Grease Fitting Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Grease fitting</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P LO 9-2320-218-i2</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u> Parking brake set. Front of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

There is a grease fitting on each wheel drive shaft universal joint. All eight fittings are removed and installed the same way. This procedure covers the grease fitting on the front left wheel drive shaft universal joint.

a. REMOVAL

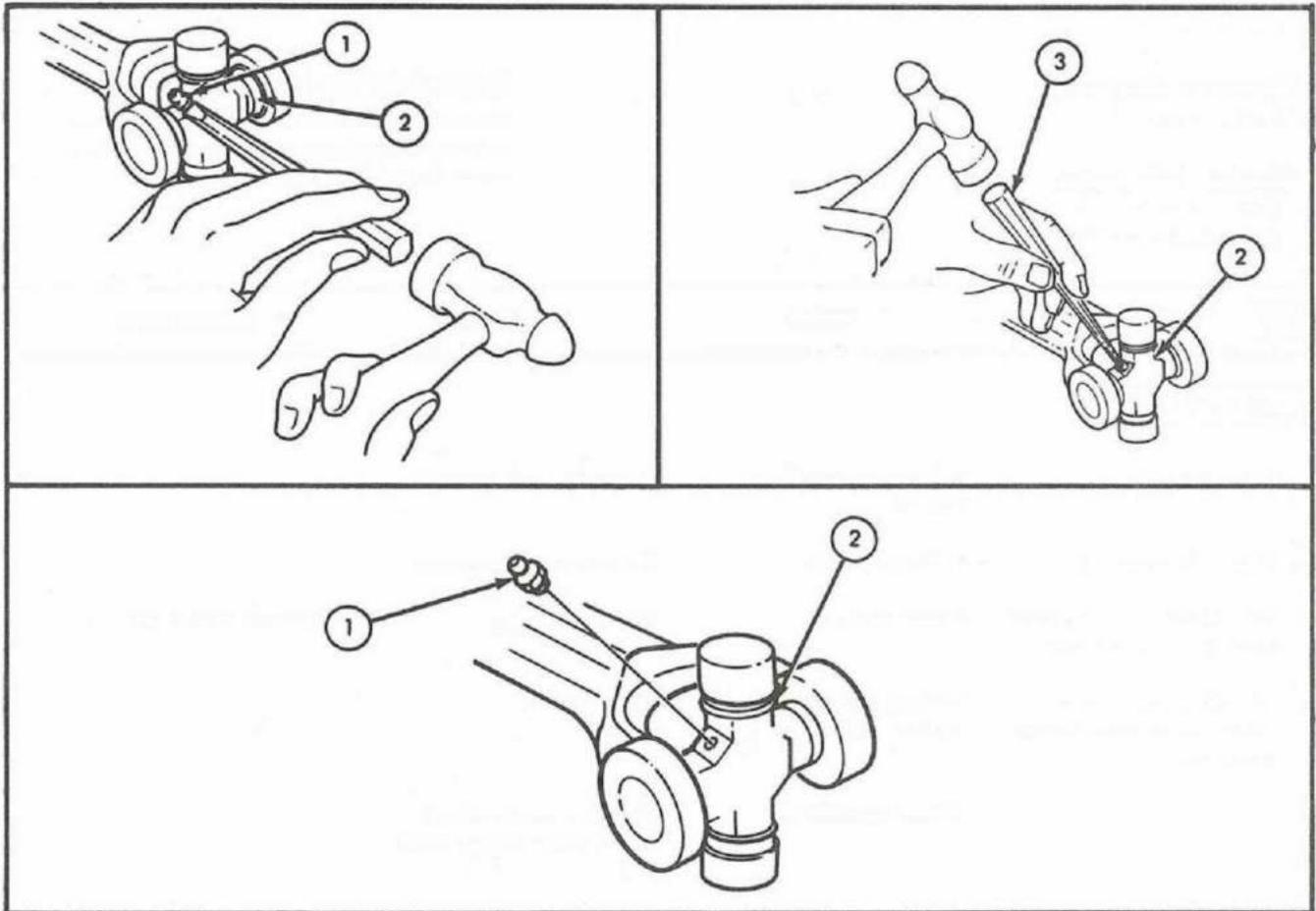
1.	Grease fitting (1)	Break off flush with universal joint cross (2).	Discard grease fitting (1).
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6-14. Wheel Drive Shaft Universal Joint Grease Fitting Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

2.			Drive existing piece of shank down into cross (2) approximately 1/32 in. (.79 mm).	Use narrow drift (3) and hammer.
3.		New grease fitting (1)	Drive into cross (2) on top of old shank.	Use 9/32 in. (7 mm) socket with extension on squared portion of fitting (1). Lubricate as necessary. (See LO 9-2320-218-12.)



END OF TASK!

FOLLOW-ON TASK: Lower vehicle (see para 3-24).

TA 155487

6-15. Wheel Spindle Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Cotter pin</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 9-6</p>	<p><u>Condition Description</u> Parking brake set. Brakedrum removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> Do not reuse wheel spindle cotter pin or substitute with any cotter pin other than NSN 5315-00-011-9120.</p>
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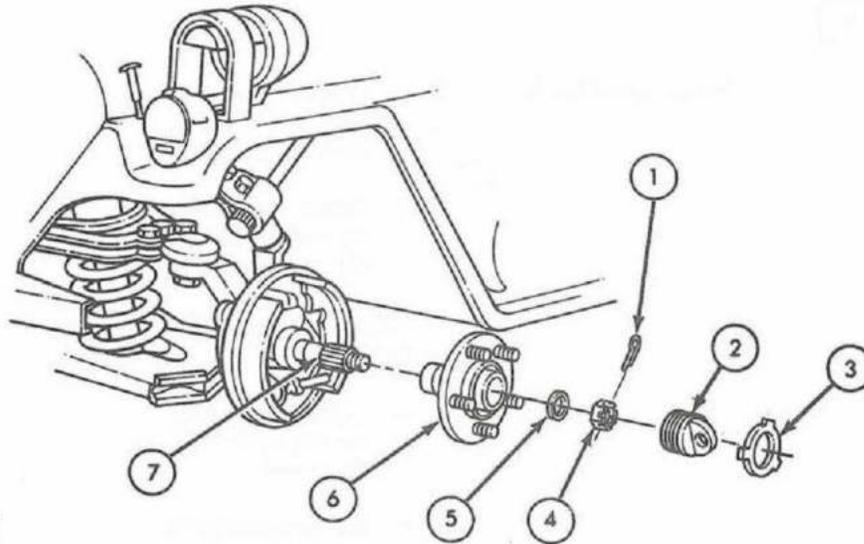
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Lifting eye (2)	Lifting eye retainer nut (3)	Unscrew and remove.	
2.	Wheel spindle (6)	Lifting eye (2)	Unscrew and remove.	
3.	Wheel drive yoke flange shaft (7) and nut (4)	Cotter pin (1)	Remove.	Discard cotter pin (1).
4.	Wheel spindle (6) to wheel drive yoke flange shaft (7)	Slotted nut (4) and washer (5)	Remove.	
5.		Wheel spindle (6)	Remove from wheel drive yoke flange shaft (7).	

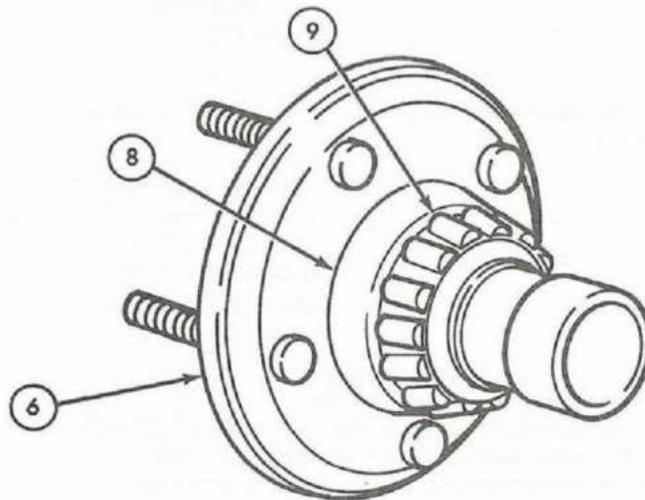
6-15. Wheel Spindle Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

6.		Wear sleeve (8) and bearing (9)	Inspect for cracks, breaks, wear, score marks, pitting, and lubrication.	Replace if cracked, broken, worn, score marked, pitted, or no evidence of lubrication. (See para 9-5.)
7.		Wheel spindle (6)	Inspect for cracks, breaks, dents, wear, and stripped threads.	If cracked, broken, worn, or threads stripped, replace spindle (6). Items in step 6 must also be replaced when spindle (6) is replaced. (See para 9-5.)



TA 155488

6-15. Wheel Spindle Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

8.		Wheel spindle (7)	<ul style="list-style-type: none"> a. Place over wheel drive yoke flange shaft (1). b. Secure with washer (6) and slotted nut (5). 	
9.			<p>Adjust wheel bearing as follows:</p> <ul style="list-style-type: none"> a. Tighten adjusting nut (5) to 30 lb-ft (41 N•m). b. Rotate spindle (7) three complete rotations. c. Recheck torque. If not 30 lb-ft (41 N•m), tighten. d. Repeat <i>b</i> and <i>c</i> above until torque can be maintained, seating bearings. e. Back adjusting nut (5) off 1/8 turn without moving spindle (7). 	

NOTE

The wheel drive yoke flange shaft (1) has two holes for cotter pin.

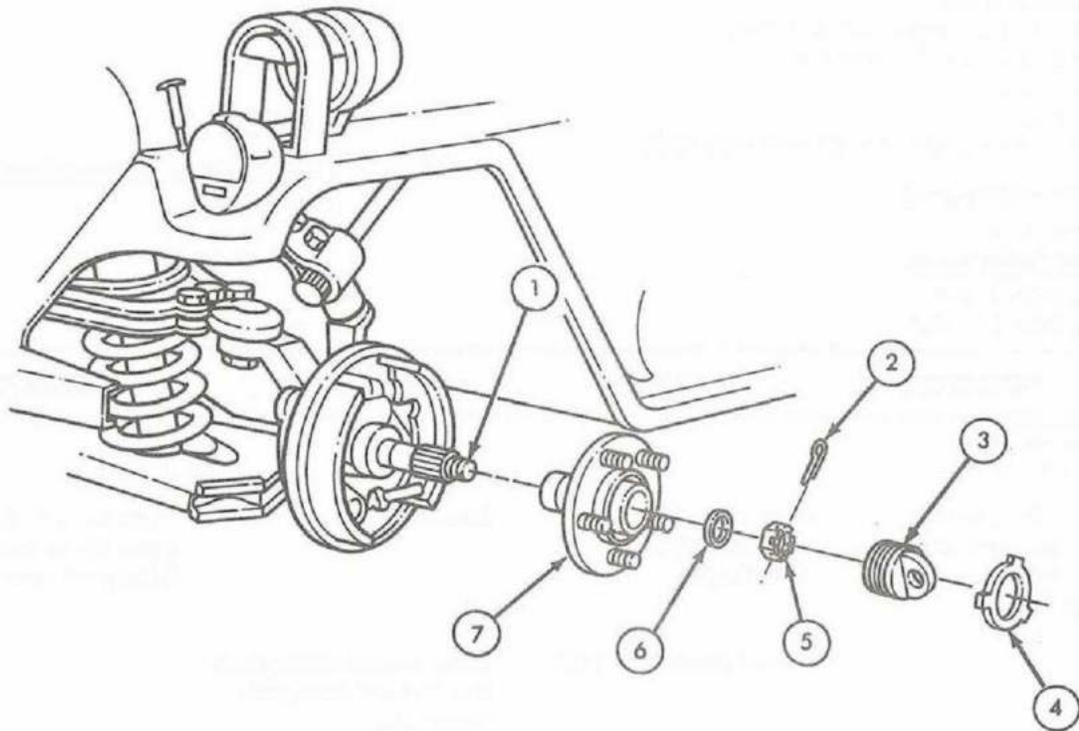
- f. If slots in adjusting nut (5) do not align with either hole, back off nut (5) slightly to align.

WARNING

Do not reuse wheel spindle cotter pin or substitute with any cotter pin other than NSN 5315-00-011-9120. Failure to use correct new cotter pin may result in wheel assembly falling off vehicle during operation, causing injury to personnel.

6-15. Wheel Spindle Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			g. Secure with new cotter pin (2).	
10.		Lifting eye (3)	Screw into wheel spindle (7).	
11.		Lifting eye retainer nut (4)	Screw onto lifting eye (3).	



END OF TASK!

- FOLLOW-ON TASKS:
- Install brakedrum. (See para 9-6.)
 - Road test (TM 9-2320-218-10) and check wheel spindle for proper operation.

TA 484665

6-16. Wheel Drive Yoke Flange Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Steel tube 4.25 inches (108 mm) long with 2.25 inches (57 mm) I.D. GAA grease Wear sleeve Sealing compound (NSN 8030-01-025-1692)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 6-15</p>	<p><u>Condition Description</u> Parking brake set. Wheel spindle removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

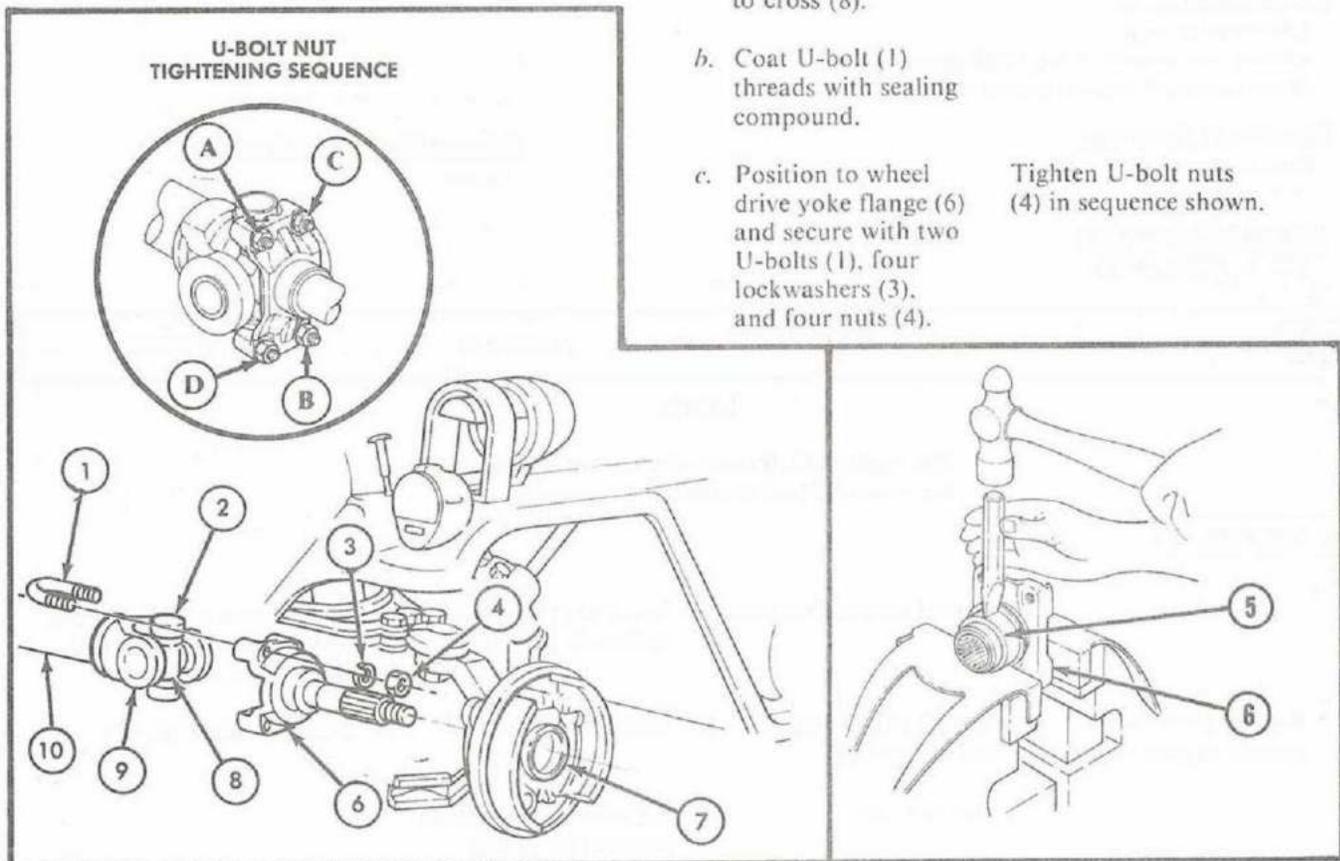
1.	Wheel drive shaft universal joint (9) to wheel drive yoke flange (6)	Four nuts (4), lock-washers (3), and two U-bolts (1)	Remove.	Tape loose U-joint bearing races (2) to keep from falling off cross (8).
2.		Wheel drive shaft (10)	Slide toward differential and remove from yoke flange (6).	
3.	Wheel spindle support (7)	Wheel drive yoke flange (6)	<i>a.</i> Pull out and remove. <i>b.</i> Position in bench vise.	
4.	Wheel drive yoke flange (6)	Wear sleeve (5)	Remove.	Use hammer and chisel. Discard wear sleeve (5).

6-16. Wheel Drive Yoke Flange Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

5.		Wheel drive yoke flange (6)	Coat mating surface with light film of GAA grease.	
6.		New wear sleeve (5)	Drive on to yoke flange (6), and seat.	Use hammer and steel tube.
7.		Wheel drive yoke flange (6)	Insert through wheel spindle support (7).	
8.		Wheel drive shaft universal joint (9)	<ol style="list-style-type: none"> Remove tape holding bearing races (2) to cross (8). Coat U-bolt (1) threads with sealing compound. Position to wheel drive yoke flange (6) and secure with two U-bolts (1), four lockwashers (3), and four nuts (4). 	Tighten U-bolt nuts (4) in sequence shown.



END OF TASK!

- FOLLOW-ON TASKS:**
- Install wheel spindle (para 6-15).
 - Road test (TM 9-2320-218-10) and check wheel drive yoke flange for proper operation.

6-17. Front Wheel Spindle Support Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Mechanical puller Seal replacer</p> <p><u>Materials/Parts</u> Three cotter pins Sealing compound (NSN 8030-00-656-1426) Outer seal and retainer assembly</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 6-15</p>	<p><u>Condition Description</u> Wheel spindle removed.</p>	<p><u>Special Environmental Conditions</u> None</p>	<p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

The right and left front wheel spindle supports are removed and installed identically.

a. REMOVAL

1.		Lower suspension arm (7)	Raise slightly with hydraulic jack (9).	Compresses coil spring (8) and releases load on ball joints (6) and (10).
2.	Tie rod (2) to wheel spindle support (3)	Cotter pin (4) and slotted nut (5)	Remove.	Discard cotter pin (4).
3.		Tie rod (2)	Separate from spindle support (3) using suitable puller (1).	
4.	Brake hose (12) to spindle support (3)	Brake lining fitting (13)	Loosen and disconnect.	
5.		Brake line retainer clip (11)	Remove.	

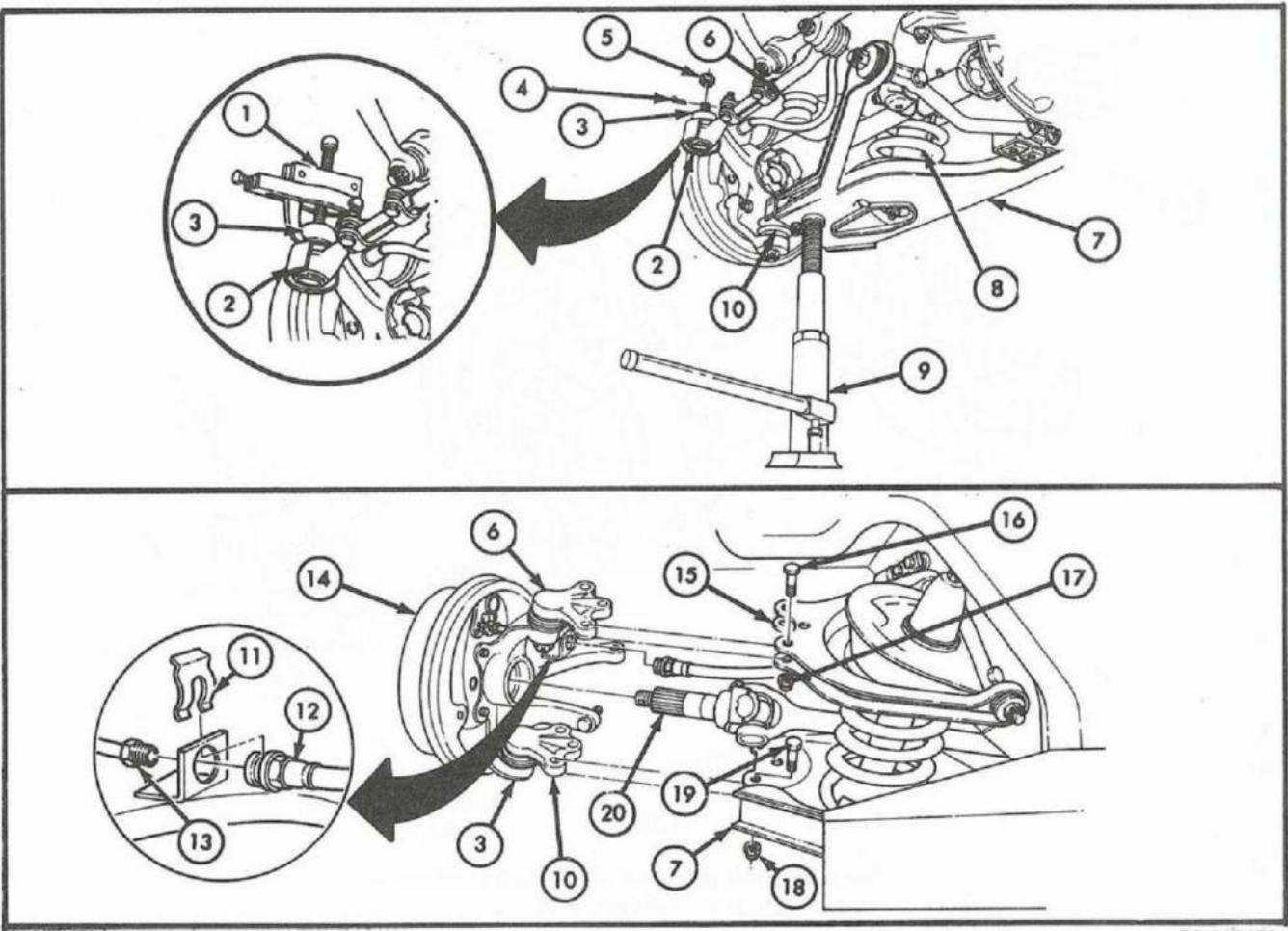
6-17. Front Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Lower ball joint (10) to lower suspension arm (7)	Three capscrews (19) and locknuts (18)	Remove.	
7.	Upper ball joint (6) to upper suspension arm (15)	Three capscrews (16) and locknuts (17)	Remove.	

CAUTION

Use care when removing wheel spindle support (3) so that wheel drive yoke flange (20) does not damage bearing or bearing seal inside spindle support (3).

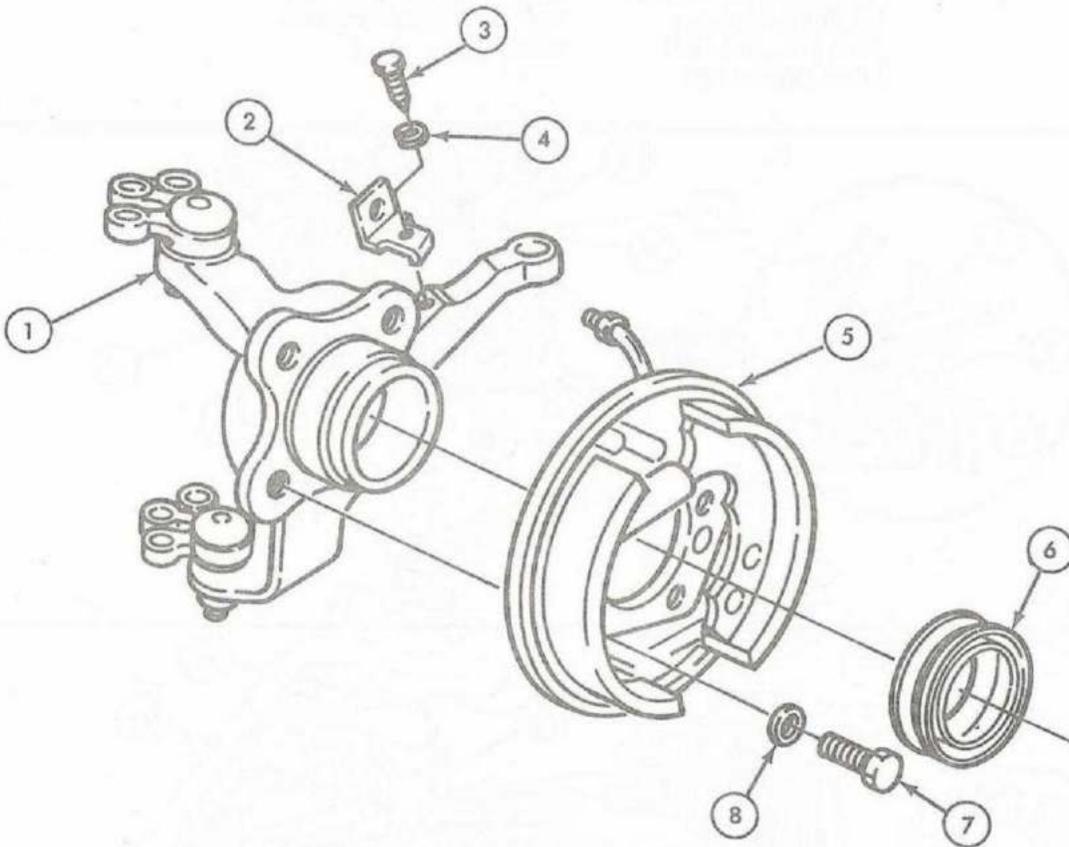
8. Wheel spindle support (3), brake backing plate (14), and ball joints (6) and (10) Remove from upper (15) and lower (7) suspension arms.



TA 155491

6-17. Front Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.	Spindle support (1)	Outer seal and retainer assembly (6)	Remove.	Discard outer seal and retainer assembly (6).
10.	Brake backing plate (5) to spindle support (1)	Four bolts (7) and lockwashers (8)	Remove.	
11.		Brake backing plate (5)	Remove from spindle support (1).	
12.	Brake hose bracket (2) to spindle support (1)	Capscrew (3) and lockwasher (4)	Remove.	
13.		Brake hose bracket (2)	Remove from spindle support (1).	



14. Spindle support (1) Position in bench vise.

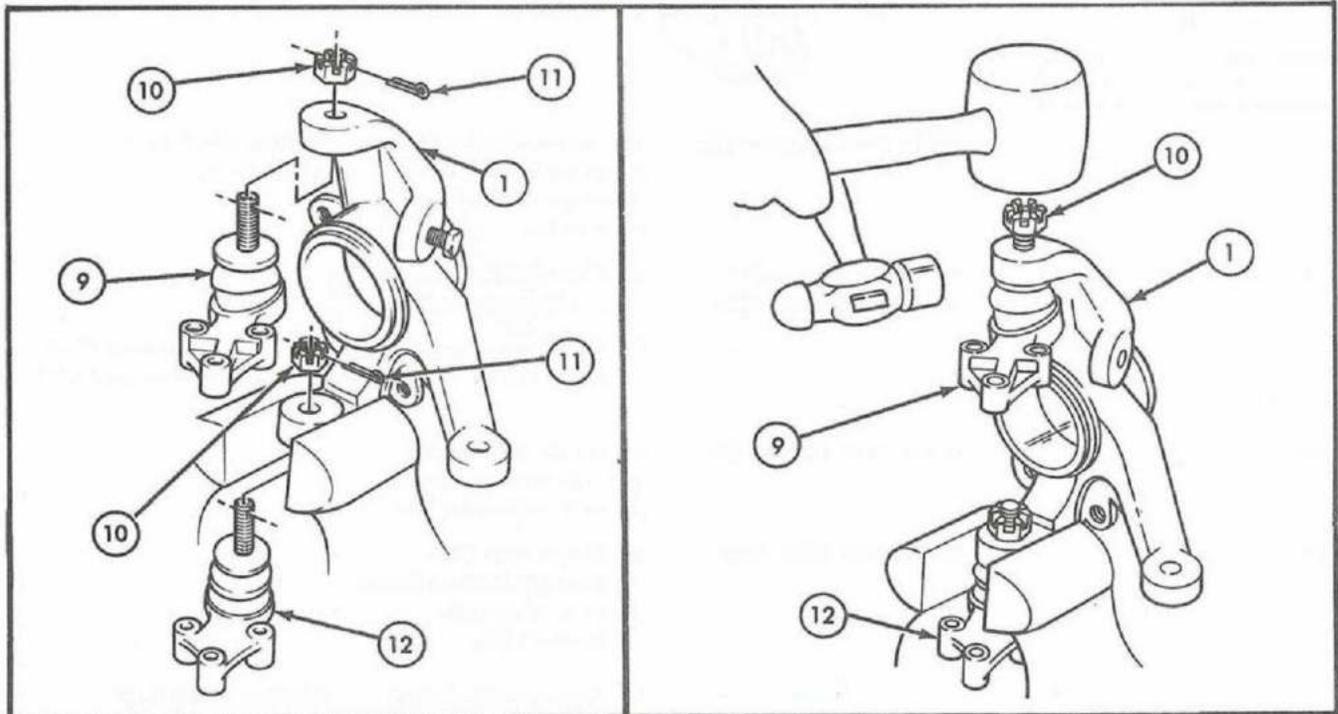
NOTE

The lower ball joint and upper ball joint are removed and installed identically.

TA 484667

6-17. Front Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
15.	Lower ball joint (9) to spindle support (1)	Cotter pin (11)	Remove.	Discard cotter pin (11).
16.		Slotted nut (10)	Loosen until slotted end clears threads on ball joint (9).	Slotted nut (10) will be used as a striking point.
17.		Lower ball joint (9)	a. Separate from spindle support (1) by striking slotted nut (10) with hammer while tapping side of spindle support (1) with second hammer. b. Remove nut (10) and separate from spindle support (1).	
18.		Upper ball joint (12)	Remove.	See steps 14, 15, 16 and 17.
b. INSPECTION				
19.		Upper (12) and lower (9) ball joints	Inspect for seal boot cracks and breaks, stripped threads, and wear.	Replace if worn, threads stripped or seal boot is cracked or broken.



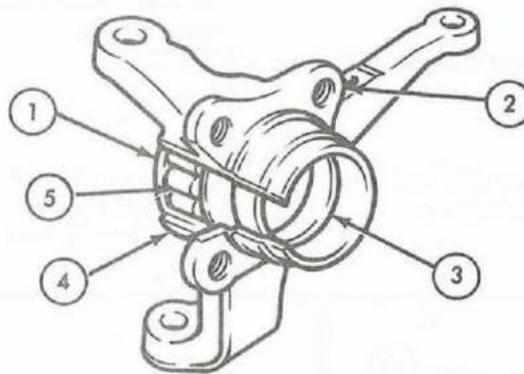
TA 155493

6-17. Front Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
20.		Inner seal (1), bearing (5), inner bearing cup (4), and outer bearing cup (3)	Inspect for cracks, breaks, wear, score marks, pitting, and lubrication.	Replace if cracked, broken, worn, score marked, pitted or no evidence of lubrication. (See para 9-5.)
21.		Wheel spindle support (2)	Inspect for cracks, breaks, wear, and stripped threads.	Repair stripped threads using tap. Replace if cracked, broken, worn, or stripped threads cannot be repaired. Items in step 20 must also be replaced if spindle support (2) is replaced. (See para. 9-5.)

NOTE

A new steering stop screw must be acquired if wheel spindle support is being replaced. Old steering stop screw is tack welded to spindle support and cannot be reused.



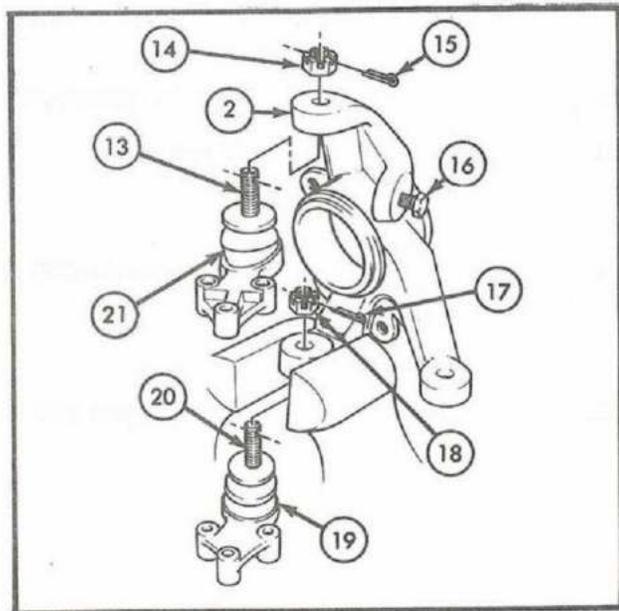
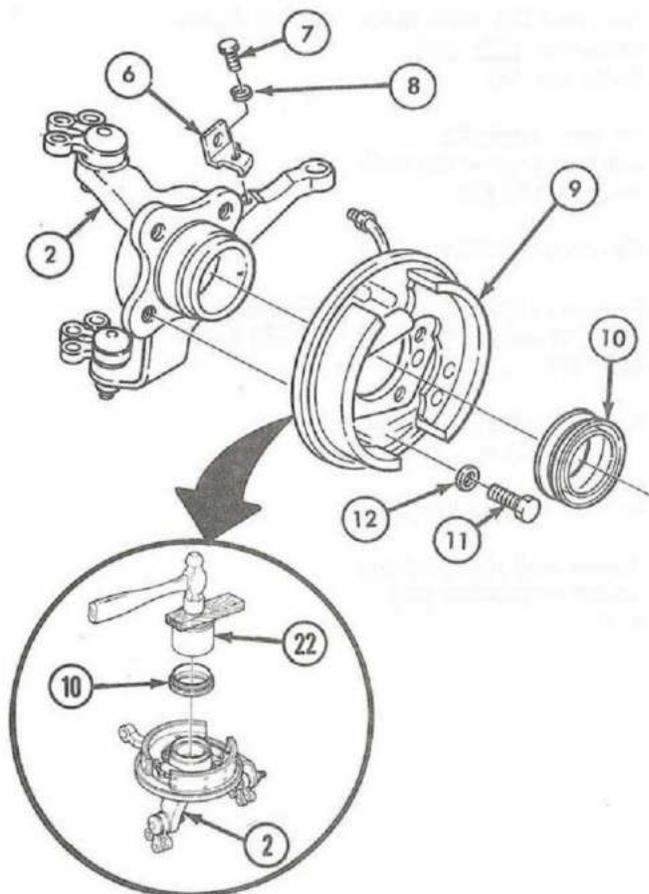
c. INSTALLATION

22.		Brake backing plate (9)	Secure to wheel spindle support (2) with four lockwashers (12), and bolts (11).	Tighten 55-65 lb-ft (75-88 N•m).
23.		New outer seal and retainer assembly (10)	a. Coat inside of retainer (10) with sealant. b. Install on spindle support (2).	Use hammer, wood block, and seal replacer tool (22) to seat.
24.		Brake hose bracket (6)	Secure to spindle support (2) with capscrew (7) and lockwasher (8).	
25.		Lower ball joint (21)	a. Insert stud (13) through hole in lower arm of spindle support (2). b. Secure with slotted nut (14).	Tighten 50-60 lb-ft (68-81 N•m).

TA 484668

6-17. Front Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
26.		New cotter pin (15)	a. Install through slotted nut (14) and stud (13). b. Bend to secure.	
27.		Upper ball joint (19)	a. Insert stud (20) through hole in upper arm of spindle support (2). b. Secure with slotted nut (18).	Tighten 50-60 lb-ft (68-81 N•m).
28.		New cotter pin (17)	a. Install through slotted nut (18) and stud (20). b. Bend to secure.	
29.		New steering stop-screw (16)	Install into spindle support (2).	Notify DS maintenance as soon as possible to adjust turning radius.



TA 484669

6-17. Front Wheel Spindle Support Maintenance (Cont'd)

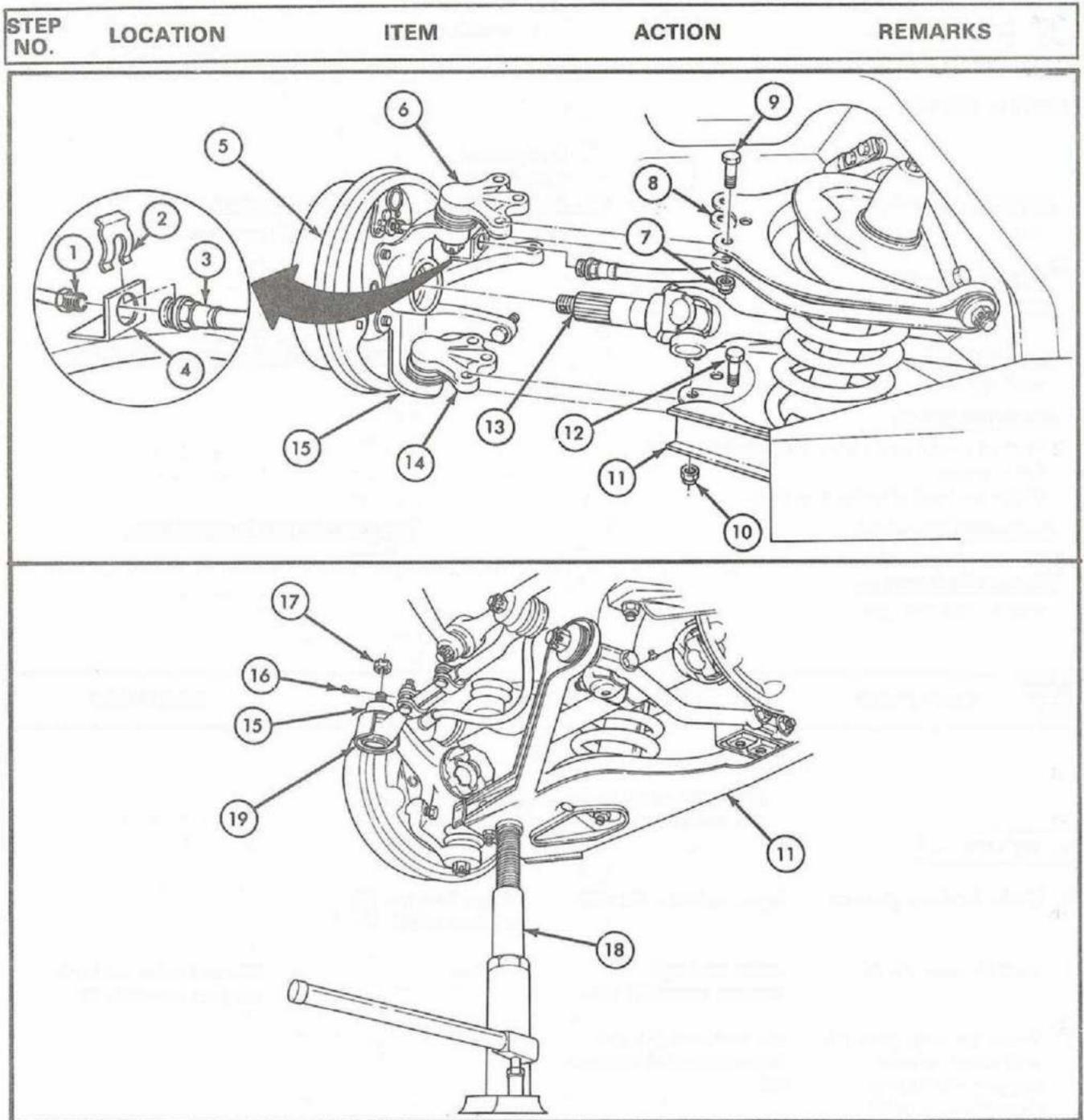
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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CAUTION

Use care when installing spindle support (15) so that wheel drive yoke flange (13) does not damage bearing or bearing seal inside spindle support (15).

30.		Wheel spindle support (15) and backing plate (5)	Install on wheel drive yoke flange (13) while positioning upper ball joint (6) and lower ball joint (14) in suspension arms (8) and (11).	
31.		Upper ball joint (6)	Secure to upper suspension arm (8) with three capscrews (9), and locknuts (7).	Tighten 35-45 lb-ft (47-61 N•m).
32.		Lower ball joint (14)	Secure to lower suspension arm (11) with three capscrews (12), and locknuts (10).	Tighten 35-45 lb-ft (47-61 N•m).
33.		Brake hose (3)	Secure to spindle support bracket (4) with retainer clip (2).	
34.		Brake line fitting (1)	Secure to brake hose (3).	
35.		Tie rod (19)	Secure to spindle support (15) with slotted nut (17).	Tighten 30-36 lb-ft (41-49 N•m).
36.		New cotter pin (16)	a. Install through slotted nut (17). b. Bend to secure.	
37.		Hydraulic jack (18)	Lower and remove from under suspension arm (11).	

6-17. Front Wheel Spindle Support Maintenance (Cont'd)



END OF TASK!

- FOLLOW-ON TASKS:**
- Install wheel spindle (para 6-15).
 - Bleed brakes (para 8-11).
 - Adjust toe-in (para 6-19).
 - Road test (TM 9-2320-218-10) and check for proper steering operation.
 - Notify DS maintenance to adjust turning radius.

TA 155496

6-18. Rear Wheel Spindle Support Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Seal replacer</p> <p><u>Materials/Parts</u> Sealing compound (NSN 8030-00-656-1426) GAA grease Outer seal and retainer assembly</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 6-15</p>	<p><u>Condition Description</u> Wheel spindle removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

The right and left rear wheel spindle supports are removed and installed identically.

a. REMOVAL

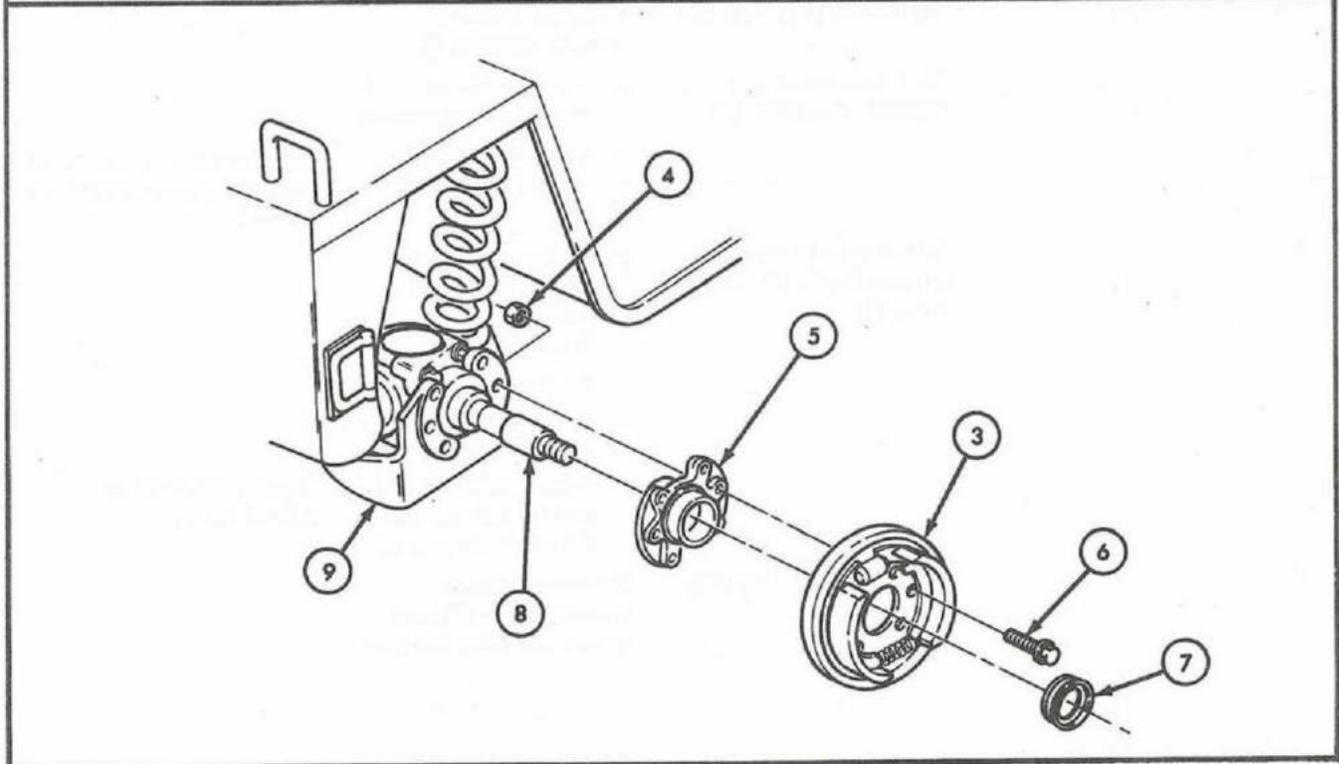
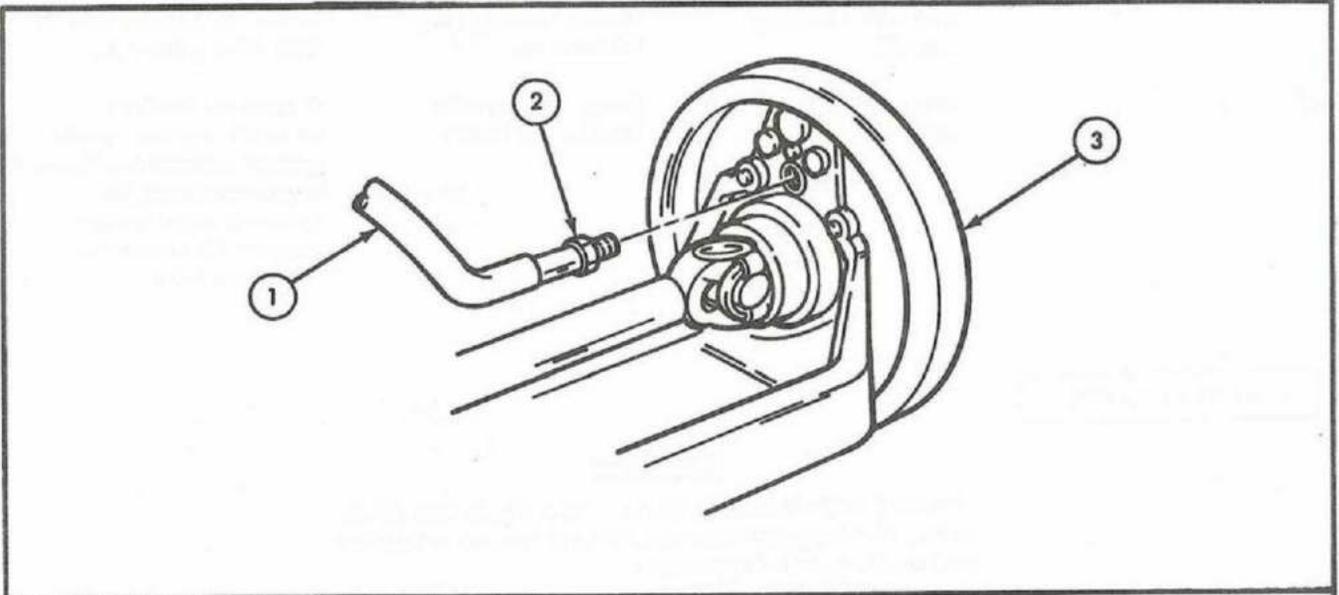
1. Brake backing plate (3)	Brake cylinder line (1)	Loosen line nut (2) and disconnect.	
2. Spindle support (5)	Outer seal and retainer assembly (7)	Remove.	Discard outer seal and retainer assembly (7).
3. Brake backing plate (3) and wheel spindle support (5) to rear suspension arm (9)	Six locknuts (4) and bolt-assembled washers (6)	Remove.	

CAUTION

Use care when removing wheel spindle support (5) that wheel drive yoke flange (8) does not damage bearing or bearing seal inside spindle support (5).

6-18. Rear Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.		Brake backing plate (3) and wheel spindle support (5)	Remove from rear suspension arm (9).	



TA 155497

6-18. Rear Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

5.		Seal (1), bearing (2), inner bearing cup (3), and outer bearing cup (5)	Inspect for cracks, breaks, wear, score marks, pitting, and lubrication.	Replace if cracked, broken, worn, score marked, pitted, or no evidence of lubrication. (See para 9-5.)
6.		Wheel spindle support (4)	Inspect for cracks, breaks, and wear.	If cracked, broken, or worn, replace spindle spindle support (4). Items in step 5 must also be replaced when spindle support (4) is replaced. (See para 9-5.)

c. INSTALLATION

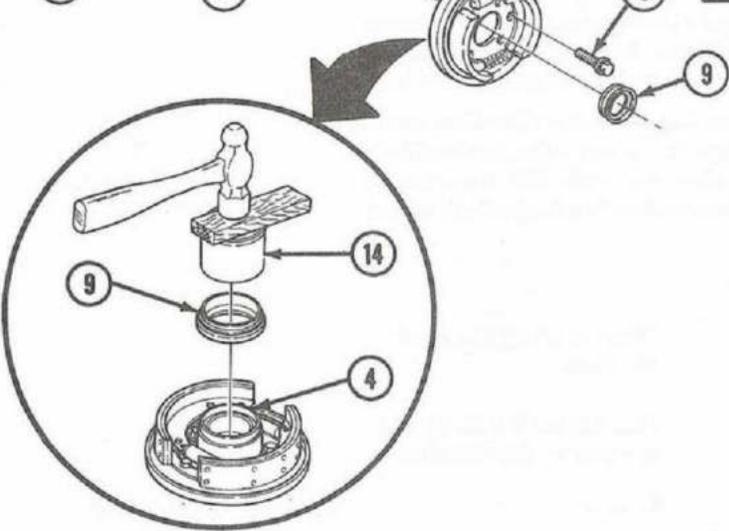
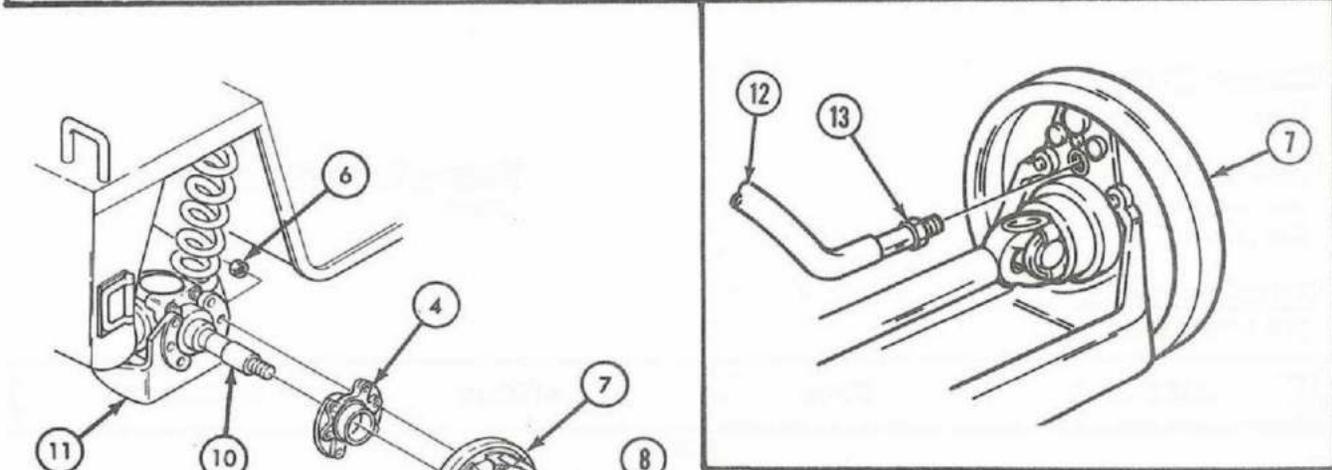
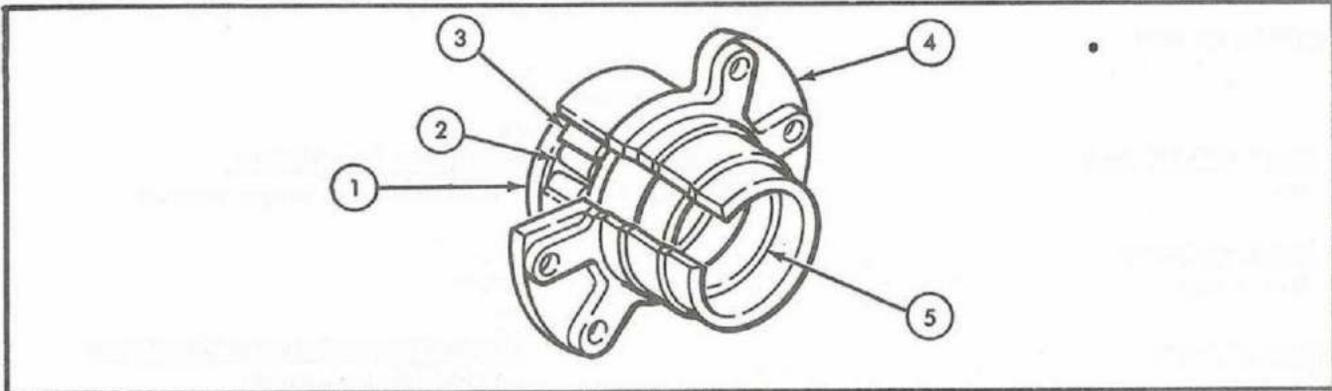
CAUTION

Use care when installing spindle support (4) that wheel drive yoke flange (10) does not damage bearing or bearing seal inside spindle support (4).

6.1.		Brake backing plate (7)	Place on wheel spindle support (4).	
7.		New outer seal and retainer assembly (9)	<p>a. Coat inside of retainer with sealant.</p> <p>b. Install on spindle support (4).</p>	Use hammer, wood block, and seal replacer tool (14) to seat.
8.		Wheel spindle support (4) and brake backing plate (7)	<p>a. Insert wheel drive yoke flange (10) through center holes of each.</p> <p>b. Position to rear suspension arm (11) and aline six holes.</p> <p>c. Secure with six bolt-assembled washers (8) and locknuts (6).</p>	Tighten 27-37 lb-ft (37-50 N•m).
9.		Brake cylinder line (12)	Position to brake backing plate (7) and secure with line nut (13).	

6-18. Rear Wheel Spindle Support Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Bleed brakes (para 8-11).
 - Install wheel spindle (para 6-15.)
 - Road test (TM 9-2320-218-10) and check for unusual noises at wheel.

TA 484670

6-19. Front Wheel Alinement Maintenance

This task covers:

a. Toe-in Check

b. Toe-in Adjustment

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> Toe-in gage</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic One assistant</p> <p><u>Manual References</u> TM 9-2320-218-10</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Tires inflated to proper pressure.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

- Excessive front wheel bearing free play will cause incorrect toe-in adjustment. Always check wheel bearings for proper adjustment before adjusting toe-in.
- Front wheel alinement adjustments other than toe-in are performed by DS maintenance. After toe-in adjustment has been completed, report to DS maintenance as soon as possible for complete front wheel alinement.

a. TOE-IN CHECK

1.	Front wheels (1)	Place in straight ahead position.	
2.	Vehicle	Roll forward 3 ft. (1 m) to remove side tension.	
3.	Parking brake	Engage.	See TM 9-2320-218-10.

6-19. Front Wheel Alinement Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

- Extend length of toe-in gage bar to provide spring tension and prevent slippage after installation.
- Perform steps 4 through 6 with toe-in gage number 1.

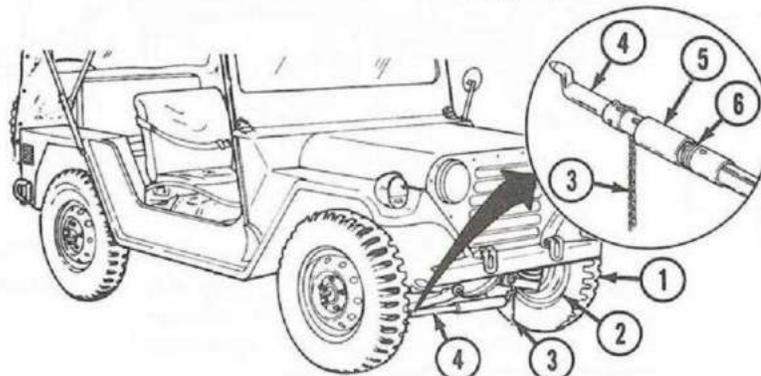
4.	Toe-in gage (4)	<p>a. Position between front tires (1) against rear of both wheel rims (2) so chains (3) are just touching the floor.</p> <p>b. Set slide (5) to zero.</p>
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NOTE

Assistant will be inside vehicle and remain to operate parking brake when mechanic gives signal to do so during step 5.

5.	Parking brake	<p>a. Release and roll vehicle backward until chains (3) just touch ground at front of wheel rim (2).</p> <p>b. Engage.</p>
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6.	Toe-in gage (4)	<p>a. Take reading (6).</p> <p>b. If toe-in reading is not within 1/32-5/32 in. (.79-3.97 mm), adjust toe-in.</p> <p>c. Remove.</p>	<p>Correct toe-in reading is 1/32-5/32 in. (.79-3.97 mm).</p>
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TOE-IN GAGE #1

TA 484671

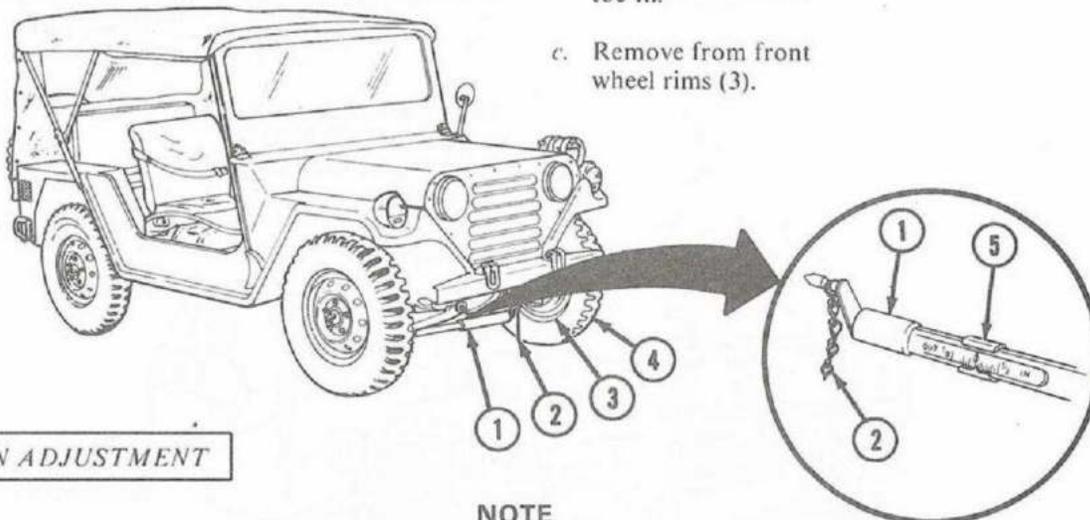
6-19. Front Wheel Alinement Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Perform steps 7 through 9 with toe-in gage number 2.

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|----|--|-----------------|--|--|
| 7. | | Toe-in gage (1) | <ol style="list-style-type: none"> Position between front tires (4) ahead of vertical centerline of wheels so both chains (2) are just touching the floor. Set gage scale (5) to zero. | |
| 8. | | Parking brake | <ol style="list-style-type: none"> Release and roll vehicle forward until gage (1) is behind vertical centerline of wheels and chains (2) are just touching the floor. Engage. | |
| 9. | | Toe-in gage (1) | <ol style="list-style-type: none"> Take reading. If toe-in reading is not within 1/32-5/32 in. (.79-3.97 mm), adjust toe-in. Remove from front wheel rims (3). | Correct toe-in reading is 1/32-5/32 in. (.79-3.97 mm). |



b. TOE-IN ADJUSTMENT

NOTE

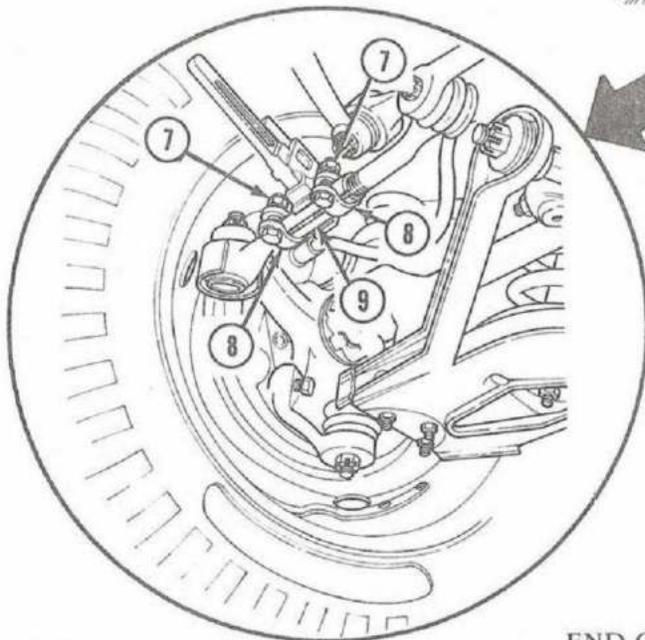
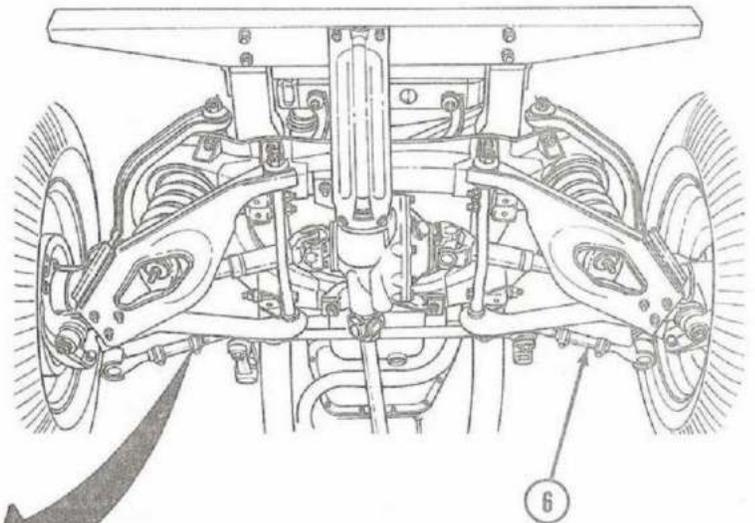
Excessive front wheel bearing free play will cause incorrect toe-in adjustment. Always check wheel bearings for proper adjustment (para 9-5) before adjusting toe-in.

TOE-IN GAGE #2

TA 484672

6-19. Front Wheel Alinement Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
10.	Two clamps (8) to adjusting sleeve (9)	Two locknuts (7)	Loosen but do not remove.	Repeat for opposite adjusting sleeve (6).
11.		Two adjusting sleeves (6) and (9)	<p>a. Turn equally but in opposite directions of each other.</p> <p>b. Repeat toe-in check until correct adjustment is indicated.</p>	
12.		Four adjusting sleeve clamp locknuts (7)	Tighten.	Tighten 12-15 lb-ft (16-20 N•m).



END OF TASK!

TA 484673

6-20. Wheel Seals, Bearings, and Cups

The procedure for maintenance of the wheel seals, bearings, and cups can be found in paragraph 9-5.

CHAPTER 7

FRONT AND REAR SUSPENSION MAINTENANCE

7-1. Overview

a. This chapter provides maintenance of the front and rear suspension components authorized for the organizational level. Each component is covered in one of the following sections:

- Section I. Front Suspension (page 7-1)
- Section II. Rear Suspension (page 7-25)

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

Section I. FRONT SUSPENSION MAINTENANCE

7-2. General

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

7-3. Front Suspension Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
7-4.	Front Springs a. Removal b. Installation	7-2
7-5.	Upper Suspension Arms a. Removal b. Installation	7-8
7-6.	Lower Suspension Arms a. Removal b. Installation	7-10
7-7.	Ball Joints and Seals a. Inspection b. Lower Ball Joint Removal c. Lower Ball Joint Installation d. Upper Ball Joint Removal e. Upper Ball Joint Installation	7-12
7-8.	Front Shock Absorbers a. Removal b. Inspection c. Installation	7-18
7-9.	Front Suspension Crossmember a. Removal b. Installation	7-22

7-4. Front Springs Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Sealing compound (NSN 8030-01-025-1692)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 3-24</p>	<p><u>Condition Description</u> Front of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

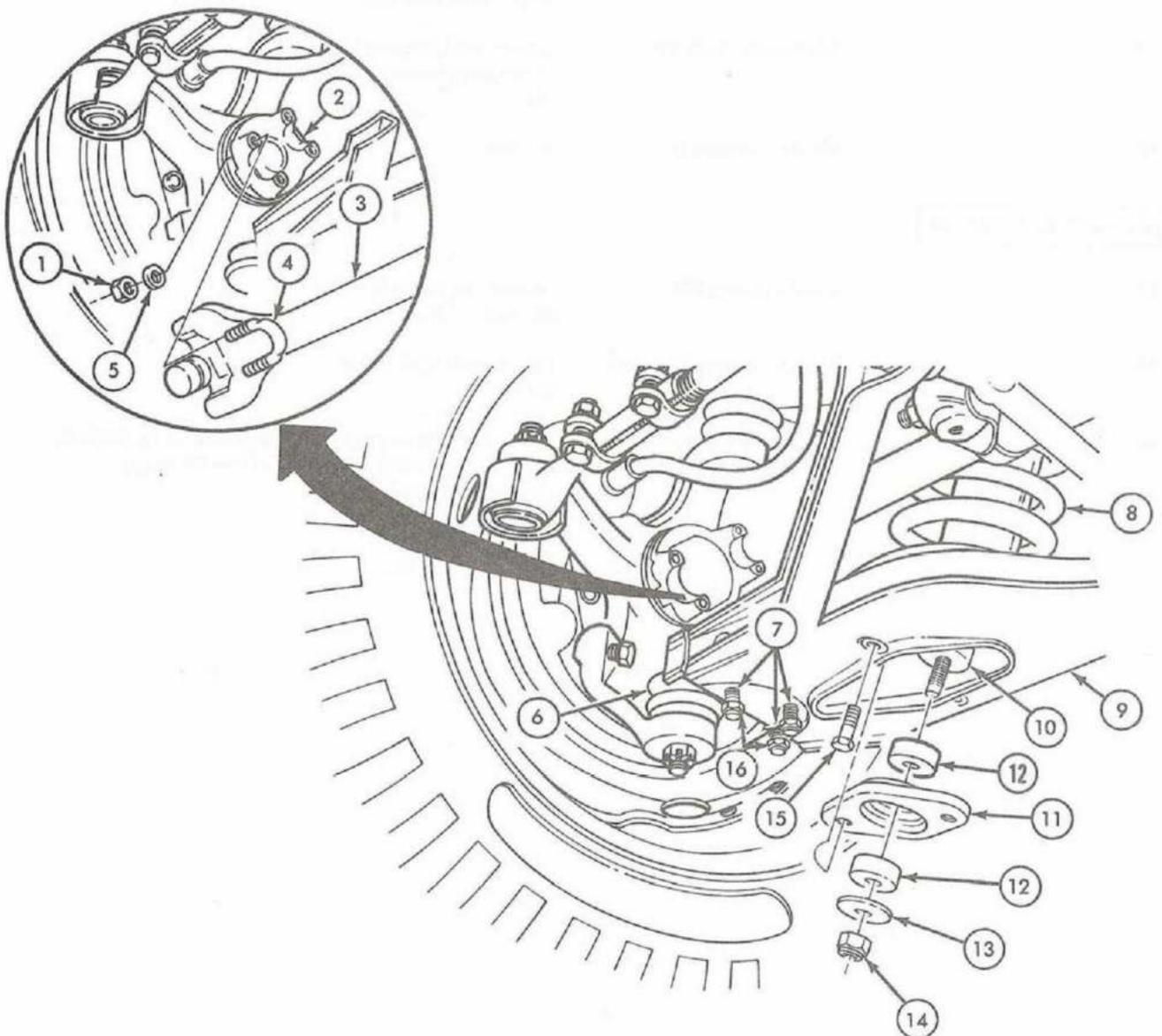
The left and right front springs are removed and installed the same way.

a. REMOVAL

- | | | | |
|----|--|--|---|
| 1. | Wheel drive shaft (3) to wheel drive flange (2) | Four nuts (1), lock-washers (5), and two U-bolts (4) | Remove. |
| 2. | Wheel drive shaft (3) | | Slide towards differential and position away from front spring (8). |
| 3. | Lower ball joint (6) to lower suspension arm (9) | Three locknuts (16) and capscrews (7) | Loosen, but do not remove. |
| 4. | Shock absorber (10) to mounting bracket (11) | Locknut (14), washer (13), and two bushings (12) | Remove. |

7-4. Front Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Shock absorber mounting bracket (11) to lower suspension arm (9)	Two bolts (15)	Remove.	
6.		Shock absorber mounting bracket (11)	Rotate 90 degrees and remove from inside of lower suspension arm (9).	



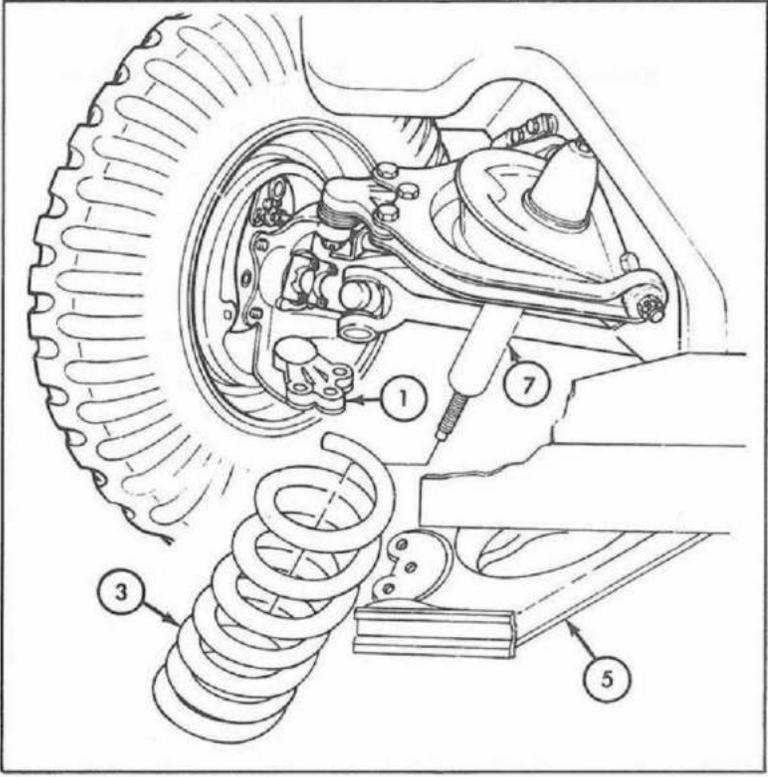
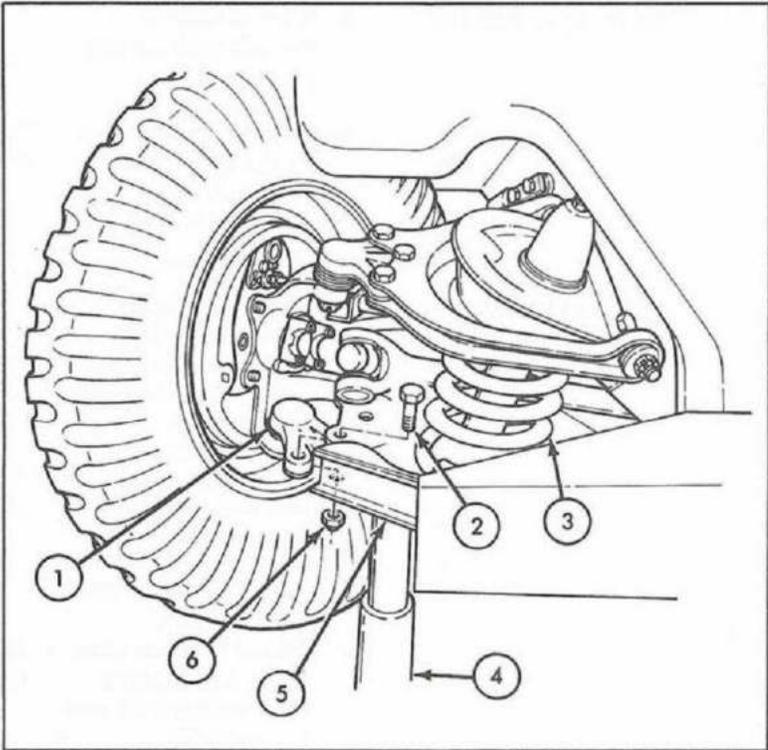
TA 484674

7-4. Front Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.		Lower suspension arm (5)	Raise slightly with hydraulic jack (4).	Compresses spring (3) and takes load off lower ball joint (1).
8.	Lower ball joint (1) to lower suspension arm (5)	Three locknuts (6) and capscrews (2)	Remove.	
9.		Lower ball joint (1)	Remove from lower suspension arm (5).	
10.		Hydraulic jack (4)	Lower and remove from lower suspension arm (5).	
11.		Front spring (3)	Remove.	
b. INSTALLATION				
12.		Front spring (3)	Install over shock absorber (7).	
13.		Lower suspension arm (5)	Raise with hydraulic jack (4).	
14.		Lower ball joint (1)	Secure to lower suspension arm (5) with three capscrews (2) and locknuts (6).	Tighten 35 to 45 lb-ft (47 to 61 N•m).

7-4. Front Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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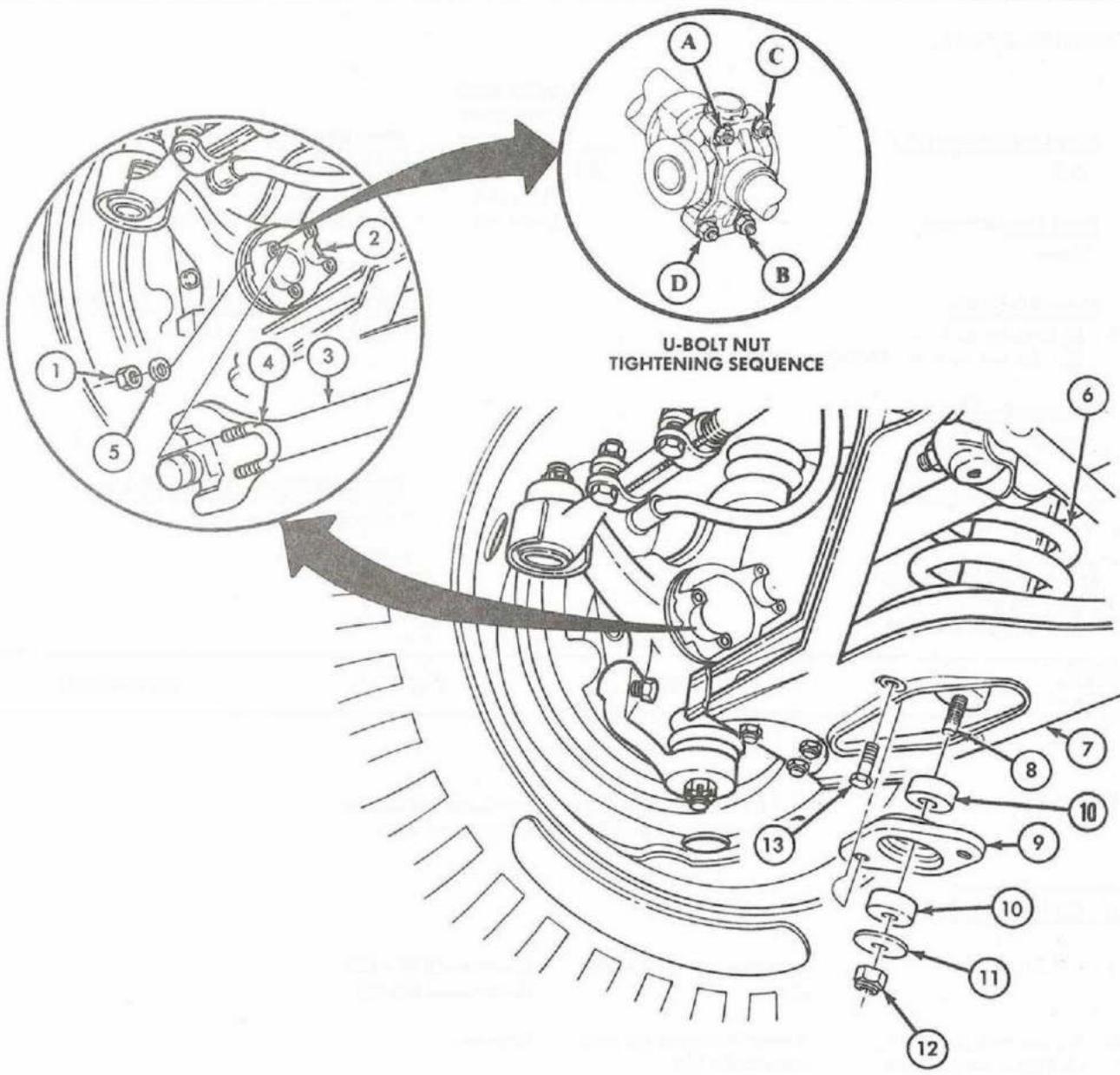
TA 155503

7-4. Front Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
15.		Wheel drive shaft (3)	<ul style="list-style-type: none"> a. Coat U-bolt (4) threads with sealing compound. b. Secure to wheel drive flange (2) with two U-bolts (4), four lock-washers (5), and four nuts (1). 	Tighten U-bolt nuts (1) in sequence shown.
16.		Bushing (10) and shock absorber mounting bracket (9)	<ul style="list-style-type: none"> a. Place over shock absorber stud (8) and through access hole in lower suspension arm (7). b. Rotate 90 degrees and secure to two holes in lower suspension arm (7) with two bolts (13). c. Secure to shock absorber (8) with bushing (10), washer (11), and locknut (12). 	<p>Tighten 40 to 50 lb-ft (54 to 68 N•m).</p> <p>Tighten 15 to 20 lb-ft (20 to 27 N•m).</p>
17.		Hydraulic jack	Lower and remove from lower suspension arm (7).	

7-4. Front Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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U-BOLT NUT TIGHTENING SEQUENCE

END OF TASK!

FOLLOW-ON TASK: Lower vehicle (para 3-24).

TA 484675

7-5. Upper Suspension Arms Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Hydraulic jack Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u></p> <p>TM 9-2320-218-10 Para 9-4 Para 7-8</p>	<p><u>Condition Description</u> Parking brake set. Wheel and tire removed. Shock absorber removed.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

The left and right front upper suspension arms are removed and installed the same way.

a. REMOVAL

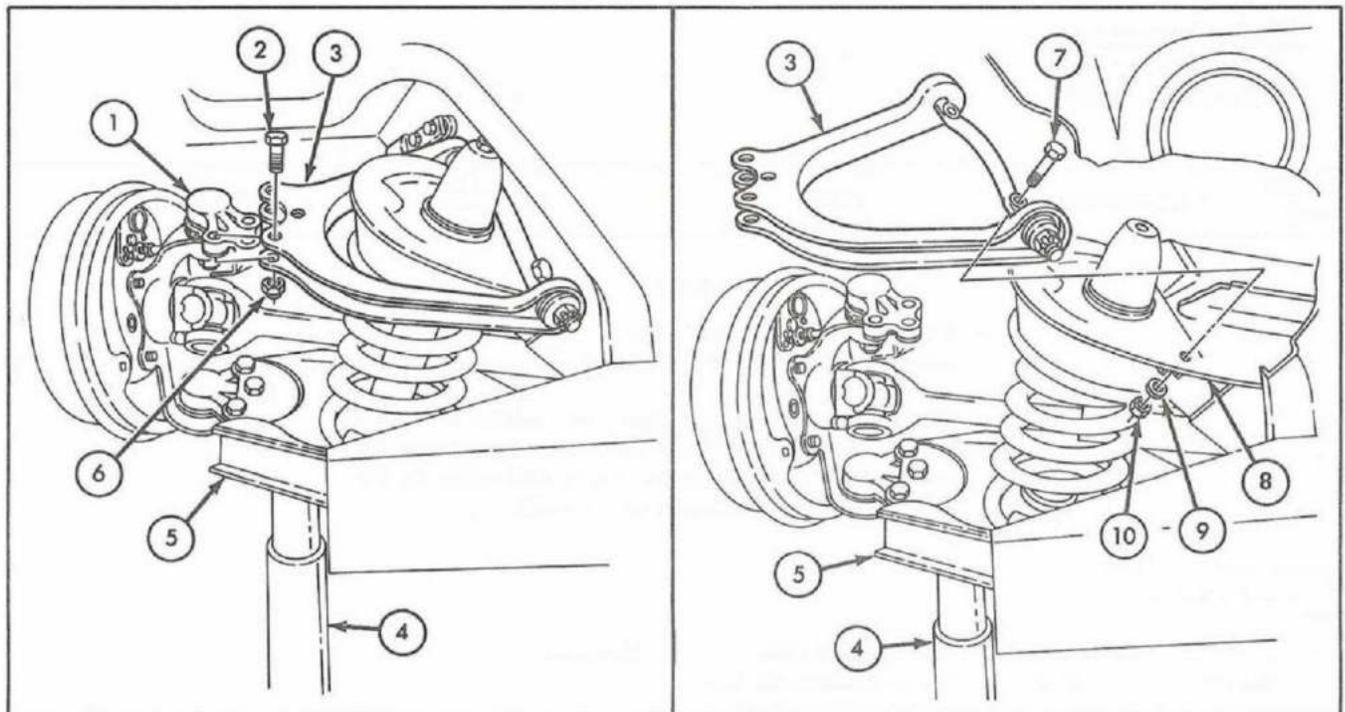
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|----|--|---|
| 1. | Lower suspension arm (5) | Raise slightly with hydraulic jack (4). |
| 2. | Upper ball joint (1) to upper suspension arm (3) | Remove. |
| 3. | Upper ball joint (1) | Remove from upper suspension arm (3). |
| 4. | Upper suspension arm (3) to crossmember (8) | Remove. |
| 5. | Upper suspension arm (3) | Remove from cross-member (8). |

7-5. Upper Suspension Arms Maintenance (Cont'd)

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

b. INSTALLATION

6.		Upper suspension arm (3)	Place on top of cross-member (8) and secure with two bolts (7), lockwashers (9), and nuts (10).	Tighten 70 to 90 lb-ft (95 to 122 N•m).
7.		Upper ball joint (1)	Secure to upper suspension arm (3) with three capscrews (2) and locknuts (6).	Tighten 35 to 45 lb-ft (47 to 61 N•m).
8.		Hydraulic jack (4)	Lower and remove from lower suspension arm (5).	



END OF TASK!

- FOLLOW-ON TASKS:**
- Install shock absorber (see para 7-8).
 - Install wheel and tire (see para 9-4).

TA 155505

7-6. Lower Suspension Arms Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
Para 7-4

Condition Description

Parking brake set.
Front spring removed.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

Vehicle on level surface.

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

- The left and right front lower suspension arms are removed and installed the same way.
- The number of spacer plates and shims will vary according to the front end alignment requirements of each vehicle. Install spacer plates and shims in the same number and location as removed.

a. REMOVAL

- | | | | |
|----|--|---|---------|
| 1. | Forward end of lower suspension arm (7) to crossmember (2) | Two locknuts (6), spacer plate(s) (8), two washers (3), and two capscrews (4) | Remove. |
| 2. | Rear end of lower suspension arm (7) to crossmember (2) | Locknut (1), shim(s) (9), and capscrew (5) | Remove. |
| 3. | | Lower suspension arm (7) | Remove. |

7-6. Lower Suspension Arms Maintenance (Cont'd)

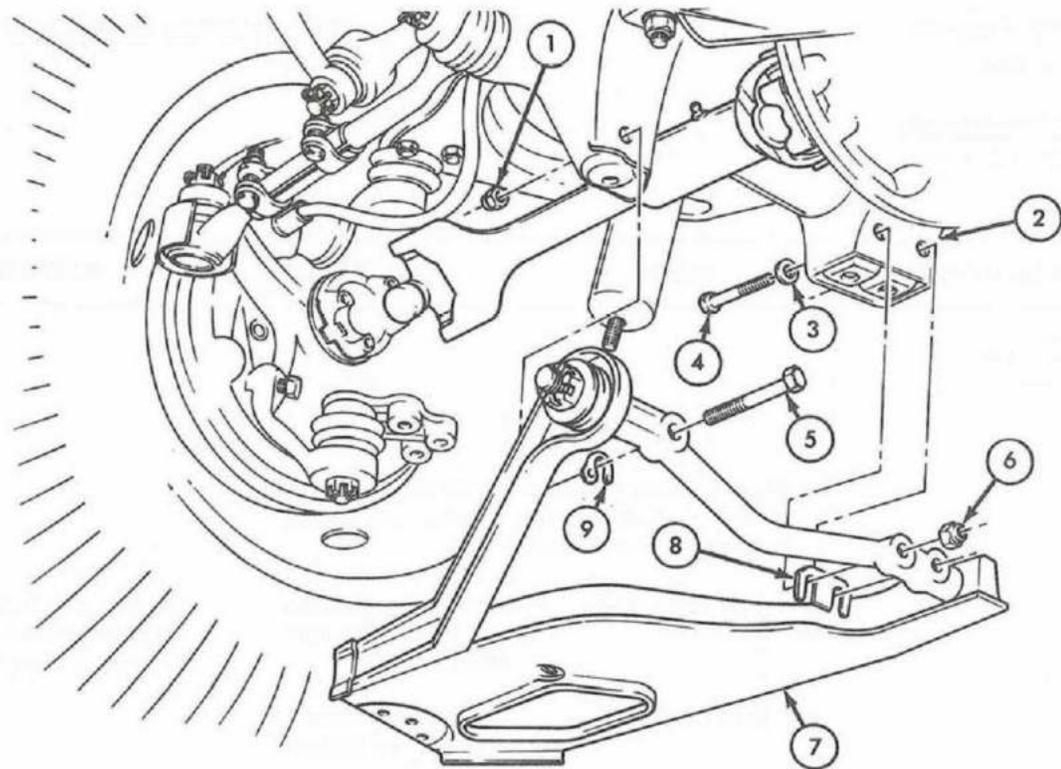
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

4.		Lower suspension arm (7)	a. Secure forward end to crossmember (2) with two capscrews (4), washers (3), spacer plate(s) (8), and two locknuts (6).	Insert capscrews (4) toward differential. Tighten 40 to 55 lb-ft (54 to 75 N•m).
			b. Secure rear end to crossmember (2) with capscrew (5), shim(s) (9), and locknut (1).	Insert capscrew (5) toward wheel. Tighten 45 to 65 lb-ft (61 to 88 N•m).

NOTE

Notify direct support maintenance to check camber and caster measurements after performing this procedure.



END OF TASK!

FOLLOW-ON TASK: Install front spring (see para 7-4).

TA 484676

7-7. Ball Joints and Seals Maintenance

This task covers:

- a. Inspection
- b. Lower Ball Joint Removal
- c. Lower Ball Joint Installation
- d. Upper Ball Joint Removal
- e. Upper Ball Joint Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Caliper</p> <p><u>Materials/Parts</u> Cotter pin Sealing compound (NSN 8030-01-025-1692)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u></p> <p>TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. INSPECTION

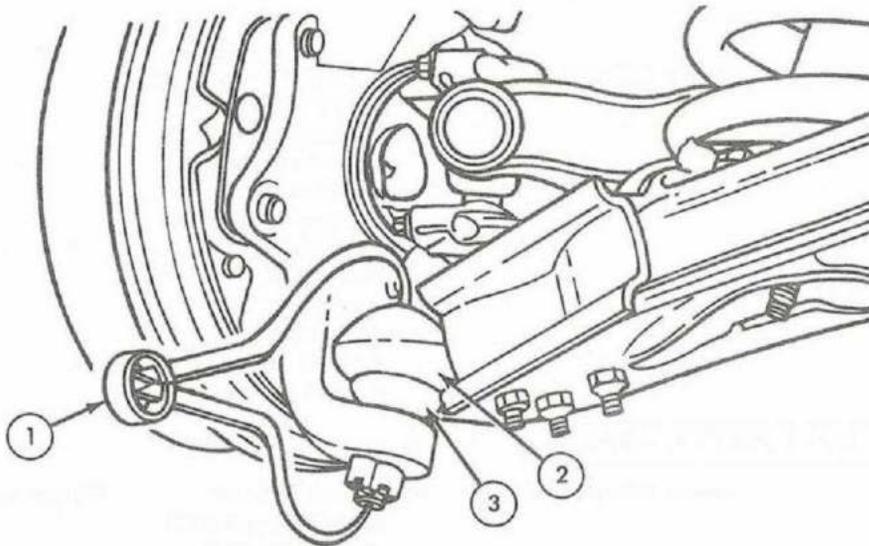
NOTE

There are upper and lower ball joints on both the left and right front wheels, and all are inspected the same way.

1.	Four ball joint seal boots (2)	Visually inspect for cracks, breaks, and wear.	Replace any ball joint (3) with cracked, broken, or worn seal boot (2).
2.	Ball joint (3)	<p>Check for vertical free play as follows:</p> <p>a. Using caliper (1), take measurement of ball joint (3) with vehicle resting on wheels.</p>	

7-7. Ball Joints and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			<i>b.</i> Raise front end of vehicle.	See para 3-24.
			<i>c.</i> Recheck measurement of ball joint (3).	Replace if any vertical movement is indicated.
			<i>d.</i> Repeat <i>a</i> , <i>b</i> , and <i>c</i> above for checking three remaining ball joints.	



7-7. Ball Joints and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. LOWER BALL JOINT REMOVAL

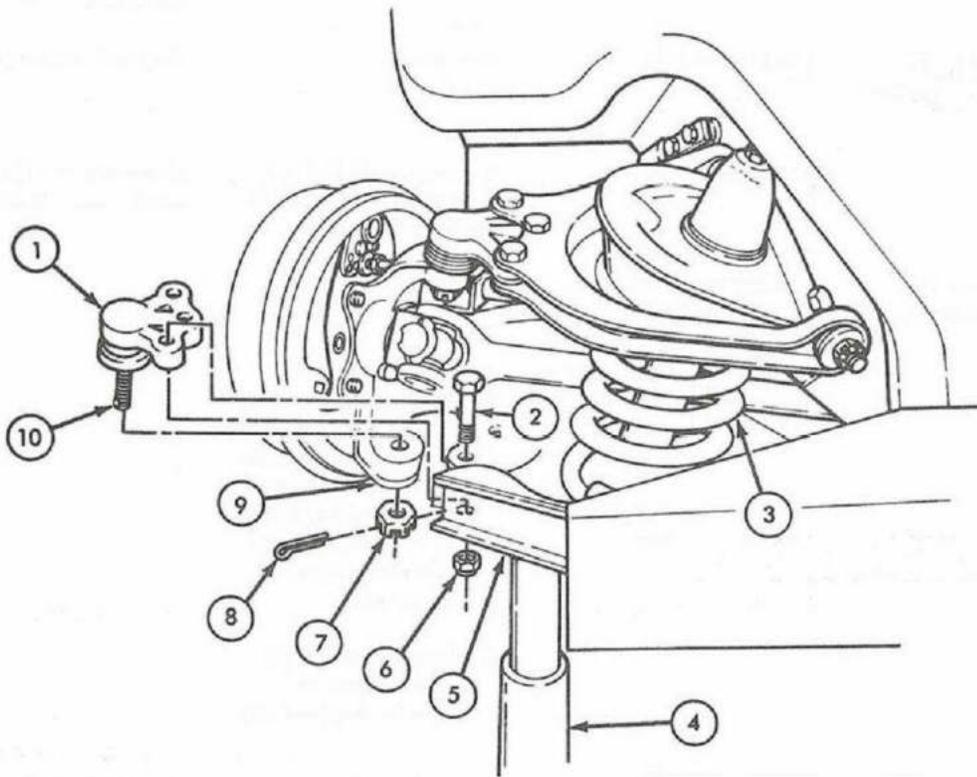
3.		Vehicle	Raise front end.	See para 3-24.
4.		Wheel and tire assembly	Remove.	See para 9-4.
5.		Lower suspension arm (5)	Raise slightly with hydraulic jack (4).	Compresses spring (3) and takes load off lower ball joint (1).
6.	Lower ball joint (1) to front spindle support (9)	Cotter pin (8)	Remove.	Discard cotter pin (8).
7.		Slotted nut (7)	Loosen until slotted end clears threads (10) on ball joint (1).	Slotted nut (7) will be used as striking point.
8.	Lower ball joint (1) to lower suspension arm (5)	Three capscrews (2) and locknuts (6)	Remove.	
9.		Lower ball joint (1)	<p>a. Separate from spindle support (9) by striking slotted nut (7) with hammer while tapping side of spindle support (9) with second hammer.</p> <p>b. Remove nut (7) and lift out of spindle support (9).</p>	

c. LOWER BALL JOINT INSTALLATION

10.		Lower ball joint (1)	<p>a. Install in front spindle support (9) and secure with slotted nut (7).</p> <p>b. Secure to lower suspension arm (5) with three capscrews (2) and locknuts (6).</p> <p>c. Tighten slotted nut (7) and secure to ball joint stud (10) with new cotter pin (8).</p>	<p>Finger tighten only.</p> <p>Tighten 35 to 45 lb-ft (47 to 61 N•m).</p> <p>Tighten 50 to 60 lb-ft (68 to 81 N•m).</p>
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7-7. Ball Joints and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
11.		Hydraulic jack (4)	Lower and remove from lower suspension arm (5).	
12.		Wheel and tire assembly	Install.	See para 9-4.
13.		Vehicle	Lower.	See para 3-24.



7-7. Ball Joints and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. UPPER BALL JOINT REMOVAL

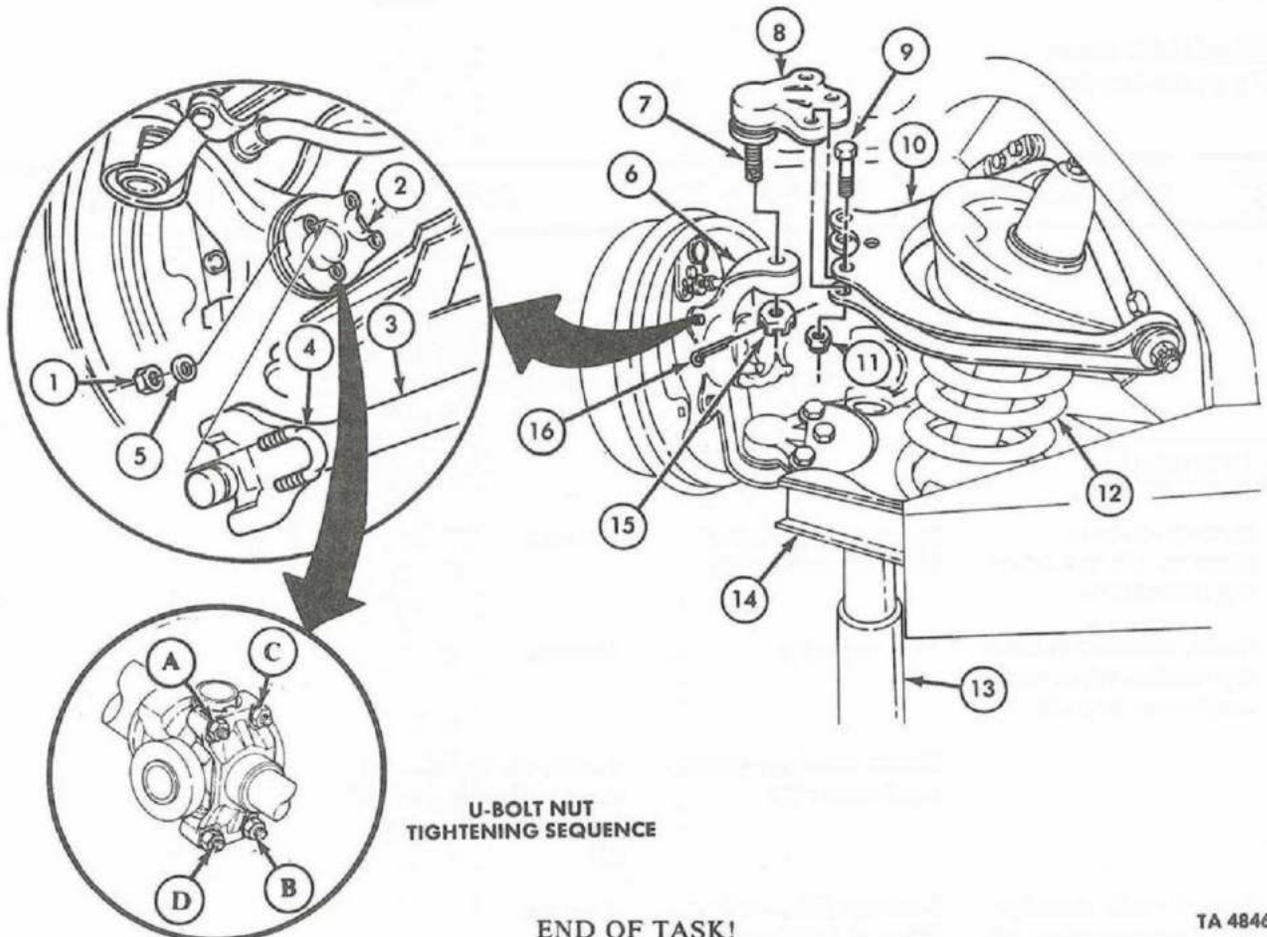
14.		Vehicle	Raise front end.	See para 3-24.
15.		Wheel and tire assembly	Remove.	See para 9-4.
16.	Wheel drive shaft (3) to wheel drive flange (2)	Four nuts (1), lock-washers (5), and two U-bolts (4)	Remove.	
17.		Wheel drive shaft (3)	Slide towards differential, and remove from wheel drive flange (2).	
18.		Lower suspension arm (14)	Raise slightly with hydraulic jack (13).	Compresses spring (12) and takes load off ball joint (8).
19.	Upper ball joint (8) to front spindle support (6)	Cotter pin (16)	Remove.	Discard cotter pin (16).
20.		Slotted nut (15)	Loosen until slotted end clears threads (7) on ball joint (8).	Slotted nut (15) will be used as striking point.
21.	Upper ball joint (8) to upper suspension arm (10)	Three capscrews (9) and locknuts (11)	Remove.	
22.		Upper ball joint (8)	<p>a. Separate from spindle support (6) by striking slotted nut (15) with hammer while tapping side of spindle support (6) with second hammer.</p> <p>b. Remove nut (15) and lift out of spindle support (6).</p>	

e. UPPER BALL JOINT INSTALLATION

23.		Upper ball joint (8)	a. Install in front spindle support (6) and secure with slotted nut (15).	Finger tighten only.
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7-7. Ball Joints and Seals Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			<ul style="list-style-type: none"> b. Secure to upper suspension arm (10) with three capscrews (9) and locknuts (11). 	Tighten 35 to 45 lb-ft (47 to 61 N•m).
			<ul style="list-style-type: none"> c. Tighten slotted nut (15). d. Install new cotter pin (16). 	Tighten 50 to 60 lb-ft (68 to 81 N•m).
25.		Wheel drive shaft (3)	<ul style="list-style-type: none"> a. Coat U-bolt (4) threads with sealing compound. b. Secure to wheel drive flange (2) with two U-bolts (4), four lockwashers (5), and four nuts (1). 	Tighten U-bolt nuts (1) in sequence shown.
26.		Wheel and tire assembly	Install.	See para 9-4.
27.		Vehicle	Lower.	See para 3-24.



END OF TASK!

TA 484677

7-8. Front Shock Absorbers Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 3-24</p>	<p><u>Condition Description</u> Front of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

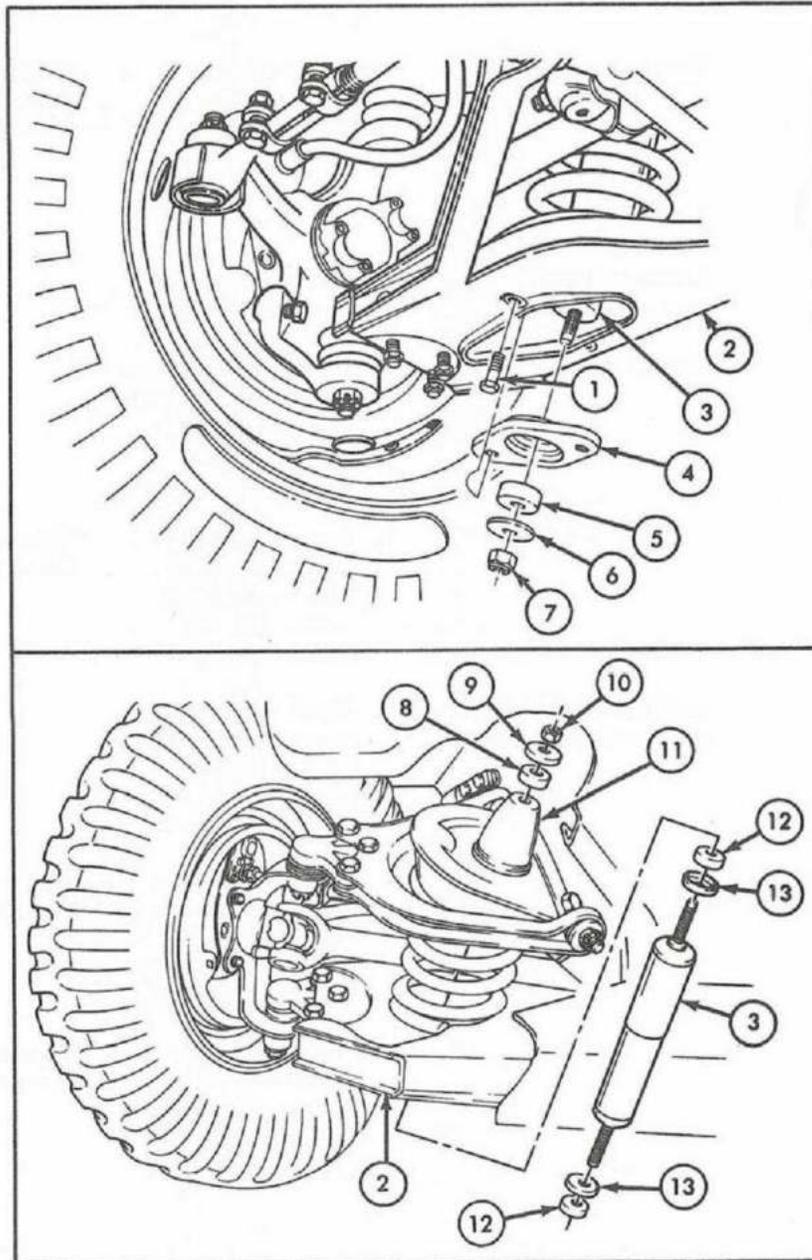
The right and left front shock absorbers are removed and installed the same way.

a. REMOVAL

- | | | | |
|----|---|---|---|
| 1. | Bottom of shock absorber (3) to mounting bracket (4) | Locknut (7), washer (6), and bushing (5) | Remove. |
| 2. | Shock absorber mounting bracket (4) to lower suspension arm (2) | Two bolts (1) | Remove. |
| 3. | Shock absorber mounting bracket (4) | | Rotate 90 degrees and remove from inside of lower suspension arm (2). |
| 4. | Top of shock absorber (3) to crossmember (11) | Locknut (10), washer (9), and bushing (8) | Remove. |

7-8. Front Shock Absorbers Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Shock absorber (3)	Shock absorber (3)	Remove through opening in lower suspension arm (2).	
6.	Shock absorber (3)	Two bushings (12) and washers (13)	Remove.	



TA 155510

7-8. Front Shock Absorbers Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

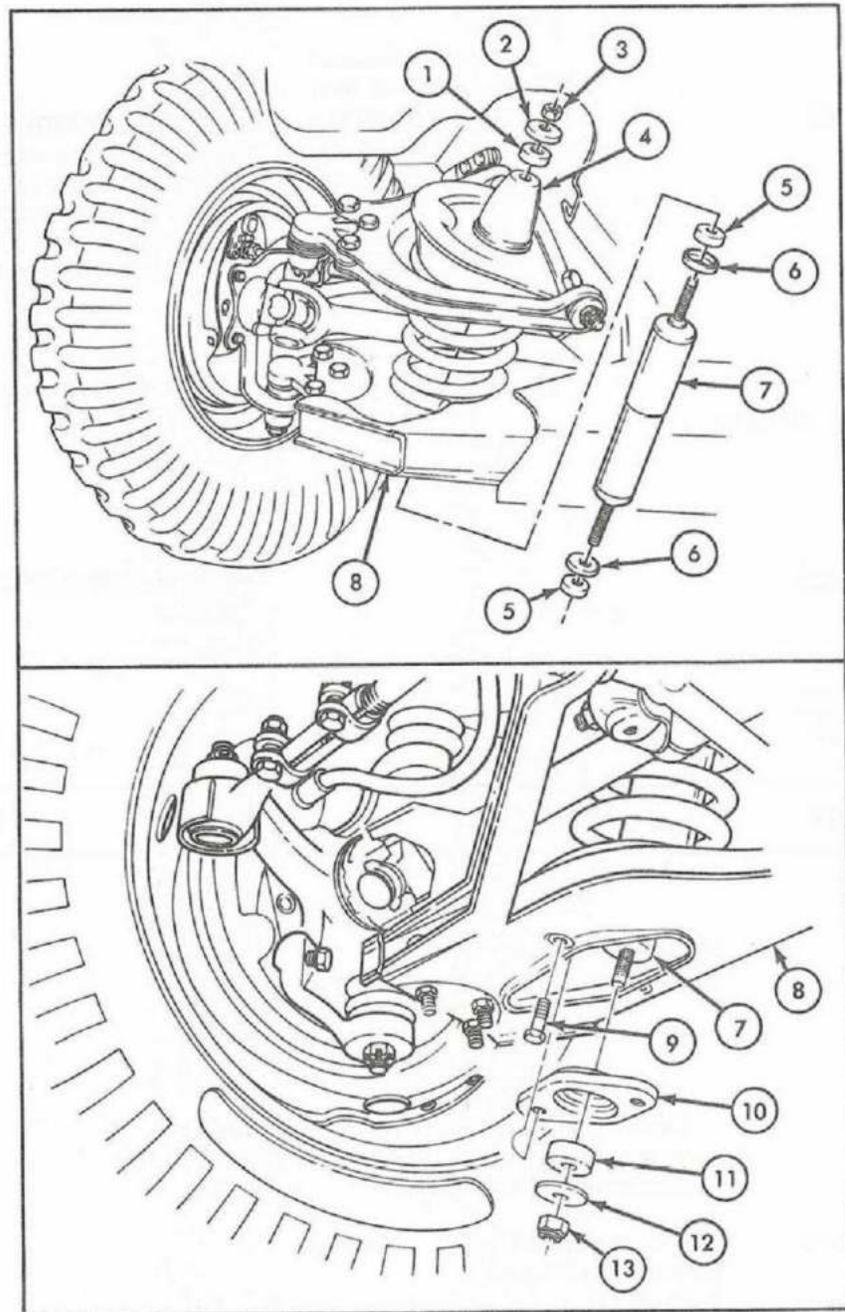
7.		Four rubber bushings (1), (5) and (11), and washers (2), (6), and (12)	Inspect for cracks, breaks, splits, and wear.	Replace if cracked, broken, split, or worn.
8.		Shock absorber mounting plate (10)	Inspect for cracks, breaks, and stripped threads.	Replace if cracked, broken, or threads stripped.
9.		Shock absorber (7)	Inspect for cracks, stripped stud threads, and leaks.	Replace if cracked, stud threads stripped, or leaks are evident.

c. INSTALLATION

10.		Washer (6) and bushing (5)	Install on each end of shock absorber (7).	
11.		Shock absorber (7)	<p>a. Insert through opening in lower suspension arm (8) with cup end facing downward.</p> <p>b. Secure top end to crossmember (4) with bushing (1), washer (2), and locknut (3).</p>	Tighten 15 to 20 lb-ft (20 to 27 N•m).
12.		Shock absorber mounting plate (10)	<p>a. Place over bottom shock absorber stud (7) and through opening in lower suspension arm (8).</p> <p>b. Rotate 90 degrees and secure to two holes in lower suspension arm (8) with two bolts (9).</p> <p>c. Secure to shock absorber (7) with bushing (11), washer (12), and locknut (13).</p>	<p>Tighten 40 to 50 lb-ft (54 to 68 N•m).</p> <p>Tighten 15 to 20 lb-ft (20 to 27 N•m).</p>

7-8. Front Shock Absorbers Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Lower vehicle (para 3-24).

TA 155511

7-9. Front Suspension Crossmember Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

Para 6-12
 Para 6-17
 Para 7-6
 Para 7-5
 Para 6-8

Condition Description

Front wheel drive shafts removed.
 Front wheel spindle supports removed.
 Lower suspension arms removed.
 Upper suspension arms removed.
 Front differential removed.

Test Equipment

None

Special Tools

Torque wrench (0-175 lb-ft)

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic
 One assistant

General Safety Instructions

None

Manual References

TM 9-2320-218-20P

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

a. REMOVAL

- | | | |
|--------------------------------------|---------------|----------|
| 1. Brake line (3) to tee fitting (5) | Flare nut (4) | Unscrew. |
|--------------------------------------|---------------|----------|

NOTE

Three different capscrew lengths are used to secure crossmember. Note position of capscrews for installation.

- | | | |
|---------------------------------------|--|---------|
| 2. Crossmember (12) to body rails (2) | Two front capscrews (10), flatwashers (11), and locknuts (1) | Remove. |
| 3. Crossmember (12) to body rails (2) | Two rear capscrews (7), flatwashers (6), and locknuts (1) | Remove. |

7-9. Front Suspension Crossmember Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

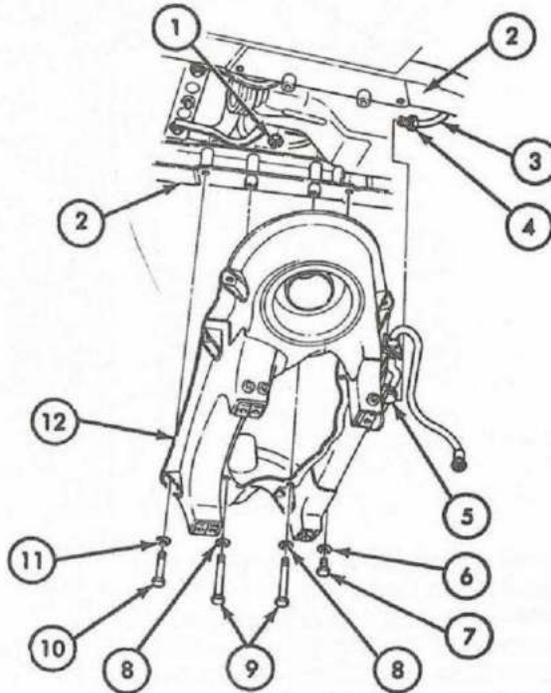
Assistant will support crossmember while mechanic performs steps 4 and 5.

4.	Crossmember (12) to body rails (2)	Four inner capscrews (9), flatwashers (8), and locknuts (1)	Remove.	
5.		Crossmember (12)	Remove from vehicle.	

b. INSTALLATION

NOTE

- If crossmember is being replaced, all brake lines, fittings, and hoses must be transferred to the new component. This procedure is covered in paragraph 8-15.
- Assistant will support crossmember during step 6.
- Three different capscrew lengths are used to secure crossmember. Do not mix capscrew usage.

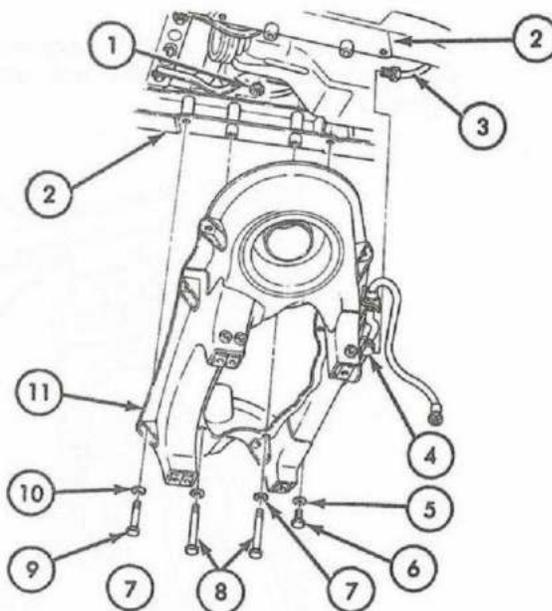


TA 156145

7-9. Front Suspension Crossmember Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Crossmember (11)	<p>a. Position to body rails (2).</p> <p>b. Secure at inner holes with four long cap-screws (8), flat washers (7), and locknuts (1).</p> <p>c. Secure at rear of crossmember (11) with two short capscrows (6), flatwashers (5), and locknuts (1).</p> <p>d. Secure front of crossmember (11) with remaining two capscrows (9), flatwashers (10), and locknuts (1).</p>	Tighten all eight capscrows 27-37 lb-ft (36-50 N•m).

7. Brake line (3) Connect to tee fitting (4).



END OF TASK!

- FOLLOW-ON TASKS:**
- Install differential assembly (para 6-8).
 - Install upper suspension arms (para 7-5).
 - Install lower suspension arms (para 7-6).
 - Install front wheel spindle assemblies (para 6-17).
 - Install front wheel driveshafts (para 6-12).
 - Bleed brakes (para 8-11).

TA 156146

Section II. REAR SUSPENSION MAINTENANCE

7-10. General

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

7-11. Rear Suspension Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
7-12.	Rear Shock Absorbers a. Removal b. Inspection c. Installation	7-26
7-13.	Rear Springs a. Removal b. Installation	7-28
7-14.	Rear Suspension Arm a. Removal b. Installation	7-32

7-12. Rear Shock Absorbers Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p>	<p><u>Equipment Condition Reference</u> Para 3-24</p>	<p><u>Condition Description</u> Rear of vehicle raised and supported.</p>
<p><u>Test Equipment</u> None</p>		
<p><u>Special Tools</u> Torque wrench (0-175 lb-ft)</p>		<p><u>Special Environmental Conditions</u> Vehicle on level surface.</p>
<p><u>Materials/Parts</u> None</p>		
<p><u>Personnel Required</u> One mechanic</p>		<p><u>General Safety Instructions</u> None</p>
<p><u>Manual References</u> TM 9-2320-218-20P</p>		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

The left and right rear shock absorbers are removed and installed the same way.

a. REMOVAL

- | | | |
|---|------------------------------|---------|
| 1. Lower rear shock absorber (7) to rear suspension arm bracket (5) | Locknut (6) and capscrew (4) | Remove. |
|---|------------------------------|---------|

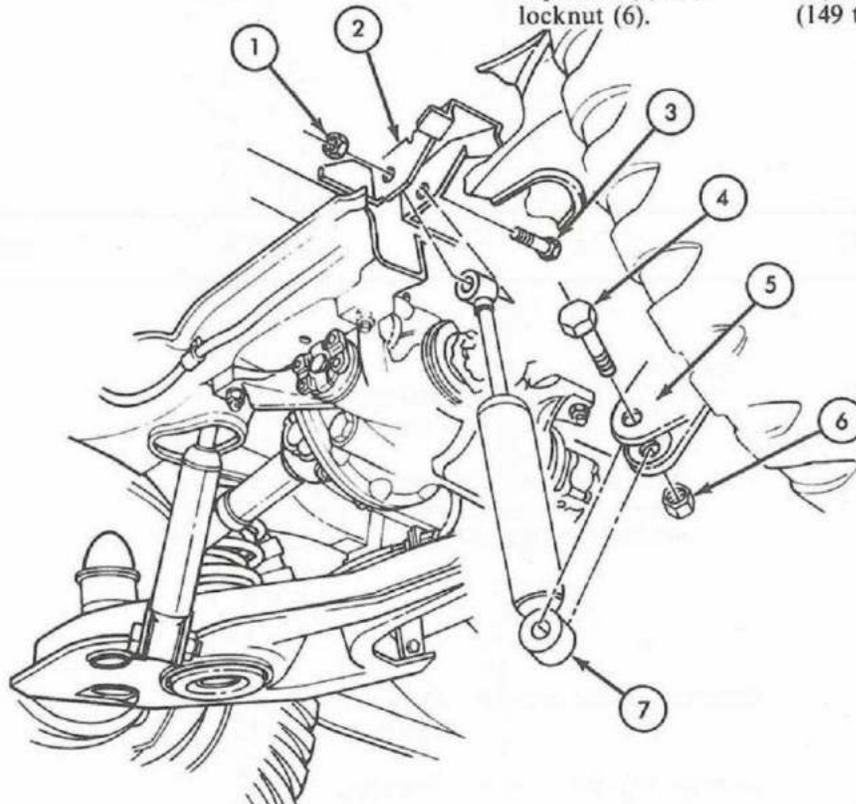
NOTE

Swing rear shock absorber upward to gain access to upper capscrew (3).

- | | | |
|---|------------------------------|---------|
| 2. Upper rear shock absorber (7) to frame bracket (2) | Locknut (1) and capscrew (3) | Remove. |
|---|------------------------------|---------|

7-12. Rear Shock Absorbers Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Rear shock absorber (7)	Remove.	
b. INSPECTION				
4.		Rear shock absorber (7)	Inspect for cracks, leaks, and nicks in shaft.	Replace if cracked, leaking, or shaft nicked.
c. INSTALLATION				
5.		Rear shock absorber (7)	<p>a. Secure upper end to frame bracket (2) with capscrew (3) and locknut (1).</p> <p>b. Secure lower end to rear suspension arm bracket (5) with capscrew (4) and locknut (6).</p>	<p>Insert capscrew (3) toward rear of vehicle.</p> <p>Tighten 110 to 150 lb-ft (149 to 203 N•m).</p> <p>Insert capscrew (4) toward front of vehicle.</p> <p>Tighten 110 to 150 lb-ft (149 to 203 N•m).</p>



END OF TASK!

FOLLOW-ON TASK: Lower vehicle (para 3-24).

TA 155512

7-13. Rear Springs Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Sealing compound (NSN 8030-01-025-1692)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 9-4</p>	<p><u>Condition Description</u> Rear wheel and tire assembly removed.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

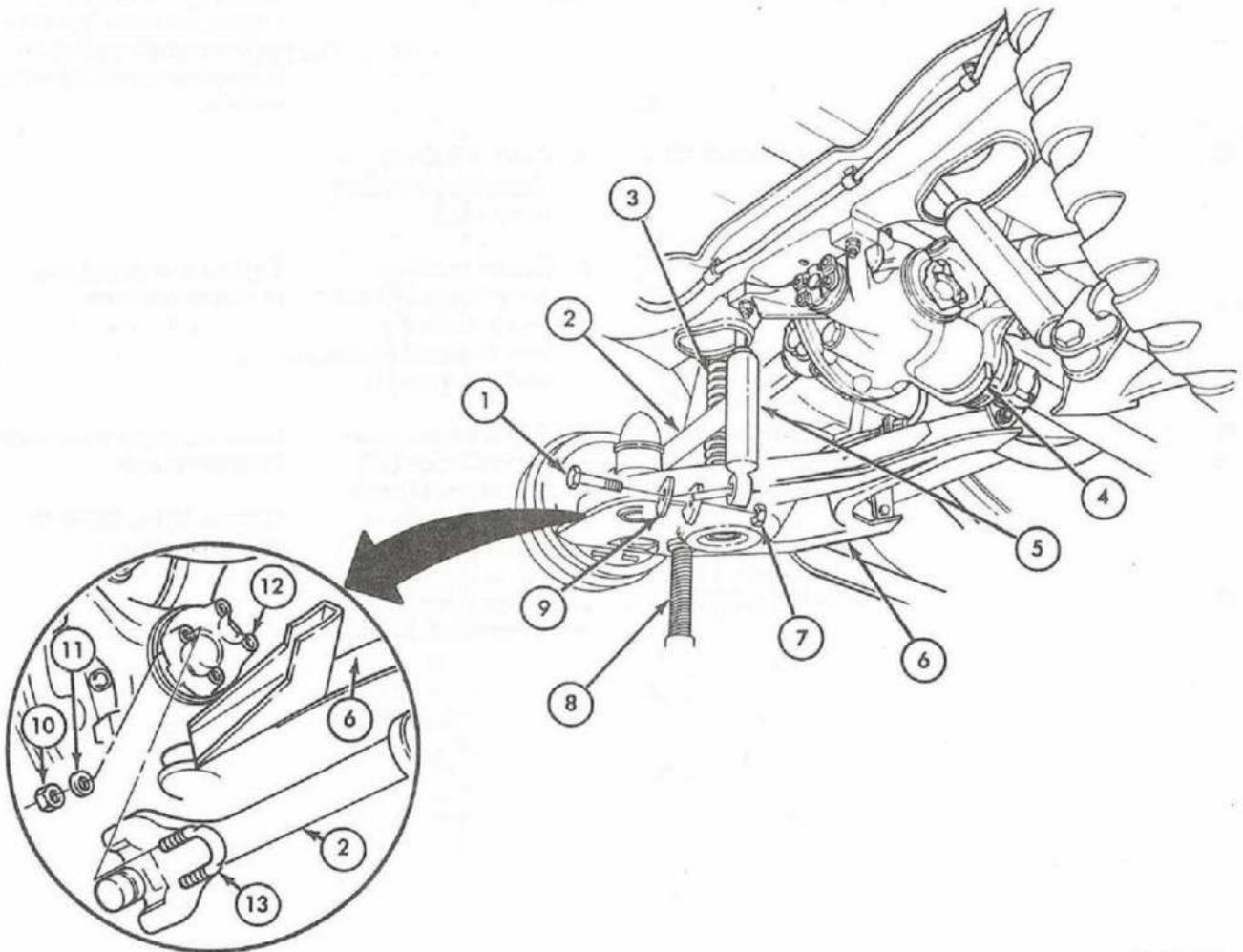
- The left and right rear springs are removed and installed the same way.
- M825 series vehicles are equipped with inner and outer rear springs to support additional weight of 106mm recoilless rifle.

a. REMOVAL

- | | | |
|----|--|---|
| 1. | Rear suspension arm (6) | Raise slightly with hydraulic jack (8). |
| 2. | Lower rear shock absorber (5) to rear suspension arm bracket (9)
Locknut (7) and capscrew (1) | Remove. |

7-13. Rear Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Rear shock absorber (5)	Remove from rear suspension arm (6).	
4.	Wheel drive shaft (2) to wheel drive flange (12)	Four nuts (10), lock-washers (11), two U-bolts (13)	Remove.	
5.		Wheel drive shaft (2)	Slide towards differential (4) and position away from rear spring (3).	
6.		Hydraulic jack (8)	Lower and remove from rear suspension arm (6).	



TA 155513

7-13. Rear Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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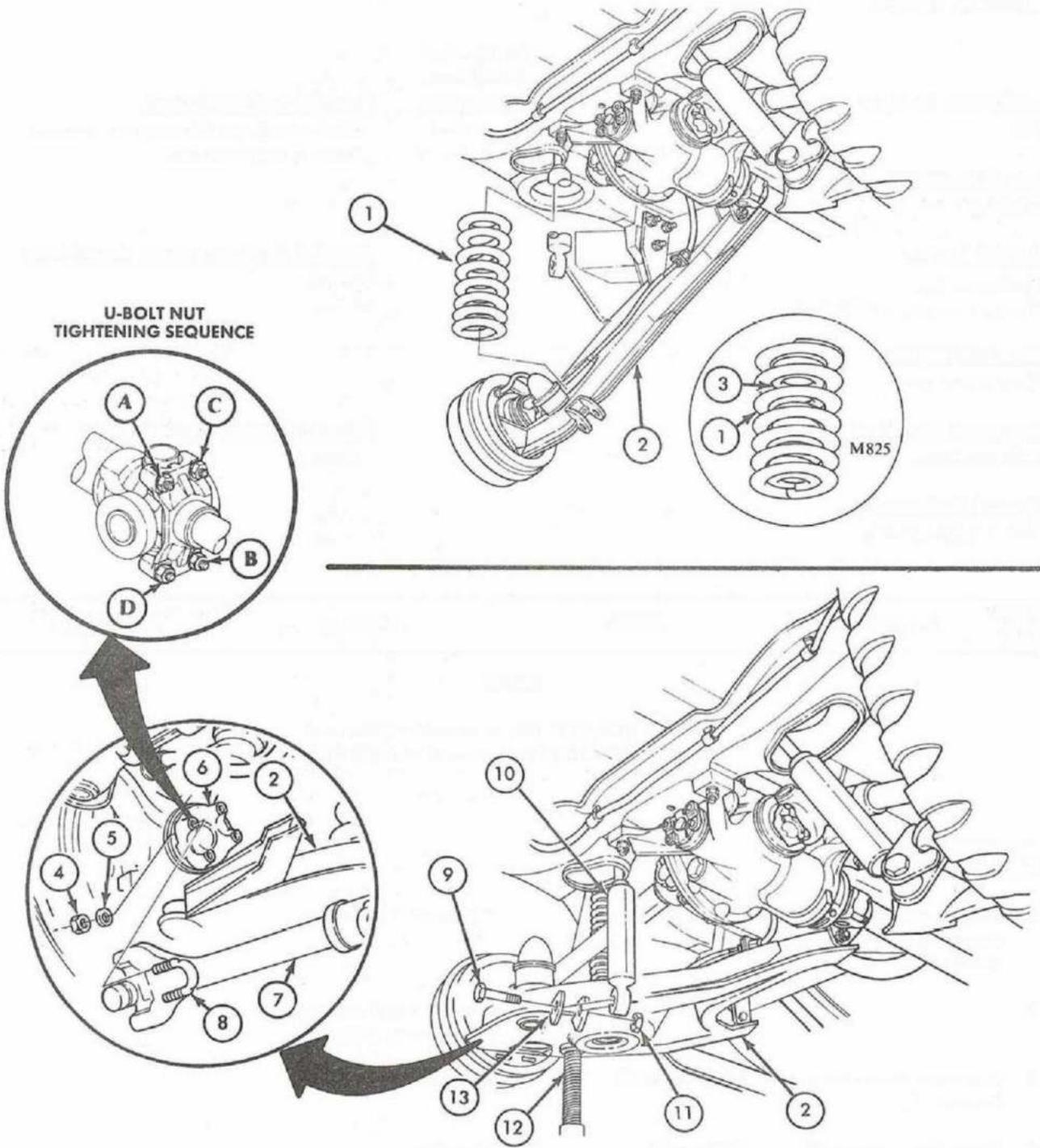
NOTE

When performing this procedure on M825 vehicles, note position of inner spring (3) for proper installation.

7.		Rear spring (1)	Remove.	
b. INSTALLATION				
8.		Rear spring (1)	Position on rear suspension arm (2).	
9.		Rear suspension arm (2)	Raise with hydraulic jack (12).	Make sure rear spring (1) is properly seated in suspension arm (2). Make sure rear inner spring (3) is properly seated on M825 vehicles.
10.		Wheel drive shaft (7)	<p>a. Coat U-bolt (8) threads with sealing compound.</p> <p>b. Secure to wheel drive flange (6) with two U-bolts (8), four lockwashers (5), and four nuts (4).</p>	Tighten U-bolt nuts (4) in sequence shown.
11.		Rear shock absorber (10)	Secure to rear suspension arm bracket (13) with capscrew (9) and locknut (11).	<p>Insert capscrew (9) toward front of vehicle.</p> <p>Tighten 110 to 150 lb-ft (149 to 203 N•m).</p>
12.		Hydraulic jack (12)	Lower and remove from rear suspension arm (2).	

7-13. Rear Springs Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install rear wheel and tire assembly (see para 9-4).

TA 484678

7-14. Rear Suspension Arm Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

Para 6-18
Para 7-12

Condition Description

Rear wheel spindle support removed.
Rear spring removed.

Test Equipment

None

Special Tools

Hydraulic jack
Torque wrench (0-175 lb-ft)

Special Environmental Conditions

None

Materials/Parts

Two cotter pins

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

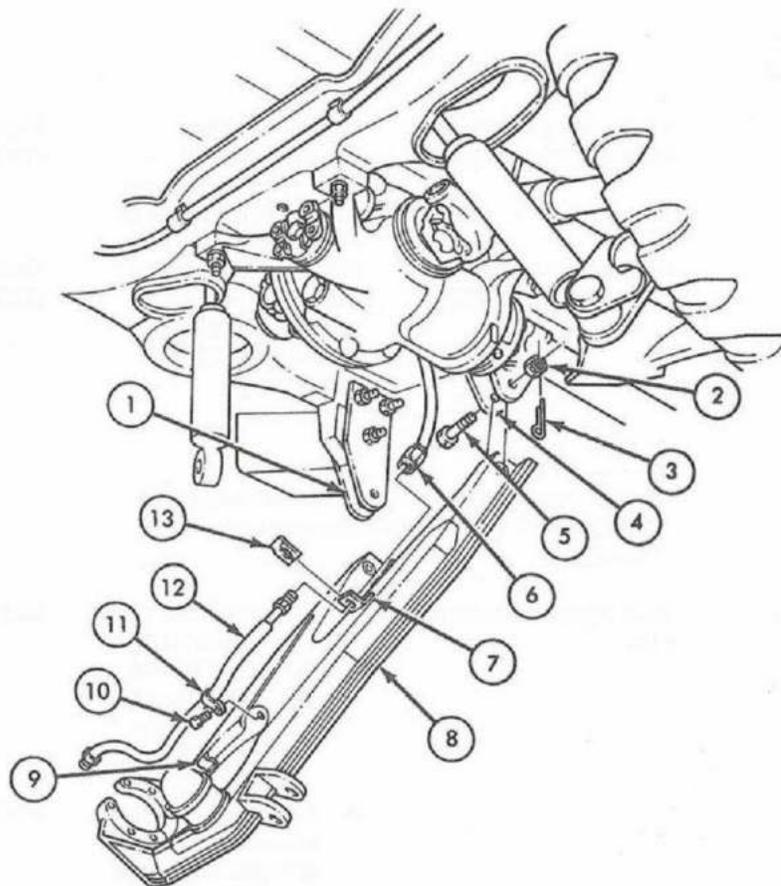
The left and right rear suspension arms and suspension hangers are removed and installed the same way.

a. REMOVAL

- | | | |
|--|-----------------|---|
| 1. Brake hose (6) to suspension arm hose bracket (7) | Clip (13) | Lift and remove. |
| 2. | Brake line (12) | Unscrew and remove from brake hose (6). |
| 3. Suspension arm hose bracket (7) | Brake hose (6) | Remove. |
| 4. Brake line clamp (11) to suspension arm (8) | Screw (10) | Remove. |

7-14. Rear Suspension Arm Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Brake line (12) and clamp (11)	Remove from suspension arm (8).	
6.		Brake line (12)	Remove from retaining clip (9).	
7.	Rear suspension arm (8) to outer and inner suspension hangers (1) and (4)	Two cotter pins (3), slotted nuts (2), and bolts (5)	Remove.	Discard cotter pins (3).
8.		Rear suspension arm (8)	Remove from outer and inner suspension hangers (1) and (4).	

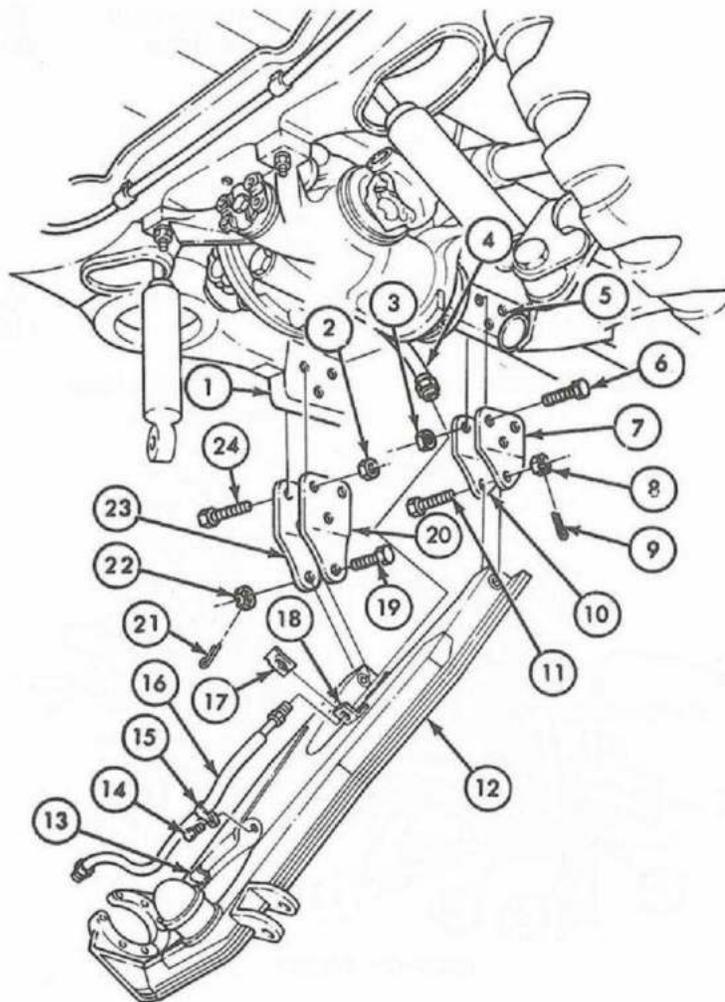


7-14. Rear Suspension Arm Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.	Two outer suspension hangers (23) and (20) to outer body mount (1)	Three capscrews (24) and locknuts (2)	Remove.	
10.		Two outer suspension hangers (23) and (20)	Remove from outer body mount (1).	
11.	Two inner suspension hangers (7) and (10) to inner body mount (5)	Three capscrews (6) and locknuts (3)	Remove.	
12.		Two inner suspension hangers (7) and (10)	Remove from inner body mount (5).	
b. INSTALLATION				
13.		Two outer suspension hangers (23) and (20)	Secure to outer body mount (1) with three capscrews (24) and locknuts (2).	Tighten 40-55 lb-ft (54.2-74.6 N•m).
14.		Two inner suspension hangers (7) and (10)	Secure to inner body mount (5) with three capscrews (6) and locknuts (3).	Tighten 40-55 lb-ft (54.3-74.6 N•m).
NOTE				
When installing new rear suspension arm, use hardware from old rear suspension arm when possible.				
15.	Rear suspension arm (12)		<p>a. Secure to two inner suspension hangers (7) and (10) with bolt (11), slotted nut (8), and new cotter pin (9).</p> <p>b. Secure to two outer suspension hangers (23) and (20) with bolt (19), slotted nut (22), and new cotter pin (21).</p>	<p>Finger tighten only.</p> <p>Finger tighten only.</p>

7-14. Rear Suspension Arm Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
16.		Brake hose (4)	<p>a. Insert through suspension arm hose bracket (18).</p> <p>b. Snap clip (17) on end to secure.</p>	
17.		Brake line (16)	<p>a. Screw into brake hose (4) and tighten.</p> <p>b. Secure line clamp (15) to suspension arm (12) with screw (14).</p> <p>c. Press into retaining clip (13).</p>	



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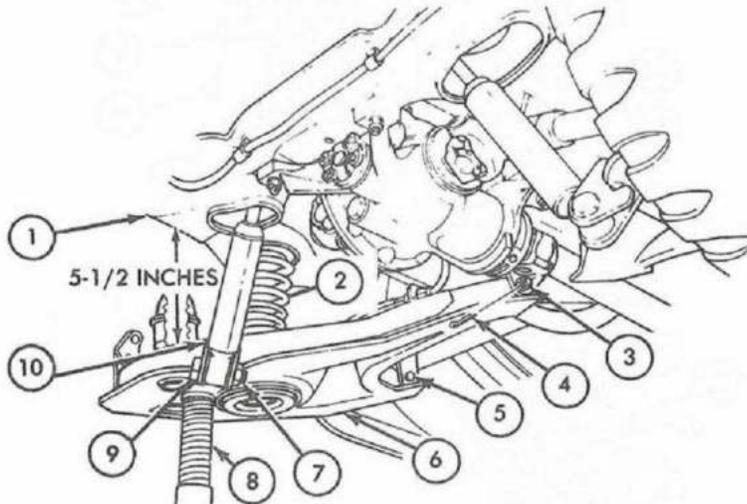
7-14. Rear Suspension Arm Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Do not tighten shock absorber locknut (7) to torque value when performing step 18. Rear suspension arm (6) must be properly positioned first.

18.		Rear spring (2)	Install.	See para 7-13.
19.		Rear suspension arm (6)	<p>a. Raise with hydraulic jack (8) and position so top surface is 5½ inches (139.7 mm) from bottom of body side member (1).</p> <p>b. Tighten two bolts (5) and slotted nuts (3).</p> <p>c. Insert new cotter pin (4) in each slotted nut (3) and bend ends around nut (3).</p>	Tighten 60 to 70 lb-ft (81 to 94 N•m).
20.	Shock absorber (10)	Capscrew (9) and locknut (7)	Tighten.	Tighten 110 to 150 lb-ft (149 to 203 N•m).
21.		Hydraulic jack (8)	Lower and remove from suspension arm (6).	



END OF TASK!

FOLLOW-ON TASK: Install rear wheel spindle support (see para 6-18).

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CHAPTER 8 BRAKE SYSTEM MAINTENANCE

8-1. Overview

a. This chapter provides maintenance information for the brake system. Components covered can be found in one of the following sections:

- Section I. Parking Brake System Maintenance (page 8-1)
- Section II. Service Brake System Maintenance (page 8-14)

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

Section I. PARKING BRAKE SYSTEM MAINTENANCE

8-2. General

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

8-3. Parking Brake System Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
8-4.	Parking Brake Adjustment Instructions a. Minor Adjustment b. Major Adjustment	8-2
8-5.	Parking Brake Band a. Removal b. Inspection c. Installation	8-6
8-6.	Parking Brakedrum a. Removal b. Inspection c. Installation	8-10
8-7.	Parking Brake Handle and Linkage a. Removal b. Inspection c. Installation	8-12

8-4. Parking Brake Adjustment Instructions

This task covers:

a. Minor Adjustment

b. Major Adjustment

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

Para 10-14
TM 9-2320-218-10

Condition Description

Transmission cover panel removed (task *b* only).
Parking brake disengaged with wheels chocked.

Test Equipment

None

Special Tools

Feeler gage

Special Environmental Conditions

Vehicle on level surface with wheels chocked.

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. MINOR ADJUSTMENT

CAUTION

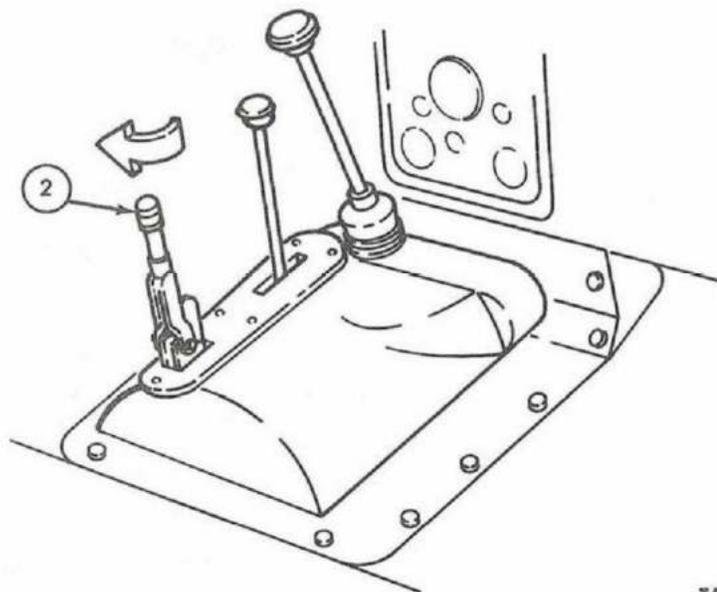
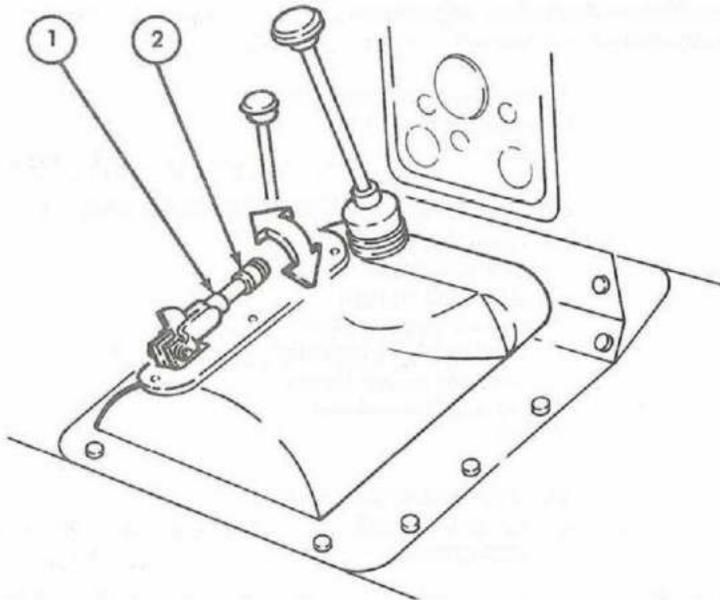
Never turn adjusting knob to eliminate noise caused by vibration of parking brake linkage. Improper adjustment will result.

1. Make minor adjustment to parking brake as follows:
 - a.* Turn adjusting knob (2) on parking brake handle (1) counter-clockwise to remove tension.
 - b.* Engage parking brake and turn knob (2) clockwise as tight as possible by hand.

8-4. Parking Brake Adjustment Instructions (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- c. Release parking brake and turn knob (2) clockwise two additional turns.



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8-4. Parking Brake Adjustment Instructions (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. MAJOR ADJUSTMENT

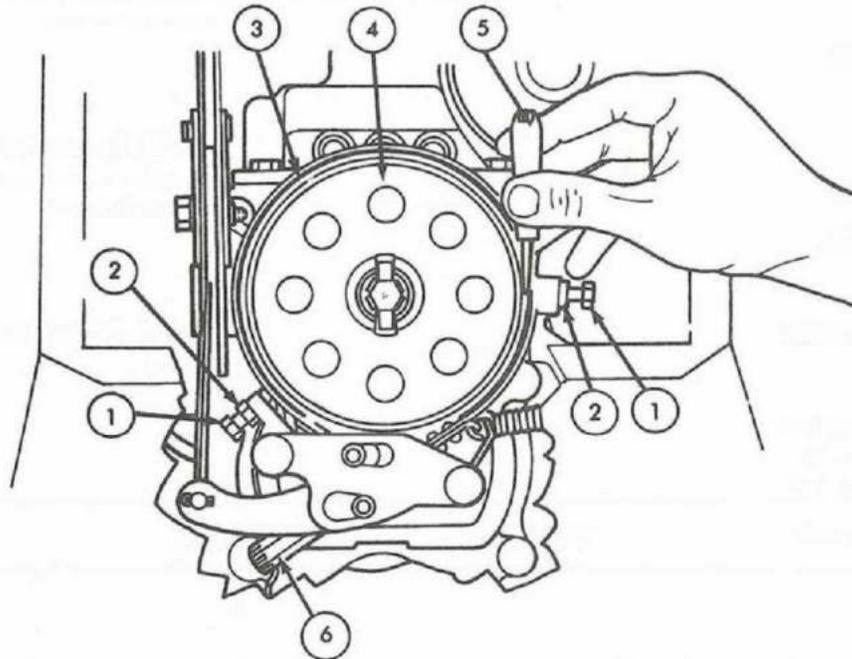
NOTE

Major parking brake adjustment must be performed whenever new parking brake lining or drum is installed or when minor adjustment is not sufficient to hold the vehicle.

- | | |
|----|--|
| 2. | <p>Make major adjustments to parking brake as follows:</p> <ul style="list-style-type: none"> a. Loosen two jam nuts (2) and adjust two screws (1) and adjusting nut (6) to obtain a clearance of .010 inch (.025mm) between brake lining (3) and brakedrum (4). Use feeler gage (5). b. Tighten two jam nuts (2) and recheck clearance. |
|----|--|

8-4. Parking Brake Adjustment Instructions (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Install transmission cover panel (para 10-14).
 - Perform stall test (TM 9-2320-218-10).

8-5. Parking Brake Band Maintenance

This task covers:

- a. Removal
- b. Inspection

c. Installation

INITIAL SETUP:

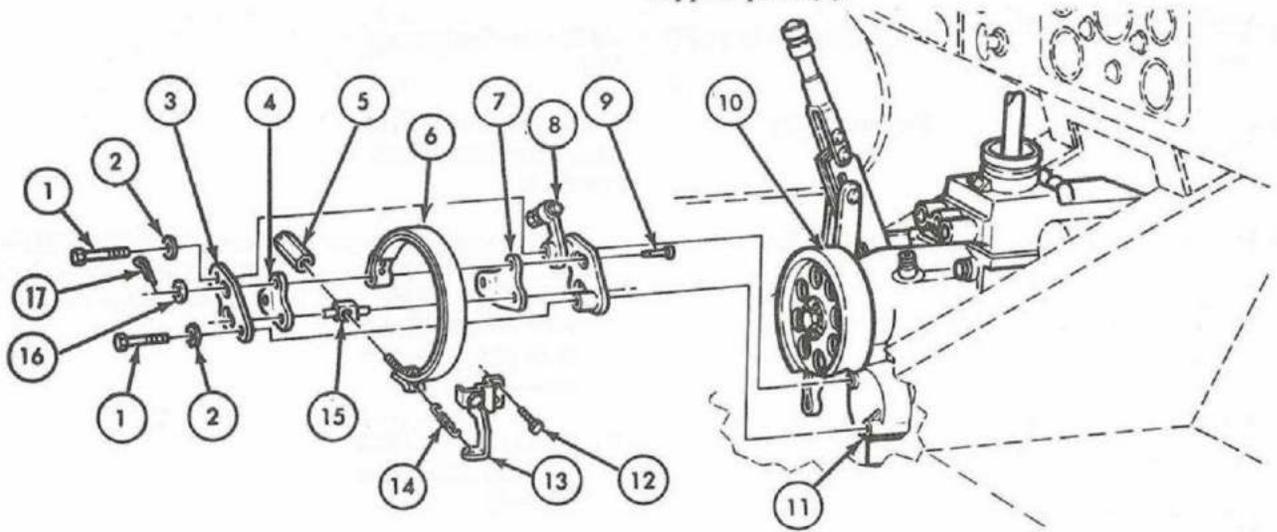
<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Cotter pin</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 10-14 TM 9-2320-218-10</p>	<p><u>Condition Description</u> Transmission cover panel removed. Parking brake disengaged with wheels chocked.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface with wheels chocked.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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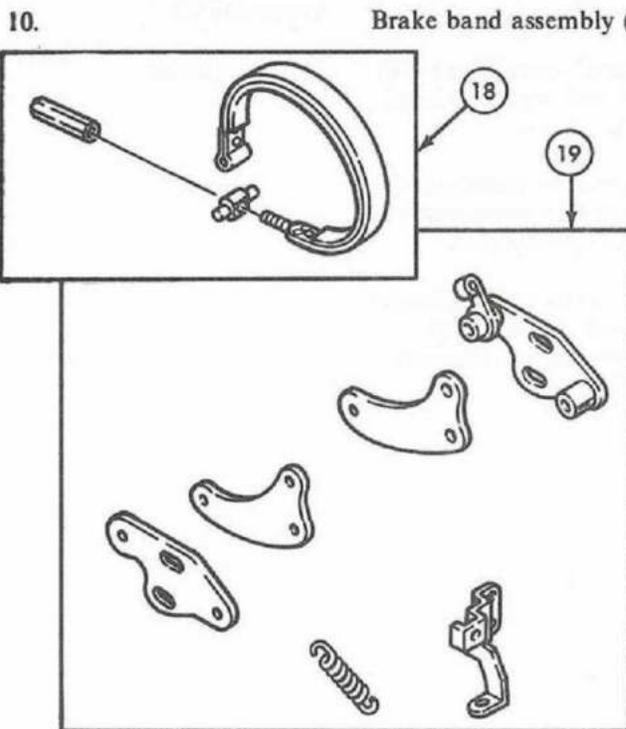
a. REMOVAL				
1.	Parking brake band (6) and band alining screw support (13)	Adjusting spring (14)	Unhook and remove.	
2.	Band alining screw support (13) to transfer (11)	Two screw-assembled lockwashers (12)	Remove.	
3.		Band alining screw support (13)	Remove.	
4.	Parking brake band (6)	Band adjusting nut (5)	Remove.	
5.	Clevis pin (9)	Cotter pin (17) and washer (16)	Remove.	Discard cotter pin (17).
6.	Spacer plate (3) to transfer (11)	Two capscrews (1) and lockwashers (2)	Remove.	
7.		Spacer plate (3), right lever plate (4), and trunnion (15)	Remove.	

8-5. Parking Brake Band Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.		Parking brake band (6)	Slide off brakedrum (10).	
9.		Clevis pin (9)	Remove from left lever plate (7) and support plate (8).	



b. INSPECTION



10. Brake band assembly (18)
- a. Check lining condition and thickness. If lining is cracked, loose, shows evidence of oil or grease, or is less than 1/32 in. (.79 mm) above rivets, replace band.
 - b. Check band stud, adjusting nut, and trunnion threads. If threads are stripped, replace band assembly, nut, or trunnion.
 - c. Check support and lever assembly (19) for bends and wear. Replace worn and badly bent parts.

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8-5. Parking Brake Band Maintenance (Cont'd)

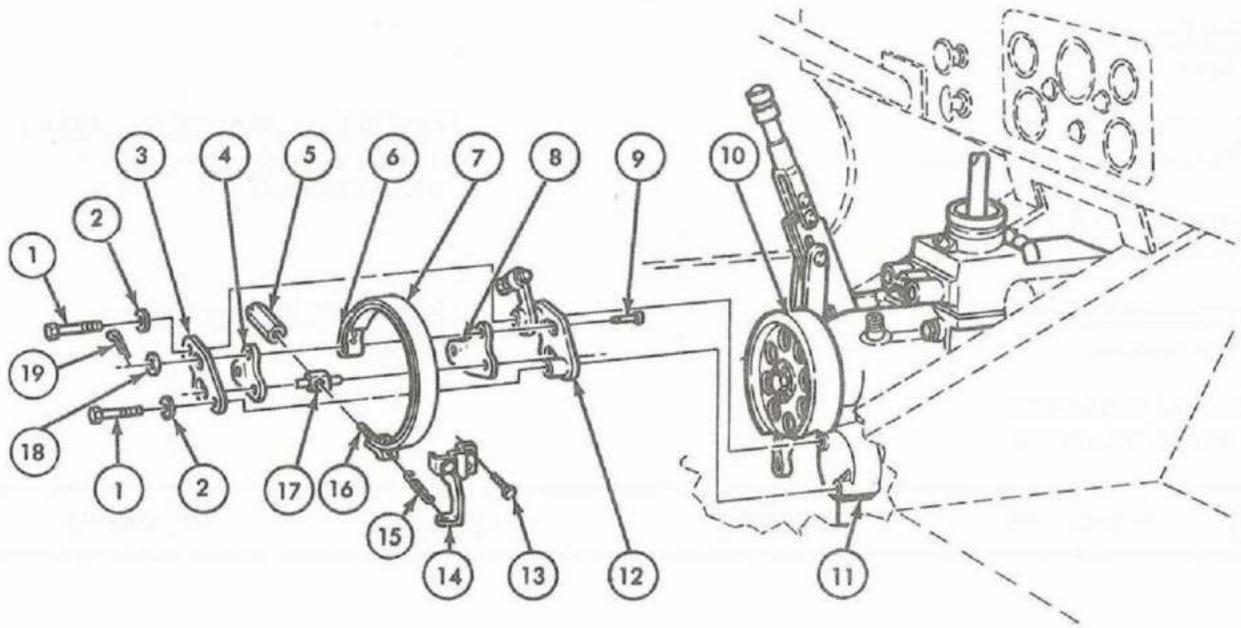
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

11.		Parking brake band (7)	Slide over brakedrum (10).	
12.		Trunnion (17)	Slide over band stud (16) of parking brake band (7).	
13.		Clevis pin (9)	<p>a. Slide through support plate (12), left lever plate (8), parking brake band (7), right lever plate (4), and spacer plate (3).</p> <p>b. Secure with washer (18) and new cotter pin (19).</p>	Make sure clevis pin (9) is positioned through parking brake band eyelet (6).
14.		Support plate (12), left lever plate (8), right lever plate (4), and spacer plate (3)	Secure to transfer (11) with two lockwashers (2) and capscrews (1).	Make sure parking brake band (7) is between left lever plate (8) and right lever plate (4).
15.		Adjusting nut (5)	Install onto T-bolt (16) of parking brake band (7).	Do not tighten.
16.		Band alining screw support (14)	Secure to transfer (11) with two screw-assembled lockwashers (13).	
17.		Adjusting spring (15)	Hook to parking brake band (7) and band alining screw support (14).	

8-5. Parking Brake Band Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASKS!

- FOLLOW-ON TASKS:**
- Adjust parking brake (para 8-4).
 - Install transmission cover panel (para 10-14).

8-6. Parking Brakedrum Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> Crocus cloth</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 8-5</p>	<p><u>Condition Description</u> Parking brake band removed.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface with wheels chocked.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

- | | | | |
|----|---|--|-----------------|
| 1. | Parking brakedrum (4) | Tab washer (2) | Bend tabs down. |
| 2. | Parking brakedrum (4) to output shaft (5) | Capscrew (1), tab washer (2) and flat washer (3) | Remove. |
| 3. | | Parking brakedrum (4) | Remove. |

b. INSPECTION

- | | | | |
|----|---------------|------------------------------|--|
| 4. | Brakedrum (4) | Check for cracks and scoring | Repair minor scoring with crocus cloth. If drum is cracked or badly scored, replace. |
|----|---------------|------------------------------|--|

8-6. Parking Brakedrum Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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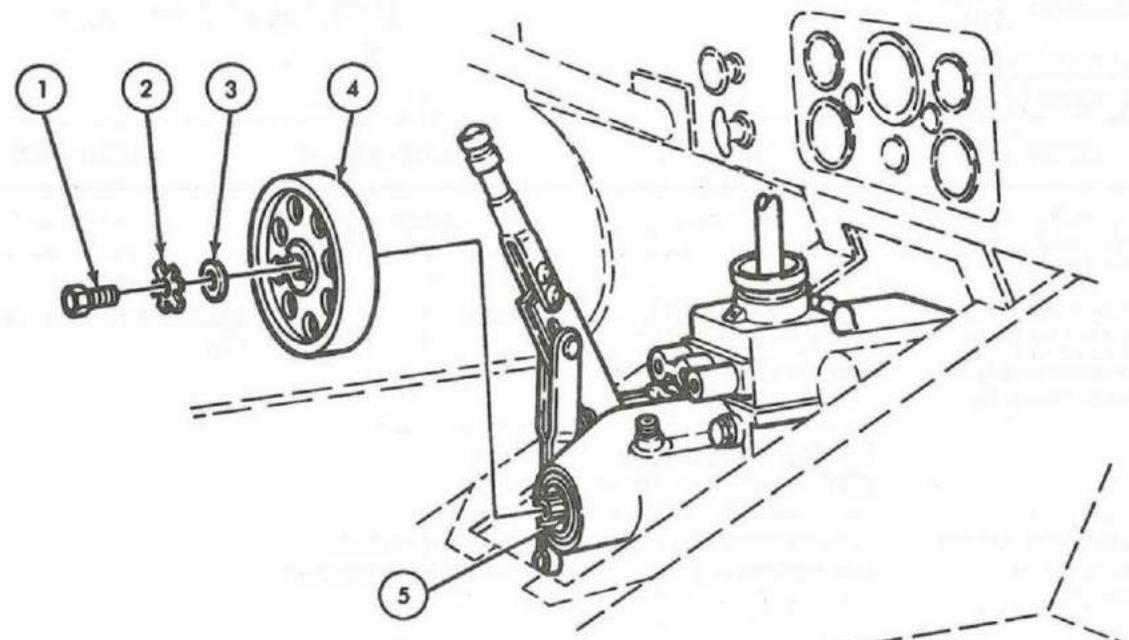
c. INSTALLATION

NOTE

- When installing a new parking brakedrum, always use new parking brake band.
- Tabs on tab washer (2) may only be bent once. If all tabs have been used, replace the tab washer.

5.		Parking brakedrum (4)	Secure to output shaft (5) with flatwasher (3), tab washer (2), and capscrew (1).	Tighten capscrew (1) 60-65 lb-ft (81-88 N•m).
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Bend two tabs up to lock capscrew (1).



END OF TASK!

FOLLOW-ON TASK: Install parking brake band (para 8-5).

8-7. Parking Brake Handle and Linkage Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Two cotter pins</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 10-14</p>	<p><u>Condition Description</u> Transmission cover panel removed.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Parking brake linkage (5) to parking brake handle assembly (1) and lever plates (6)	Two cotter pins (4), clevis pins (2), and washers (3)	Remove.	Discard two cotter pins (4).
2.		Parking brake linkage (5)	Remove.	
3.	Parking brake handle assembly (1) to transfer (9)	Two capscrews (7) and lockwashers (8)	Remove and detach handle (1) from transfer (9).	

b. INSPECTION

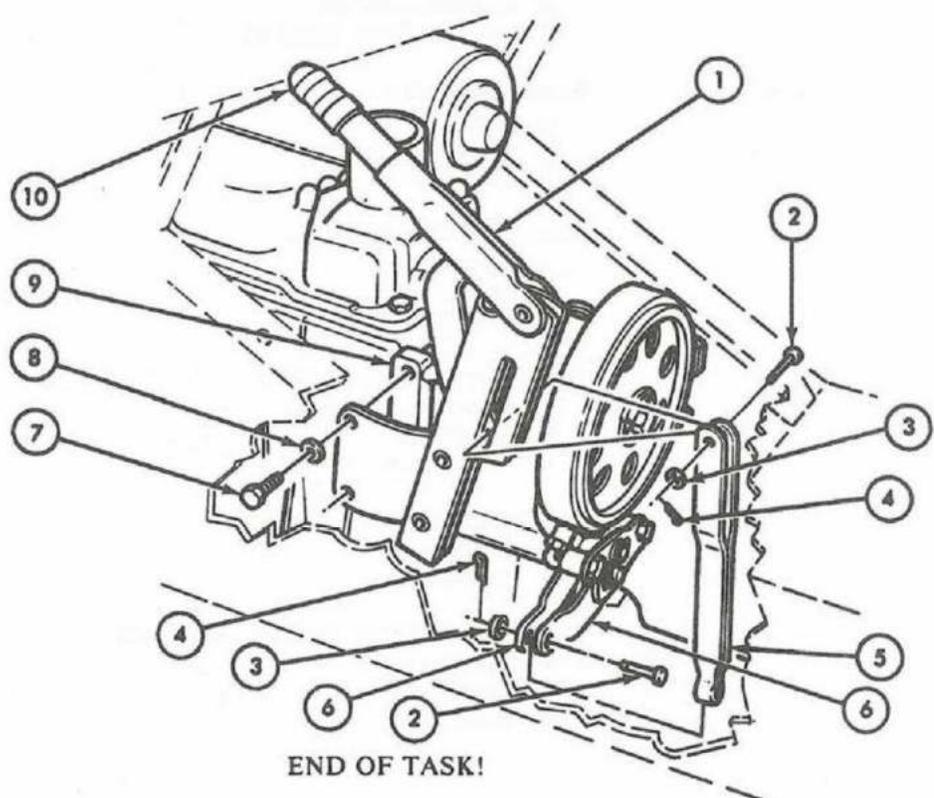
4.	Handle assembly (1)		a. Check handle assembly (1) and knob (10) for freedom of movement.	If handle does not move freely, and bends cannot be straightened, replace handle assembly.
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8-7. Parking Brake Handle and Linkage Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
			b. Check handle assembly (1) and knob (10) for damaged or stripped threads.	If threads are damaged, and repairable, chase with die. If threads are stripped, replace handle assembly.
5.		Link (5)	Check link (5) and pins (2) for bends and wear.	If pins or link are worn or bent, replace.

c. INSTALLATION

6.		Parking brake handle assembly (1)	Secure to transfer (9) with two lockwashers (8) and capscrews (7).
7.		Parking brake linkage (5)	Secure to handle assembly (1) and lever plates (6) with two clevis pins (2), washers (3), and two new cotter pins (4).



- FOLLOW-ON TASKS:**
- Adjust parking brake (para 8-4).
 - Install transmission cover panel (para 10-14).

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Section II. SERVICE BRAKE SYSTEM MAINTENANCE

8-8. General

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

8-9. Service Brake System Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
8-10.	Brakeshoe and Pedal Travel Adjustment a. Brakeshoe Travel Adjustment Instructions b. Brake Pedal Free Travel Adjustment Instructions	8-16
8-11.	Bleeding Brake System a. Manual Bleeding b. Pressure Tank Bleeding	8-20
8-12.	Service Brakeshoe a. Removal b. Inspection c. Installation	8-24
8-13.	Wheel Cylinder Assembly a. Removal b. Inspection c. Installation	8-28
8-14.	Service Brake Backing Plate a. Removal b. Inspection c. Installation	8-30
8-15.	Master Cylinder a. Removal b. Installation	8-34
8-16.	Service Brake Lines, Fittings, and Hoses a. Removal b. Inspection c. Installation	8-38

8-9. Service Brake System Maintenance Task Summary (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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8-17.

- Brake and Clutch Pedal Assembly**
- a. Removal
 - b. Disassembly
 - c. Inspection
 - d. Reassembly
 - e. Installation

8-42

8-10. Brakeshoe and Pedal Travel Adjustment Instructions

This task covers:

- a. Brakeshoe Travel Adjustment Instructions b. Brake Pedal Free Travel Adjustment Instructions*

INITIAL SETUP:

Applicable Models

All

Test Equipment

None

Special Tools

Torque wrench (0-175 lb-ft)
Brake adjusting tool

Materials/Parts

None

Personnel Required

One mechanic

Manual References

TM 9-2320-218-10

Equipment
Condition
Reference

TM 9-2320-218-10
Para 3-24

Condition Description

Parking brake set (task *b* only).
Vehicle raised and supported
(task *a* only).

Special Environmental Conditions

None

General Safety Instructions

None

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. BRAKESHOE TRAVEL ADJUSTMENT INSTRUCTIONS

NOTE

The adjustment procedures for all four wheels are the same. This task will only cover one wheel.

8-10. Brakeshoe and Pedal Travel Adjustment Instructions (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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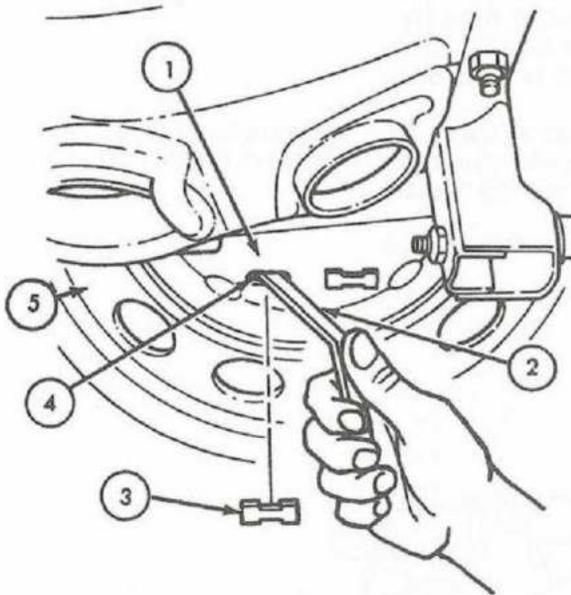
1. Rear of backing plate (1)

Front adjusting slot cover (3)

Remove.

2.

Adjust brakeshoes as follows:



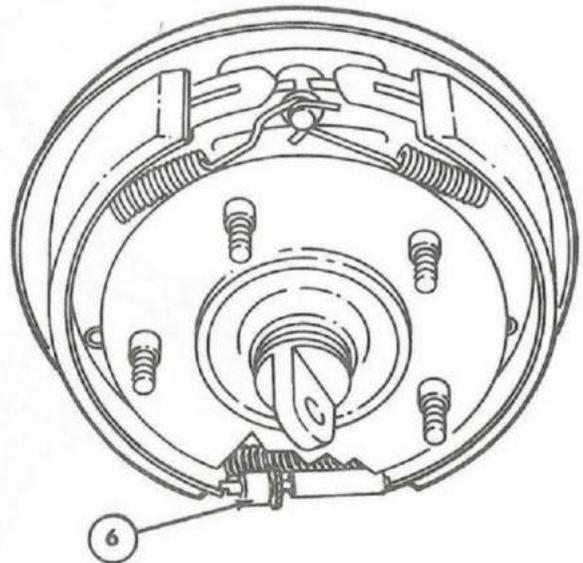
a. Insert brake adjusting tool (2) through adjusting slot (4) and rotate star adjuster (6) until wheel (5) cannot be turned by hand.

Make sure transmission is in neutral.

b. Back off star adjuster (6) until slight wheel drag is felt.

c. Install adjusting hole cover (3).

d. Repeat for all wheels.



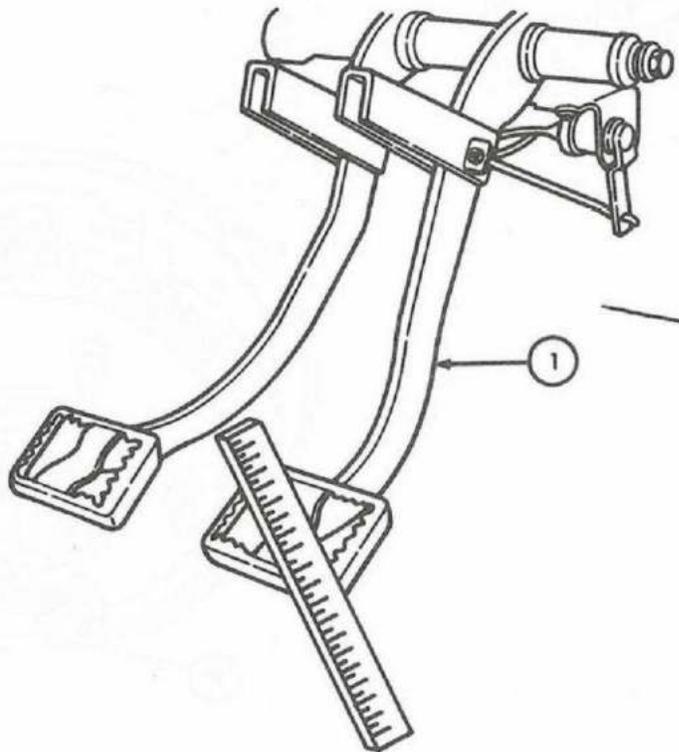
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8-10. Brakeshoe and Pedal Travel Adjustment Instructions (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. BRAKE PEDAL FREE TRAVEL ADJUSTMENT INSTRUCTIONS

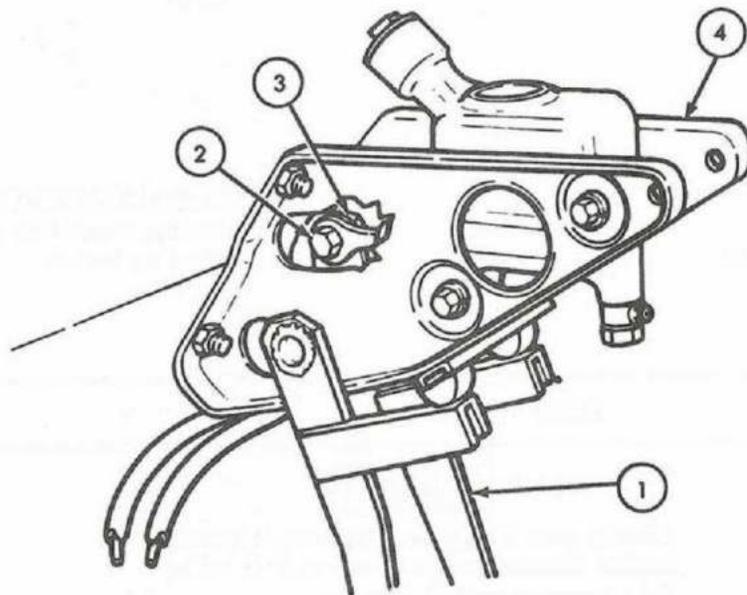
3.	Brake pedal (1) to master cylinder bracket (4)	Eccentric adjusting bolt (2) and locknut (3)	<p>a. Loosen locknut (3).</p> <p>b. Turn adjusting bolt (2) to obtain a free travel at pedal (1) of 1/4 to 7/8 in. (6.35 to 22.22 mm).</p> <p>c. Tighten locknut (3) while holding adjusting bolt (2) in place.</p> <p>d. Recheck free travel.</p>	<p>Tighten locknut (3) 10-15 lb-ft (14-20 N•m).</p>
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8-10. Brakeshoe and Pedal Travel Adjustment Instructions (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Lower vehicle (para 3-24).

8-11. Bleeding Brake System

This task covers:

a. Manual Bleeding

b. Pressure Tank Bleeding

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
LO 9-2320-218-12

Condition Description

Parking brake set.
Master cylinder filled to proper level.

Test Equipment

None

Special Tools

Safety goggles
Pressure tank bleeder

Special Environmental Conditions

None

Materials/Parts

Brake fluid
Small container
Hose

Personnel Required

One mechanic
One assistant (task *a* only)

General Safety Instructions

Always wear safety goggles when bleeding brakes.

Manual References

TM 9-2320-218-10
LO 9-2320-218-12

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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WARNING

Always wear safety goggles when bleeding brakes. Severe eye injury will result if brake fluid comes in contact with eyes.

NOTE

- Always begin brake bleeding from the wheel farthest from the master cylinder; right rear, left rear, right front, left front.
- Assistant is required to depress the brake pedal when manually bleeding brakes while mechanic opens and closes bleeder valves.

a. MANUAL BLEEDING

- | | | | |
|----|----------------------------|--|--------------------------------------|
| 1. | Hose (2) and container (3) | <p><i>a.</i> Fill container (3) 3/4 full of brake fluid.</p> <p><i>b.</i> Connect hose to bleeder valve (1), and place other end in container (3).</p> | <p>Make sure valve (1) is clean.</p> |
|----|----------------------------|--|--------------------------------------|

8-11. Bleeding Brake System (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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2.

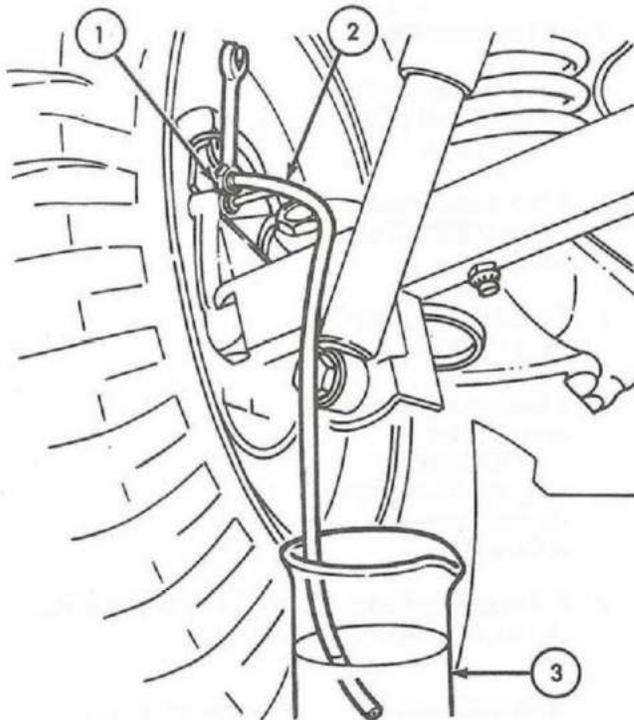
Bleed brakes as follows:

- a. Have assistant depress brake pedal and hold.

Builds up pressure and forces air to wheel cylinders.

CAUTION

- Once bleeder valve is opened, brake pedal will drop to floor. Assistant must hold pedal to floor until bleeder valve is closed. Failure to do this will result in improper bleeding of brakes.
- Check fluid level in master cylinder frequently. Improper bleeding will result if master cylinder is allowed to run dry during bleeding.



- b. Crack open bleeder valve (1) to allow air to escape.

- c. Once all air escapes, close valve (1).

It may be necessary to repeat steps a, b, and c to allow all air to escape.

- d. Disconnect hose (2) from valve (1).

- e. Repeat step 1 for all wheels.

- f. Fill master cylinder to proper level.

See LO 9-2320-218-12.

8-11. Bleeding Brake System (Cont'd)

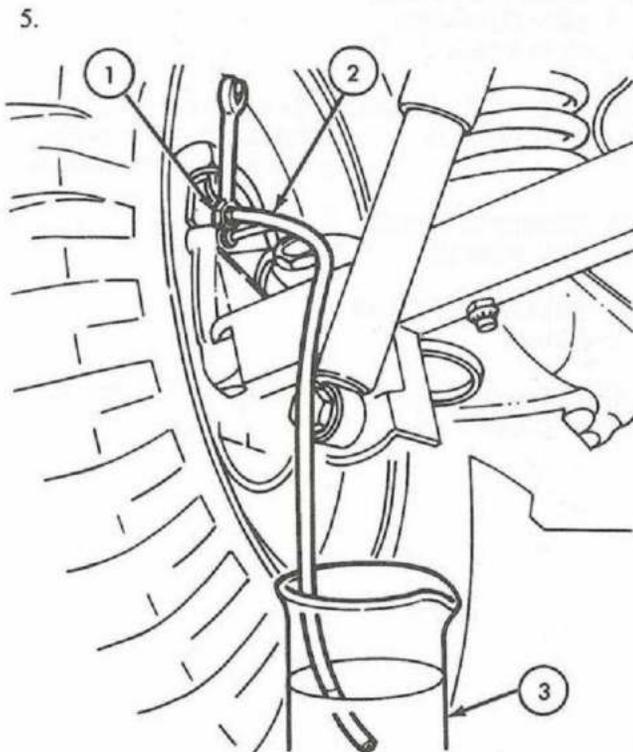
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. PRESSURE TANK BLEEDING

3.		Hose (2) and container (3)	<ol style="list-style-type: none"> a. Fill container 3/4 full of brake fluid. b. Connect hose (2) to bleeder valve (1) and place other end in container (3). 	Make sure valve (1) is clean.
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3.1.	Master cylinder (7)	Filler plug (8)	Remove.	
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4.		Pressure tank bleeder (5)	Connect line (4) to master cylinder (7) using proper adapter (6).	Tank (5) must have between 10 and 20 psi air pressure and sufficient fluid to maintain proper fluid level.
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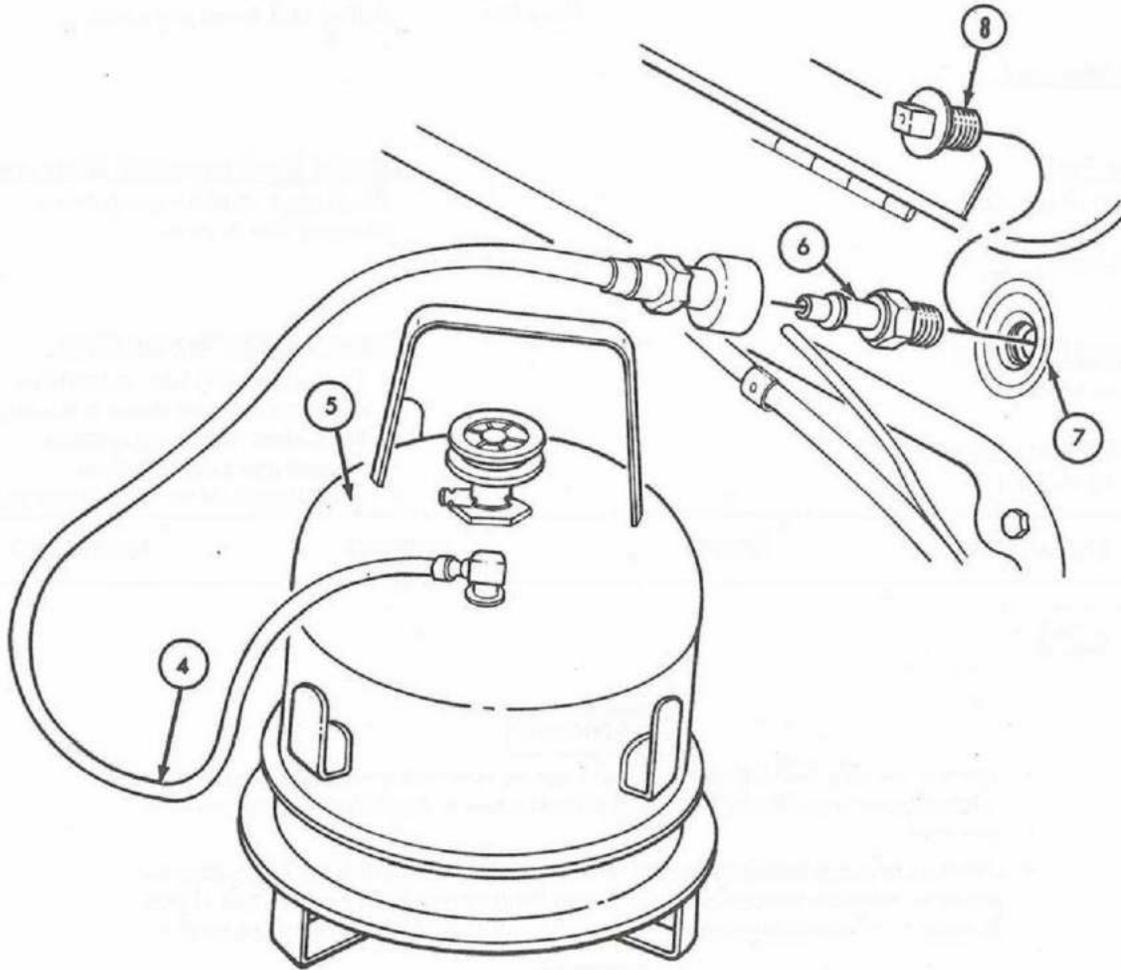


5.			<p>Bleed brakes as follows:</p> <ol style="list-style-type: none"> a. Crack open bleeder valve (1) and allow air to escape. b. Close bleeder valve (1) and disconnect hose (2). c. Repeat steps 3 and 5 for all wheels. d. Disconnect pressure tank bleeder (5) from adapter (6) and remove adapter (6) from master cylinder (7). e. Fill master cylinder (7) to proper level. f. Install filler plug (8) in master cylinder (7). 	<p>See LO 9-2320-218-12.</p> <p>Tighten 15-20 lb-ft (20-27 N•m).</p>
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TA 155528

8-11. Bleeding Brake System (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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FOLLOW-ON TASK: Road test (TM 9-2320-218-10) and check for proper brake action.

TA 155529

8-12. Service Brakeshoe Maintenance

This task covers:

- a. Removal
- b. Inspection

c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Brake spring tool</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 9-6</p>	<p><u>Condition Description</u> Wheel and drum removed.</p> <p><u>Special Environmental Conditions</u> Work area must be away from blowing dirt or dust.</p> <p><u>General Safety Instructions</u></p> <ul style="list-style-type: none"> • Do not use any tool other than brake spring tool when removing brakeshoe retracting springs. • Do not use a dry brush or compressed air to clean brakeshoes.
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

WARNING

- Do not use any tool other than brake spring tool when removing brakeshoe retracting springs. Springs can pop off and cause severe injury if proper tool is not used.
- Do not use a dry brush or compressed air to clean brakeshoes. There may be asbestos dust on brakeshoes which can be dangerous to your health if you breathe it. (Brakeshoe must be wet, and a soft bristle brush must be used.)

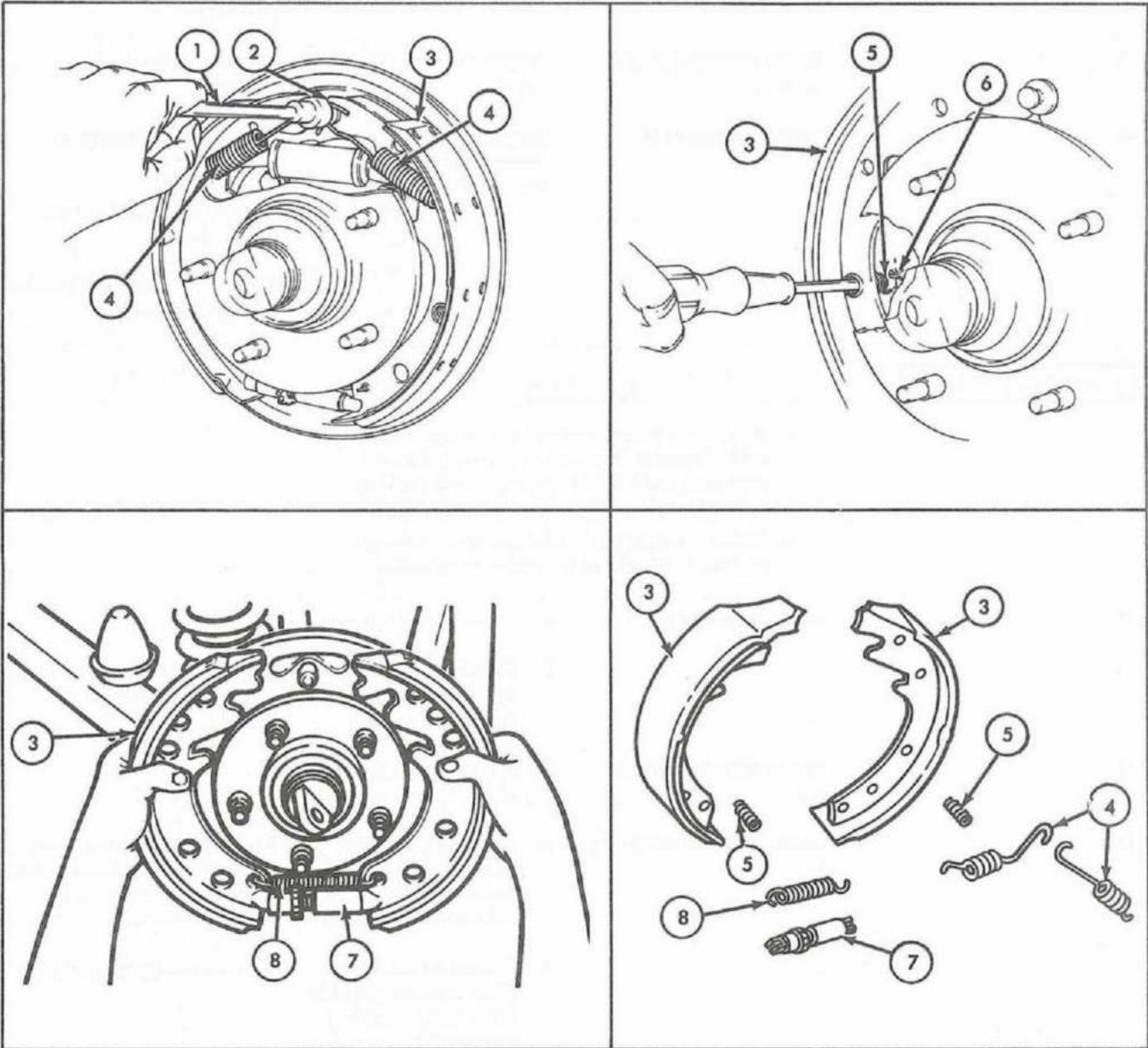
CAUTION

Do not work with dirty or greasy hands when removing or installing brakeshoes. Grease or dirt will contaminate brakeshoes and cause premature wear or failure of braking system components.

1. Service brakeshoes (3) to backing plate anchor pin (2)	Two retracting springs (4)	Remove.	Use brake spring tool (1).
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8-12. Service Brakeshoe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
2.		Two conical holddown springs (5)	Remove by pushing in and unhooking from two anchor plates (6).	
3.		Service brakeshoes (3), adjuster (7), and adjuster spring (8)	Remove and separate adjuster (7) and spring (8) from brakeshoes (3).	



TA 155530

8-12. Service Brakeshoe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

4.		Brakeshoes (1)	Inspect for cracks, breaks, glaze, oil saturation and wear.	Replace if cracked, broken, glazed, oil saturated or worn. Replace riveted lining if lining has less than 3/64 in. (1.0 mm) above any rivet. Replace bonded lining if brass squealer is visible.
5.		Brake springs (2), (3), and (6)	Inspect for rust and breaks.	Replace if broken or rusted.
6.		Brake adjuster (4)	Inspect for free movement and damaged threads.	Clean and lubricate as necessary. Repair damaged threads with die. Replace if bent or threads cannot be repaired.

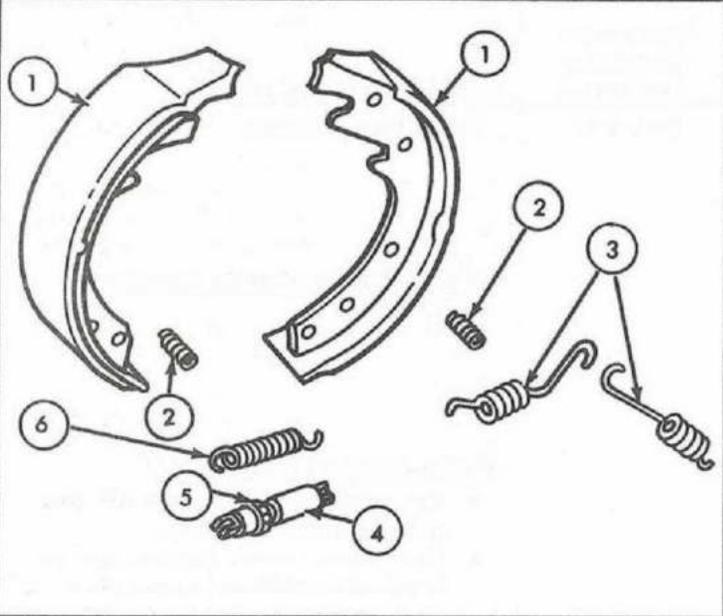
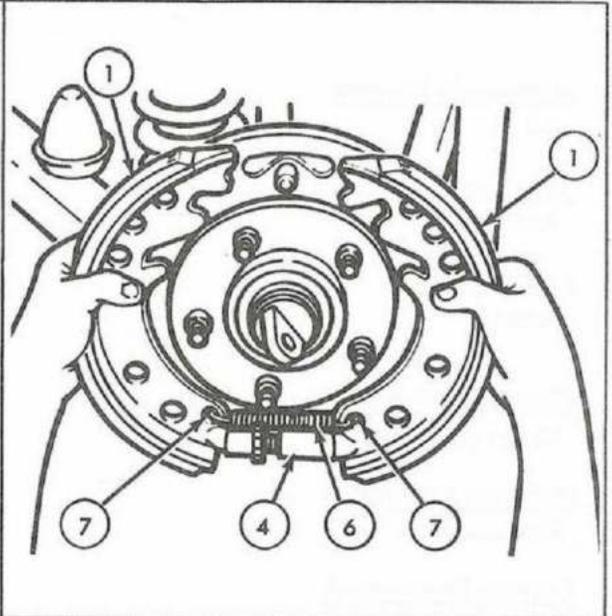
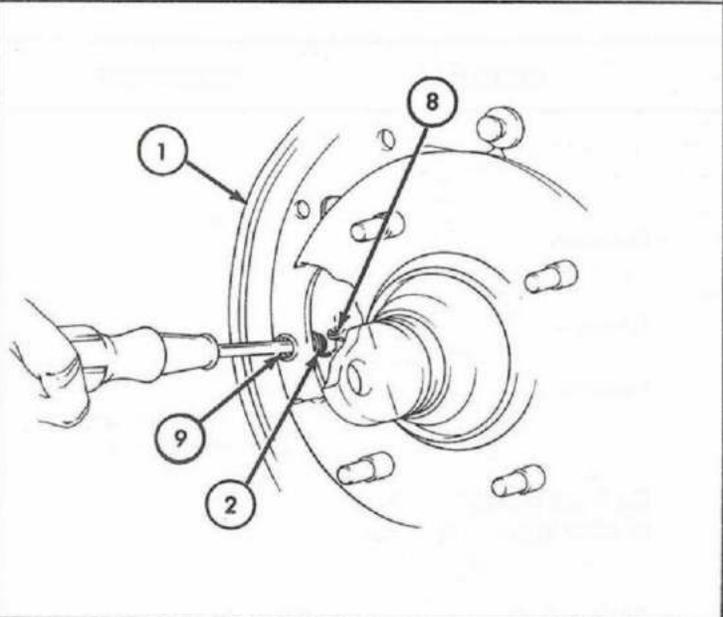
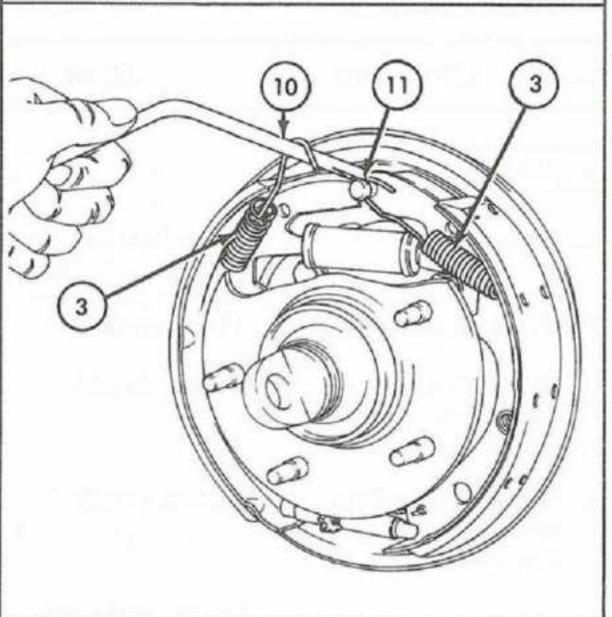
c. INSTALLATION

CAUTION

- Anytime riveted brakeshoes are replaced with bonded brakeshoes, discard brake adjusters and brake springs, and replace with blue color-coded parts provided in kit.
- When replacing brakeshoes, always replace brakeshoes on opposite wheels.

7.		Brake adjuster (4)	<p>a. Screw in all the way.</p> <p>b. Position adjuster (4) against two brakeshoes (1).</p>	Adjuster star (5) must face toward the front of vehicle.
8.		Brake adjuster spring (6)	Attach to two lower holes (7) of brakeshoes (1).	
9.		Brakeshoe assembly (1)	<p>a. Secure to backing plate with two conical holddown springs (2) and anchors (8).</p> <p>b. Secure to backing plate anchor pin (11) with two retracting springs (3).</p>	<p>Make sure springs (2) are secured to each anchor (8) through center holes (9) of brakeshoes (1).</p> <p>Use brake spring tool (10).</p>

8-12. Service Brakeshoe Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
				
				
				
				

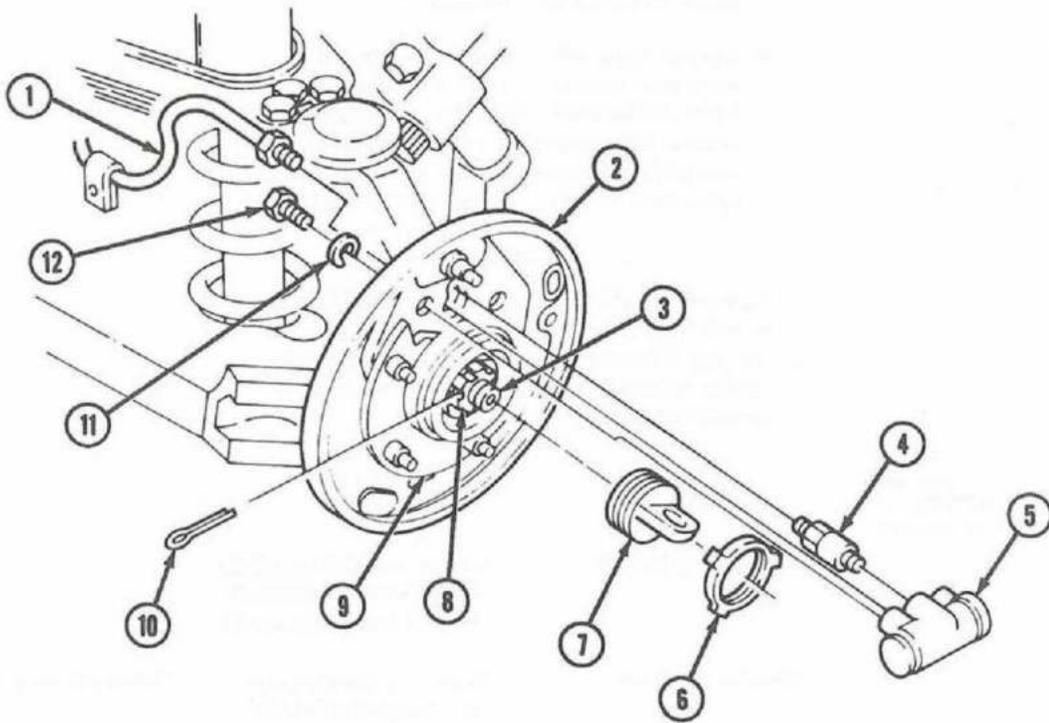
END OF TASK!

- FOLLOW-ON TASKS:
- Install wheel and brakedrum (para 9-6).
 - Adjust brakeshoe travel (para 8-10).

TA 155531

8-13. Wheel Cylinder Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
8.	Wheel cylinder (5) to backing plate (2)	Two capscrews (12) and lockwashers (11)	Remove.	
9.		Wheel cylinder (5)	Remove.	



8-13. Wheel Cylinder Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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10.		Wheel cylinder (4)	Inspect for leakage.	Replace if leaking.
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WARNING

- Use part number 11669159 wheel cylinder, 1.00 in. diameter, for front brake assembly, and part number 11669158 wheel cylinder, 0.75 in. diameter, for rear brake assembly. Failure to use correct wheel cylinder may result in injury to personnel.
- Do not reuse wheel spindle cotter pin or substitute with any cotter pin other than NSN 5315-00-011-9120. Failure to use correct new cotter pin may result in wheel assembly falling off vehicle during operation, causing injury to personnel.

NOTE

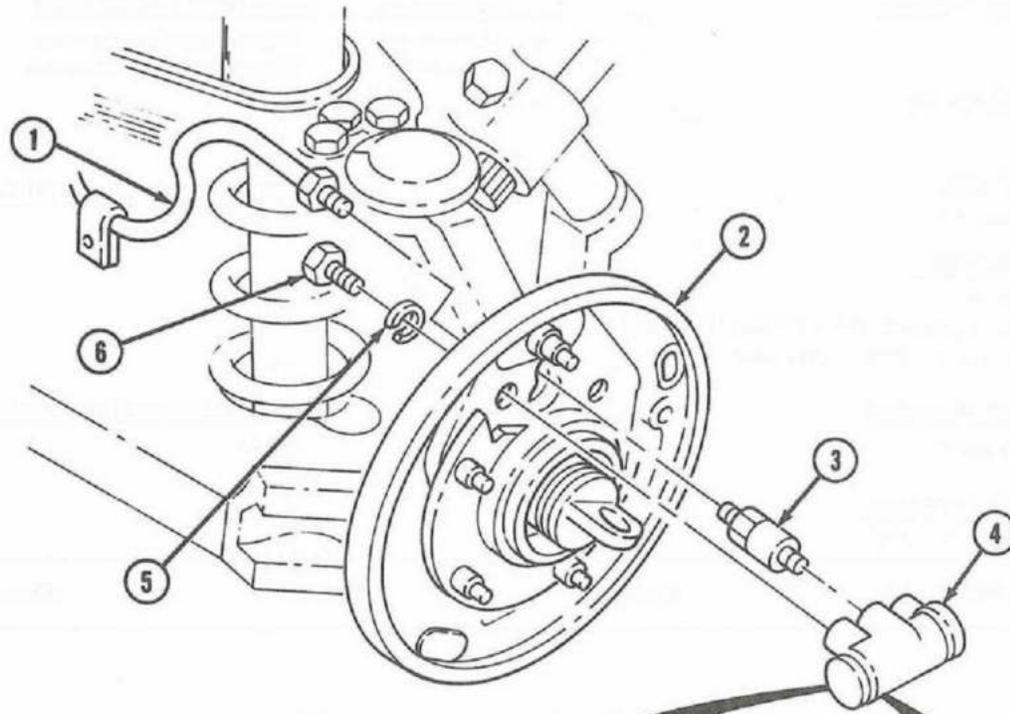
New wheel cylinders supplied by manufacturer will have part numbers affixed on the casting. There will also be a decal attached stating where it is to be used and on what vehicle model.

c. INSTALLATION

11.		Wheel cylinder (4)	Secure to backing plate (2) with two capscrews (6) and lockwashers (5).	
12.		Bleeder valve (3)	Install in bleeder port of wheel cylinder (4).	Valve (3) must be clean.
13.		Brake line (1)	Install in brake line port of wheel cylinder (4).	

8-13. Wheel Cylinder Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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**USE ON REAR AXLE OF M151A2 SERIES,
FRONT AND REAR AXLE M151A1 SERIES**

**DO NOT USE ON REAR AXLE
USE ONLY ON
M151A2 SERIES FRONT AXLE**

END OF TASK!

- FOLLOW-ON TASKS:**
- Install brakeshoes (para 8-12).
 - Install wheel spindle (para 6-15).
 - Bleed braking system (para 8-11).
 - Adjust brakes (para 8-10).

TA 484680

8-14. Service Brake Backing Plate Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Seal replacer tool</p> <p><u>Materials/Parts</u> GAA grease Sealing compound (NSN 8030-00-656-1426) Outer seal and retainer assembly</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 6-15 Para 8-13</p>	<p><u>Condition Description</u> Wheel spindle removed. Wheel cylinder removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Left and right front, and left and right rear backing plates are removed and installed identically.

a. REMOVAL

- | | | | |
|------------------------|--------------------------------------|---------|---|
| 1. Spindle support (1) | Outer seal and retainer assembly (3) | Remove. | Discard outer seal and retainer assembly (3). |
|------------------------|--------------------------------------|---------|---|

NOTE

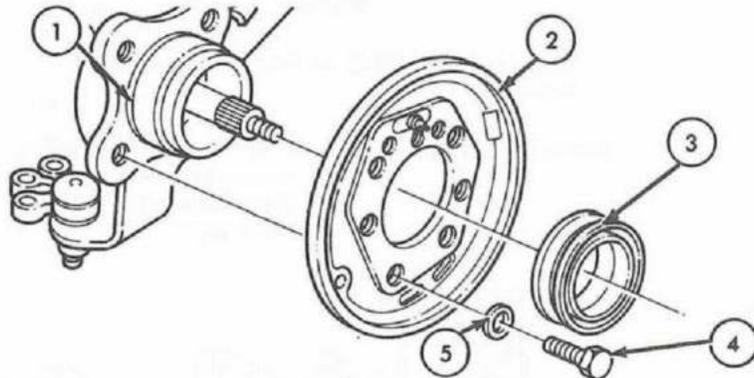
Steps 2 and 3 apply to front backing plate removal only.

- | | | | |
|---|------------------------------------|---------|--|
| 2. Brake backing plate (2) to spindle support (1) | Four bolts (4) and lockwashers (5) | Remove. | |
|---|------------------------------------|---------|--|

8-14. Service Brake Backing Plate Maintenance (Cont'd)

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

- | | | | | |
|----|--|-------------------------|----------------------------------|--|
| 3. | | Brake backing plate (2) | Remove from spindle support (1). | |
|----|--|-------------------------|----------------------------------|--|



NOTE

Steps 4 and 5 apply only to rear backing plate removal.

CAUTION

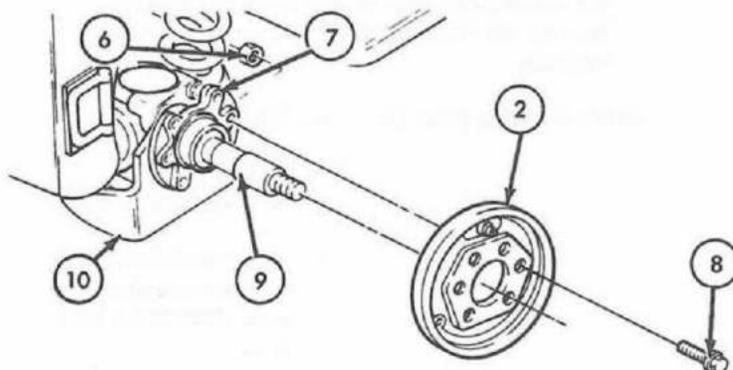
Hold spindle support in place on drive yoke flange (9) while removing backing plate to avoid damaging bearing or bearing seal inside spindle support (7).

- | | | | | |
|----|---|--|---------------------------------------|--|
| 4. | Brake backing plate (2) and wheel spindle support (7) to rear suspension arm (10) | Six locknuts (6) and flange head bolts (8) | Remove. | |
| 5. | | Brake backing plate (2) | Remove from rear suspension arm (10). | |

b. INSPECTION

- | | | | | |
|----|--|-------------------------|---|--|
| 6. | | Brake backing plate (2) | Inspect for cracks, dents, and unpainted surface. | Replace if cracked or badly dented.

Touch up paint as required. |
|----|--|-------------------------|---|--|



TA 155952

8-14. Service Brake Backing Plate Maintenance (Cont'd)

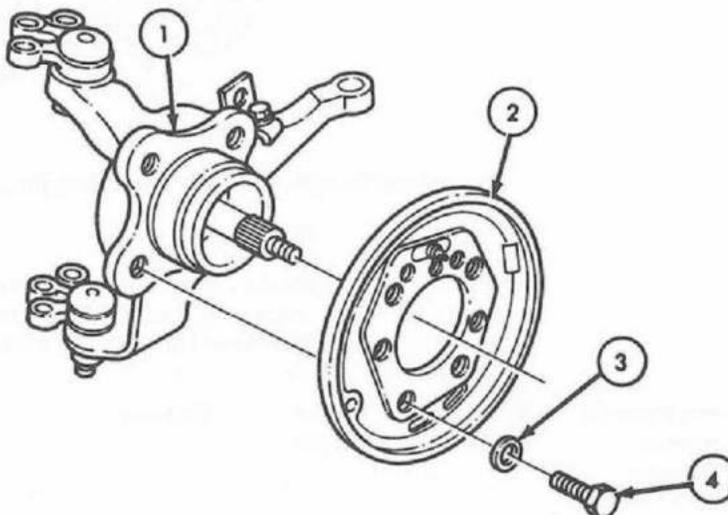
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

NOTE

Step 7 applies only to front backing plate installation.

- | | | | |
|----|-------------------------|--|----------------------------------|
| 7. | Brake backing plate (2) | Secure to wheel spindle support (1) with four lockwashers (3) and bolts (4). | Tighten 55-65 lb-ft (74-88 N•m). |
|----|-------------------------|--|----------------------------------|



NOTE

Step 8 applies only to rear backing plate installation.

CAUTION

Use care when installing backing plate, that the wheel drive yoke flange does not damage bearing or bearing seal inside rear spindle support.

- | | | |
|----|-------------------------|---|
| 8. | Brake backing plate (2) | <p>a. Place on spindle support (6) with yoke flange (9) through center hole.</p> <p>b. Aline with holes in spindle support (6) and suspension arm (10).</p> |
|----|-------------------------|---|

TA 155953

8-14. Service Brake Backing Plate Maintenance (Cont'd)

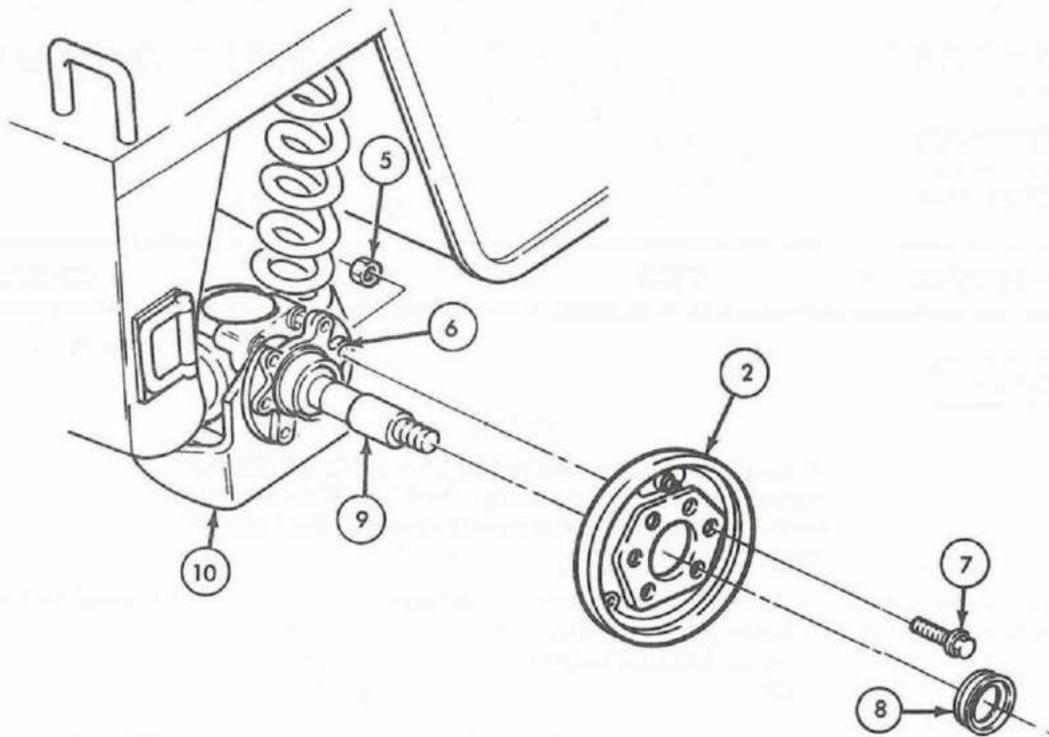
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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			c. Secure with six flange head bolts (7) and lock-nuts (5).	Tighten 27-37 lb-ft (37-50 N•m).
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NOTE

Step 9 applies to installation of both front and rear outer seal and retainer assemblies.

9.		New outer seal and retainer assembly (8)	a. Coat inside of retainer with sealing compound. b. Install on spindle support (6).	Use hammer and wood block.
----	--	--	---	----------------------------



END OF TASK!

- FOLLOW-ON TASKS:**
- Install wheel cylinder (para 8-13).
 - Install wheel spindles (para 6-15).

TA 155954

8-15. Master Cylinder Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
Para 5-71

Condition Description

Parking brake set.
Ignition switch removed.

Test Equipment

None

Special Tools

None

Materials/Parts

Two screw-assembled lockwashers
Two washers
Locknut
Four lockwashers
Light oil

Special Environmental Conditions

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

NOTE

When removing eccentric bolt (1), one bushing (18) may remain attached to the eccentric bolt. The other bushing (3) may remain on master cylinder push rod and will be removed in a later step.

1.	Master cylinder push rod (2) to brake pedal (4)	Eccentric bolt (1), two bushings (18) and (3), washer (5), and locknut (6)	Remove.	Discard locknut (6).
2.	Brake pedal assembly (7)	Two screw-assembled lockwashers (13), nuts (17), and pedal stop bracket (14)	Remove.	Discard screw-assembled lockwashers (13).
3.	Master cylinder (8)	Fluid passage bolt (10), two washers (9), and master cylinder outlet fitting (11)	Remove.	Plug fitting (11) and master cylinder (8) to prevent entry of contaminants. Discard washers (9).

8-15. Master Cylinder Maintenance (Cont'd)

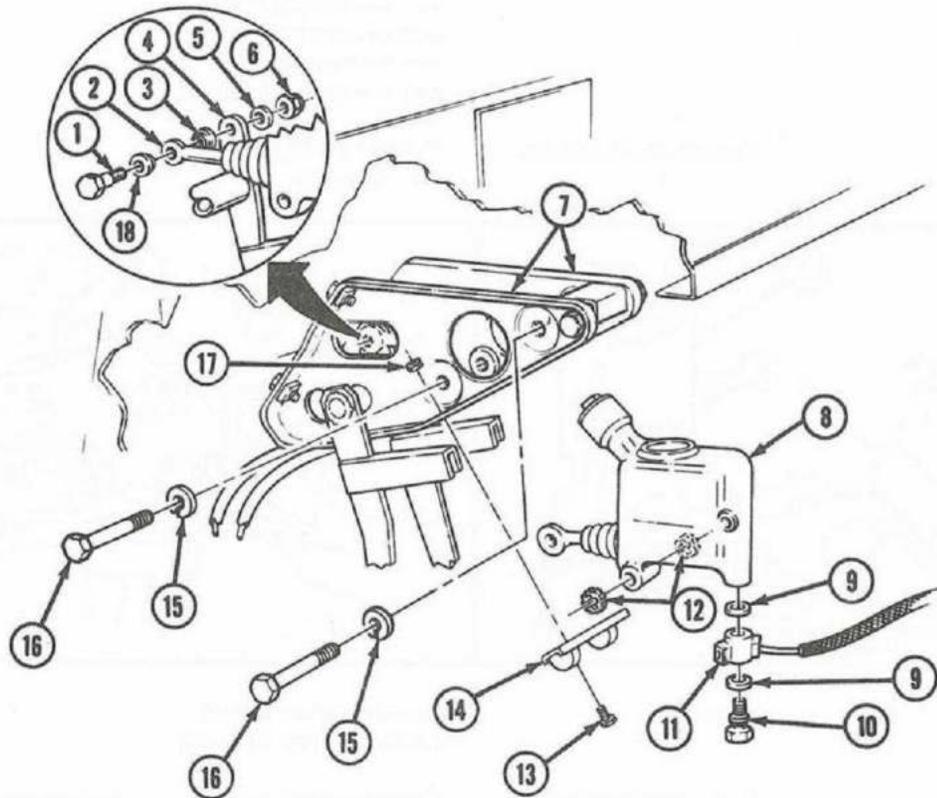
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Brake pedal assembly (7)	Two bolts (16), lockwashers (15), and master cylinder (8)	Remove.	Discard lockwashers (15).
5.	Master cylinder (8)	Two lockwashers (12) and bushing (3) (if attached to push rod (2))	Remove.	Discard lockwashers (12).

b. INSTALLATION

NOTE

Dip brake pedal push rod assembly bushings in light oil before installation.

6. Two bushings (3) and (18) Install on push rod (2).



TA 484681

8-15. Master Cylinder Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

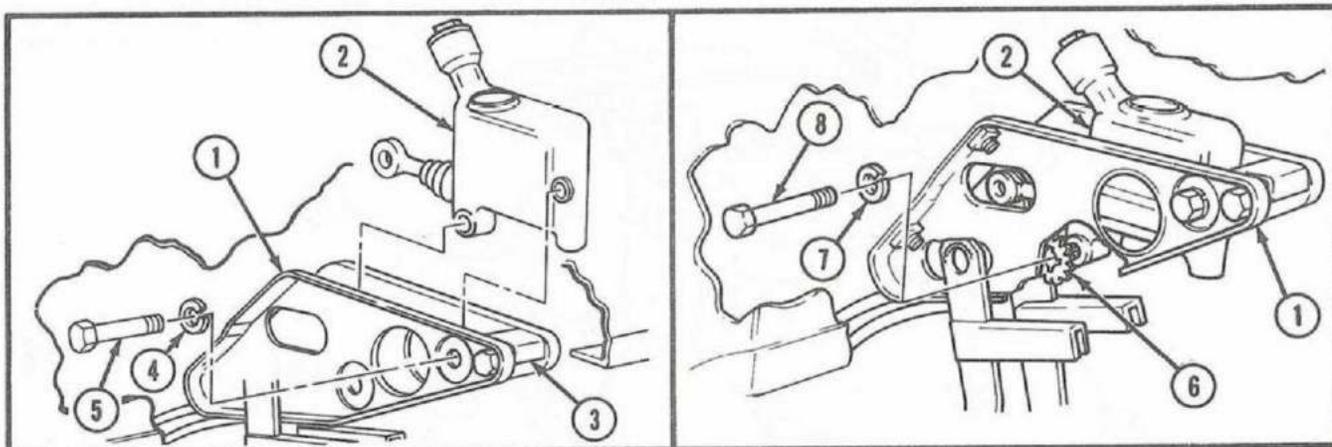
Ensure that bracket (3) is in proper position on pedal assembly (1) and that bracket bolt holes are aligned with bolt holes in master cylinder and pedal assembly.

- | | | | | |
|----|--|---------------------|--|--|
| 7. | | Master cylinder (2) | Position in brake pedal assembly (1). | |
| 8. | | Bolt (5) | Install through lockwasher (4), brake pedal assembly (1), and master cylinder (2). | |

NOTE

Ensure that lockwashers (6) are properly installed, one on each side of master cylinder (2) and pedal assembly (1).

- | | | | | |
|-----|--|-----------------------|---|--------------------------|
| 9. | | Bolt (8) | Install through new lockwasher (7), brake pedal assembly (1), two new lockwashers (6), and master cylinder (2). | Finger tighten bolt (8). |
| 10. | | Two bolts (5) and (8) | Tighten 12-18 lb-ft (16-24 N•m). | |

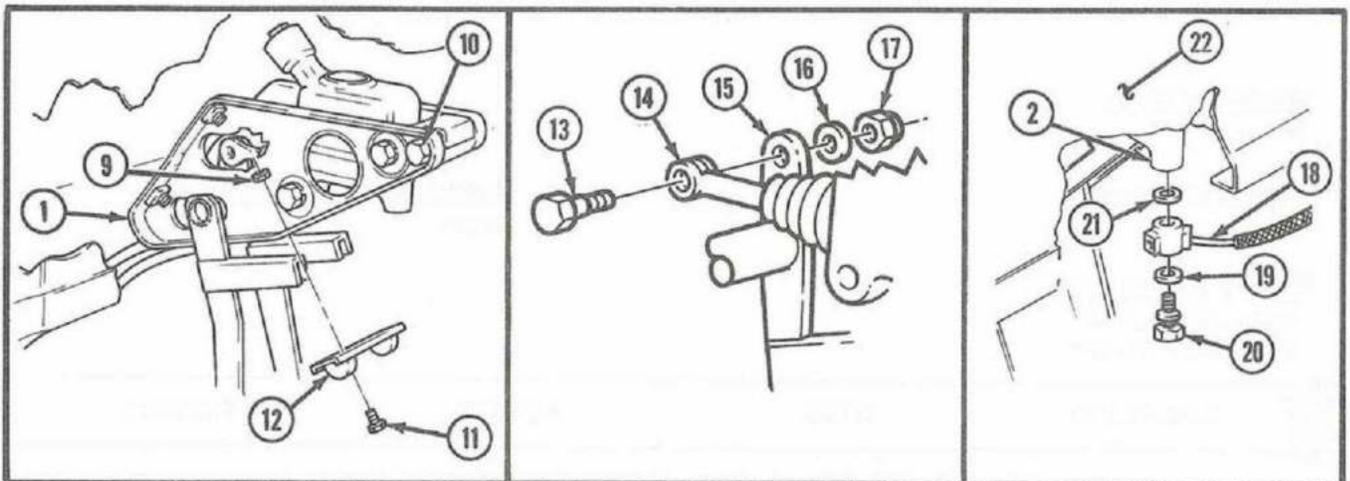


- | | | | | |
|-----|--|-------------------------|--|---|
| 11. | | Bolt (10) | Loosen and retighten 12-18 lb-ft (16-24 N•m). | |
| 12. | | Pedal stop bracket (12) | Secure to brake pedal assembly (1) with two new screw-assembled lockwashers (11) and nuts (9). | Tighten nuts (9) 15-37 lb-ft (20-50 N•m). |

TA 484682

8-15. Master Cylinder Maintenance (Cont'd)

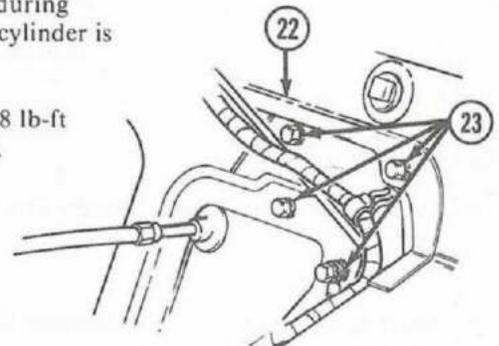
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.		Push rod (14)	Secure to brake pedal (15) with eccentric bolt (13), washer (16), and new locknut (17).	Finger tighten locknut (17).
14.		Master cylinder outlet fitting (18)	Secure to master cylinder (2) with new washer (21), new washer (19), and fluid passage bolt (20).	The smaller sealing washer (21) must be between fitting (18) and cylinder (2). Tighten bolt (20) 40-50 lb-ft (54-68 N•m).



NOTE

- Check for loose or missing bolts (23) securing pedal and bracket assembly to firewall (22).
- All master cylinder mounting bolts should be checked and tightened to proper torque during scheduled services to ensure that master cylinder is secure.

15.	Four bolts (23)	Tighten 12-18 lb-ft (16-24 N•m).
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END OF TASK!

- FOLLOW-ON TASKS:**
- Install ignition switch (para 5-71).
 - Bleed brakes (para 8-11).
 - Adjust brake pedal free travel (para 8-10).

TA 484683

8-16. Service Brake Lines, Fittings, and Hoses Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

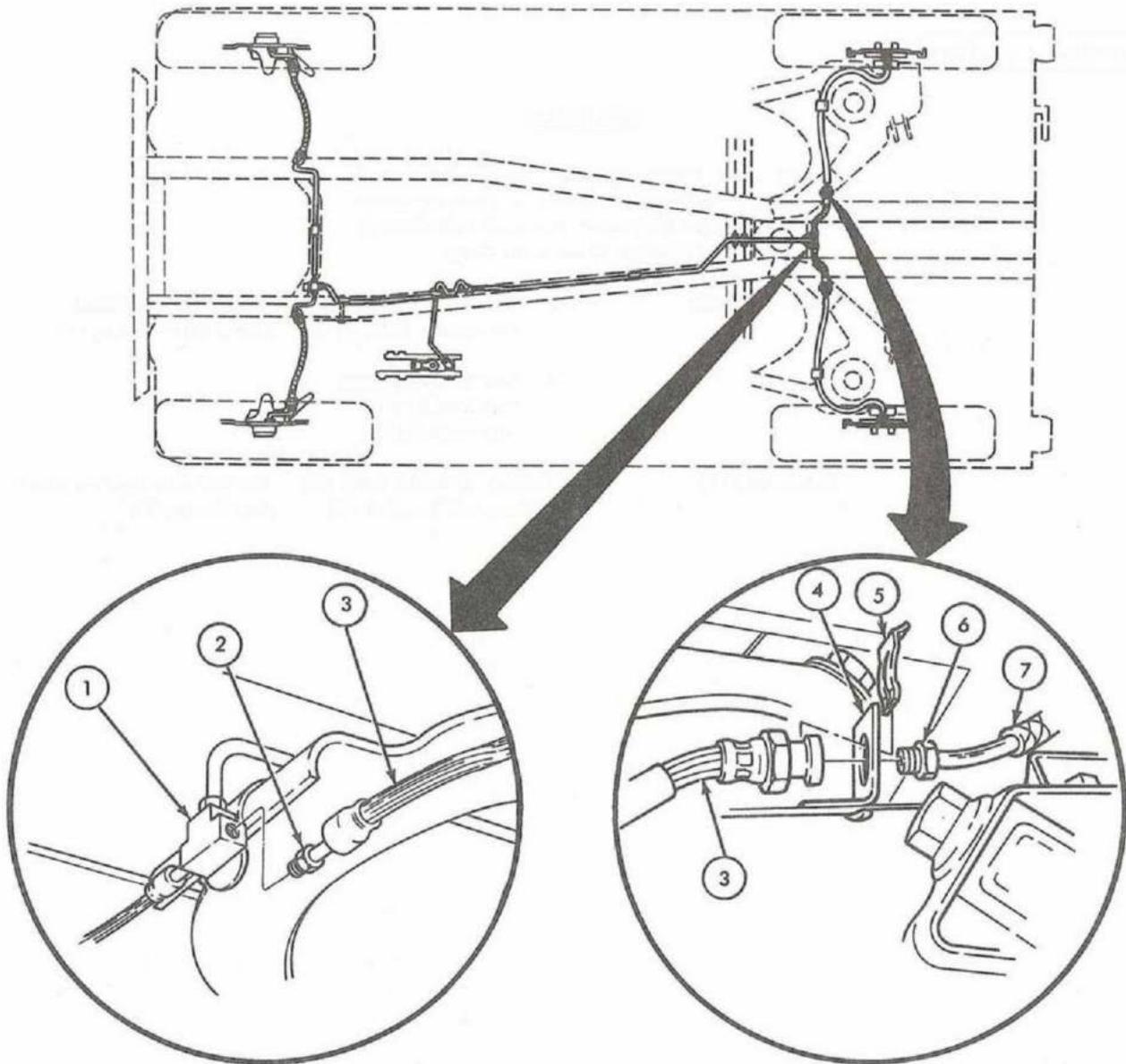
The removal and installation procedures for brake lines and hoses are basically the same. This procedure covers the right rear brake hose only.

a. REMOVAL

- | | | | |
|--|------------------------|---|--|
| 1. Brake line (7) to brake hose (3) | Brake line fitting (6) | Loosen and separate brake line (7) from brake hose (3). | Hose (3) must not be allowed to turn or twist. |
| 2. Brake hose (3) to support bracket (4) | Retainer clip (5) | Remove and detach hose (3) from bracket (4). | |

8-16. Service Brake Lines, Fittings and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Brake hose (3) to brake line connector fitting (1)	Brake hose fitting (2)	Loosen and detach hose (3) from connector fitting (1).	



TA 155535

8-16. Service Brake Lines, Fittings and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

4.		Brake hose (3)	Inspect for cracks, breaks and dryness.	Replace if cracked, broken or dried out.
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c. INSTALLATION

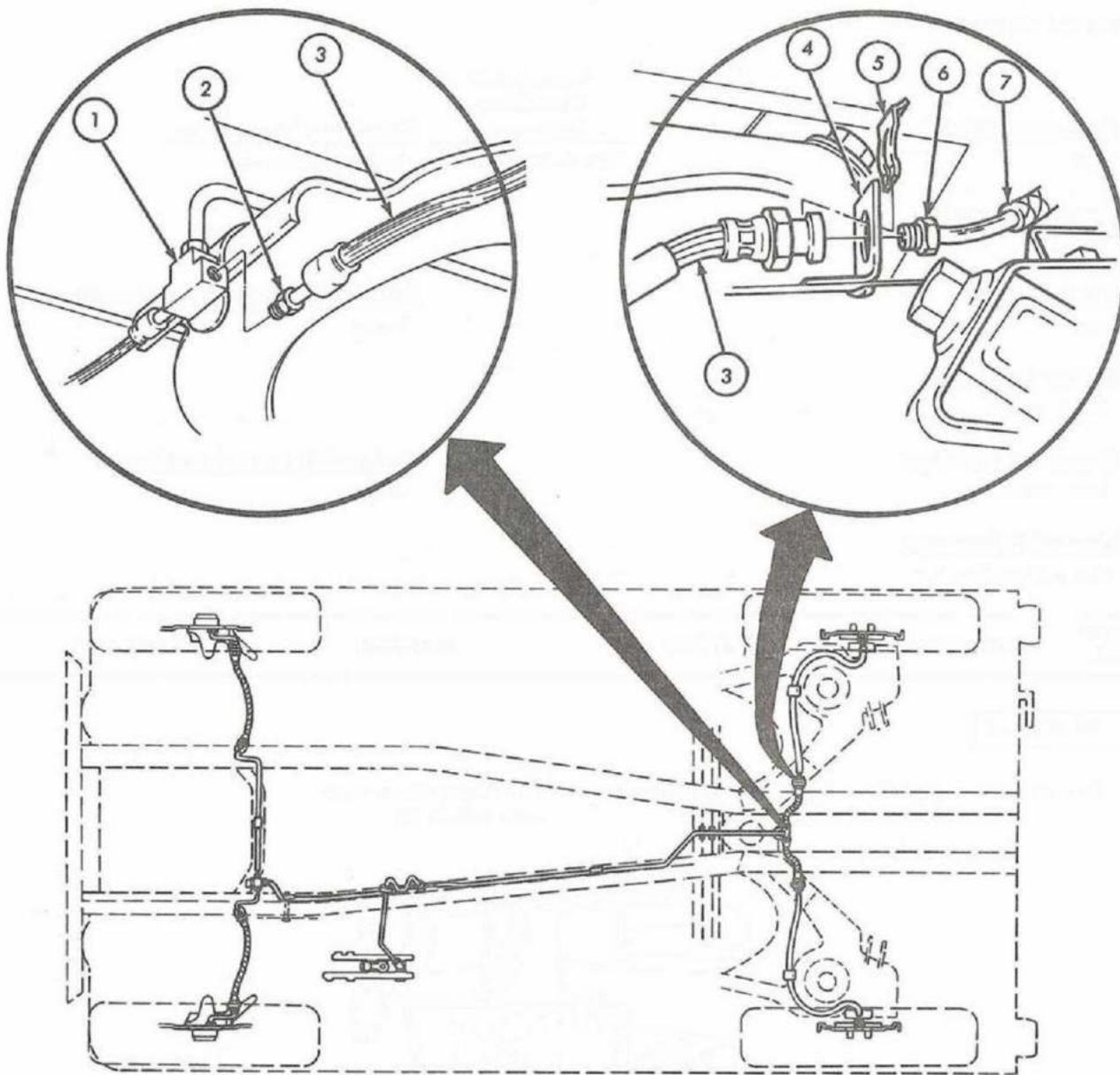
CAUTION

Use care when installing brake lines and hoses. Bending or kinking of lines or hoses will damage equipment. Start all male fittings by hand to prevent cross threading.

5.		Brake hose (3)	a. Secure to brake line connector fitting (1). b. Secure to support bracket (4) with retainer clip (5).	Do not overtighten brake hose fitting (2).
6.		Brake line (7)	Secure to brake hose (3) at support bracket (4).	Do not overtighten brake line fitting (6).

8-16. Service Brake Lines, Fittings and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Bleed braking system (para 8-11).

TA 155536

8-17. Brake and Clutch Pedal Assembly Maintenance

This task covers:

- | | |
|-----------------------|------------------------|
| <i>a. Removal</i> | <i>d. Reassembly</i> |
| <i>b. Disassembly</i> | <i>e. Installation</i> |
| <i>c. Inspection</i> | |

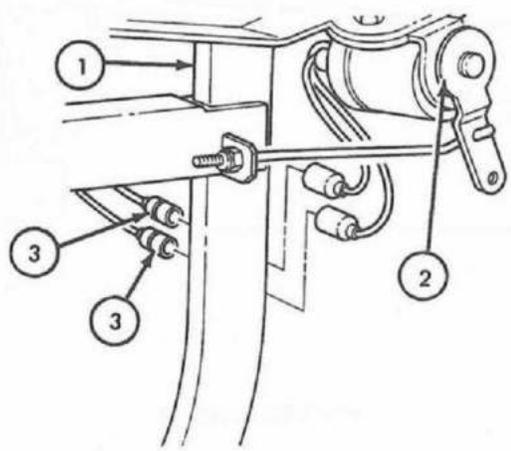
INITIAL SETUP:

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

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

- | | | |
|---------------------------|-------------------------------------|---------------------------------------|
| 1. Behind brake pedal (1) | Two stoplight switch connectors (3) | Disconnect from stoplight switch (2). |
|---------------------------|-------------------------------------|---------------------------------------|

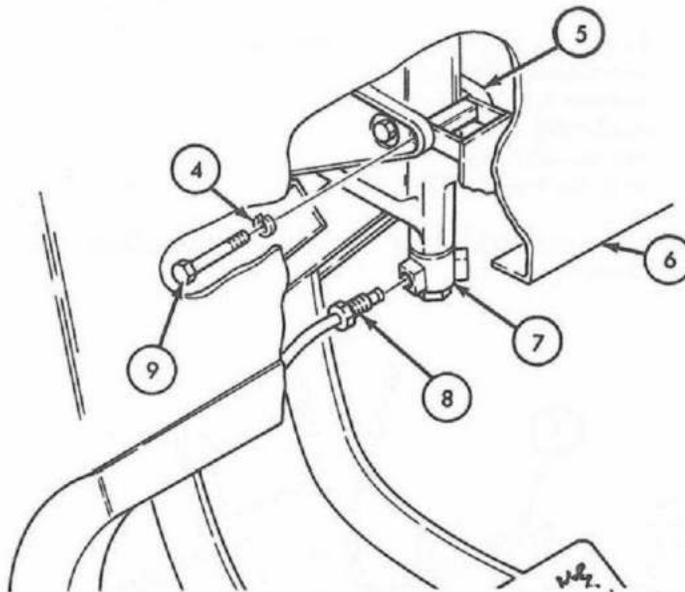


TA 155537

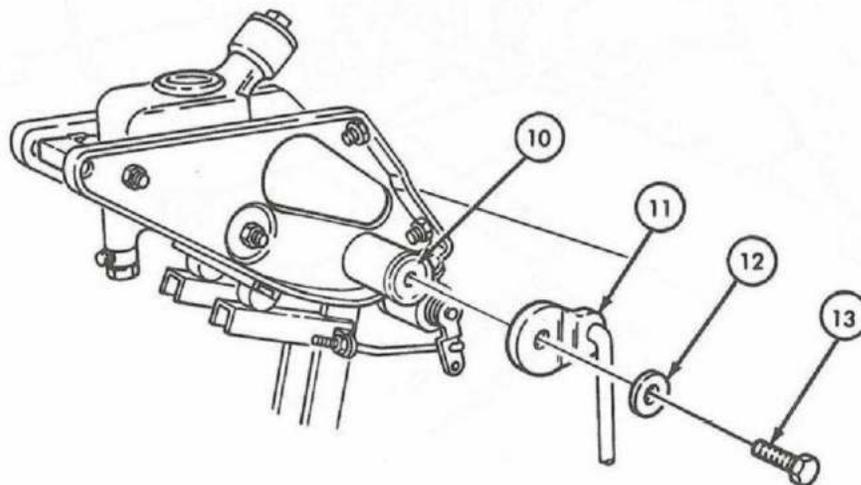
8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- | | | | | |
|----|--|------------------------------|-------------|--|
| 2. | Master cylinder outlet fitting (7) | Brake line (8) | Disconnect. | |
| 3. | Pedal assembly (5) to instrument panel (6) | Bolt (9) and lock-washer (4) | Remove. | |



- | | | | | |
|----|--|---|--------------------------------------|--|
| 4. | Clutch lever (11) to clutch pedal shaft (10) | Bolt-assembled lock-washer (13) and washer (12) | Remove. | |
| 5. | | Clutch lever (11) | Remove from clutch pedal shaft (10). | |



TA 155538

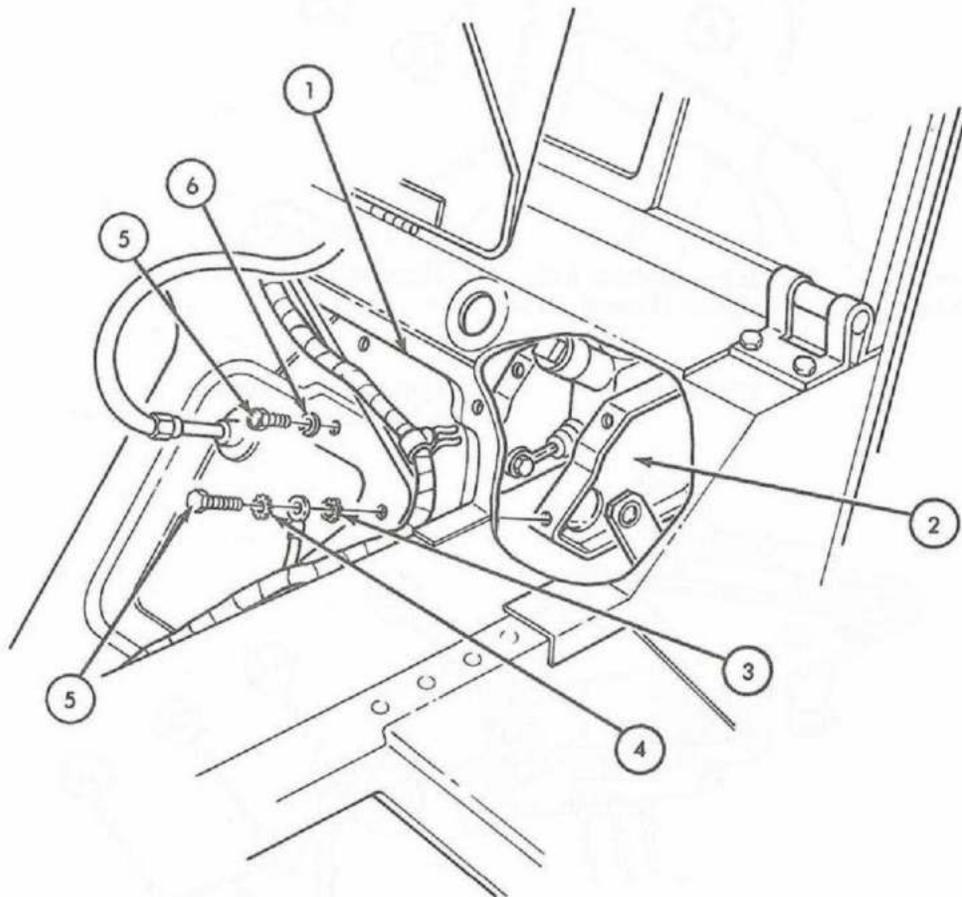
8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

The pedal assembly is secured to firewall with different type bolts and lockwashers. Make note of location and order in which this hardware is removed.

- | | | |
|---------------------------------------|--|----------------------|
| 6. Pedal assembly (2) to firewall (1) | Four bolts (5), three lockwashers (6), one external tooth lockwasher (4), and one external/internal tooth lockwasher (3) | Remove. |
| 7. | Brake and clutch pedal assembly (2) | Remove from vehicle. |



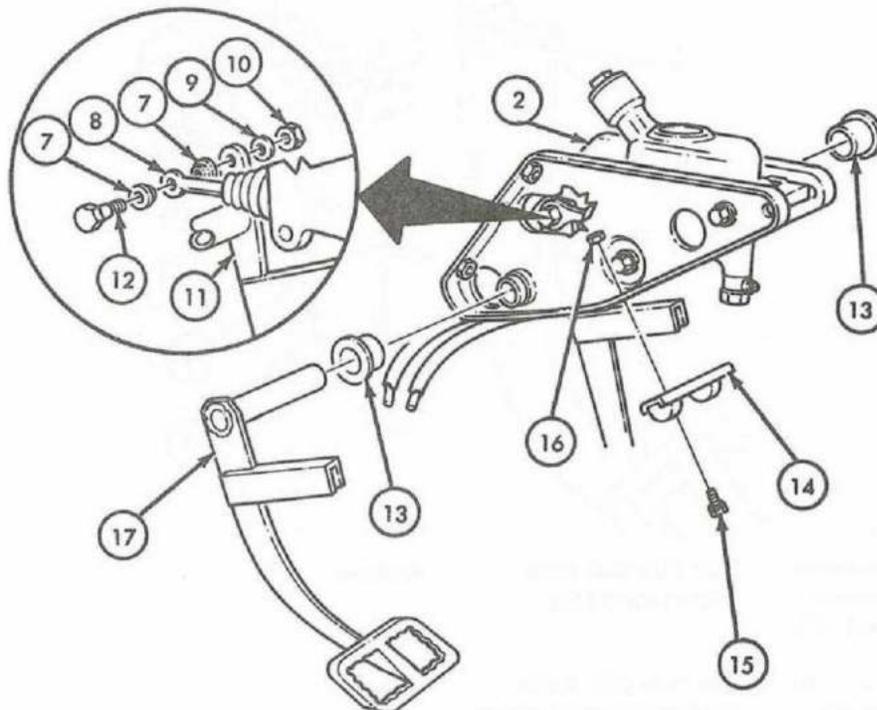
TA 155539

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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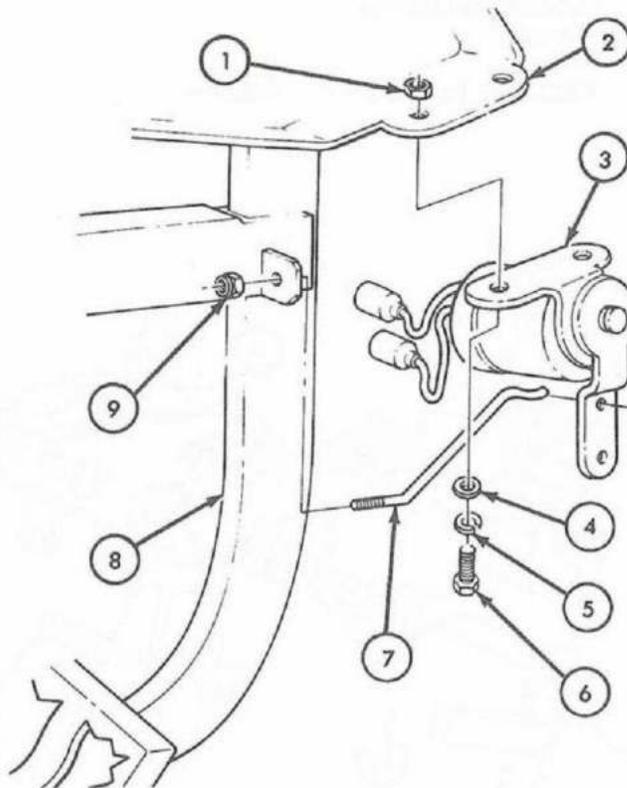
b. DISASSEMBLY

8.		Clutch pedal (17) and two bushings (13)	Remove from pedal assembly (2).	
9.	Master cylinder push rod (8) to brake pedal (11)	One nut (10), washer (9) eccentric adjusting bolt (12), and two nylon bushings (7)	Remove.	
10.	Pedal stop bracket (14) to pedal assembly (2)	Two screw-assembled lockwashers (15) and nuts (16)	Remove.	
11.		Pedal stop bracket (14)	Remove.	



8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
12.	Stoplight switch rod (7) to brake pedal (8)	Nut (9)	Remove.	
13.		Stoplight switch rod (7)	Remove from brake pedal (8) and stoplight switch (3).	
14.	Stoplight switch (3) to right support bracket and pedal assembly (2)	Two nuts (1), cap-screws (6), flat washers (4), and lockwashers (5).	Remove.	



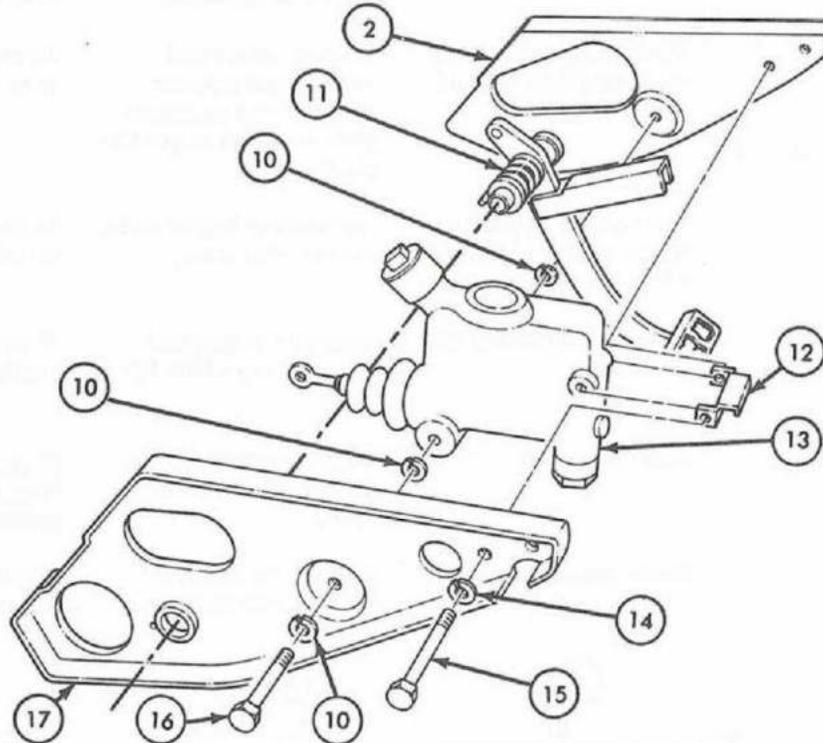
15.	Master cylinder (13) to right support bracket and pedal assembly (2)	Bolt (16) and three lockwashers (10)	Remove.	
16.	Master cylinder (13) to right support bracket and pedal assembly (2)	One bolt (15), lockwasher (14), and master cylinder bracket (12)	Remove.	
17.		Master cylinder (13)	Remove from right support bracket and pedal assembly (2).	

TA 155541

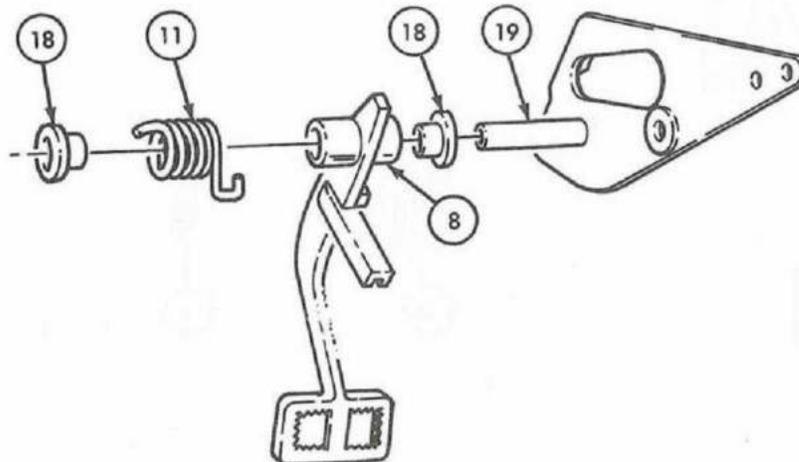
8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- | | | | | |
|-----|--|---------------------------|--|--|
| 18. | | Left support bracket (17) | Unhook from spring (11), and separate from right support bracket and pedal assembly (2). | |
|-----|--|---------------------------|--|--|



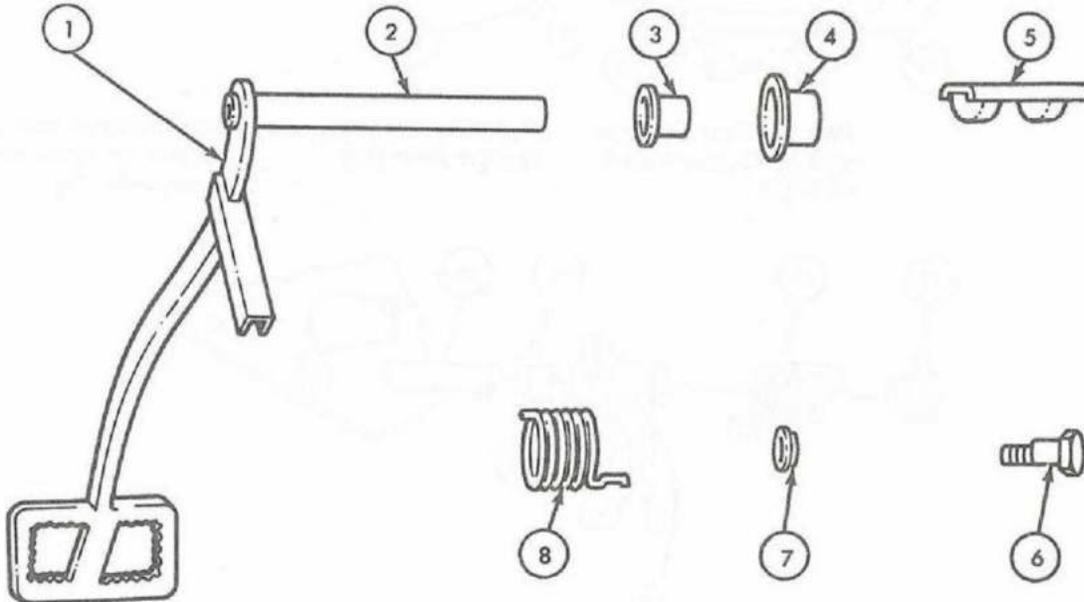
- | | | | | |
|-----|--|---|---|--|
| 19. | | Two bushings (18), one spring (11), and brake pedal (8) | Pull off of right support bracket shaft (19). | Two bushings (18) are located on either side of brake pedal (8). |
|-----|--|---|---|--|



TA 155542

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>c. INSPECTION</i>				
20.		Clutch pedal (1)	Inspect shaft (2) for wear marks and cracks.	If shaft (2) is worn or cracked, replace.
21.		Four brake and clutch shaft bushings (4) and (3)	Inspect inside and outside surfaces for grooves and excessive play when on respective shafts.	Replace if grooved or play is evident.
22.		Two master cylinder nylon push rod bushings (7)	Inspect for frayed ends, cracks, and wear.	Replace if cracked, frayed or worn.
23.		Eccentric adjusting bolt (6)	Inspect for stripped threads and offset for wear.	If worn, or threads stripped, replace bolt (6).
24.		Pedal stops (5)	Inspect rubber for cracks, dryness, and splits.	If cracked or split, replace. If dry, lubricate with GAA grease.
25.		Brake pedal spring (8)	Inspect for cracks, breaks, and distortion.	If cracked, broken, or distorted, replace.



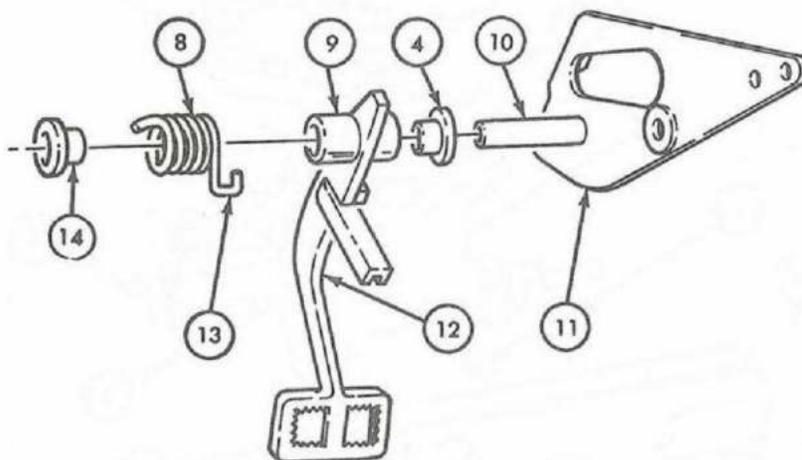
TA 155543

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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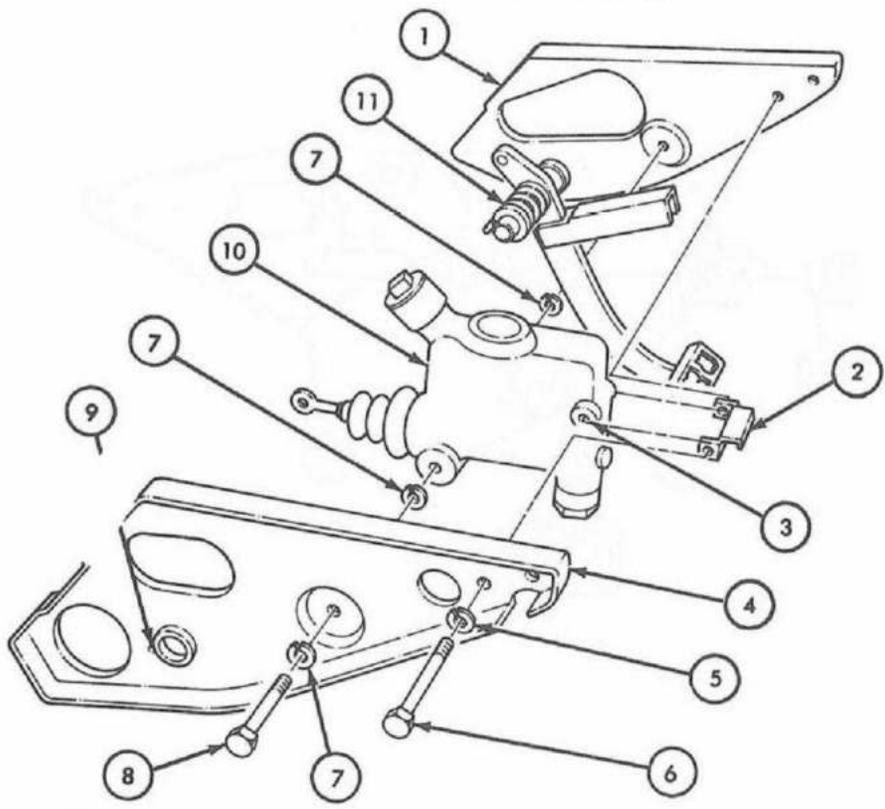
d. REASSEMBLY

- | | | | | |
|-----|--|--------------------------|---|--|
| 26. | | Brake pedal bushing (4) | Slide onto right support bracket shaft (10) until large end rests against bracket (11). | |
| 27. | | Brake pedal (12) | Slide onto right support bracket shaft (10) over pedal bushing (4). | |
| 28. | | Retracting spring (8) | Place over brake pedal hub (9) and secure hook end (13) to bottom side of brake pedal (12). | |
| 29. | | Brake pedal bushing (14) | Place into brake pedal hub (9) until large end bottoms against retracting spring (8). | |



8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

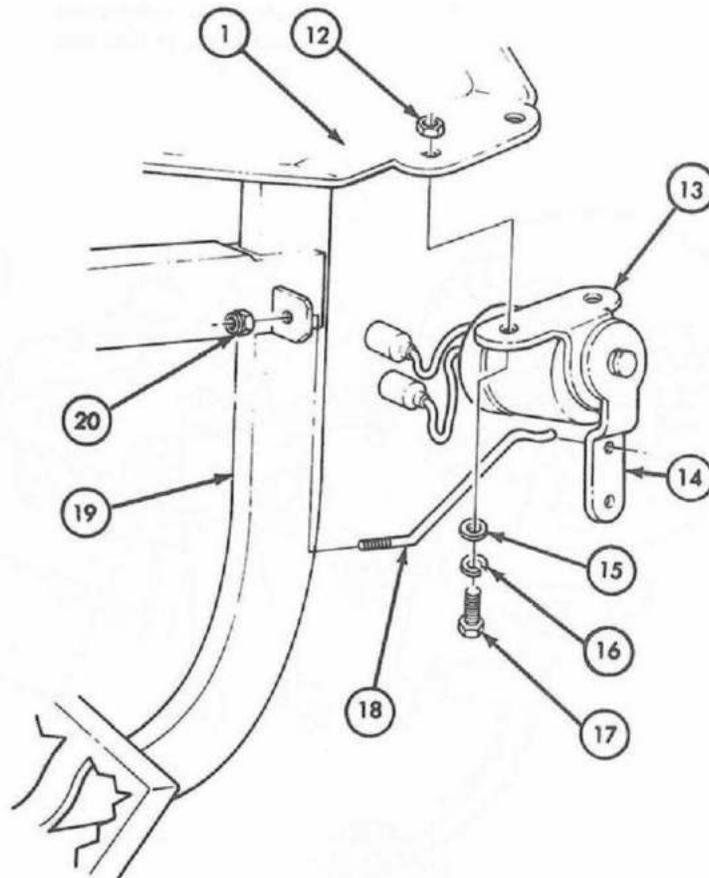
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
30.		Left support bracket (4) and master cylinder (10)	Secure to right support bracket and pedal assembly (1) with three lockwashers (7) and bolt (8).	Lockwashers (7) are positioned under bolt head (8) and on each side of master cylinder (10). Do not tighten bolt yet.
31.		Left support bracket (4)	Swivel until retracting spring (11) seats in hole (9) of support bracket (4).	
32.		Master cylinder bracket (2)	<p>a. Position to rear hole (3) in master cylinder (10).</p> <p>b. Secure to left support bracket (4) and right support bracket and pedal assembly (1) with bolt (6) and lock-washer (5).</p>	
33.		Bolts (6) and (8)	Tighten to 17-18 lb-ft (23-24 N•m).	



TA 155545

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

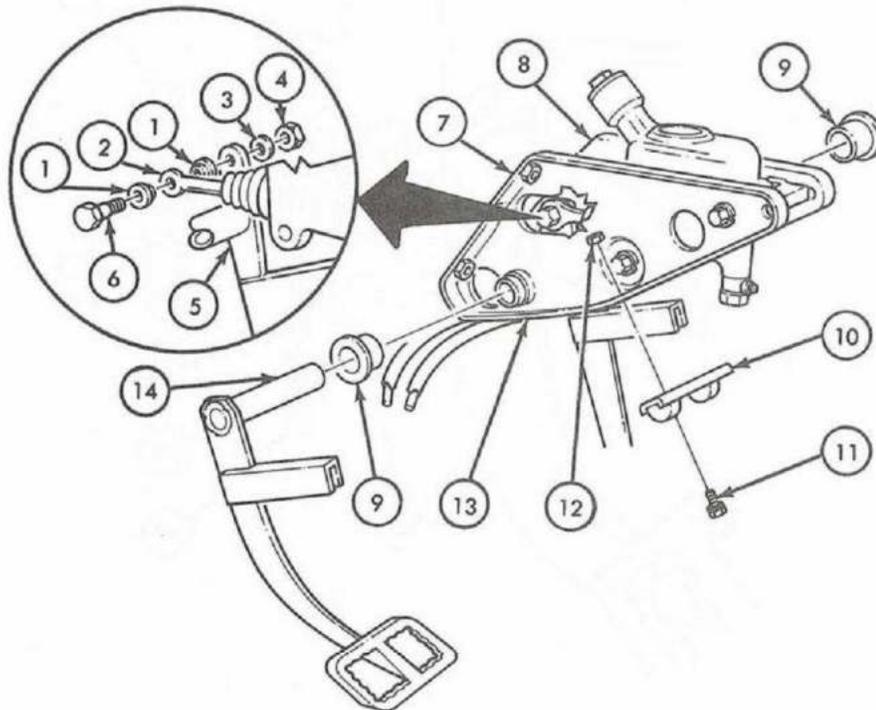
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
34.		Stoplight switch (13)	Secure to right support bracket and pedal assembly (1) with two cap-screws (17), lockwashers (16), flat washers (15), and nuts (12).	Place washers (16) and (15) on capscrew (17) before inserting into stoplight switch (13).
35.		Stoplight switch rod (18)	<p>a. Insert curved end through top hole in stoplight switch lever (14).</p> <p>b. Insert threaded end through hole in brake pedal (19).</p> <p>c. Secure threaded end with self-locking nut (20).</p>	



TA 155546

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
36.		Master cylinder push rod (2)	<p>a. Place one nylon bushing (1) on each side.</p> <p>b. Secure to brake pedal (5) with eccentric adjusting bolt (6), washer (3), and nut (4).</p>	Tighten to 20-25 lb-ft (27-34 N•m).
37.		Two clutch pedal shaft bushings (9)	Install in left and right support brackets (7) and (8).	
38.		Clutch pedal shaft (14)	Slide into pedal assembly (13).	
39.		Pedal stop bracket (10)	Secure to pedal assembly (13) with two screw-assembled lockwashers (11) and nuts (12).	



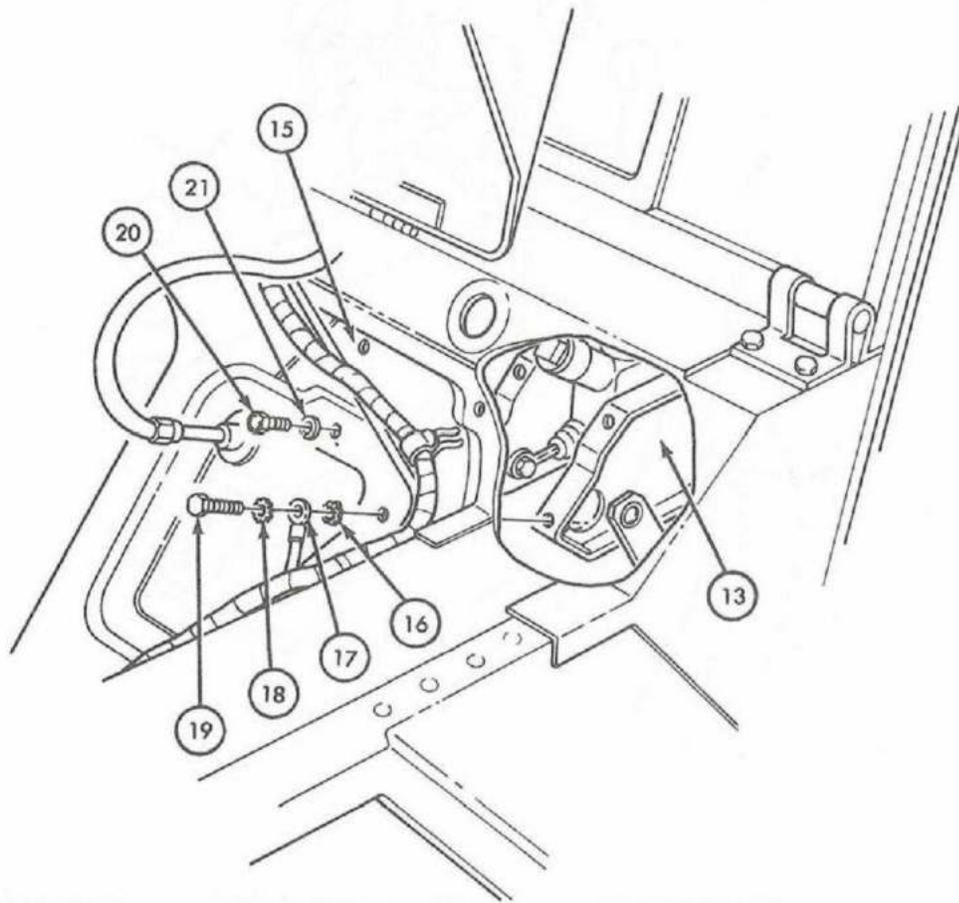
TA 155547

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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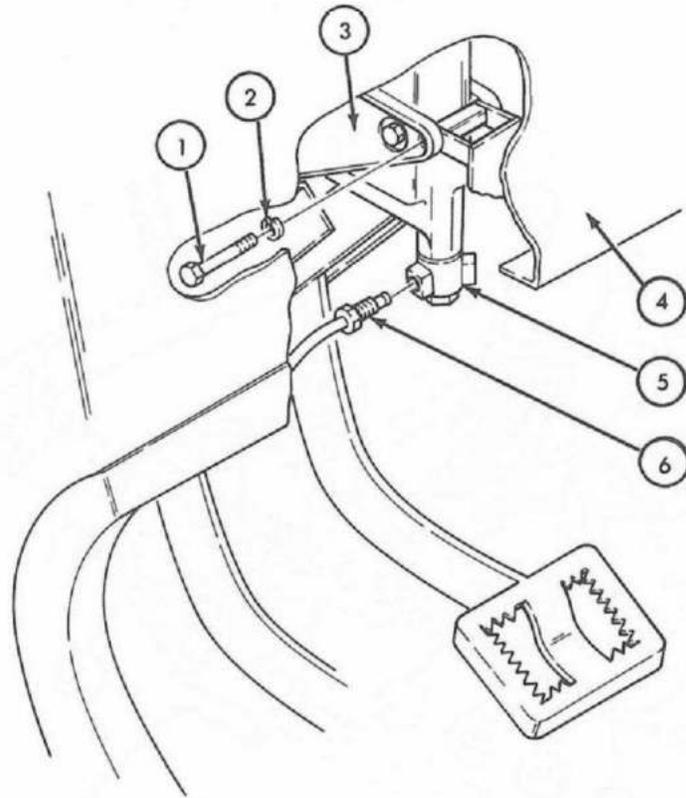
e. INSTALLATION

40.		Pedal assembly (13)	Secure to firewall (15) with four bolts (19) and (20), one external tooth lockwasher (18), three lockwashers (21), and one internal/external tooth lockwasher (16).	When facing firewall, lower left and upper right holes take a short bolt and lockwasher (20) and (21); upper left hole takes a long bolt (19), external tooth lockwasher (18), ground wire eyelet (17), and internal/external tooth lockwasher (16). Tighten 12-18 lb-ft (16-24 N•m).
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8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
41.		Pedal assembly (3)	Secure to instrument panel (4) with bolt (1) and lockwasher (2).	
42.		Brake line (6)	Connect to master cylinder outlet fitting (5).	Tighten to 40-50 lb-ft (57-68 N•m).

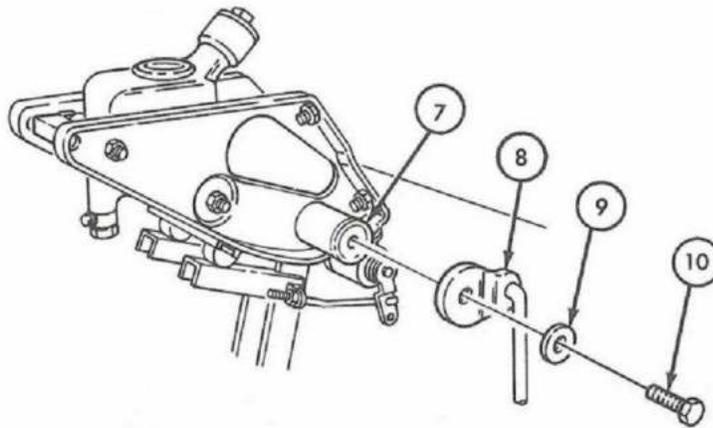


43.		Clutch lever (8)	Place on end of clutch pedal shaft (7), and secure with bolt-assembled lockwasher (10) and washer (9).	Tighten 24-26 lb-ft (32-35 N•m).
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TA 155549

8-17. Brake and Clutch Pedal Assembly Maintenance (Cont'd)

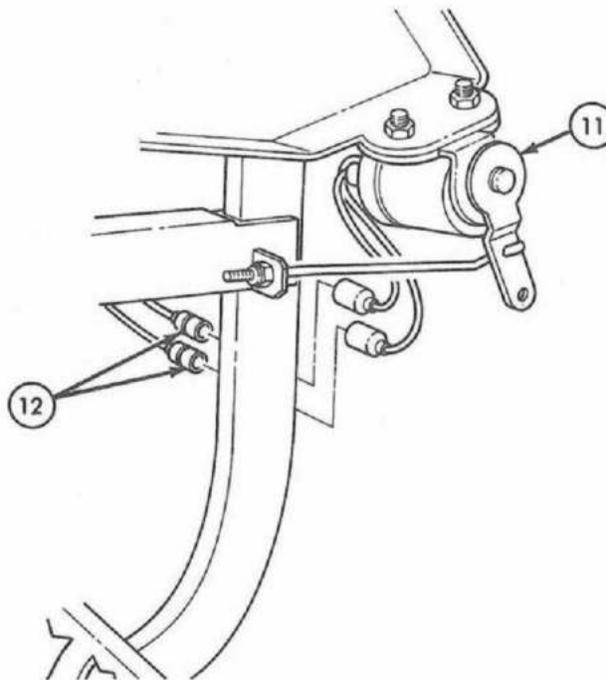
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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44.

Two stoplight switch connectors (12)

Connect to stoplight switch (11)



END OF TASK!

- FOLLOW-ON TASKS:**
- Bleed brakes (para 8-11).
 - Adjust brake pedal free travel (para 8-10).
 - Check brake, clutch, and stoplight operation (TM 9-2320-218-10).

TA 155550

CHAPTER 9

WHEELS, TIRES, DRUMS, AND STEERING MAINTENANCE

9-1. Overview

a. This chapter provides maintenance information for wheels, tires, drums, and the steering system. Components covered can be found in one of the following sections:

- Section I. Wheels, Tires, and Drums Maintenance (page 9-1)
- Section II. Steering System Maintenance (page 9-19)

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

Section I. WHEELS, TIRES, AND DRUMS MAINTENANCE

9-2. General

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

9-3. Wheels, Tires, and Drums Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
9-4.	Wheel and Tire <ul style="list-style-type: none"> a. Wheel Removal b. Wheel and Tire Inspection c. Wheel Installation d. Tire and Tube Replacement e. Wheel Rotation 	9-2
9-5.	Wheel Seals, Bearings, and Cups <ul style="list-style-type: none"> a. Wheel Bearing Check b. Wheel Bearing Adjustment c. Removal d. Cleaning and Inspection e. Lubrication f. Installation 	9-6
9-6.	Drum Assembly <ul style="list-style-type: none"> a. Removal b. Cleaning and Inspection c. Installation 	9-16

9-4. Wheel and Tire Maintenance

This task covers:

- a. Wheel Removal
- b. Wheel and Tire Inspection
- c. Wheel Installation
- d. Tire and Tube Replacement
- e. Wheel Rotation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P TM 9-2610-200-24</p>	<p>Equipment Condition Reference</p> <p>TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

- All four wheels are removed and installed identically. The left rear wheel is covered in this procedure.
- All wheel nuts (2) have right-hand threads.

a. WHEEL REMOVAL

1.	Five wheel nuts (2)	Loosen.	Do not remove.
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NOTE

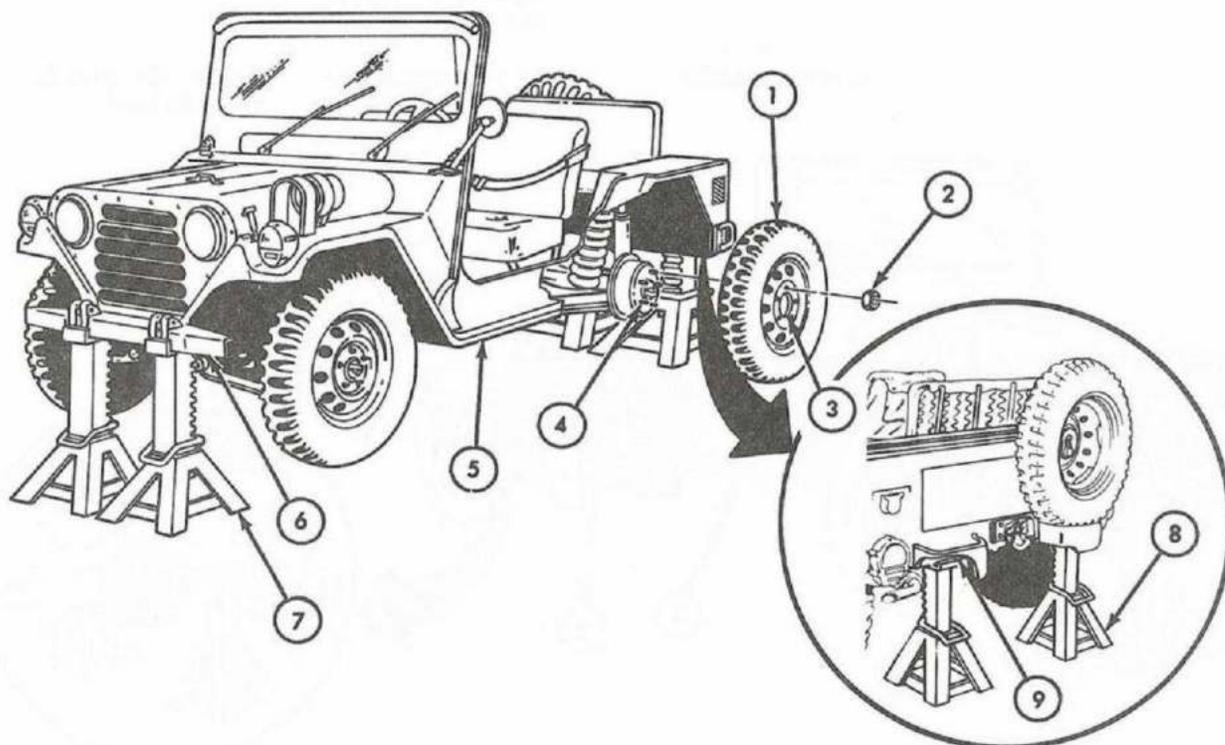
Perform step 2b if rear wheels are being removed, step 2a if front wheels are being removed, and steps 2a and b if front and rear wheels are being removed.

9-4. Wheel and Tire Maintenance (Cont'd)

- | | | |
|----|--------------------------------|--|
| 2. | Vehicle (5) | <p>a. Raise front end using hydraulic jack, and support each end of front bumper (6) with trestle (7).</p> <p>b. Raise rear end using hydraulic jack, and support each end of rear cross sill assembly (9) with trestle (8).</p> |
| 3. | Wheel (3) to spindle studs (4) | Remove. |
| 4. | Wheel (3) | Lift wheel (3) off spindle studs (4). |

b. WHEEL AND TIRE INSPECTION

- | | | | |
|----|-----------|---|---|
| 5. | Tire (1) | Inspect for cuts in tread or sidewall and wear. | Replace if cut. See TM 9-2320-218-10 for wear limits. |
| 6. | Wheel (3) | Inspect for bends or cracks. Inspect stud holes for out-of-round condition. | Replace if bent or cracked. Replace if stud holes are out of round. |



TA 155551

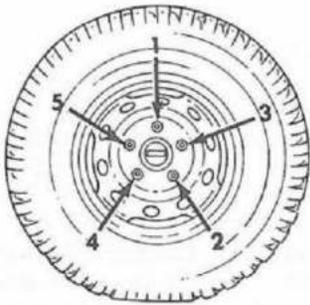
9-4. Wheel and Tire Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. WHEEL INSTALLATION

7. Wheel (1)
Secure to spindle studs (3) with five wheel nuts (2).

8. Vehicle (4)
a. Raise rear end with hydraulic jack until weight is removed from two trestles (6).

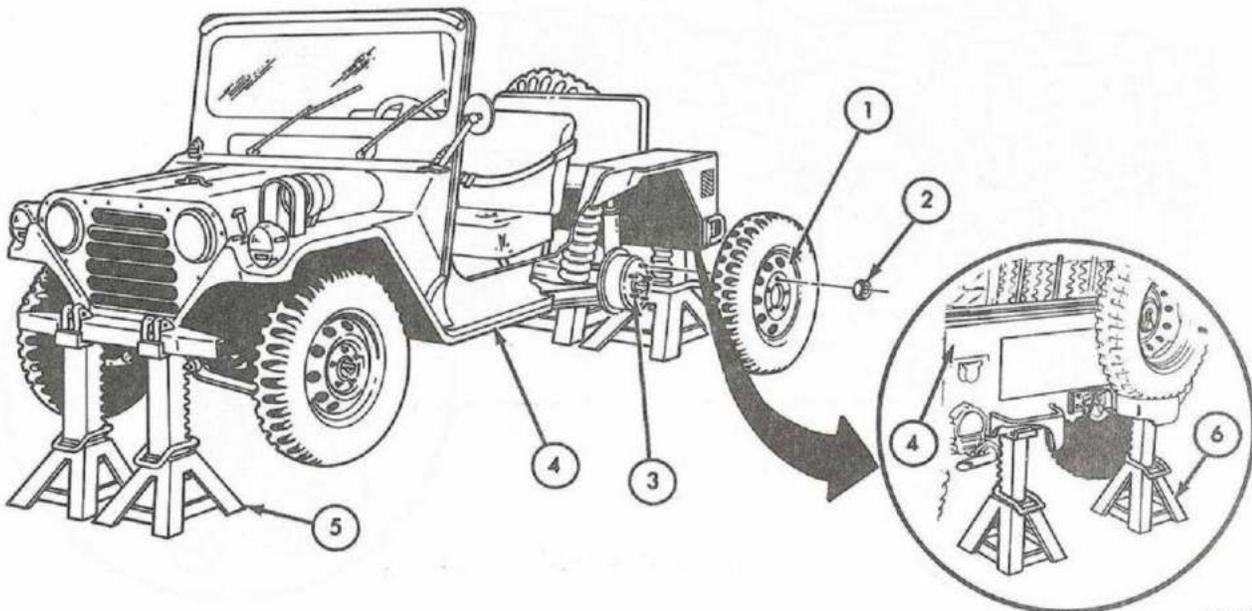


b. Remove two trestles (6) and lower rear end.

c. Raise front end with hydraulic jack until weight is removed from two trestles (5).

d. Remove two trestles (5) and lower front end.

9. Five wheel nuts (2)
Tighten in sequence as shown. Tighten 80-110 lb-ft (108-149 N•m).



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9-4. Wheel and Tire Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. TIRE AND TUBE REPLACEMENT

NOTE

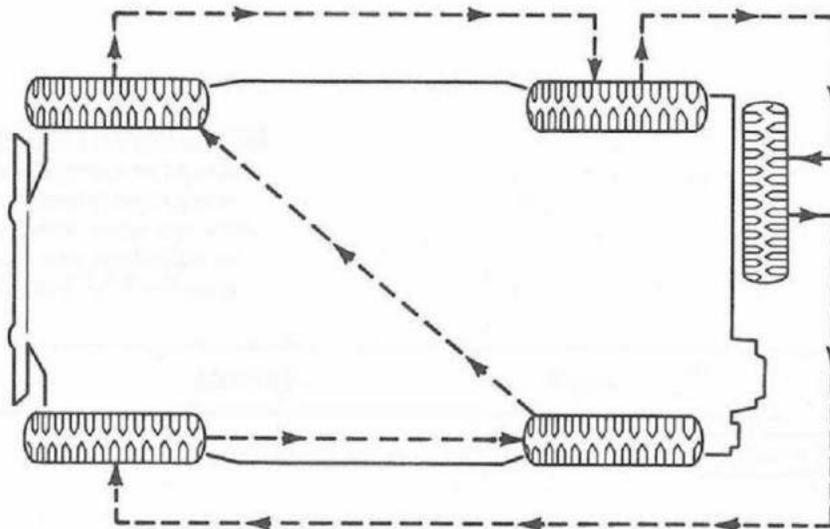
Procedures for removal and installation of tires and tubes to wheels are given in TM 9-2610-200-24, Maintenance and Repair of Tires and Inner Tubes.

e. WHEEL ROTATION

10. Wheels Rotate as shown below.

NOTE

If tires show unequal wear, rotate tires as shown, in accordance with TM 9-2610-200-24.



END OF TASK!

TA 484685

9-5. Wheel Seals, Bearings, and Cups Maintenance

This task covers:

- | | |
|--|--|
| <ul style="list-style-type: none"> a. <i>Wheel Bearing Check</i> b. <i>Wheel Bearing Adjustment</i> c. <i>Removal</i> | <ul style="list-style-type: none"> d. <i>Cleaning and Inspection</i> e. <i>Lubrication</i> f. <i>Installation</i> |
|--|--|

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	Para 3-24 Para 6-17	Vehicle raised and supported. Front wheel spindle support removed (for tasks <i>c</i> , <i>d</i> , <i>e</i> , and <i>f</i> — front only).
	Para 6-18	Rear wheel spindle support removed (for <i>c</i> , <i>d</i> , <i>e</i> and <i>f</i> — rear only).

Test Equipment
None

Special Tools
 Puller
 Wedge assembly
 Seal replacer
 Steel tube 2.45 in. (62 mm) long with 2.75 in. (69.8 mm) I.D.
 Inner bearing cup driver (see appendix E)

Special Environmental Conditions
Clean, well-ventilated work area.

Materials/Parts
 Spindle bearing and sleeve kit
 Wheel spindle bearing kit
 Sealing compound, type III, spec MIL-S-45180
 GAA grease
 Drycleaning solvent
 One cotter pin

Personnel Required
One mechanic

General Safety Instructions

- Keep fire extinguisher nearby when using drycleaning solvent.
- Do not reuse wheel spindle cotter pin or substitute with any cotter pin other than NSN 5315-00-011-9120.

Manual References
 TM 9-2320-218-20P
 LO 9-2320-218-12
 TM 9-214

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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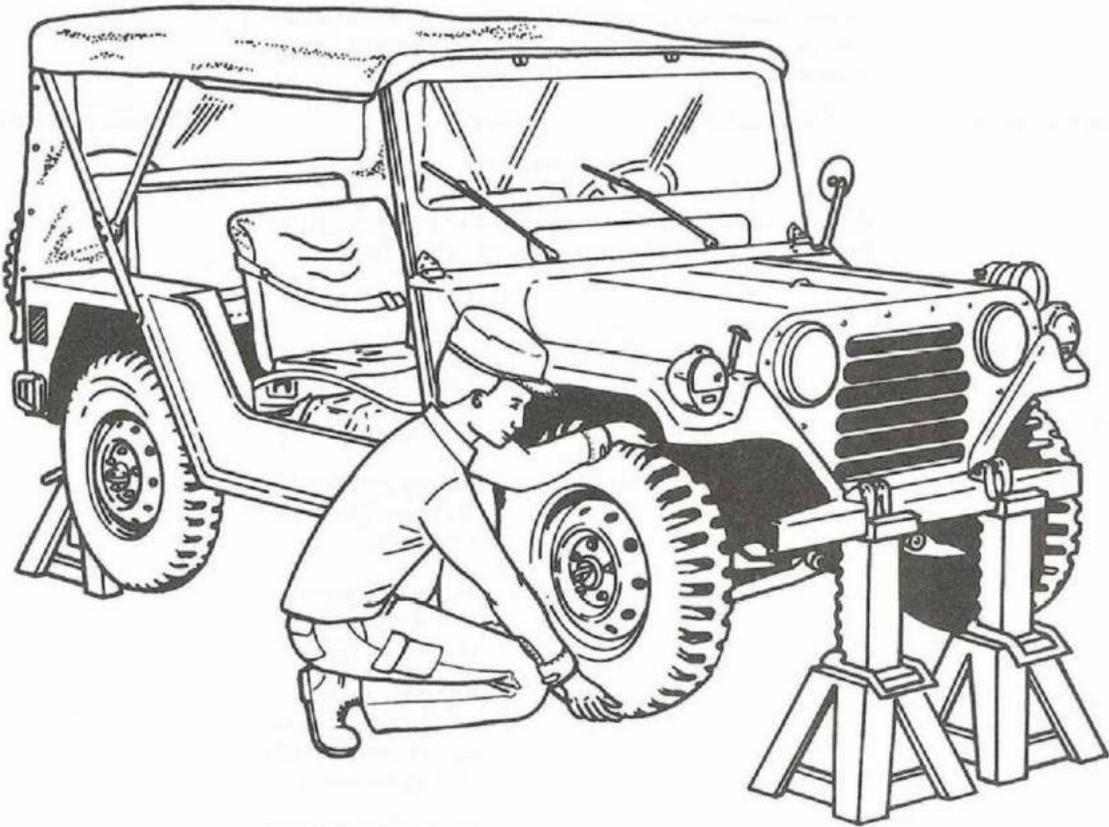
a. WHEEL BEARING CHECK

- | | |
|----|---|
| 1. | Check wheel bearing adjustment as follows: <ul style="list-style-type: none"> a. Grasp each tire at top and bottom. b. Push inward and outward. |
|----|---|

9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. If any excessive play is noticed, adjust wheel bearing.



9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. WHEEL BEARING ADJUSTMENT

2.		Wheel (5)	Remove.	See para 9-4.
3.	Spindle (1)	Nut (4) and lifting eye (3)	Remove.	

WARNING

Do not reuse wheel spindle cotter pin or substitute with any cotter pin other than NSN 5315-00-011-9120. Failure to use correct new cotter pin may result in wheel assembly falling off vehicle during operation, causing injury to personnel.

4.	Adjusting nut (2)	Cotter pin (6)	Remove.	Discard cotter pin (6).
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CAUTION

Do not rotate wheel or spindle when adjusting nut is backed off. Wheel bearing preload will be lost.

5.			Adjust wheel bearing as follows:	
			<i>a.</i> Tighten adjusting nut (2) to 30 lb-ft (41 N•m).	
			<i>b.</i> Rotate spindle (1) three complete rotations.	
			<i>c.</i> Recheck torque. If not 30 lb-ft (41 N•m), tighten.	
			<i>d.</i> Repeat <i>b</i> and <i>c</i> above until torque can be maintained, seating bearings.	
			<i>e.</i> Back adjusting nut (2) off 1/8 turn without moving spindle (1).	

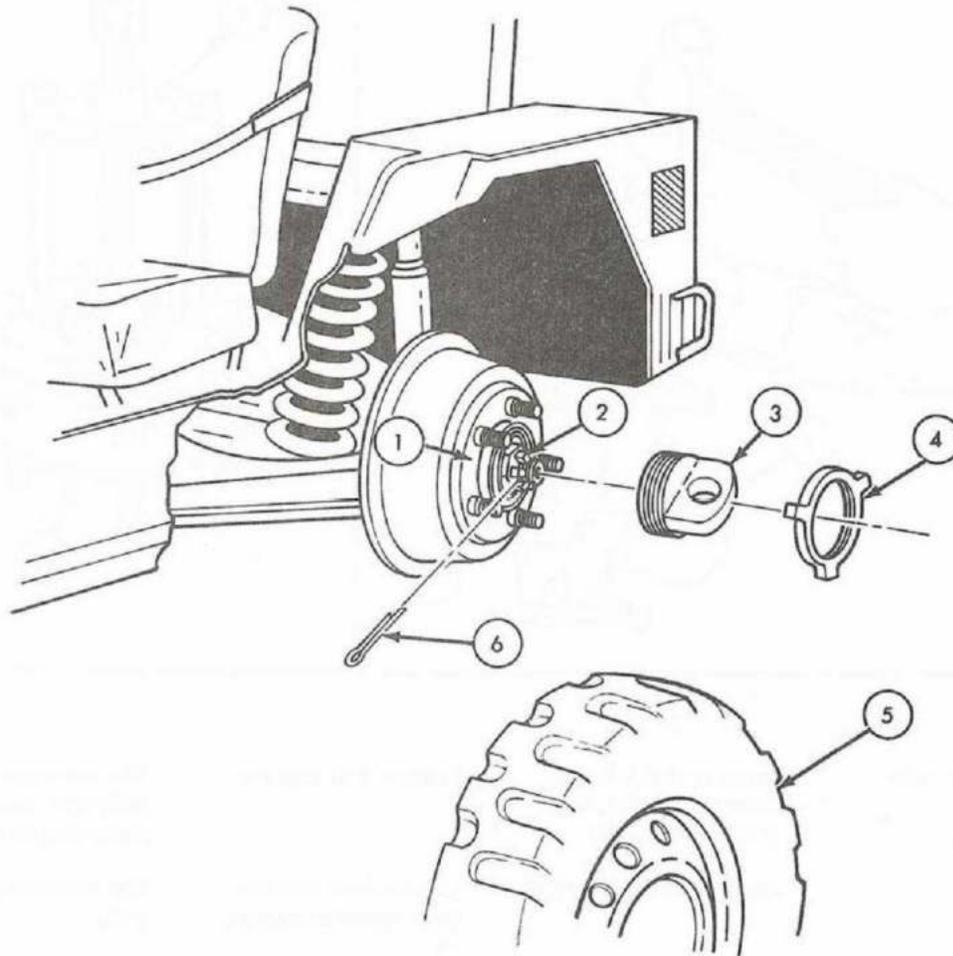
NOTE

The wheel drive yoke flange shaft has two holes for cotter pin.

- f.* If slots in adjusting nut (2) do not align with either hole, back off nut (2) slightly to align.

9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.		Wheel (5)	g. Secure with new cotter pin (6). Install.	See para 9-4.
7.			Repeat step 1 and check wheel bearings.	If excessive play is noticed, replace wheel bearings.

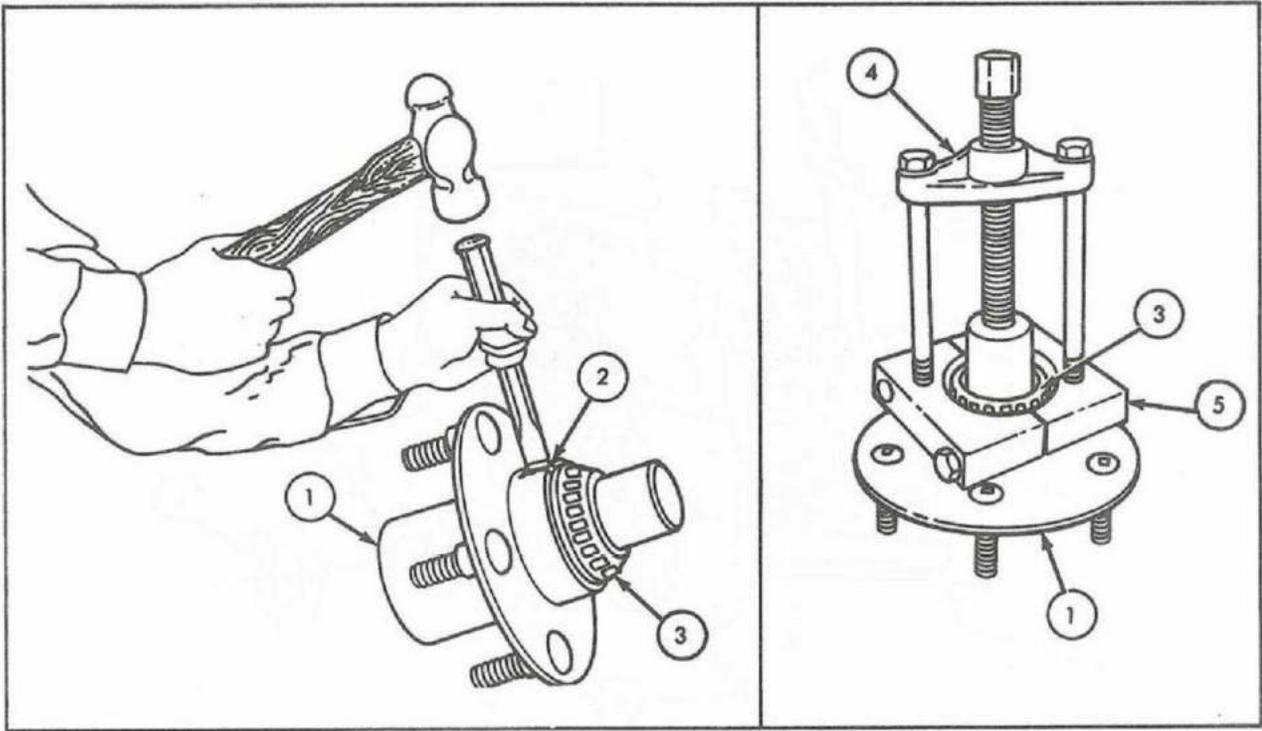


9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. REMOVAL

8.	Spindle (1)	Wear sleeve (2)	Split and remove.	Use hammer and sharp chisel. Discard sleeve (2).
9.		Outer bearing (3)	Remove from spindle (1)	Use puller (4) and wedge assembly (5).



10.	Spindle support (8)	Inner seal (6), inner bearing cup (9), and inner bearing (7)	Loosen and remove.	Use hammer and brass drift to loosen. Discard inner seal (6).
11.		Outer bearing cup (10)	Loosen and remove from spindle support (8).	Use hammer and brass drift.

9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

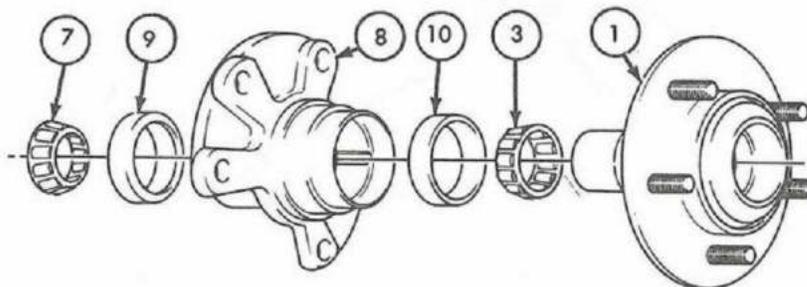
STEP NO.	LOCATION	ITEM	ACTION	REMARKS

d. CLEANING AND INSPECTION

WARNING

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

- | | | | |
|-----|---|--|--|
| 12. | Bearing cups (9) and (10), spindle (1), and spindle support (8) | a. Clean in dry-cleaning solvent. | Clean bearings (7) and (3) in accordance with TM 9-214. |
| | | b. Inspect for cracks, pitting, scoring, and wear. | Replace any part that is cracked, pitted, scored, or worn. |



TA 155557

9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

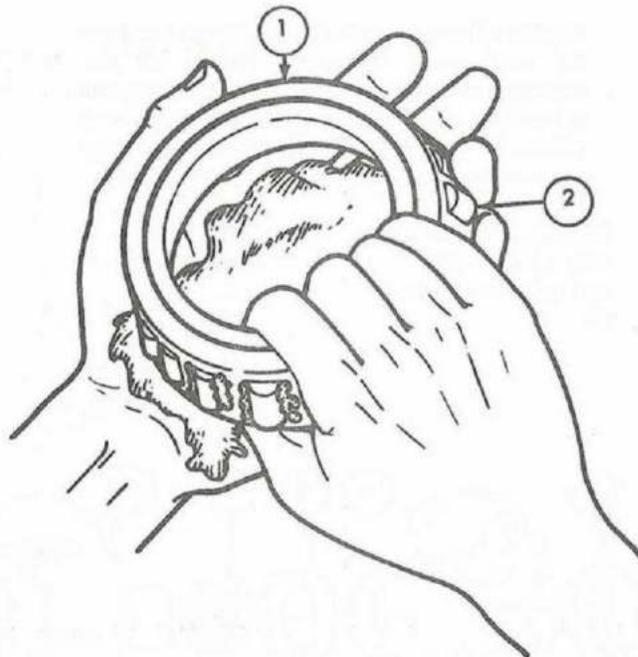
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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e. LUBRICATION

NOTE

If lubricating kit is not available, pack bearings by hand as shown. See TM 9-214 for additional information.

13.	Bearing (1)		Pack by hand as follows: <ol style="list-style-type: none"> a. Hold bearing (1) in one hand, with grease on palm of other hand. b. Wipe bearing (1) through grease continually until grease oozes out each roller (2). 	Use grease specified in LO 9-2320-218-12.
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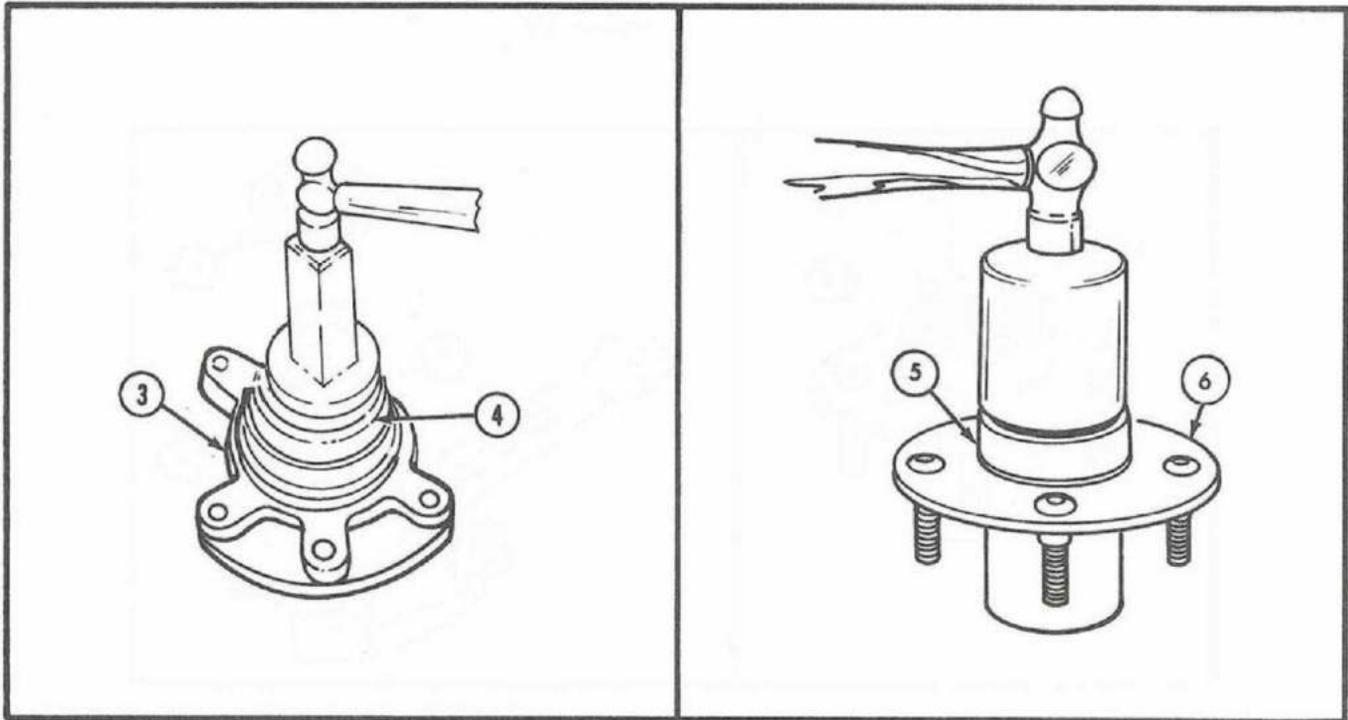


9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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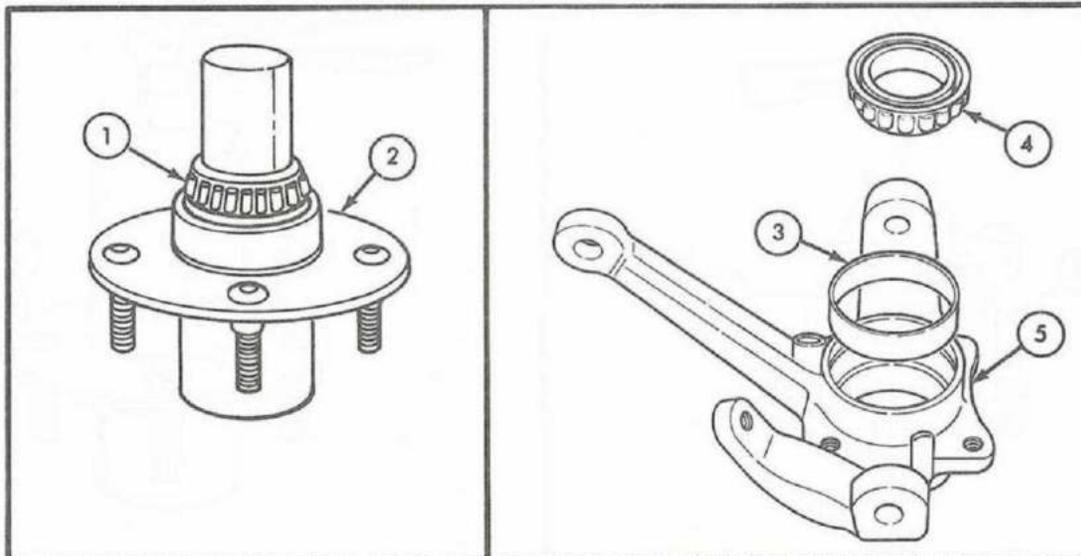
f. INSTALLATION

14.		Spindle support (3)	Coat entire inside with light film of GAA grease.	
15.		Outer bearing cup (4)	Coat with light film of GAA grease, and install in spindle support (3).	Use hammer and wood block to start. Seat with bearing cup driver.
16.		New outer wear sleeve (5)	<p>a. Coat sleeve mating surface on spindle (6) with sealing compound.</p> <p>b. Install on spindle (6).</p>	Use hammer and steel tube to seat.



9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

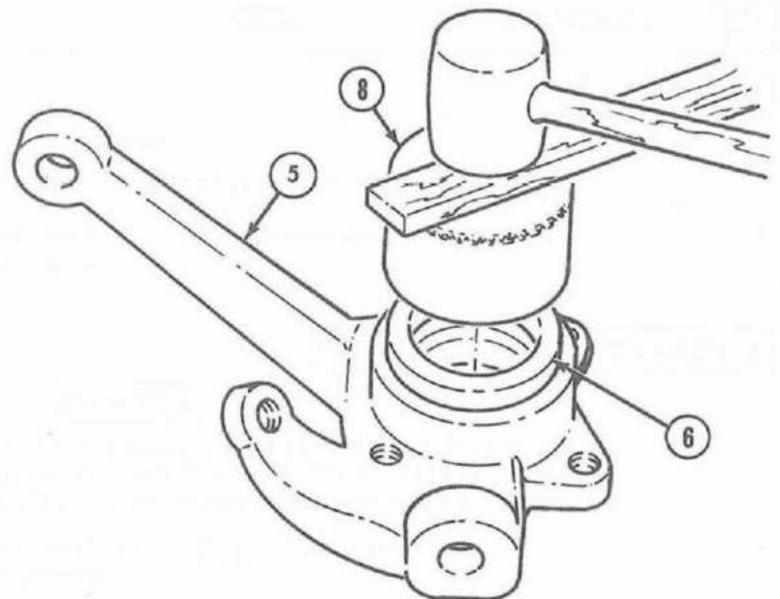
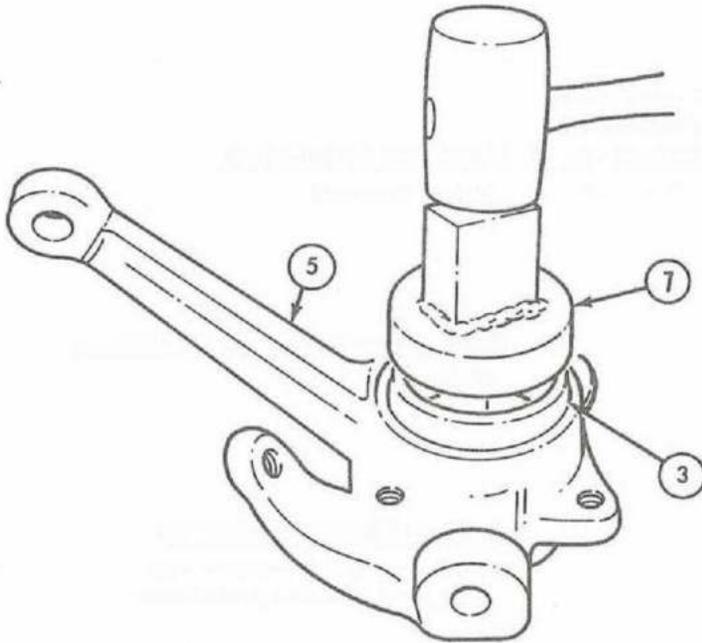
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
17.		Outer bearing (1)	Install on spindle (2).	Use hammer and steel tube to seat.
18.		Spindle support (5)	<p>a. Coat inner seal (6) mating surface with sealing compound.</p> <p>b. Coat bearing bore with light film of GAA grease.</p>	
19.		Inner bearing cup (3)	Coat with light film of GAA grease and install in spindle support (5).	Use hammer and inner bearing cup driver (7) to seat.
20.		Inner bearing (4)	Place in bearing cup (3).	
21.		Inner seal and retainer (6)	Pack lip of seal (6) with GAA grease, and install on spindle support (5).	Use hammer and seal replacer tool (8).



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9-5. Wheel Seals, Bearings, and Cups Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:
- Install front wheel spindle support (para 6-17).
 - Install rear wheel spindle support (para 6-18).
 - Lower vehicle (para 3-24).

TA 484688

9-6. Drum Assembly Maintenance

This task covers:

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

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Wire brush</p> <p><u>Materials/Parts</u> Oil-free rag</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> Para 9-4</p>	<p><u>Condition Description</u> Wheel removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> Do not use a dry brush or compressed air to clean brakeshoes.</p>
---	---	---

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

NOTE

It may be necessary to back off brakeshoes before removing drum (para 8-10).

1.	Drum assembly (2)	Loosen and remove from spindle (1).	Use soft hammer to tap around edges to loosen.
----	-------------------	-------------------------------------	--

b. CLEANING AND INSPECTION

WARNING

Do not use a dry brush or compressed air to clean brakeshoes. There may be asbestos dust on brakeshoes which can be dangerous to your health if you breathe it. (Brakeshoe must be wet, and a soft bristle brush must be used.)

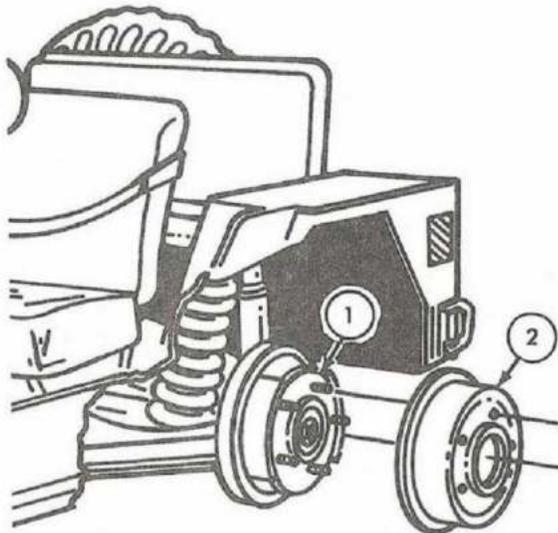
2.	Drum assembly (2)	<p>a. Remove all dirt and debris, and wipe clean.</p> <p>b. Inspect for cracks, pitting, breaks, wear, and grooves.</p>	<p>Use wire brush and oil-free rag.</p> <p>Replace if cracked, pitted, broken, or worn.</p> <p>If grooved, notify DS maintenance.</p>
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9-6. Drum Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

- | | | |
|----|-------------------|-------------------------|
| 3. | Drum assembly (2) | Install on spindle (1). |
|----|-------------------|-------------------------|



END OF TASK!

FOLLOW-ON TASK: Install wheel (para 9-4).

TA 155562

Section II. STEERING SYSTEM MAINTENANCE

9-7. General

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

9-8. Steering System Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
9-9.	Steering Wheel a. Removal b. Installation	9-20
9-10.	Steering Pitman Arm a. Removal b. Installation	9-22
9-11.	Center Link and Idler Assembly a. Removal b. Inspection c. Installation	9-26
9-12.	Tie Rod End Assemblies a. Removal b. Installation	9-30
9-13.	Vehicle Turning Radius Check a. Wheel Stops Check b. Vehicle Left Turn Radius Check c. Vehicle Right Turn Radius Check	9-33

9-9. Steering Wheel Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
Para 5-73

Condition Description

Parking brake set.
Horn switch removed.

Test Equipment

None

Special Tools

Mechanical puller
Torque wrench (0-175 lb-ft)

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

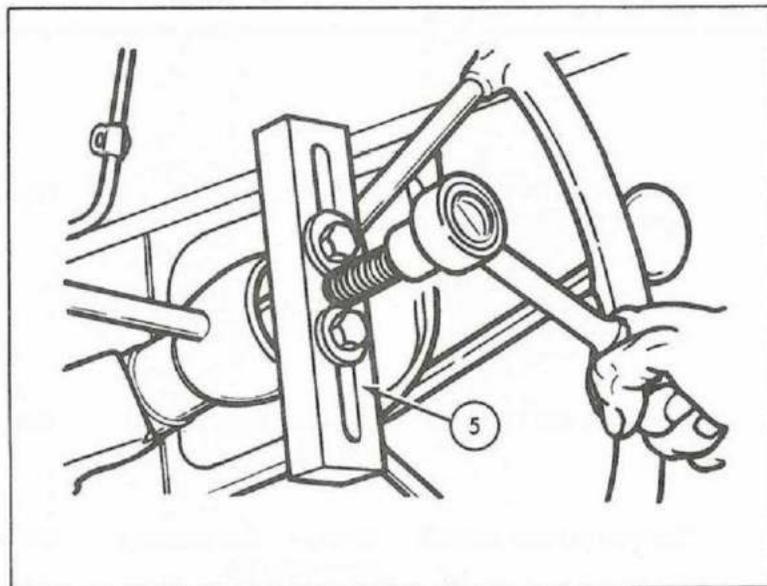
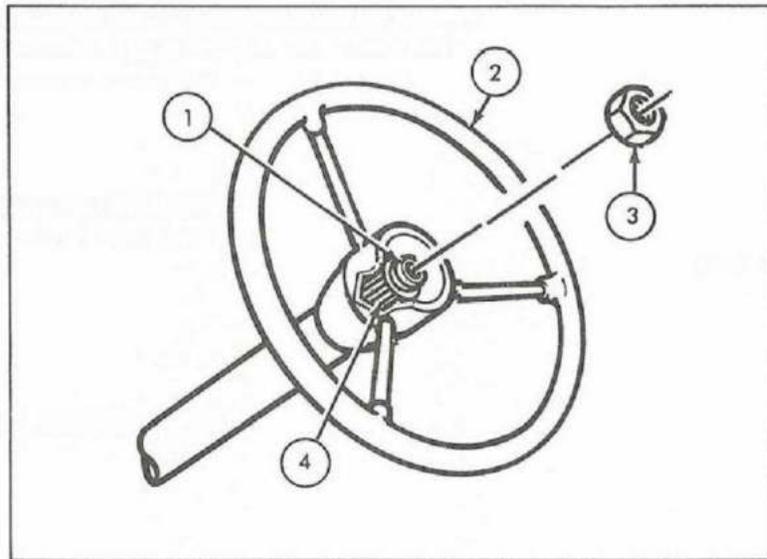
1.	Steering wheel (2) to steering shaft (1)	Shaft nut (3)	Remove.	
2.		Steering wheel (2)	Remove.	Use suitable puller (5).

b. INSTALLATION

3.		Steering wheel (2)	<p><i>a.</i> Position on steering shaft (1).</p> <p><i>b.</i> Secure with shaft nut (3).</p> <p><i>c.</i> Peen nut (3) after properly tightened.</p>	<p>Make sure splines (4) are properly alined.</p> <p>Tighten nut (3) 25-35 lb-ft (34-47 N•m).</p>
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9-9. Steering Wheel Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install horn switch (para 5-73).

TA 155563

9-10. Steering Pitman Arm Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Mechanical puller Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> Cotter pin</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u> Parking brake set. Raise and support front end of vehicle.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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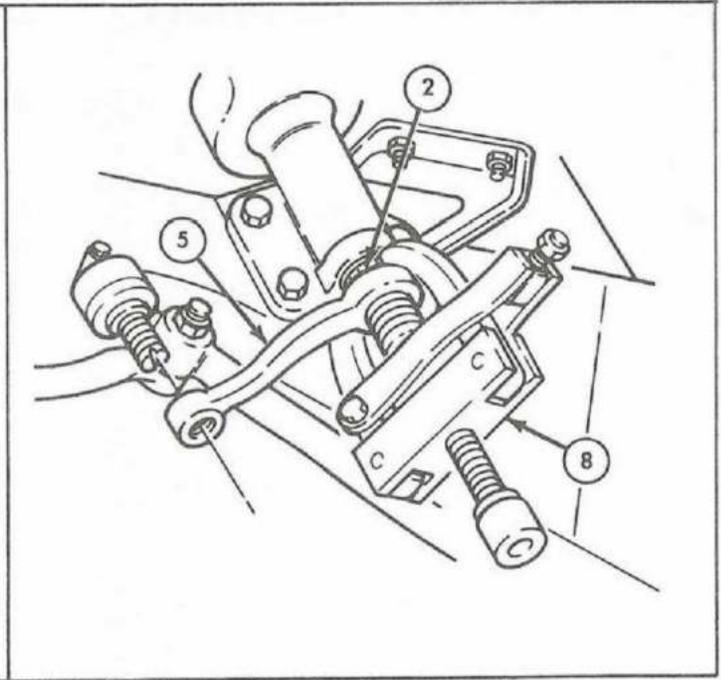
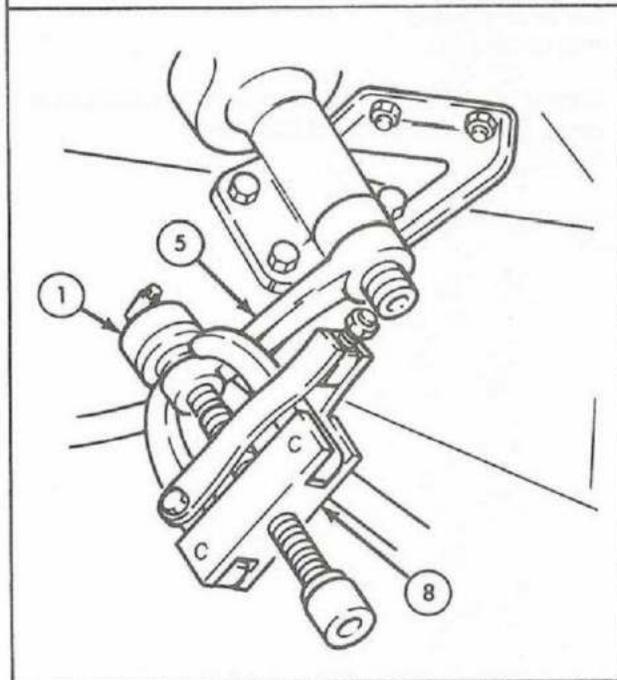
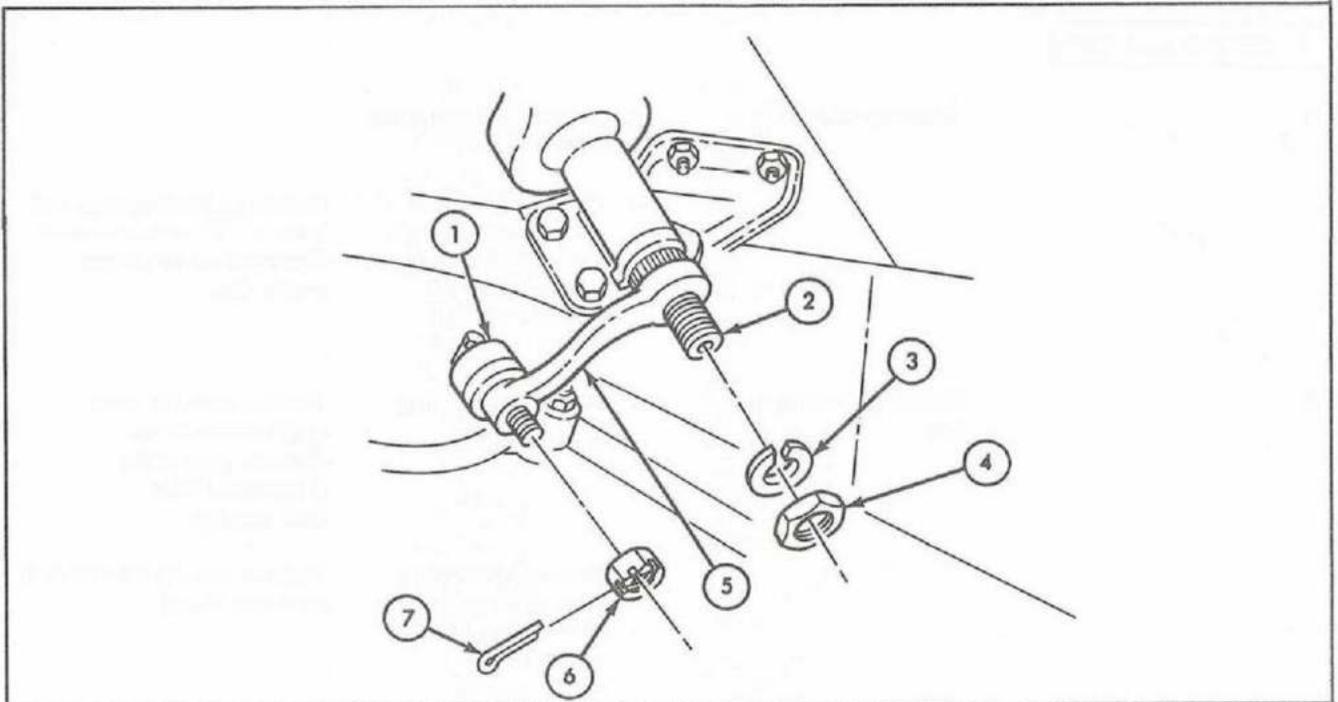
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Idler arm rod (1) to steering pitman arm (5)	Cotter pin (7) and slotted nut (6)	Remove.	Discard cotter pin (7).
2.	Steering pitman arm (5) to steering gear shaft (2)	Nut (4) and lock-washer (3)	Remove.	
3.		Idler arm rod (1)	Remove from pitman arm (5).	Use suitable puller (8).
4.		Steering pitman arm (5)	Remove from steering gear shaft (2).	Use suitable puller (8).

9-10. Steering Pitman Arm Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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9-10. Steering Pitman Arm Maintenance (Cont'd)

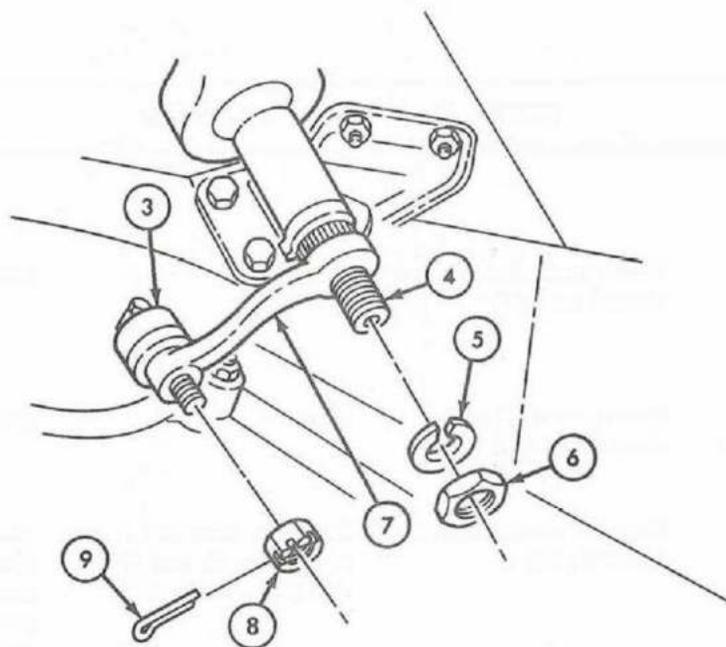
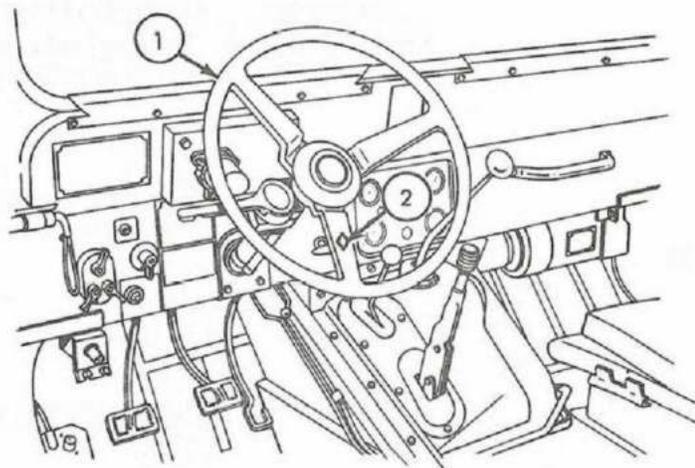
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

5.		Steering wheel (1)	<p>a. Rotate to maximum turn.</p> <p>b. Reverse rotation $1\frac{3}{4}$ turns and position lower steering wheel spoke (2) straight up and down.</p>	Steering wheel spokes will form a "Y" with stamped diamond on the lower spoke (2).
6.		Steering pitman arm (7)	<p>a. Install on steering gear shaft (4).</p> <p>b. Secure to steering gear shaft (4) with lockwasher (5) and nut (6).</p>	<p>Pitman arm (7) must angle down from steering gear shaft (4) toward idler arm rod (3).</p> <p>Tighten nut (6) 80-100 lb-ft (108-136 N•m).</p>
7.		Idler arm rod (3)	<p>a. Install in steering pitman arm (7).</p> <p>b. Secure to pitman arm (7) with slotted nut (8).</p>	Tighten nut (8) 35-45 lb-ft (47-61 N•m).
8.		Slotted nut (8)	Secure with new cotter pin (9).	

9-10. Steering Pitman Arm Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Lower vehicle (para 3-24).
 - Road test vehicle (TM 9-2320-218-10) and check for proper steering operation.

9-11. Center Link and Idler Assembly Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Mechanical puller Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> Three cotter pins</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 3-24</p>	<p><u>Condition Description</u> Parking brake set. Front of vehicle raised and supported.</p> <p><u>Special Environmental Conditions</u> Vehicle on level surface.</p> <p><u>General Safety Instructions</u> None</p>
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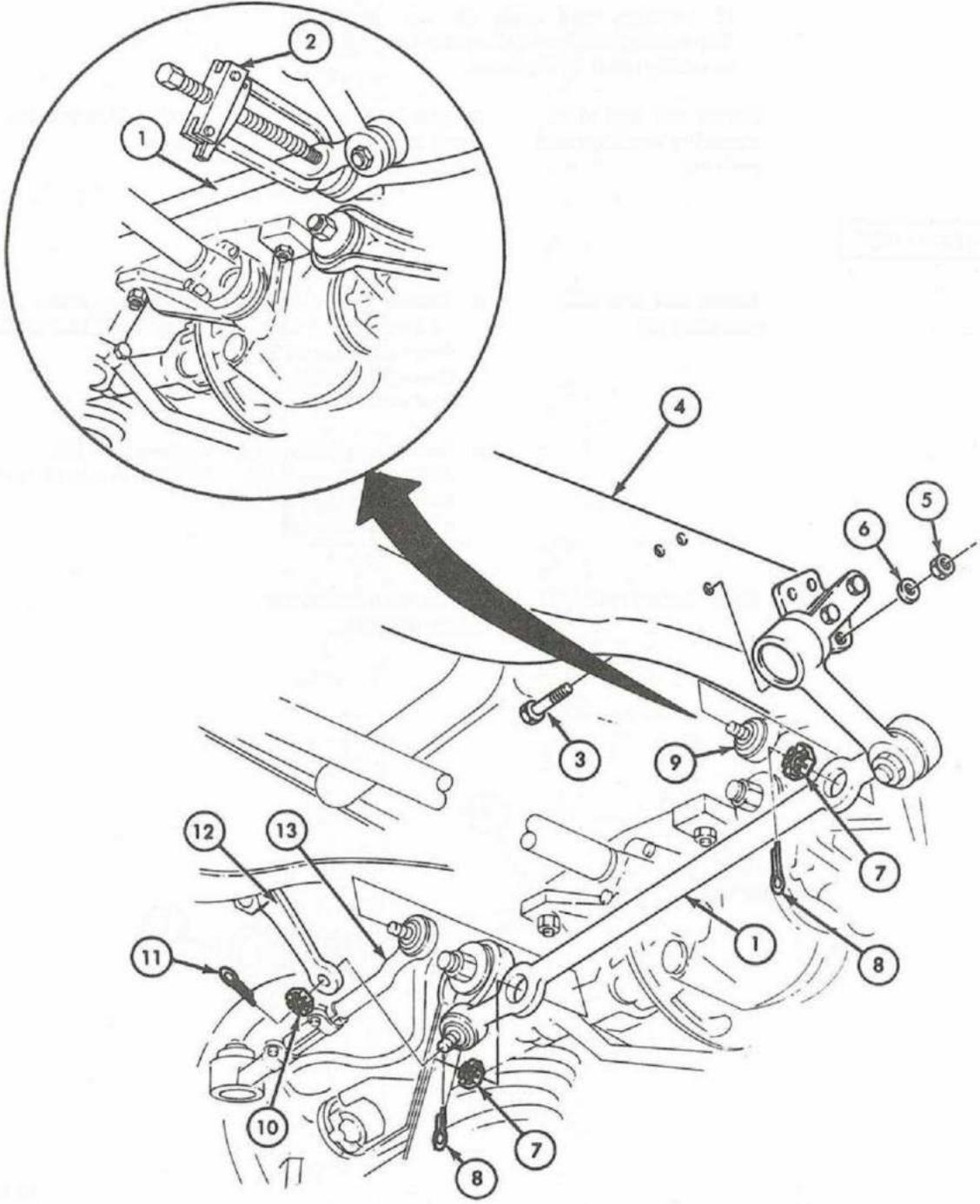
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Center link and idler assembly (1) to left tie rod (13) and right tie rod (9)	Two cotter pins (8) and slotted nuts (7)	Remove.	Discard cotter pins (8).
2.	Center link and idler assembly (1) to pitman arm (12)	Cotter pin (11) and slotted nut (10)	Remove.	Discard cotter pin (11).
3.		Center link and idler assembly (1)	Separate from left tie rod (13), right tie rod (9), and pitman arm (12).	Use suitable puller (2). Center link and idler assembly (1) will remain attached to vehicle underbody (4).

9-11. Center Link and Idler Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Center link and idler assembly (1) to vehicle underbody (4)	Three nuts (5), lockwashers (6), and capscrews (3)	Remove.	



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9-11. Center Link and Idler Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSPECTION

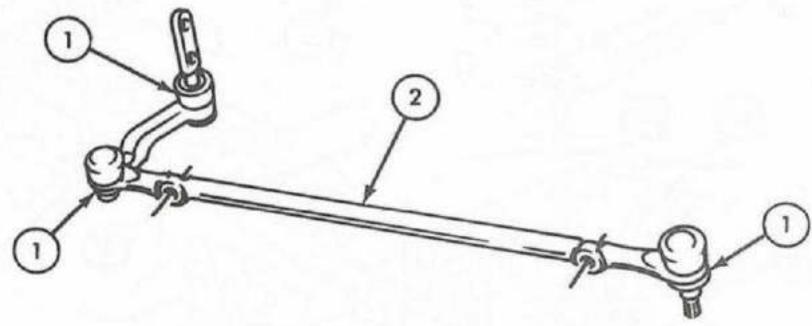
NOTE

If bushings and seals do not pass the inspection given in step 5, center link and idler assembly must be replaced.

5.		Center link and idler assembly bushings and seals (1)	Inspect for looseness, dried, and cracked condition.	Replace if loose, dry, or cracked.
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c. INSTALLATION

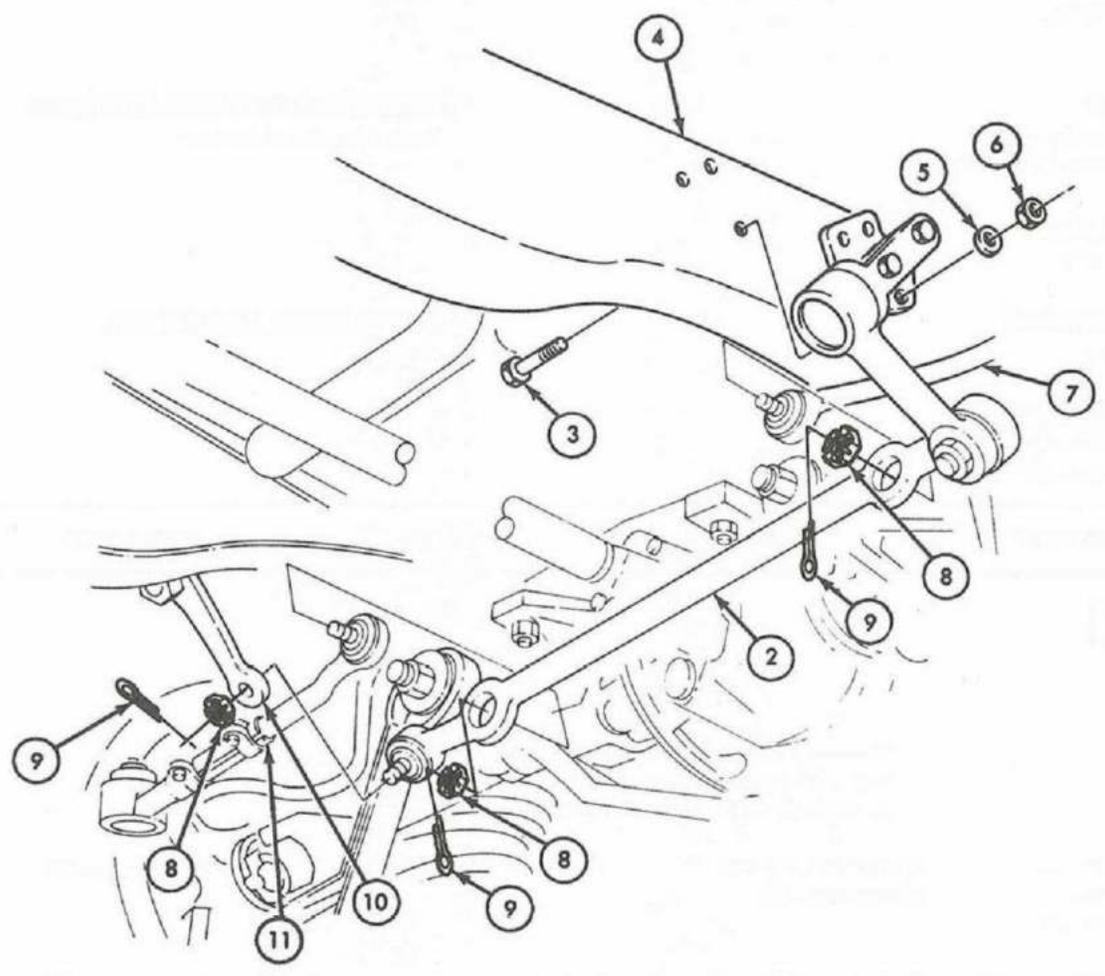
6.		Center link and idler assembly (2)	<p>a. Secure to vehicle underbody (4) with three capscrews (3), lockwashers (5), and nuts (6).</p> <p>b. Secure to pitman arm (10), right tie rod (7), and left tie rod (11) with three slotted nuts (8).</p>	<p>Tighten capscrews (3) 24-36 lb-ft (32.5-49 N•m).</p> <p>Tighten nuts (8) 35-45 lb-ft (47-61 N•m).</p>
7.		Three slotted nuts (8)	Secure with three new cotter pins (9).	



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9-11. Center Link and Idler Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Lower vehicle (para 3-24).
 - Adjust toe-in (para 6-19).
 - Road test (TM 9-2320-218-10) and check for proper steering operation.

TA 155568

9-12. Tie Rod End Assemblies Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
Para 3-24

Condition Description

Parking brake set.
Vehicle raised and supported.

Test Equipment

None

Special Tools

Mechanical puller
Torque wrench (0-175 lb-ft)

Special Environmental Conditions

Vehicle on level surface.

Materials/Parts

Two cotter pins

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

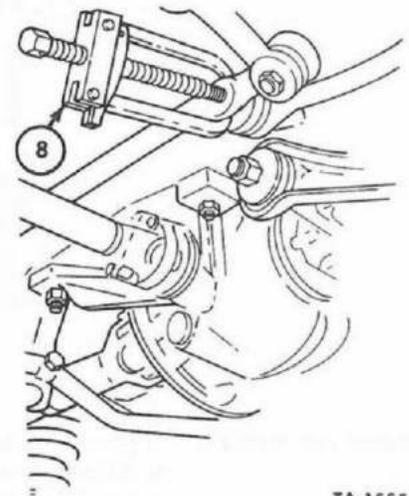
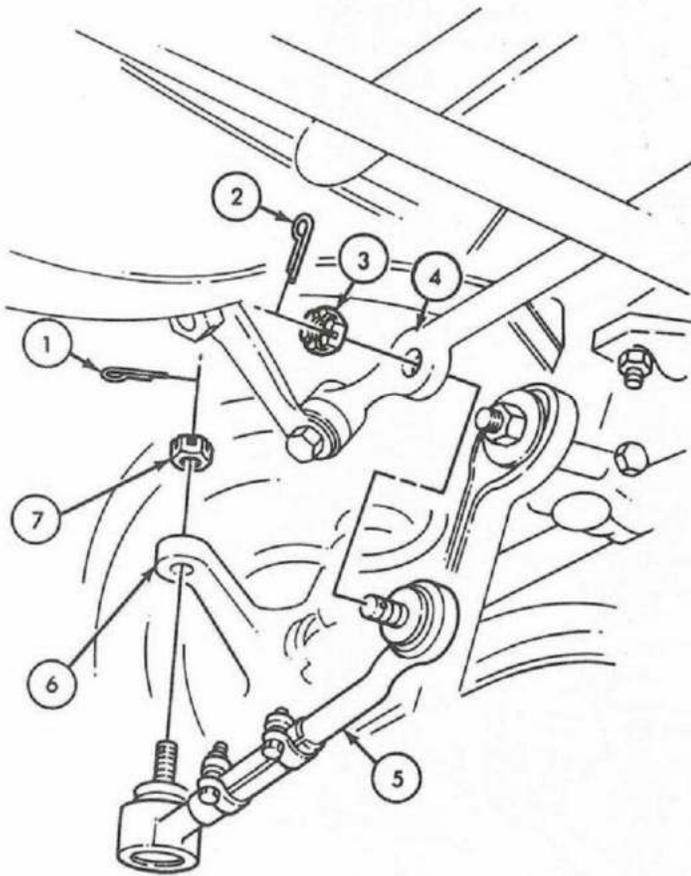
NOTE

Removal procedures for the left and right tie rod end assemblies are all the same. This procedure will only cover the left tie rod.

- | | | | | |
|----|--|------------------------------------|---------|-------------------------|
| 1. | Left tie rod (5) to center link and idler assembly (4) | Cotter pin (2) and slotted nut (3) | Remove. | Discard cotter pin (2). |
| 2. | Left tie rod (5) to steering spindle support arm (6) | Cotter pin (1) and slotted nut (7) | Remove. | Discard cotter pin (1). |

9-12. Tie Rod End Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Left tie rod (5)	Separate from steering spindle support arm (6) and center link and idler assembly (4).	Use suitable puller (8).



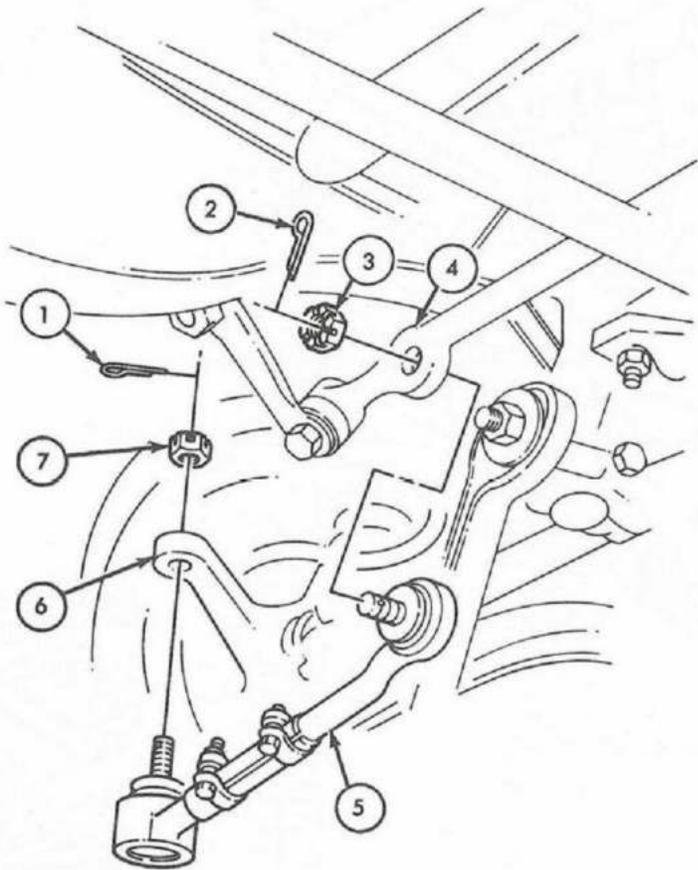
TA 155569

9-12. Tie Rod End Assemblies Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

4.		Left tie rod (5)	a. Secure to spindle support arm (6) with slotted nut (7) and new cotter pin (1).	Tighten nut (7) to 30-36 lb-ft (41-49 N•m).
			b. Secure to idler arm rod (4) with slotted nut (3) and new cotter pin (2).	Tighten nut (3) to 30-36 lb-ft (41-49 N•m).



END OF TASK!

- FOLLOW-ON TASKS:
- Lower vehicle (para 3-24).
 - Adjust toe-in (para 6-19).
 - Road test (TM 9-2320-218-10) and check for proper steering operation.

TA 155570

9-13. Vehicle Turning Radius Check

This task covers:

- a. Wheel Stops Check
- b. Vehicle Left Turn Radius Check
- c. Vehicle Right Turn Radius Check

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
None		None
<u>Materials/Parts</u>		<u>General Safety Instructions</u>
Rope Chalk Strip of paper		Do not start engine during wheel stops check. Keep fingers from between wheel stops.
<u>Personnel Required</u>		
One mechanic One assistant		
<u>Manual References</u>		
TM 9-2320-218-10 TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. WHEEL STOPS CHECK

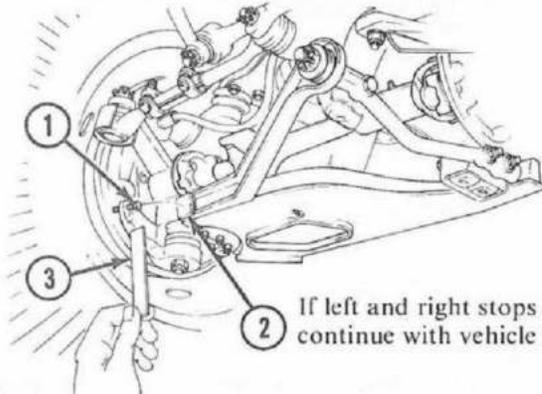
WARNING

Do not start engine during this test. Keep fingers from between wheel stops or injury may result.

NOTE

- Left and right wheel stops are checked the same way.
- Before wheel stops check, make sure stop bolt head and lower control arm area is thoroughly cleaned.

I. Wheel stop bolt (1) at lower control arm (2)



Strip of paper (3)

- a. Assistant will insert paper (3) between arm (2) and bolt (1).
- b. Driver will turn steering wheel full left (about two turns) for left stop and full right for right stop, and assistant will release paper (3).
- c. If paper (3) is not held in place, discontinue radius test.

Paper (3) should be pinched between stop bolt (1) and control arm (2).

Notify direct support maintenance to adjust wheel stop bolt (1).

NOTE

If left and right stops operate as described in step I b., continue with vehicle turning radius check.

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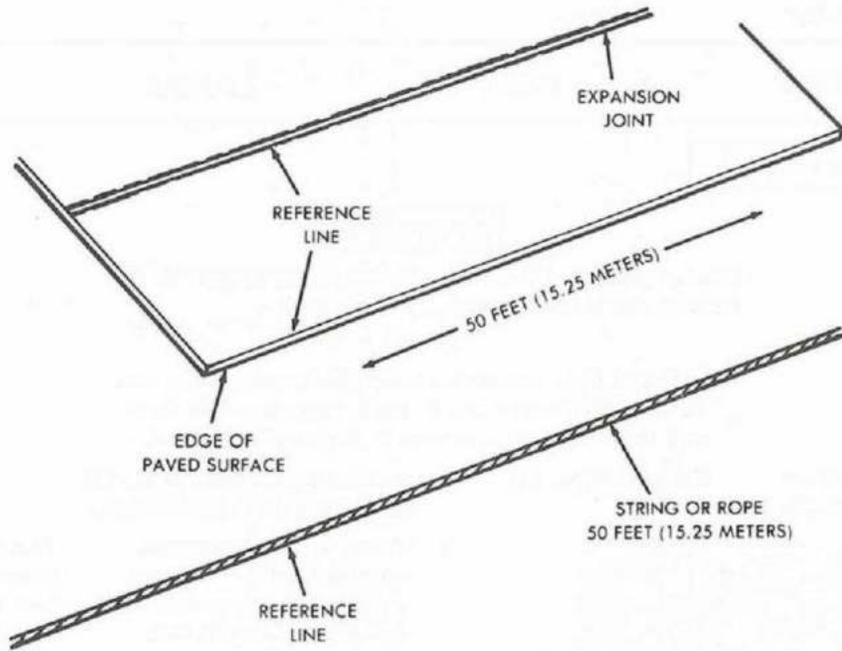
9-13. Vehicle Turning Radius Check (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. VEHICLE LEFT TURN RADIUS CHECK

NOTE

- Establish test area in a clearing 50 feet (15.25 meters) in circumference free of obstructions.
- If test is conducted on paved surface, use edge of surface or an expansion joint that is at least 50 feet (15.25 meters) long as the reference line as shown.
- If test is conducted on sand or gravel surface, a 50 foot (15.25 meters) length of string or rope can be stretched and used as reference line as shown.

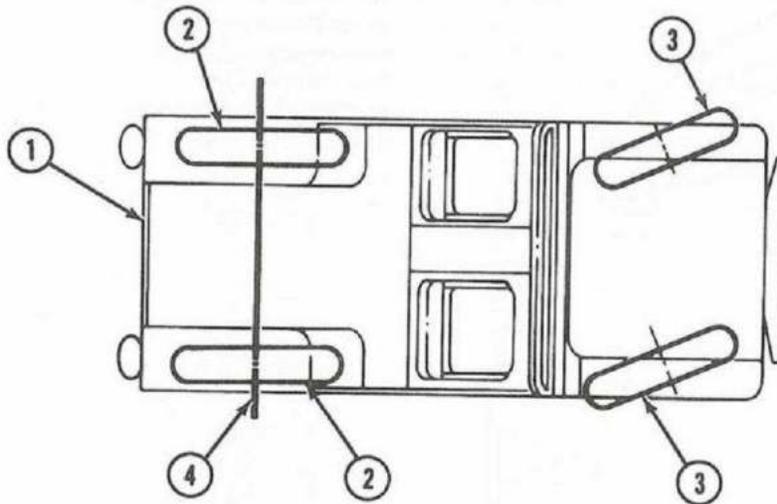


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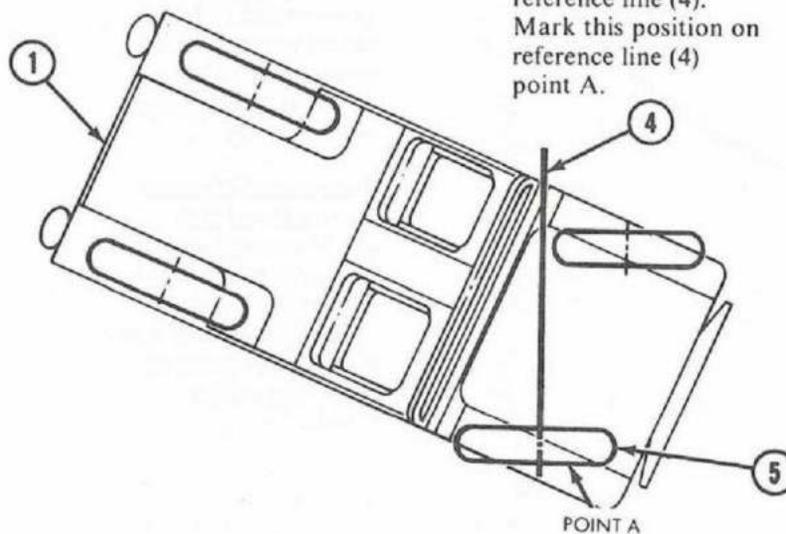
9-13. Vehicle Turning Radius Check (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- | | | | | |
|----|-------------|--|--|--|
| 2. | Vehicle (1) | | <p>a. Position center of rear wheels (2) directly over reference line (4) with front wheels (3) turned full left (about two full turns).</p> | |
|----|-------------|--|--|--|



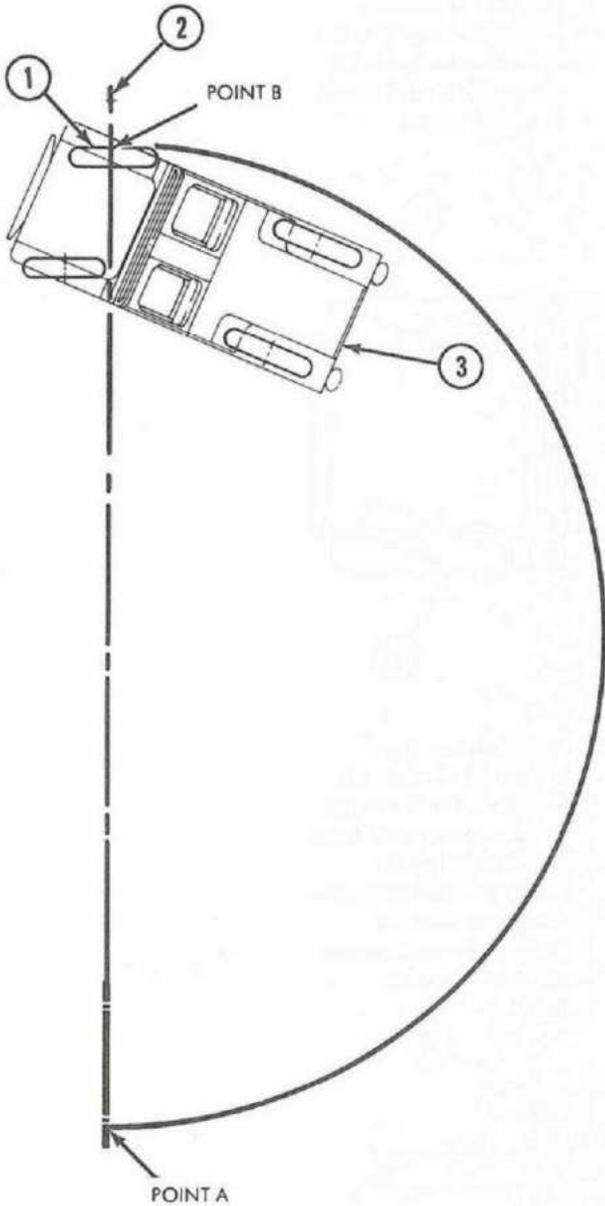
- b. Maintaining front wheels (3) in full left position, back vehicle (1) until center of right front wheel (5) is positioned directly over reference line (4). Mark this position on reference line (4) point A.



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9-13. Vehicle Turning Radius Check (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- c. Move vehicle (3) forward in a full left turn until right front wheel (1) is positioned over other end of reference line (2).
- d. Mark reference line (2) point B where center outside edge of right front wheel (1) is positioned directly over reference line (2).
- e. Measure distance from point A to point B. If distance is less than 35 feet (10.57 meters) or more than 37 feet (11.28 meters), vehicle steering is defective. Notify direct support maintenance.
- f. If measured distance is between 35 feet (10.57 meters) and 37 feet (11.28 meters) vehicle left turning radius is within specification. Proceed to right turn radius check.

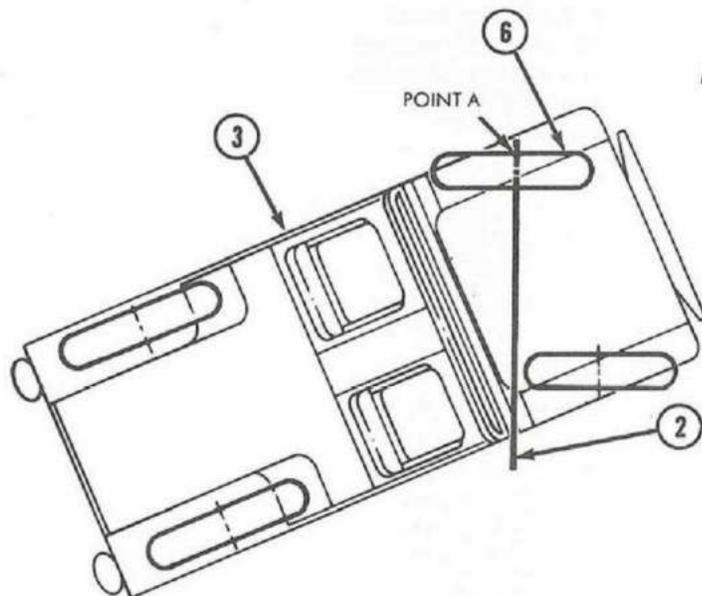
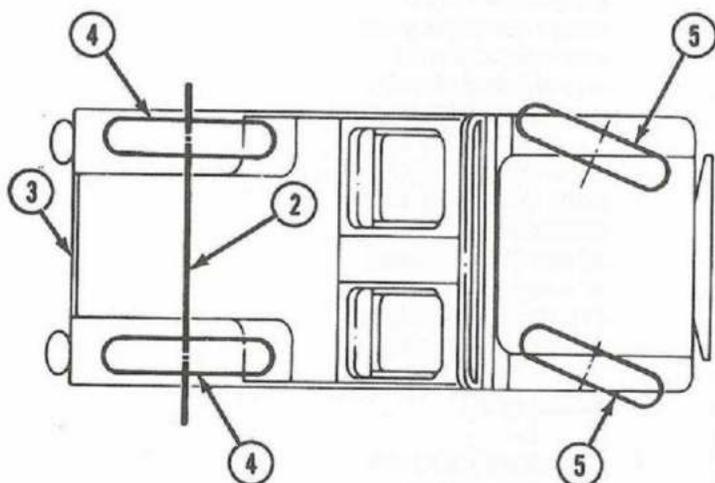
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9-13. Vehicle Turning Radius Check (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. VEHICLE RIGHT TURNING RADIUS CHECK

- | | | |
|----|-------------|---|
| 3. | Vehicle (3) | <p>a. Position center of rear wheels (4) directly over reference line (2) with front wheels (5) turned full right (about two full turns).</p> |
|----|-------------|---|

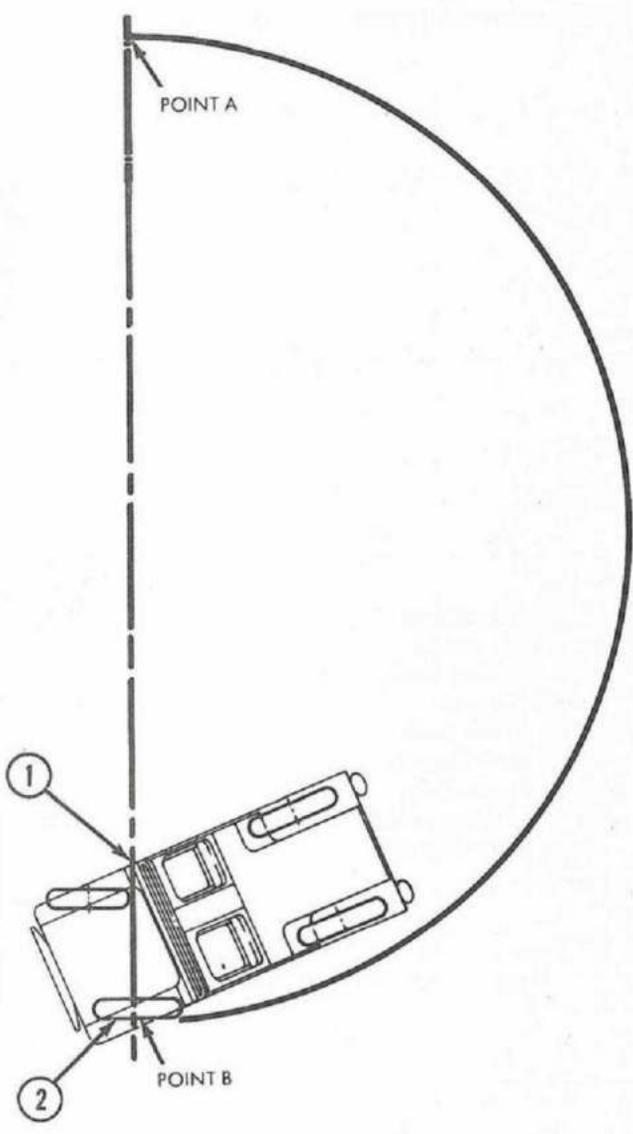


- b. Maintaining front wheels (5) in full right position, back vehicle (3) until center of left front wheel (6) is directly over reference line (2). Mark this position on reference line (2) point A.

9-13. Vehicle Turning Radius Check (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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- c. Move vehicle forward in a full right turn until left, front wheel (2) is positioned over other end of reference line (1).
- d. Mark reference line (1) point B where center outside edge of left front wheel (2) is positioned directly over reference line (1).
- e. Measure distance from point A to point B. If distance is less than 35 feet (10.57 meters) or more than 37 feet (11.28 meters), vehicle steering is defective. Notify direct support maintenance.
- f. If measured distance is between 35 feet (10.57 meters) and 37 feet (11.28 meters), is within specification. No further test is required.



END OF TASK!

TA 484694

CHAPTER 10 BODY AND MISCELLANEOUS ACCESSORY ITEMS MAINTENANCE

10-1. Overview

a. This chapter provides maintenance information for body and miscellaneous accessory items. Components covered can be found in one of the following sections:

- Section I. Body Components Maintenance (page 10-1)
- Section II. Miscellaneous Accessory Items Maintenance (page 10-50)

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

c. Vehicle marking instructions are not covered in this manual. See TB 43-0209, Color Marking, Camouflage, and Painting of Military Vehicles for this information.

Section I. BODY COMPONENTS MAINTENANCE

10-2. General

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

10-3. Body Components Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
10-4.	Front Lifting Attachments a. Removal b. Installation	10-4
10-5.	Rear Lifting Attachments a. Removal b. Installation	10-6
10-6.	Towing Pintle Hook a. Removal b. Installation	10-8
10-7.	Front Bumper a. Removal b. Installation	10-10
10-8.	Rear Bumperettes a. Removal b. Installation	10-12

10-3. Body Components Maintenance Task Summary (Cont'd)

TASK PARA	PROCEDURES	PAGE NO
10-9.	Front Seat Cushion and Backrest Cushion a. Inspection b. Removal c. Installation	10-14
10-10.	Front Seat Frame a. Removal b. M718A1 Ambulance Passenger Seat Hinge Modification c. Installation	10-16
10-11.	Rear Seat Cushion and Backrest Cushion (M151A2 Utility Vehicle) a. Inspection b. Removal c. Installation	10-20
10-12.	Rear Seat Frame (M151A2 Utility Vehicle) a. Removal b. Installation	10-22
10-13.	Rear Seat Cushions and Frame (M825 Recoilless Rifle) a. Removal b. Installation	10-24
10-14.	Transmission Cover Panel a. Removal b. Inspection c. Installation	10-26
10-15.	Radiator Brush Guard a. Removal b. Installation	10-28
10-16.	Hood Fastener and Catch a. Removal b. Installation	10-30
10-17.	Hood Assembly a. Removal b. Installation c. Rubber Bumper Modification	10-32
10-18.	Windshield Wiper Motor and Switch a. Removal b. Installation	10-36
10-19.	Windshield Wiper Blade and Arm a. Removal b. Installation	10-40

10-3. Body Components Maintenance Task Summary (Cont'd)

TASK PARA	PROCEDURES	PAGE NO.
10-20.	Windshield Washer Reservoir and Hoses a. Reservoir Removal b. Reservoir Installation c. Hose Removal d. Hose Installation	10-42
10-21.	Windshield Assembly a. Removal b. Installation	10-48

10-4. Front Lifting Attachments Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both right and left front lifting attachments are removed identically.

a. REMOVAL

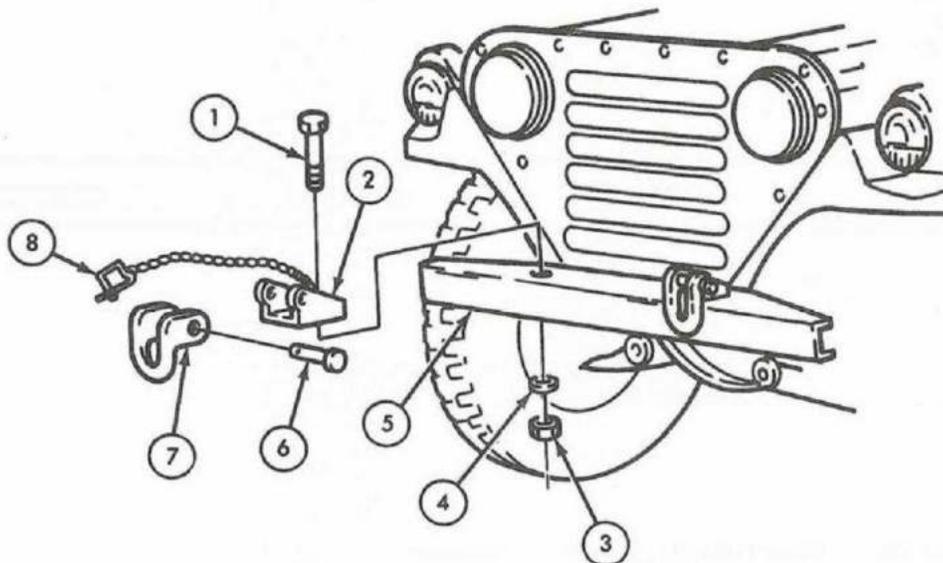
<p>1. Retainer pin (6)</p> <p>2. Lifting eye (7)</p> <p>3.</p> <p>4. Lifting eye bracket (2) to front bumper (5)</p> <p>5.</p>	<p>Pin retainer clip (8)</p> <p>Retainer pin (6)</p> <p>Lifting eye (7)</p> <p>Two capscrews (1), lockwashers (4), and nuts (3)</p> <p>Lifting eye bracket (2)</p>	<p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove from front bumper (5).</p>	<p>To prevent loss, leave clip (8) on chain.</p>
--	--	--	--

10-4. Front Lifting Attachments Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

- | | | | | |
|----|--|-------------------------|--|-------------------------------------|
| 6. | | Lifting eye bracket (2) | Secure to front bumper (5) with two cap-screws (1), lockwashers (4), and nuts (3). | Tighten to 30-50 lb-ft (41-68 N•m). |
| 7. | | Lifting eye (7) | Secure to lifting eye bracket (2) with retainer pin (6) and pin retainer clip (8). | |



END OF TASK!

TA 155571

10-5. Rear Lifting Attachments Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> M151A2 and M825</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Cotter pin</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 10-34</p>	<p><u>Condition Description</u> Parking brake set. Rear composite light cable guard removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both left and right rear lifting attachments are removed identically.

a. REMOVAL

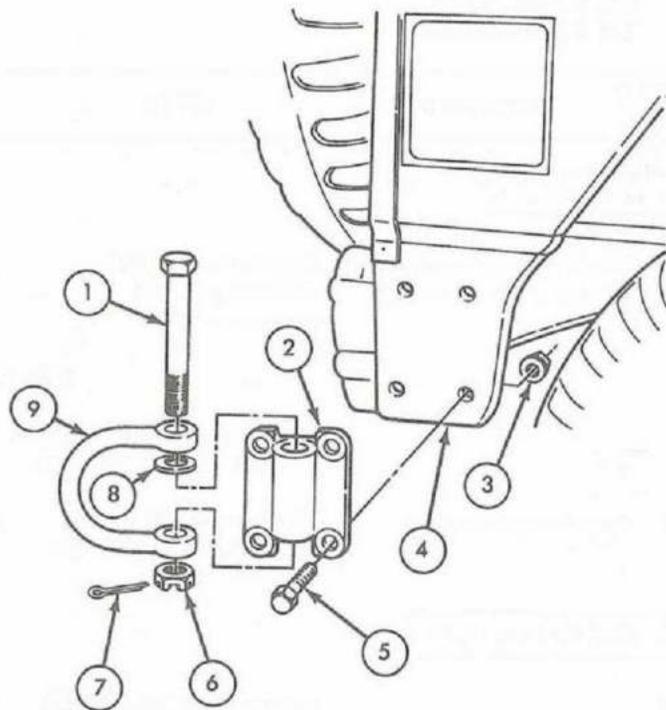
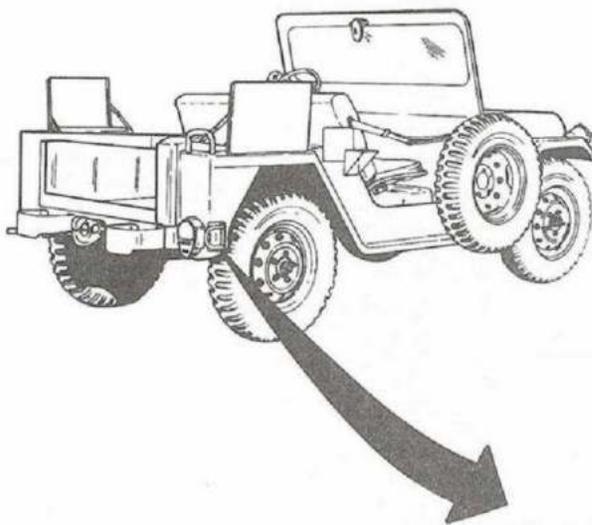
<p>1. Lifting eye retainer (2) to body (4)</p> <p>2.</p> <p>3. Capscrew (1)</p> <p>4. Lifting eye (9) to retainer (2)</p>	<p>Four locknuts (3) and capscrews (5)</p> <p>Lifting eye retainer (2)</p> <p>Cotter pin (7)</p> <p>Slotted nut (6), capscrew (1), and washer (8)</p>	<p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove and detach lifting eye (9) from retainer (2).</p>	<p>Discard cotter pin (7).</p>
---	---	--	--------------------------------

10-5. Rear Lifting Attachments Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

5.		Lifting eye (9)	Secure to retainer (2) with washer (8), capscrew (1), and slotted nut (6).	Make sure washer (8) rests between retainer (2) and lifting eye (9).
6.		Slotted nut (6)	Secure to capscrew (1) with cotter pin (7).	
7.		Lifting eye retainer (2)	Secure to body (4) with four locknuts (3) and capscrews (5).	



END OF TASK!

FOLLOW-ON TASK: Install rear composite light cable guard (para 10-34).

TA 155572

10-6. Towing Pintle Hook Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> Torque wrench (0-175 lb-ft)</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

- | | | | | |
|----|---|--|---------|--|
| 1. | Towing pintle hook (4) to rear body panel (6) | Four nuts (1), lock-washers (2), and capscrews (3) | Remove. | |
|----|---|--|---------|--|

NOTE

A safety chain bracket (5) is required on M151A2 vehicles only.

- | | | | | |
|----|---------------------|--|---------|--|
| 2. | Rear body panel (6) | Pintle hook (4) and safety chain bracket (5) | Remove. | |
|----|---------------------|--|---------|--|

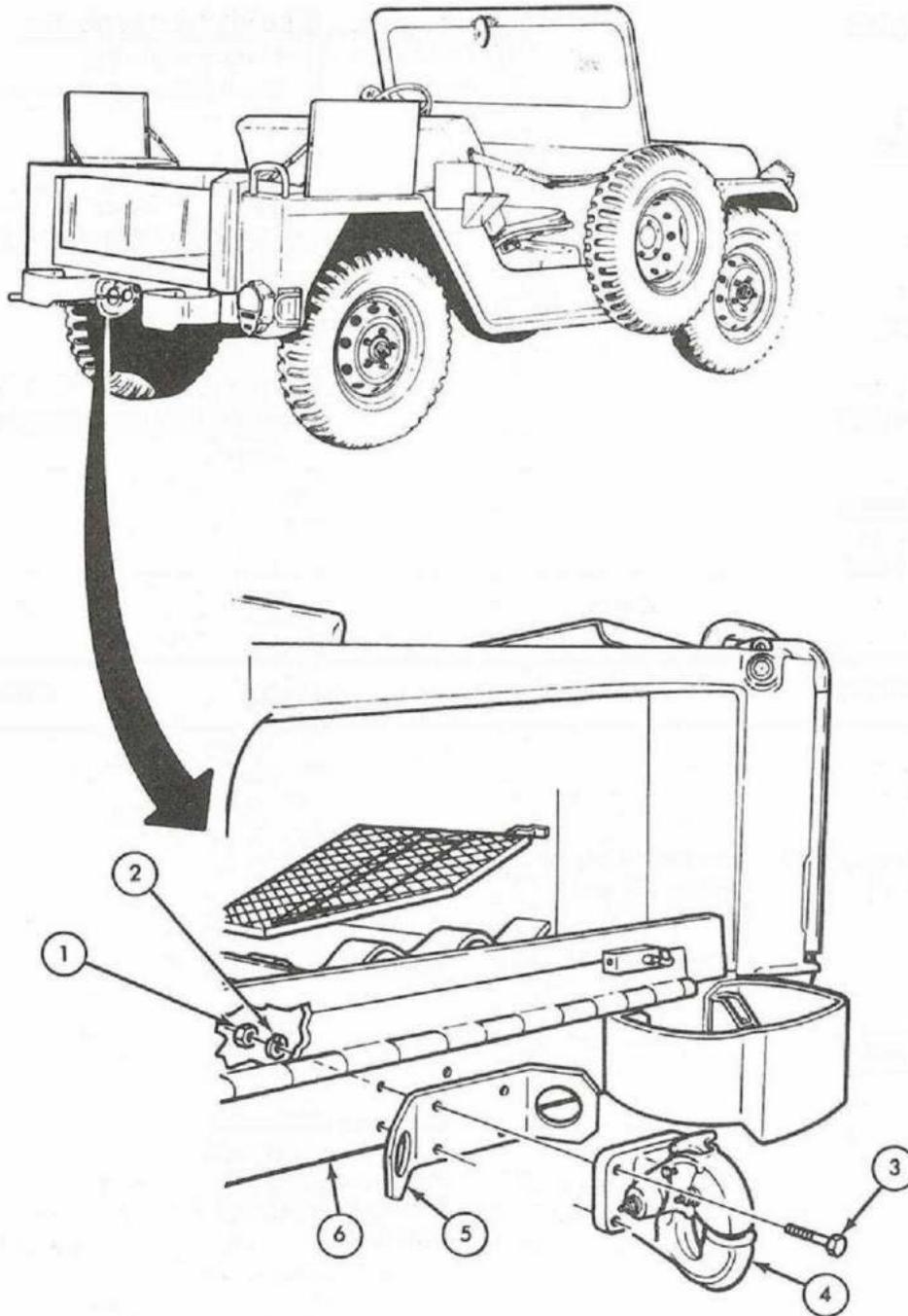
b. INSTALLATION

- | | | | |
|----|--|--|--|
| 3. | Safety chain bracket (5) and pintle hook (4) | Aline to holes in rear body panel (6) and secure with four capscrews (3), lockwashers (2), and nuts (1). | Make sure bracket (5) is positioned between panel (6) and pintle hook (4).

Tighten capscrews (3) 65 to 80 lb-ft (88-108 N•m). |
|----|--|--|--|

10-6. Towing Pintle Hook Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155573

10-7. Front Bumper Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p>Equipment Condition Reference</p> <p>TM 9-2320-218-10 Para 10-4</p>	<p><u>Condition Description</u> Parking brake set. Front lifting attachments removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

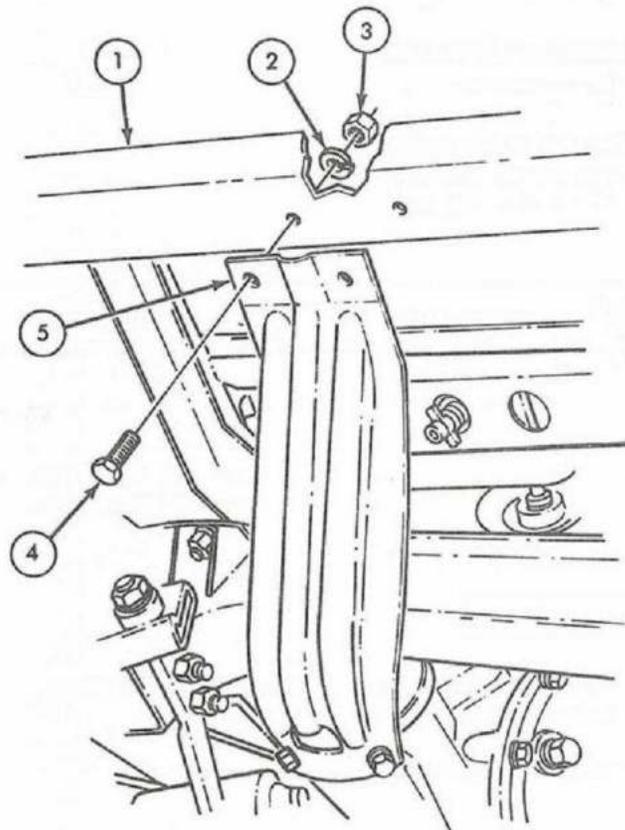
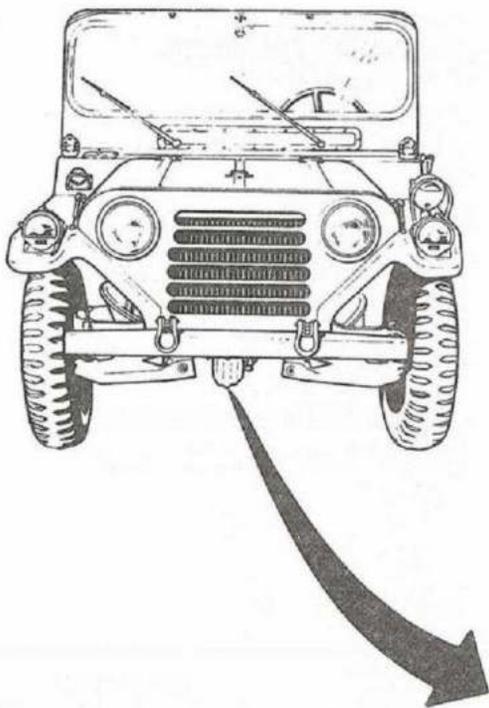
- | | | | |
|----|---|---|---------|
| 1. | Differential flange guard (5) to bumper (1) | Two nuts (3), lock-washers (2), and capscrews (4) | Remove. |
| 2. | Bumper (1) | | Remove. |

b. INSTALLATION

- | | | | |
|----|------------|--|---|
| 3. | Bumper (1) | | Secure to differential flange guard (5), with two capscrews (4), lockwashers (2), and nuts (3). |
|----|------------|--|---|

10-7. Front Bumper Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install front lifting attachments (para 10-4).

TA 155574

10-8. Rear Bumperettes Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

M151A2, M825

Equipment Condition Reference

TM 9-2320-218-10

Condition Description

Parking brake set.

Test Equipment

None

Special Tools

Torque wrench (0-175 lb-ft)

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both left and right rear bumperettes are removed identically.

a. REMOVAL

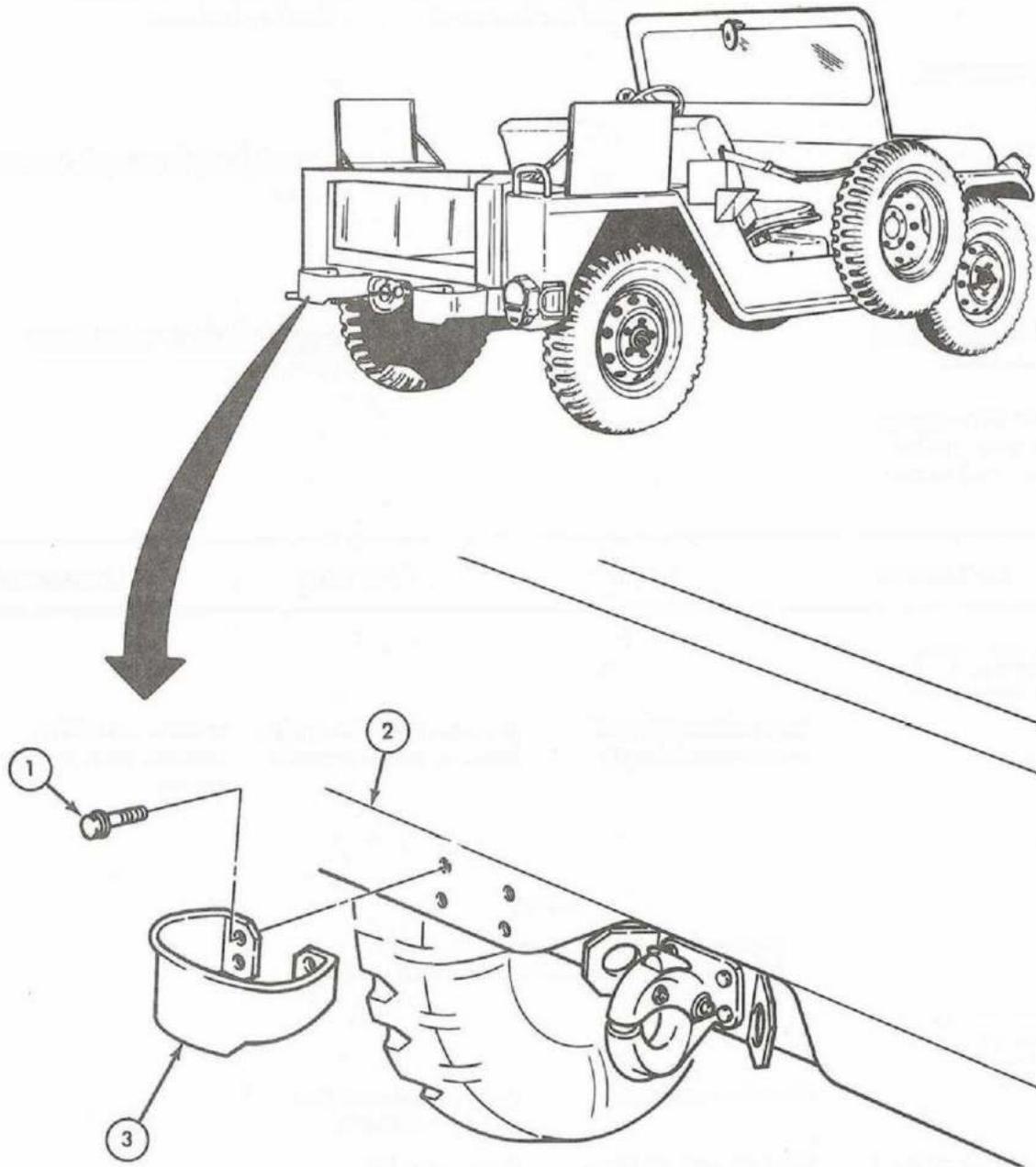
- | | | | |
|----|---------------------------------------|----------------------------------|---------|
| 1. | Bumperette (3) to rear body panel (2) | Four screw-assembled washers (1) | Remove. |
| 2. | Rear body panel (2) | Bumperette (3) | Remove. |

b. INSTALLATION

- | | | | |
|----|----------------|--|--------------------------------------|
| 3. | Bumperette (3) | Secure to rear body panel (2) with four screw-assembled washers (1). | Tighten to 55-80 lb-ft (75-108 N•m). |
|----|----------------|--|--------------------------------------|

10-8. Rear Bumperettes Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155575

10-9. Front Seat Cushion and Backrest Cushion Maintenance

This task covers:

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

INITIAL SETUP:

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

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. INSPECTION

1.	Seat cushion (2) and backrest cushion (1)	Inspect covers for cracks, tears, or rotted material.	If cover material is cracked, torn, or rotted, replace.
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NOTE

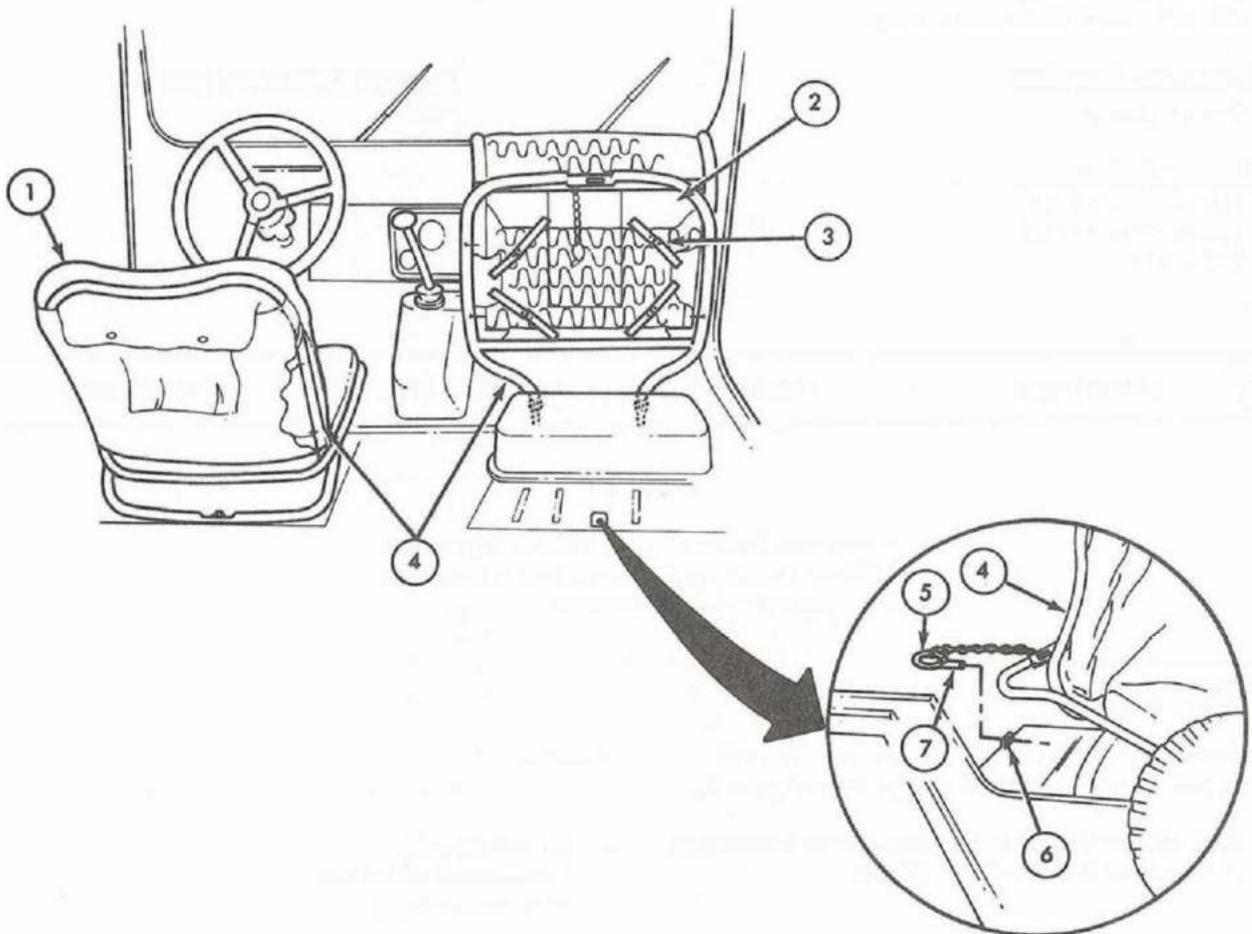
Backrest and seat cushions are replaced identically for the driver and passenger seats.

b. REMOVAL

2.	Backrest cushion (1)	Pull upward and slide off seat frame (4).	
3.	Seat frame (4) to floor bracket (6)	Ring (5) and retaining pin (7)	Rotate ring (5) toward rear of vehicle to unlock pin (7).
4.	Seat cushion (2) to seat frame (4)	Four snap fasteners (3)	Unfasten.

10-9. Front Seat Cushion and Backrest Cushion Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.		Seat cushion (2)	Remove.	
c. INSTALLATION				
6.		Seat cushion (2)	Place against raised seat frame (4), and secure with four snap fasteners (3).	
7.		Seat frame (4)	Lower to travel position and secure to floor bracket (6) with retaining pin (7).	Rotate ring (5) forward to secure pin (7).
8.		Backrest cushion (1)	Slide onto rear of seat frame (4).	



END OF TASK!

TA 155576

10-10. Front Seat Frame Maintenance

This task covers:

- a. Removal
- b. M718A1 Ambulance Passenger Seat Hinge Modification
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Two front seat hinges (M718A1 seat modification only)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P TM 9-237</p>	<p>Equipment Condition Reference</p> <p>TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

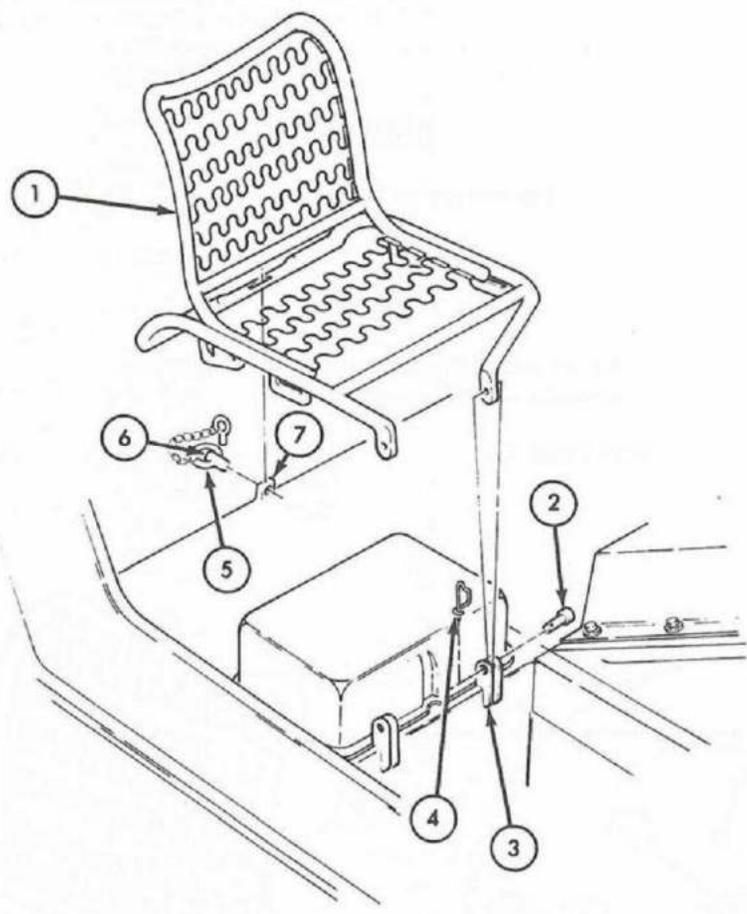
Front seat frame removal can be performed without removing cushions, and is identical for passenger and driver seats.

a. REMOVAL

- | | | |
|---|--|---|
| <p>1. Front of seat frame (1) to two floor brackets (3)</p> | <p>Two front retainer clips (4) and pins (2)</p> | <p>Remove.</p> |
| <p>2. Rear of seat frame (1) to rear floor bracket (7)</p> | <p>Ring (5) and retaining pin (6)</p> | <p>a. Rotate ring (5) toward rear of vehicle to unlock pin (6).</p> <p>b. Remove pin (6).</p> |

10-10. Front Seat Frame Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.		Front seat frame (1)	Remove.	



NOTE

Task *b* is designed to be used only for modifying M718A1 ambulance passenger seat.

TA 155577

10-10. Front Seat Frame Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. M718A1 AMBULANCE PASSENGER SEAT HINGE MODIFICATION

4.		Seat hinge (1)	<p>a. Place top on outside of back frame (2), 3/4 in. (19 mm) above second spring bracket (4) with hinge pivot (3) facing forward.</p>	
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CAUTION

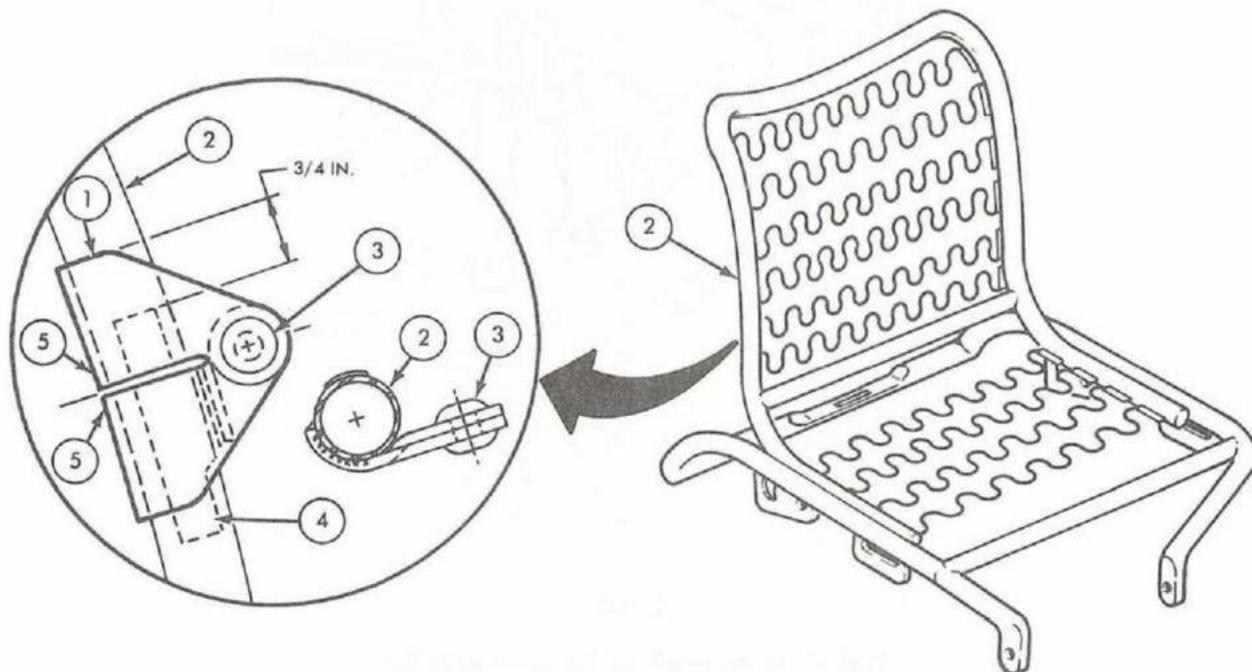
Do not get weld on hinge pivot.

b. Weld in place. See TM 9-237.

NOTE

Repeat step 4 for second hinge installation on opposite side of seat frame.

5.		Back frame (2)	Cut off between hinge halves (5) back to front.	Use hacksaw.
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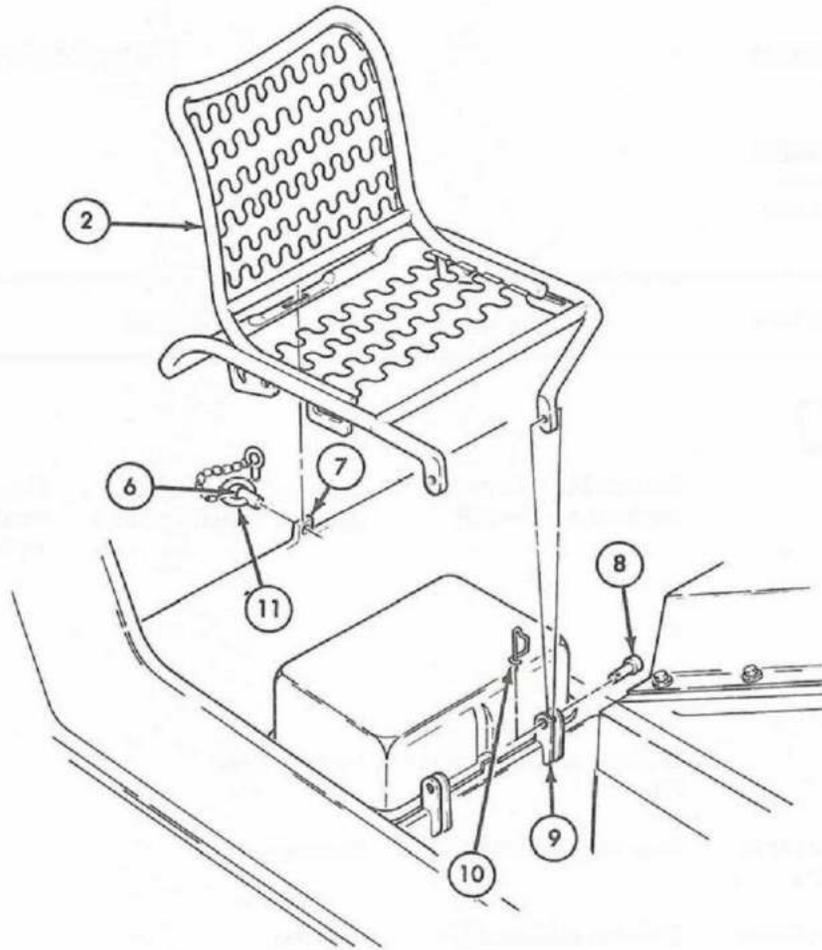
TA 155578

10-10. Front Seat Frame Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

- | | | | |
|----|----------------|--|---|
| 6. | Back frame (2) | <p>a. Secure to each front floor bracket (9) with two retainer pins (8) and two retainer clips (10).</p> <p>b. Secure to rear floor bracket (7) with retainer pin (6). Rotate ring (11) forward to secure pin (6).</p> | Rotate ring (11) forward to secure pin (6). |
|----|----------------|--|---|



END OF TASK!

TA 155579

10-11. Rear Seat Cushion and Backrest Cushion (M151A2 Utility Vehicle) Maintenance

This task covers:

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

INITIAL SETUP:

Applicable Models

M151A2

Equipment Condition Reference

TM 9-2320-218-10

Condition Description

Parking brake set.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. INSPECTION

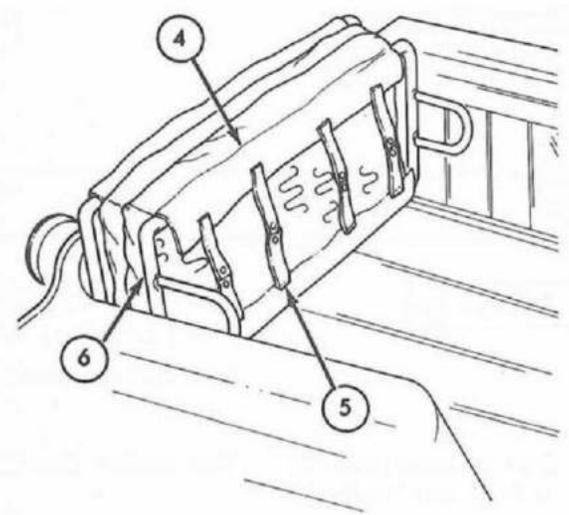
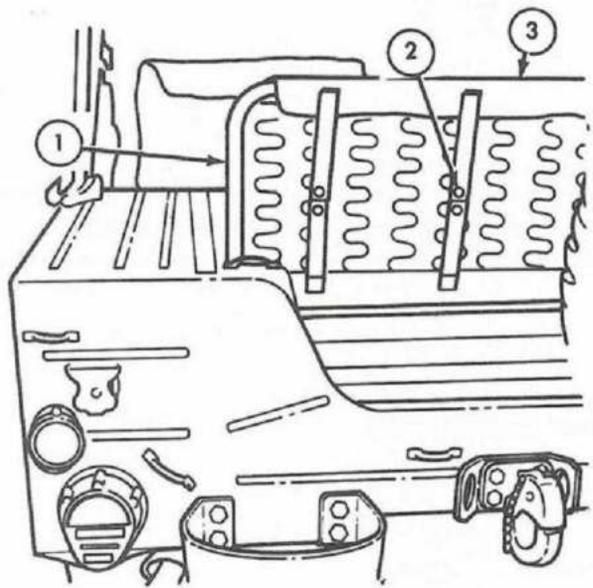
- | | | | |
|----|---|---|---|
| 1. | Seat cushion (4) and backrest cushion (3) | Inspect covers for cracks, tears, or rotted material. | If cover material is cracked, torn, or rotted, replace. |
|----|---|---|---|

b. REMOVAL

- | | | |
|----|--|--|
| 2. | Backrest cushion frame (1) | Fold forward. |
| 3. | Backrest cushion (3) to backrest frame (1) | Four snap fasteners (2) Unfasten. |
| 4. | Backrest cushion frame (1) | Backrest cushion (3) Remove. |
| 5. | Seat cushion frame (6) | Raise up until snap fasteners (5) are exposed. |

10-11. Rear Seat Cushion and Backrest Cushion (M151A2 Utility Vehicle) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Seat cushion (4) to seat frame (6)	Four snap fasteners (5)	Unfasten.	
7.	Seat cushion frame (6)	Seat cushion (4)	Remove.	
c. INSTALLATION				
8.		Seat cushion (4)	Secure to raised seat frame (6) with four snap fasteners (5).	
9.		Backrest cushion (3)	Secure to backrest frame (1) with four snap fasteners (2).	



END OF TASK!

TA 155580

10-12. Rear Seat Frame (M151A2 Utility Vehicle) Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

M151A2

Equipment Condition Reference

TM 9-2320-218-10
Para 10-11

Condition Description

Parking brake set.
Rear seat cushions removed.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

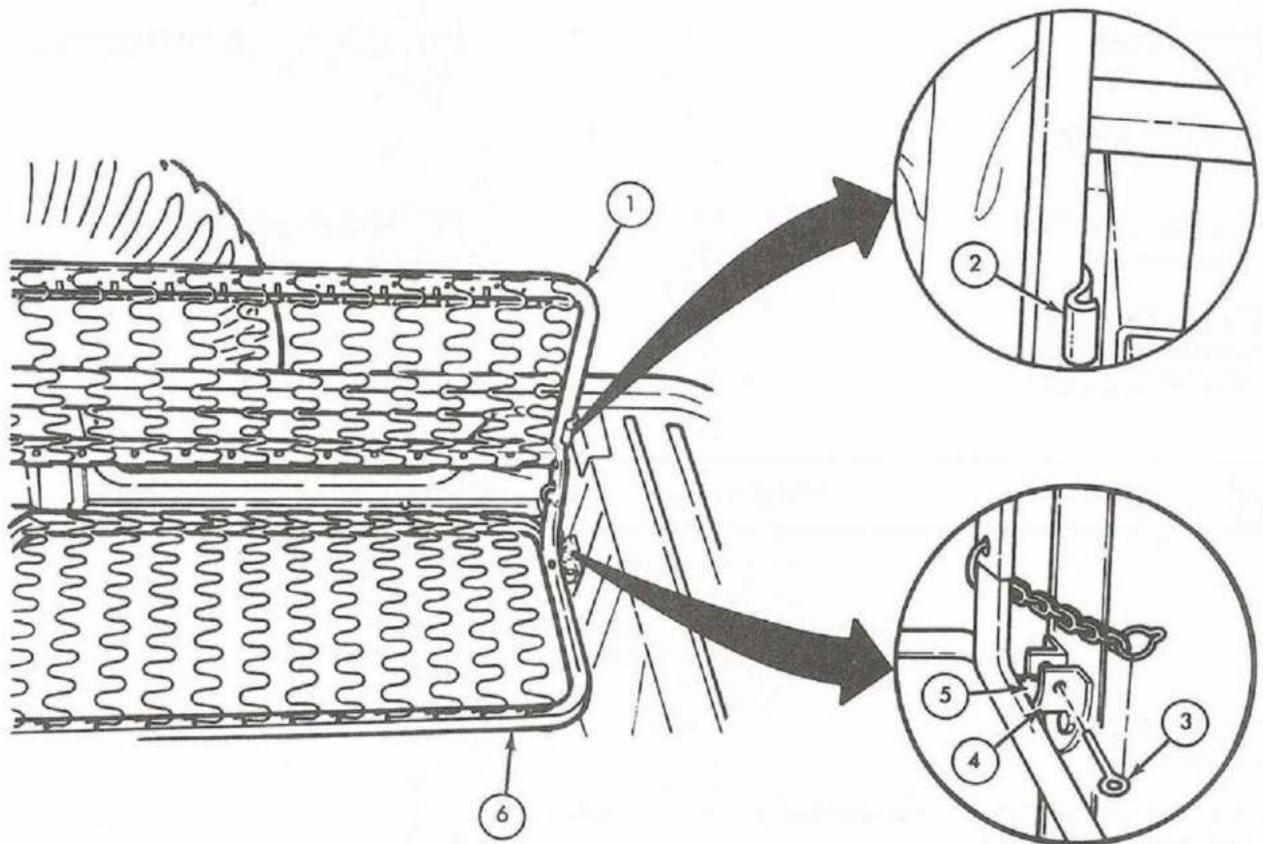
- | | | |
|----|---|--|
| 1. | Rear backrest frame (1) | Fold forward until clear of side spring clips (2). |
| 2. | Seat mounting stud (5) to body seat bracket (4) | Two retainer pins (3) Remove. |
| 3. | Rear seat frame (6) | Remove. |

b. INSTALLATION

- | | | |
|----|-------------------------|--|
| 4. | Rear seat frame (6) | Secure to two body seat brackets (4) with two retainer pins (3). |
| 5. | Rear backrest frame (1) | Raise until secured by two spring clips (2). |

10-12. Rear Seat Frame (M151A2 Utility Vehicle) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install rear seat cushions (para 10-11).

TA 155581

10-13. Rear Seat Cushions and Frame (M825 Recoilless Rifle) Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> M825</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both left and right rear seat cushions and seat frames are removed identically.

a. REMOVAL

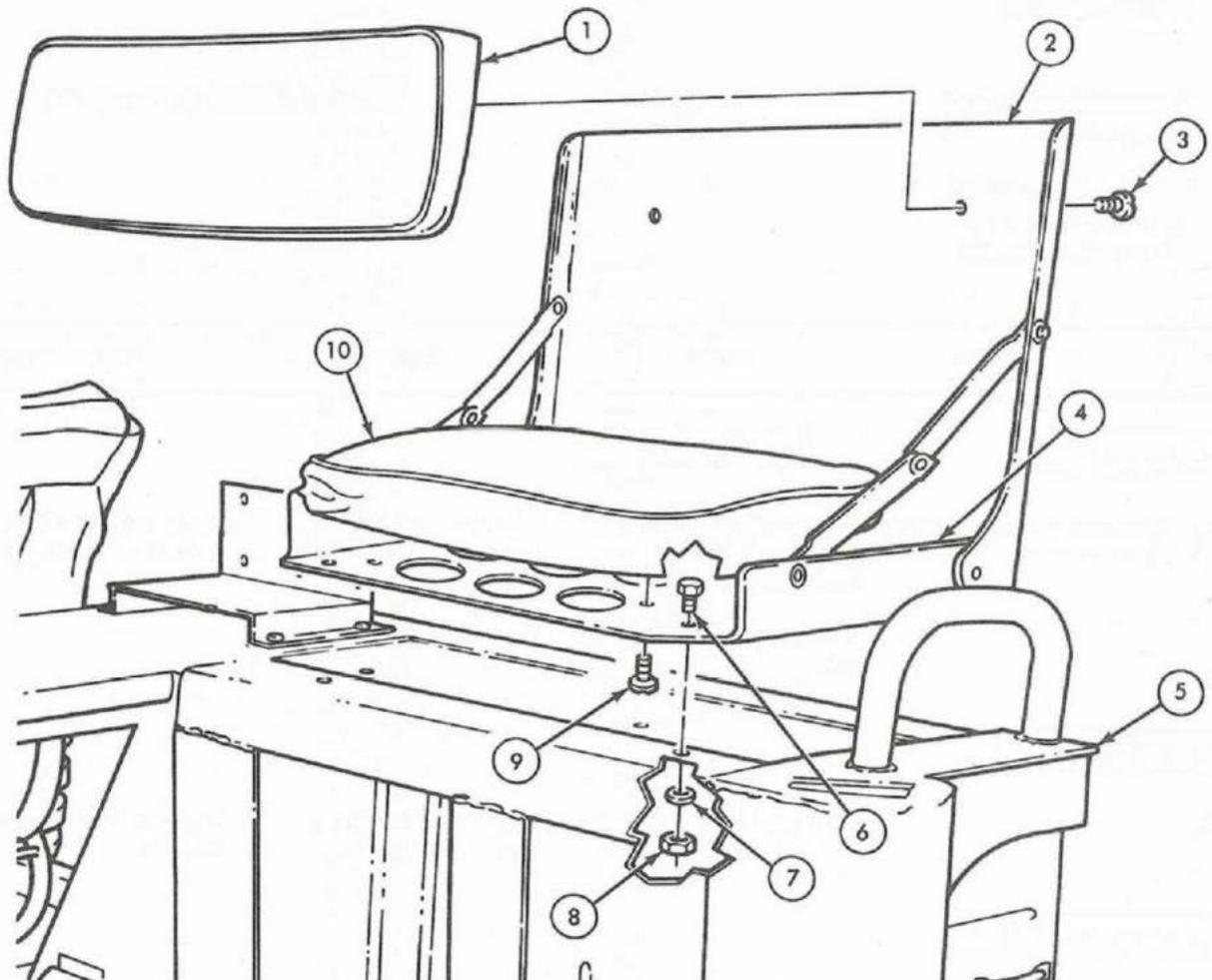
<p>1. Backrest cushion (1) to backrest seat frame (2)</p> <p>2. Backrest seat frame (2)</p> <p>3. Seat cushion frame (4) to rear fender (5)</p> <p>4. Rear fender (5)</p> <p>5. Seat cushion (10) to seat cushion frame (4)</p> <p>6. Seat cushion frame (4)</p>	<p>Two screws (3)</p> <p>Backrest cushion (1)</p> <p>Four locknuts (8), washers (7), and cap-screws (6)</p> <p>Seat frame (4)</p> <p>Four screws (9)</p> <p>Seat cushion (10)</p>	<p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove.</p>	<p>Locknuts (8) can be reached under rear fender (5).</p>
--	---	---	---

10-13. Rear Seat Cushions and Frame (M825 Recoilless Rifle) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

- | | | |
|----|------------------------|--|
| 7. | Seat cushion (10) | Secure to seat cushion frame (4) with four screws (9). |
| 8. | Seat cushion frame (4) | Secure to rear fender (5) with four cap-screws (6), washers (7), and locknuts (8). |
| 9. | Backrest cushion (1) | Secure to backrest seat frame (2) with two screws (3). |



END OF TASK!

TA 155582

10-14. Transmission Cover Panel Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u></p> <p>TM 9-2320-218-10 Para 10-32 Para 10-33 Para 10-10</p>	<p><u>Condition Description</u></p> <p>Parking brake set. Shift lever knobs and boot removed. Dust shield removed. Front seats removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
--	--	--

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Transmission cover panel (2) to body (5)	Twelve screw-assembled washers (1) and one fuel line clamp (6)	Remove and detach panel (2) from body (5).	Make sure fuel line (7) is clear of panel (2).
		Two gaskets (3) and (4)	Remove.	

b. INSPECTION

2.		Two gaskets (3) and (4)	Inspect for breaks, cracks, and splits.	Replace if broken, cracked, or split.
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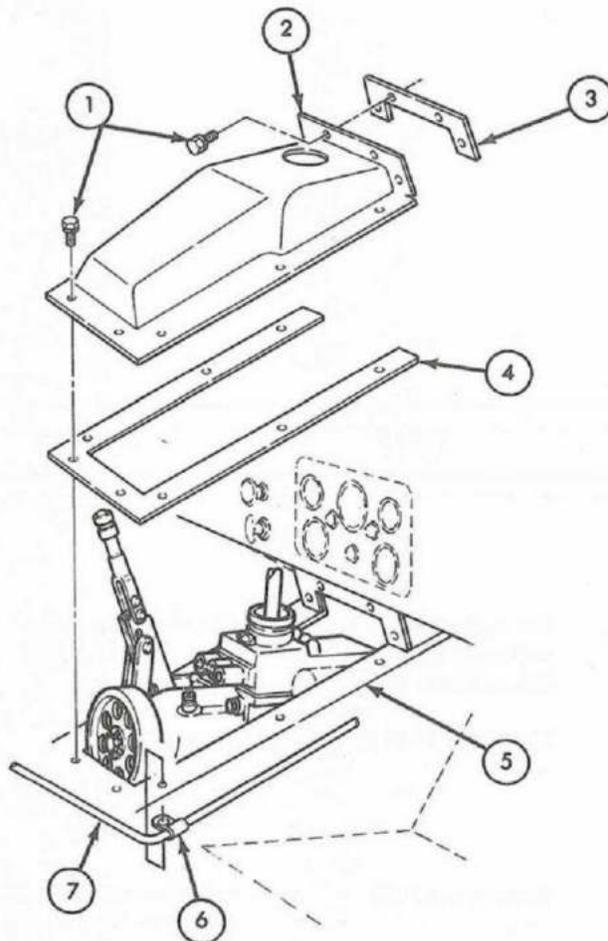
c. INSTALLATION

3.		Two gaskets (3) and (4)	Position to body (5) and aline twelve holes.	
----	--	-------------------------	--	--

10-14. Transmission Cover Panel Maintenance (Cont'd)

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

- | | | | | |
|----|--|------------------------------|--|--|
| 4. | | Transmission cover panel (2) | <p>a. Position to body (5) and aline twelve holes.</p> <p>b. Position fuel line clamp (6).</p> <p>c. Secure with twelve screw-assembled washers (1).</p> | |
|----|--|------------------------------|--|--|



END OF TASK!

- FOLLOW-ON TASKS:
- Install dust shield (para 10-33).
 - Install shift lever knobs and boot (para 10-32).
 - Install front seats (para 10-10).

TA 155583

10-15. Radiator Brush Guard Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 5-36</p>	<p><u>Condition Description</u> Parking brake set. Two service headlights removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

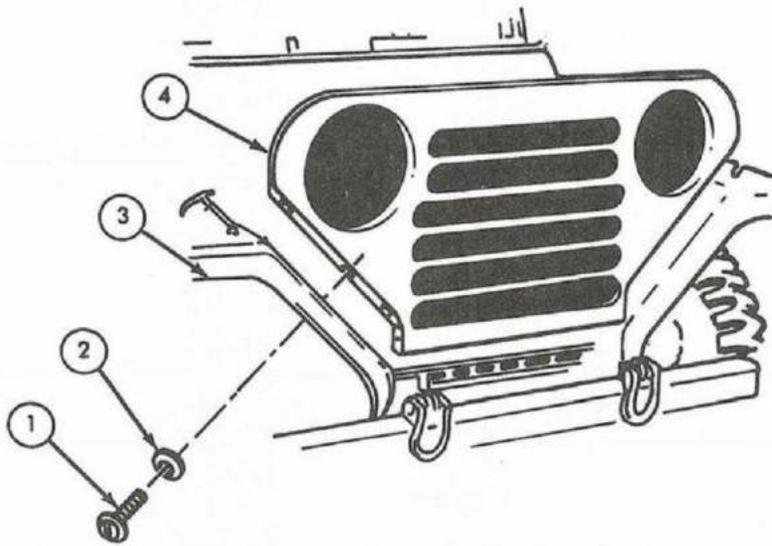
- | | | | |
|----|--------------------------------|---|---------|
| 1. | Brush guard (4) to fenders (3) | Six bolt-assembled lockwashers (1) and flat washers (2) | Remove. |
| 2. | Brush guard (4) | | Remove. |

b. INSTALLATION

- | | | | |
|----|-----------------|--|--|
| 3. | Brush guard (4) | | Position between and secure to fenders (3) with six bolt-assembled lockwashers (1) and flat washers (2). |
|----|-----------------|--|--|

10-15. Radiator Brush Guard Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install two service headlights (para 5-36).

TA 155584

10-16. Hood Fastener and Catch Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment Condition Reference

TM 9-2320-218-10
TM 9-2320-218-10

Condition Description

Parking brake set.
Hood raised and secured.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both left and right hood fasteners (3) and catches (1) are removed identically.

a. REMOVAL

- | | | |
|-------------------------------|--|-----------------------------------|
| 1. Hood catch (1) to hood (7) | Two self-locking nuts (8) and screws (2) | Remove and detach hood catch (1). |
| 2. Fastener (3) to fender (6) | Two screws (5) and lockwashers (4) | Remove and detach fastener (3). |

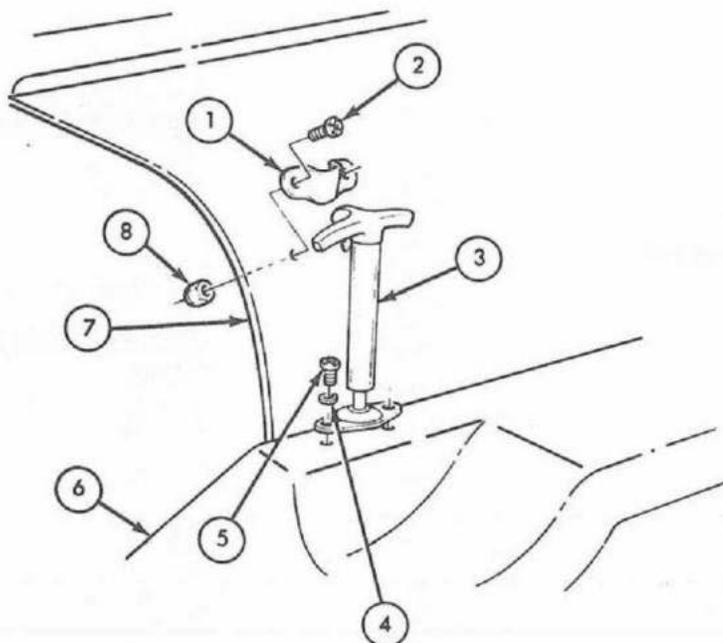
b. INSTALLATION

- | | | |
|----|--------------|--|
| 3. | Fastener (3) | Position to fender (6) and secure with two screws (5) and lockwashers (4). |
|----|--------------|--|

10-16. Hood Fastener and Catch Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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4.		Catch (1)	Position to hood (7) and secure with two screws (2) and two self-locking nuts (8).	
----	--	-----------	--	--



END OF TASK!

TA 155585

10-17. Hood Assembly Maintenance

This task covers:

- a. Removal
- b. Installation

c. Rubber Bumper Modification

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10 TM 9-2320-218-10	Parking brake set. Hood raised and secured.

Test Equipment
None

Special Tools
None

Special Environmental Conditions
None

Materials/Parts
Thin-line felt tip marking pen
Four rubber bumpers

Personnel Required
One mechanic
One assistant

General Safety Instructions
None

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

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

- | | | | |
|----|---------------------------------|--|---------|
| 1. | Two hood hinges (1) to hood (2) | Six self-locking nuts (5), flat washers (4), and capscrews (3) | Remove. |
|----|---------------------------------|--|---------|

NOTE

Assistant must hold one side of hood (2) during steps 2 and 3.

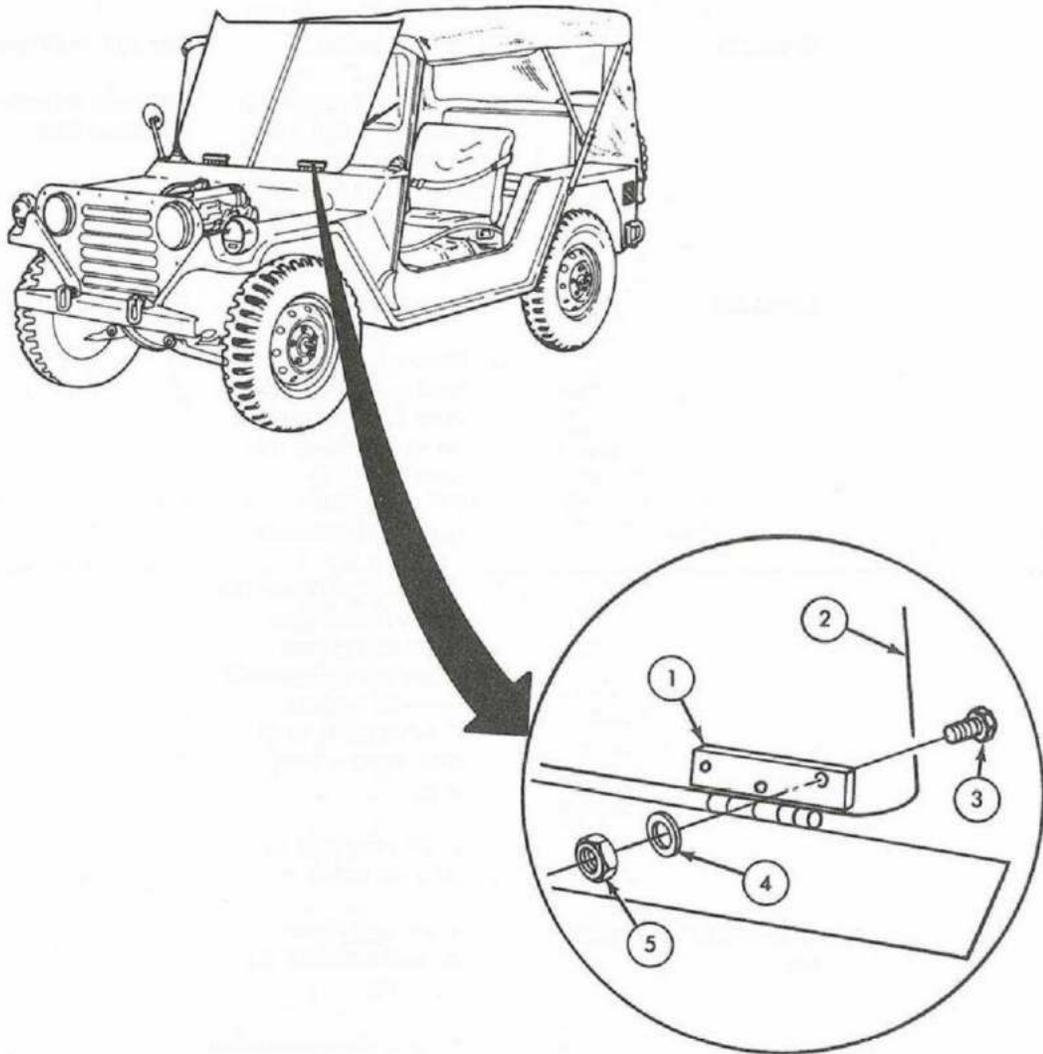
- | | | |
|----|----------|---------|
| 2. | Hood (2) | Remove. |
|----|----------|---------|

10-17. Hood Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

3.	Hood (2)	Position to two hinges (1), and secure with six capscrews (3), flat washers (4), and self-locking nuts (5).
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TA 155586

10-17. Hood Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. RUBBER BUMPER MODIFICATION

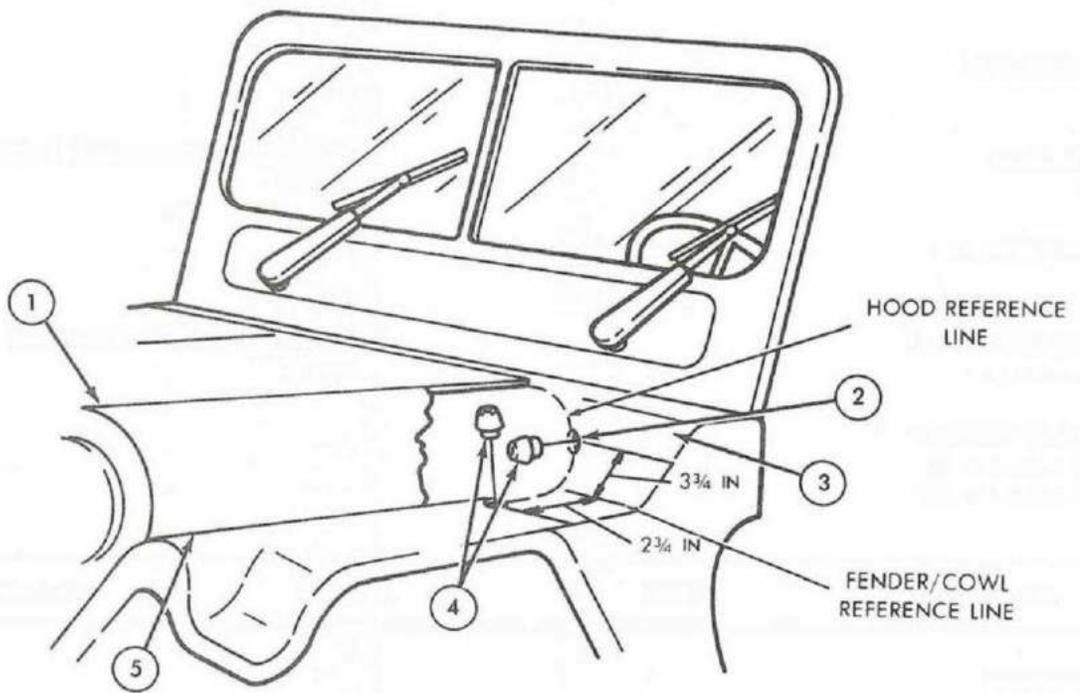
NOTE

Hood rattle can be reduced by installing rubber bumpers (4) between the hood (1) and cowl (3). They can be installed, as described below, on any M151A2 series vehicle currently fielded. Installation requires the local commander's approval. Bumpers (4) are installed the same for both corners of the hood (1). This procedure covers only the left corner.

4.		Hood (1)	Close and fasten.	See TM 9-2320-218-10.
5.			With a thin-line felt tip marking pen and using the rear corner of the hood (1) as a template, draw a line on the cowl (3).	This will be called the hood reference line.
6.		Hood (1)	Raise and secure.	See TM 9-2320-218-10.
7.			<p>a. Starting at the fender/cowl reference line, follow the hood reference upward 3-3/4 in. (95 mm), and make a drill mark.</p> <p>b. Again, starting at the fender/cowl line, follow the hood reference line toward front of vehicle 2-3/4 in. (70 mm), and make a drill mark.</p> <p>c. Drill two 5/16 in. (8 mm) holes.</p>	
8.		Two rubber bumpers (4)	<p>a. Press each into drilled holes (2) in cowl (3).</p> <p>b. Check alinement with hood line (5).</p>	

10-17. Hood Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Lower and fasten hood (TM (9-2320-218-10).

TA 155587

10-18. Windshield Wiper Motor and Switch Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 10-19</p>	<p><u>Condition Description</u> Parking brake set. Windshield wiper blades and arms removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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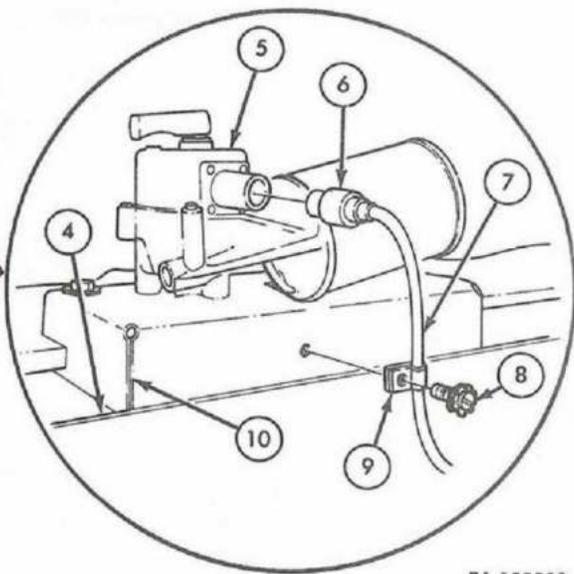
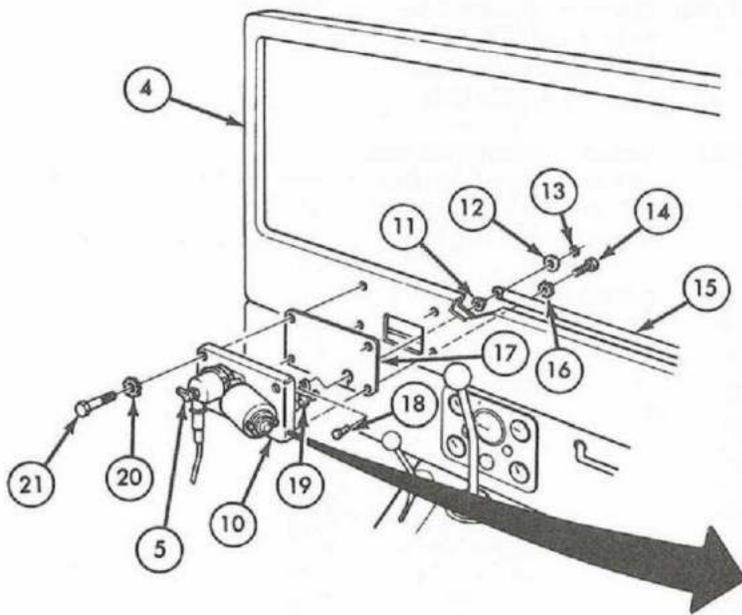
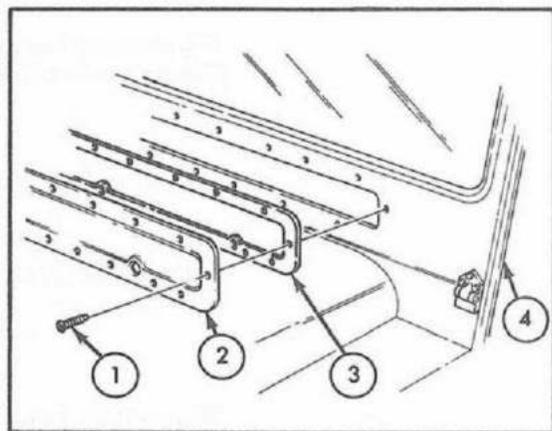
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Wiper cover (2) to windshield (4)	Eighteen self-tapping screws (1)	Remove.	
2.	Windshield (4)	Wiper cover (2) and gasket (3)	Remove.	
3.	Wiper connecting link (15) to pivot shaft arm (19)	Snap ring (13) spring washer (12), bushing (11) and groove-headed pin (18)	Remove.	
4.	Wiper motor bracket (10) to windshield (4)	Two screws (14) and lockwashers (16)	Remove.	
5.	Wiper motor switch (5)	Circuit 71 connector (6)	Disconnect.	
6.	Cable clamp (9) to wiper motor bracket (10)	Screw-assembled washer (8)	Remove and detach cable clamp (9) and cable (7).	Do not separate clamp (9) from cable (7).

10-18. Windshield Wiper Motor and Switch Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Wiper motor bracket (10) to windshield (4)	Two bolts (21) and lockwashers (20)	Remove.	
8.		Wiper motor bracket (10) and gasket (17)	Remove from windshield (4).	



TA 155588

10-18. Windshield Wiper Motor and Switch Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

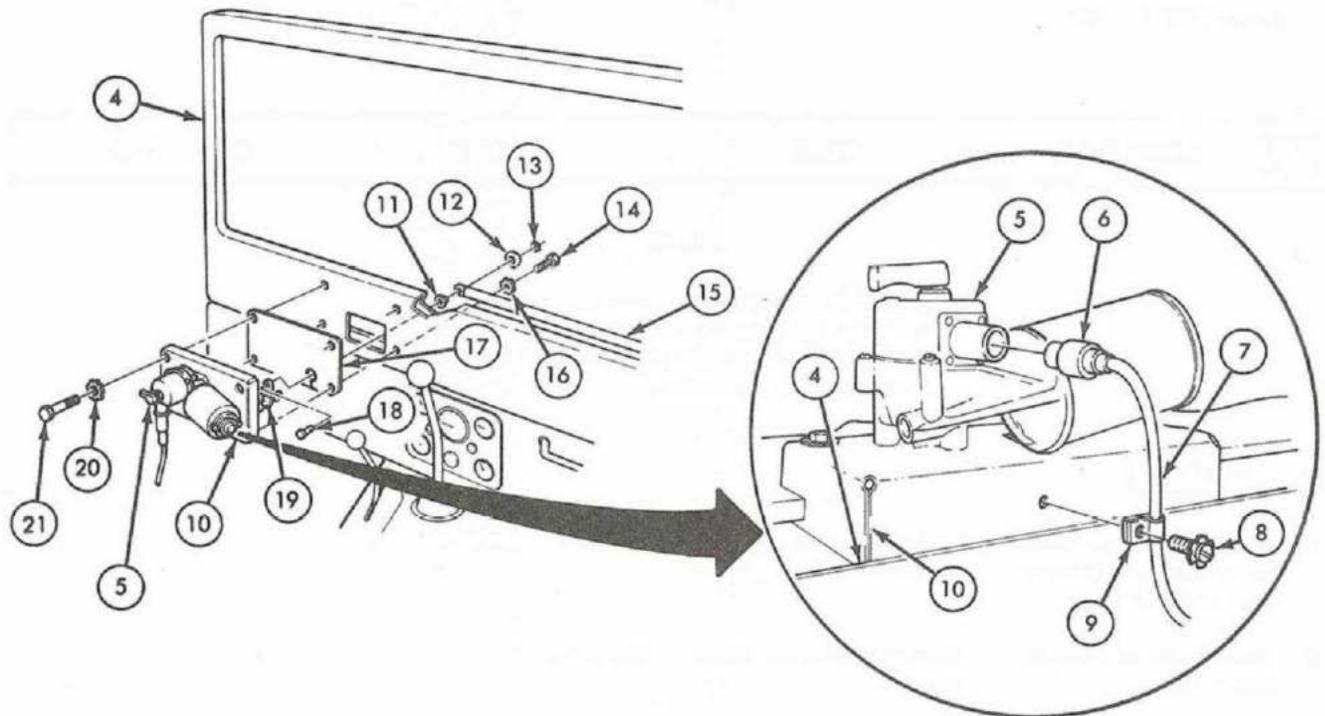
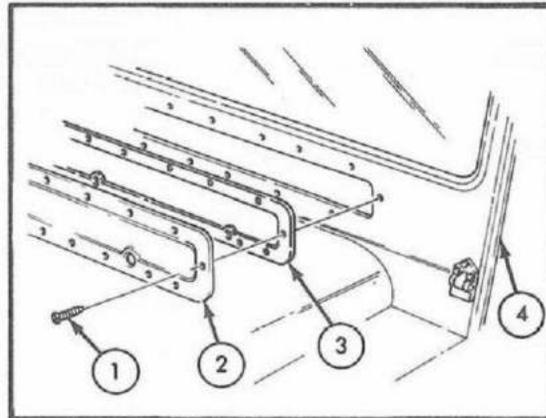
NOTE

Make sure all mating surfaces are clean to bare metal for proper ground.

9.		Wiper motor bracket (10) and gasket (17)	Secure to two top holes in windshield (4) with two bolts (21) and lockwashers (20).	
10.		Circuit 71 connector (6)	Connect to wiper motor switch (5).	
11.		Cable clamp (9) and cable (7)	Secure to wiper motor bracket (10) with screw-assembled washer (8).	
12.		Wiper motor bracket (10)	Secure to two bottom holes in windshield (4) with two lockwashers (16) and screws (14).	
13. Wiper connecting link (15) to pivot shaft arm (19)		Groove-headed pin (18) and bushing (11)	Secure to pivot shaft arm (19) and connecting link (15) with spring washer (12) and snap ring (13).	
14.		Gasket (3) and wiper cover (2)	Secure to windshield (4) with eighteen self-tapping screws (1).	

10-18. Windshield Wiper Motor and Switch Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

- FOLLOW-ON TASKS:**
- Install windshield wiper blades and arms (para 10-19).
 - Test wiper motor for proper operation (TM 9-2320-218-10).

TA 155589

10-19. Windshield Wiper Blade and Arm Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment
Condition
Reference

TM 9-2320-218-10

Condition Description

Parking brake set.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Both left and right windshield wiper blades (4) and arms (7) are removed identically. Do not bend wiper arm saddle (2), as this will cause chatter during operation.

a. REMOVAL

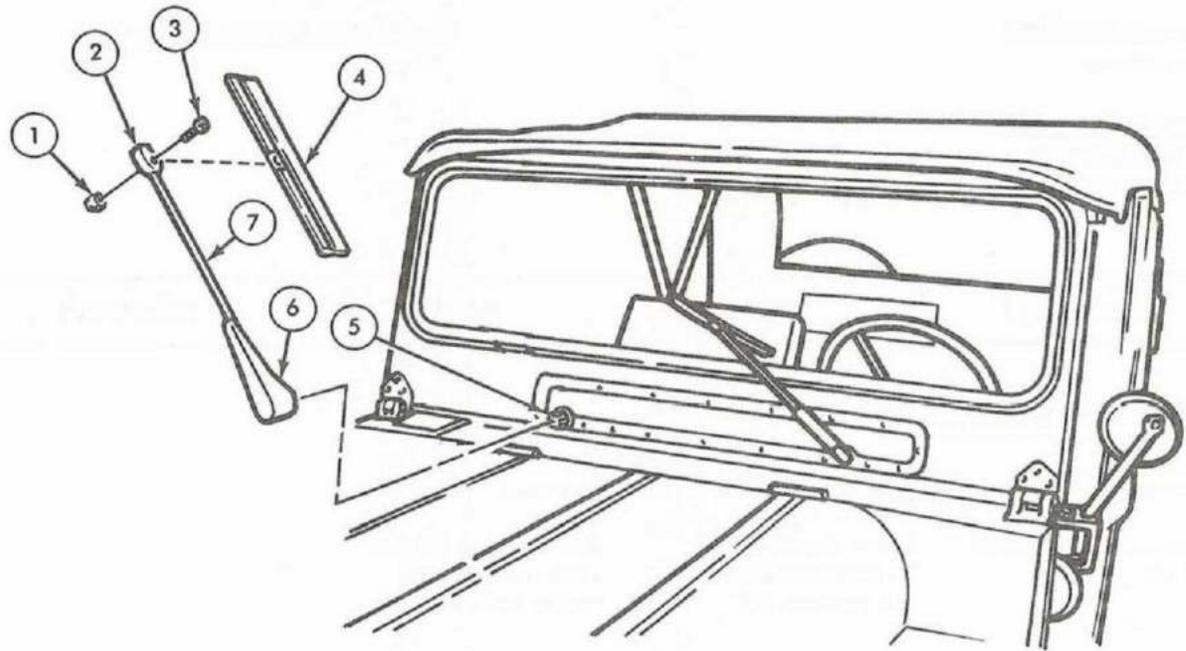
- | | | | |
|--|------------------------------------|---------------------------------|--|
| 1. Windshield wiper blade (4) to windshield wiper arm saddle (2) | Self-locking nut (1) and screw (3) | Remove. | |
| 2. Windshield wiper arm saddle (2) | Windshield wiper blade (4) | Remove. | |
| 3. Windshield wiper arm (7) | Spring clip (6) | Pull upward and remove arm (7). | Note position of arm (7) for installation. |

10-19. Windshield Wiper Blade and Arm Maintenance (Cont'd)

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

b. INSTALLATION

- | | | | | |
|----|--|----------------------------|---|-------------------------------------|
| 4. | | Windshield wiper arm (7) | Position on pivot shaft (5) and press down firmly to secure. | |
| 5. | | Windshield wiper blade (4) | Secure to wiper arm saddle (2) with screw (3) and self-locking nut (1). | Tighten to 14-18 lb-ft (19-24 N•m). |



END OF TASK!

TA 155590

10-20. Windshield Washer Reservoir and Hoses Maintenance

This task covers:

- | | |
|----------------------------------|-----------------------------|
| <i>a. Reservoir Removal</i> | <i>c. Hose Removal</i> |
| <i>b. Reservoir Installation</i> | <i>d. Hose Installation</i> |

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
All	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Hood raised and secured.
<u>Test Equipment</u>		
None		
<u>Special Tools</u>		<u>Special Environmental Conditions</u>
Torque wrench (0-175 lb-ft)		None
<u>Materials/Parts</u>		
None		
<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None
<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. RESERVOIR REMOVAL

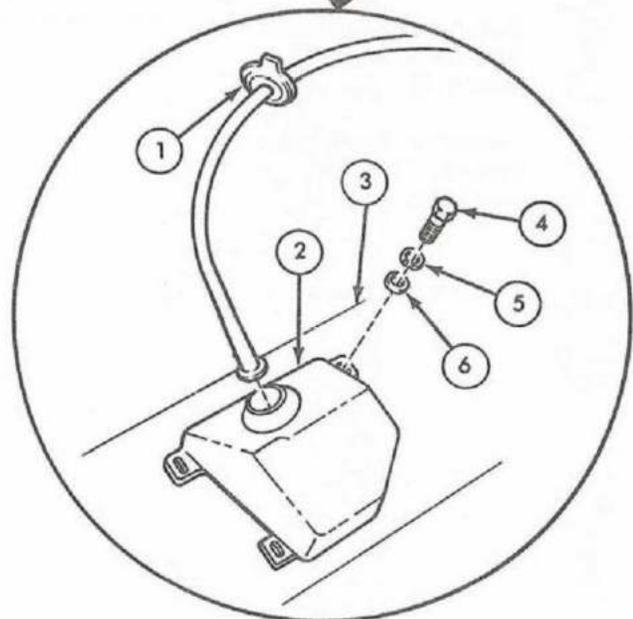
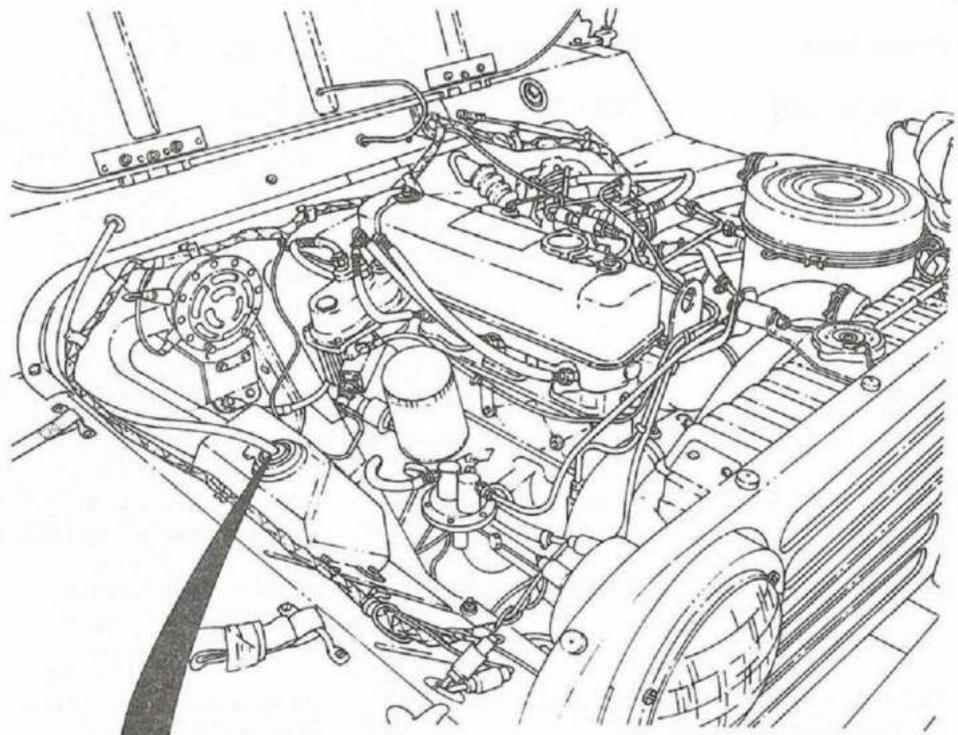
- | | | |
|-------------------------------------|--|---|
| 1. Reservoir (2) | Reservoir cap (1) | Remove. |
| 2. Reservoir (2) to fender well (3) | Three capscrews (4), lockwashers (5), and flat washers (6) | Remove and detach reservoir (2) from fender well (3). |

b. RESERVOIR INSTALLATION

- | | | |
|----|-------------------|--|
| 3. | Reservoir (2) | Secure to fender well (3) with three flat washers (6), lockwashers (5), and capscrews (4). |
| 4. | Reservoir cap (1) | Secure to reservoir (2). |

10-20. Windshield Washer Reservoir and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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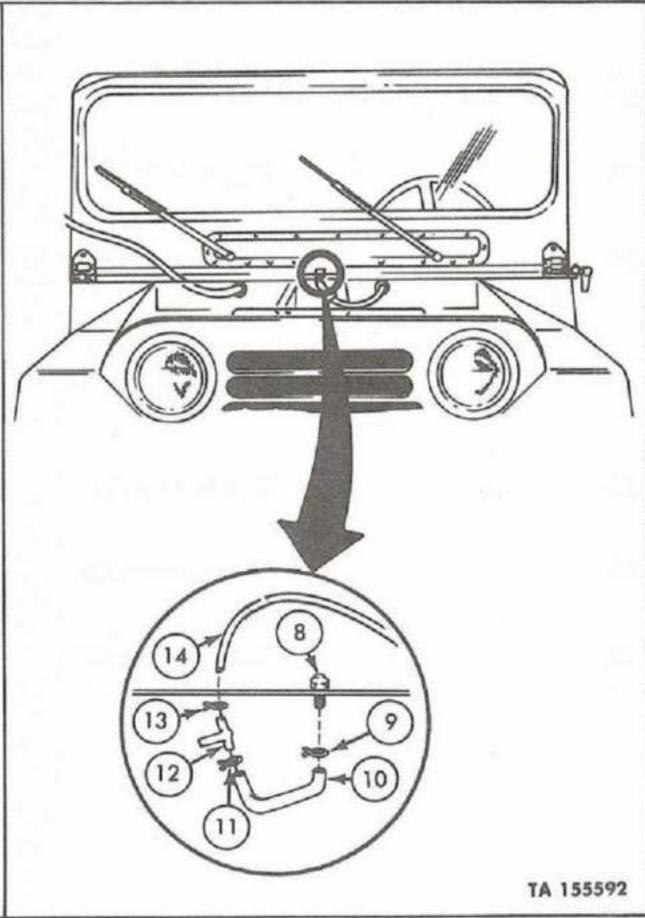
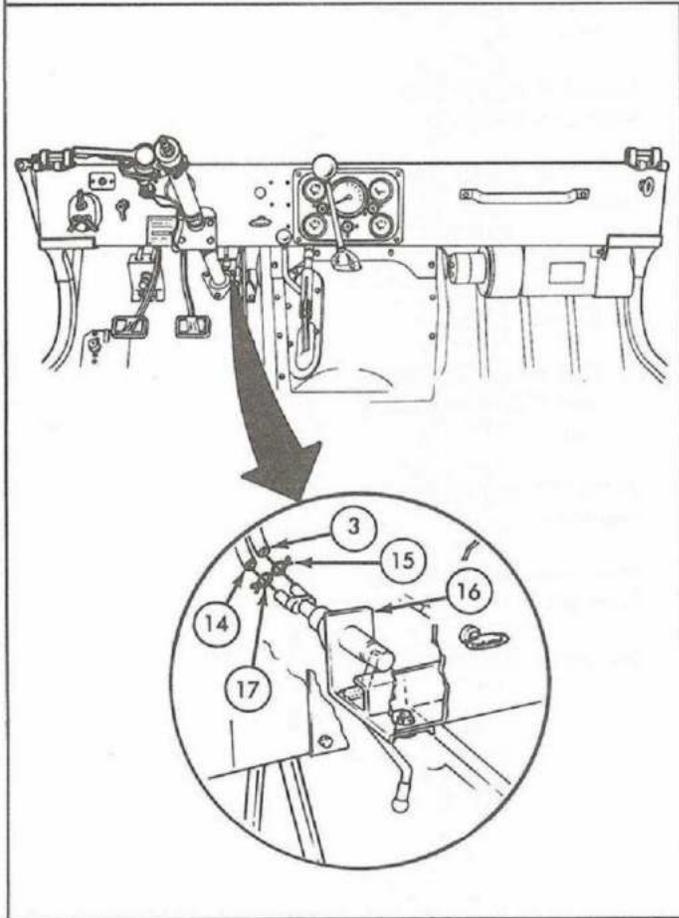
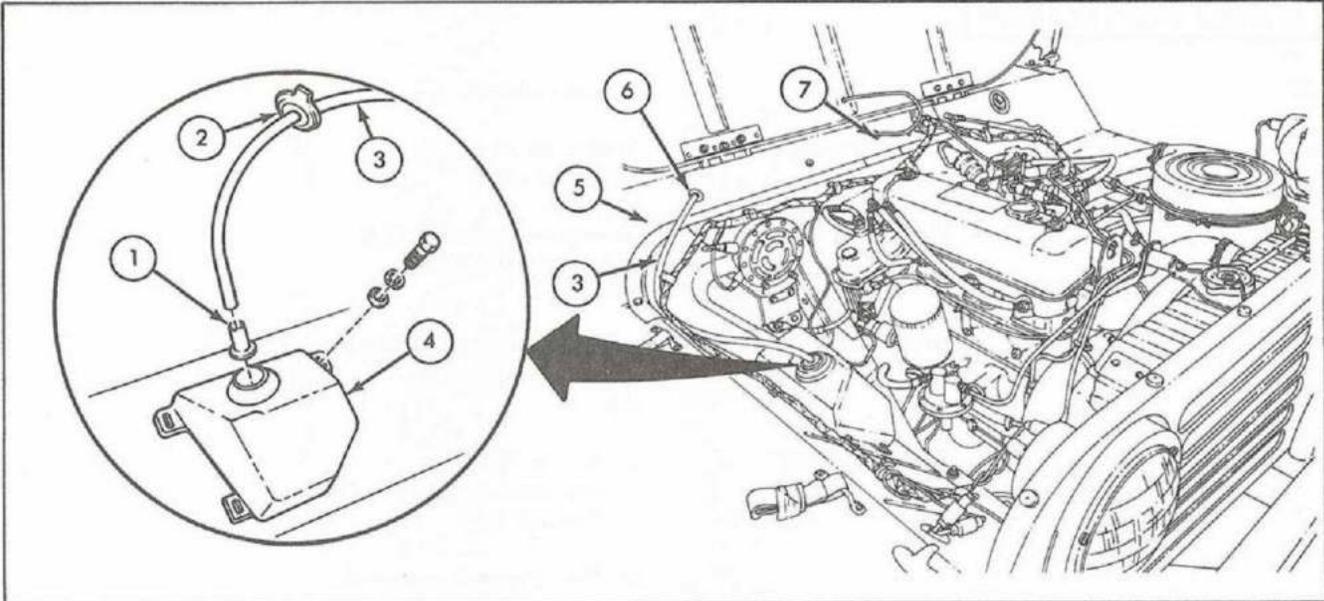
TA 155591

10-20. Windshield Washer Reservoir and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<i>c. HOSE REMOVAL</i>				
5.	Reservoir (4)	Reservoir cap (2)	Remove.	
6.	Supply hose (3)	Filter screen (1)	Remove.	
7.		Supply hose (3)	Slide through reservoir cap (2).	
8.		Supply hose (3)	Push through grommet (6) in firewall (5) from engine side.	
9.	Supply hose (3) to pump (16)	Hose clamp (15)	Remove and pull supply hose (3) from pump (16).	Make note of location on pump (16) for installation.
10.		Supply hose (3)	Remove from vehicle.	
11.	Outlet hose (14) to pump (16)	Hose clamp (17)	Remove and pull outlet hose (14) from pump (16).	Make note of location on pump (16) for installation.
12.		Outlet hose (14)	Pull through grommet (7) in firewall (5) from engine side.	
13.	Outlet hose (14) to pressure relief valve (12)	Hose clamp (13)	Remove and pull outlet hose (14) from relief valve (12).	
14.	Valve hose (10) to pressure relief valve (12)	Hose clamp (11)	Remove and pull valve hose (10) from relief valve (12).	
15.	Valve hose (10) to jet nozzle (8)	Hose clamp (9)	Remove and pull valve hose (10) from jet nozzle (8).	
16.		Jet nozzle (8)	Remove from hood.	

10-20. Windshield Washer Reservoir and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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TA 155592

10-20. Windshield Washer Reservoir and Hoses Maintenance (Cont'd)

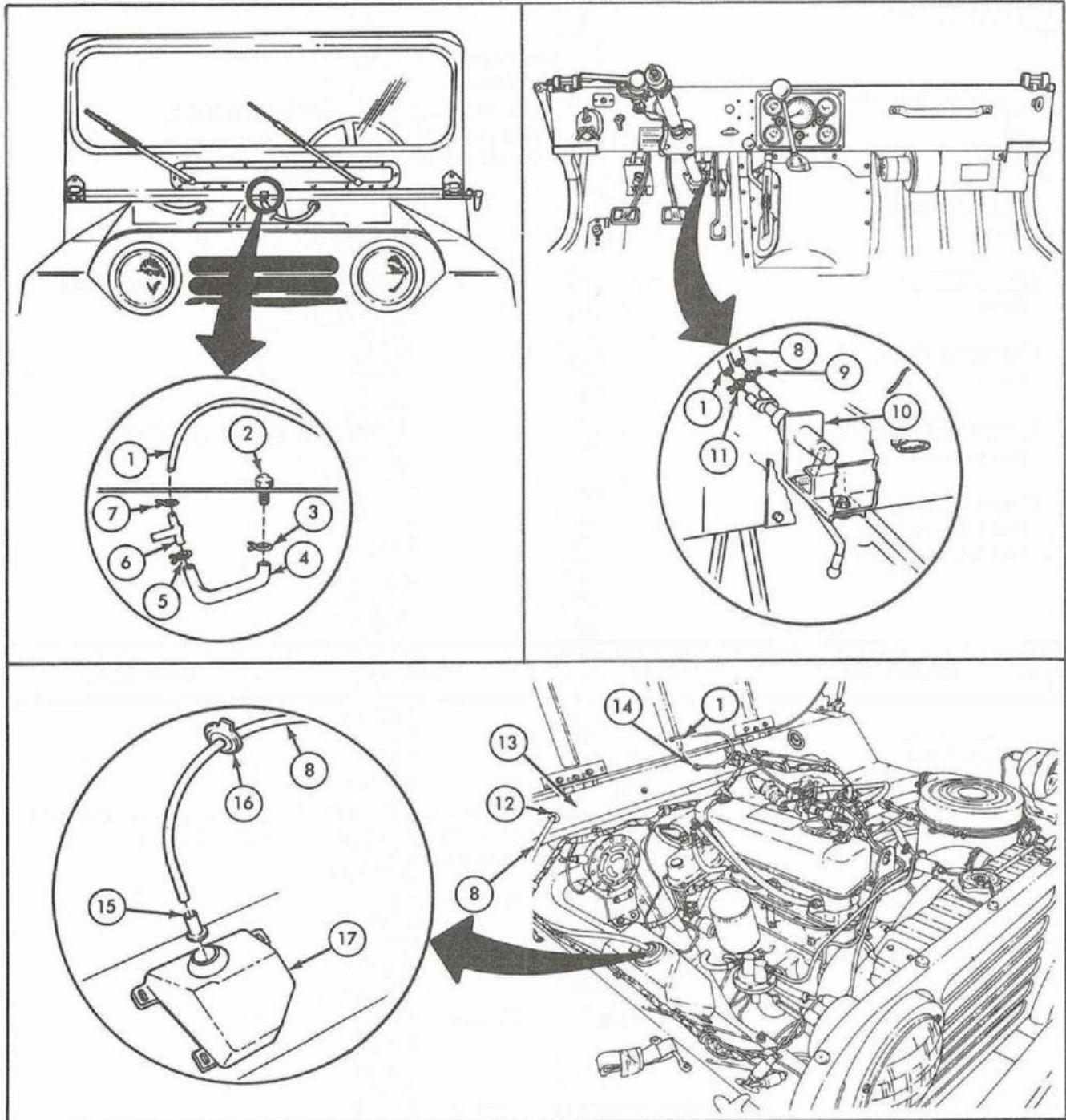
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. HOSE INSTALLATION

17.		Jet nozzle (2)	Install in hood.	
18.		Valve hose (4)	Secure to jet nozzle (2) with clamp (3).	
19.		Valve hose (4)	Secure to pressure relief valve (6) with clamp (5).	
20.		Outlet hose (1)	Secure to pressure relief valve (6) with clamp (7).	
21.		Outlet hose (1)	<p>a. Insert through grommet (14) in firewall (13).</p> <p>b. Pull through grommet (14) from passenger side.</p>	
22.		Outlet hose (1)	Secure to pump (10) with clamp (11).	
23.		Supply hose (8)	Secure to pump (10) with clamp (9).	
24.		Supply hose (8)	<p>a. Insert through grommet (12) in firewall (13).</p> <p>b. Pull through grommet (12) from engine side.</p>	
25.		Supply hose (8)	Slide through reservoir cap (16).	
26.		Filter screen (15)	Push into end of supply hose (8).	
27.		Reservoir cap (16)	Secure to reservoir (17).	

10-20. Windshield Washer Reservoir and Hoses Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

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

TA 155593

10-21. Windshield Assembly Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u></p> <p>TM 9-2320-218-10 TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set. Soft top lowered.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Cable clamp (5) to wiper motor bracket (6)	Screw-assembled washer (4)	Remove and detach cable clamp (5) and cable (3).	Do not separate clamp (5) from cable (3).
2.	Wiper motor switch (1)	Circuit 71 connector (2)	Disconnect.	
3.	Two windshield hinge pins (8)	Two pin retainer clips (9)	Remove.	
4.	Two windshield hinges (10) to windshield assembly (7)	Two hinge pins (8)	Remove.	
5.		Windshield assembly (7)	Remove.	

10-21. Windshield Assembly Maintenance (Cont'd)

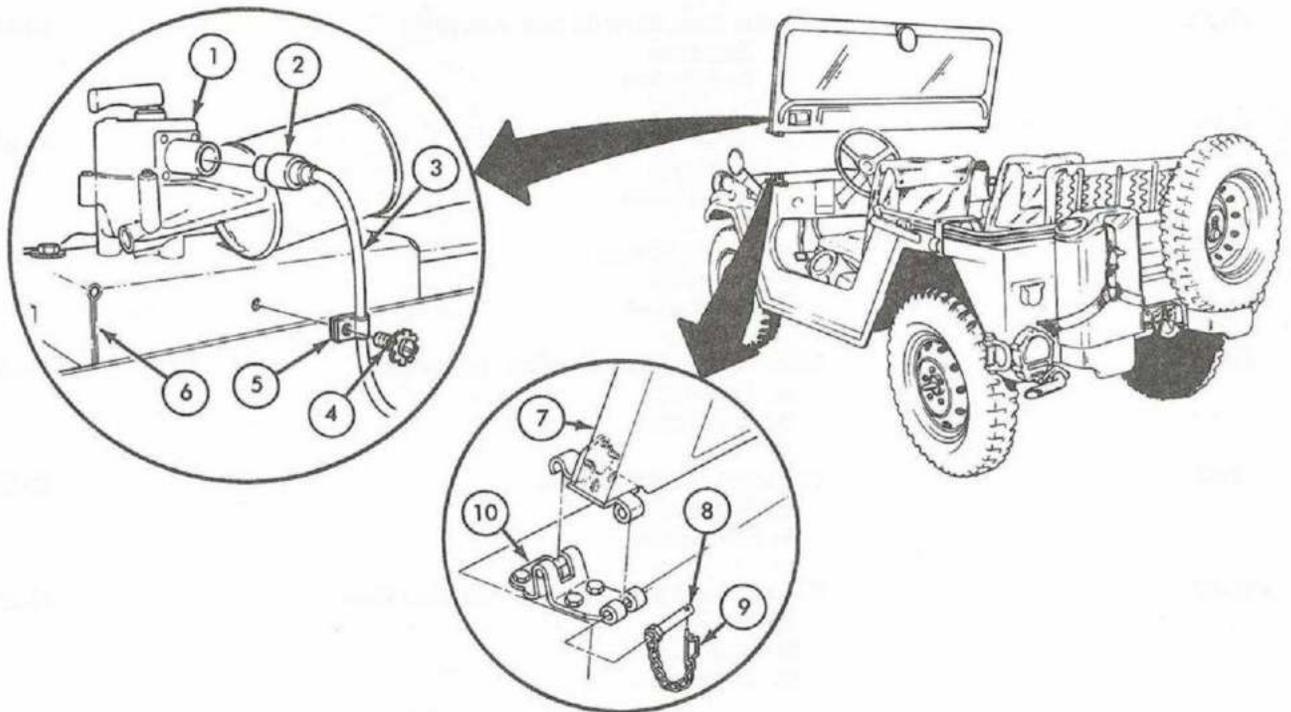
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

NOTE

- Windshield hinges (10) provide ground point for wiper motor. Be sure all corrosion is removed prior to windshield installation.
- If new windshield is being installed, use attaching parts from old windshield (7).

6.		Windshield assembly (7)	Secure to two hinges (10) with two hinge pins (8).
7.		Two hinge pins (8)	Secure with two pin retaining clips (9).
8.		Circuit 71 connector (2)	Connect to wiper motor switch (1).
9.		Cable clamp (5) and cable (3)	Secure to wiper motor bracket (6) with screw-assembled washer (4).



END OF TASK!

FOLLOW-ON TASK: Place soft top in travel position (TM 9-2320-218-10).

TA 155594

Section II. MISCELLANEOUS ACCESSORY ITEMS MAINTENANCE

10-22. General

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

10-23. Miscellaneous Accessory Items Maintenance Task Summary

TASK PARA	PROCEDURES	PAGE NO.
10-24.	Soft-Top Frame (M151A2 Utility Vehicle) a. Removal b. Installation	10-52
10-25.	Soft Top and Curtains (M718A1 Ambulance) a. Removal b. Installation	10-54
10-26.	Soft-Top Frame (M718A1 Ambulance) a. Removal b. Installation	10-58
10-27.	Outside Rear View Mirror Assembly a. Removal b. Installation	10-62
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10-32.	Shift Lever Knobs and Transmission Boot a. Removal b. Inspection c. Installation	10-72

10-23. Miscellaneous Accessory Items Maintenance Task Summary (Cont'd)		
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TASK PARA	PROCEDURES	PAGE NO.
10-33.	Transfer Shift Lever Dust Shield a. Removal b. Inspection c. Installation	10-74
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10-37.	Fuel Can Mounting Bracket and Hold Down Strap a. Removal (M151A2) b. Removal (M825 and M718A1) c. Installation (M151A2) d. Installation (M825 and M718A1)	10-94

10-24. Soft-Top Frame (M151A2 Utility Vehicle) Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<u>Applicable Models</u>	<u>Equipment Condition Reference</u>	<u>Condition Description</u>
M151A2	TM 9-2320-218-10	Parking brake set.
	TM 9-2320-218-10	Top frame in raised position.
	TM 9-2320-218-10	Soft top removed.

<u>Test Equipment</u>		<u>Special Environmental Conditions</u>
None		None

<u>Special Tools</u>		
None		

<u>Materials/Parts</u>		
None		

<u>Personnel Required</u>		<u>General Safety Instructions</u>
One mechanic		None

<u>Manual References</u>		
TM 9-2320-218-10		
TM 9-2320-218-20P		

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Removal procedure is identical for both the right and left sides of the soft-top frame.

a. REMOVAL

- | | | | |
|----|---------------------------------------|---|---|
| 1. | Top bar (4) to windshield bracket (3) | Ring and chain retainer (2) | Remove. |
| 2. | Top bar (4) | | Remove from windshield bracket (3). |
| 3. | Top frame (1) | | Lower to rear of vehicle. See TM 9-2320-218-10. |
| 4. | Tab (7) to fender (8) | Three self-locking nuts (10), flat washers (6), and bolts (5) | Remove. |
| 5. | Top frame (1) | | <i>a.</i> Unhook from stud (9).

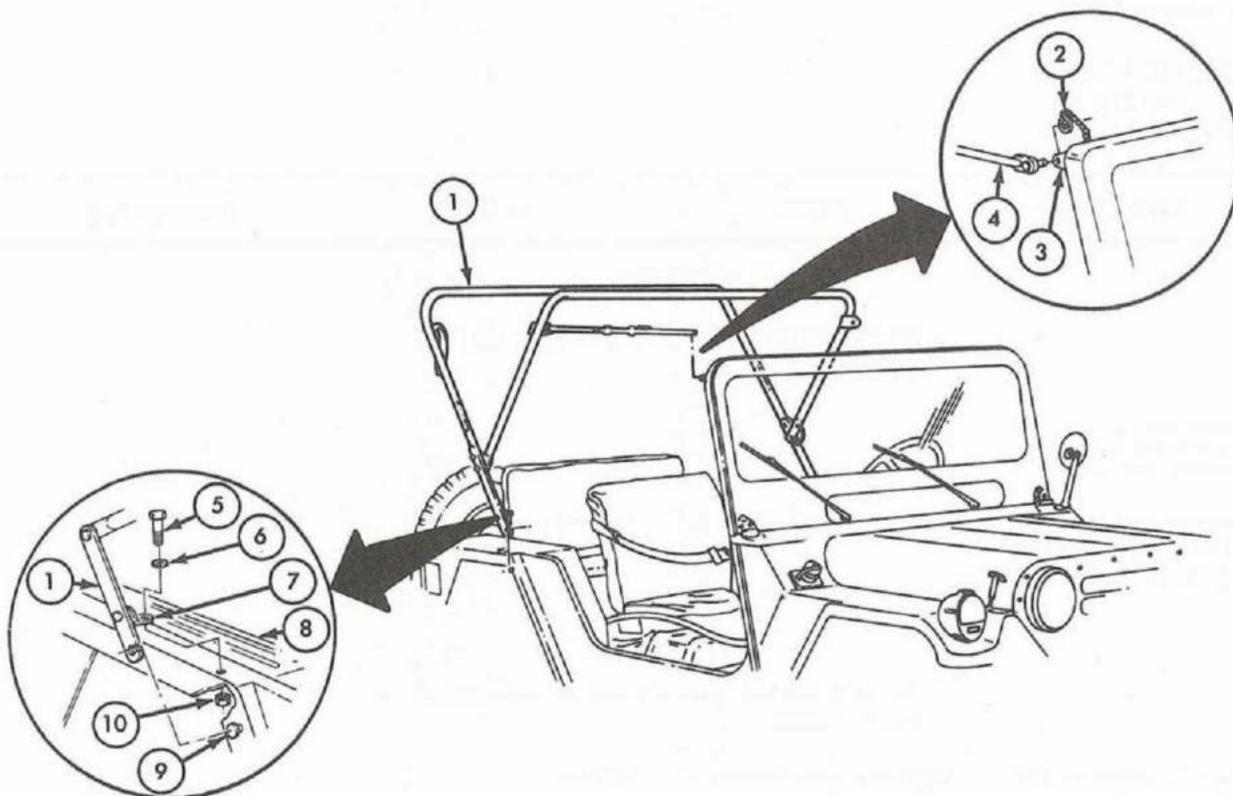
<i>b.</i> Remove from vehicle. |

10-24. Soft-Top Frame (M151A2 Utility Vehicle) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

6.		Top frame (1)	<p>a. Hook to stud (9).</p> <p>b. Position to fender (8) and secure with three bolts (5), flat washers (6), and self-locking nuts (10).</p>	
7.		Top frame (1)	Raise.	See TM 9-2320-218-10.
8.		Two top bars (4)	Position to windshield bracket (3) and secure with ring and chain retainer (2).	



END OF TASK!

- FOLLOW-ON TASKS:
- Top frame in raised position (TM 9-2320-218-10).
 - Soft top installed (TM 9-2320-218-10).

TA 155595

10-25. Soft Top and Curtains (M718A1 Ambulance) Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> M718A1</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Adhesive (NSN 8030-01-079-3135)</p> <p><u>Personnel Required</u> One mechanic One assistant</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u></p> <p>TM 9-2320-218-10 TM 9-2320-218-10</p>	<p><u>Condition Description</u></p> <p>Parking brake set. Door frames and door curtains removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

An assistant must be used during all steps of this task.

a. REMOVAL

- | | | |
|--|--------------------|-----------|
| 1. Two side curtains (6) and one rear curtain (3) to body (9). | Fifteen straps (8) | Unfasten. |
|--|--------------------|-----------|

NOTE

All turn button fasteners (5) are unfastened inside vehicle.

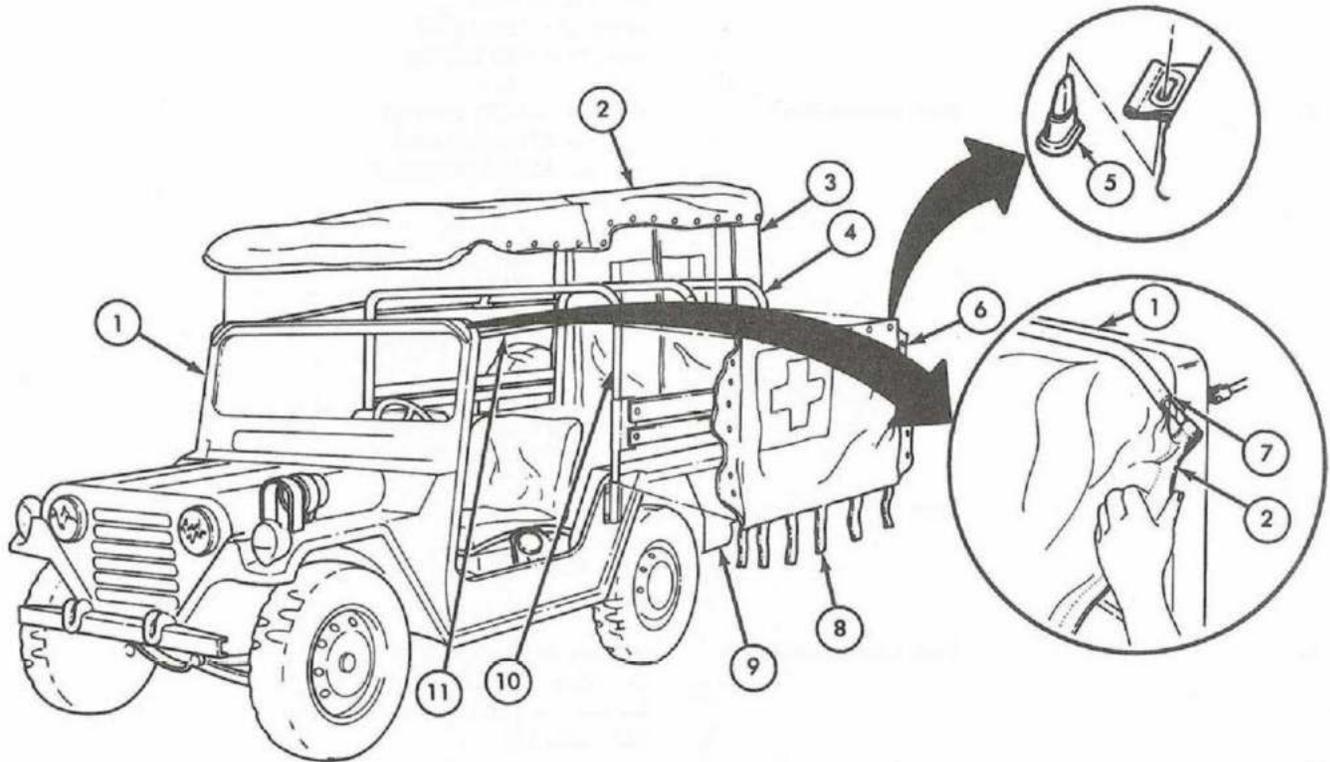
- | | | |
|--|------------------------------------|---|
| 2. Two side curtains (6) to top curtain (2) | Eighteen turn button fasteners (5) | Unfasten. |
| 3. Side curtains (6) to vertical door rod (10) | Ten turn button fasteners (5) | <i>a.</i> Unfasten. |
| | | <i>b.</i> Remove two side curtains (6). |

10-25. Soft Top and Curtains (M718A1 Ambulance) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
4.	Top curtain (2) to three bows (4)	Twenty-five turn button fasteners (5)	Unfasten.	
5.	Top curtain (2) to two horizontal door rods (11)	Ten turn button fasteners (5)	a. Unfasten. b. Fold top curtain (2) halfway toward front of vehicle.	

CAUTION

When doing steps 6 and 7 below, hold top curtain (2) up to prevent it catching and tearing on projections on top of windshield (1). Do not use tools of any kind to aid in removing top (2) from retaining channel (7).



TA 155596

10-25. Soft Top and Curtains (M718A1 Ambulance) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
6.	Windshield retaining channel (7)	Top curtain (2)	Standing behind windshield (1), carefully slide beaded edge (8) out of retaining channel (7) until free of windshield (1).	Top (2) can be removed from either right or left side of retaining channel (7).

b. INSTALLATION

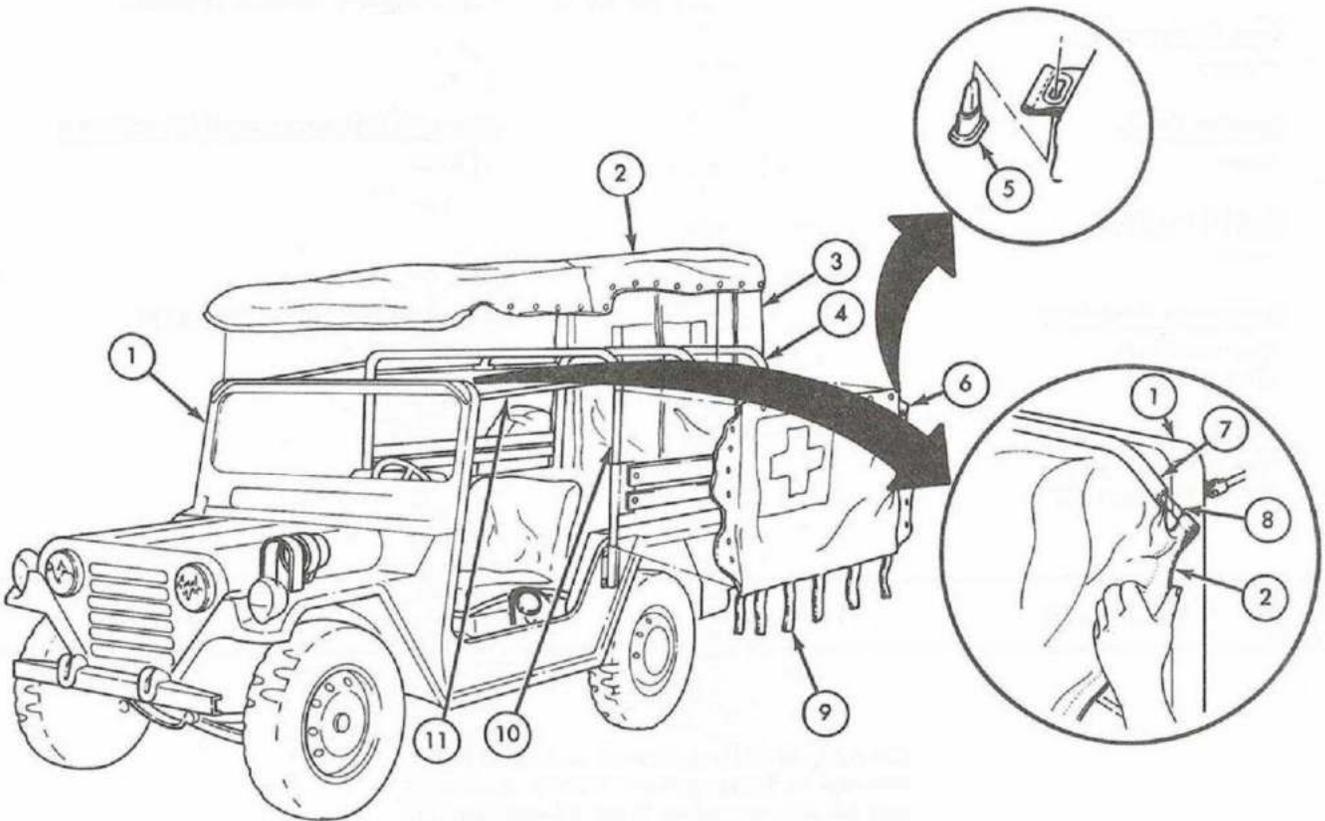
NOTE

It is possible for rain water to leak through a seam on the top curtain (2). To prevent this, seal the seam by applying adhesive.

7.		Top curtain (2)	Position beaded edge (8) to retaining channel (7) and pull top (2) across vehicle.	
8.		Top curtain (2)	<p>a. Pull top (2) toward rear of vehicle and fold in half at center of vehicle.</p> <p>b. Secure top (2) to two horizontal door rods (11) with ten turn button fasteners (5).</p>	
9.		Top curtain (2)	Secure top (2) to three bows (4) with twenty-five turn button fasteners (5).	
10.		Two side curtains (6)	Secure to two vertical rods (10) with ten turn button fasteners (5).	
11.		Two side curtains (6)	Secure to sides of top curtain (2) with twenty-six turn button fasteners (5).	
12.		Fifteen straps (9)	Fasten to body.	

10-25. Soft Top and Curtains (M718A1 Ambulance) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Replace door curtains and door frames (TM 9-2320-218-10).

TA 155597

10-26. Soft-Top Frame (M718A1 Ambulance) Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> M718A1</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic One assistant</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10 Para 10-25</p>	<p><u>Condition Description</u> Parking brake set. Soft top and curtains removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

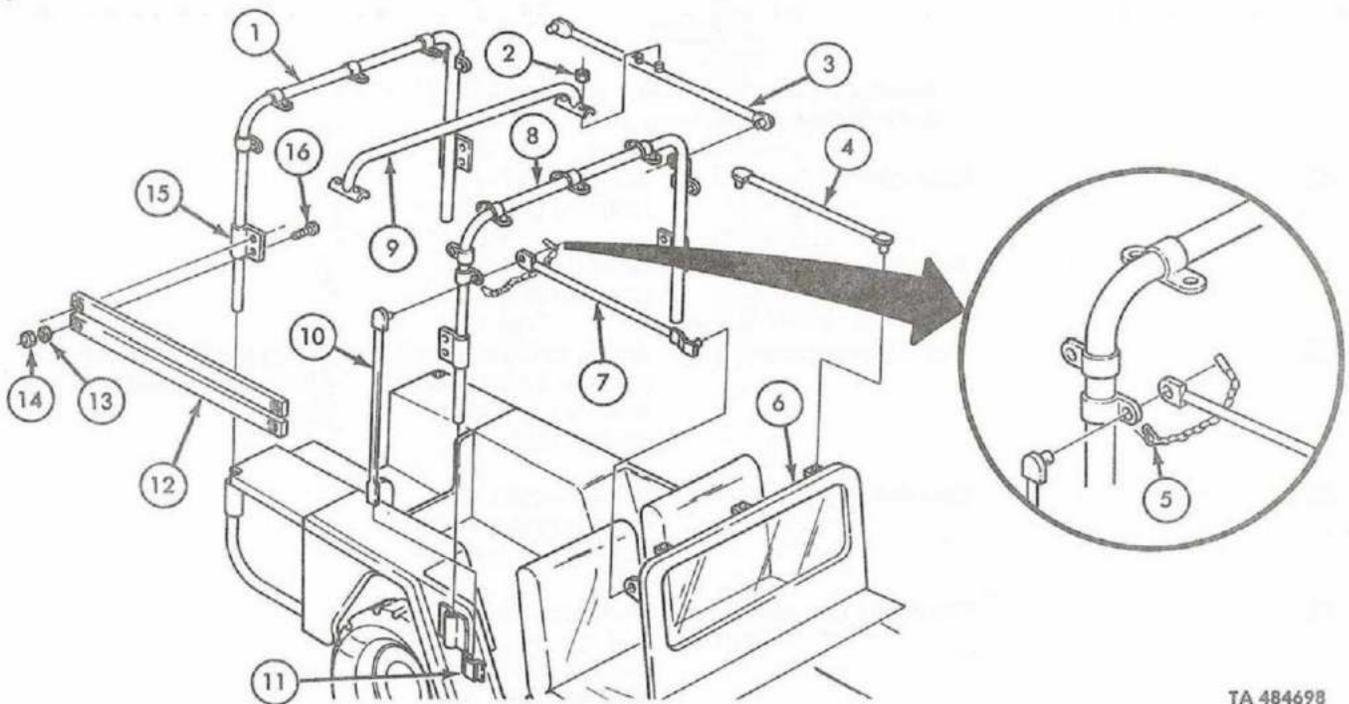
Carefully identify and locate each part before removal to insure proper installation. Right and left side supports (3) are almost identical in appearance, and can be easily switched and installed on wrong side of vehicle. When side supports (3) are properly installed, the intermediate bow (9) will be located closer to the front bow (8) than to the rear bow (1).

a. REMOVAL

- | | | | |
|----|---|--|---------|
| 1. | Four seat back supports (12) to four retainers (15) | Eight self-locking nuts (14), flat washers (13), and carriage bolts (16) | Remove. |
| 2. | Four seat back supports (12) | | Remove. |

10-26. Soft-Top Frame (M718A1 Ambulance) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
3.	Two side vertical rods (10) to two side rods (7)	Two ring and chain retainers (5)	Remove.	
4.		Two side vertical rods (10)	Pull away from side rods (7), and then pull upward and slide out of retainer (11).	
5.	Three top front rods (4) to front bow (8) and windshield (6)	Six ring and chain retainers (5)	Remove.	
6.		Three front rods (4)	Remove.	
7.	Two side rods (7) to front bow (8) and windshield (6)	Four ring and chain retainers (5)	Remove.	
8.		Two side rods (7)	Remove.	
9.	Intermediate bow (9) to two side supports (3)	Four self-locking nuts (2)	Remove.	
10.		Intermediate bow (9)	Remove.	



TA 484698

10-26. Soft-Top Frame (M718A1 Ambulance) Maintenance (Cont'd)

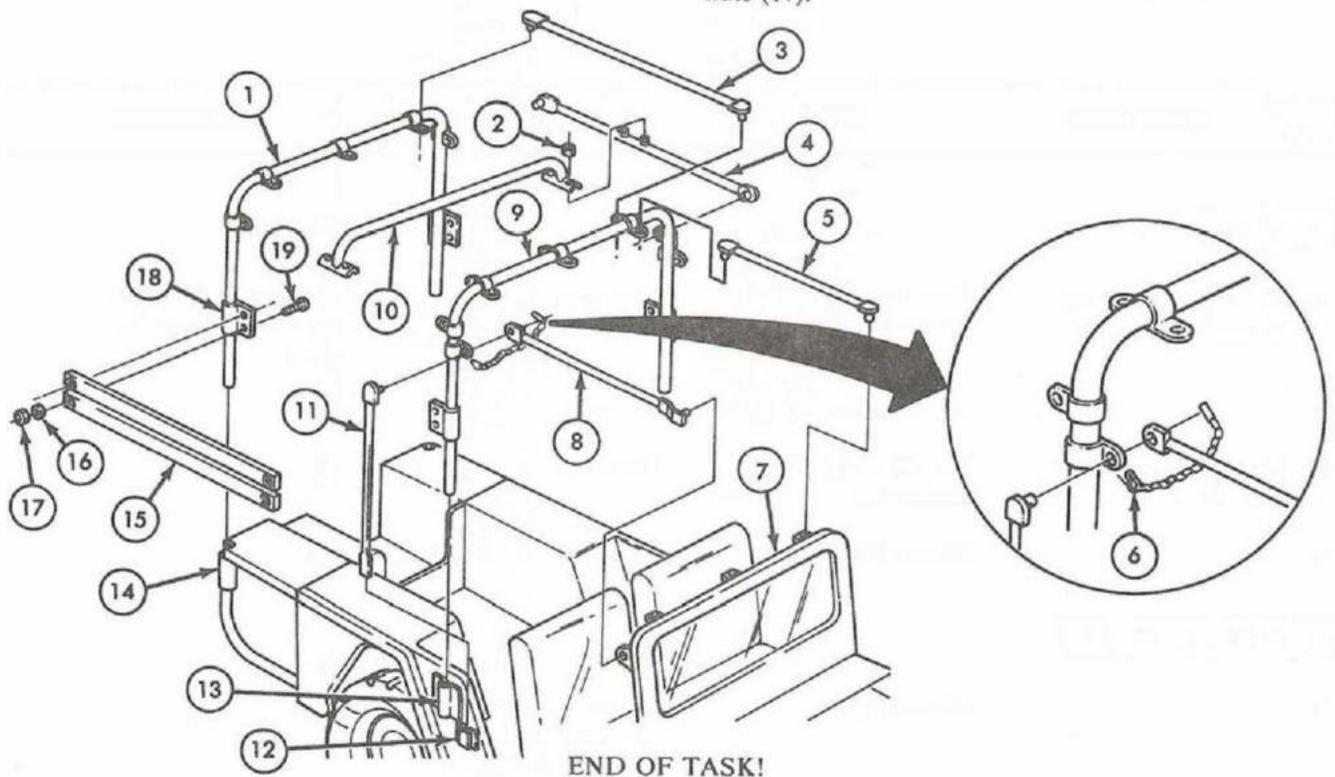
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
11.	Two side supports (4) to front bow (9) and rear bow (1)	Four ring and chain retainers (6)	Remove.	
12.		Two side supports (4)	Remove.	Mark each support (4) for correct installation.
13.	Three top rear rods (3) to front bow (9) and rear bow (1)	Six ring and chain retainers (6)	Remove.	
14.		Three top rear rods (3)	Remove.	
NOTE				
Assistant must help remove front and rear bows during steps 15 and 16.				
15.		Front bow (9)	Lift out of two retainers (13).	
16.		Rear bow (1)	Lift out of two retainers (14).	

b. INSTALLATION

NOTE				
Assistant must help install front and rear bows during steps 17 and 18.				
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
17.		Rear bow (1)	Install in two retainers (14).	
18.		Front bow (9)	Install in two retainers (13).	
19.		Two side supports (4)	Secure to front bow (9) and rear bow (1) with four ring and chain retainers (6).	Be sure to install supports (4) as marked during step 12
20.		Intermediate bow (10)	Secure to two side supports (4) with four self-locking nuts (2).	
21.		Three top rear rods (3)	Secure to front bow (9) and rear bow (1) with six ring and chain retainers (6).	

10-26. Soft-Top Frame (M718A1 Ambulance) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
22.		Two side rods (8)	Secure to front bow (9) and windshield (7) with four ring and chain retainers (6).	
23.		Three top front rods (5)	Secure to front bow (9) and windshield (7) with six ring and chain retainers (6).	
24.		Two side vertical rods (11)	a. Install flat end in retainer (12). b. Install opposite end to two side rods (8) and secure with two ring and chain retainers (6).	
25.		Four back supports (15)	Secure to four retainers (18) with eight carriage bolts (19), flat washers (16), and locking nuts (17).	



FOLLOW-ON TASK: Install soft top and curtains (para 10-25).

TA 155599

10-27. Outside Rear View Mirror Assembly Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

<p>1. Mirror assembly (6) to cowl (8)</p> <p>2.</p> <p>3. Mirror (4) to mirror arm (5)</p> <p>4.</p>	<p>Two nuts (7) and screws (1)</p> <p>Mirror assembly (6)</p> <p>Nut (2) and lock-washer (3)</p> <p>Mirror (4)</p>	<p>Remove.</p> <p>Remove.</p> <p>Remove.</p> <p>Remove.</p>	<p>Reach nuts (7) from inside vehicle under cowl (8).</p>
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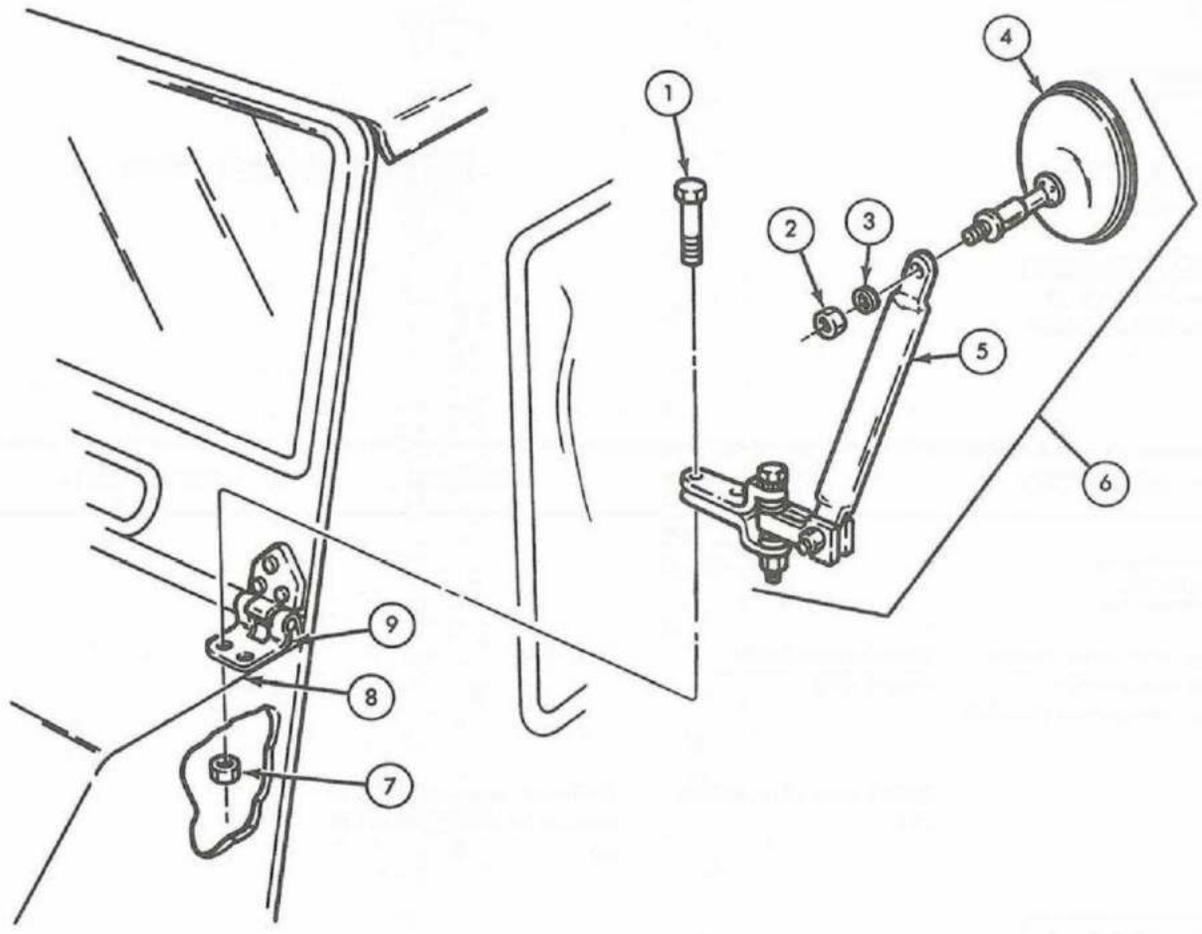
b. INSTALLATION

<p>5.</p>	<p>Mirror (4)</p>	<p>Secure to mirror arm (5) with lockwasher (3) and nut (2).</p>
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10-27. Outside Rear View Mirror Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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6.		Mirror assembly (6)	Secure to windshield hinge (9) with two screws (1) and nuts (7).	
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END OF TASK!

TA 155600

10-28. Inside Rear View Mirror Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

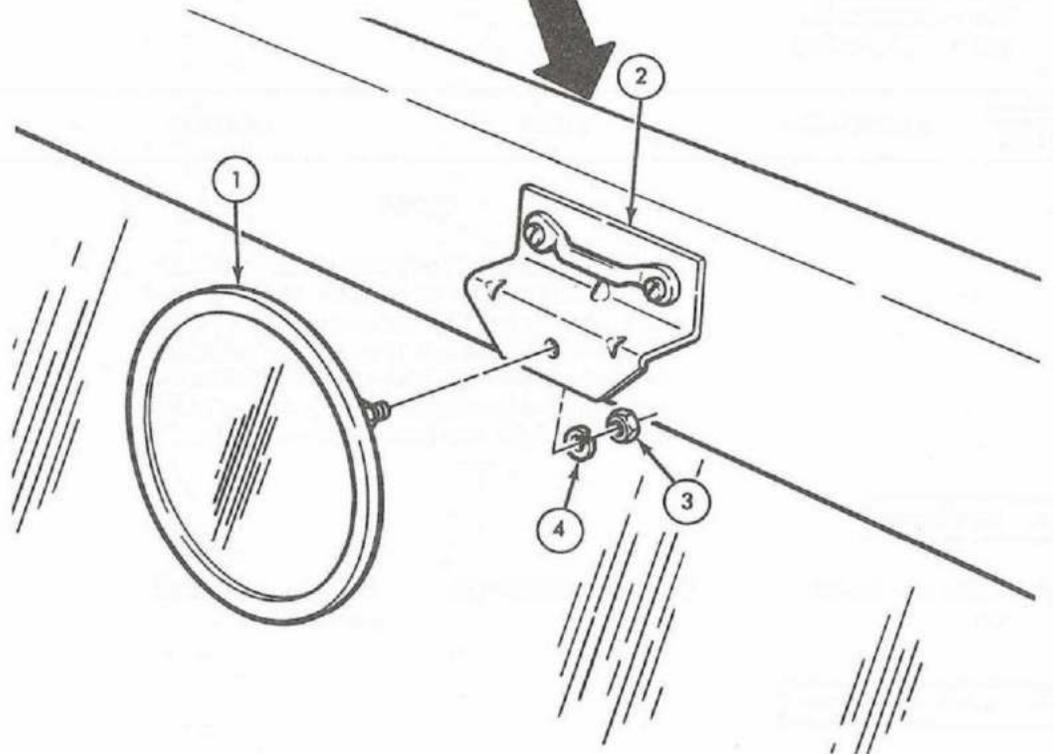
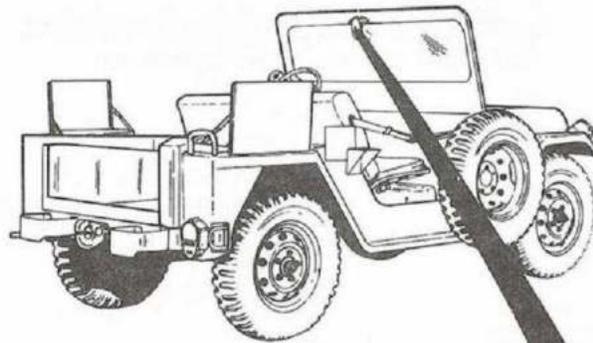
- | | | | | |
|----|---|-----------------------------|---|--|
| 1. | Inside rear view mirror (1) to windshield mirror mounting bracket (2) | Nut (3) and lock-washer (4) | Remove. | |
| 2. | Inside rear view mirror (1) | | Remove from windshield mirror mounting bracket (2). | |

b. INSTALLATION

- | | | | | |
|----|-----------------------------|--|---|--|
| 3. | Inside rear view mirror (1) | | Secure to windshield mirror mounting bracket (2) with lockwasher (4) and nut (3). | |
|----|-----------------------------|--|---|--|

10-28. Inside Rear View Mirror Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155601

10-29. Stick-On Reflector Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> Reflector sealer, alkyd type (NSN 8010-00-506-1980)</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Stick-on reflectors are located on each side of the front fenders, rear fenders, back panels, and the spare tire mounting plate. The M718A1 model has a large square reflector located on left rear fender. All are removed and installed identically. This procedure will cover the right rear fender reflector only.

a. REMOVAL

1. Right rear fender (3)	Stick-on reflector (2)	Lift one corner and peel off.
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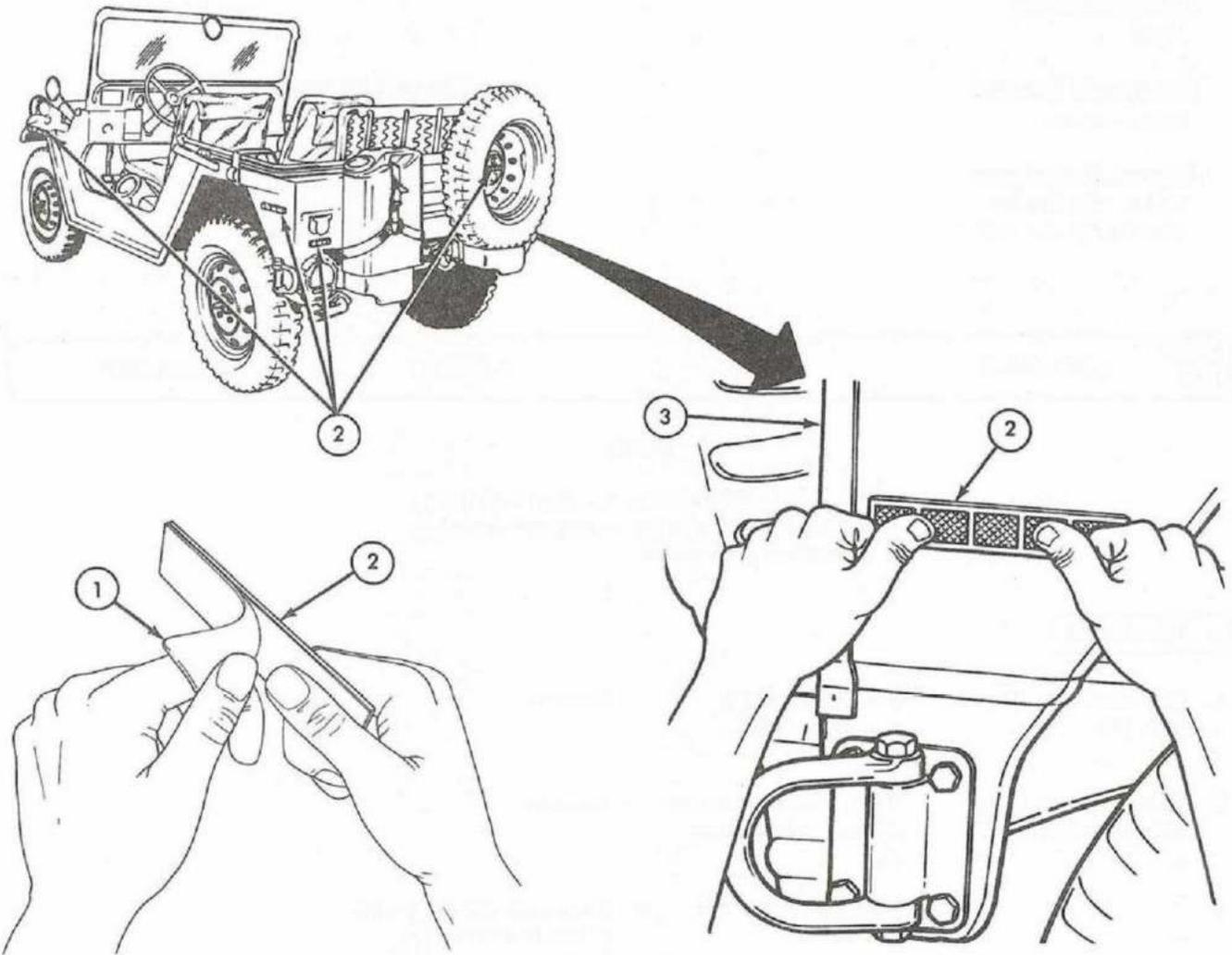
b. INSTALLATION

NOTE

Make sure area where stick-on reflector is being installed is clean of dirt, grime, and corrosion before installation.

10-29. Stick-On Reflector Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
2.		Stick-on reflector (2)	<p>a. Peel off protective backing (1).</p> <p>b. Place evenly on right rear fender (3) and press down with hand to remove air pockets.</p> <p>c. Secure by applying liberal amount of sealer completely around reflector (2).</p>	<p>Sealer must be applied around edge of each side and overlap 1/4 in. (6.35 mm) of reflector.</p>



END OF TASK!

TA 155602

10-30. Litter Rail Straps (M718A1 Ambulance) Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> M718A1</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

All litter rail straps are removed identically. This procedure applies to all litter rail straps regardless of location.

a. REMOVAL

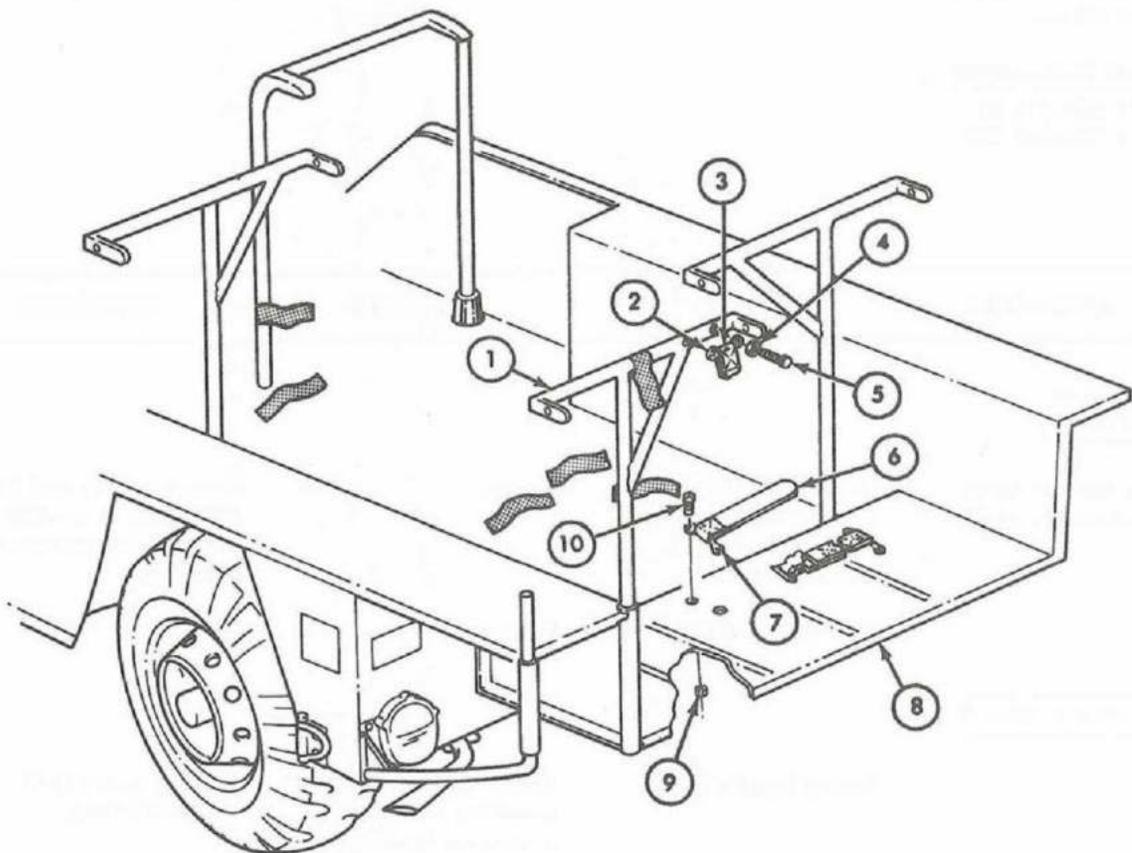
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|----|---|--|---|
| 1. | Footman loop (7) to body (8) | Two locknuts (9) and screws (10) | Remove. |
| 2. | Footman loop (2) to litter rail support (1) | Two machine screws (5) and lockwashers (4) | Remove. |
| 3. | | Footman loops (7) and (2) | Slide each out from end of straps (3) and (6) if strap replacement is required. |

10-30. Litter Rail Straps (M718A1 Ambulance) Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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b. INSTALLATION

- | | | |
|----|---------------------------|--|
| 4. | Footman loops (7) and (2) | Install in end of straps (3) and (6). |
| 6. | Footman loop (2) | Secure to litter rail support (1) with two lockwashers (4) and machine screws (5). |
| 7. | Footman loop (7) | Secure to body (8) with two screws (10) and locknuts (9). |



END OF TASK!

TA 155603

10-31. Passenger Safety Handle Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

All

Equipment
Condition
Reference

TM 9-2320-218-10

Condition Description

Parking brake set.

Test Equipment

None

Special Tools

Torque wrench (0-175 lb-ft)

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic

General Safety Instructions

None

Manual References

TM 9-2320-218-10
TM 9-2320-218-20P

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

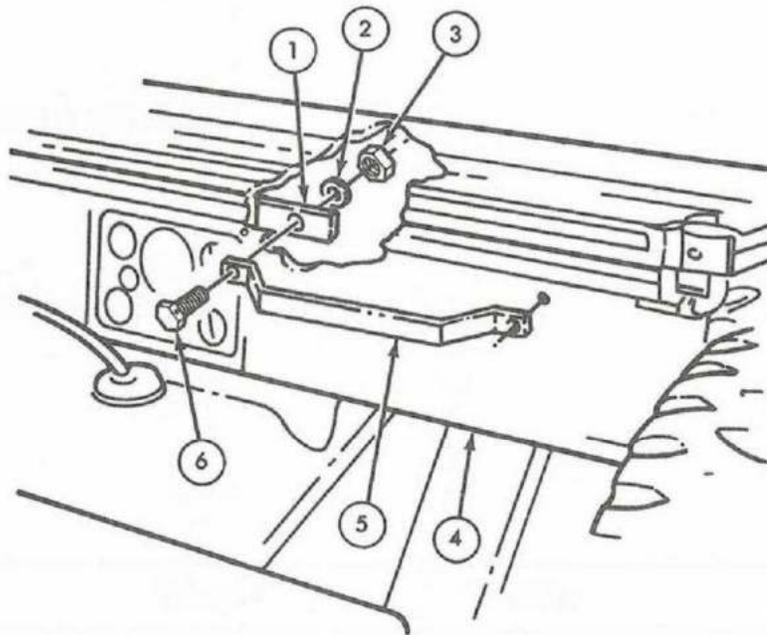
- | | | | | |
|----|---|---|---------|--|
| 1. | Safety handle (5) to instrument panel (4) | Two self-locking nuts (3), flat washers (2), backing plates (1), and screws (6) | Remove. | Nuts, washers, and backing plates can be reached from behind instrument panel (4). |
| 2. | | Safety handle (5) | Remove. | |

b. INSTALLATION

- | | | | | |
|----|--|-------------------|--|--------------------------------------|
| 3. | | Safety handle (5) | Secure to instrument panel (4) with two screws (6), backing plates (1), flat washers (2), and self-locking nuts (3). | Tighten to 4-8 lb-ft (5.4-10.8 N•m). |
|----|--|-------------------|--|--------------------------------------|

10-31. Passenger Safety Handle Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155604

10-32. Shift Lever Knobs and Transmission Boot Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

- | | | | |
|----|------------------------------|----------|---|
| 1. | Transmission lever (3) | Knob (1) | Unscrew and remove. |
| 2. | Transfer lever (5) | Knob (6) | Unscrew and remove. |
| 3. | Transmission cover panel (4) | Boot (2) | Pull bottom lip of boot (2) from transmission cover panel (4) and slide up and off of transmission lever (3). |

b. INSPECTION

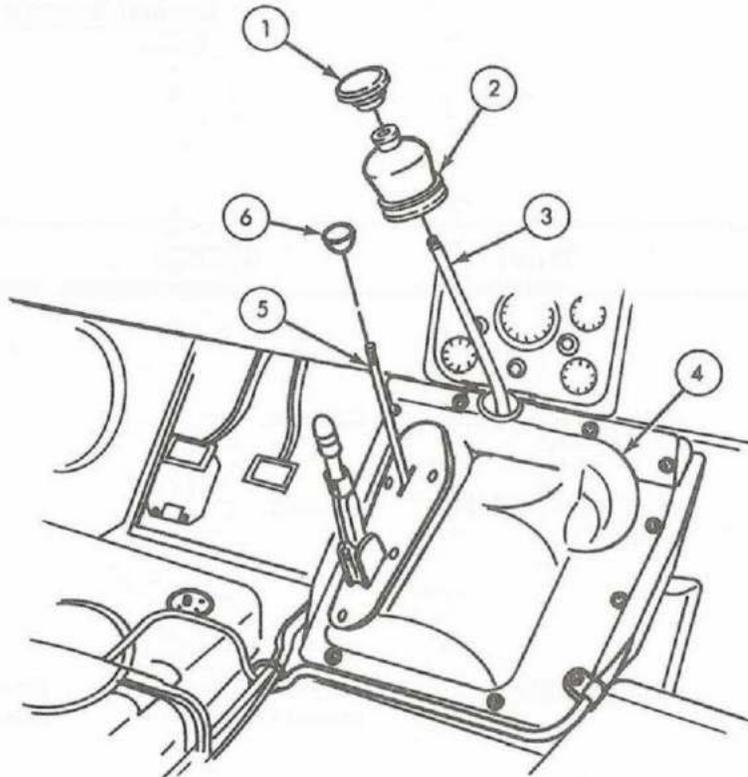
- | | | | | |
|----|--|----------|---|---------------------------------------|
| 4. | | Boot (2) | Inspect for breaks, cracks, and splits. | Replace if broken, cracked, or split. |
|----|--|----------|---|---------------------------------------|

10-32. Shift Lever Knobs and Transmission Boot Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION

- | | | |
|----|----------|--|
| 5. | Boot (2) | Slide down transmission lever (3) and secure bottom lip to transmission cover panel (4). |
| 6. | Knob (1) | Screw onto transmission lever (3). |
| 7. | Knob (6) | Screw onto transfer lever (5). |



END OF TASK!

TA 155605

10-33. Transfer Shift Lever Dust Shield Maintenance

This task covers:

- a. Removal
- b. Inspection
- c. Installation

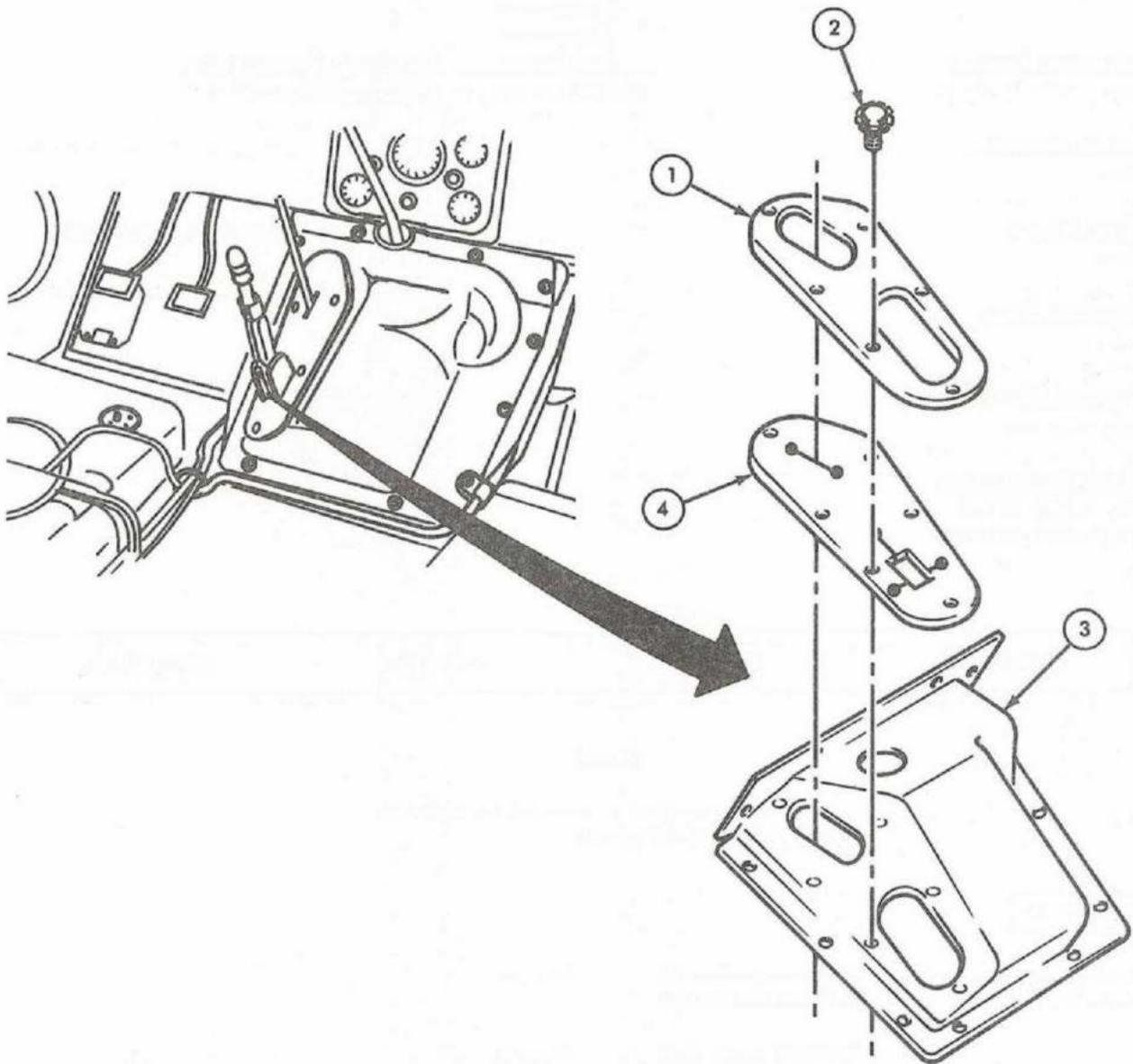
INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p>Equipment Condition Reference</p> <p>TM 9-2320-218-10 Para 10-32</p>	<p><u>Condition Description</u></p> <p>Parking brake set. Shift lever knobs and transmission boot removed.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
<u>a. REMOVAL</u>				
1.	Retainer (1) to transmission cover panel (3)	Six screw-assembled washers (2)	Remove.	
2.		Retainer (1) and dust shield (4)	Remove.	
<u>b. INSPECTION</u>				
3.		Dust shield (4)	Inspect for breaks, cracks, and splits.	Replace if broken, cracked, or split.
<u>c. INSTALLATION</u>				
4.		Dust shield (4) and retainer (1)	Secure to underside of transmission cover panel (3) with six screw-assembled washers (2).	Make sure dust shield (4) is positioned between retainer (1) and transmission cover panel (3).

10-33. Transfer Shift Lever Dust Shield Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

FOLLOW-ON TASK: Install shift lever knobs and transmission boot (para 10-32).

TA 155606

10-34. Rear Composite Light Cable Guard Maintenance

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Removal procedure is identical for both left and right sides of vehicle.

a. REMOVAL

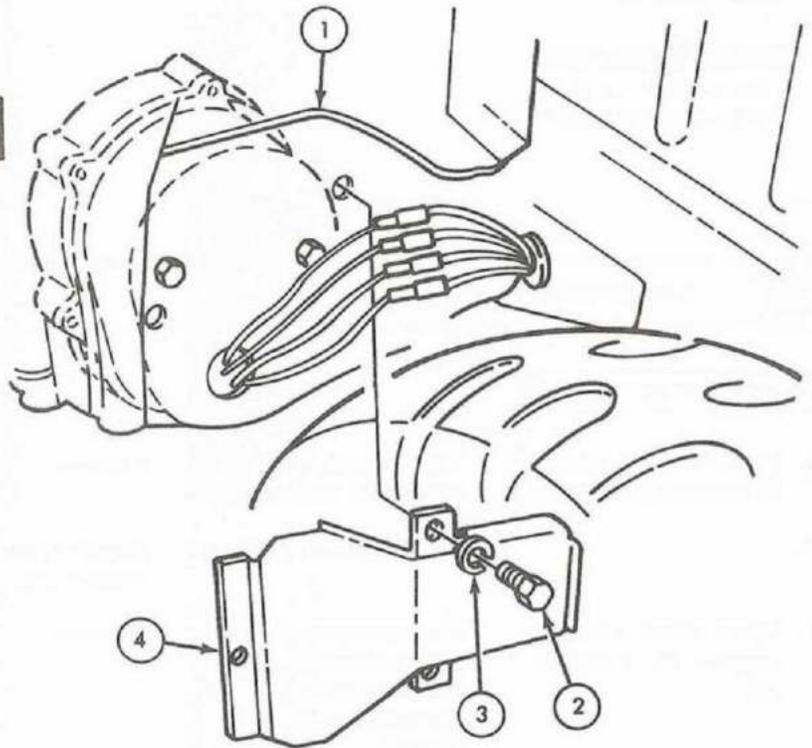
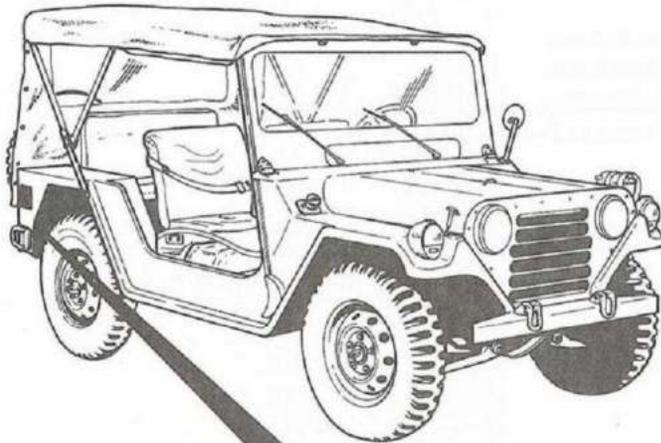
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|----|---------------------------------------|---|---------|
| 1. | Taillight cover plate (4) to body (1) | Three capscrews (2) and lockwashers (3) | Remove. |
| 2. | Taillight cover plate (4) | | Remove. |

b. INSTALLATION

- | | | | |
|----|---------------------------|--|--|
| 3. | Taillight cover plate (4) | | Secure to body (1) with three lockwashers (3) and capscrews (2). |
|----|---------------------------|--|--|

10-34. Rear Composite Light Cable Guard Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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END OF TASK!

TA 155607

10-35. Spare Wheel Mounting Support Assembly Maintenance

This task covers:

- a. Removal (M825)
- b. Removal (M718A1)
- c. Installation (M825)
- d. Installation (M718A1)

INITIAL SETUP:

<p><u>Applicable Models</u> All</p> <p><u>Test Equipment</u> None</p> <p><u>Special Tools</u> None</p> <p><u>Materials/Parts</u> None</p> <p><u>Personnel Required</u> One mechanic</p> <p><u>Manual References</u> TM 9-2320-218-10 TM 9-2320-218-20P</p>	<p><u>Equipment Condition Reference</u> TM 9-2320-218-10</p>	<p><u>Condition Description</u> Parking brake set.</p> <p><u>Special Environmental Conditions</u> None</p> <p><u>General Safety Instructions</u> None</p>
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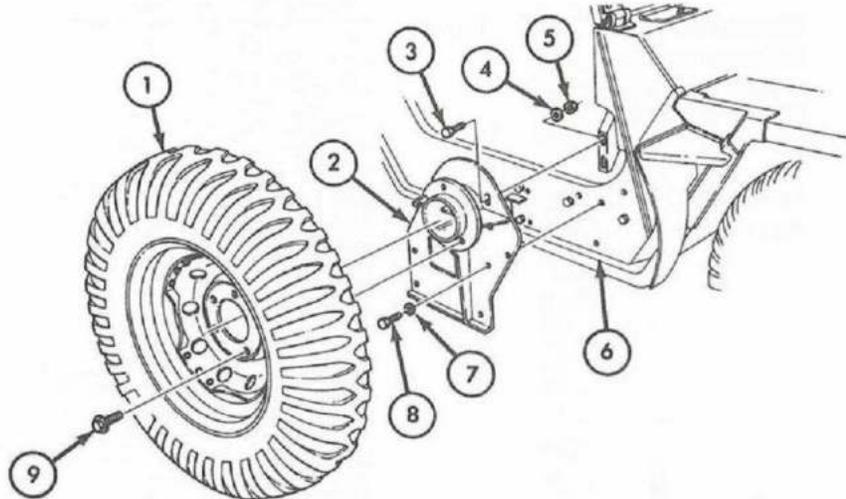
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL (M825)

- | | | | |
|----|--|--|-----------------------------------|
| 1. | Spare tire and wheel (1) to mounting support (2) | Three capscrew-assembled washers (9) | Remove. |
| 2. | Spare tire and wheel (1) | | Remove from mounting support (2). |
| 3. | Spare wheel mounting support (2) to vehicle (6) | Six capscrews (8) and lockwashers (7), and two capscrews (3), flat washers (4), and nuts (5) | Remove. |

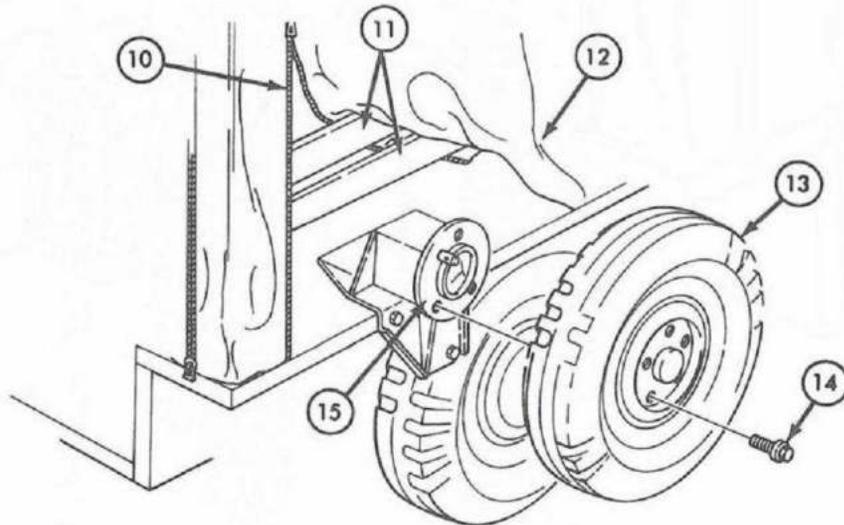
10-35. Spare Wheel Mounting Support Assembly Maintenance (Cont'd)

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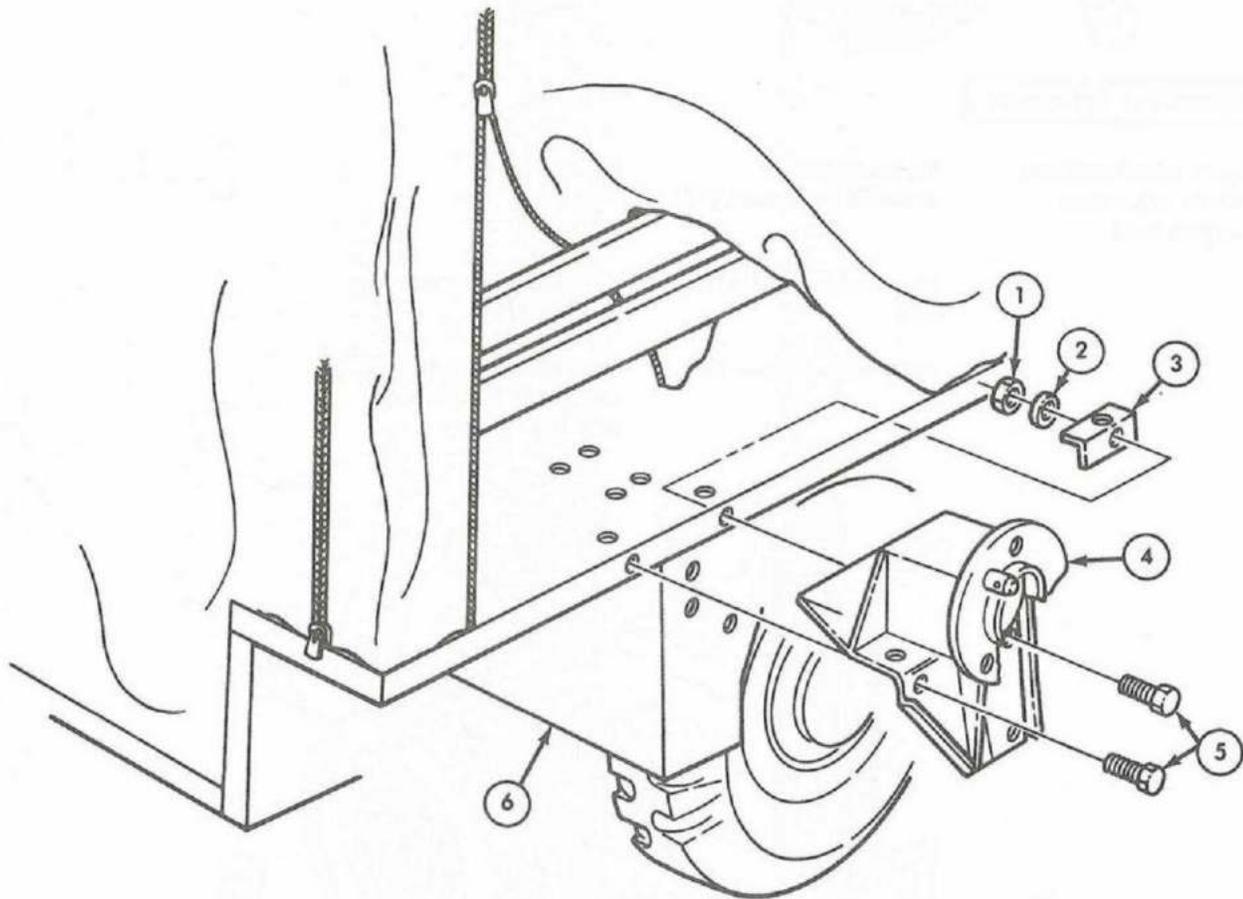
b. REMOVAL (M718A1)

- | | | |
|---|---------------------------------------|---|
| 4. Spare wheel and tire (13) to mounting support (15) | Three capscrew-assembled washers (14) | Remove. |
| 5. | Spare wheel and tire (13) | Remove from mounting support (15). |
| 6. | Right side curtain (12) | Unzip rear corner (10) and lift free end over seat back (11). |



10-35. Spare Wheel Mounting Support Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
7.	Spare wheel mounting support (4) to vehicle (6)	Eleven nuts (1), lockwashers (2), capscrews (5), and one reinforcement plate (3)	Remove.	
8.		Spare wheel mounting support (4)	Remove from vehicle (6).	



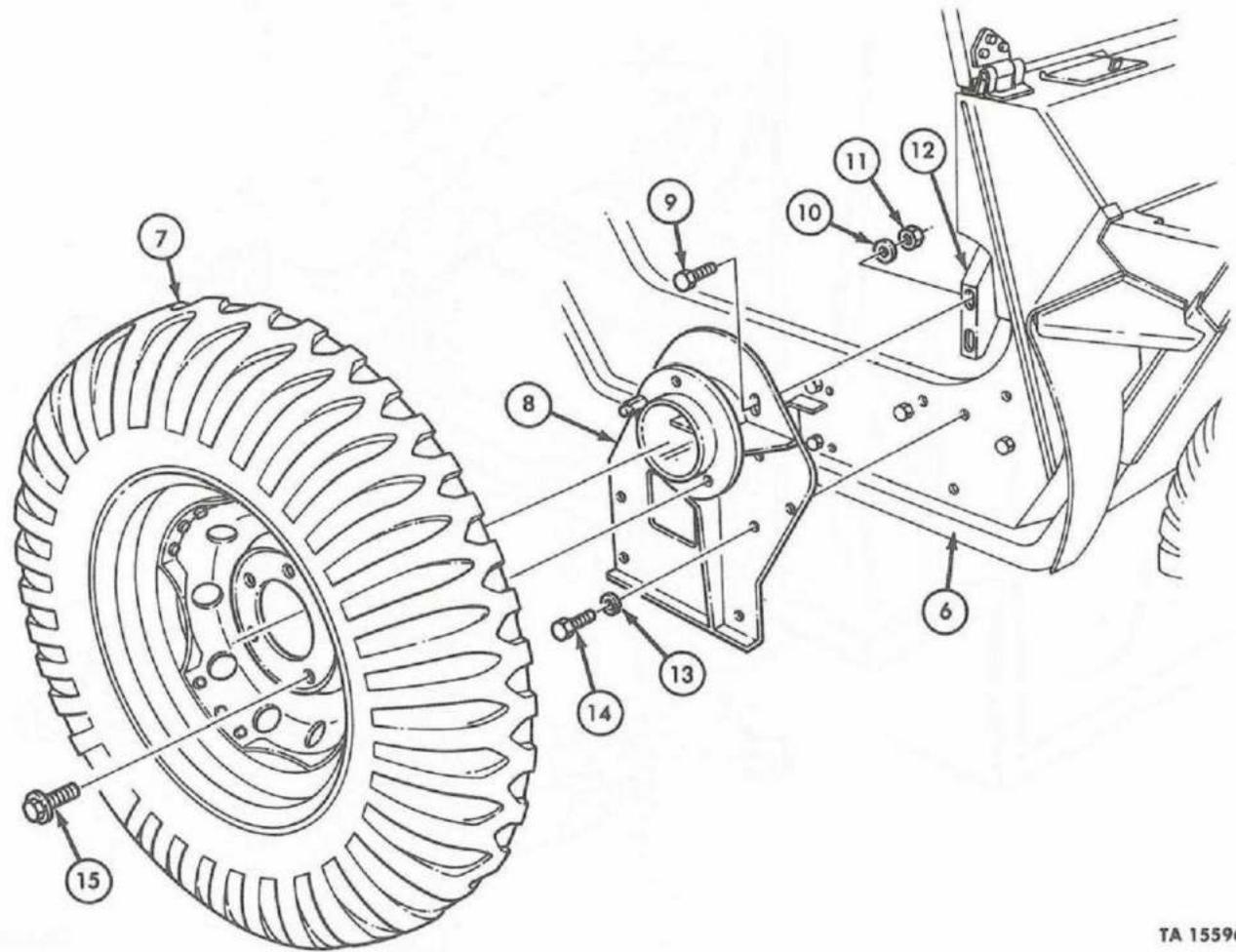
TA 155964

10-35. Spare Wheel Mounting Support Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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c. INSTALLATION (M825)

9.		Spare wheel mounting support (8)	<p>a. Secure to vehicle (6) with six capscrews (14) and lockwashers (13).</p> <p>b. Secure to support (12) with two capscrews (9), flat washers (10) and nuts (11).</p>	Tighten 17-22 lb-ft (23-30 N•m).
10.		Spare wheel and tire (7)	Secure to spare wheel mounting support (8) with three capscrew-assembled washers (15).	



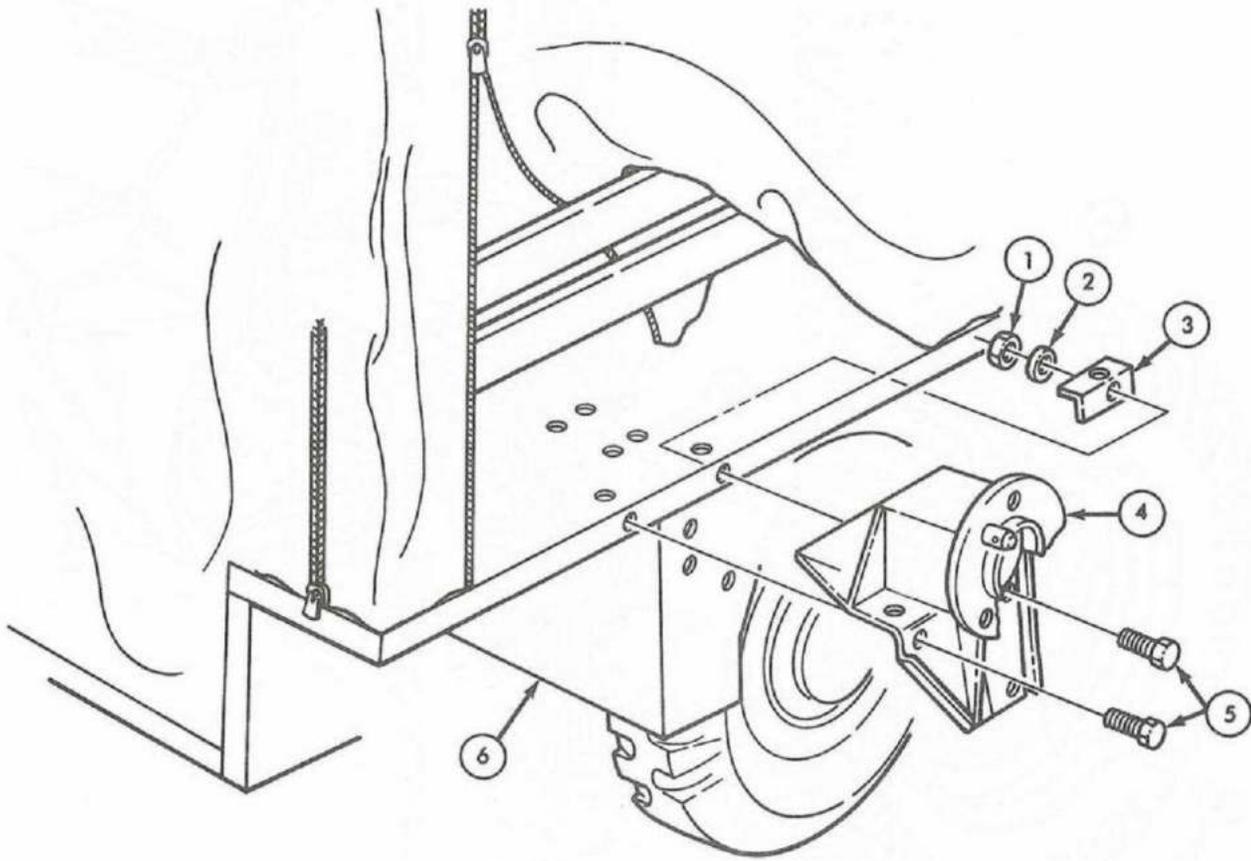
TA 155965

10-35. Spare Wheel Mounting Support Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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d. INSTALLATION (M718A1)

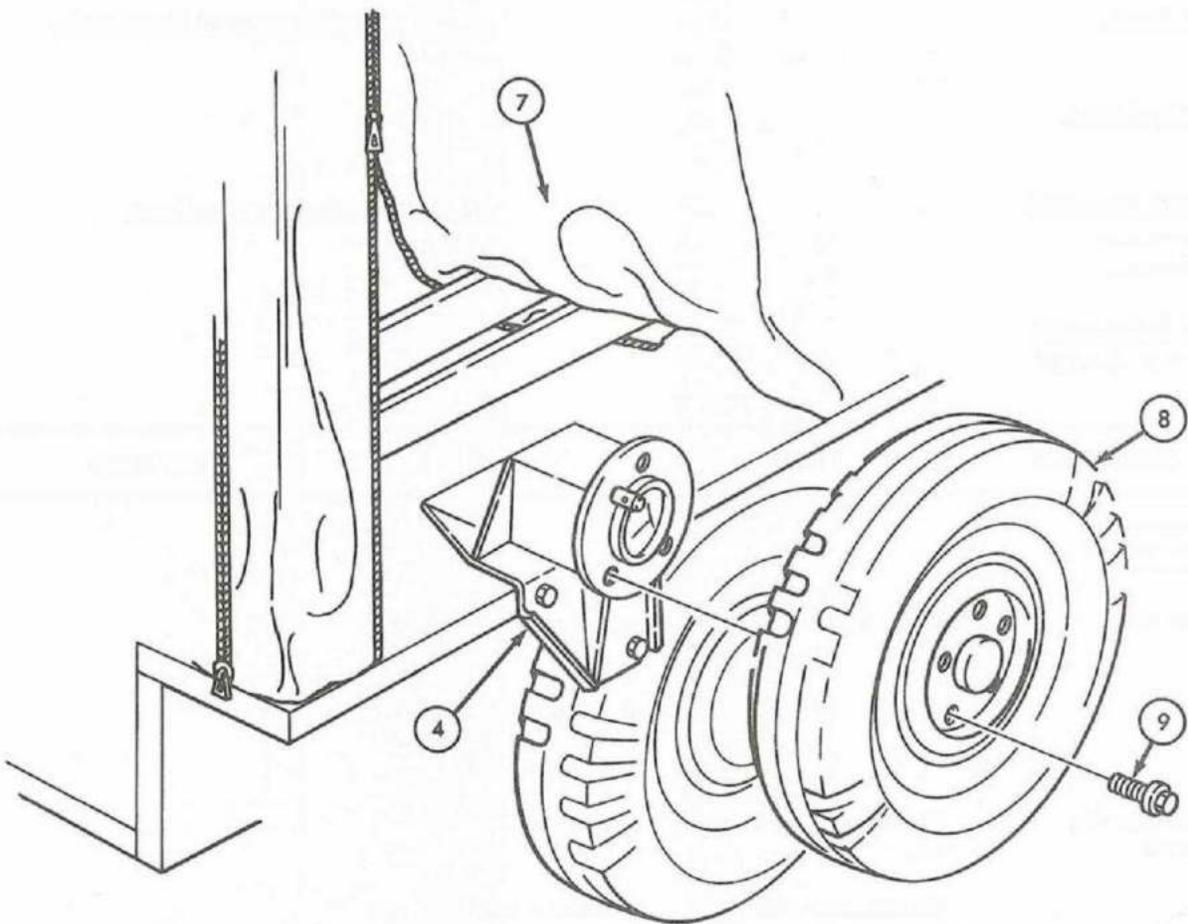
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| 11. | | Spare wheel mounting support (4) | Secure to vehicle (6) with two capscrews (5), one reinforcement plate (3), two lockwashers (2), and two nuts (1). | Finger tighten only. |
| 12. | | Nine remaining capscrews (5), lockwashers (2), and nuts (1) | Place in spare wheel mounting support (4) and secure. | |
| 13. | | Eleven capscrews (5) and nuts (1) | Tighten 17-22 lb-ft (23-30 N•m). | |



TA 155966

10-35. Spare Wheel Mounting Support Assembly Maintenance (Cont'd)

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
14.		Right side curtain (7)	Pull downward and zip rear corner.	
15.		Spare wheel and tire (8)	Secure to mounting support (4) with three capscrew-assembled washers (9).	



10-36. Body Extension Maintenance (M718A1 Ambulance)

This task covers:

a. Removal

b. Installation

INITIAL SETUP:

Applicable Models

M718A1

Equipment Condition Reference

TM 9-2320-218-10
Para 5-42
Para 10-35

Condition Description

Left rear litter rail support removed.
Rear composite light assembly removed.
Spare wheel mounting support removed.

Test Equipment

None

Special Tools

None

Special Environmental Conditions

None

Materials/Parts

None

Personnel Required

One mechanic
One assistant

General Safety Instructions

None

Manual References

TM 9-2320-218-20P

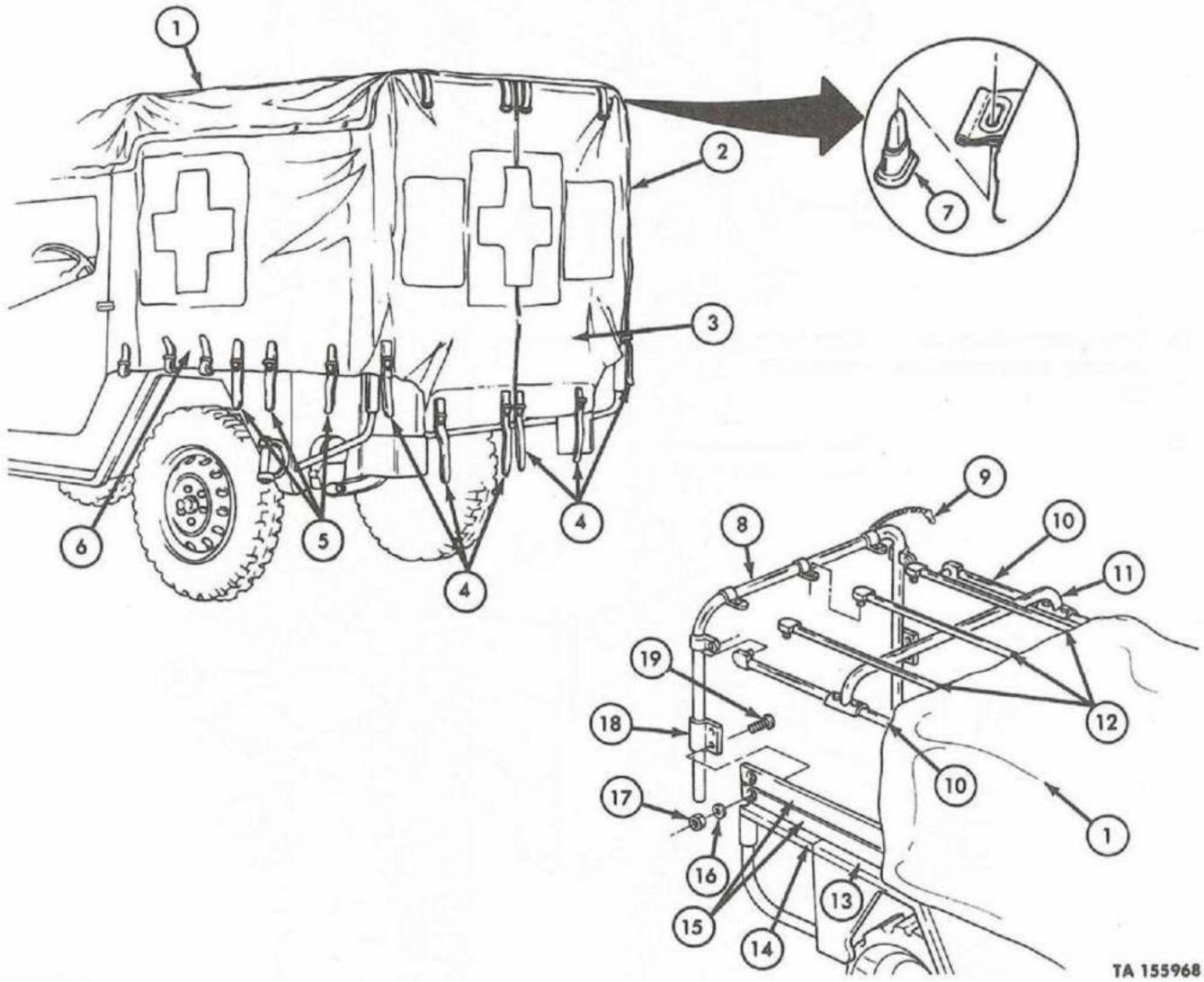
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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a. REMOVAL

1.	Soft top (1)	Rear curtain (3)	<p><i>a.</i> Unfasten six straps (4).</p> <p><i>b.</i> Unzip left and right corners and flip up onto top (1).</p>	
2.	Left soft-top side curtain (6)	Three rear straps (5)	Unfasten.	
3.		Sixteen turn button fasteners (7)	Unfasten from top and sides of rear bow (8).	
4.	Left and right soft-top side curtains (6) and (2) to side supports (10)	Eight turn button fasteners (7)	Unfasten four from each and flip top (1) and sides (6) and (2) forward to intermediate bow (11).	

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

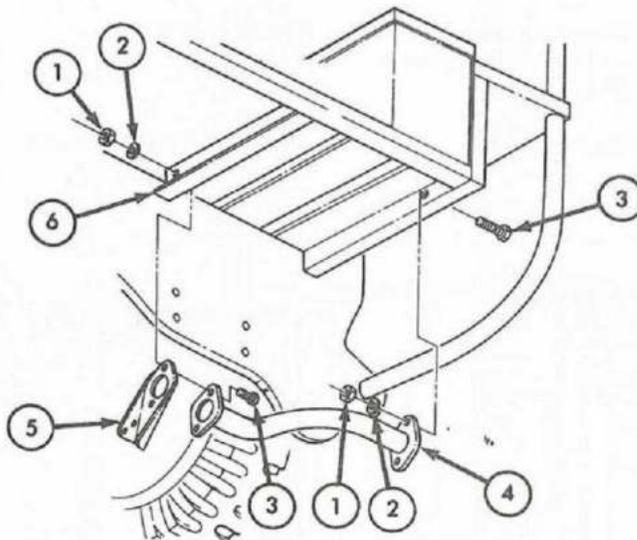
STEP NO.	LOCATION	ITEM	ACTION	REMARKS
5.	Four seat back supports (15) to rear retainers (18)	Four locknuts (17), flat washers (16), and carriage bolts (19)	Remove.	Allow rear of seat back supports (15) to swing down and rest on seats (13).
6.	Three top supports (12) and two side supports (10) to rear bow (8)	Five ring and chain retainers (9)	Remove.	
7.		Three top supports (12) and two side supports (10)	Remove from rear. bow (8).	Allow side supports (10) to swing down toward seats (13).
8.		Rear bow (8)	Lift up and remove from body extensions (14).	



TA 155968

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

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
9.	Tailpipe extension (4) to center body extension (6)	Two nuts (1), lock-washers (2), and capscrews (3)	Remove.	
10.		Tailpipe extension (4) and support (5)	Remove from center body extension (6).	



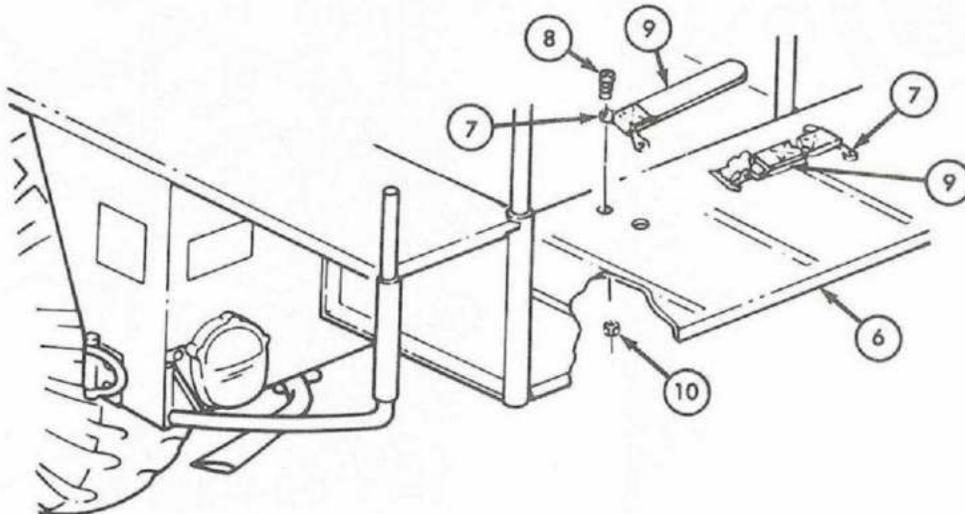
11. Two footman loops (7) to center body extension (6)

Four locknuts (10) and screws (8)

Remove.

12. Two footman loops (7) and belts (9)

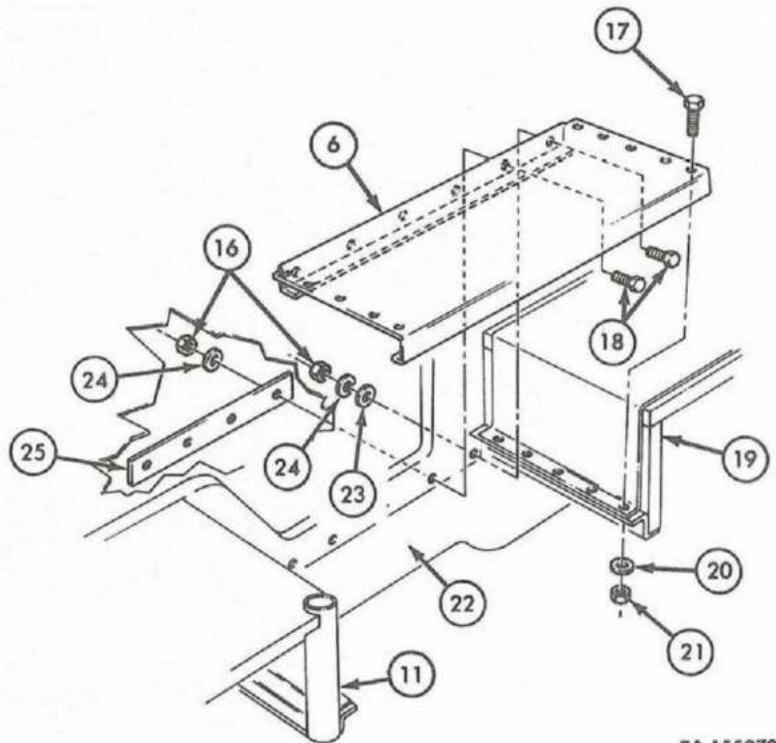
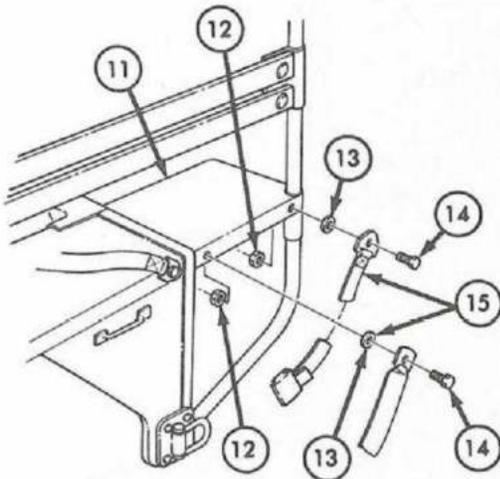
Remove from center body extension (6).



TA 155969

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

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
13.	Seatbelt (15) to left body extension (11)	Two nuts (12), washers (13), and capscrews (14)	Remove.	
14.		Seatbelt (15)	Remove from left body extension (11).	
15.	Center body extension (6) to left and right body extensions (11) and (19)	Ten nuts (21), lock-washers (20), and capscrews (17)	Remove.	
16.	Center body extension (6) to rear of vehicle (22)	Six nuts (16), lock-washers (24), two flat washers (23), one reinforcement plate (25), and six capscrews (18)	Remove.	
17.		Center body extension (6)	Remove from vehicle (22).	



TA 155970

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

STEP NO.	LOCATION	ITEM	ACTION	REMARKS
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NOTE

Left and right body extensions are removed identically. Removal of left body extension is covered below.

18.	Body extension brace (9) to rear of vehicle (10)	Two nuts (11), lockwashers (6), flat washers (7), and capscrews (8)	Remove.	
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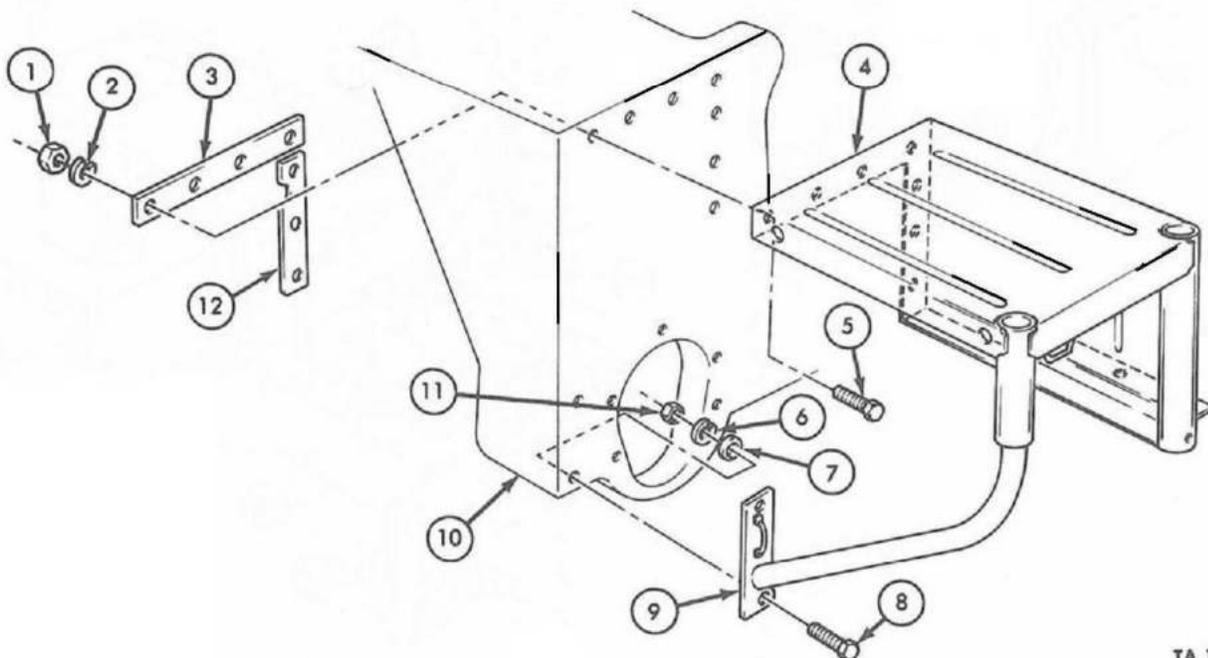
NOTE

Assistant will support rear of body extension while mechanic removes capscrews.

19.	Body extension (4) to rear of vehicle (10)	Seven nuts (1), lockwashers (2), two reinforcement plates (3) and (12), and seven capscrews (5)	Remove.	Tag left four-holed reinforcement plate (3) for reassembly.
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20.	Body extension (4)	Remove from vehicle (10).		
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21.		Repeat steps 18 through 20 for right body extension removal.		
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TA 155971