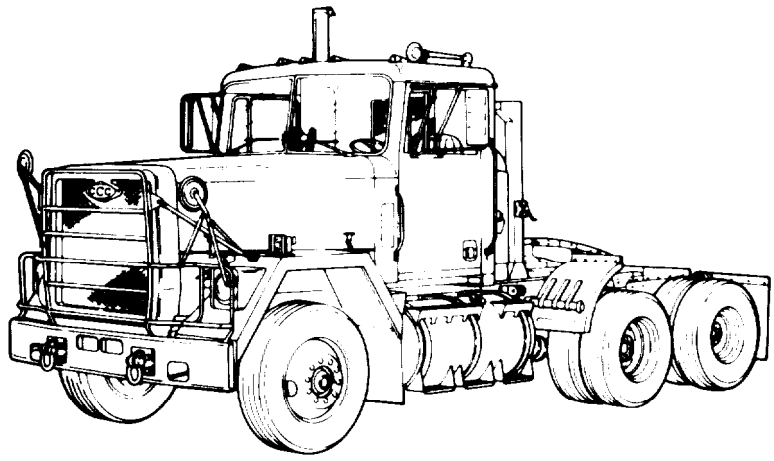
TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6 x 4, MQ 15A1

(NSN 2320-01-125-2640)



HEADQUARTERS,
DEPARTMENT OF THE ARMY

DECEMBER 1983

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WARNING

Snaprings are spring steel and may pop off when being removed. Wear a face shield when removing snaprings to prevent personal injury.

WARNING

When using a hydraulic press for removal or installation of bearings, wear a face shield to prevent possible injury to personnel.

WARNING

Compressed air used for cleaning or repair purposes will not exceed 30 psi. Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.).

WARNING

To avoid injury, do not work in engine compartment with engine running.

WARNING

Direct all personnel to stand clear during hoisting operations. A heavy or swinging load can cause severe injury.

WARNING

Use extreme care when handling broken glass. Broken, chipped, or cracked glass can cause serious injury. When removing broken glass, wear protective face shield and gloves.

TECHNICAL MANUAL
TM 9-2320-283-34-2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, *16 December 1983*

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6 X 4, M915A1

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to Commander, U.S. Army Tank-Automotive Command, ATTN: DRSTA-MB, Warren, MI 48090.. A reply will be furnished to you.

VOLUME 2 OF 2

Section VII. FRONT AXLE

3-58. GENERAL.

This section provides procedures authorized at direct and general support maintenance levels to replace front axle components. To find a specific procedure contained in this section, see the task summary below:

3-59. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
Two (MOS-63W).

REFERENCE (TM)
TM92320-283-10
TM 9-2320-283-20.

TROUBLESHOOTING REFERENCES
None.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-10.	Air drained from air system.
TM 9-2320-283-20.	Drums, hubs, bearings, and seals removed.
TM 9-2320-283-20.	Spiders and back plates removed.
TM 9-2320-283-20.	Shocks removed.
TM 9-2320-283-20.	Drag link removed.

SPECIAL ENVIRONMENTAL CONDITIONS
None.

GENERAL SAFETY INSTRUCTIONS
Block rear wheels.

LIST OF TASKS

TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
Front Axle Replacement	3-60	
a. Removal.	3-60a	
b. Cleaning.	3-60b	
c. Inspection.	3-60c	
d. Installation.	3-60d	

FRONT AXLE.

3-60. FRONT AXLE REPLACEMENT.

THIS TASK COVERS:

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

TEST,EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
Two (MOS-63W).

REFERENCES (TM
TM 9-2320-283-10
TM 9-2320-283-20

TROUBLESHOOTING REFERENCES
None.

EQUIPMENT CONDITION

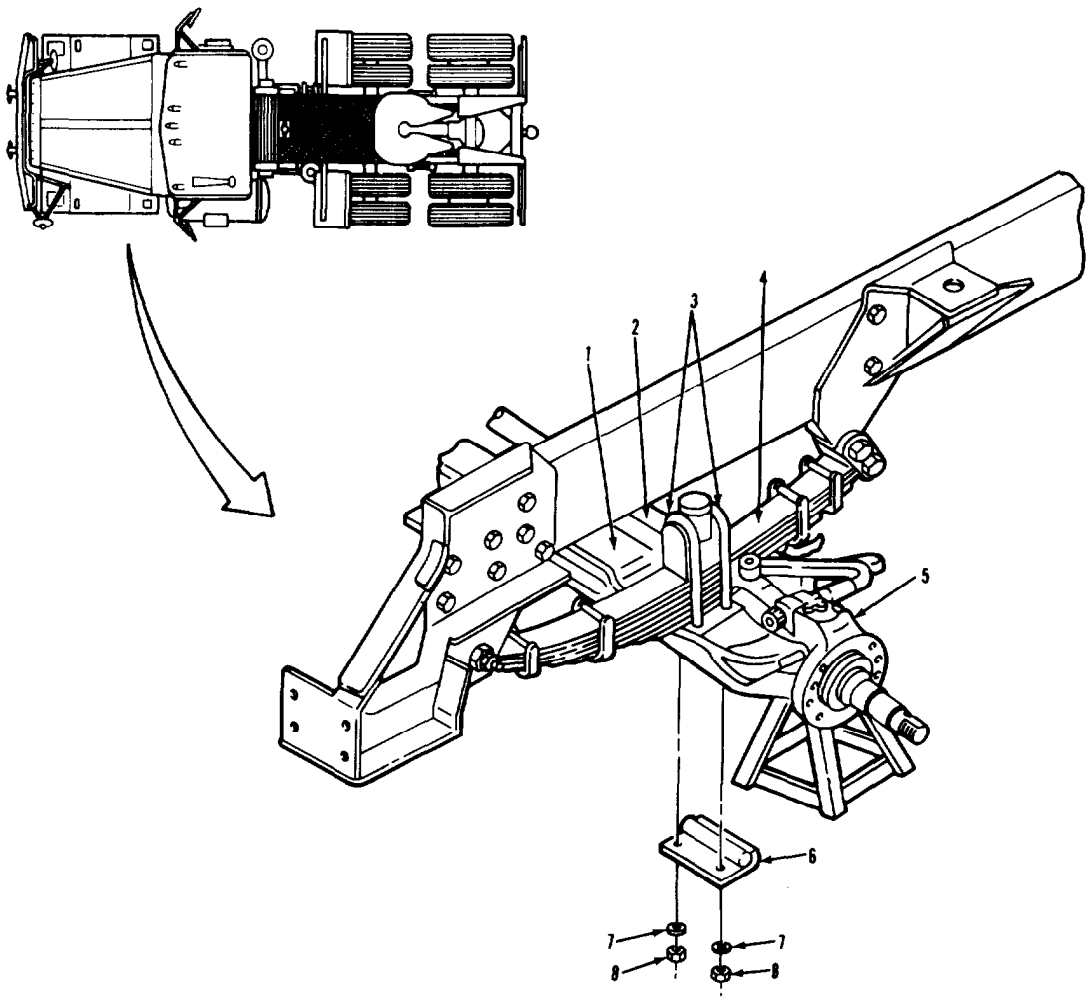
PARAGRAPH	CONDITION DESCRIPTION
TM-9-2320-283-10	Air drained from air system.
TM 9-2320-283-20.	Drums, hubs, bearings, and seals removed.
TM 9-2320-283-20.	Brake shoes, spiders, and backplates removed.
TM 9-2320-283-20.	Shocks removed.
TM 9-2320-283-20.	Drag link removed.

SPECIAL ENVIRONMENTAL CONDITIONS
None.

GENERAL SAFETY INSTRUCTIONS
Block rear wheels.

FRONT AXLE.

3-60. FRONT AXLE REPLACEMENT (Continued).



LEGEND:

1. FRONT NONDRIVING AXLE ASSEMBLY
2. TIE ROD TUBE ASSEMBLY
3. U-BOLT (4)
4. FRONT SPRING ASSEMBLY (2)
5. STEERING MECHANISM
6. LOWER SHOCK MOUNTING BRACKET (2)
7. FLAT WASHER (8)
8. HEXAGON HEAD NUT (8)

TA 23338334

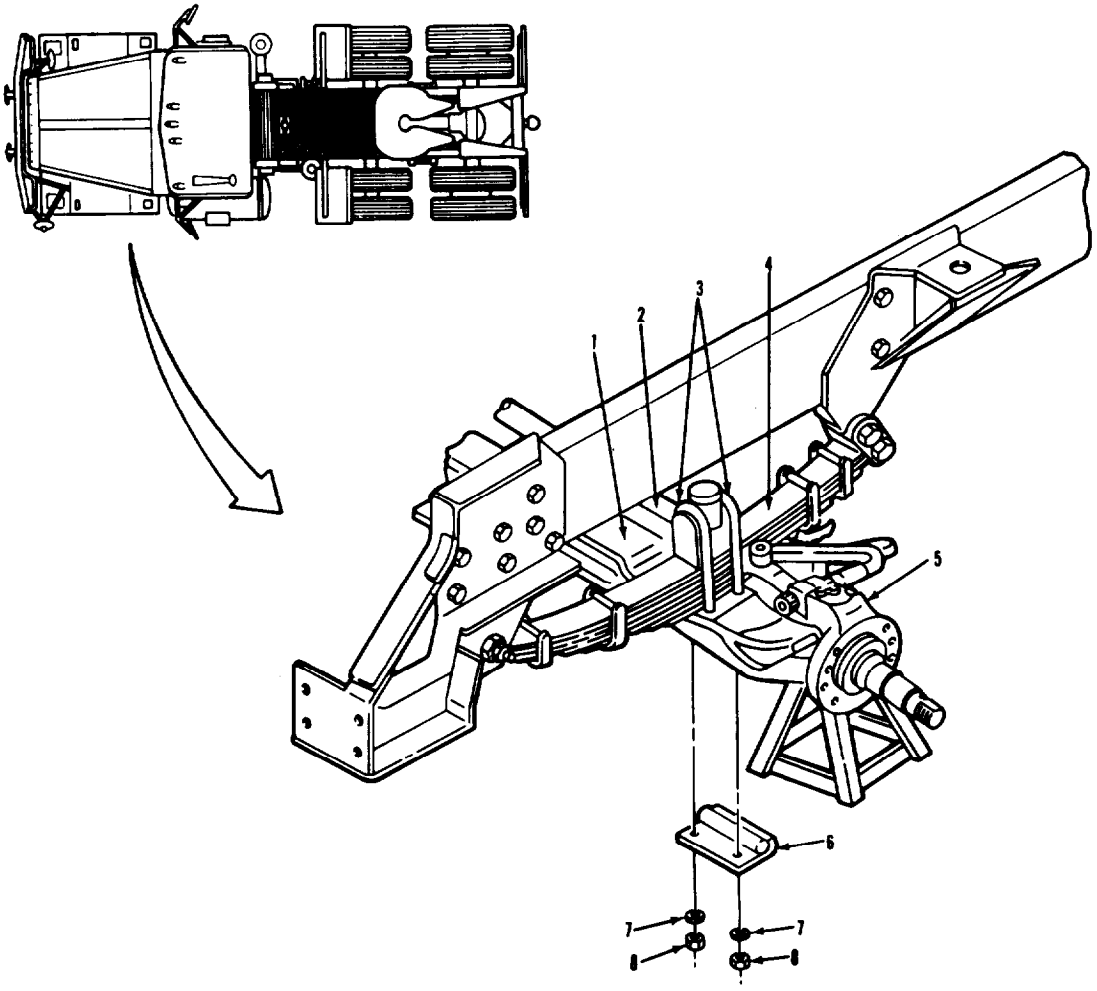
FRONT AXLE.

3-60. FRONT AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL		
	NOTE Before removing front axle, make sure front of vehicle is supported by two jack stands as shown in illustration.	
1. Front nondriving axle assembly (1).	Position floor jack under center and raise until weight of item (1) is supported.	Use floor jack rated for ten ton capacity.
2. Eight nuts (8), washers (7), and two brackets (6).	Remove from four items (3) and item (1).	It is not necessary to remove four items (3) from two items (5).
3. Front nondriving axle assembly (1).	a. Using floor jack, lower and remove from under vehicle. b. Using suitable lifting device, lift off of floor jack and place on clean work surface.	Have assistant help guide item (1) during removal.
B. CLEANING		
4. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
5. All parts.	Inspect.	Refer to paragraph 3-5. If either items (20) or items (4) are damaged, refer to TM 9-2320-283-20 for repair. If item (1) is damaged, replace it with items (5) and (2) attached.

FRONT AXLE.

3-60. FRONT AXLE REPLACEMENT (Continued).



LEGEND:

1. FRONT NONDRIVING AXLE ASSEMBLY
2. TIE ROD TUBE ASSEMBLY
3. U-BOLT (4)
4. FRONT SPRING ASSEMBLY (2)
5. STEERING MECHANISM
6. LOWER SHOCK MOUNTING BRACKET (2)
7. FLAT WASHER (8)
8. HEXAGON HEAD NUT (8)

TA 238335

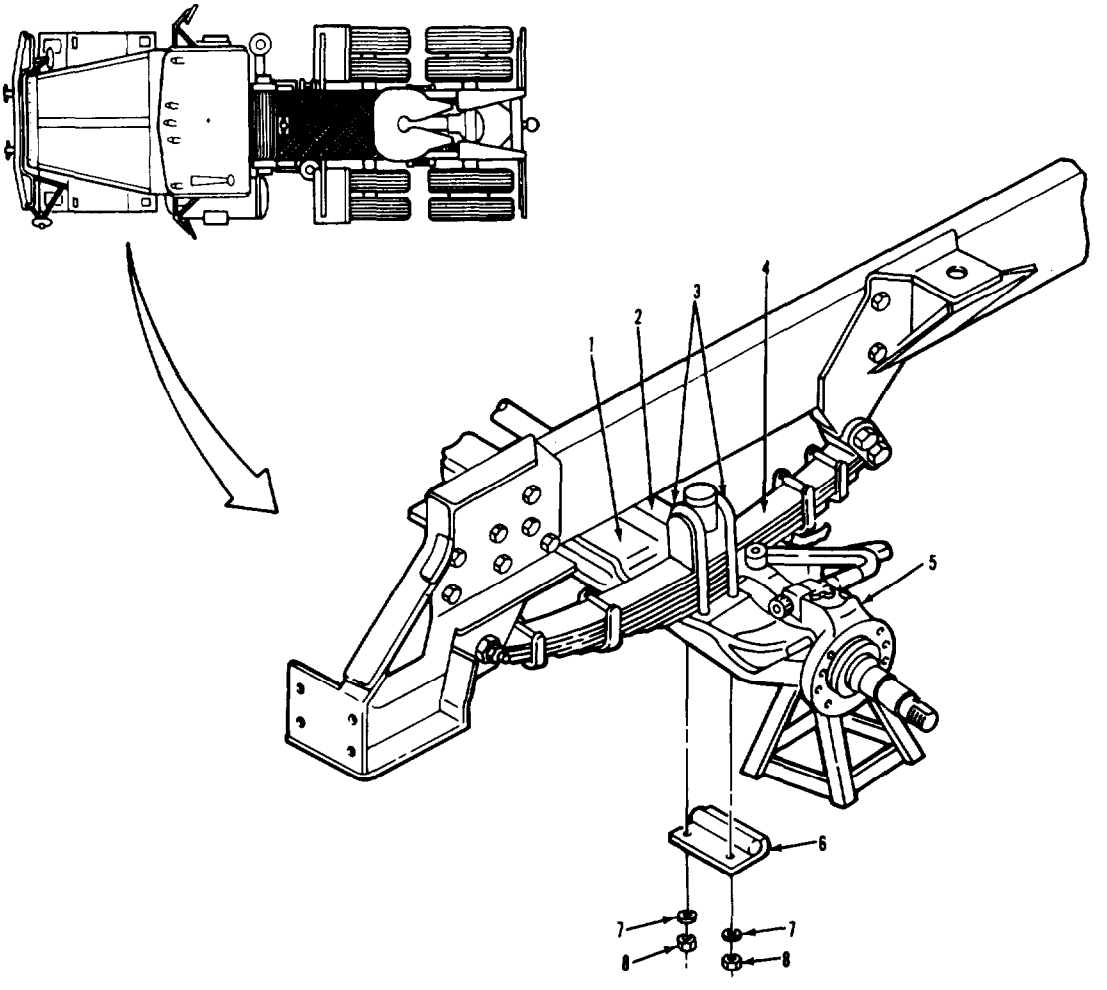
FRONT AXLE.

3-60. FRONT AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION.		
6. Front nondriving axle assembly (1).	a. Using suitable lifting device, place on floor jack.	Make sure item (1) is centered on floor jack before doing step 6b.
	b. Using floor jack, roll into position under vehicle and raise until item (1) is against two items (4).	Have assistant help guide item (1) during installation. Make sure center bolt of item (4) enters guide hole of item (1).
	NOTE Tighten each nut so that approximately the same number of threads protrude beyond nut on each side of U-bolt.	
7. Two brackets (6): eight nuts (8), and four items (3). washers (7).	Install on item (1) and	Torque eight items (8) to 350-375 lb-ft.
	NOTE Follow-on maintenance action required: Install drag link (TM 9-2320-283-20). Install shocks (TM 9-2320-283-20). Install brake shoes, spiders and backplates (TM 9-2320-283-20). Install drums, hubs, bearings, and seals (TM 9-2320-283-20). Remove jack stands and jack. Check front end alinement and adjust if necessary (TM 9-2320-283-20). Road test vehicle and check for vibration, steering, or brake problems.	

FRONT AXLE.

3-60. FRONT AXLE REPLACEMENT (Continued).



LEGEND:

1. FRONT NONDRIVING AXLE ASSEMBLY
2. TIE ROD TUBE ASSEMBLY
3. U-BOLT (4)
4. FRONT SPRING ASSEMBLY (2)
5. STEERING MECHANISM
6. LOWER SHOCK MOUNTING BRACKET (2)
7. FLAT WASHER (8)
8. HEXAGON HEAD NUT (8)

TA 238336

Section VIII. REAR TANDEM AXLES

3-61 GENERAL .

This section provides procedures authorizedat direct and general support maintenance levels to rep1ace and repair rear tandem axle components. To find a specific procedure contained in this section, see the task summary below:

3-62. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
(Refer to specific paragraph for this information).	

TEST EQUIPMENT
None.

SPECIAL TOOLS
Flange tool
(33287) J3453.

Staking tool
(33287) J-26883.

MATERIALS/PARTS (P/N)
Grease, automotive and artillery
Item 7, Appendix B.
Sealant, silicone rubber
Item 27, Appendix B.
Oil, lubricating, engine, OE/HDO-10
Item 16, Appendix B.
Oil, lubricating: OE/HDO-30
Item 17, Appendix B.
Seal, oil
(52304) 64656.
Seal, oil
(52304) 63910.
O-ring, output shaft (2)
(52304) 46526.
Locknut, hex head (8)
(52304) 57637.
O-ring
(52304) 10620.
Cone, inner pinion bearing
(52304) 85439.
Cone, outer pinion bearing
(52304) 110846.
Cup, inner pinion bearing
(52304) 14217.
Cup, outer pinion bearing
(52304) 35502.
Pin, cotter
(52304) 90873.
Screw, hex head (12)
(52304) 96271.
Grommet, push rod
(52304) 32826.
Grommet, piston
(52304) 32832.
Oiler, piston, felt
(52304) 96916.
Grormnet, cover
(52304) 32831.
Pin, cotter
(52304) 90876.
Cone, pinion bearing (2)
(52304) 12496.
Seal, oil
(52304) 79470.
Cup, pinion bearing (2)
(52304) 12495.
Bearing, pinion pilot
(52304) 15828.
Cup differential bearing
(52304) 9803.
Cone, differential
(52304) 27813.
bearing
Cone, differential bearing
(52304) 6082.
Cup differential bearing
(52304) 90943.
Pin, dowel (16)
(52304) 7641.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

REAR TANDEM AXLES.

3-62. TASK SUMMARY (Continued).

INITIAL SETUP (Continued).

REFERENCES (TM
TM 9-2320- 283-10.
TM 9-2320-283-20.
LO 9-2320-283-12.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

GENERAL SAFETY INSTRUCTIONS
Block front and rear tires.

Snaprings are made from spring steel and may pop off during removal. Wear face shield to prevent possible injury.

When using a hydraulic press for removal or installation of bearings, wear a face shield to prevent possible injury.

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
1	Forward-Rear Axle Replacement	3-63	2-7
	a. Removal.	3-63a	
	b. Cleaning.	3-63b	
	c. Inspection.	3-63c	
	d. Installation.	3-63d	
2	Forward-Rear Axle Housing and Cover Repair	3-64	2-7
	a. Disassembly.	3-64a	
	b. Cleaning.	3-64b	
	c. Inspection.	3-64c	
	d. Assembly.	3-64d	
3	Forward-Rear Axle Yoke and Oil Seal Replacement	3-65	2-7
	a. Removal.	3-65a	
	b. Cleaning.	3-65b	
	c. Inspection.	3-65c	
	d. Installation.	3-65d	
4	Forward-Rear Axle Flange and Oil Seal Replacement	3-66	2-7
	a. Removal.	3-66a	
	b. Cleaning.	3-66b	
	c. Inspection.	3-66c	
	d. Installation.	3-66d	

REAR TANDEM AXLES.

3-62. TASK SUMMARY (Continued).

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
5	Differential Carrier Cover Replacement	3-67	2-7
	a. Removal.	3-67a	
	b. 'Inspection.	3-67b	
	c. Checking End Play.	3-67c	
6	Differential Carrier Cover Repair	3-68	2-7
	a. Disassembly.	3-68a	
	b. Cleaning.	3-68b	
	c. Inspection.	3-68c	
	d. Installation.	3-68d	
	e. Adjusting End Play.	3-68e	
7	Forward-Rear Axle Carrier Replacement	3-69	
	a. Removal.	3-69a	
	b. Cleaning.	3-69b	
	c. Inspection.	3-69c	
	d. Installation.	3-69d	
8	Forward-Rear Axle Carrier Repair	3-70	2-7
	a. Disassembly.	3-70a	
	b. Cleaning and Inspection.	3-70b	
	c. Assembly.	3-70c	
	d. Adjusting Pinion Bearing Preload.	3-70d	
	e. Adjusting Differential Preload.	3-70e	
	f. Adjusting Ring Gear Backlash.	3-70f	
	g. Ring Gear and Pinion Tooth Contact.	3-709	
	h. Adjusting Tooth Contact Pattern.	3-70h	
	i. Final Assembly.	3-70i	
9	Differential Lockout Replacement and Repair	3-71	2-7
	a. Disassembly.	3-71a	
	b. Cleaning.	3-71b	
	c. Inspection.	3-71c	
	d. Reassembly.	3-71d	

REAR TANDEM AXLES.

3-62. TASK SUMMARY (Continued).

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
10	Rear-Rear Axle Replacement	3-72	2-7
	a. Removal.	3-72a	
	b. Cleaning.	3-72b	
	c. Inspection.	3-72c	
	d. Installation.	3-724	
11	Rear-Rear Axle Housing Repair	3-73	2-7
	a. Disassembly.	3-73a	
	b. Cleaning.	3-73b	
	c. Inspection.	3-73c	
	d. Assembly.	3-734	
12	Rear-Rear Axle Flange and Oil Seal Replacement	3-74	2-7
	a. Removal.	3-74a	
	b. Cleaning.	3-74b	
	c. Inspection.	3-74c	
	d. Installation.	3-74d	
13	Rear-Rear Axle Carrier Replacement	3-75	2-7
	a. Removal.	3-75a	
	b. Cleaning.	3-75b	
	c. Inspection.	3-75c	
	d. Installation.	3-75d	
14	Rear-Rear Axle Carrier Repair	3-76	2-7
	a. Disassembly.	3-76a	
	b. Cleaning.	3-76b	
	c. Inspection.	3-76c	
	d. Assembly.	3-76d	
	e. Adjusting Pinion Bearing Preload.	3-76e	
	f. Adjusting Differential Preload.	3-76f	
	g. Adjusting Ring Gear Backlash.	3-769	
	h. Ring Gear and Pinion Tooth Contact.	3-76h	
	i. Adjusting Tooth Contact Pattern.	3-76i	
	j. Final Assembly.	3-76j	

REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

EQUIPMENT CONDITION PARAGRAPH TM 9-2320-283-10	CONDITION DESCRIPTION
TM 9-2320-283-20.	Air system draincocks open.
TM 9-2320-283-20.	Drums, hubs, bearings, and seals removed.
TM 9-2320-283-20.	Remove brake assembly.
TM 9-2320-283-20.	Service deck removed.
TM 9-2320-283-20.	Front and rear propeller.
TM 9-2320-283-20.	Disconnect seven air lines.

MATERIALS/PARTS (P/N)
Grease, automotive and artillery
Item 7, Appendix C.

PERSONNEL REQUIRED
Two (MOS-63W).

REFERENCE (TM)
TM 9-230-283-10
TM 9-2320-283-20.

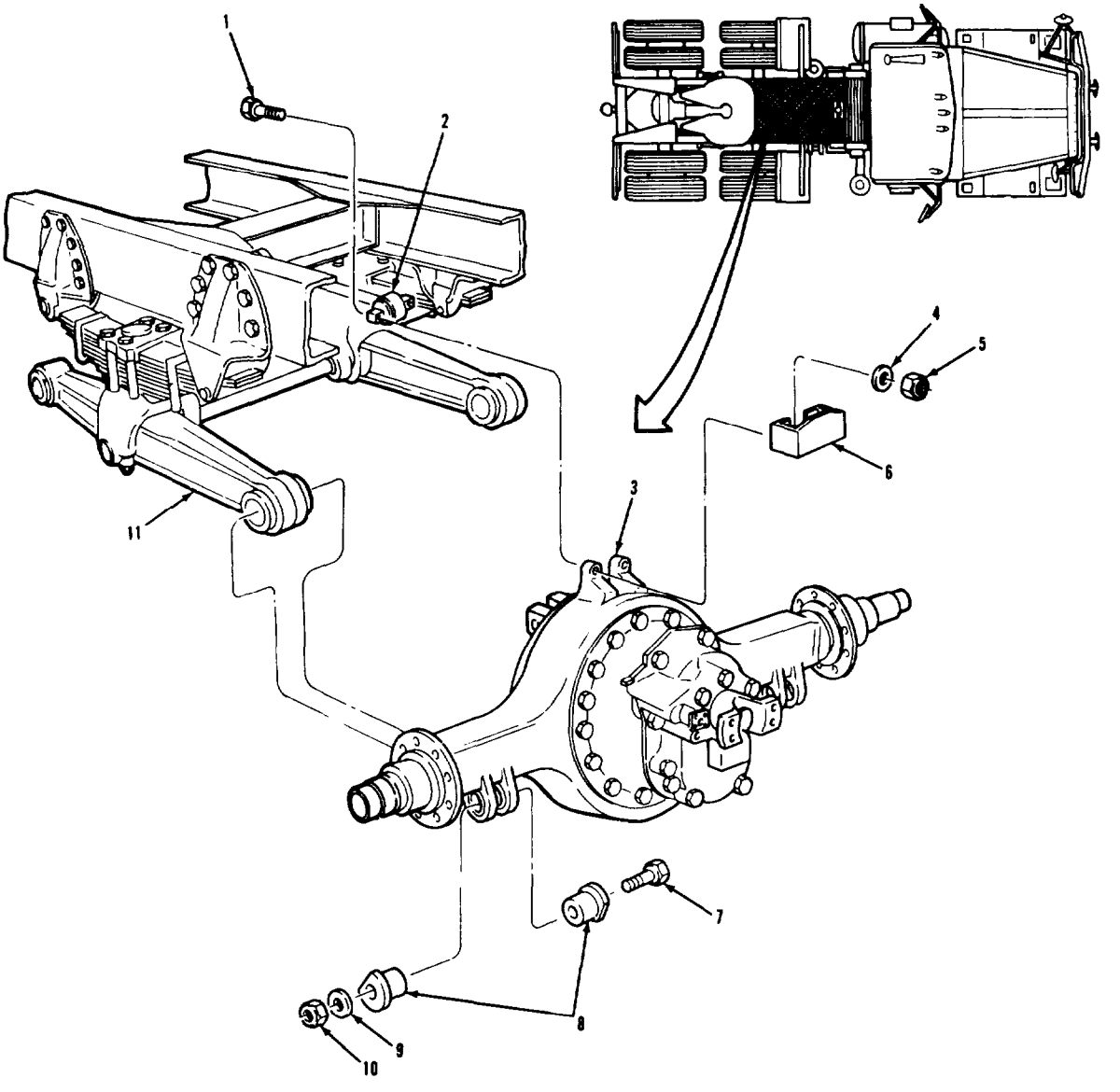
SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
Block front wheels.

TROUBLESHOOTING REFERENCES
paragraph 2-7.

REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (2)
2. TORQUE ROD ASSEMBLY
3. FORWARD-REAR AXLE ASSEMBLY
4. WASHER (2)
5. HEXAGON FLANGE NUT (2)
6. BRACKET
7. HEXAGON HEAD SCREW (2)
8. BEAM END ADAPTER (4)
9. PLAIN HARDENED WASHER (2)
10. HEXAGON HEAD NUT (2)
11. EQUALIZER BEAM (2)

TA 238337

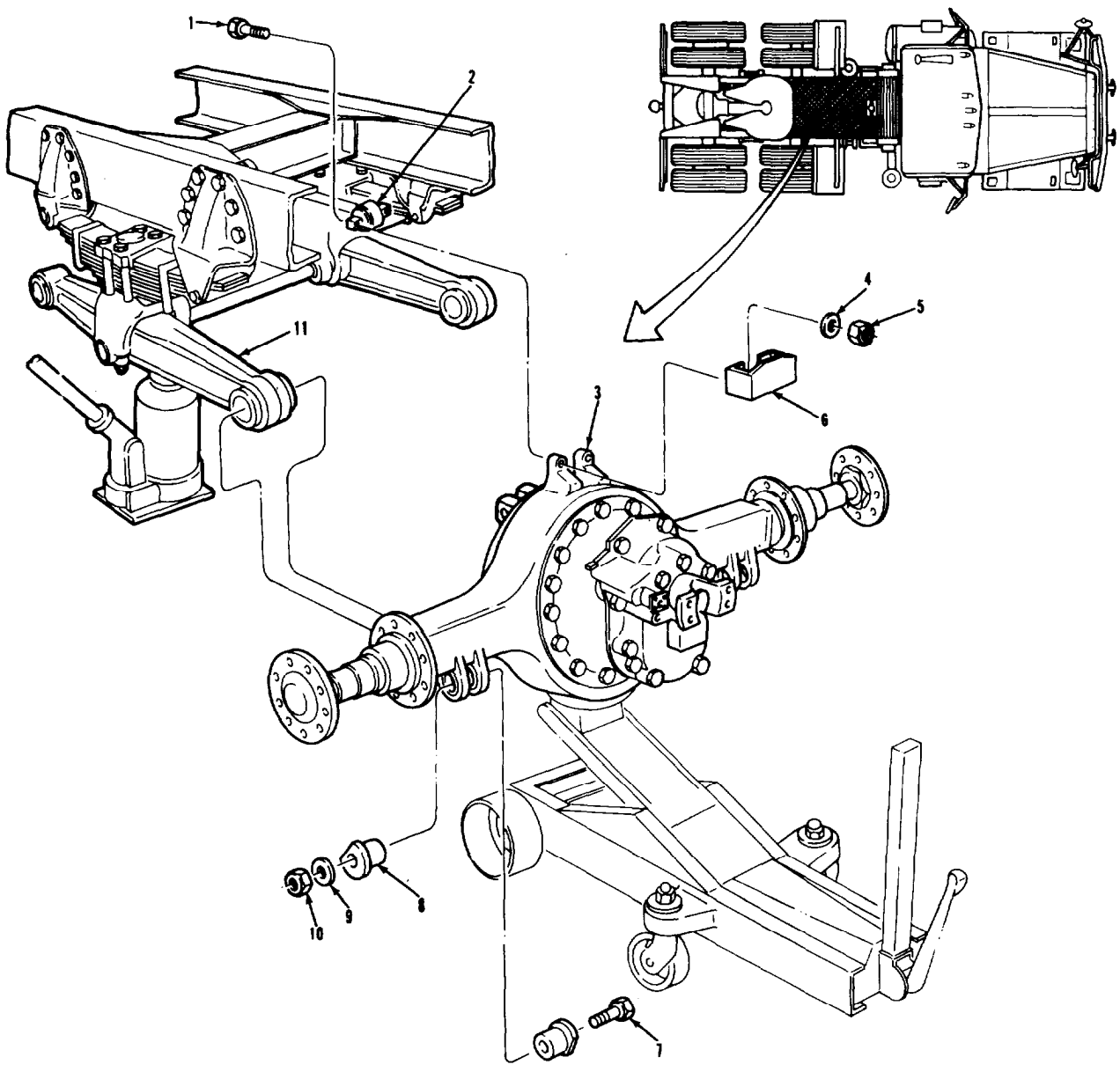
REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
	CAUTION *Position a hydraulic jack under each equalizer beam as shown in illustration. Raise each equalizer beam high enough to remove the weight from the beam end adapters. This will prevent the equalizer beams from dropping once the hex head screws have been removed. *Using a transmission jack, position under axle housing. Wrap a chain around the differential output flange and secure chain to base plate of transmission jack. This will prevent forward rolling of the rear axle after the attaching hardware has been removed.	
	NOTE Removal of forward-rear axle can be made easier if fender on side in which axle is being taken out is removed first.	
1. Two screws (I), washers (9), and nuts (10).	Remove from four items (8).	
2. Four adapters (8).	Remove from two brackets in item (3).	Use a flat chisel and hammer to pry out of item (3).
3. Two nuts (5), washers (4), screws (1), and bracket (6).	Remove from items (2) and (3).	

REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (2)
2. TORQUE ROD ASSEMBLY
3. FORWARD-REAR AXLE ASSEMBLY
4. WASHER (2)
5. HEXAGON FLANGE NUT (2)
6. BRACKET
7. HEXAGON HEAD SCREW (2)
8. BEAM END ADAPTER (4)
9. PLAIN HARDENED WASHER (2)
10. HEXAGON HEAD NUT (2)
11. EQUALIZER BEAM (2)

TA 238338

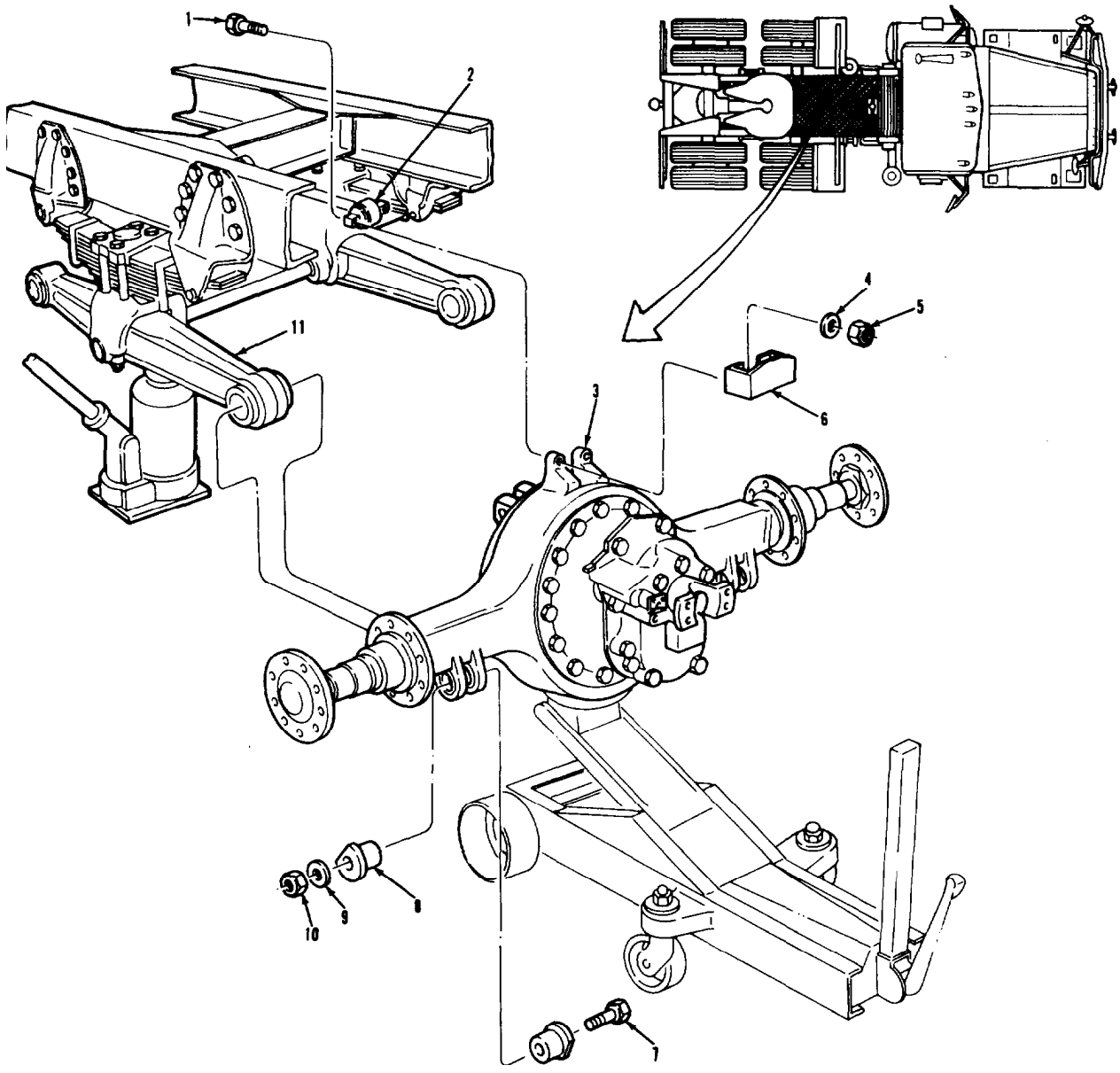
REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
	NOTE Removal of foward-rear axle will be simplified if rear-rear axle is elevated.	
4. Forward-rear axle assembly (3).	Remove from under frame.	Pull item (3) forward so it will clear item (11). One assistant may be required to help remove item (3) from under frame. When item (3) is clear of item (ll), lower transmission jack.
B. CLEANING.		
5. All parts.	Clean.	
C. INSPECTION.		
6. All parts.	Inspect.	
D. INSTALLATION.		
7. Forward-rear axle assembly (3).	Carefully position and install under frame.	
	NOTE After axle housing has been carefully positioned under frame and onto equal-izer beams, it may be necessary attach a floor crane to yoke of axle housing and slowly raise front of axle housing so it rolls upward. This will help position the torque rod to the top of the axle housing support.	

REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (2)
2. TORQUE ROD ASSEMBLY
3. FORWARD-REAR AXLE ASSEMBLY
4. WASHER (2)
5. HEXAGON FLANGE NUT (2)
6. BRACKET
7. HEXAGON HEAD SCREW (2)
8. BEAM END ADAPTER (4)
9. PLAIN HARDENED WASHER (2)
10. HEXAGON HEAD NUT (2)
11. EQUALIZER BEAM (2)

TA 238339

REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
8. Torque rod assembly (2) and bracket (6).	Position onto top of item (3).	Use a drift punch to properly aline the holes. Leave the drift punch in one of the holes.
9. Bracket (6), two screws (1). washers (4), and nuts (5).	Install into items (2) and (3). Torque two items (5) to 105 lb-ft.	
10. Four adapters (8).	Insert in lower support bracket of item (3)	Be sure flat side of item (8) is installed in the vertical position. Prelube the outside diameter of the item (8) with grease for ease of insertion.
11. Two screws (7), washers (9), and nuts (10).	Install in four items (8) and torque to 210-240 lb-ft.	

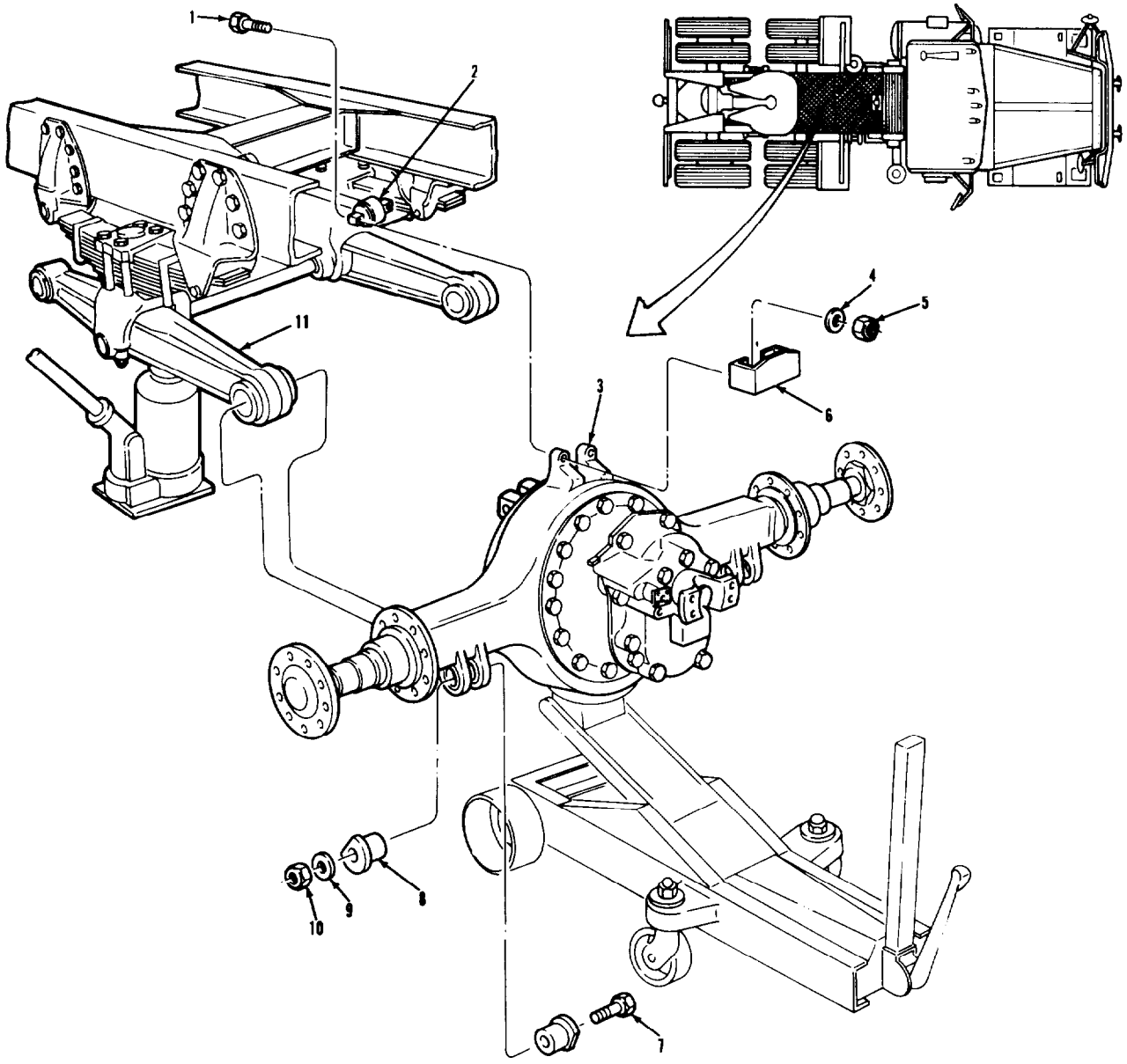
NOTE

Follow-on maintenance action required:

Connect seven air lines (TM 9-2320-283-20).
Connect front and rear propeller shafts (TM 9-2320-283-20).
Install service deck (TM 9-2320-283-20).
Install brake assembly (TM 9-2320-283-20).
Install drums, hubs, bearings and seals (TM 9-2320-283-20).

REAR TANDEM AXLES.

3-63. FORWARD-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (2)
2. TORQUE ROD ASSEMBLY
3. FORWARD-REAR AXLE ASSEMBLY
4. WASHER (2)
5. HEXAGON FLANGE NUT (2)
6. BRACKET
7. HEXAGON HEAD SCREW (2)
8. BEAM END ADAPTER (4)
9. PLAIN HARDENED WASHER (2)
10. HEXAGON HEAD NUT (2)
11. EQUALIZER BEAM (2)

TA 238340

REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Sealant, silicone rubber
Item 27, Appendix B.

PERSONNEL REQUIRE0
One (MOS-63W).

REFERENCE (TM)

TROUBLESHOOTING REFERENCES
paragraph 2-7.

EQUIPMENT CONDITION

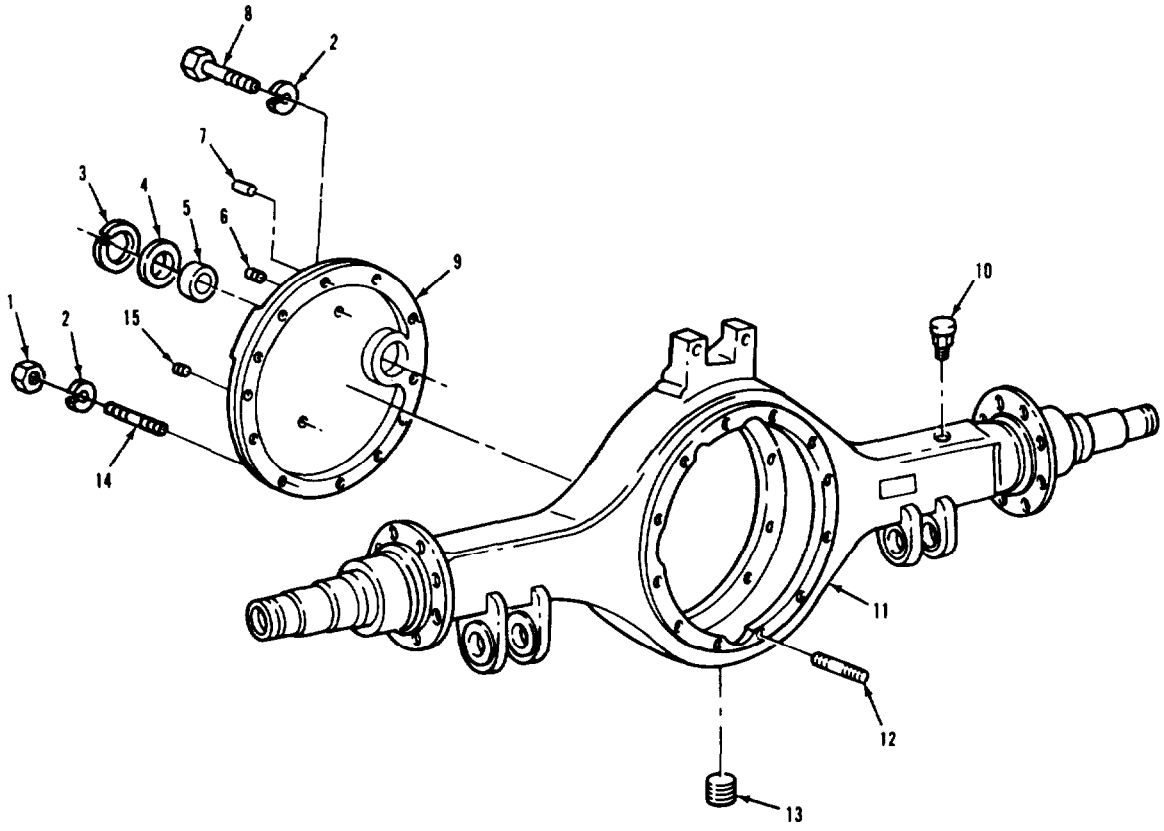
PARAGRAPH	CONDITION DESCRIPTION
3-63.	Forward-rear axle housing removed from truck.
3-69.	Forward-rear carrier and carrier cover removed from housing.

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
Wear face shield when removing snapring.

REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).



LEGEND:

1. HEX HEAD NUT (11)
2. LOCKWASHER (12)
3. SNAPRING
4. OUTPUT SHAFT BEARING
5. OUTPUT SHAFT BUSHING
6. MAGNETIC FILLER PLUG
7. DOWEL PIN (2)
8. SCREW
9. AXLE HOUSING COVER
10. BREATHER VENT
11. FORWARD-REAR AXLE HOUSING
12. STUD (11)
13. HOUSING DRAINPLUG
14. STUD (11)
15. HOLE PLUG

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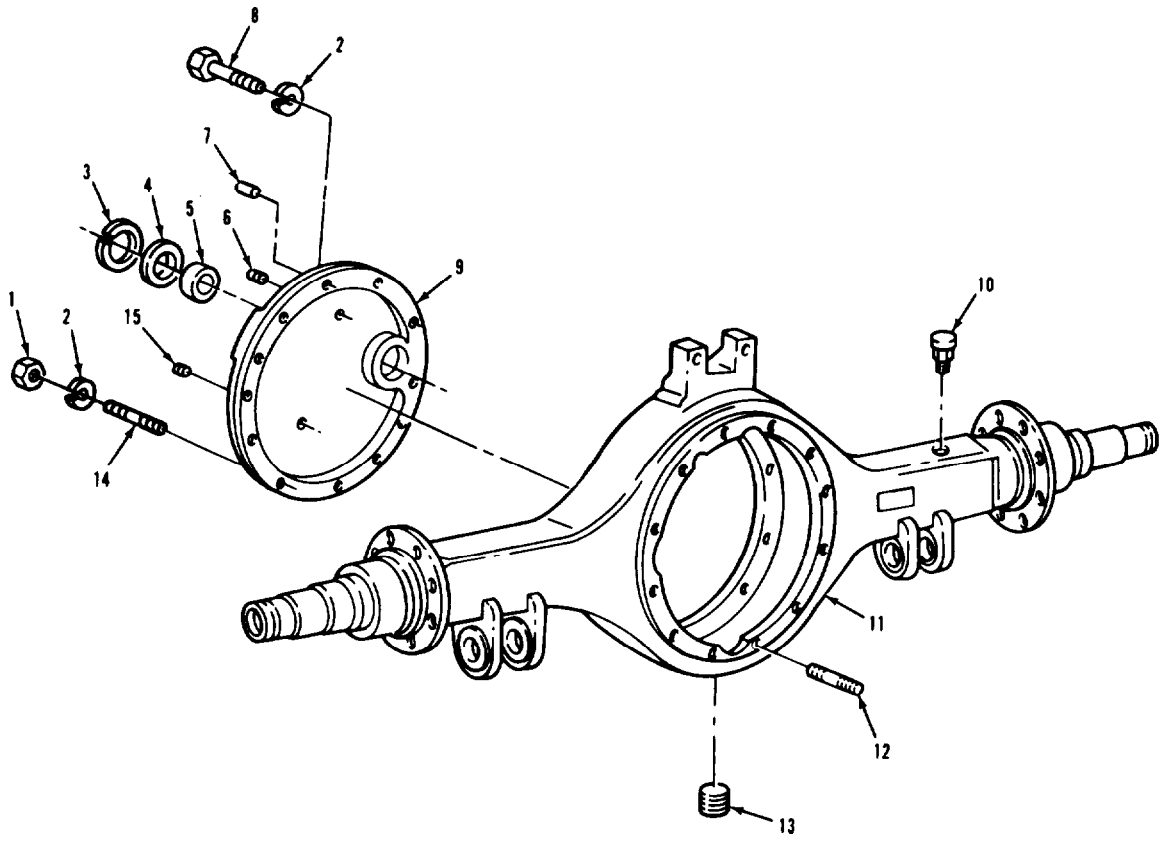
REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	WARNING Snapring is spring steel and may pop off when removing. Wear a face shield when removing to prevent personal injury.	
1. Snapring (3).	Remove from item (9).	
	NOTE Output shaft bearing and bushing can be replaced with axle housing cover removed or installed.	
2. Bearing (4) and bushing (5).	Remove from item (9).	Items (4) and (5) are ordered as a set and are replaced as a set.
3. Plug (6), plug (15), drainplug (13), and vent (10).	Remove from items (9) and (11) l	
4. Eleven nuts (1) and lockwashers (2).	Remove from items (14).	
5. Screw (8) and lockwasher (2).	Remove from item (9).	
6. Cover (9).	Remove from item (11).	
	NOTE Do not remove dowel pins unless damaged or loose. If necessary to remove proceed with step 7.	
7. Two pins (7).	Remove from item (11).	Use vise grips to remove.

REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).



LEGEND:

1. HEX HEAD NUT (11)
2. LOCKWASHER (12)
3. SNAPRING
4. OUTPUT SHAFT BEARING
5. OUTPUT SHAFT BUSHING
6. MAGNETIC FILLER PLUG
7. DOWEL PIN (2)
8. SCREW
9. AXLE HOUSING COVER
10. BREATHER VENT
11. FORWARD-REAR AXLE HOUSING
12. STUD (11)
13. HOUSING DRAINPLUG
14. STUD (11)
15. HOLE PLUG

TA 238342

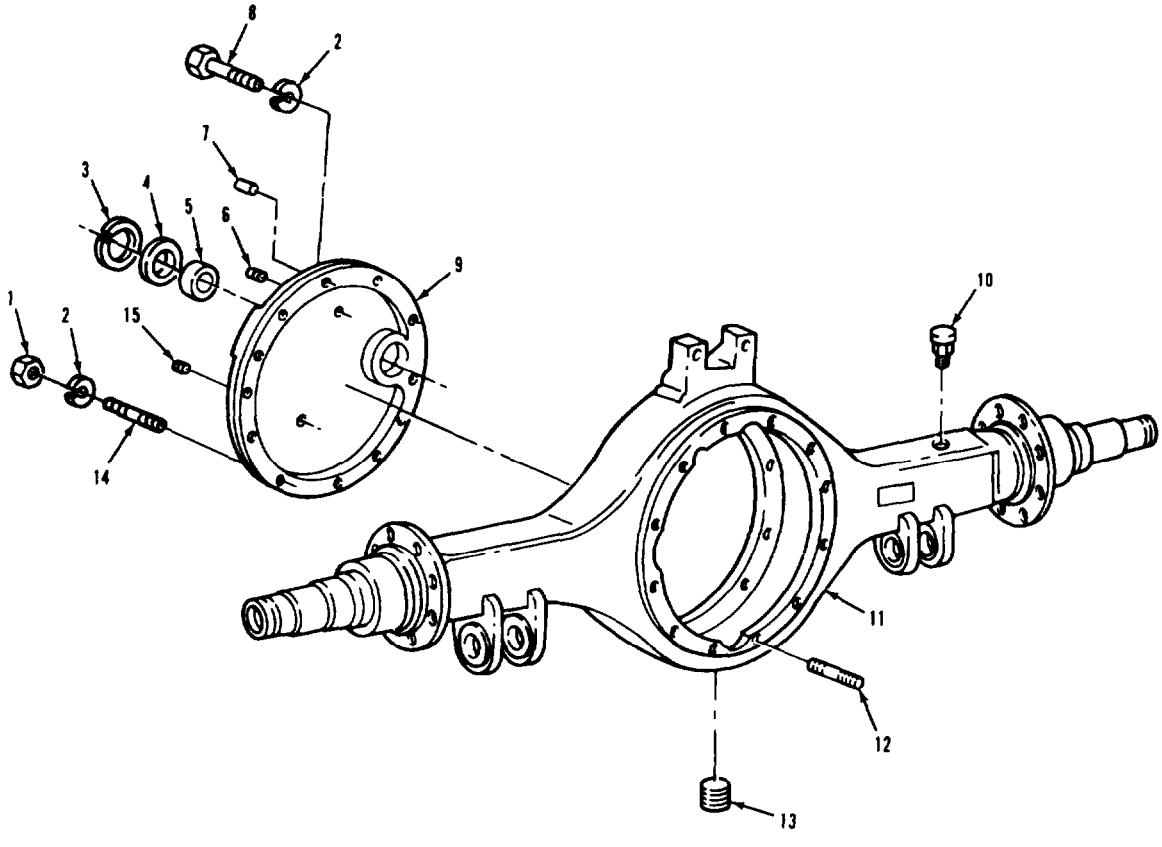
REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
	NOTE Do not remove any of the eleven studs unless damaged or worn. Remove only what is necessary. If necessary to remove, proceed with step 8.	
8. Eleven studs (12) or (14)	Remove from item (11) or (9) as necessary.	Discard damaged or worn parts.
B. CLEANING.		
9. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION		
10. All parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY		
	CAUTION Although the forward-rear axle housing has been cleaned according to para 3-4, recheck for any moisture or dirt that may have collected in the housing.	
11. Two new pins (7).	Install in item (11).	
12. Housing (11).	Apply silicone to back side of mating surface.	Silicone will set in twenty minutes. Install cover before compound dries. Use double nut method for stud installation.

REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).



LEGEND:

1. HEX HEAD NUT (11)
2. LOCKWASHER (12)
3. SNAPRING
4. OUTPUT SHAFT BEARING
5. OUTPUT SHAFT BUSHING
6. MAGNETIC FILLER PLUG
7. DOWEL PIN (2)
8. SCREW
9. AXLE HOUSING COVER
10. BREATHER VENT
11. FORWARD-REAR AXLE HOUSING
12. STUD (11)
13. HOUSING DRAINPLUG
14. STUD (11)
15. HOLE PLUG

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REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
13. Cover (9).	Install on item (11).	
14. Eleven lockwashers (2) and nuts (1).	Install onto item (14) and torque item (1) to 70-86 lb-ft.	
15. Screw (8) and lockwasher (2).	Install in item (9) and torque to 45-56 lb-ft.	
16. New bearing (4).	Install in item (9) using a brass drift punch and ball peen hammer.	Make certain item (4) bottoms in item (9).
17. Snapring (3).	Install in item (9).	
18. New bushing (5).	Install in item (4).	Item (5) may fall out of item (4) since the output shaft is removed. Secure temporarily.
19. Vent (10), drain-plug (13), and Plug (15).	a. Coat threads with pipe sealant. b. Install in items (9) and (11).	
20. Eleven studs (12) or (14).	Install in item (11) or (9) if removed.	Use double nut method for installation.
21. Plug (6).	Install, but do not tighten in item (9).	Item (6) will have to be removed to fill item (11) with gear oil.

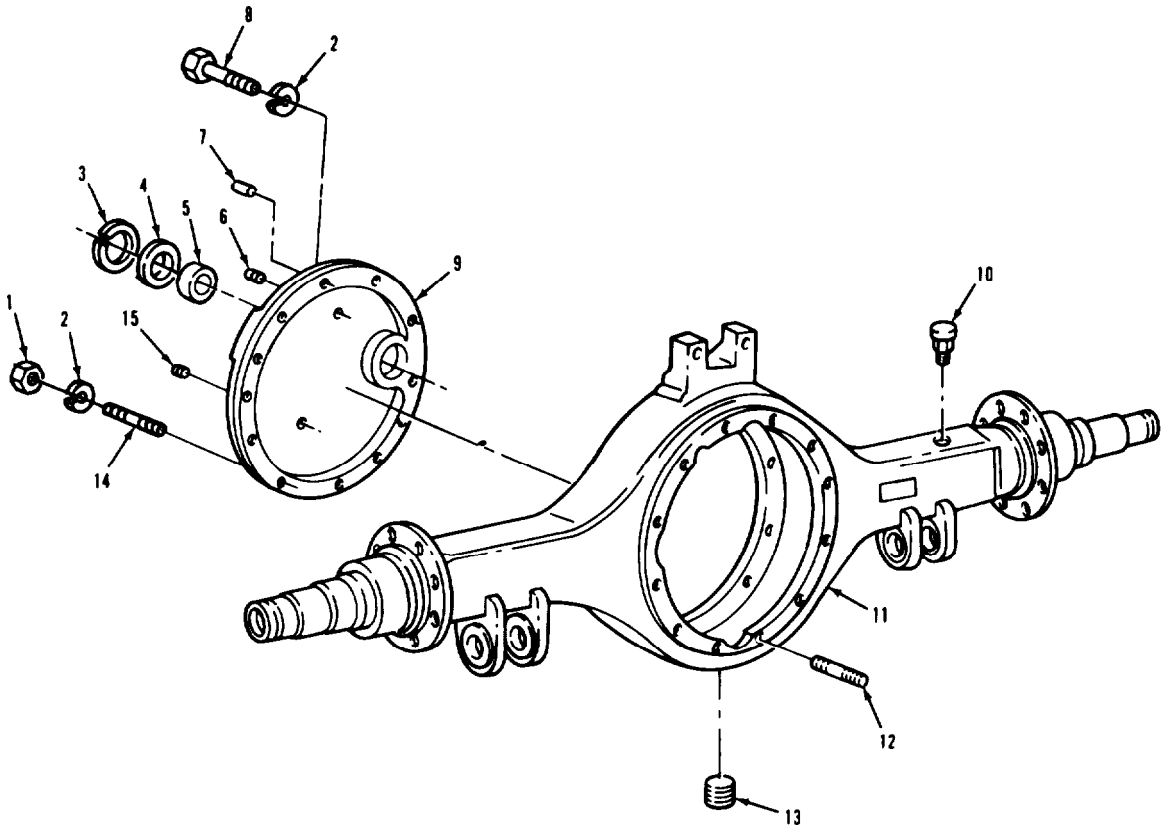
NOTE

Follow-on maintenance action required:

Install forward-rear carrier and carrier cover (para 3-69).
Install forward-rear axle in truck (para .3-63).

REAR TANDEM AXLES.

3-64. FORWARD-REAR AXLE HOUSING AND COVER REPAIR (Continued).



LEGEND:

1. HEX HEAD NUT (11)
2. LOCKWASHER (12)
3. SNAPRING
4. OUTPUT SHAFT BEARING
5. OUTPUT SHAFT BUSHING
6. MAGNETIC FILLER PLUG
7. DOWEL PIN (2)
8. SCREW
9. AXLE HOUSING COVER
10. BREATHER VENT
11. FORWARD-REAR AXLE HOUSING
12. STUD (11)
13. HOUSING DRAINPLUG
14. STUD (11)
15. HOLE PLUG

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REAR TANDEM AXLES.

3-65. FORWARD-REAR AXLE YOKE AND OIL SEAL REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
ALL.	TM 9-2320-283-20.	Drive shaft disconnected.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Flange tool
(33287) J3453.

MATERIALS/PARTS (P/N)
Oil lubricating; engine, OE/HDO-10
Item 16, Appendix C.
Seal, oil
(52304) 64656.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

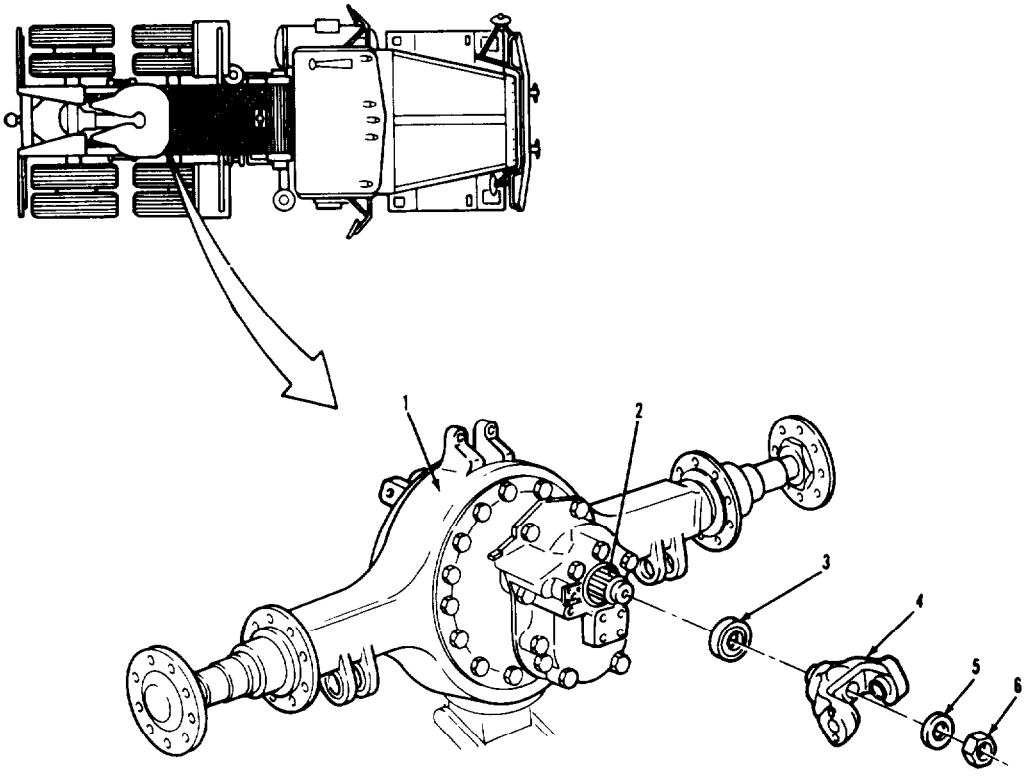
REFERENCE (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Block front and rear tires.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM AXLES.

3-65. FORWARD-REAR AXLE YOKE AND OIL SEAL REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE ASSEMBLY
2. INPUT SHAFT
3. OIL SEAL
4. YOKE AND MUDSLINGER ASSEMBLY
5. WASHER
6. INPUT SHAFT NUT

TA 238345

REAR TANDEM AXLES.

3-65. FORWARD-REAR AXLE YOKE AND OIL SEAL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Nut (6).	Remove from item (2).	Use tool No. J-3453 to prevent item (4) from turning.
2. Washer (5) and yoke and mudslinger assembly (4).	Remove from item (2).	It may be necessary to tap item (4) with a soft face hammer for it to slide off of item (2).
3. Seal (3).	Remove from item (1).	Use a punch and a hammer to remove item (3). Discard item (3).
B. CLEANING.		
4. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION		
5. All parts.	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
6. New seal (3).	Install into item (1).	Coat outside diameter of item (3) with OE/HDO-10 lubricating oil for ease of installation. Use a suitable oil seal tool for installation.
7. Yoke and mudslinger assembly (4), washer (5), and nut (6).	Install onto item (2). Torque item (6) to 780-960 lb-ft.	Use tool No. J-3453 to prevent item (4) from turning.

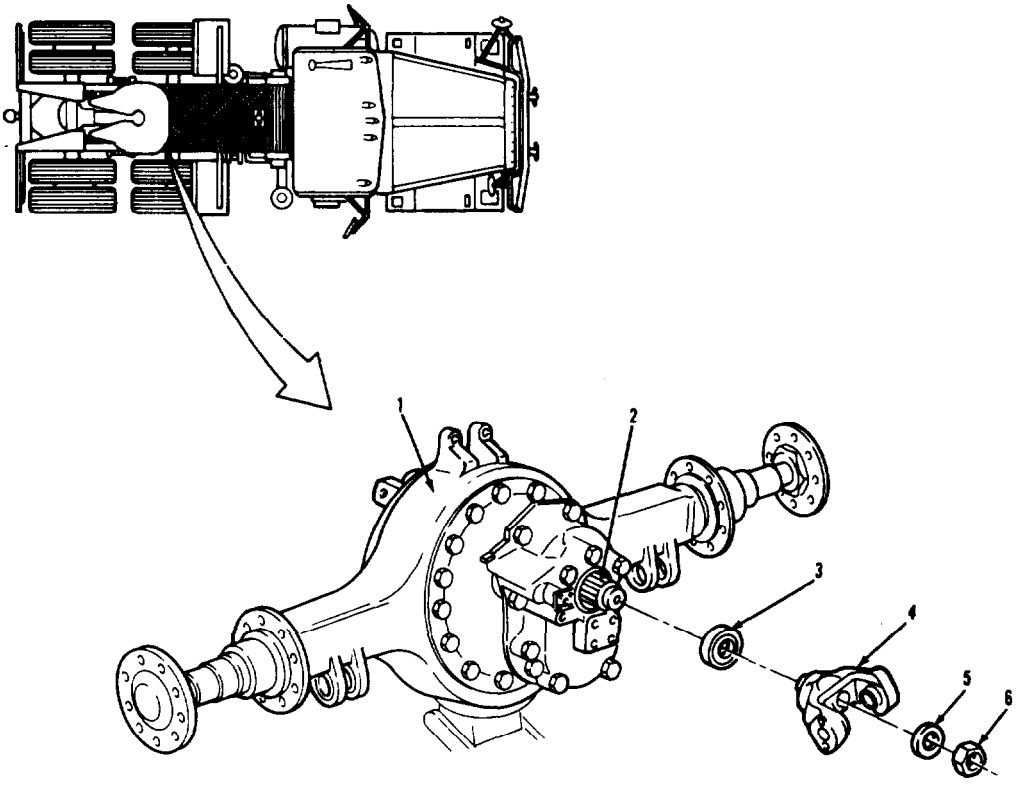
NOTE

Follow-on maintenance action required:

Install drive shaft (TM 9-2320-283-20).

REAR TANDEM AXLES.

3-65. FORWARD-REAR AXLE YOKE AND OIL SEAL REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE ASSEMBLY
2. INPUT SHAFT
3. OIL SEAL
4. YOKE AND MUDSLINGER ASSEMBLY
5. WASHER
6. INPUT SHAFT NUT

TA 238346

REAR TANDEM AXLES.

3-66. FORWARD-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
ALL.	TM 9-2320-283-20.	Drive shaft disconnected.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Flange Tool
(33284) J3453.

MATERIALS/PARTS (P/N)
Oil lubricating, engine, OE/HDO-10
Item 16, Appendix B.
Seal, oil
(52304) 63910.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

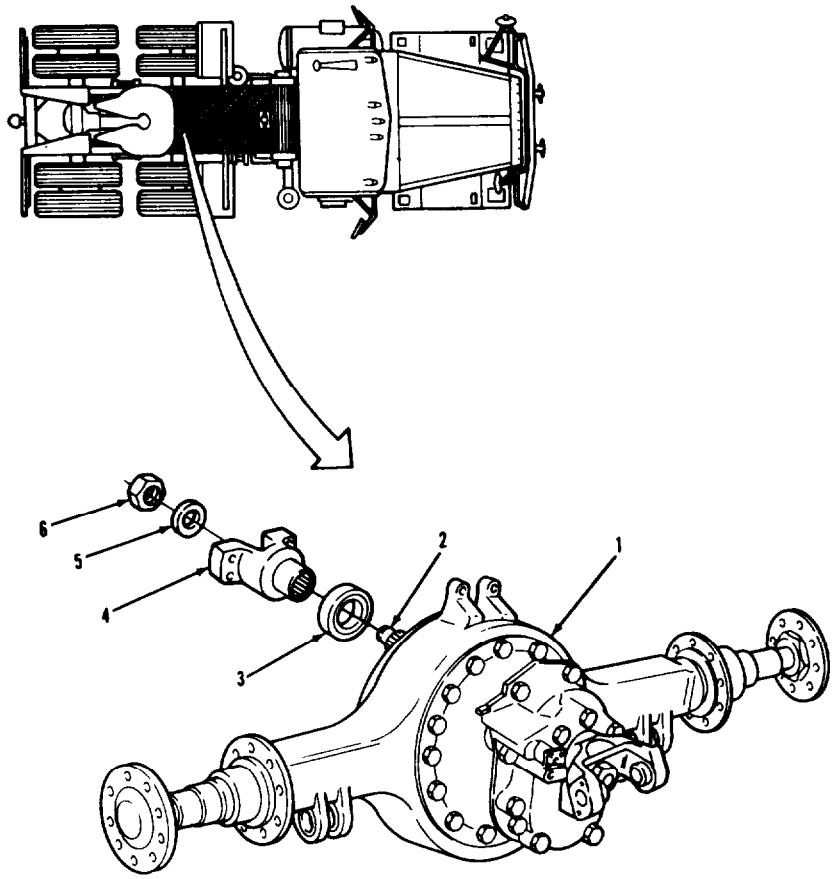
REFERENCES (TM)
M 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Block front and rear tires.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM AXLES.

3-66. FORWARD-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE HOUSING ASSEMBLY
2. OUTPUT SHAFT ASSEMBLY
3. OIL SEAL
4. OUTPUT SHAFT FLANGE
5. FLAT WASHER
6. OUTPUT SHAFT NUT

TA 238347

REAR TANDEM AXLES.

3-66. FORWARD-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Nut (6).	Remove from item (2).	Use tool No. J-3453 to prevent item (4) from turning.
2. Washer (5) and flange (4).	Remove from item (2).	It may be necessary to tap item (4) with a soft face hammer for it to slide off of item (2).
3. Seal (3).	Remove from rear cover of item (1).	Use a slide hammer and puller to remove item (3). Discard item (3).
B. CLEANING.		
4. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION		
5. All parts.	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION		
6. New seal (3).	Install into rear cover of item (1).	Use a suitable oil seal installation tool.
7. Flange (4).	Install onto item (2).	Coat splines of item (2) with OE-HDO-10 lubricating oil for ease of installation.
8. Washer (5) and nut (6).	Install onto item (2) and torque item (6) to 480-600 lb-ft.	Use tool No. J-3453 to prevent item (4) from turning.

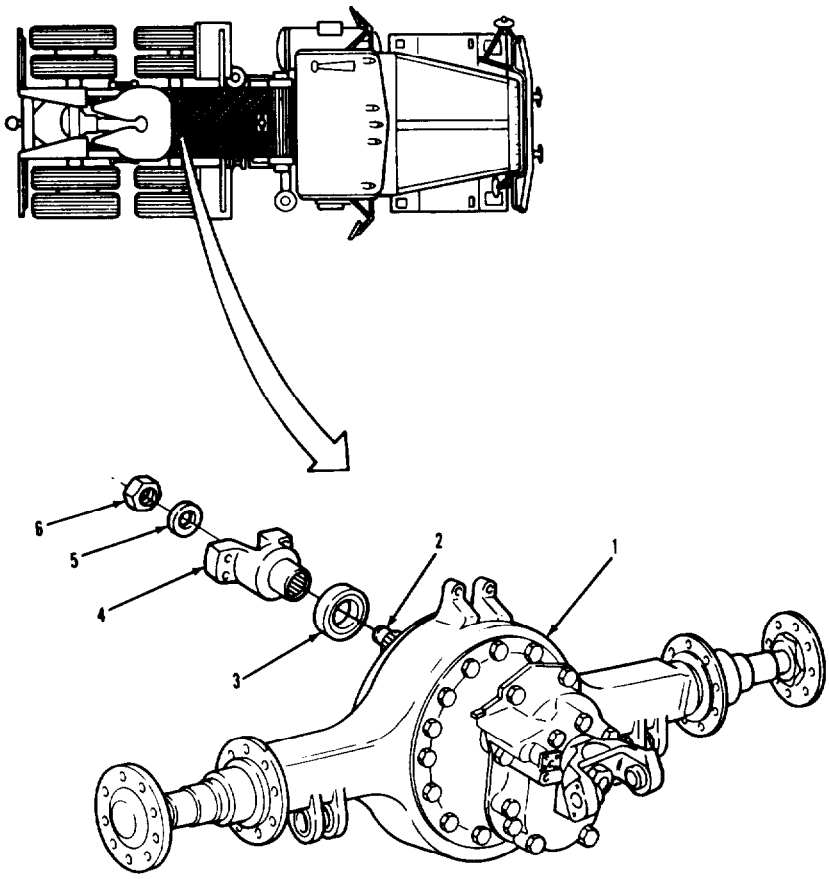
NOTE

Follow-on maintenance action required:

Install drive shaft (TM 9-2320-283-20).

REAR TANDEM AXLES.

3-66. FORWARD-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE HOUSING ASSEMBLY
2. OUTPUT SHAFT ASSEMBLY
3. OIL SEAL
4. OUTPUT SHAFT FLANGE
5. FLAT WASHER
6. OUTPUT SHAFT NUT

TA 238348

REAR TANDEM AXLES.

3-67. DIFFERENTIAL CARRIER COVER REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Inspection.
c. Checking End Play.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

TEST EQUIPMENT

SPECIAL TOOLS
Flange tool
(33287) J3453.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320 -283-20.	Front and rear drive shafts disconnected.
LO 9-2320-283-12.	Gear oil drained.
TM 9-2320-283-10.	Forward-rear axle tires removed (one-side only).
3-66.	Forward-rear axle flange removed.
3-71.	Differential lockout removed.

MATERIALS/PARTS (P/N)
Oil lubricating engine, OE/HDO-10
Item 16, Appendix B.
Sealant, silicone rubber
Item 27, Appendix B.
Seal, oil
(52304) 63910.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

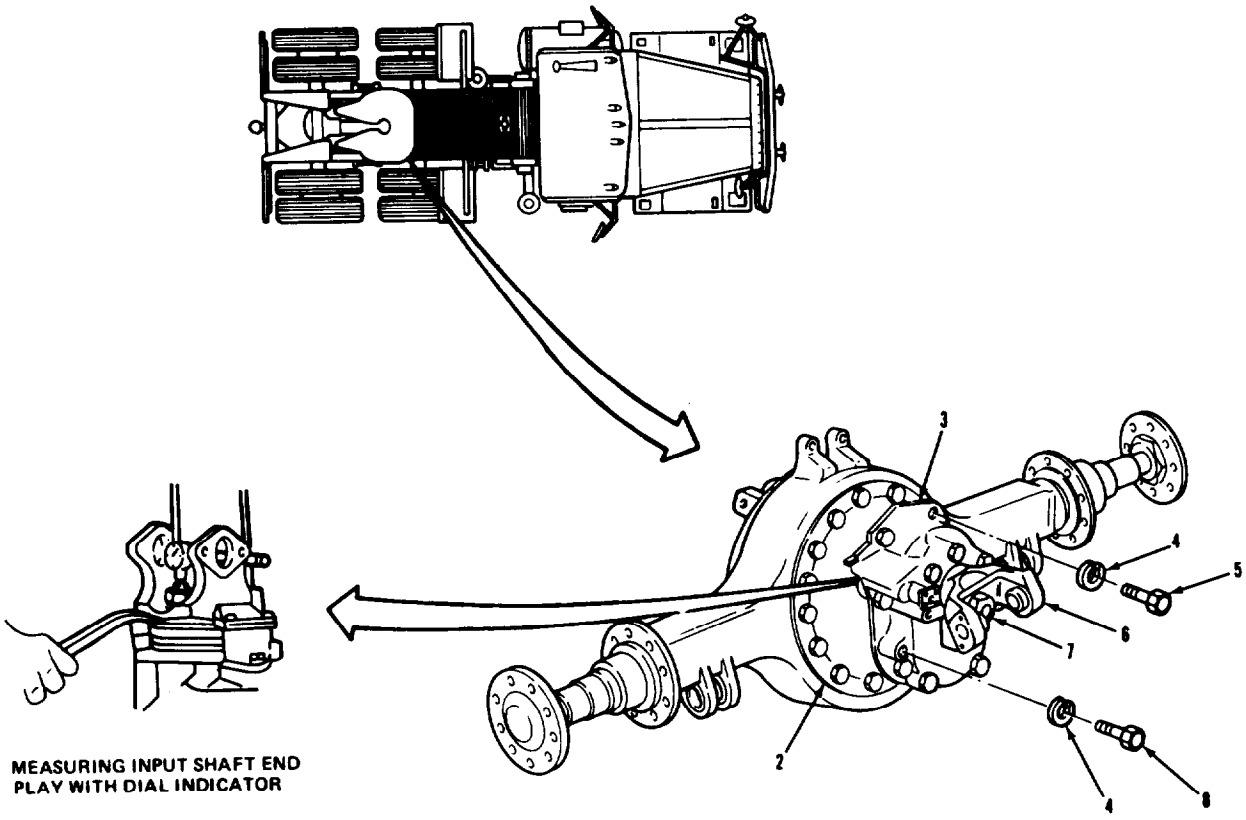
REFERENCE (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-230-283-34P.
LO 9-2320-283-12.

GENERAL SAFETY INSTRUCTIONS
'Front and rear wheels blocked.

TROUBLESHOOTING REFERENCES
paragraph 2-7.

REAR TANDEM AXLES.

3-67. DIFFERENTIAL CARRIER COVER REPLACEMENT (Continued).



LEGEND:

1. INTERAXLE DIFFERENTIAL ASSEMBLY
2. DIFFERENTIAL CARRIER AND BEARING CAP ASSEMBLY
3. DIFFERENTIAL CARRIER COVER ASSEMBLY
4. LOCKWASHER (8)
5. HEX HEAD SCREW 1-3/4" (5)
6. YOKE
7. INPUT SHAFT ASSEMBLY
8. HEX HEAD SCREW 2-1/2" (4)

TA 238349

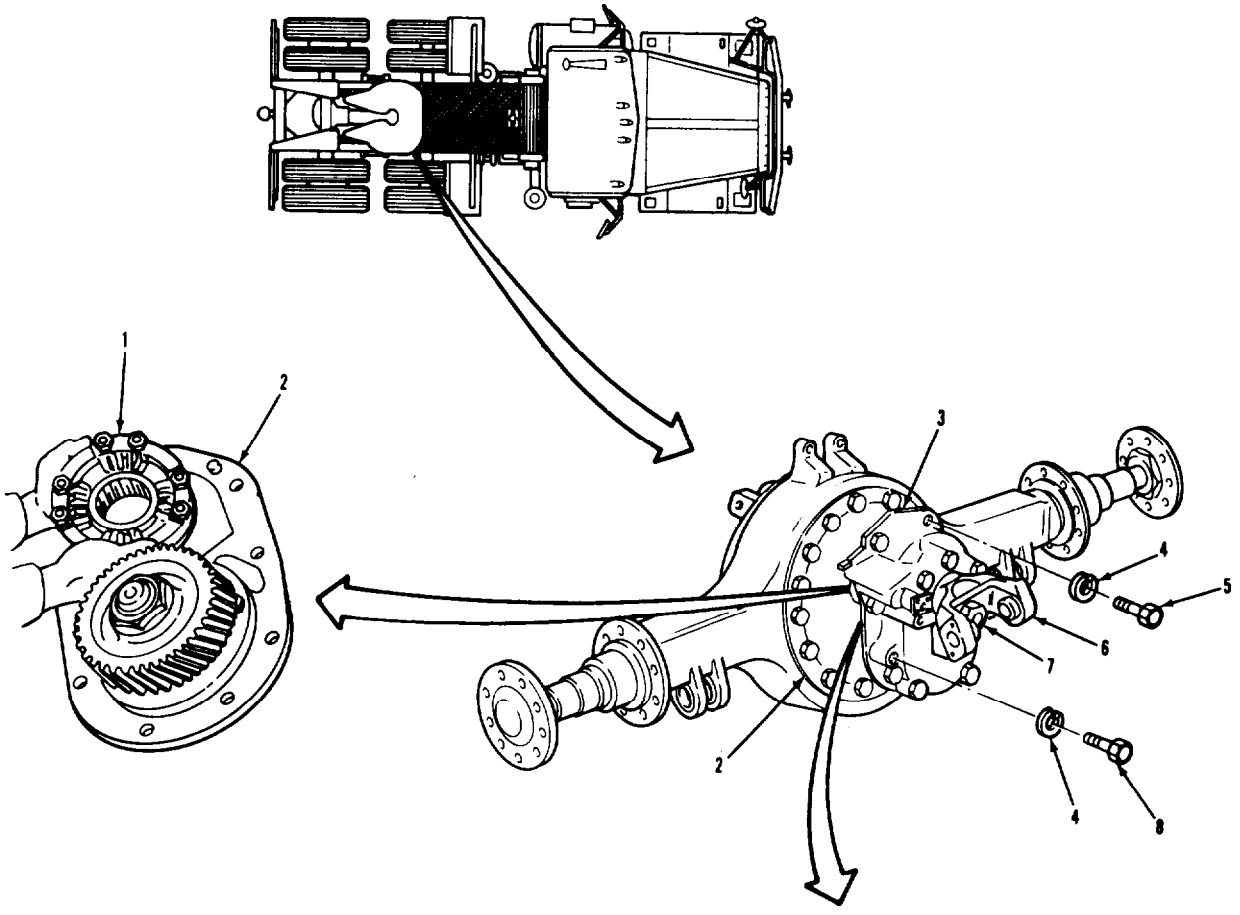
REAR TANDEM AXLES.

3-67. DIFFERENTIAL CARRIER COVER REPLACEMENT (Continued).

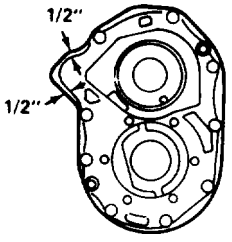
LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
	CAUTION Position a suitable jack under differential carrier cover assembly before attempting to remove hex head bolts.	
1. Five short screws (5), four long screws (8), and eight lockwashers (4).	Remove from item (3).	
	WARNING During removal and installation of differential carrier, cover assembly and the interaxle differential may fall from carrier. Use extreme care when removing to prevent damage or personal injury.	
2. Differential carrier cover assembly (3).	Remove from item (2).	Tap back face of item (1) to dislodge item (2). If item (3) does not dislodge easily, strike the side of item (3) near the dowel pin locations.
B. INSTALLATION.		
3. Interaxle differential assembly (1).	Install in item (2).	
4. Differential carrier cover assembly (3).	a. Apply silicone sealant on mating surface as shown.	Sealant will set in twenty minutes.

REAR TANDEM AXLES.

3-67. DIFFERENTIAL CARRIER COVER REPLACEMENT (Continued).



GASKET COMPOUND PATTERN



LEGEND:

1. INTERAXLE DIFFERENTIAL ASSEMBLY
2. DIFFERENTIAL CARRIER AND BEARING CAP ASSEMBLY
3. DIFFERENTIAL CARRIER COVER ASSEMBLY
4. LOCKWASHER (8)
5. HEX HEAD SCREW 1-3/4" (5)
6. YOKE
7. INPUT SHAFT ASSEMBLY
8. HEX HEAD SCREW 2-1/2"'(4)

TA 238350

REAR TANDEM AXLES.

3-67. DIFFERENTIAL CARRIER COVER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B . INSTALLATION (CONTINUED).		
4. Differential carrier cover assembly (3) continue).	b. Install onto item (2).	Rotate item (6) to engage splines with item (1). After installation, rotate item (6) again to check for correct assembly.
5. Five short screws (5), four long screws (8), and (4) lockwashers	Install in correct location in item (3) and torque to 115-125 lb-ft.	
6. Input shaft assembly (7).	Check end play as follows:	
	a. Position dial indicator as shown.	
	b. Check end play as shown. End play should be 0.003-0.007 inch.	If end play is not within specifications, refer to para 3-68 for end play adjustment.

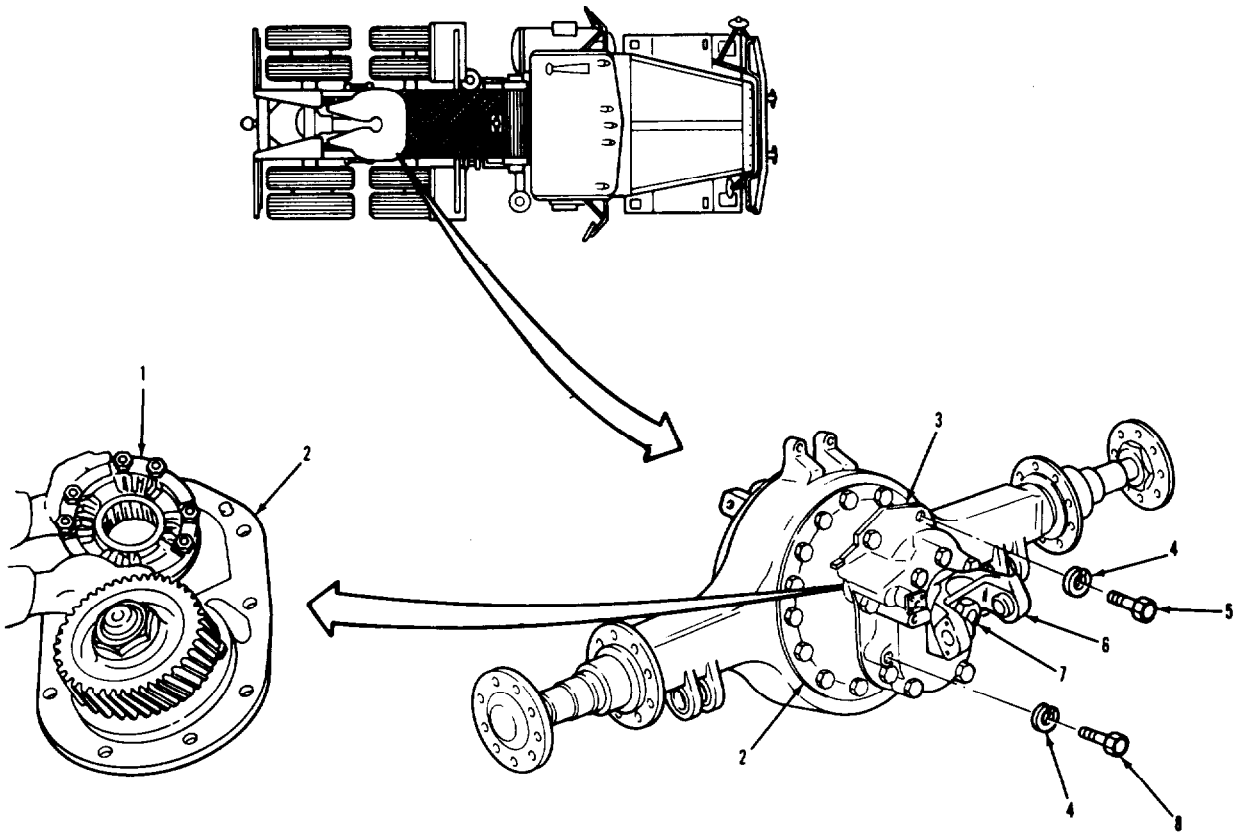
NOTE

Follow-on maintenance action required:

Install rear axle flange (para 3-66).
Install differential lockout (para 3-71).
Connect front and rear drive shafts (TM 9-2320-283-20).
Refill differential carrier assembly (LO 9-2320-283-12).
Install forward-rear axle tires (TM 9-2320-283-10).

REAR TANDEM AXLES.

3-67. DIFFERENTIAL CARRIER COVER REPLACEMENT (Continued).



LEGEND:

1. INTERAXLE DIFFERENTIAL ASSEMBLY
2. DIFFERENTIAL CARRIER AND BEARING CAP ASSEMBLY
3. DIFFERENTIAL CARRIER COVER ASSEMBLY
4. LOCKWASHER (8)
5. HEX HEAD SCREW 1-3/4" (5)
6. YOKE
7. INPUT SHAFT ASSEMBLY
8. HEX HEAD SCREW 2-1/2" (4)

TA 238251

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning.
c. Inspection.
d. Assembly.
e. Adjusting End Play.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
3-67.	Differential carrier cover and output shaft assembly removed.
3-71	Differential lockout removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Oil lubricating: OE/HDO-30
Item 18, Appendix B.
O-ring, output shaft (2)
(52304) 46526.
Seal, oil
(52304) 64656.
Locknut, hex head (8)
(52304) 57637.
O-ring
(52304) 102620.

PERSONNEL REQUIRED
One (MOS-63W)

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

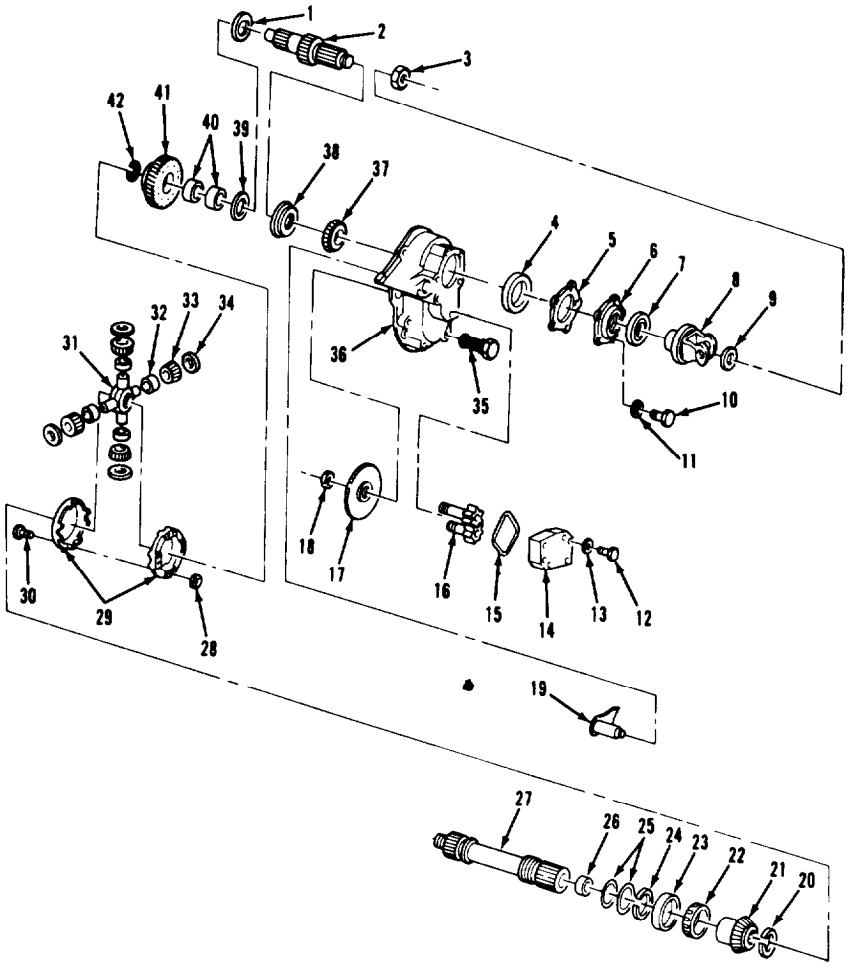
REFERENCES (TM)
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Snaprings are made from spring steel and may pop off during removal. Wear face shield to prevent personal injury.

TROUBLESHOOTING REFERENCES
paragraph 2-7.

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

1. SPECIAL WASHER
2. INPUT SHAFT
3. NUT
4. BEARING CUP
5. INPUT BEARING COVER SHIM
6. BEARING RETAINER
7. OIL SEAL
8. YOKE
9. WASHER
10. SCREW (5)
11. WASHER (5)
12. SCREW (4)
13. WASHER (4)
14. HOUSING
15. O-RING
16. PUMP GEAR (2)
17. PUMP DRIVE GEAR
18. NUT
19. SHIFT FORK
20. OUTER SNAPRING
21. SIDE GEAR
22. BEARING CONE
23. BEARING CUP
24. INNER SNAPRING
25. O-RING (2)
26. BUSHING
27. OUTPUT SHAFT
28. NUT (8)
29. INTERAXLE DIFFERENTIAL
30. BOLT (8)
31. SPIDER
32. BUSHING (4)
33. PINION (4)
34. WASHER (4)
35. MAGNETIC SCREEN
36. DIFFERENTIAL CARRIER COVER
37. BEARING CONE
38. LOCKOUT SLIDING CLUTCH
39. WASHER
40. BUSHING (2)
41. HELICAL GEAR
42. SNAPRING

TA 238352

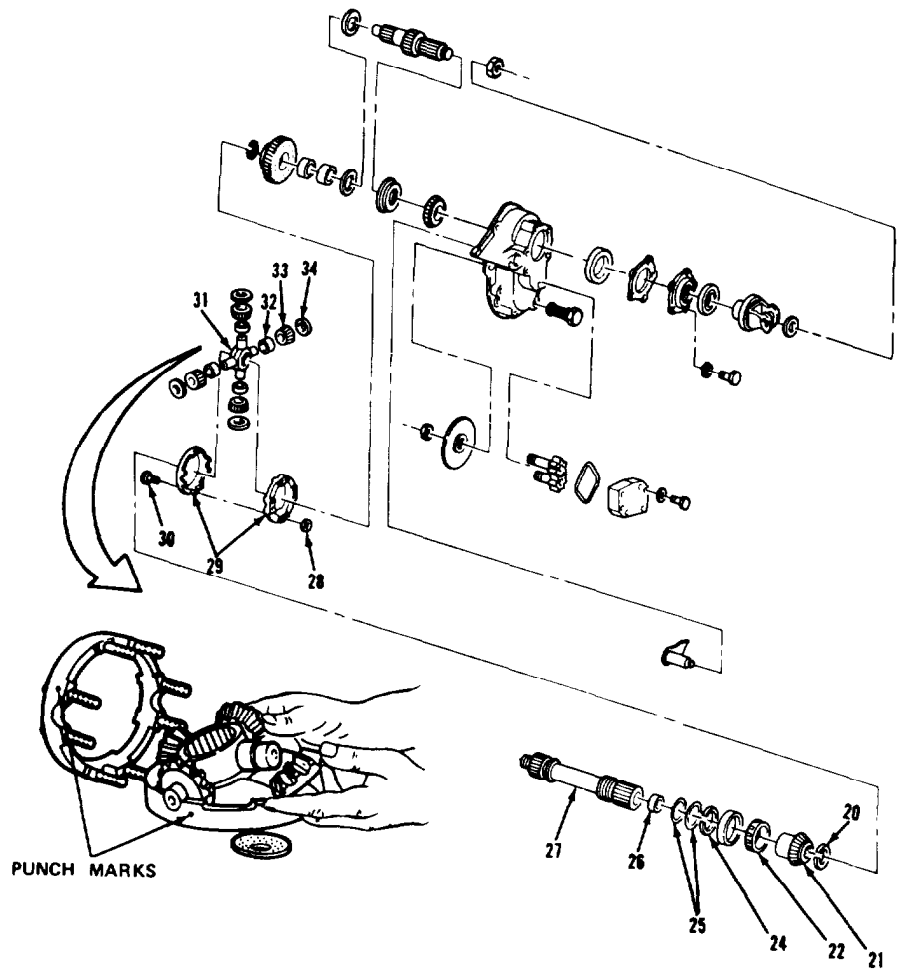
REAR TANDEM AXLE.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Differential (29) and spider (31).	Center punch each for correct location for reassembly.	Both halves of item (29) will have to be center punched as shown.
2. Eight bolts (30) and nuts (28).	Remove from item (29).	Discard item (28).
	CAUTION Do not mix pinions, bushings, and washers of interaxle differential after separating the two halves. Tag each part for reassembly.	
3. Differential (29).	Separate both halves.	
4. Four washers (34), pinions (33), and bushings (32).	Remove from item (31).	Do not mix items (32), (33), and (34).
5. Snapring (20).	Remove from item (27).	Mount item (27) in vise with jaw protectors Use snapring pliers to remove item (20).
6. Gear (21), cone (22) and cup (23) as an assembly, and two O-rings (25).	Remove from item (27).	Do not remove item (24) unless damaged. Discard items (25).
	NOTE Do not remove the bushings in the helical gear and output shaft until an inspection has been performed to determine whether the bushings need to be replaced.	
7. Bushing (26).	Remove from item (27).	Discard item (27).
8. Bearing cone (22).	Remove from item (21).	Use a suitable hydraulic press and split type puller to separate item (21) from item (22).

REAR TANDEM AXLF.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

20. OUTER SNAPRING
21. SIDE GEAR
22. BEARING CONE
23. BEARING CUP
24. INNER SNAPRING
25. O-RING (2)
26. BUSHING
27. OUTPUT SHAFT
28. NUT (8)
29. INTERAXLE DIFFERENTIAL
30. BOLT (8)
31. SPIDER
32. BUSHING (4)
33. PINION (4)
34. WASHER (4)

TA 238353

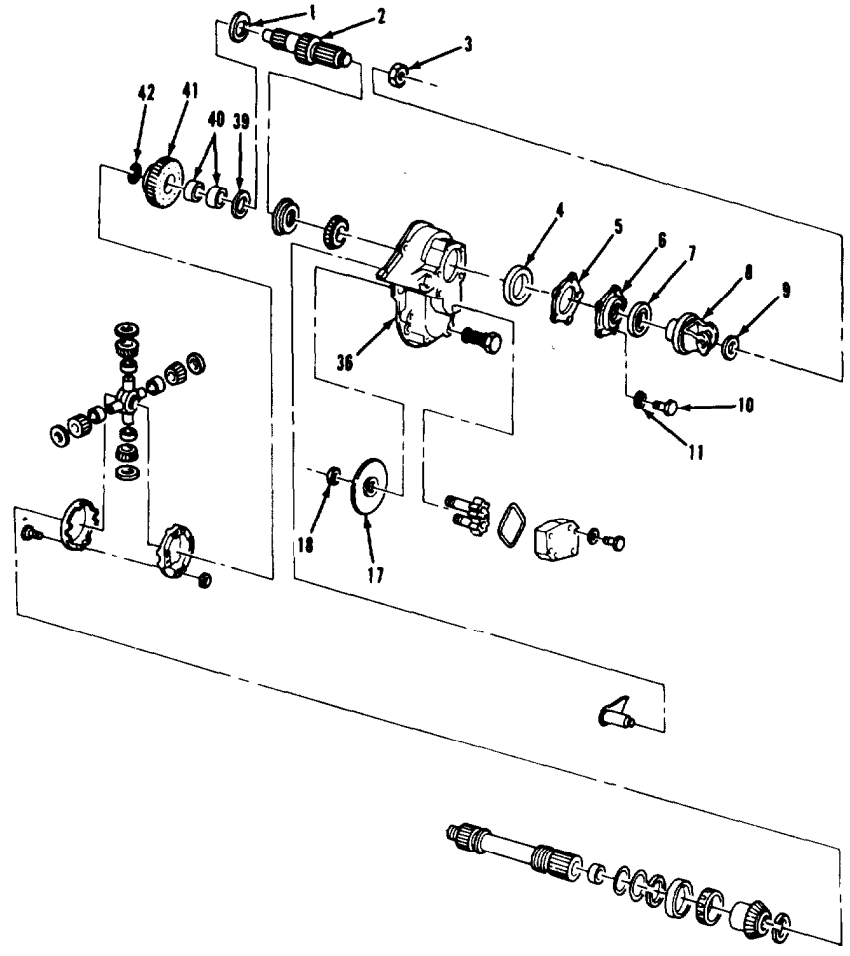
REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
9. Snapring (42).	Remove from item (2).	
10. Gear (41), washer (1), and washer (39).	Remove from item (2).	Item (39) is a bronze thrust washer.
11. Two bushings (40).	Remove from item (41).	Discard item (40).
12. Nut (18).	Remove from item (17).	To loosen item (18), prevent item (8) from turning.
13. Nut (3).	Remove from item (2).	Use a suitable yoke holding tool to prevent item (8) from turning.
14. Washer (9) and yoke (8).	Remove from item (2).	Hitting the backside of item (8) with a brass hammer will assist in removal.
NOTE Do not discard bearing cover shims. Shims will be needed during assembly.		
15. Five screws (10) and washers (11).	Remove from item (6).	
16. Retainer (6).	Remove from item (36).	Item (6) may require slight upward and downward pressure to remove.
17. Shim (5).	Remove from item (6).	More than one shim may be used. Do not discard item (5).
18. Seal (7).	Remove from item (6).	Discard item (7).
19. cup (4).	Remove from item (6).	A hammer and a punch may be used to remove item (4).

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER RERAIR (Continued).



LEGEND:

1. SPECIAL WASHER
2. INPUT SHAFT
3. NUT
4. BEARING CUP
5. INPUT BEARING COVER SHIM
6. BEARING RETAINER
7. OIL SEAL
8. YOKE
9. WASHER
10. SCREW (5)
11. WASHER (5)
17. PUMP DRIVE GEAR
18. NUT
36. DIFFERENTIAL CARRIER COVER
39. WASHER
40. BUSHING (2)
41. HELICAL GEAR
42. SNAPRING

TA 238354

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

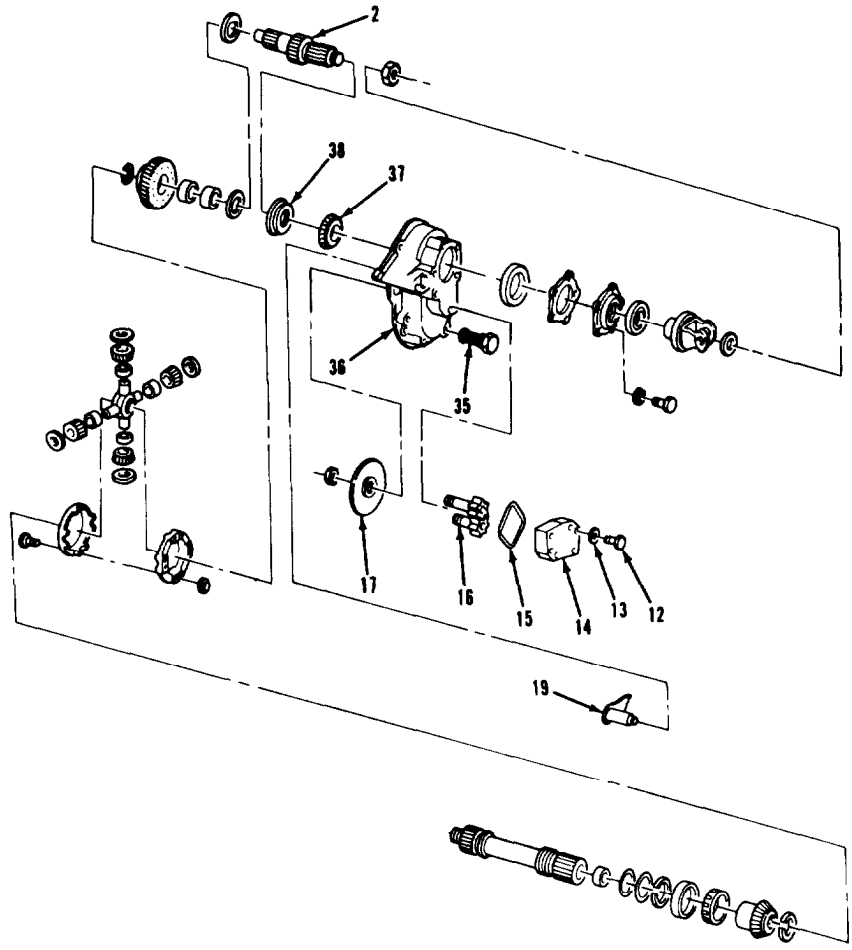
LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
20. Shaft (2).	Remove from item (36).	
21. Clutch (38), fork (19), and gear (17).	Remove from item (36).	
22. Cone (37).	Remove from item (2).	Temporarily place item (38) onto rear of item (2) with teeth toward item (37). Place item (2) in hydraulic press and remove item (37).
23. Four screws (12) and washers (13).	Remove from item (14).	
24. Housing (14).	Remove from item (36).	
25. O-ring (15).	Remove from item (14).	Discard item (15).
26. Two gears (16).	Remove from item (36).	
27. Screen (35).	Remove from item (36).	
B. CLEANING.		
28. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
29. All parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY.		

NOTE

Before assembly, coat all internal parts with OE/HDO-30 lubricating oil.

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

2. INPUT SHAFT
12. SCREW (4)
13. WASHER (4)
14. HOUSING
15. O-RING
16. PUMP GEAR (2)
17. PUMP DRIVE GEAR
19. SHIFT FORK
35. MAGNETIC SCREEN
36. DIFFERENTIAL CARRIER COVER
37. BEARING CONE
38. LOCKOUT SLIDING CLUTCH

TA 238355

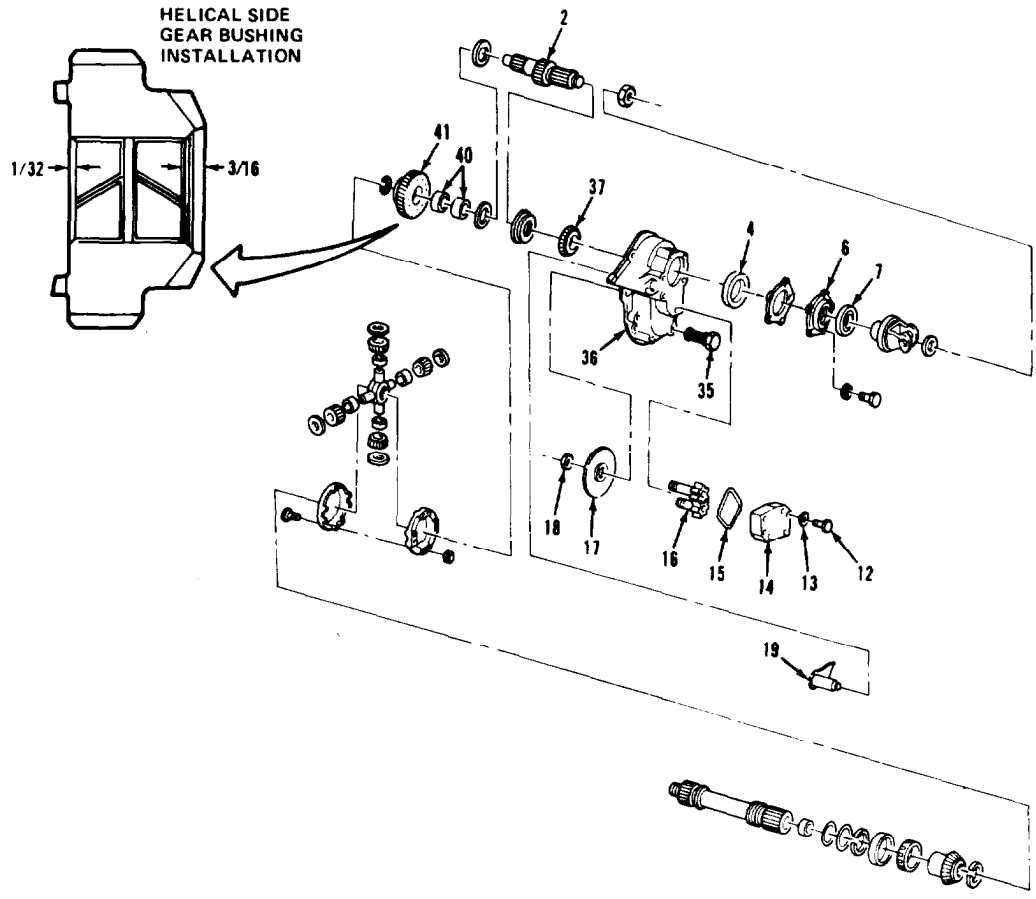
REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
30. Two gears (16).	Install in item (36).	Item (16) with long threaded shaft is placed in hole next to hole of item (2).
31. New O-ring (15).	Install in item (14).	
32. Housing (14).	Position on item (36).	
33. Four screws (12) and washers (13).	Install in item (14) and torque items (12) to 85-105 lb-in.	
34. Gear (17).	Install onto threaded shaft of item (16).	
35. Nut (18).	Install onto threaded shaft of item (16) and hand tighten.	
36. Screen (35).	Install in item (36) and torque to 40-60 lb-ft.	
37. New cone (37).	Install onto item (2) using a suitable press and bearing cone adapter.	
38. New cup (4).	Install into item (6) using a suitable press.	Item (4) should be pressed in until it bottoms in item (6).
39. New seal (7).	Install into item (6) using a suitable seal installer.	Item (7) should be pressed in until it is flush with edge of item (6).
40. Two new bushings (40).	Install as shown into item (41) using suitable bushing installer tool.	
41. Fork (19).	Install into item (36).	

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

2. INPUT SHAFT
4. BEARING CUP
6. BEARING RETAINER
7. OIL SEAL
12. SCREW (4)
13. WASHER (4)
14. HOUSING
15. O-RING
16. PUMP GEAR (2)
17. PUMP DRIVE GEAR
18. NUT
19. SHIFT FORK
35. MAGNETIC SCREEN
36. DIFFERENTIAL CARRIER COVER
37. BEARING CONE
40. BUSHING (2)
41. HELICAL GEAR

TA 238356

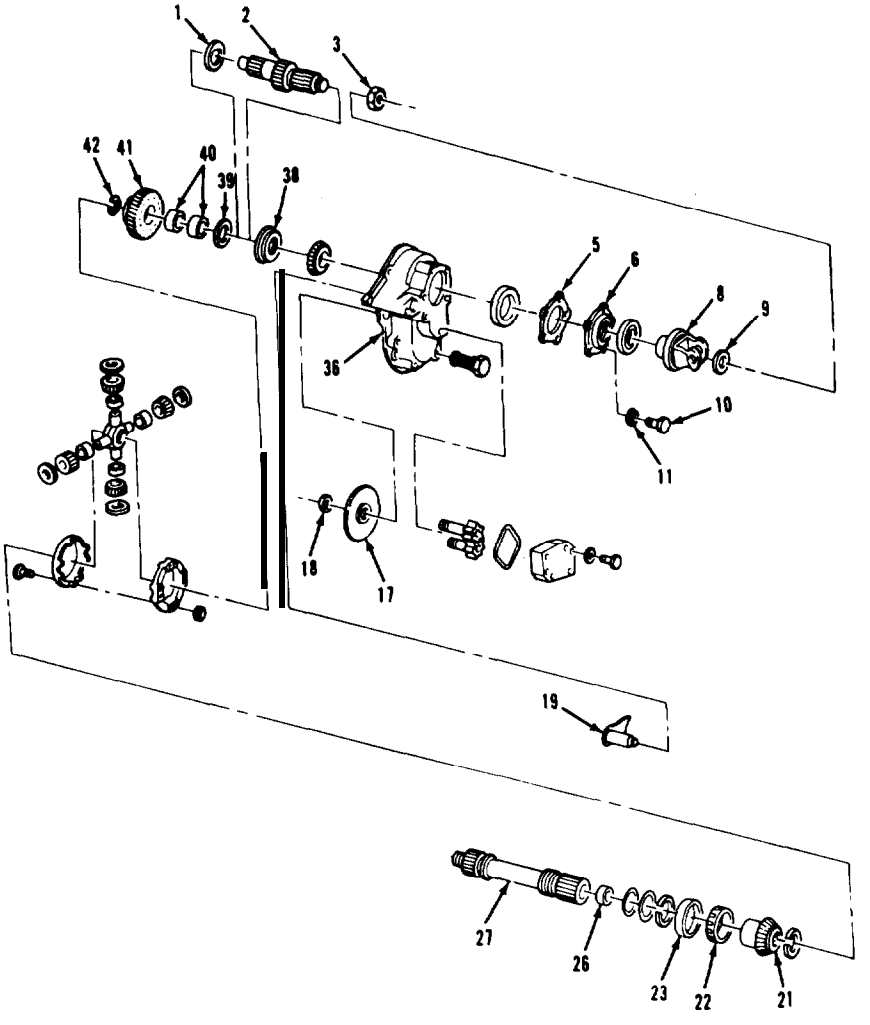
REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
	NOTE Position a block of wood, 4 inch x 4 inch x 4 inch, under the shift fork to prevent it from falling out when differential carrier cover is reversed.	
42. Clutch (38).	Slide onto item (2) with clutch teeth facing item (41).	
43. Shaft (2).	Install through the front of item (36).	It may be necessary to rotate item (2) so that engages onto item (19).
44. Retainer (6).	Install onto item (36).	Install without items (5).
45. Five screws (10) and washers (11).	Install in item (6) finger tight only.	Items (10) and (11) will be removed for checking and adjusting end play in step 60.
46. Yoke (8), washer (9), and nut (3).	Install onto item (2) and temporarily tighten item (3).	Refer to step 45.
47. Nut (18).	Install on item (17) and torque to 35-45 lb-ft.	Hold item (8) when torquing item (18).
48. Washer (1), washer (39), gear (41), and ring (42).	Install in that order onto item (2).	Item (1) is a steel washer and item (39) is a bronze washer.
49. Cone (22).	Install onto item (21) using suitable mandrel and hydraulic press.	Protect gear teeth of item (21) during press operation.
50. New bushing (26).	Install into item (27) using suitable bushing installer.	
51. Assembled gear (21), cone (22), and cup (23).	Install onto item (27).	Clamp item (27) in a vise.

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

1. SPECIAL WASHER
2. INPUT SHAFT
3. NUT
5. INPUT BEARING COVER SHIMS
6. BEARING RETAINER
8. YOKE
9. WASHER
10. SCREW (5)
11. WASHER (5)
17. PUMP DRIVE GEAR
18. NUT
19. SHIFT FORK
21. SIDE GEAR
22. BEARING CONE
23. BEARING CUP
26. BUSHING
27. OUTPUT SHAFT
36. DIFFERENTIAL CARRIER COVER
38. LOCKOUT SLIDING CLUTCH
39. WASHER
40. BUSHING (2)
41. HELICAL GEAR
42. SNAPRING

TA 238357

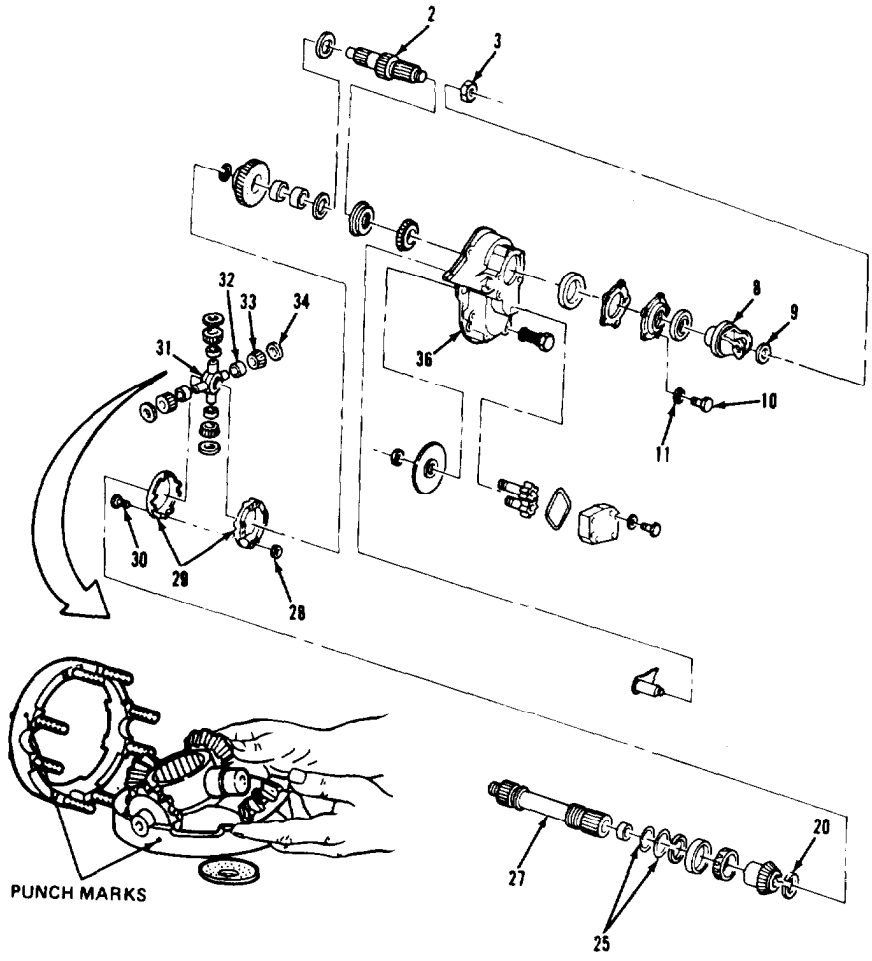
REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
52. Snapring (20).	Install onto end of item (27).	If item (24) was removed during disassembly, installation will be similar.
53. Two new O-rings (25).	Install onto item (27).	
54. Four bushings (32), pinion (33), and washers (34).	Install onto each shaft of item (31).	
55. Assembled spider (31).	Install in one half of item (29) and place the remaining half of item (29) onto item (31).	Make certain previously made, punch marks are alined.
56. Eight bolts (30) and new nuts (28).	Install into holes of item (29) and torque to 17-23 lb-ft.	
E. ADJUSTING END PLAY.		
	NOTE To adjust end play, the assembled output shaft, interaxle differential and differential carrier cover must be installed on the differential carrier.	
57. Assembled cover (36).	Install onto differential carrier.	Refer to paragraph 3-67 for installation.
58. Differential carrier with carrier cover (36).	Mount in suitable differential stand.	
59. Nut (3), washer (9), yoke (8), five screws (10), and washers (11).	Remove from items (2) and (36).	Items (3), (9), (8), (10), and (11) were installed finger tight.

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

2. INPUT SHAFT
3. NUT
8. YOKE
9. WASHER
10. SCREW (5)
11. WASHER (5)
20. OUTER SNAPRING
25. O-RING (2)
27. OUTPUT SHAFT
28. NUT (8)
29. INTERAXLE DIFFERENTIAL
30. BOLT (8)
31. SPIDER
32. BUSHING (4)
33. PINION (4)
34. WASHER (4)
36. DIFFERENTIAL CARRIER COVER

TA 238358

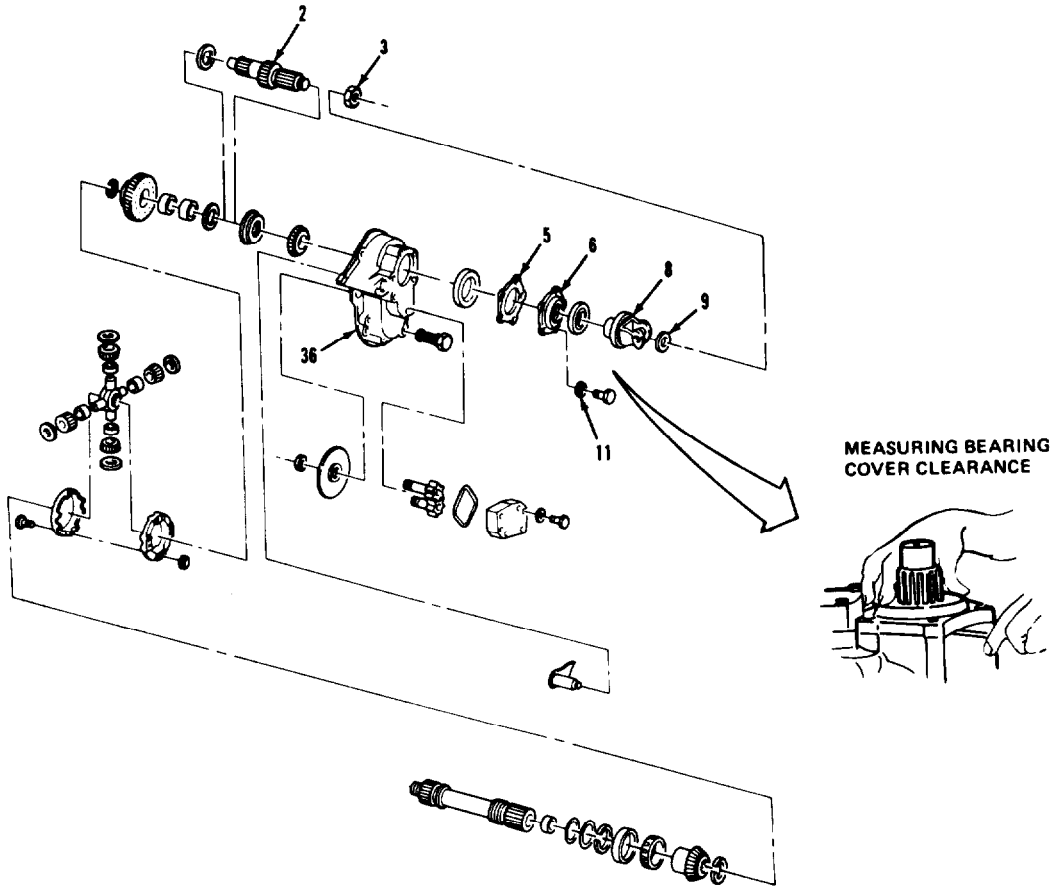
REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. ADJUSTING END PLAY (Continued).		
60. Retainer (6).	Adjust end play as follows:	
	a. Using feeler gage and hand pressure on item (6), measure clearance between item (36) and item (6) as shown.	
	b. Add 0.005 to the bearing cover clearance measured in step a and construct a shim pack of this site.	Item (5) are available in 0.003, 0.005, 0.010, and 0.020 inch If measured bearing cover clearance is 0.034 and 0.005 has been added to provide end play, the shim pack size should be 0.039.
	c. Remove item (6) and install shim pack (5).	
	d. Install item (6), five items (11), and torque to 85 lb-ft.	
	e. Install items (8), (9), and (3). Tighten item (3) snugly. Tap end of item (2) lightly to seat bearing.	

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

2. INPUT SHAFT
3. NUT
5. INPUT BEARING COVER SHIM
6. BEARING RETAINER
8. YOKE
9. WASHER
11. WASHER (5)
36. DIFFERENTIAL CARRIER COVER

TA 238359

REAR TANDEM AXLES.

3-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. ADJUSTING END PLAY (Continued).		
60. Retainer (6) (continued).	Adjust end play as follows (continued):	
	f. Check end play of item (2) with dial indicator as shown. End play should be between 0.003-0.007 inch.	If end play is less that 0.003 inch add items (5) to shim pack. If end play is more than 0.007 remove shims as required from shim pack. The five items (10) and (11) will have to be re-torqued if shims have been added or removed.
	g. With end play correct proceed to step 61.	
61. Nut (3).	Torque to 780-960 lb-ft.	Use a suitable yoke holding tool to prevent yoke from turning while torquing.

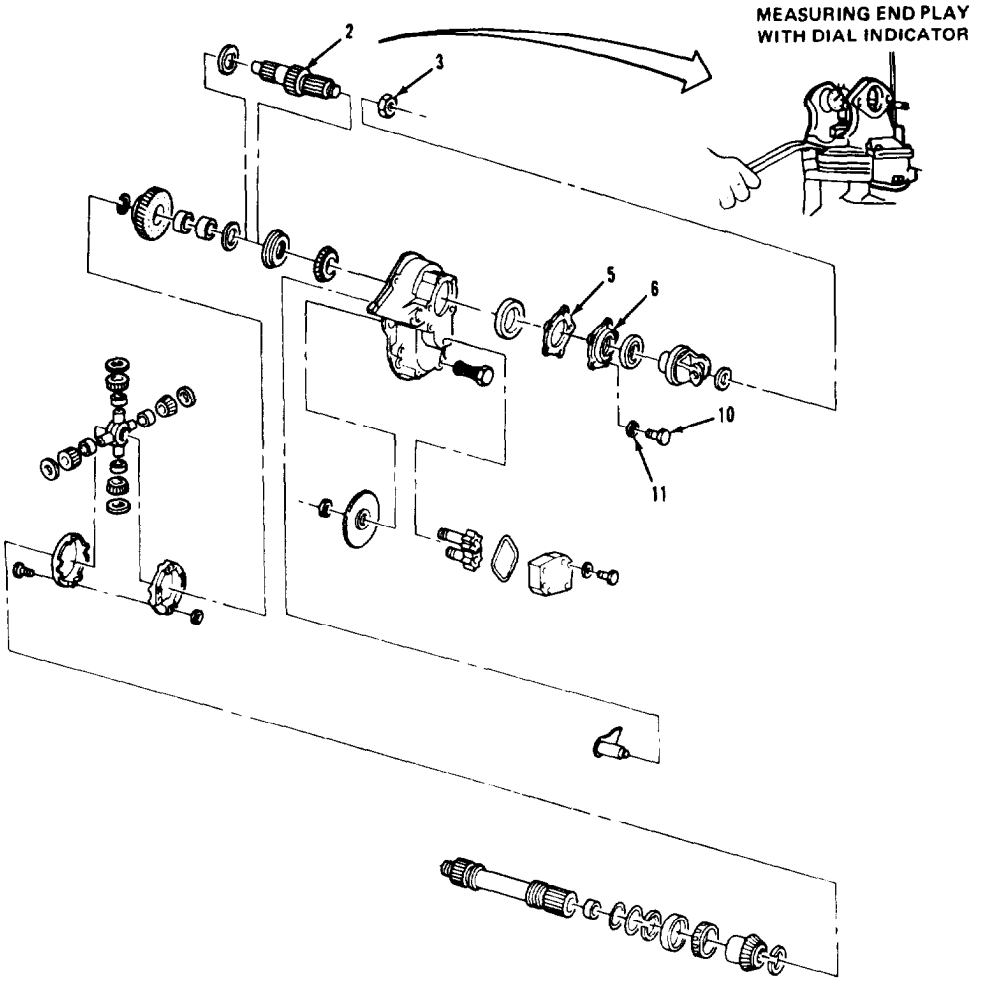
NOTE

*Differential carrier cover may be removed from differential carrier after end play adjustments and torquing of yoke have been completed. Removal of differential carrier cover is necessary if repair of differential carrier is required.

*Follow-on maintenance action required:
Install differential lockout (para 3-71).
Install differential carrier cover on differential carrier, if removed (para 3-67).

REAR TANDEM AXLES.

-68. DIFFERENTIAL CARRIER COVER REPAIR (Continued).



LEGEND:

2. INPUT SHAFT
3. NUT
5. INPUT BEARING COVER SHIMS
6. BEARING RETAINER
10. SCREW (5)
11. WASHER (5)

TA 238360

REAR TANDEM AXLES.

3-69. FORWARD-REAR AXLE CARRIER REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Flange tool (33287) J3453.

MATERIALS/PARTS (P/N)
Sealant, silicone rubber
Item 27, Appendix B.

PERSONNEL REQUIRED
One (MOS-63W).

REFERENCES (TM)
LO 9-2320-283-12.
TM 9-2320-283-20.
TM 9-2320-283-34P.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

EQUIPMENT CONDITION

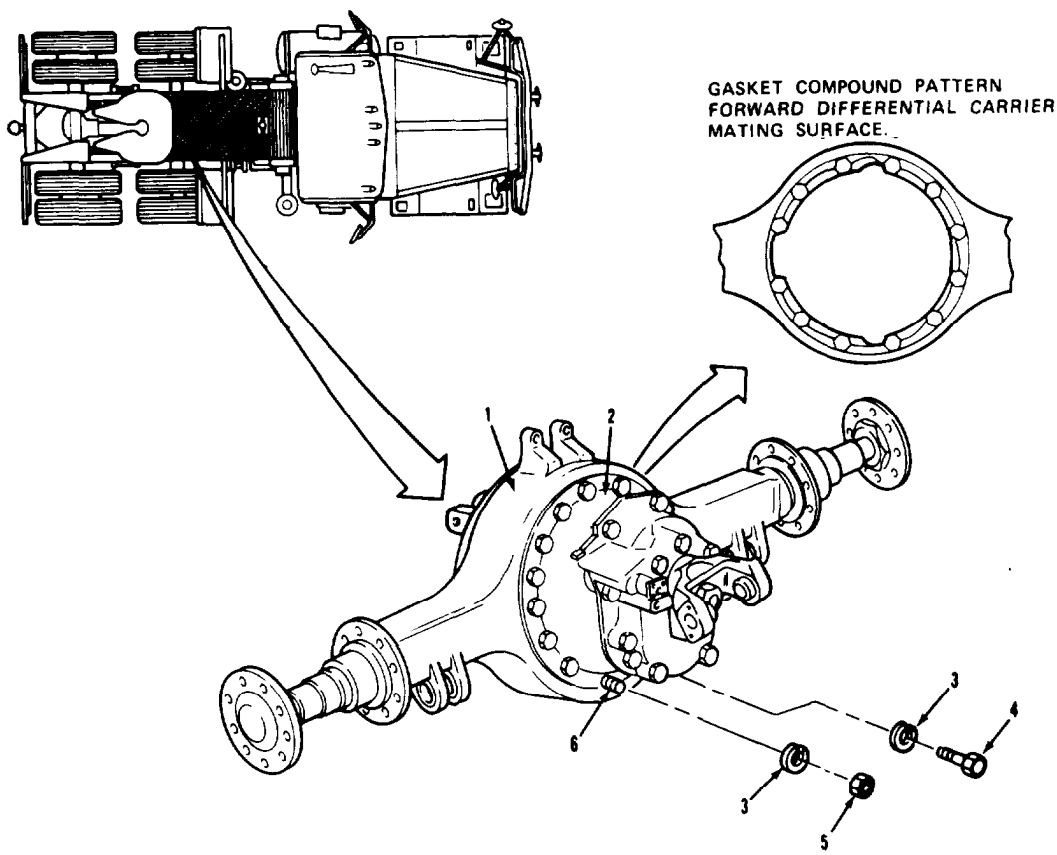
PARAGRAPH	CONDITION DESCRIPTION
LO 9-2320-283-12.	Forward-rear axle housing oil drained.
TM 9-2320-283-20.	Front and rear drive shafts disconnected.
TM 9-2320-283-20.	Axle shafts removed.
3-71.	Differential lockout removed.
3-66.	Output flange removed.

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
Front and rear wheels blocked.

REAR TANDEM AXLES.

3-69. FORWARD-REAR AXLE CARRIER REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE HOUSING
2. FORWARD-REAR AXLE CARRIER
3. LOCKWASHER (12)
4. SCREW
5. HEX HEAD NUT (11)
6. STUD (11)

TA 238361

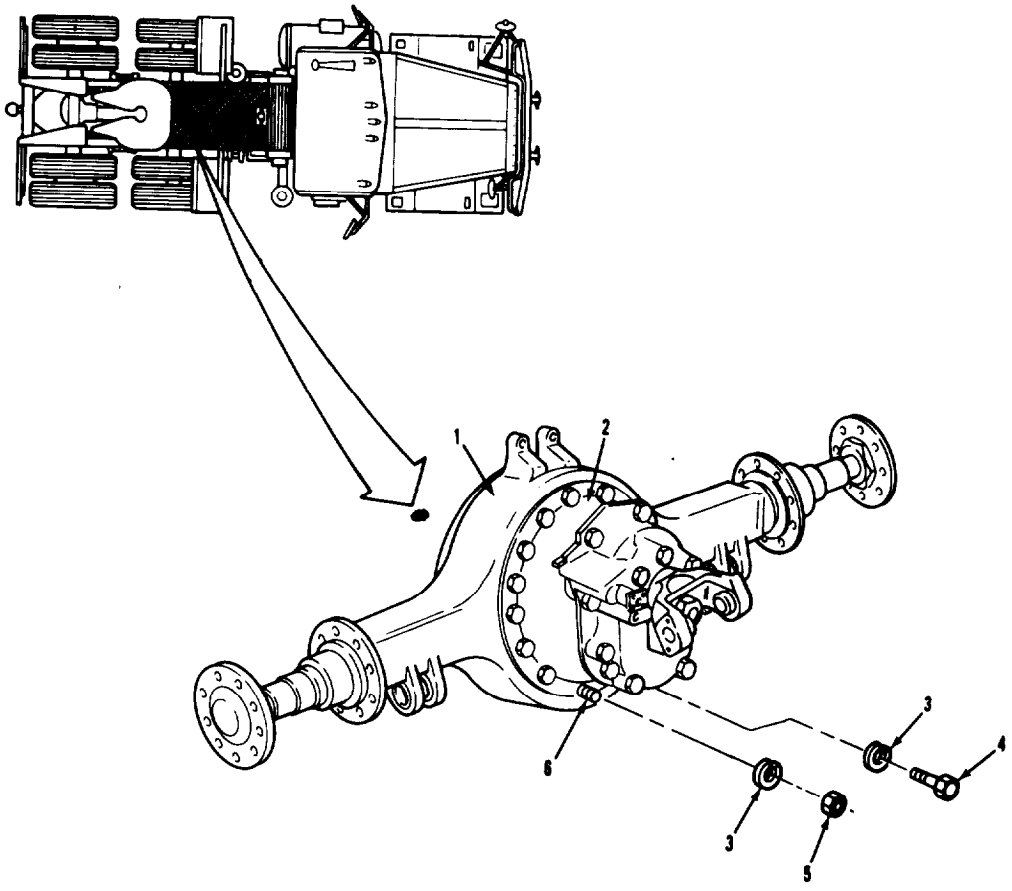
REAR TANDEM AXLES.

3-69. FORWARD-REAR AXLE CARRIER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE •The differential carrier and cover can be removed from axle housing installed or with the axle housing removed. If axle housing has been removed, a suitable floor crane will be required to lift carrier from housing after nuts and lockwashers have been removed. •The differential carrier and differential carrier cover do not have to be removed as one unit. The differential carrier cover can first be removed followed by the differential carrier. The availablity and type of carrier jacks will determine whether or not both can be removed as one unit.	
A. REMOVAL.		
1. Eleven nuts (5), one, screw (4), and twelve lockwashers (3).	Remove.	
	NOTE Raising rear of frame may be necessary to gain clearance for removal of differential carrier and carrier jack.	
2. Carrier (2).	Carefully remove from item (1).	The use of two pry bars may be necessary to separate item (2) from item (1).

REAR TANDEM AXLES.

3-69. FORWARD-REAR AXLE CARRIER REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE HOUSING
2. FORWARD-REAR AXLE CARRIER
3. LOCKWASHER (12)
4. SCREW
5. HEX HEAD NUT (11)
6. STUD (11)

TA 238382

REAR TANDEM AXLES.

3-69. FORWARD-REAR AXLE CARRIER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING.		
3. Housing (1).	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
4. Housing (1).	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
5. Housing (1).	Apply silicone sealer as shown.	
6. Carrier (2).	Carefully install into item (1).	
7. Eleven lockwashers (3) and nuts (5).	Install and torque to 220-240 lb-ft on item (6).	
8. Lockwasher (3) and screw (4).	Install and torque to 160-176 lb-ft on item (6).	

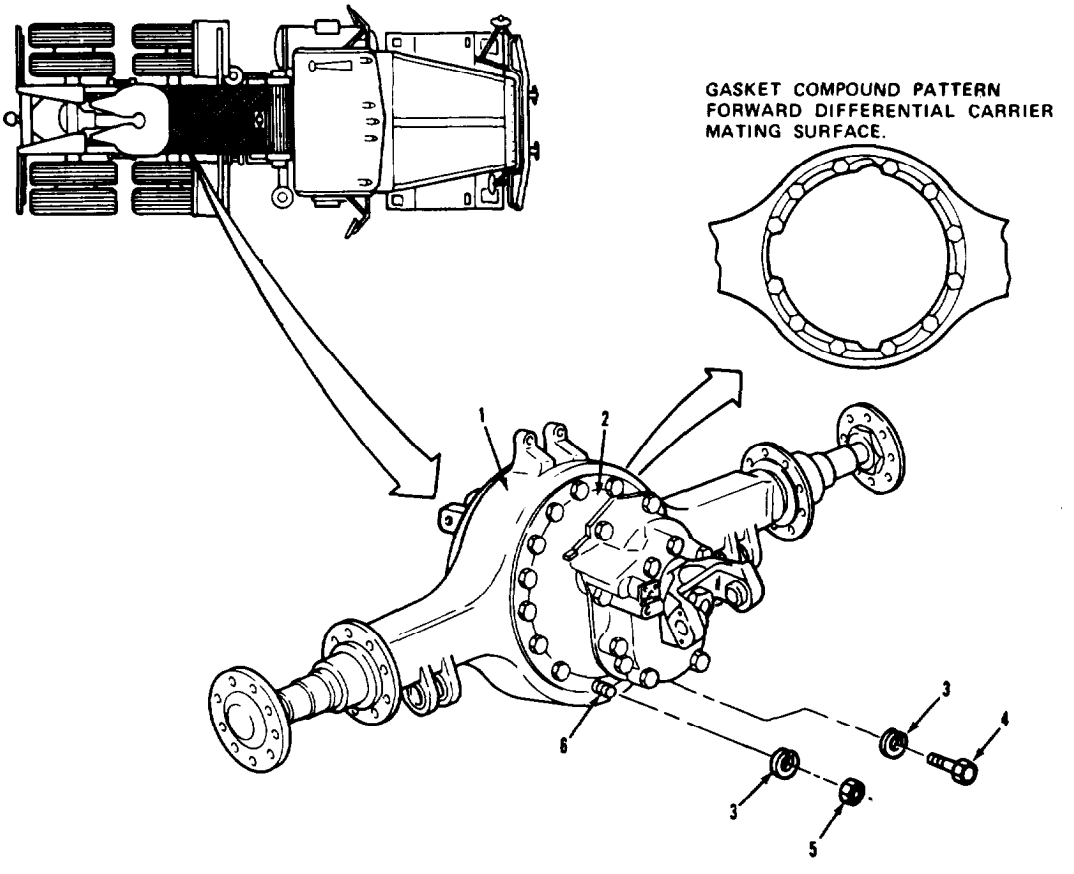
NOTE

Follow-on maintenance action required:

Refill axle housing with gear oil (LO 9-2320-283-12).
Install output flange (para 3-66).
Connect front and rear drive shafts (TM 9-2320-283-20).
Install differential lockout (para 3-71).
Install two axle shafts (TM 9-2320-283-20).

REAR TANDEM AXLES.

3-69. FORWARD-REAR AXLE CARRIER REPLACEMENT (Continued).



LEGEND:

1. FORWARD-REAR AXLE HOUSING
2. FORWARD-REAR AXLE CARRIER
3. LOCKWASHER (12)
4. SCREW
5. HEX HEAD NUT (11)
6. STUD (11)

TA 238363

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR.

THIS TASK COVERS

a, Disassembly.
b. Cleaning and Inspection.
c. Assembly.
d. Adjusting Pinion Bearing Preload.
e. Adjusting Differential Preload.
f. Adjusting Ring Gear Backlash.
g. Ring Gear and Pinion Tooth Contact.
h. Adjusting Tooth Contact Pattern.
i. Final Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT

SPECIAL TOOLS
Staking tool
(33287) J-26883.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
3-69.	Forward-rear differential carrier removed.
3-67.	Differential carrier cover removed.

MATERIALS/PARTS (P/N)
Oil, lubricating: OE/HDO-30.
Item 17, Appendix B.
Pin, cotter
(52304) 90873.
Screw, hex head (12)
(52304) 96271.
Pin, cotter
(52304) 90876.
Cone, inner pinion bearing
(52304) 85439.
Cone, outer pinion bearing
(52304) 110846.
Cup, inner pinion bearing
(52304) 14217.
Cup, outer pinion bearing
(52304) 35502.
Bearing, pinion pilot
(52304) 15828.
Cup, differential bearing
(52304) 9803.
Cone, differential bearing
(52304) 27813.
Cup, differential bearing
(52304) 90943.
Cone, differential bearing
(52304) 6082.
Pin, dowel (16)
(52304) 7641.

PERSONNEL REQUIRED
Two (MOS-63W).

REFERENCES (TM)
TM 9-2320-283-34P.

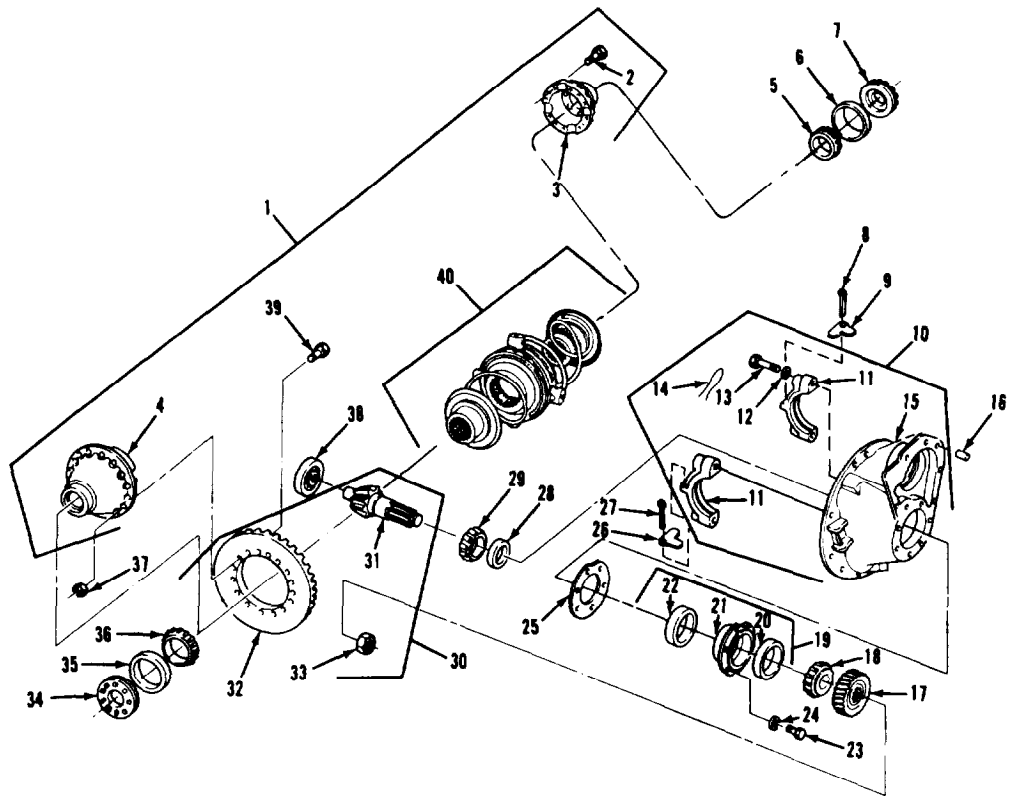
TROUBLESHOOTING REFERENCES
Paragraph 2-7.

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
When using a hydraulic press for removal or installation of bearings, wear a face shield to prevent possible injury.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL WHEEL CAGE ASSEMBLY
2. HEX HEAD SCREW (12)
3. PLAIN CASE HALF
4. FLANGED CASE HALF
5. DIFFERENTIAL BEARING CONE
6. DIFFERENTIAL BEARING CUP
7. DIFFERENTIAL BEARING ADJUSTER
8. COTTER PIN
9. BEARING ADJUSTER LOCK
10. DIFFERENTIAL ASSEMBLY
11. BEARING CAP (2)
12. FLAT WASHER (4)
13. DRILLED HEX HEAD SCREW (4)
14. LOCKWIRE (4)
15. FORWARD CARRIER
16. CARRIER COVER DOWEL PIN
17. HELICAL PINION GEAR
18. OUTER PINION BEARING CONE
19. PINION BEARING CUP AND CAGE
20. OUTER PINION BEARING CUP
21. BEARING CAGE
22. INNER PINION BEARING CUP
23. SCREW (6)
24. LOCKWASHER (6)
25. PINION BEARING CAGE SHIM
26. BEARING ADJUSTER LOCK
27. COTTER PIN
28. PINION BEARING SPACER
29. INNER PINION BEARING CONE
30. RING GEAR AND DRIVE PINION ASSEMBLY
31. DRIVE PINION
32. RING GEAR
33. PINION NUT
34. DIFFERENTIAL BEARING ADJUSTER
35. DIFFERENTIAL BEARING CUP
36. DIFFERENTIAL BEARING CONE
37. LOCKNUT (16)
38. PINION PILOT BEARING
39. SPECIAL HEAD SCREW (16)
40. DIFFERENTIAL No-SPIN* UNIT

TA 238364

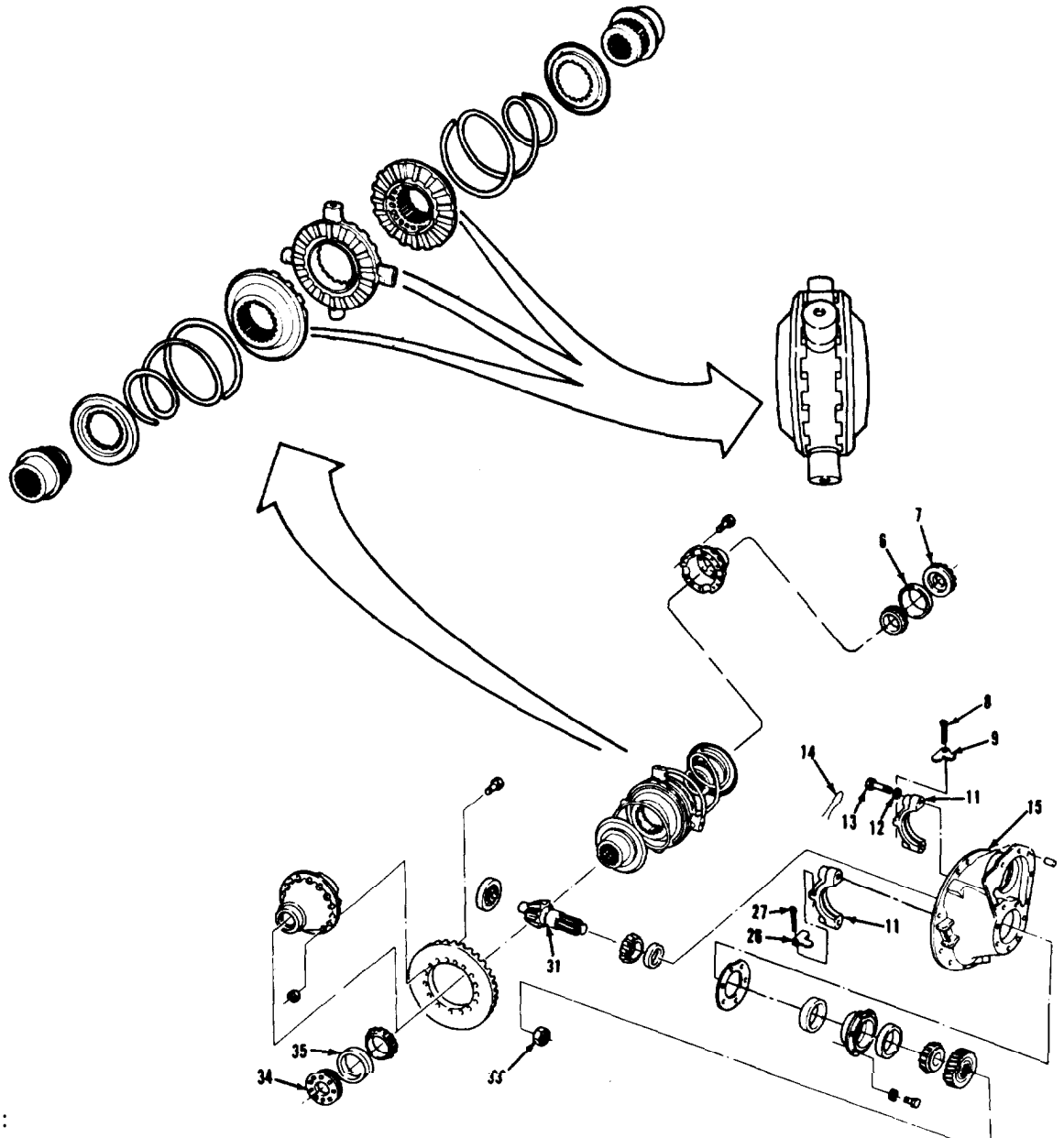
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	NOTE Mount forward-rear axle carrier in a suitable overhaul stand.	
1. Nut (33).	Loosen from item (31), but do not remove.	
	NOTE Rotate overhaul stand so that ring gear is facing up.	
2. Two caps (11) and carrier (15).	Center punch for correct location and alinement.	This will provide for correct alinement during reassembly.
3. Two adjusters (7) and (34).	Center punch for correct alinement and location.	If a new ring gear and drive pinion assembly are being installed, it is not necessary to center punch items (7) and (34).
4. Lockwire (14).	Cut, remove, and discard.	
5. Two pins (8) and (27).	Remove from items (11), (9), and (26).	Retain items (9) and (26) for reassembly. Discard item (8) and (27).
6. Four screws (13) and washers (12).	Remove from items (11).	
7. Two adjusters (7) and (34).	Remove from item (15).	
8. Two cups (6) and (35).	Remove from item (15).	
	NOTE If ring gear and drive pinion are to be reused, determine backlash before disassembly. Use a suitable dial indicator as illustrated in step 55c.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

6. DIFFERENTIAL BEARING CUP
7. DIFFERENTIAL BEARING ADJUSTER
8. COTTER PIN
9. BEARING ADJUSTER LOCK
11. BEARING CAP (2)
12. FLAT WASHER (4)
13. DRILLED HEX HEAD SCREW (4)
14. LOCKWIRE (4)
15. FORWARD CARRIER
26. BEARING ADJUSTER LOCK
27. COTTER PIN
31. DRIVE PINION
33. PINION NUT
34. DIFFERENTIAL BEARING ADJUSTER
35. DIFFERENTIAL BEARING CUP

TA 238365

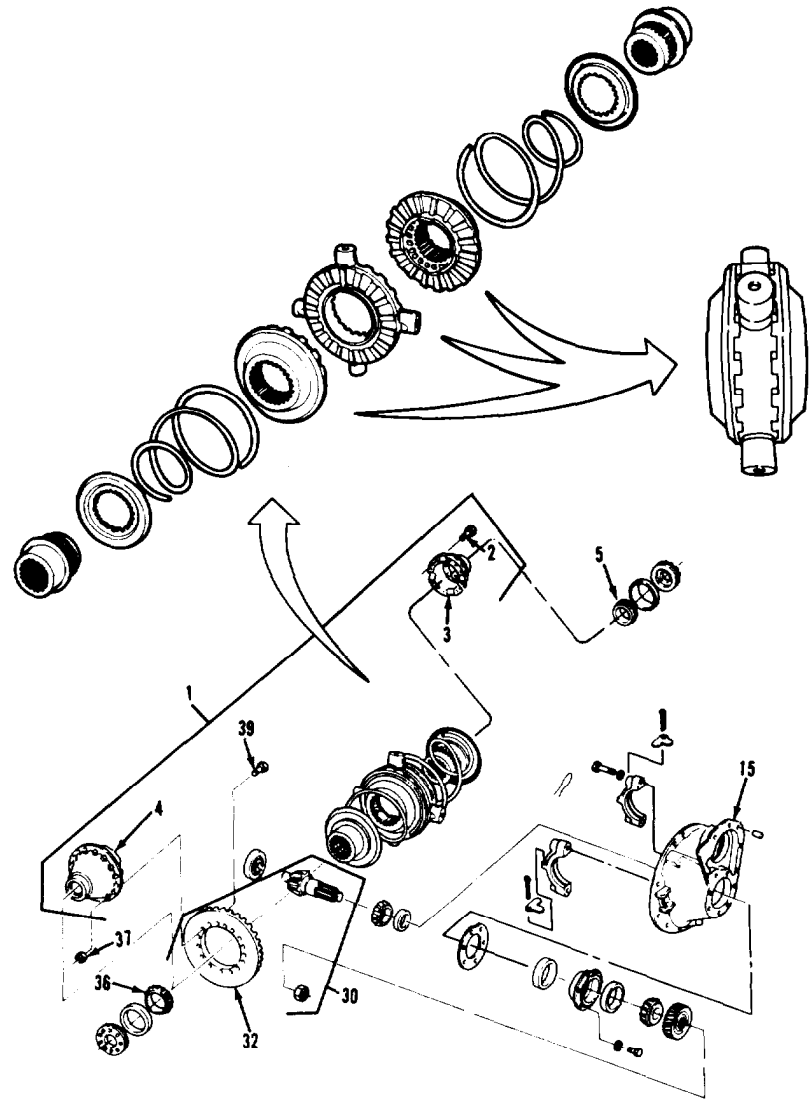
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued),

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
9. Ring gear and drive pinion assembly (30), two cones (5) and (36), and differential wheel cage assembly (1).	Remove as an assembly from item (15).	Use a suitable chain hoist attached to a steel bar. Insert the steel bar through the center of item (30) and lift out.
10. Sixteen screws (39) and locknuts (37).	Remove from item (4).	Secure item (4) in a suitable holding fixture to prevent it from turning while loosening items (37) and (39).
11. Gear (32).	Remove from item (4).	If item (32) will not drop off, tap outer diameter with soft mallet to loosen.
12. Case halves (3) and (4).	Center punch for correct alinement for reassembly.	
	WARNING The differential wheel cage assembly is under spring tension. Remove the last screw very slowly to prevent it from springing apart and causing personal injury.	
13. Eleven screws (2).	Remove from item (3) and discard items (2).	
14. Screw (2).	Slowly loosen and remove from item (3) and discard item (2).	Items (3) and (4) will separate as soon as the last item (2) is removed.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL WHEEL CAGE ASSEMBLY
2. HEX HEAD SCREW (12)
3. PLAIN CASE HALF
4. FLANGED CASE HALF
5. DIFFERENTIAL BEARING CONE
15. FORWARD CARRIER
30. RING GEAR AND DRIVE PINION ASSEMBLY
32. RING GEAR
36. DIFFERENTIAL BEARING CONE
37. LOCKNUT (16)
39. SPECIAL HEAD SCREW (16)

TA 238368

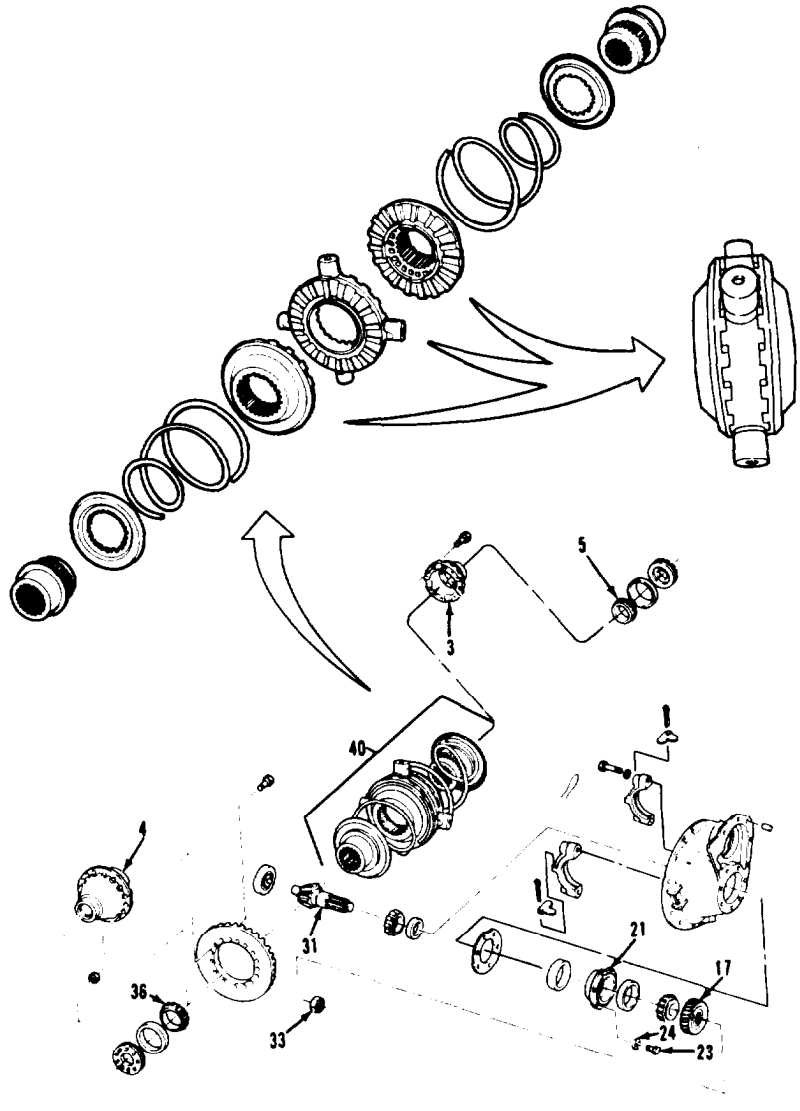
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
	NOTE The differential No-SPIN@ unit is a non-repairable item. If it fails the inspection it is to be discarded.	
15. Unit (40).	Remove from item (4).	
	NOTE Bearing cones and bearing cups which are pressed on are only to be removed if they fail inspection. Refer to step 30 for inspection. Removal of any bearing cup or cone will usually result in damage to the cone or cup.	
16. Cones (5) and (36).	Remove from item (3) using suitable bearing puller.	Discard items (5) and (36).
	NOTE Rotate forward carrier so its position is the same as being mounted in the truck.	
17. Nut (33).	Remove from item (31).	
18. Gear (17).	Remove from item (31) using suitable gear puller.	Two pry bars under item (17) may be used instead of a gear puller.
19. Six screws (23) and lockwashers (24).	Remove from item (21).	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

3. PLAIN CASE HALF
4. FLANGED CASE HALF
5. DIFFERENTIAL BEARING CONE
17. HELICAL PINION GEAR
21. BEARING CAGE
23. SCREW (6)
24. LOCKWASHER (6)
31. DRIVE PINION
33. PINION NUT
36. DIFFERENTIAL BEARING CONE
40. DIFFERENTIAL No-SPIN'= UNIT

TA 238367

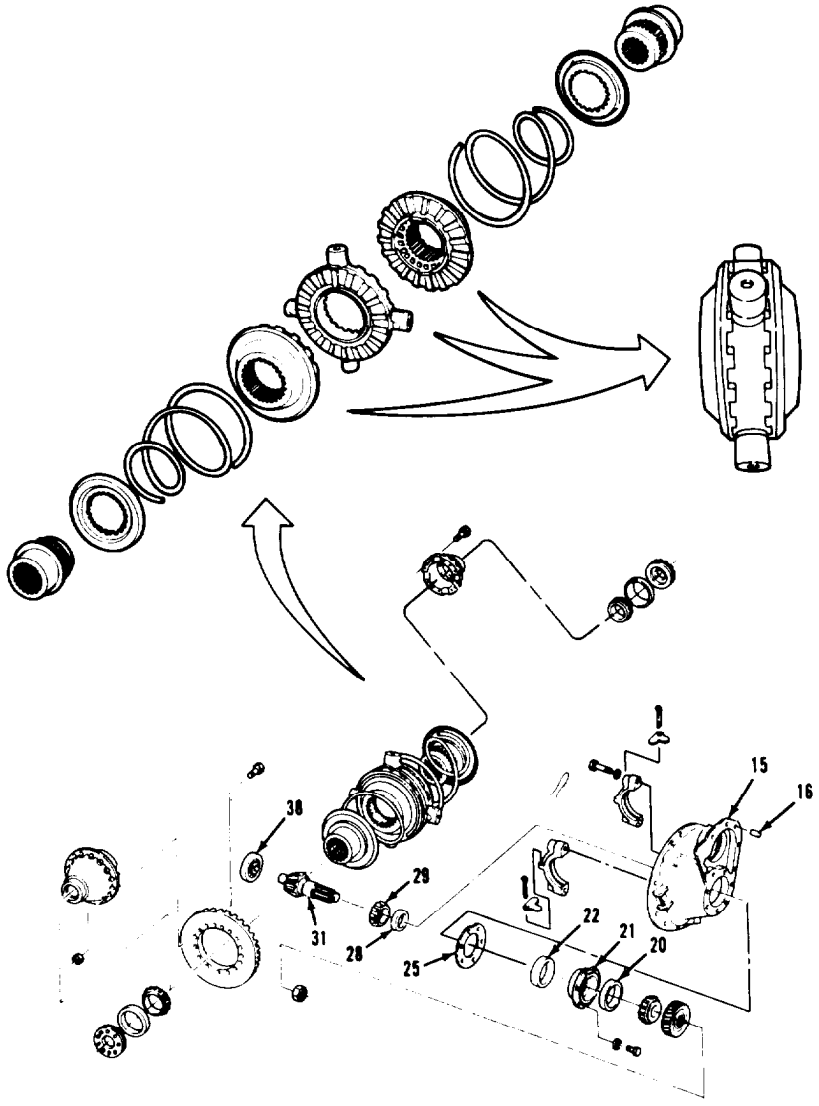
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
20. Pinion (31) and cage (21).	Remove from item (15).	It may be necessary to tap the back of item (31) with a soft face mallet for ease of removal.
	NOTE More than one shim may be used. Count all shims and tag for use during assembly.	
21. Shims (25).	Remove from item (15).	Do not lose shims, they will be used for reassembly.
22. Pinion (31).	Remove from item (21) using a suitable hydraulic press.	
23. Cone (18).	Lift out of item (21).	
24. Spacer (28).	Remove from item (31).	Item (28) will be reused.
25. Cone (29).	Remove from item (31) using a suitable split type bearing puller and a hydraluic press.	
26. Bearing (38).	Remove from item (31) using a suitable split type bearing puller and a hydraulic press.	
27. Two cups (20) and (22).	Remove from item (21) using a ball peen hammer and drift punch.	
	NOTE Do not remove dowel pin unless damaged or worn. If necessary to remove, proceed to step 28.	
28. Pin (16).	Remove using vise grips and twist out. Discard after removal.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

15. FORWARD CARRIER
16. CARRIER COVER DOWEL PIN
20. OUTER PINION BEARING CUP
21. BEARING CAGE
22. INNER PINION BEARING CUP
25. PINION BEARING CAGE SHIM
28. PINION BEARING SPACER
29. INNER PINION BEARING CONE
31. DRIVE PINION
38. PINION PILOT BEARING

TA 238368

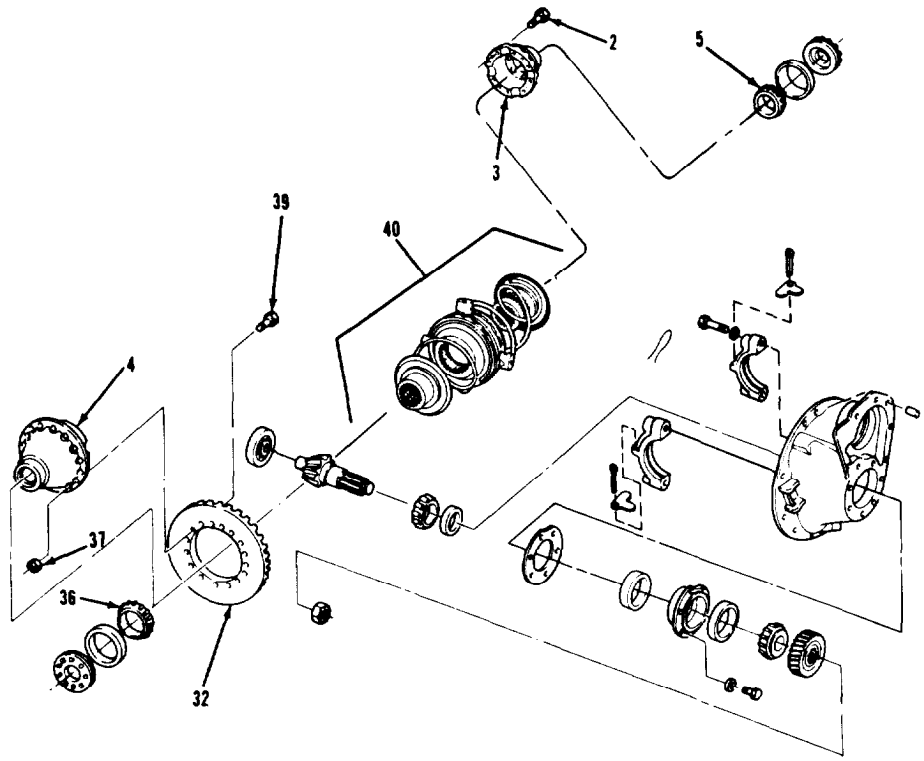
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING AND INSPECTION.		
29. All parts.	Clean and inspect.	Refer to paragraphs 3-4 and 3-5.
C. ASSEMBLY.		
	CAUTION Coat all parts with OE/HDO-30 lubricating oil before assembly.	
30. New cone (5).	Press onto item (3) using suitable bearing installation tool and hydraulic press.	
31. New cone (36).	Press onto item (4) using suitable bearing installation tool and hydraulic press.	
32. Unit (40).	Place in item (4).	
33. Case half (3).	Aline punch marks with item (4) and push halves together and secure with one new item (2).	
34. Eleven new screws (2).	Install in remaining holes of item (3). Torque all new items (2) to 150-180 lb-ft.	
	CAUTION Make certain ring gear sits flat on flanged case. Any unevenness will result in incorrect adjustment and damage to the ring and pinion gear will result.	
35. Gear (32).	Install onto item (4).	
36. Sixteen screws (39) and locknuts (37).	Install in items (32) and (4), torque to 195-245 lb-ft.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

2. HEX HEAD SCREW (12)
3. PLAIN CASE HALF
4. FLANGED CASE HALF
5. DIFFERENTIAL BEARING CONE
32. RING GEAR
36. DIFFERENTIAL BEARING CONE
37. LOCKNUT (16)
39. SPECIAL HEAD SCREW (16)
40. DIFFERENTIAL No-SPIN=' UNIT

TA 238369

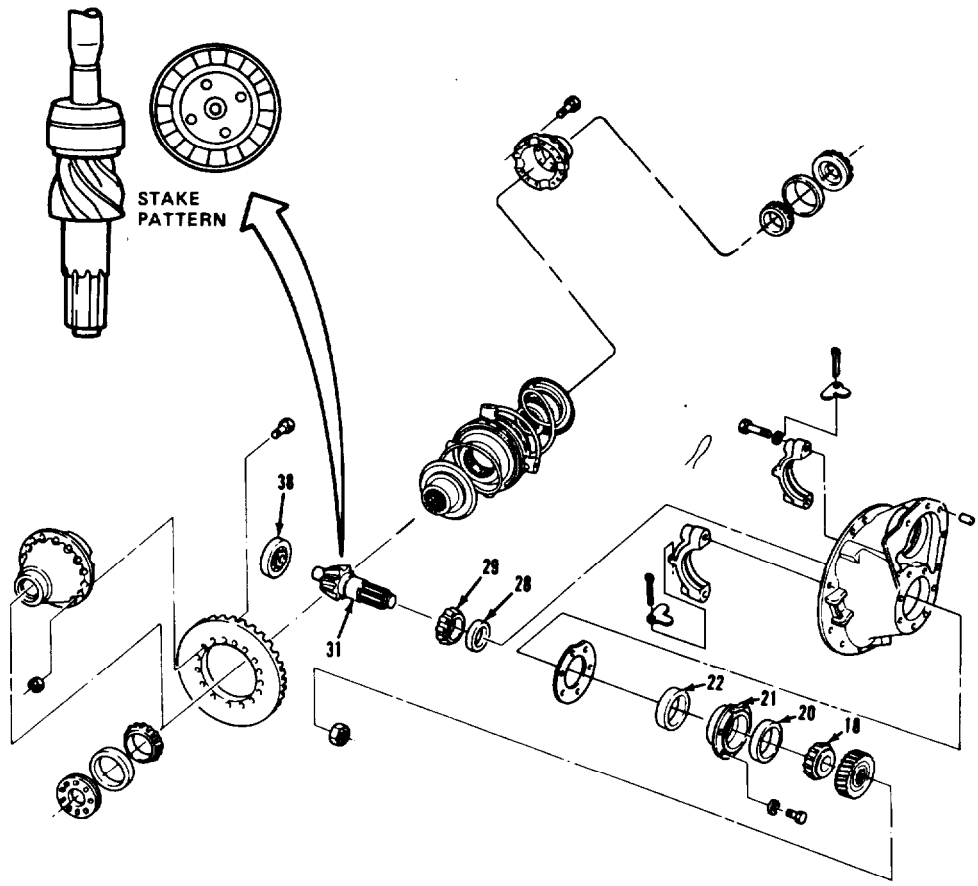
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
37. New cups (20) and (22).	Install in proper location of item (21) using a suitable bearing sleeve and hydraulic press.	Make certain items (20) and (22) bottom in item (21).
	CAUTION Before complete reassembly of the drive pinion, the correct pinion bearing spacer will have to be determined after installation of pilot bearing and pinion bearing cone. Refer to step 52 for trial build-up and step 53 for final pinion bearing preload test to determine the correct size of spacer to be used.	
38. New bearing (38).	Install onto end of item (31) using suitable bearing sleeve and hydraulic press.	Stake item (38) as shown using staking tool.
39. New cone (29).	Install onto item (31) using suitable bearing sleeve and hydraulic press.	Make certain item (29) bottoms on item (31).
40. Spacer (28).	Install onto item (31).	Items (28) are available in thirty-six different sizes. Use the correct size as determined in steps 52 and 53.
41. Cage (21).	Install onto item (31) using suitable hydraulic press.	
42. New cone (18).	Install into front of item (21).	
	CAUTION After installation of outer bearing cone, make a final check of pinion bearing preload. Refer to step 53.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

18. OUTER PINION BEARING CONE
20. OUTER PINION BEARING CUP
21. BEARING CAGE
22. INNER PINION BEARING CUP
28. PINION BEARING SPACER
29. INNER PINION BEARING CONE
31. DRIVE PINION
38. PINION PILOT BEARING

TA 238370

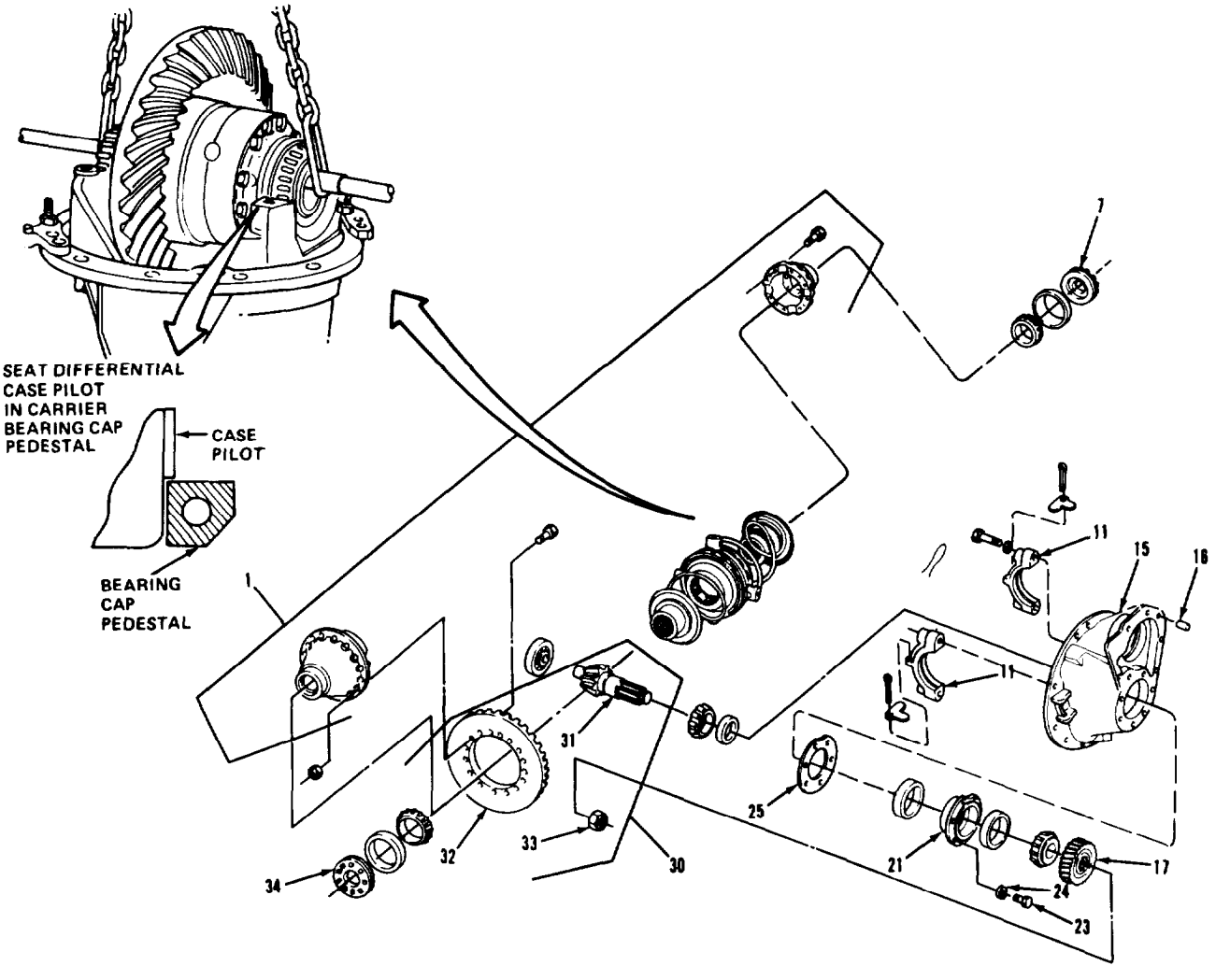
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
	NOTE If ring gear and drive pinion assembly are to be reused, install the same amount and size of shims removed during disassembly. When installing a new ring gear and drive pinion assembly, use a nominal shim pack of 0.029 inch.	
43. Shims (25).	Place on item (15) and make certain lube hole is clear.	Items (25) are available in five different sizes. The total number and sizes will be determined during adjustment.
44. Assembled cage (21).	Install into item (15).	
45. Six screws (23) and lockwashers (24).	Install in item (21) and torque to 155-175 lb-ft.	Items (23) and assembled item (21) may have to be removed during final adjustment for changing shims.
46. Gear (17).	Install on item (31) using suitable installation tool.	
47. Nut (33).	Install on item (31) and torque to 780-960 lb-ft.	
48. Gear (32) and differential wheel cage assembly (1).	Install into item (15).	During installation, tilt item (30) to allow differential case pilot to mesh properly with edge of bearing cap pedestal as shown.
49. Two cups (6) and (35), adjusters (7) and (34), and caps (11).	Install in item (15).	Make certain punch marks are properly alined and threads of items (7) and (34) are not cross threaded with item (11).

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL WHEEL CAGE ASSEMBLY
7. DIFFERENTIAL BEARING ADJUSTER
11. BEARING CAP (2)
15. FORWARD CARRIER
16. CARRIER COVER DOWEL PIN
17. HELICAL PINION GEAR
21. BEARING CAGE
23. SCREW (6)
24. LOCKWASHER (6)
25. PINION BEARING CAGE SHIM
30. RING GEAR AND DRIVE PINION ASSEMBLY
31. DRIVE PINION
32. RING GEAR
33. PINION NUT
34. DIFFERENTIAL BEARING ADJUSTER

TA 238371

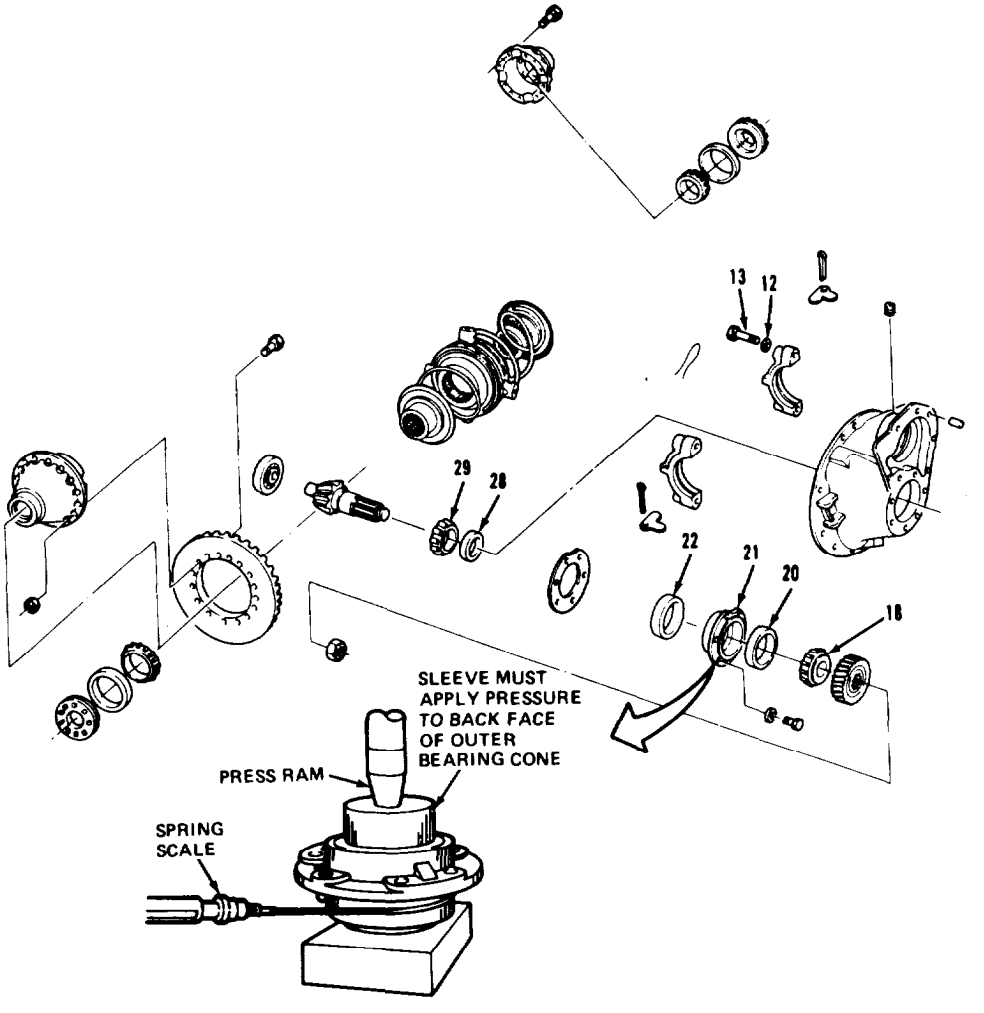
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
	CAUTION Do not torque the four drilled hex screws until all adjustments have been made.	
50. Four screws (13) and washers (12).	Install and tighten finger tight. If necessary use a hand wrench, but do not tighten.	Refer to steps 54 and 55 under Adjustment for Setting Differential Preload and ring gear backlash.
D. ADJUSTING PINION BEARING PRELOAD.		
	CAUTION Once correct pinion bearing preload has been established note the pinion bearing spacer size used. Select a pinion bearing spacer 0.001 inch larger for use in the final pinion bearing cage assembly.	
	NOTE When a new gear set or pinion bearings are used, use a bearing spacer with a thickness of 0.638 inch. If original parts are used, use bearing spacer removed during disassembly.	
51. Assembled cage (21).	For trial build-up of pinion bearing preload test, adjust as follows:	Item (21) should be assembled with items (20), (22), (18), (29), and correct (28).
	a. Place assembled item (21) in press. Position sleeve so that load is applied directly to the back face of item (18) as shown.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

12. FLAT WASHER (4)
13. DRILLED HEX HEAD SCREW (4)
18. OUTER PINION BEARING CONE
20. OUTER PINION BEARING CUP
21. BEARING CAGE
22. INNER PINION BEARING CUP
28. PINION BEARING SPACER
29. INNER PINION BEARING CONE

TA 238372

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ADJUSTING PINION BEARING PRELOAD.		
51. Assembled cage (21) (continued).	For trial build-up of pinion bearing preload test, adjust as follows (continued):	
	b. Apply hydraulic press load of 13.5 to 15.5 tons to assembled item (21).	
	c. Wrap soft wire around assembled item (21) and attach a spring scale as shown.	
	d. Pull spring scale. Preload is correct when torque required to rotate assembled item (21) is is from 10-20 lb-in..	If necessary, adjust pinion bearing preload by changing item (28). A thicker item (28) will decrease preload. A thinner item (28) will increase preload.

CAUTION

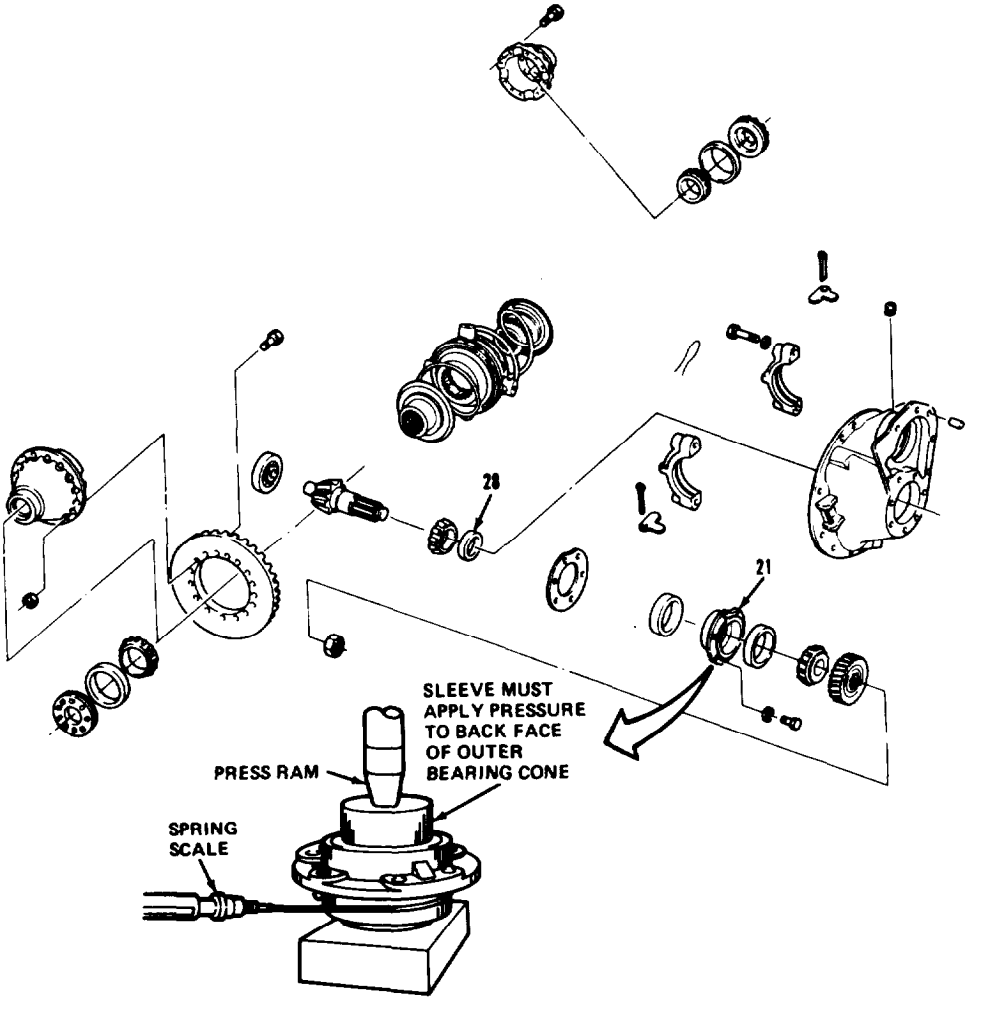
After adjusting pinion bearing preload without drive pinion a final preload test must be made. Proceed to step 52 for adjustments with drive pinion installed in bearing cage assembly.

NOTE

Drive pinion and pinion pilot bearing must be installed in bearing cage assembly for final bearing preload test.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

21. BEARING CAGE
28. PINION BEARING SPACER

TA 238373

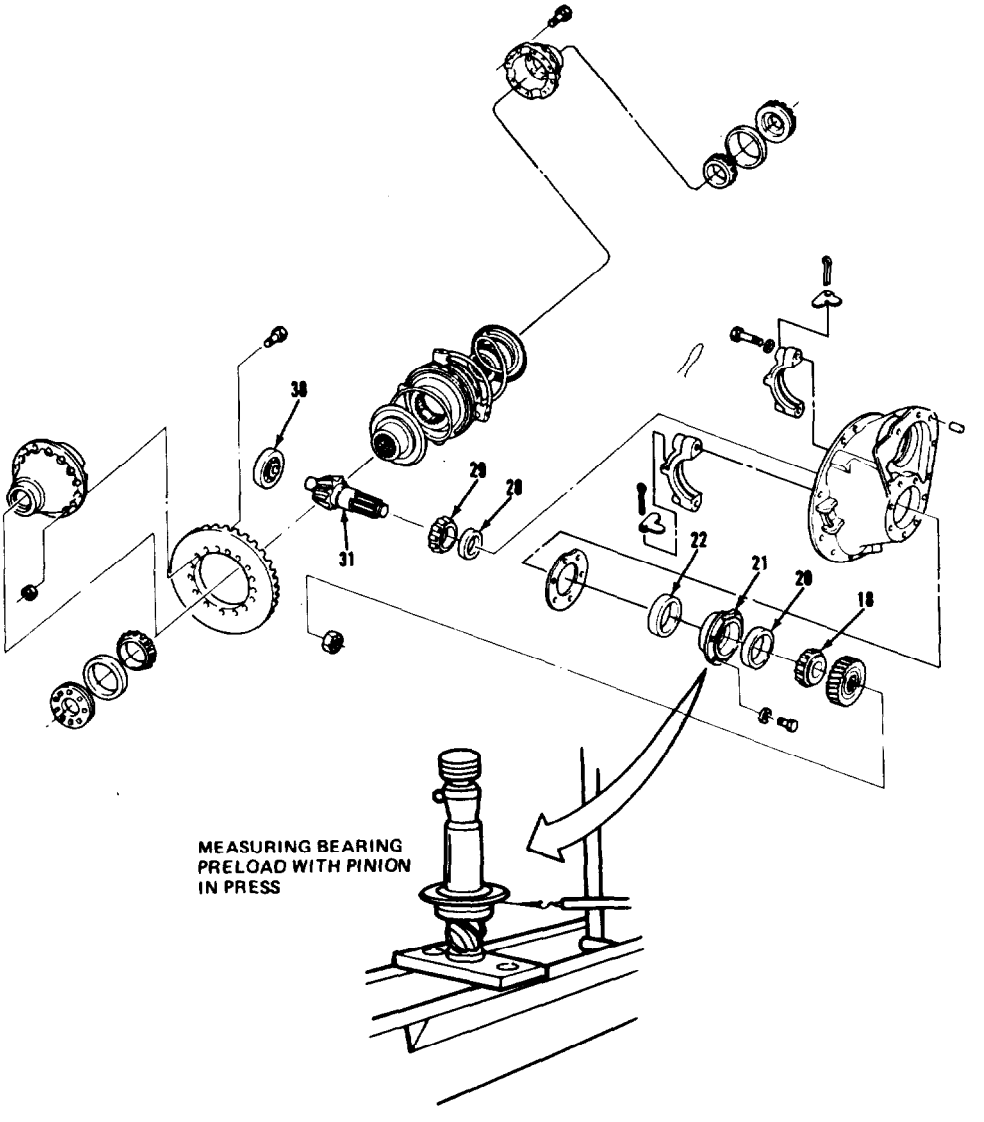
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ADJUSTING PINION BEARING PRELOAD (Continued).		
52. Assembled bearing cage (21).	For final pinion bearing preload test, adjust as follows:	Item (21) should be assembled with items (20), (22), (19), (29), (38), (31), and correct item (28).
	a. Place assembled item (21) with a suitable sleeve or spacer so that load is applied directly to the back face of item (18) as shown.	
	b. Apply hydraulic press load of 13.5 to 15.5 tons to assembled item (21).	
	c. Wrap soft wire around assembled item (21) and attach a spring scale as shown.	
	d. Pull spring scale. Preload is correct when torque required to rotate the assembled item (21) is from 15-35 lb-in..	If necessary, adjust pinion bearing preload by changing item (28). A thicker item (28) will decrease preload. A thinner item (28) will increase preload.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

18. OUTER PINION BEARING CONE
20. OUTER PINION BEARING CUP
21. BEARING CAGE
22. INNER PINION BEARING CUP
28. PINION BEARING SPACER
29. INNER PINION BEARING CONE
31. DRIVE PINION
38. PINION PILOT BEARING

TA 238374

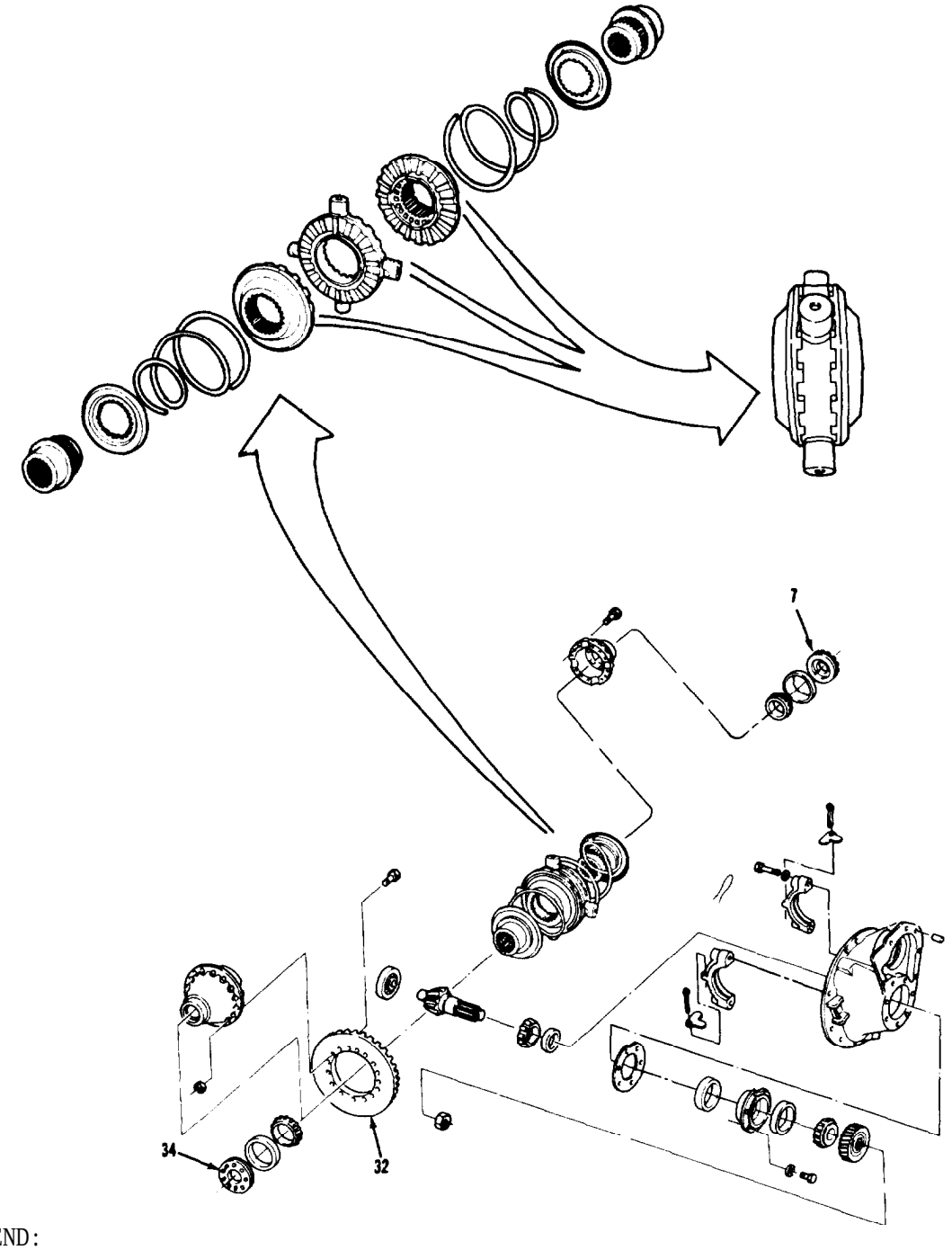
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. ADJUSTING DIFFERENTIAL PRELOAD.		
53. Adjusters (7) and (34).	Adjust differential preload as follows:	Tightening preloads the bearings, and provides proper gear backlash.
	a, Loosen item (7) on same side as ring gear teeth until its first thread is visible.	
	b. Tighten item (34) on other side until there is no backlash.	This can be tested by facing item (32) and pushing item (32) away from the body while gently rocking item (32) from side to side. There should be no free movement.
	c. Rotate item (32) and check for any point where item (32) may bind. If such a point exists, loosen and retighten item (34). Make all further adjustments from the point of tightest mesh.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

7. DIFFERENTIAL BEARING ADJUSTER
32. RING GEAR
34. DIFFERENTIAL BEARING ADJUSTER

TA 238375

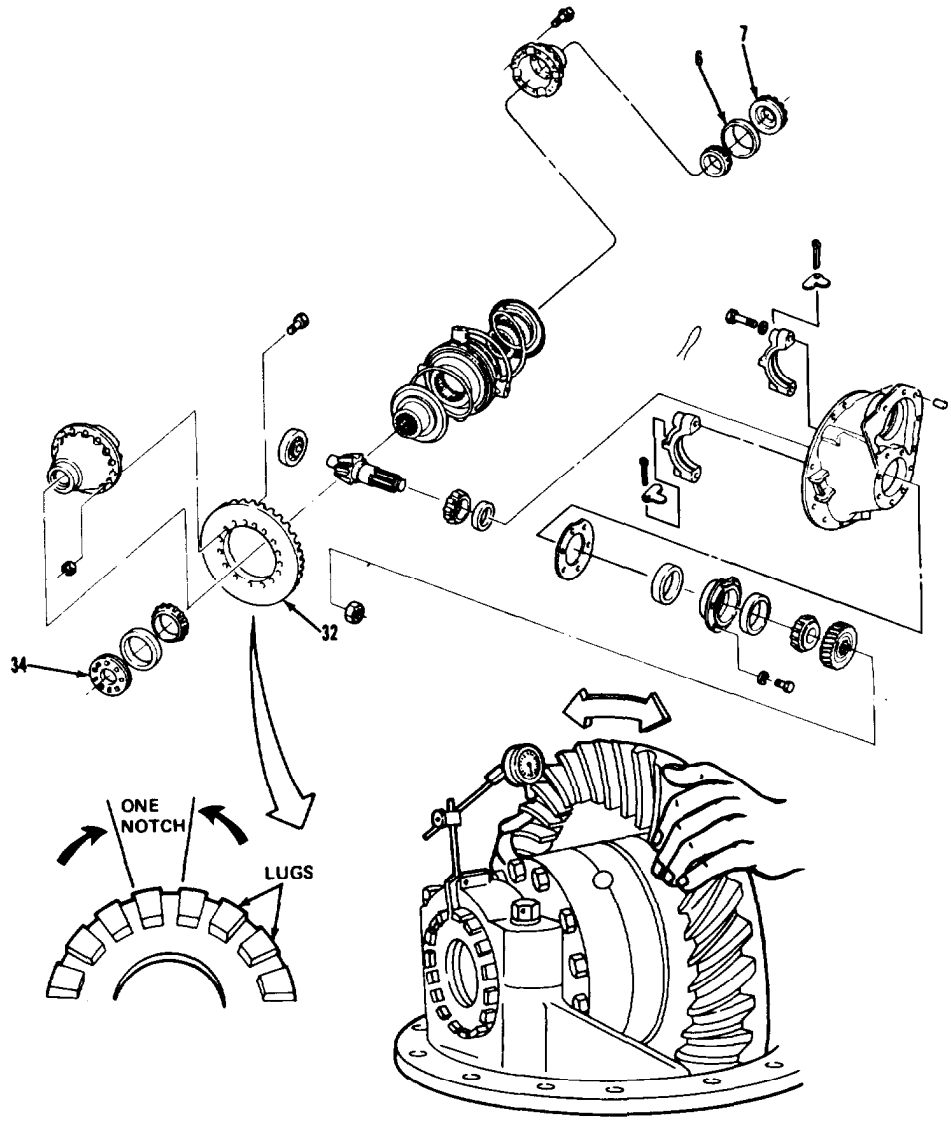
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
F. ADJUSTING RING GEAR BACKLASH.		
54. Adjusters (7) and (34).	Adjust ring gear backlash as follows:	
	a. Loosen item (34) one notch.	One notch is the movement of the lead edge of one adjuster lug to the lead edge of the next lug post at a preselected point as shown.
	b. Tighten item (7) on the teeth side of item (32) until it contacts item (6).	Contact is felt in the form of increased resistance to item (7) movement.
	NOTE Backlash specifications are for new ring gear and drive pinion assemblies only. Reset used gearing to backlash recorded before disassembly.	
	c. Mount dial indicator as shown. Tighten item (7) two or three notches and check item (32) backlash.	Backlash should be between 0.006 and 0.016.
	d. To add backlash loosen item (34) on back face side of item (32) one notch at a time. Tighten item (7) on opposite side until it contacts item (6). Continue to tighten the same item (7) two or three notches.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

6. DIFFERENTIAL BEARING CUP
7. DIFFERENTIAL BEARING ADJUSTER
32. RING GEAR
34. DIFFERENTIAL BEARING ADJUSTER

TA 238376

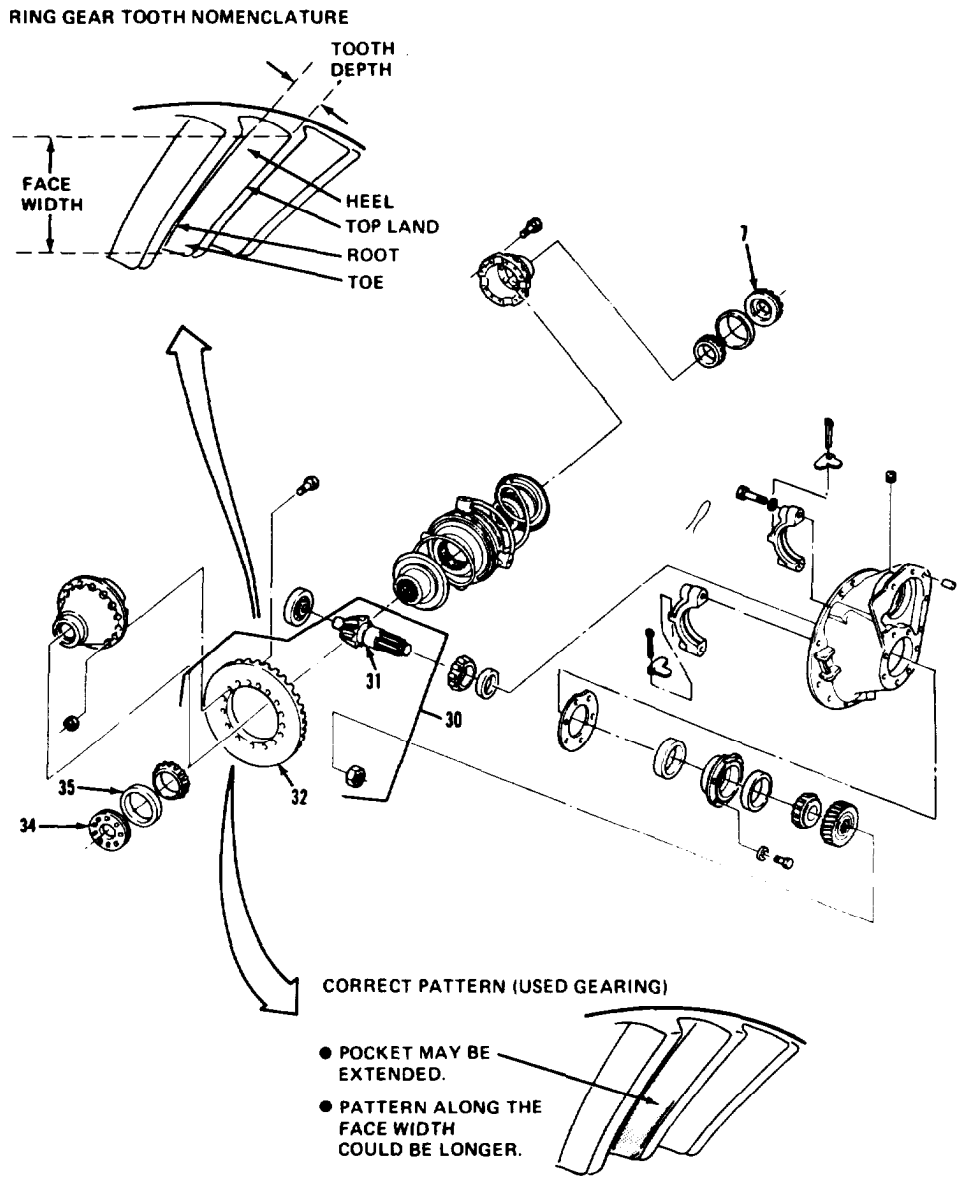
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued),

LOCATION/ITEM	ACTION	REMARKS
F. ADJUSTING RING GEAR BACKLASH (Continued).		
54. Adjusters (7) and (34) (continued).	Adjust ring gear backlash as follows (continued):	
	e. To remove backlash loosen item (7) on the teeth side of item (32) one notch at a time. Tighten the opposite item (34) until it contacts item (35). Continue to tighten the same item (34) two or three notches. Recheck backlash.	
G. RING GEAR AND PINION TOOTH CONTACT.		
55. Gear (32).	Coat nine teeth on item (32) with marking compound.	This represents the total number of teeth on item (31).
56. Used ring gear and drive pinion assembly (30).	Used item (30) tooth contact should show as follows:	Roll item (32) to obtain a contact pattern. Refer to illustration for item (32) tooth nomenclature and correct tooth pattern.
	a. Used item (30) will have a pocket at the toe-end of the gear tooth which tails into a contact line along the root of tooth.	
	b. A correct pattern is clear of the toe and centers evenly along the face width between the top land and root.	The length and shape of the pattern are considered acceptable as long as it does not run off the tooth at any point.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

7. DIFFERENTIAL BEARING ADJUSTER
30. RING GEAR AND DRIVE PINION ASSEMBLY
31. DRIVE PINION
32. RING GEAR
34. DIFFERENTIAL BEARING ADJUSTER
35. DIFFERENTIAL BEARING CUP

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

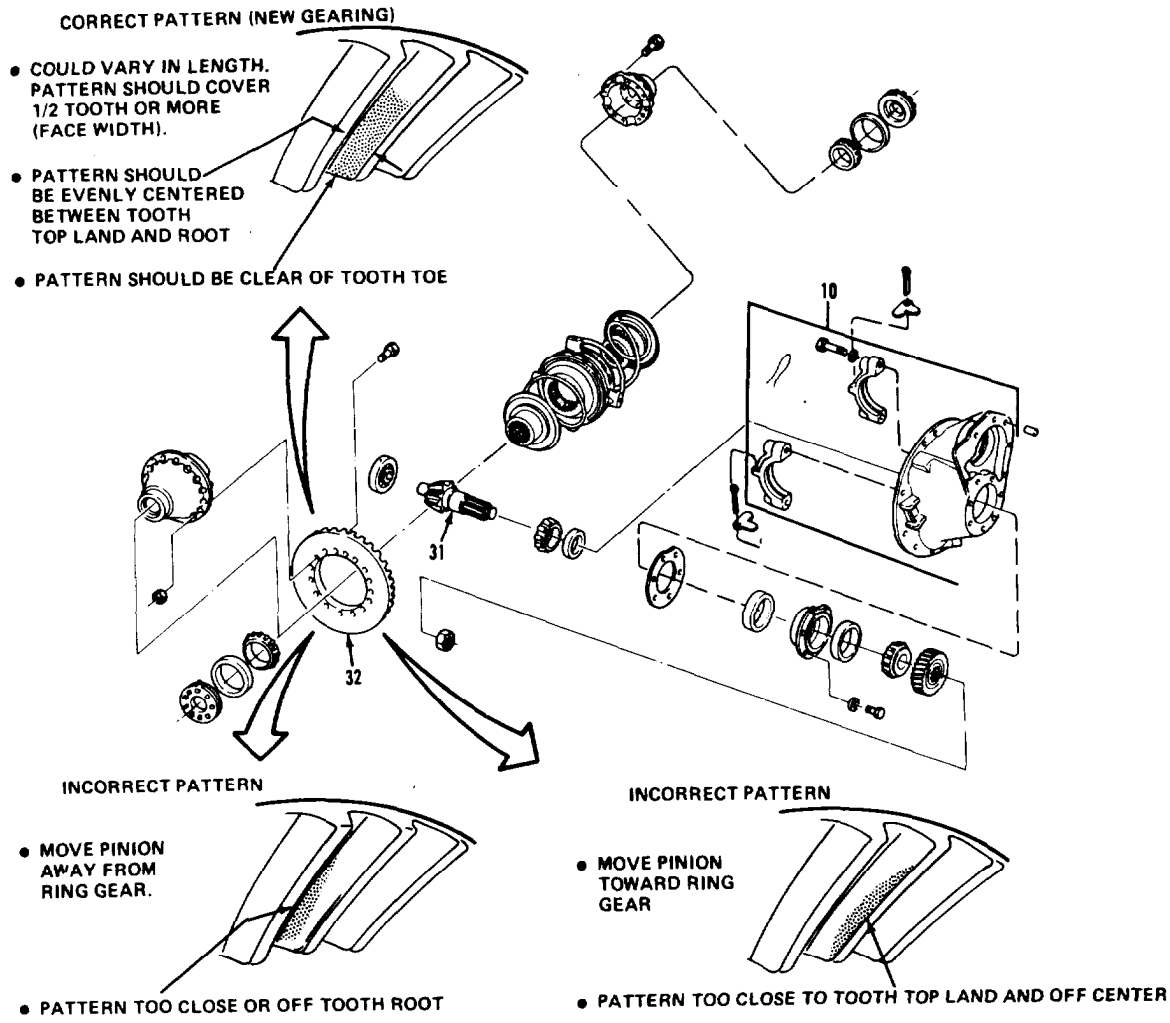
LOCATION/ITEM	ACTION	REMARKS
G. RING GEAR AND PINION TOOTH CONTACT (Continued).		
57. New ring gear and drive pinion assembly (30).	New item (30) tooth contact should show the following: a. The pattern is well centered on the tooth of item (32) with lengthwise contact clear of the toe. b. The length of the pattern in an unloaded condition is approximately one-half to two-thirds of the tooth of item (32).	Roll item (32) to obtain a contact pattern. Refer to illustration for item (32) tooth nomenclature and correct tooth patterns.
H. ADJUSTING TOOTH CONTACT PATTERN.		

NOTE

- Ring gear backlash controls the ring gear position. This adjustment moves the contact pattern along the face width of the ring gear tooth. Pinion position is determined by the size of the pinion bearing cage shim pack. It controls contact on the tooth depth of the ring gear tooth.
- When making adjustments, first adjust the drive pinion, then the backlash. Continue this method, until the pattern is correct.
- Check ring gear backlash after each shim change and adjust if necessary to maintain the. 0.006 to 0.016 inch for new ring and pinion gears.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

30. RING GEAR AND DRIVE PINION ASSEMBLY.
32. RING GEAR

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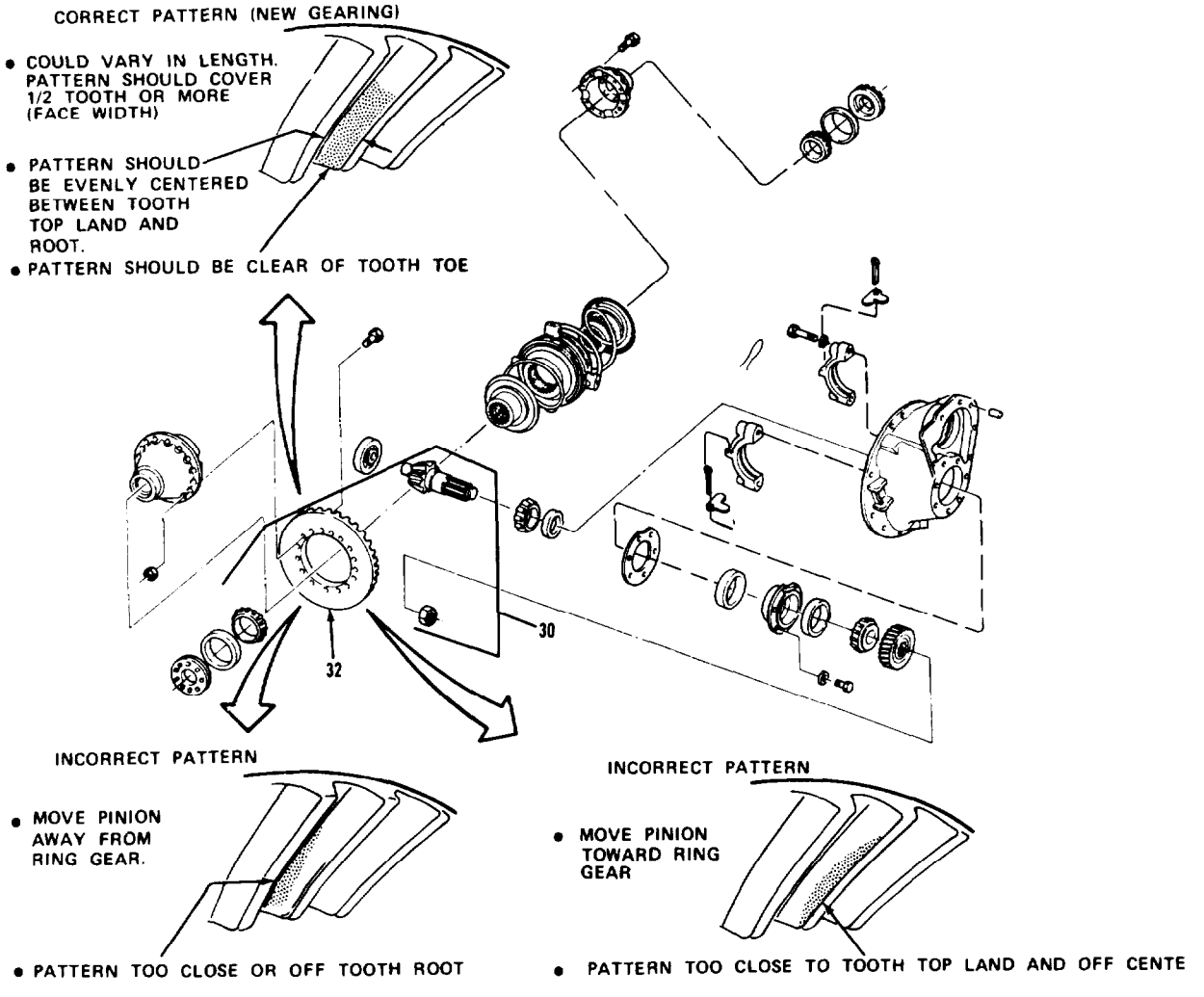
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
H. ADJUSTING TOOTH CONTACT PATTERN (Continued).		
58. Pinion (31).	Refer to illustrations and adjust item (31) position as follows: a. If item (32) tooth pattern is too close to the top land, move item (31) toward item (32) by removing shims. b. If item (32) tooth pattern is too close to the root of the tooth, move item (31) away from item (32) by adding shims.	Refer to steps 20 and 45 for shim removal and installation.

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

10. DIFFERENTIAL ASSEMBLY
31. DRIVE PINION
32. RING GEAR

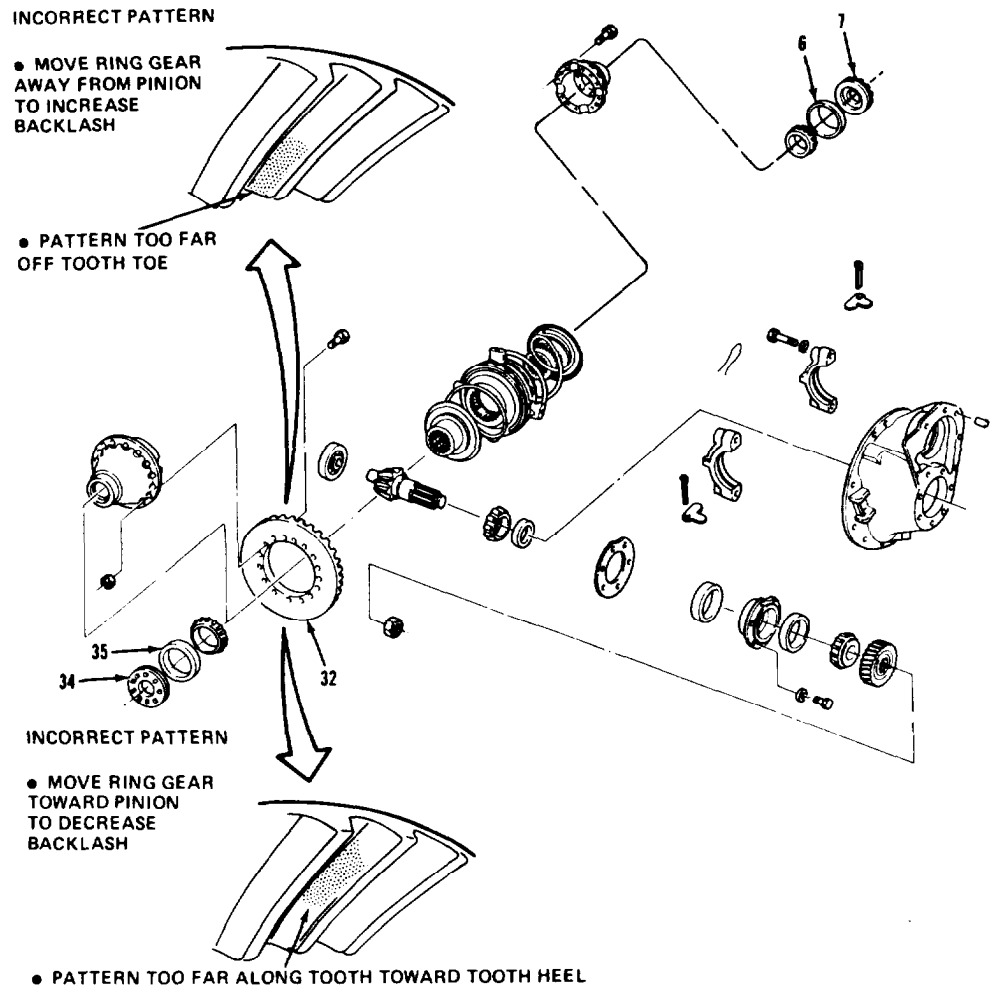
REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
H. ADJUSTING TOOTH CONTACT PATTERN (Continued).		
59. Adjusters (7) and (34).	Refer to illustrations and adjust backlash if contact patterns are similar to illustrations. a. If pattern is too far off tooth toe, add backlash by loosening item (34) on the back face side of item (32) one notch at a time. Tighten the other item (7) until it contacts item (6). Continue to tighten item (7) two or three notches. Recheck backlash. b. If pattern is too far toward tooth heel, remove backlash by loosening item (7) on the tooth side of item (32) one notch at a time. Tighten the opposite item (34) until it contacts item (35). Continue to tighten the same item (34) two or three notches. Recheck backlash.	

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

6. DIFFERENTIAL BEARING CUP
7. DIFFERENTIAL BEARING ADJUSTER
32. RING GEAR
34. DIFFERENTIAL BEARING ADJUSTER
35. DIFFERENTIAL BEARING CUP

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
I. FINAL ASSEMBLY.		
60. Four screws (13) and washer (12).	Torque to 360-440 lb-ft.	
61. Two locks (9) and (26), and new pins (8) and (27).	Install on items (11).	
62. Four new lockwires (14).	Install in items (13) on each item (11).	

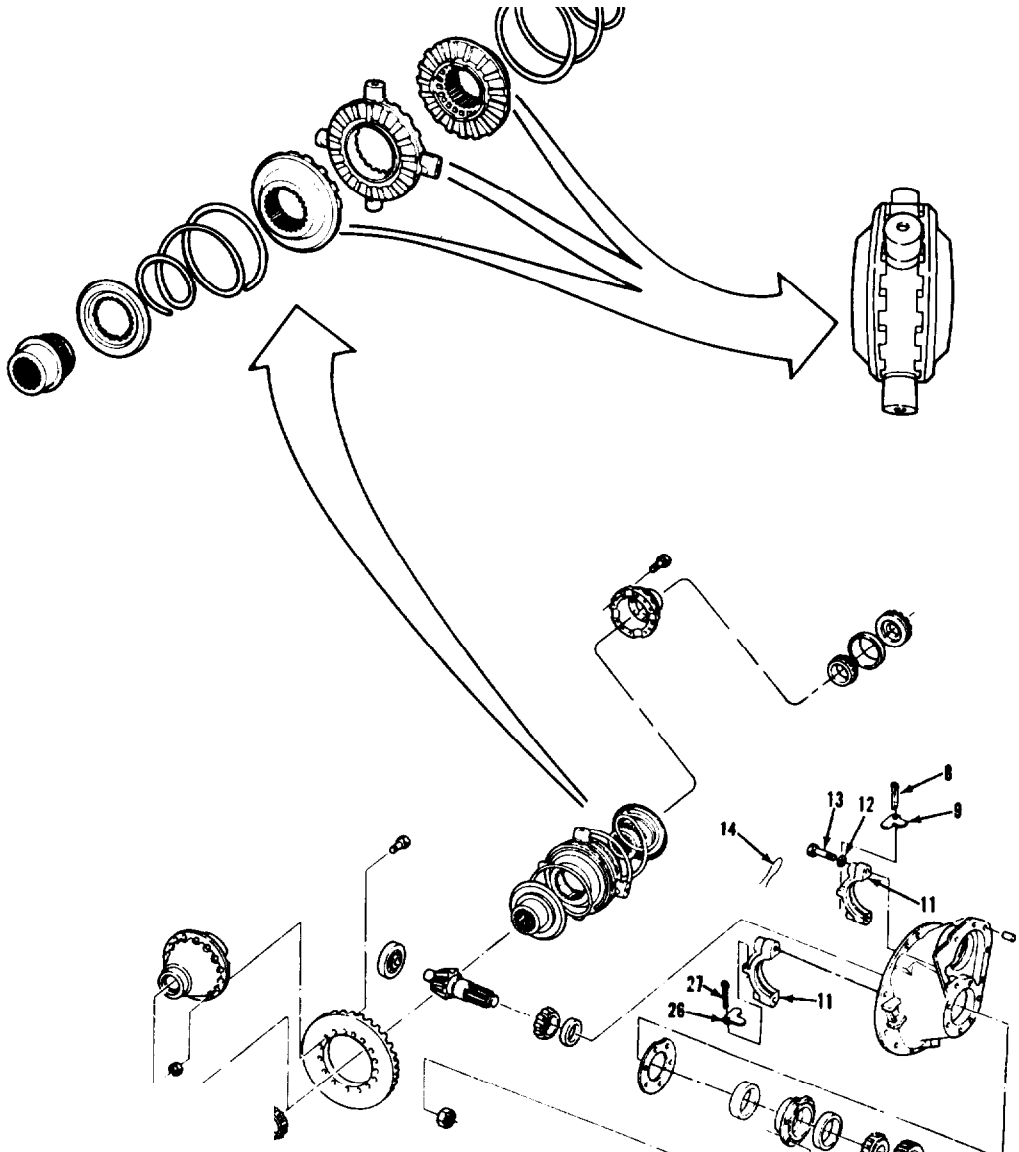
NOTE

Follow-on maintenance action required:

Install differential cover (para 3-67).
Install forward differential carrier in housing (para 3-69).

REAR TANDEM AXLES.

3-70. FORWARD-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

8. COTTER PIN
9. BEARING ADJUSTER LOCK
11. BEARING CAP (2)
12. FLAT WASHER (4)
13. DRILLED HEX HEAD SCREW (4)
14. LOCKWIRE (4)
26. BEARING ADJUSTER LOCK
27. COTTER PIN

REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR.

THIS TASK COVERS:

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-20	Air line to differential lockout disconnected.
TM 9-2320-283-10.	Air system draincocks opened.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Sealant, silicone rubber
Item 27, Appendix C.
Oil, lubricating: OE/HDO-30
Item 17, Appendix C.
Grommet, push rod
(52304) 32826.
Grommet, piston
(52304) 32832.
Oiler, piston, felt
(52304) 96916.
Grommet, cover
(52304) 32831.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

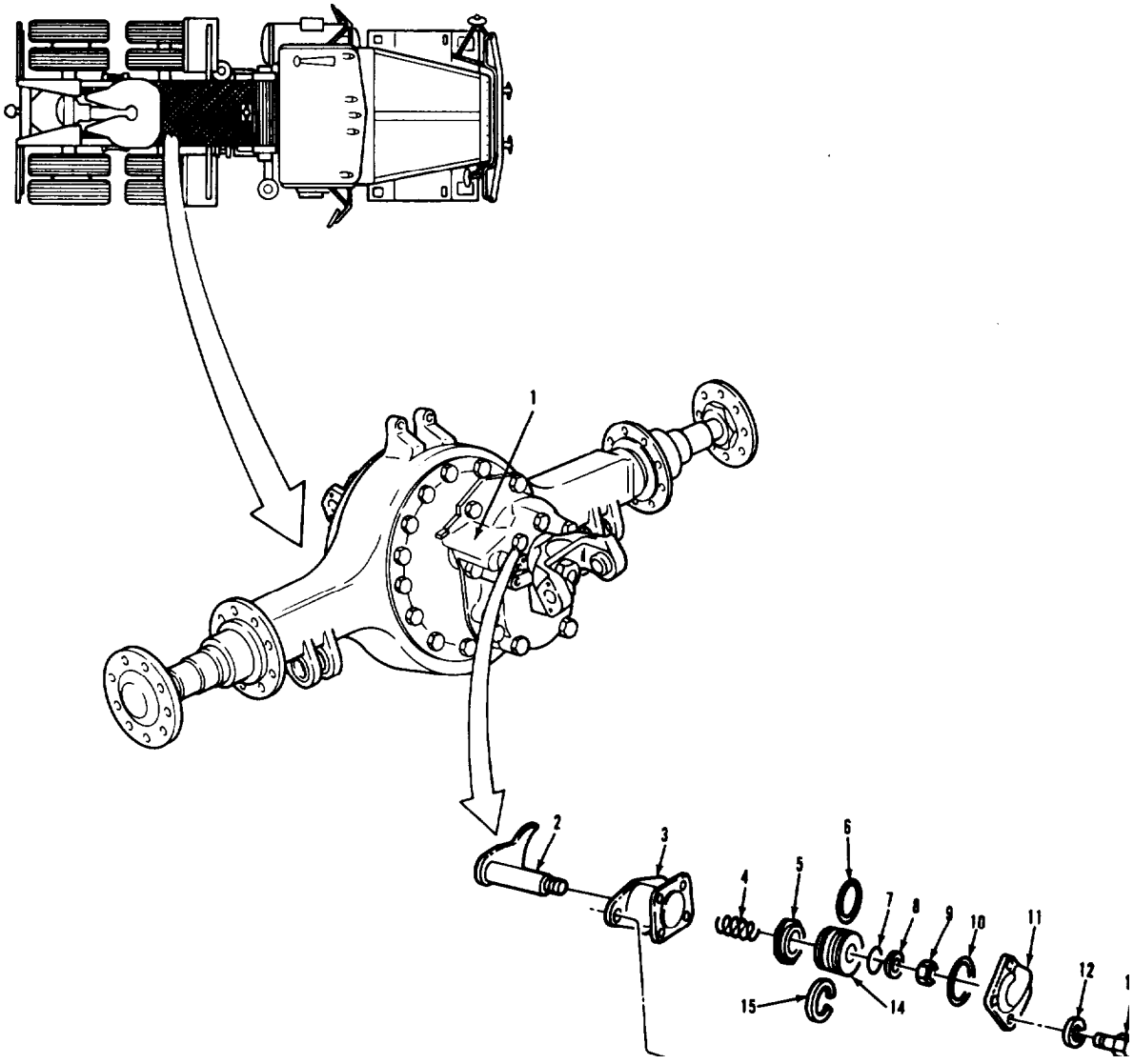
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CARRIER COVER
2. SHIFT FORK
3. SHIFT CYLINDER BODY
4. SPRING
5. PISTON STOP
6. PISTON GROMMET
7. PUSH ROD GROMMET
8. PUSH ROD WASHER
9. NUT
10. COVER GROMMET
11. BODY COVER
12. LOCKWASHER (4)
13. SCREW (4)
14. SHIFT CYLINDER PISTON
15. PISTON FELT OILER (2)
16. SCREW (2)
17. LOCKWASHER (2)

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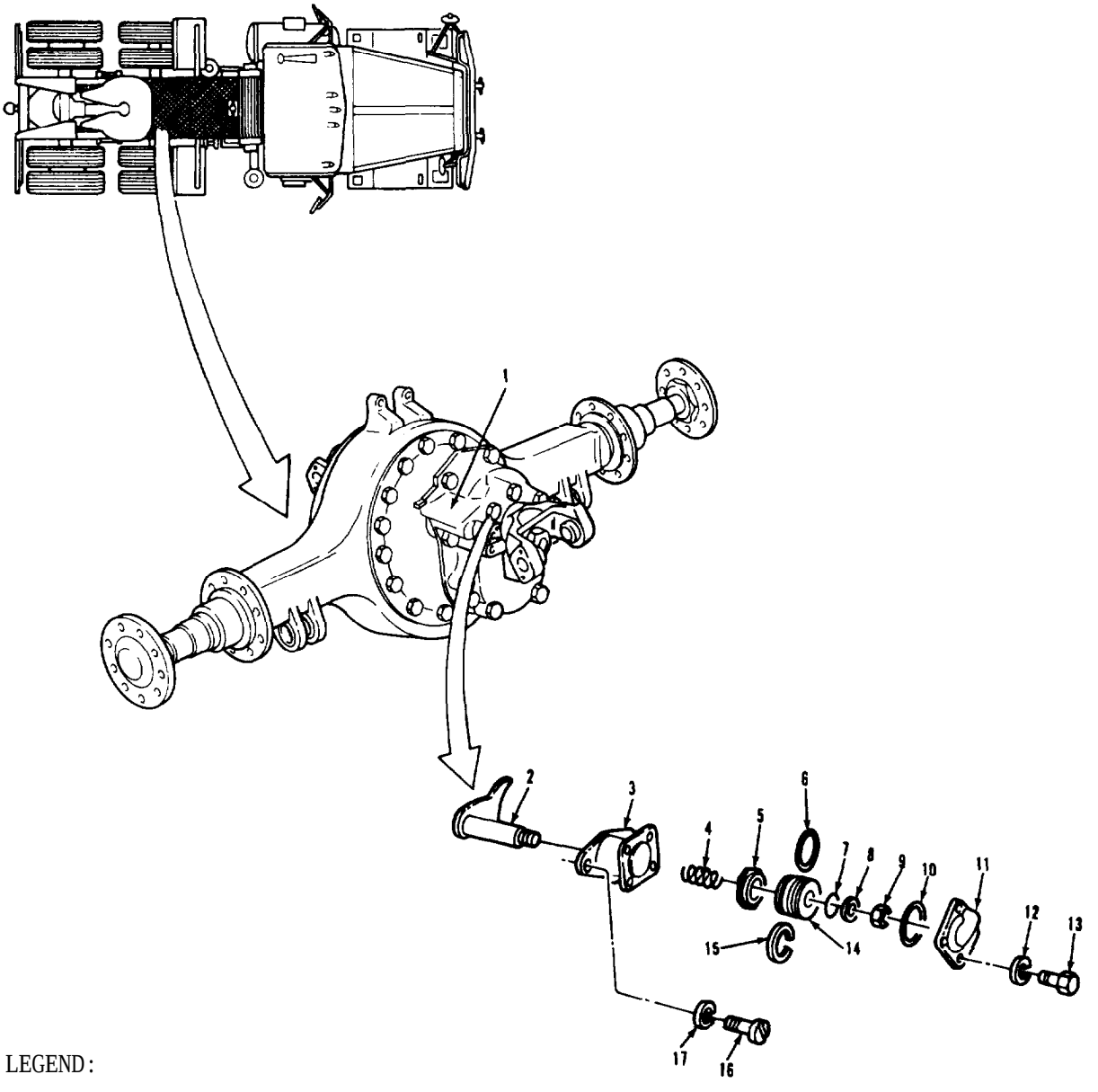
REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE To replace differential lockout as an assembly, it will be necessary to disassemble most of the lockout parts for removal from differential carrier cover.	
A. DISASSEMBLY.		
1. Four screws (13) and lockwashers (12).	Remove from item (11).	
2. Cover (11).	Remove from item (3) and discard item (10).	
3. Nut (9), washer (8), and gromnet (7).	Remove from item (2) and discard item (7).	
4. Two screws (16) and lockwashers (17).	Remove from item (3).	
5. Body (3).	Remove from item (1).	
6. Piston (14), stop (5) and spring (4).	Remove from item (3).	When removing item (3) in step 5, item (4) may remain on item (2).
7. Grommet (6) and two oilers (15).	Remove from item (14) and discard items (15) and (6).	
	NOTE The shift fork cannot be removed unless the differential carrier cover has been removed and disassembled.	

REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CARRIER COVER
2. SHIFT FORK
3. SHIFT CYLINDER BODY
4. SPRING
5. PISTON STOP
6. PISTON GROMMET
7. PUSH ROD GROMMET
8. PUSH ROD WASHER
9. NUT
10. COVER GROMMET
11. BODY COVER
12. LOCKWASHER (4)
13. SCREW (4)
14. SHIFT CYLINDER PISTON
15. PISTON FELT OILER (2)
16. SCREW (2)
17. LOCKWASHER (2)

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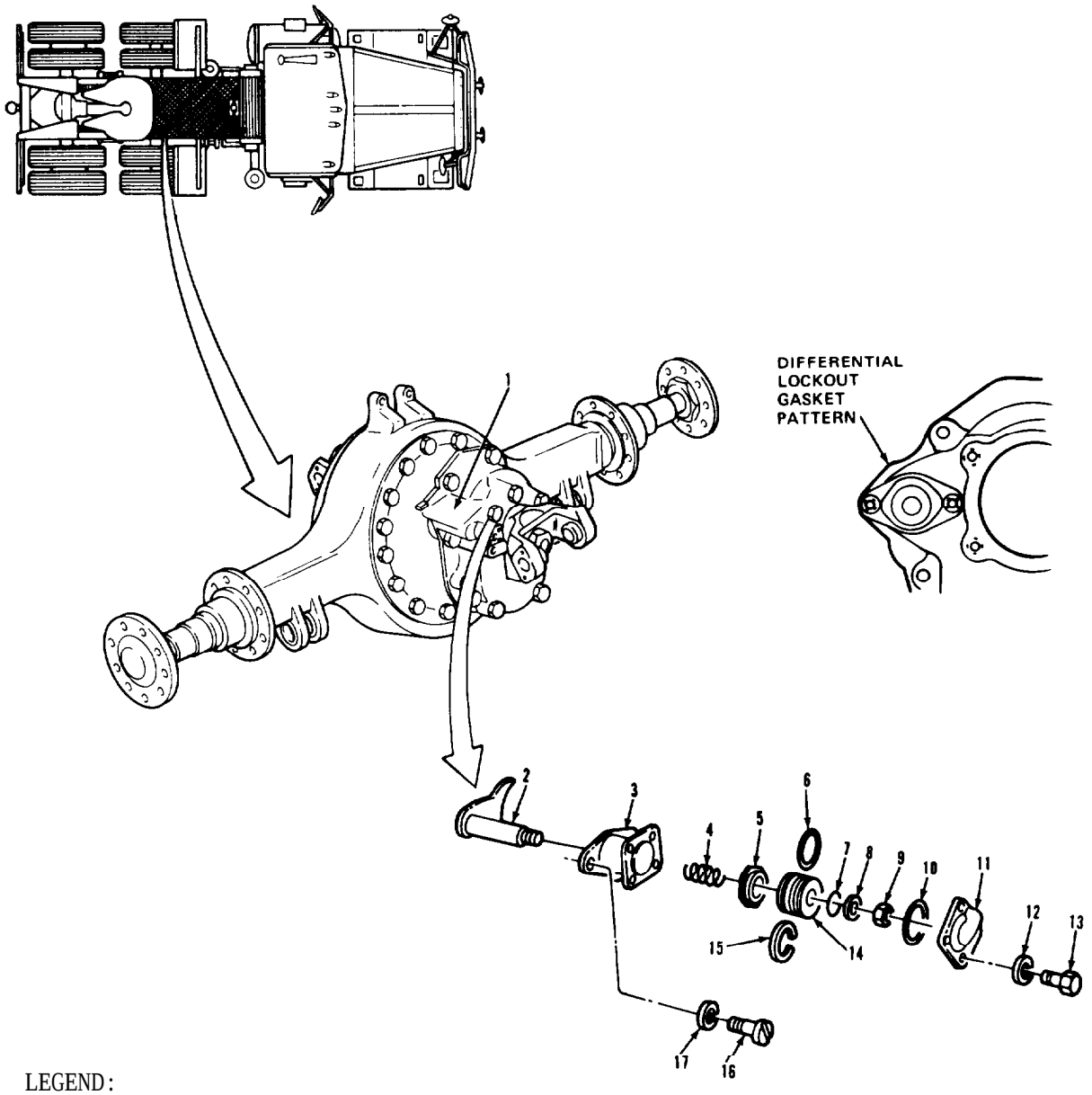
REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING.		
8. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
9. All parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY.		
	NOTE Before installing two new piston felt oilers, soak them in OE/HDO-30 lubricating oil for thirty minutes.	
10. Cover (1).	Apply silicone rubber gasket compound on mating surfaces as shown.	
11. Body (3).	Install on item (1).	
12. Two screws (16) and lockwashers (17).	Install on item (1) and torque to 48-56 lb-ft.	
13. New grornnet (6) and two new presoaked oilers (15).	Install on item (14).	
14. stop (5).	Install into item (3).	
15. Spring (4).	Install over push rod of item (2).	

REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CARRIER COVER
2. SHIFT FORK
3. SHIFT CYLINDER BODY
4. SPRING
5. PISTON STOP
6. PISTON GROMMET
7. PUSH ROD GROMMET
8. PUSH ROD WASHER
9. NUT
10. COVER GROMMET
11. BODY COVER
12. LOCKWASHER (4)
13. SCREW (4)
14. SHIFT CYLINDER PISTON
15. PISTON FELT OILER (2)
16. SCREW (2)
17. LOCKWASHER (2)

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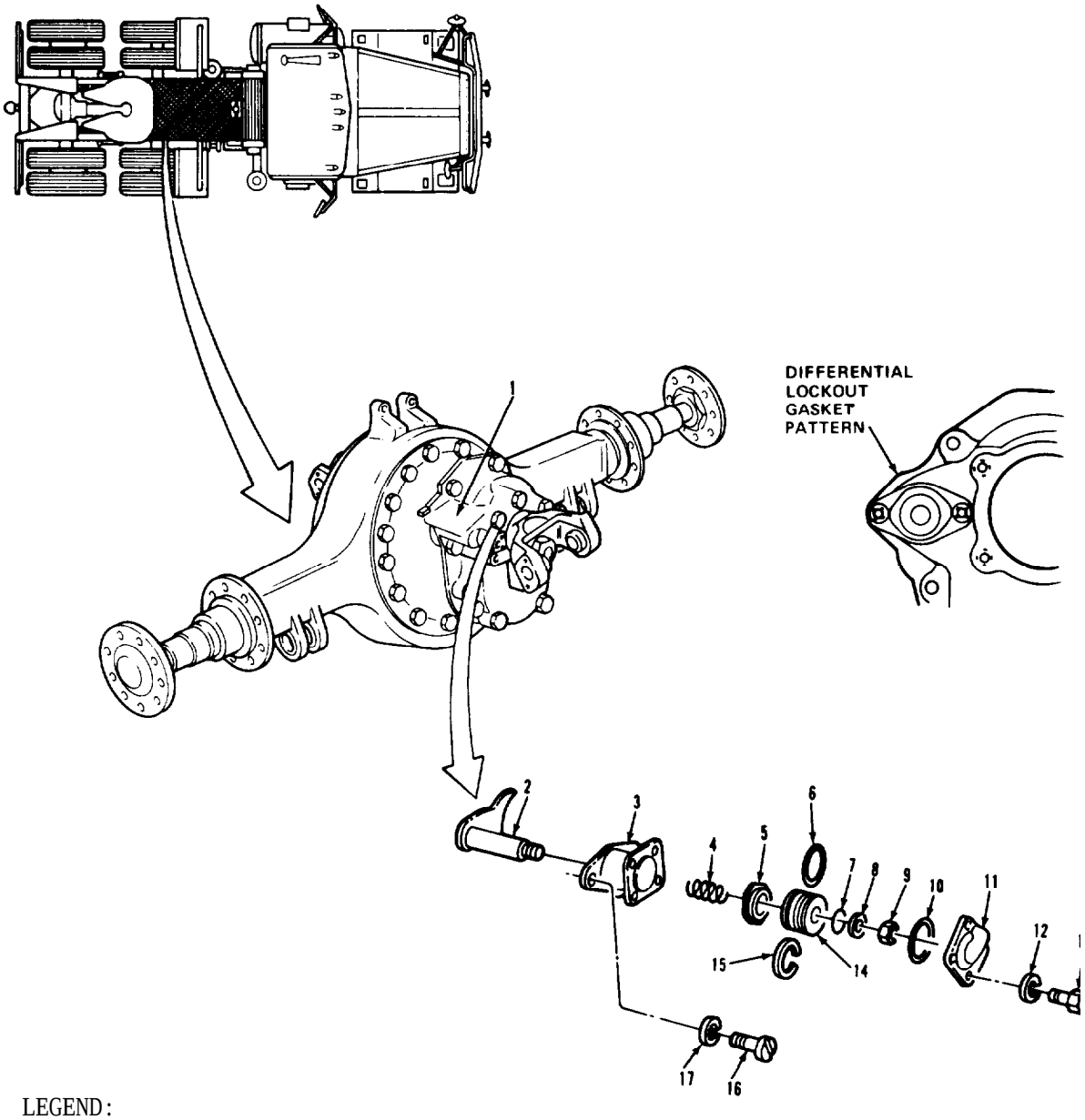
REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
16. Assembled piston (14).	Install into item (3).	
17. New grommet (7), washer (8), and nut (9).	Install on item (3) and torque to 20-26 lb-ft.	
18. New grommet (10).	Install on item (11).	
19. Cover (11).	Install on item (3).	
20. Four screws (13) and lockwashers (12).	Install on item (11) and torque to 96-108 lb-in.	
	NOTE Follow-on maintenance action required: Install air line (TM 9-2320-283-20). Start vehicle, build air pressure, and check for leaks and proper lockout operation (TM 9-2320-283-10).	

REAR TANDEM AXLES.

3-71. DIFFERENTIAL LOCKOUT REPLACEMENT AND REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CARRIER COVER
2. SHIFT FORK
3. SHIFT CYLINDER BODY
4. SPRING
5. PISTON STOP
6. PISTON GROMMET
7. PUSH ROD GROMMET
8. PUSH ROD WASHER
9. NUT
10. COVER GROMMET
11. BODY COVER
12. LOCKWASHER (4)
13. SCREW (4)
14. SHIFT CYLINDER PISTON
15. PISTON FELT OILER (2)
16. SCREW (2)
17. LOCKWASHER (2)

REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-10.	Air sytem draincocks opened.
TM 9-2320-283-10.	Rear mud flaps removed.
TM 9-2320-283-20.	Brake assembly removed.
TM 9-2320-283-20.	Propeller shaft disconnected.

MATERIALS/PARTS (P/N)
Grease, automotive and artillery
Item 7, Appendix C.

PERSONNEL REQUIRED
Two (MOS-63W).

REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.

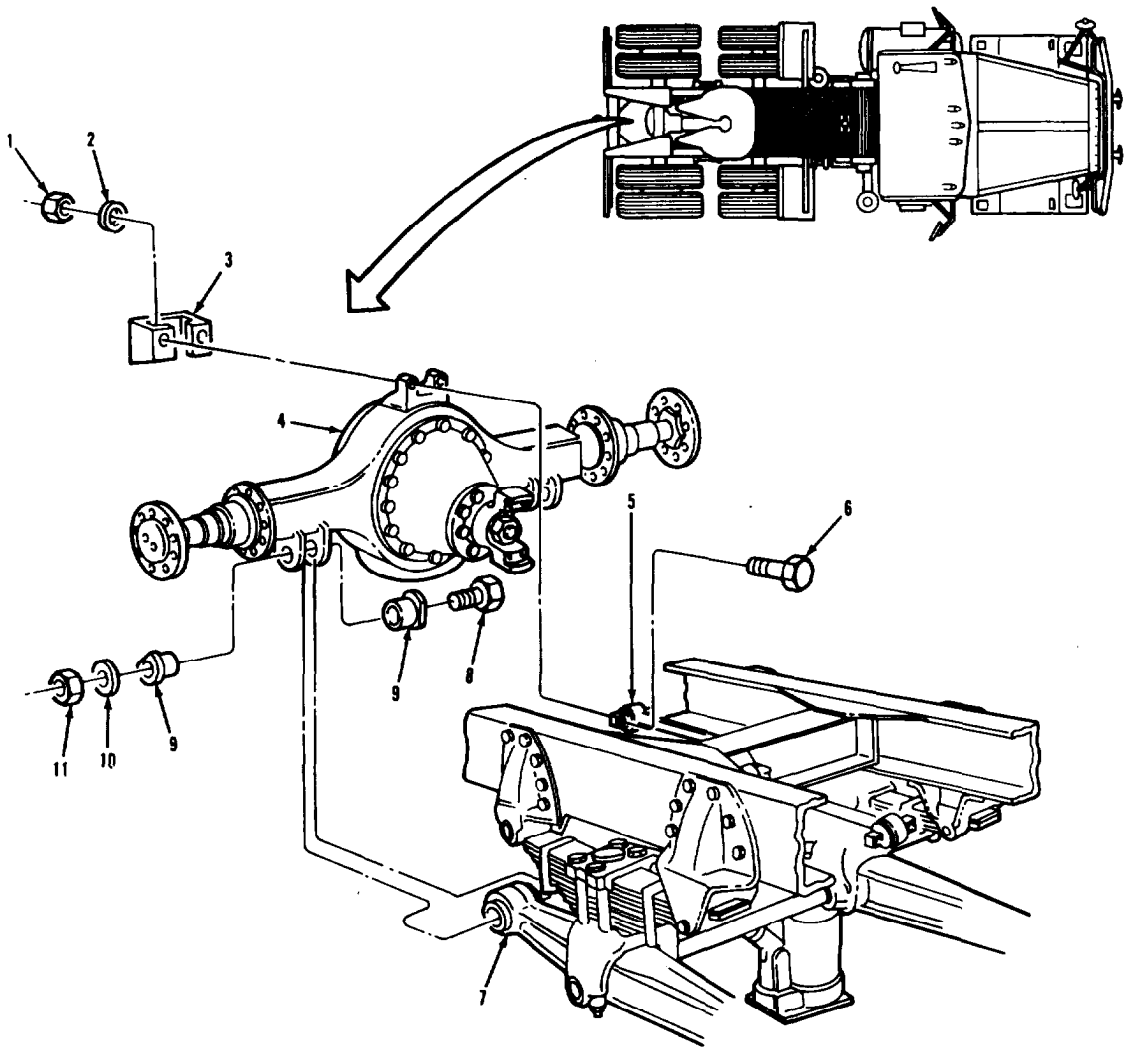
SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
Block front wheels.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM-AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEX FLANGE NUT (2)
2. WASHER (2)
3. BRACKET
4. REAR-REAR AXLE HOUSING
5. TORQUE ROD ASSEMBLY
6. HEX HEAD SCREW (2)
7. EQUALIZER BEAM (2)
8. HEX HEAD SCREW (2)
9. BEAM END ADAPTER (4)
10. PLAIN HARDENED WASHER (2)
11. HEX HEAD NUT (2)

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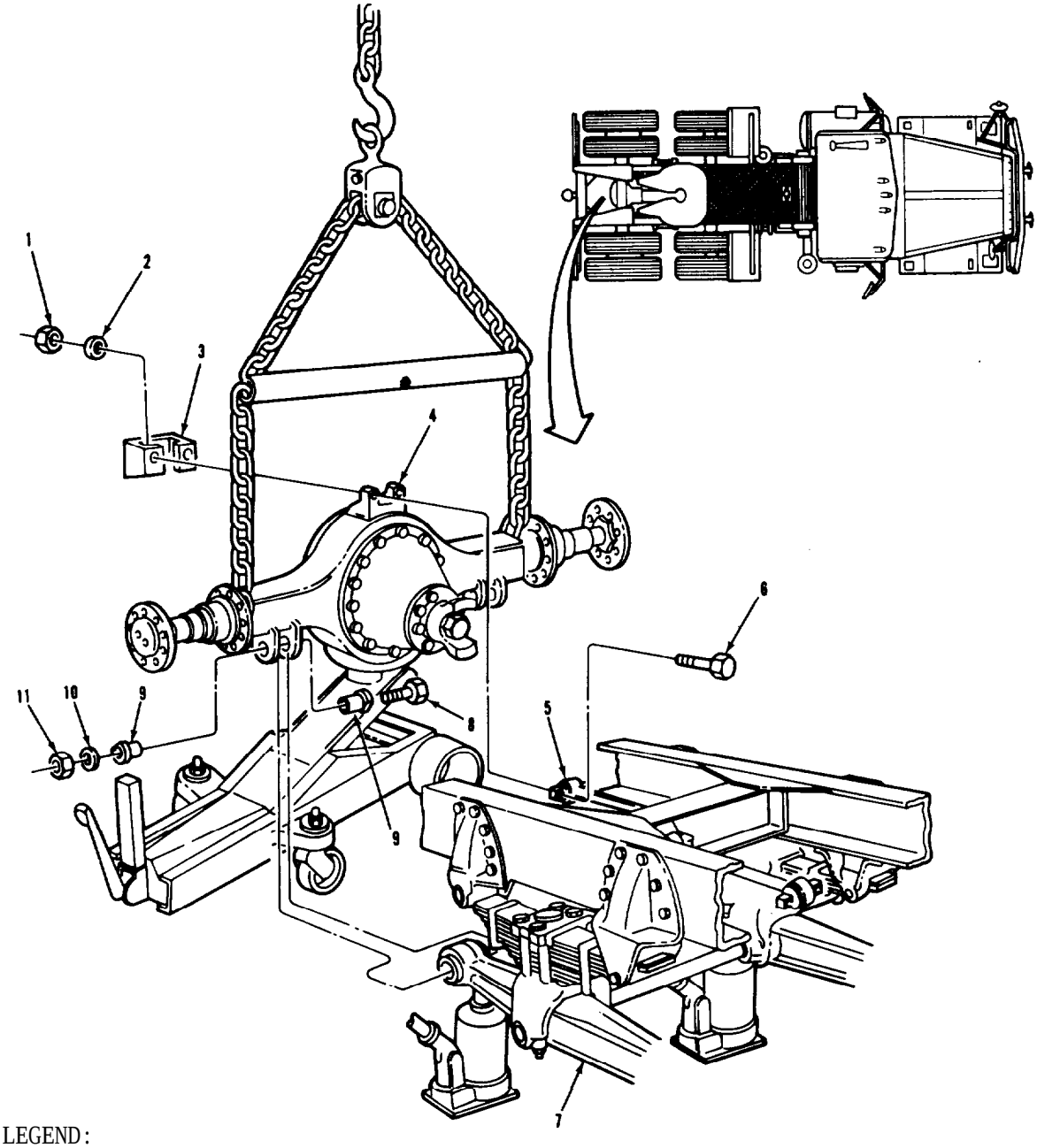
REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
	CAUTION Position a hydraulic jack under each equalizer beam as shown in illustration. Raise each equalizer beam high enough to remove the weight from the beam end adapters. This will prevent the equalizer beams from dropping once the hex head screws have been removed.	
1. Two screws (8), washers (10), and nuts (11).	Remove from items (9).	
2. Four adapters (9).	Remove from two brackets in item (4).	Use a flat chisel and hammer to pry out 'of item (4).
	CAUTION Position a floor jack under the rear-rear axle housing as shown in illustration to prevent it from dropping or tilting down. This will occur after the torque rod has been removed from the rear-rear axle housing.	
3. Two nuts (1), washer (2), screws (6), and bracket (3).	Remove from items (4) and (5).	
4. Housing (4).	Remove from under frame.	Attach a floor crane to item (4) as shown. Slowly pull item (4) away from frame.

REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEX FLANGE NUT (2)
2. WASHER (2)
3. BRACKET
4. REAR-REAR AXLE HOUSING
5. TORQUE ROD ASSEMBLY
6. HEX HEAD SCREW (2)
7. EQUALIZER BEAM (2)
8. HEX HEAD SCREW (2)
9. BEAM END ADAPTER (4)
10. PLAIN HARDENED WASHER (2)
11. HEX HEAD NUT (2)

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REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).

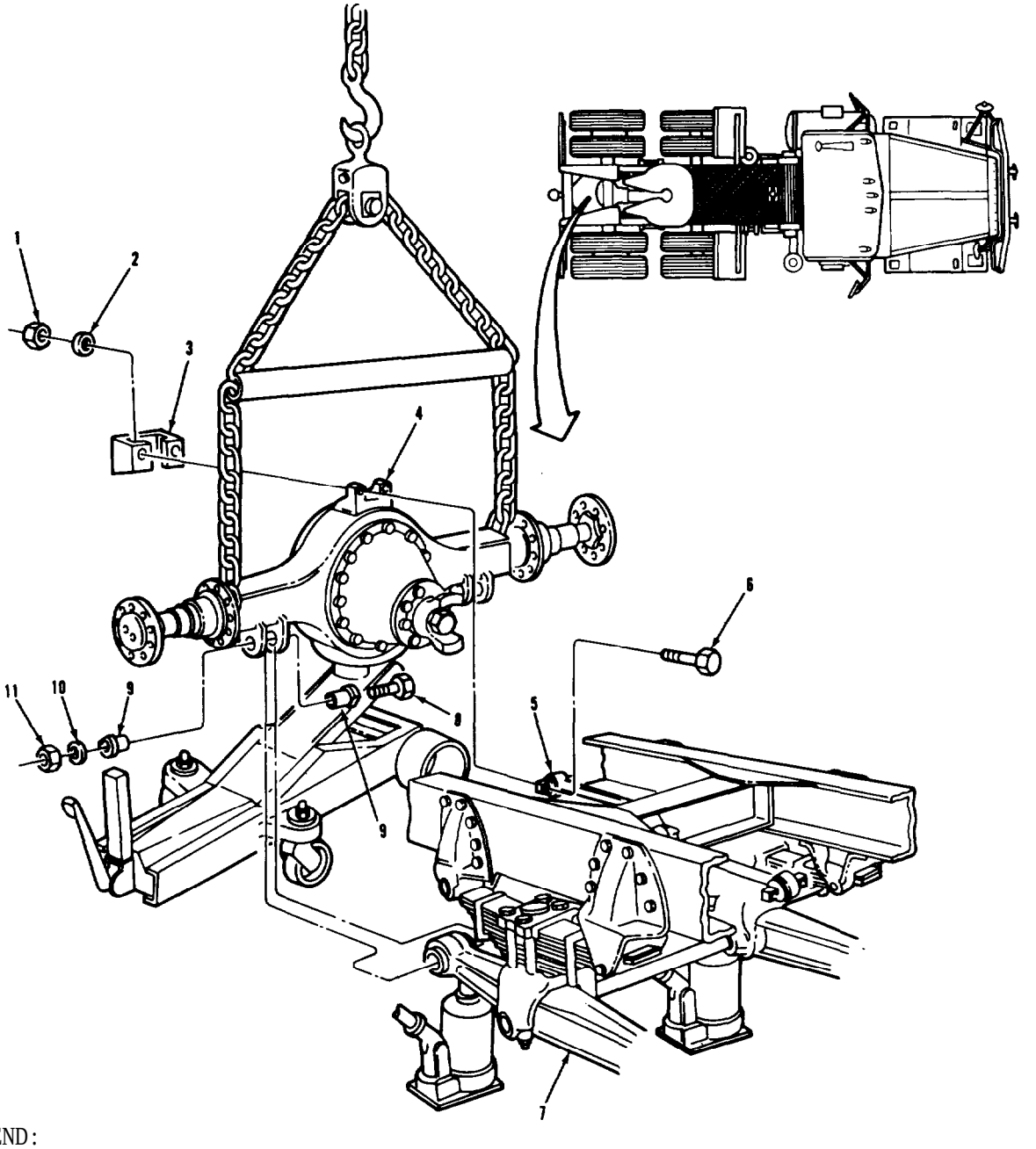
LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
4. Housing (4) (continued).		One assistant may be required to help remove item (4) from under frame. It will be necessary for the assistant to slide the chain from the sides of the frame while the floor crane is being pulled away. The floor jack may be removed from under the yoke of item (4). Do not remove the two hydraulic jacks from under item (7).
B. CLEANING.		
5. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
6. All parts.	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
7. Housing (4).	Carefully position and install under frame.	Refer to step 4 for correct placement of floor crane and chain.

NOTE

After axle housing has been carefully positioned under frame and onto equalizer beams, place a floor jack under yoke of axle housing and slowly raise front of axle housing so it rolls upward. This will help position the torque rod to the top of the axle housing supports.

REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEX FLANGE NUT (2)
2. WASHER (2)
3. BRACKET
4. REAR-REAR AXLE HOUSING
5. TORQUE ROD ASSEMBLY
6. HEX HEAD SCREW (2)
7. EQUALIZER BEAM (2)
8. HEX HEAD SCREW (2)
9. BEAM END ADAPTER (4)
10. PLAIN HARDENED WASHER (2)
11. HEX HEAD NUT (2)

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REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
8. Torque rod assembly (5) and bracket (3).	Position onto top of item (4).	Use a drift punch to properly aline the holes. Leave the drift punch in one of the holes.
9. Bracket (3), two screws (6) washers (2), and nuts (1).	Install into items (4) and (5). Torque two items (1) to 105 lb-ft.	
10. Four adapters (9).	Insert in support brackets of item (4).	Be sure flat side of item (9) is installed in the vertical position. Prelube the outside diameter of items (9) with grease for ease of insertion.
11. Two screws (8), washers (10), and nuts (11).	Install in item (9) and torque to 210-240 lb-ft.	

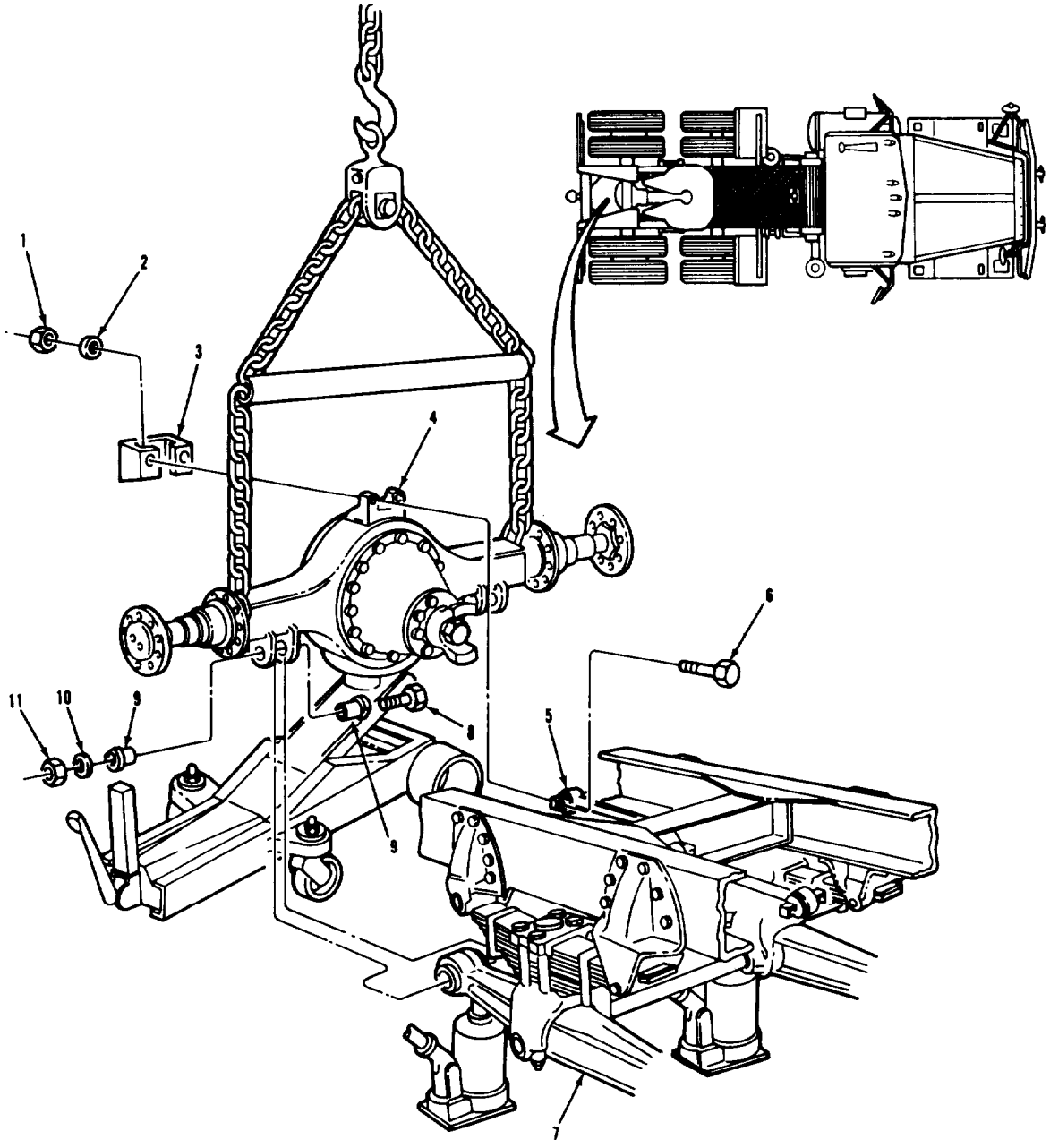
NOTE

Follow-on maintenance action required:

Connect propeller shaft (TM 9-2320-283-20).
Install brake assembly (TM 9-2320-283-20).
Install rear mud flaps (TM 9-2320-283-10).

REAR TANDEM AXLES.

3-72. REAR-REAR AXLE REPLACEMENT (Continued).



LEGEND:

1. HEX FLANGE NUT (2)
2. WASHER (2)
3. BRACKET
4. REAR-REAR AXLE HOUSING
5. TORQUE ROD ASSEMBLY
6. HEX HEAD SCREW (2)
7. EQUALIZER BEAM (2)
8. HEX HEAD SCREW (2)
9. BEAM END ADAPTER (4)
10. PLAIN HARDENED WASHER (2)
11. HEX HEAD NUT (2)

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REAR TANDEM AXLES.

3-73. REAR-REAR AXLE HOUSING REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	3-72.	Rear-rear axle removed.
	3-75.	Rear-rear carrier removed from housing.

TEST EQUIPMENT

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

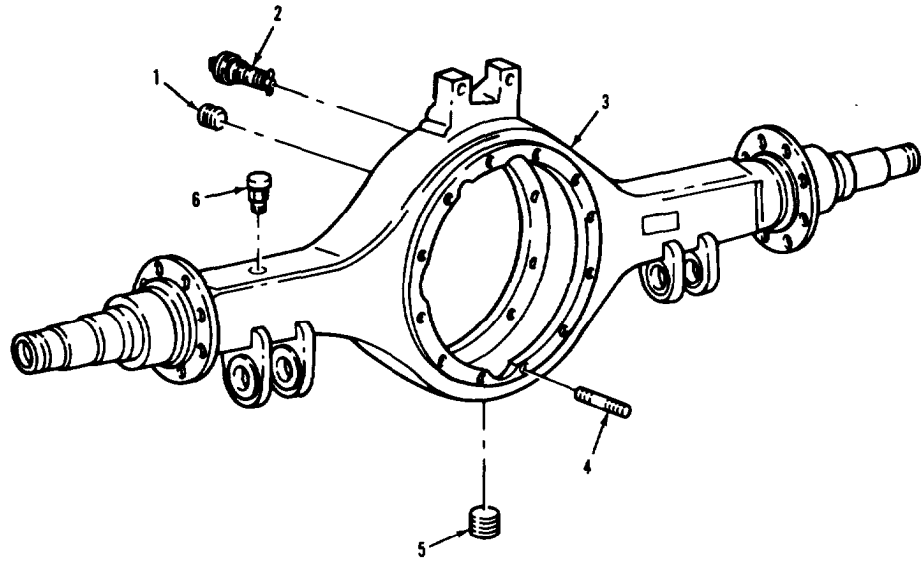
REFERENCES (TM
LO 9-2320-283-12.

GENERAL SAFETY INSTRUCTIONS
'None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM AXLES.

3-73. REAR-REAR AXLE HOUSING REPAIR (Continued).



LEGEND:

1. HOLE PLUG
2. MAGNETIC FILLER PLUG
3. REAR-REAR AXLE HOUSING WITH BRACKETS
4. STUD (12)
5. HOUSING DRAINPLUG
6. BREATHER VENT

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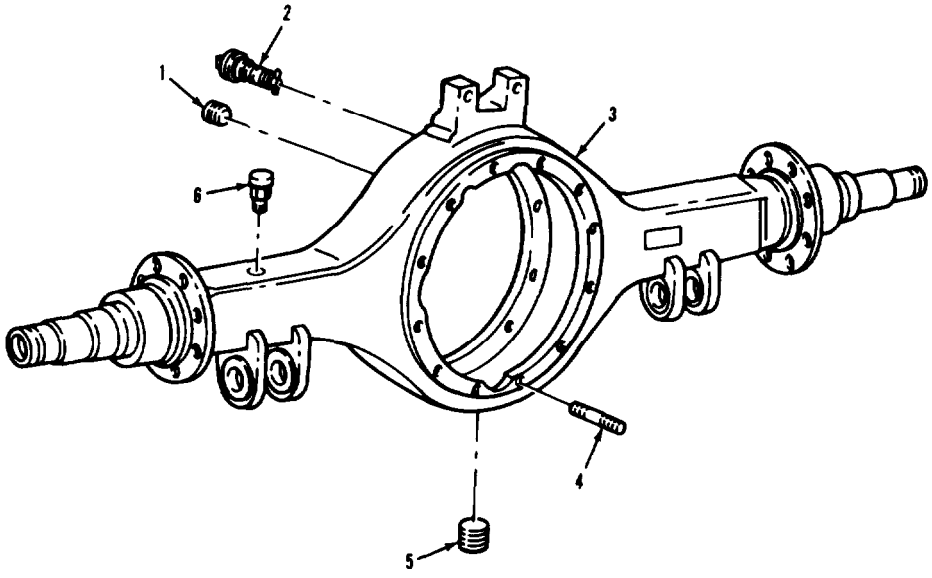
REAR TANDEM AXLES.

3-73. REAR-REAR AXLE HOUSING REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	NOTE Do not remove any of the twelve studs unless the threads are damaged or worn. If necessary to remove any studs proceed with step 1, if not proceed with step 2.	
1. Twelve studs (4).	Only remove items (4) that appear to be damaged or worn, from item (3).	Discard items (4) that are removed.
2. Plug (2), plug (1), vent (6), and drainplug (5).	Remove from item (3).	
B. CLEANING.		
3. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
4. All parts.	Inspect.	Refer to paragraph 3-5.
	CAUTION Although the rear-rear axle housing has been cleaned according to paragraph 3-4, recheck for any moisture or dirt that may have collected in the housing.	

REAR TANDEM AXLES.

3-73. REAR-REAR AXLE HOUSING REPAIR (Continued).



LEGEND:

1. HOLE PLUG
2. MAGNETIC FILLER PLUG
3. REAR-REAR AXLE HOUSING WITH BRACKETS
4. STUD (12)
5. HOUSING DRAINPLUG
6. BREATHER VENT

REAR TANDEM AXLES.

3-73. REAR-REAR AXLE HOUSING REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
5. Twelve studs (4).	Install in item (3), if removed.	Use double nut method to install.
6. Drainplug (5), plug (1), and vent (6).	Install in item (3) and tighten.	
7. Plug (2).	Install in item (3), but do not tighten.	Item (2) will have to be removed to fill item (3) with gear oil.

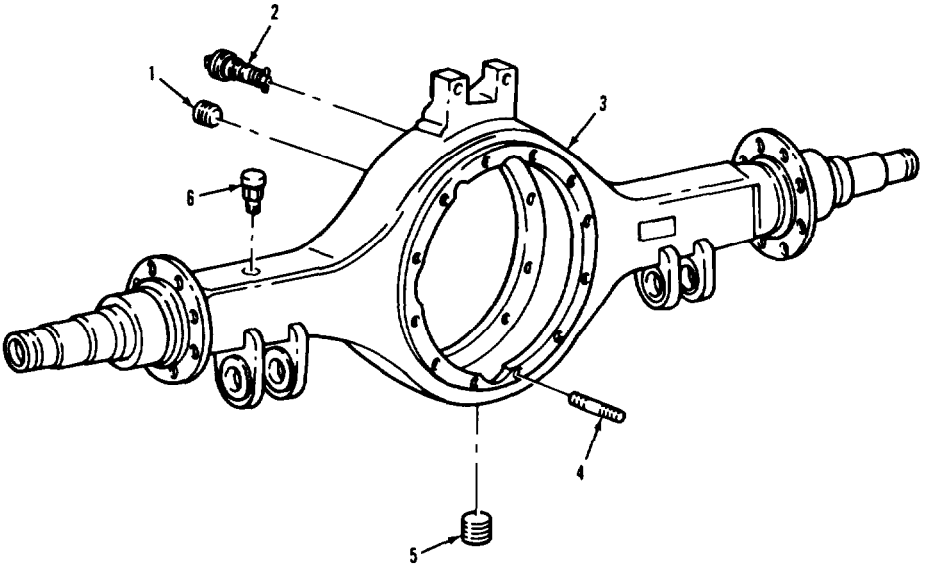
NOTE

Follow-on maintenance action required:

Install rear-rear carrier in housing (para 3-75).
Install rear-rear axle in truck (para 3-72).
Fill item (3) with gear oil (LO 9-2320-283-12).

REAR TANDEM AXLES.

3-73. REAR-REAR AXLE HOUSING REPAIR (Continued).



LEGEND:

1. HOLE PLUG
2. MAGNETIC FILLER PLUG
3. REAR-REAR AXLE HOUSING WITH BRACKETS
4. STUD (12)
5. HOUSING DRAINPLUG
6. BREATHER VENT

TA 238392

REAR TANDEM AXLES.

3-74. REAR-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-20.	Drive shaft disconnected.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Flange tool
(33287) J3453.

MATERIALS/PARTS (P/N)
Oil, lubricating, engine, OE/HDO-10
Item 16, Appendix B.'
Seal, oil
(52304) 63910.

PERSONNEL REQUIRED
One (MDS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

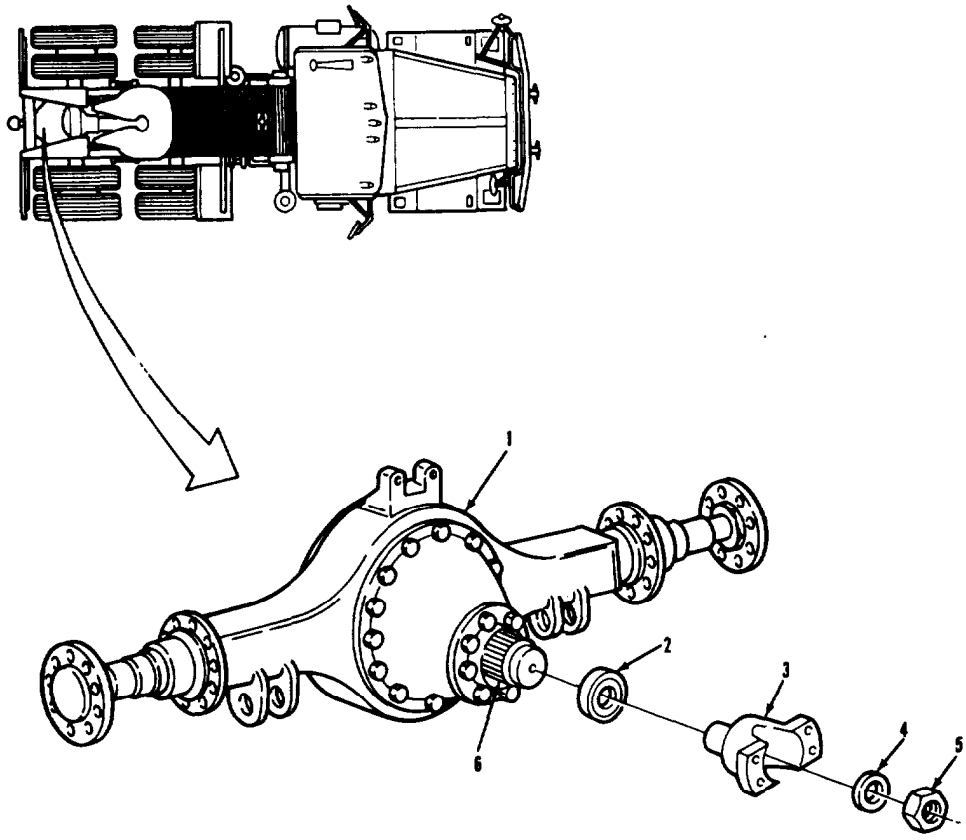
REFERENCE (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Block front and rear tires.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM AXLES.

3-74. REAR-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT (Continued).



LEGEND:

1. REAR-REAR AXLE ASSEMBLY
2. OIL SEAL
3. INPUT FLANGE ASSEMBLY
4. FLAT WASHER
5. PINION NUT
6. DRIVE PINION

TA 238393

REAR TANDEM AXLES.

3-74. REAR-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Nut (5).	Remove from item (6).	Use suitable yoke tool to prevent item (6) from turning.
2. Input flange assembly (3) and washer (4).	Remove from item (6).	Tap the backside of item (3) for ease of removal.
3. Oil seal (2).	Remove from item (1).	Use a hammer and chisel for ease of removal. Discard item (2).
B. CLEANING.		
4. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
5. All parts.	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
6. New seal (2).	Install into item (1).	Coat outside edges of item (2) with OE/HDO 10 for ease of installation.
7. Input flange assembly (3), washer (4), and nut (5).	Install and torque item (5) to 560-600 lb-ft.	Coat outside oil seal surface of item (3) with OE/HDO-10 to prevent damage to item (2). Use suitable yoke holding tool to prevent item (6) from turning.

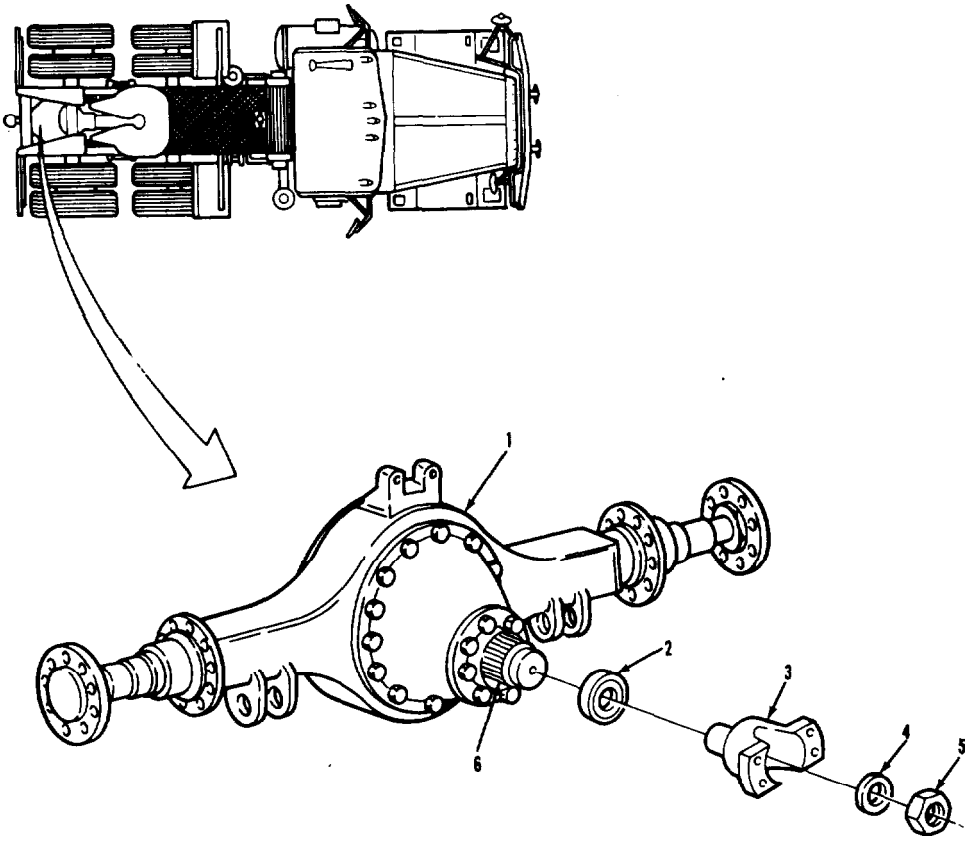
NOTE

Follow-on maintenance action required:

Connect drive shaft (TM 9-2320-283-20).

REAR TANDEM AXLES.

3-74. REAR-REAR AXLE FLANGE AND OIL SEAL REPLACEMENT (Continued).



LEGEND:

1. REAR-REAR AXLE ASSEMBLY
2. OIL SEAL
3. INPUT FLANGE ASSEMBLY
4. FLAT WASHER
5. PINION NUT
6. DRIVE PINION.

TA 238394

REAR TANDEM AXLES.

3-75. REAR-REAR AXLE CARRIER REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT
NONE.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Sealant, silicone rubber
Item 27, Appendix C.

PERSONNEL REQUIRED
Two (MOS-63W).

REFERENCES (TM)
LO 9-2320-283-12.
TM 9-2320-283-20.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

EQUIPMENT CONDITION

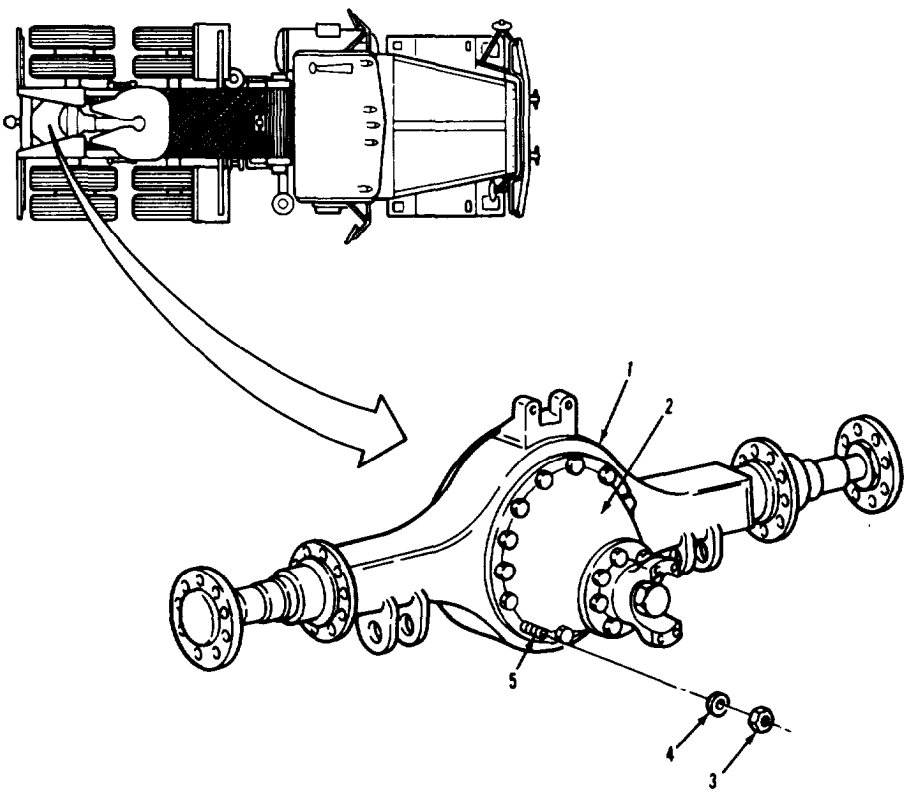
PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-20.	Drive shaft disconnected.
LO 9-2320-283-12.	Gear oil drained.
TM 9-2320-283-20.	Rear-rear axle shafts removed.

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
Block front and rear tires.

REAR TANDEM AXLES.

3-75. REAR-REAR AXLE CARRIER REPLACEMENT (Continued).



LEGEND:

1. REAR AXLE HOUSING
2. DIFFERENTIAL CARRIER
3. HEX HEAD NUT (12)
4. LOCKWASHER (12)
5. STUD (12)

TA 238395

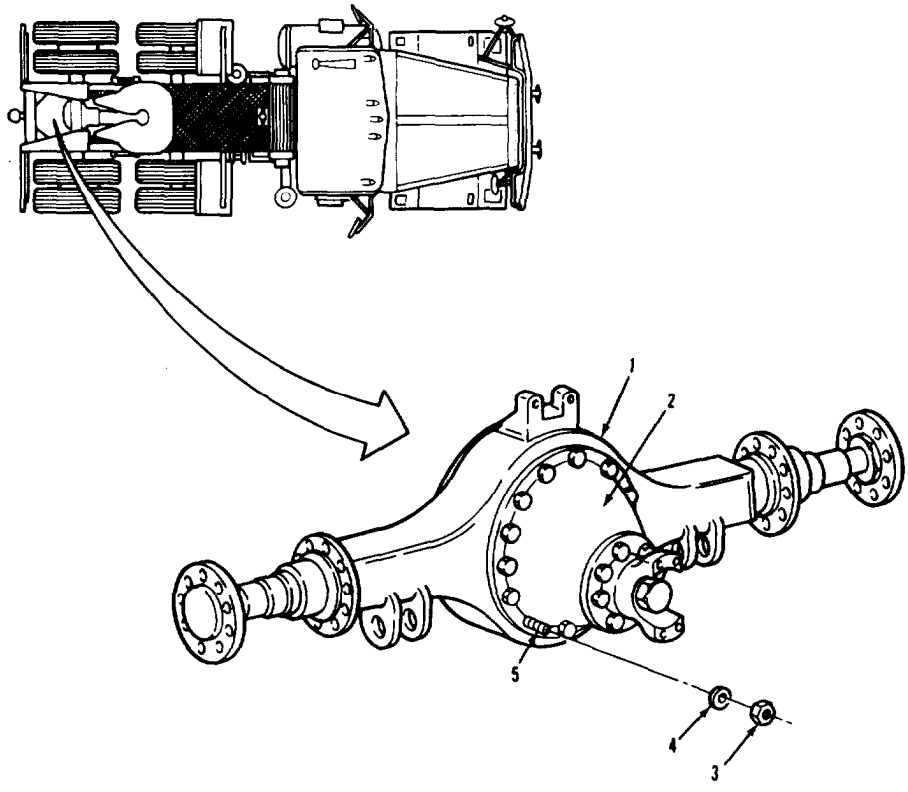
REAR TANDEM AXLES.

3-75. REAR-REAR AXLE CARRIER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE The differential carrier can be removed from the axle housing in the truck or with the axle housing removed. If the axle housing has been removed, a suitable floor crane will be required to lift the differential carrier from the axle housing after the nuts and lockwashers have been removed.	
A. REMOVAL.		
	WARNING Do not lie under the differential carrier after nuts and lockwashers have been removed. Use a suitable carrier jack to support and remove differential carrier.	
1. Twelve nuts (3) and lockwashers (4).	Remove from item (5).	
	NOTE Raising the rear of the frame may be necessary to gain clearance for the removal of the differential carrier and carrier jack.	
2. Carrier (2).	Carefully remove from item (1).	Use two pry bars to separate item (2) from item (1).

REAR TANDEM AXLES.

3-75. REAR-REAR AXLE CARRIER REPLACEMENT (Continued).



LEGEND:

1. REAR AXLE HOUSING
2. DIFFERENTIAL CARRIER
3. HEX HEAD NUT (12)
4. LOCKWASHER (12)
5. STUD (12)

TA 238396

REAR TANDEM AXLES.

3-75. REAR-REAR AXLE CARRIER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING.		
3. Housing (1).	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
4. Housing (1).	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
5. Housing (1).	Apply silicone sealant as shown.	
6. Carrier (2).	Carefully install into item (1).	
7. Twelve lockwashers (4) and nuts (3).	Install and torque to 220-240 lb-ft on items (5).	

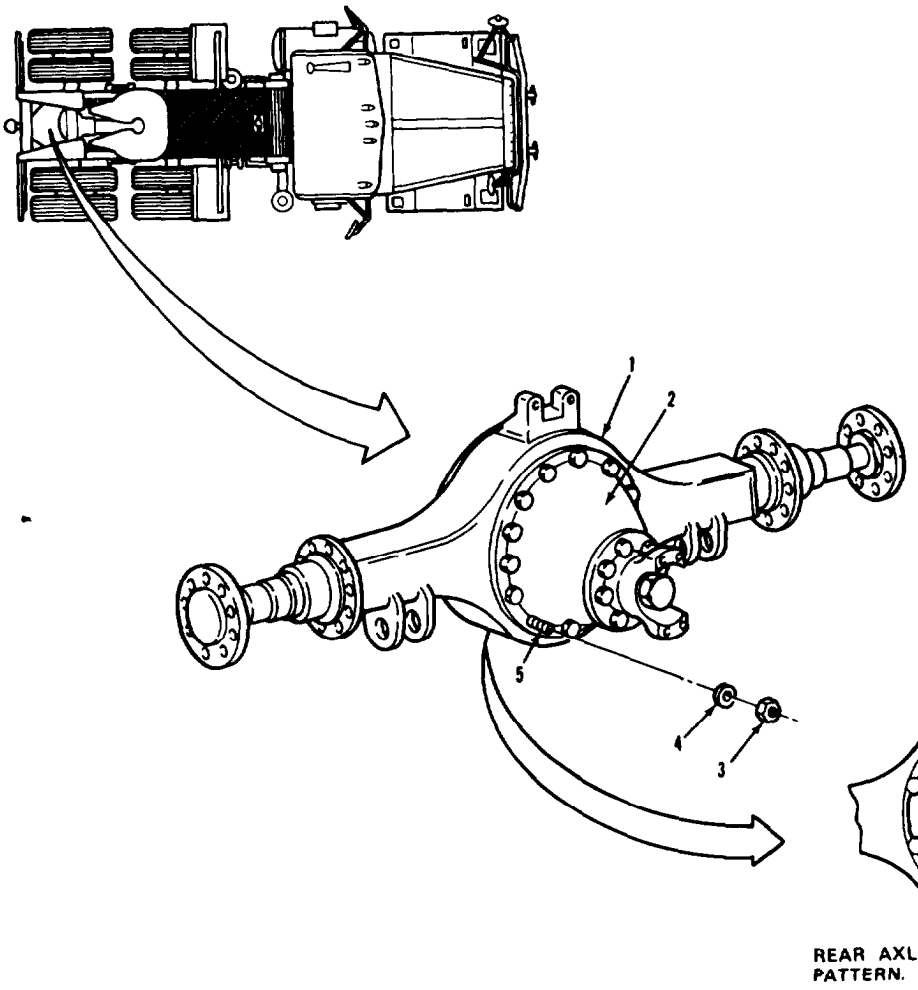
NOTE

Follow-on maintenance action required:

Refill axle housing with gear oil (LO 9-2320-283-12).
Connect drive shaft (TM 9-2320-283-20).
Install two axle shafts (TM 9-2320-283-20).

REAR TANDEM AXLES.

3-75. REAR-REAR AXLE CARRIER REPLACEMENT (Continued).



REAR AXLE HOUSING GASKET COMPOUND PATTERN.

LEGEND:

1. REAR AXLE HOUSING
2. DIFFERENTIAL CARRIER
3. HEX HEAD NUT (12)
4. LOCKWASHER (12)
5. STUD (12)

TA 238397

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning.
c. Inspection.
d. Assembly.
e. Adjusting Pinion Bearing Preload.
f. Adjusting Differential Preload.
g. Adjusting Ring Gear Backlash.
h. Ring Gear and Pinion Tooth Contact.
i. Adjusting Tooth Contact Pattern.
j. Final Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All

EQUIPMENT CONDITION
PARAGRAPH
3-75.

CONDITION DESCRIPTION
'Rear-rear axle carrier removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Stakin tool
(33287 J-26883.
Flange tool
(33287) J-3453.

MATERIALS/PARTS (P/N)
Oil lubricating: OE/HDO-30
Item 17, Appendix B.
Seal, oil
(52304) 79470.
Pin, cotter
(52304) 90876.
Pin, cotter
(52304) 90873.
Screw, hex head (12)
(52304) 96271.
Cone, pinion bearing (2)
(52304) 12496.
Cup, pinion bearing (2)
(52304) 12495.
Bearing, pinion pilot
(52304) 15828.
Cup, differential bearing
(52304) 9803.
Cone, differential bearing
(52304) 27813.
Cone, differential bearing
(52304) 6082.
Cup, differential bearing
(52304) 90943.
Spacer, pinion bearing
(52304) as required.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

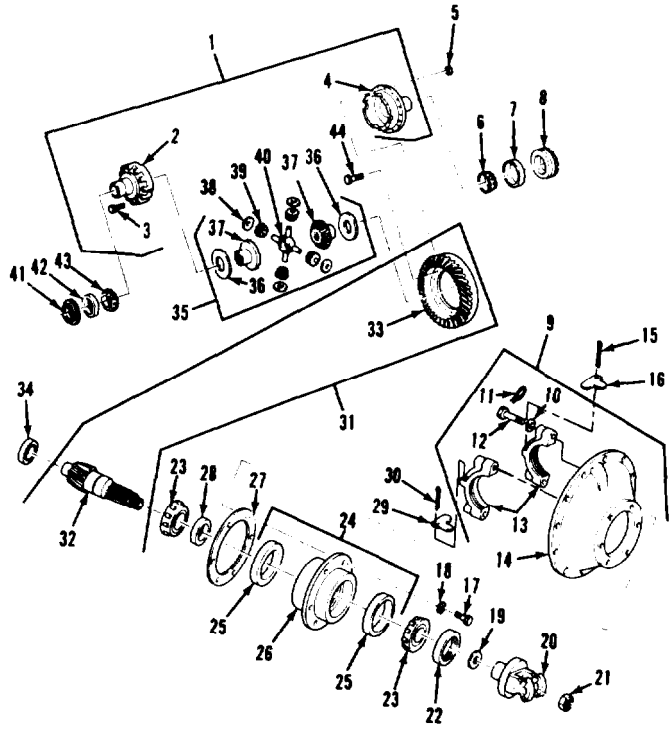
REFERENCES (TM)
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
When using a hydraulic press for removal or installation of bearings, wear a face shield to prevent possible injury to personnel.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CASE ASSEMBLY
2. PLAIN CASE HALF
3. HEX HEAD SCREW (12)
4. FLANGED CASE HALF
5. LOCKNUT (16)
6. DIFFERENTIAL BEARING CONE
7. DIFFERENTIAL BEARING CUP
8. DIFFERENTIAL BEARING ADJUSTER
9. DIFFERENTIAL BEARING CAP CARRIER ASSEMBLY
10. FLAT WASHER (4)
11. LOCKWIRE
12. DRILLED HEX HEAD SCREW (4)
13. BEARING CAP (2)
14. REAR CARRIER
15. COTTER PIN
16. BEARING ADJUSTER LOCK
17. SCREW (6)
18. LOCKWASHER (6)
19. FLAT WASHER
20. INPUT FLANGE
21. PINION NUT
22. OIL SEAL
23. PINION BEARING CONE (2)
24. PINION BEARING CAGE AND CUP ASSEMBLY
25. PINION BEARING CUP (2)
26. PINION BEARING CAGE
27. PINION BEARING SHIM
28. PINION BEARING SPACER
29. BEARING ADJUSTER LOCK
30. COTTER PIN
31. RING GEAR AND DRIVE PINION
32. DRIVE PINION
33. RING GEAR
34. PINION PILOT BEARING
35. SIDE GEAR AND PINION ASSEMBLY
36. SIDE GEAR THRUST WASHER (2)
37. DIFFERENTIAL SIDE GEAR (2)
38. SIDE PINION THRUST WASHER (4)
39. SIDE PINION (4)
40. SPIDER
41. DIFFERENTIAL BEARING ADJUSTER
42. DIFFERENTIAL BEARING CUP
43. DIFFERENTIAL BEARING CONE
44. SPECIAL HEAD SCREWS (16)

TA 238398

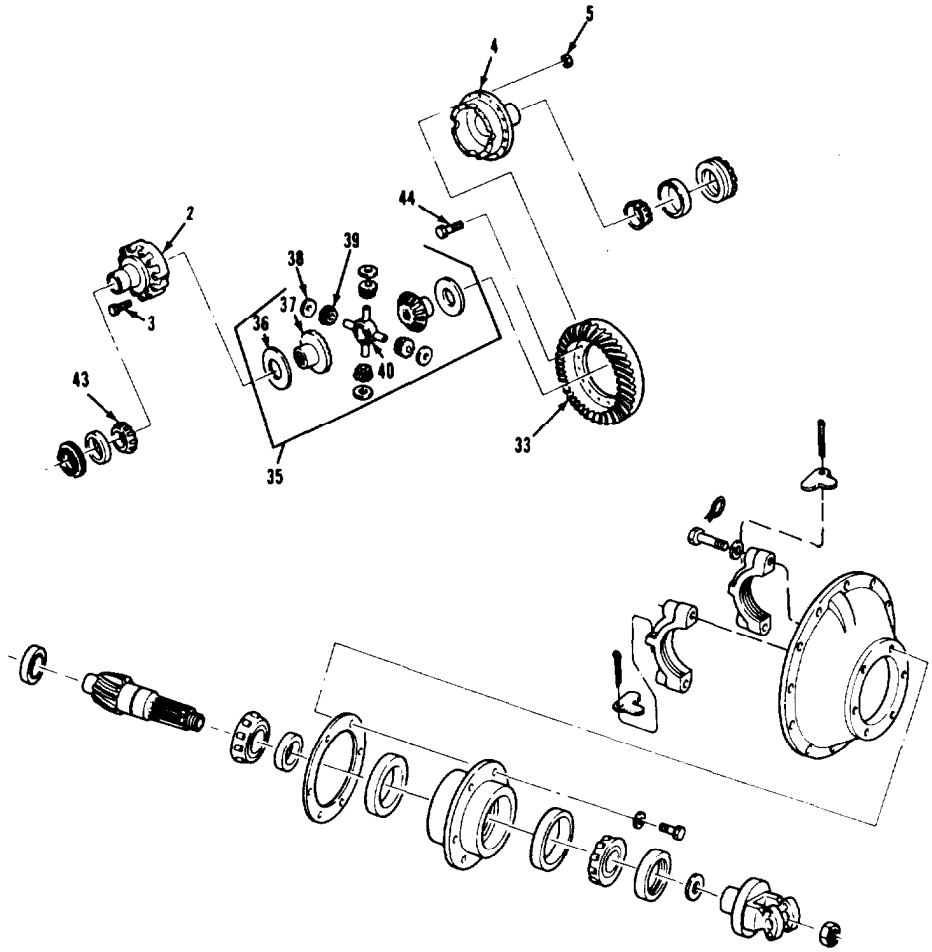
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	NOTE •If ring gear and drive pinion are to be reused, determine backlash before disassembly. Use a suitable dial indicator as illustrated in step 54. •Mount rear-rear axle carrier in a suitable overhaul stand.	
1. Nut (21).	Remove from item (32).	Use tool No. J-3453 to prevent item (31) from turning.
	NOTE Rotate overhaul stand so that ring gear is facing up.	
2. Two caps (13) and carrier (14).	Center punch for correct location and alinement.	This will provide for correct reassembly.
3. Spider (40) and differential case assembly (1).	Center punch for correct location and alinement.	
4. Two adjusters (8) and (41).	Center punch for correct location and alinement.	If new ring gear and drive pinion assembly are being installed, it is not necessary to center punch items (8) and (40).
5. Lockwire (11).	Cut, remove, and discard.	
6. Two pins (15) and (30).	Remove from items (13), (16), and (29).	Retain items (13),(16), and (29). Discard item (15) and (30).

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CASE ASSEMBLY
8. DIFFERENTIAL BEARING ADJUSTER
11. LOCKWIRE
13. BEARING CAP (2)
14. REAR CARRIER
15. COTTER PIN
16. BEARING ADJUSTER LOCK
21. PINION NUT
29. BEARING ADJUSTER LOCK
30. COTTER PIN
32. DRIVE PINION
40. SPIDER
41. DIFFERENTIAL BEARING ADJUSTER

TA 238399

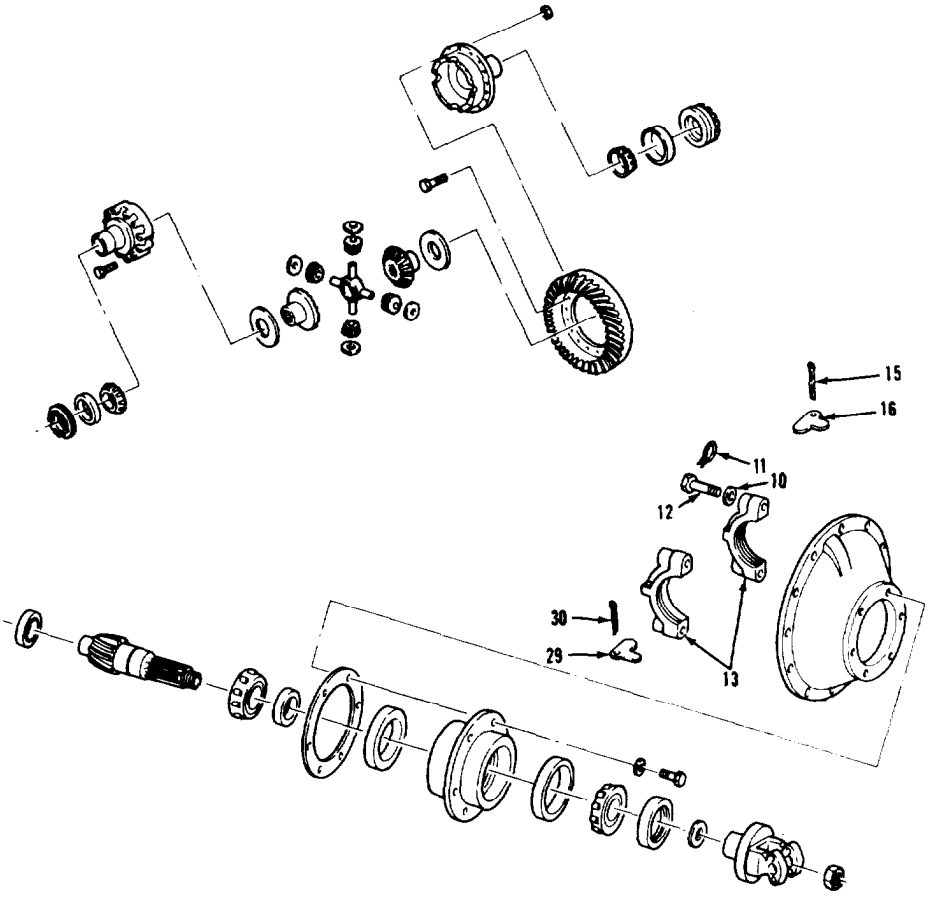
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
7. Four screws (12) and washers (10).	Remove from item (13). Remove item (13) from item (1).	
8. Two adjusters (8) and (41).	Remove from item (14).	
9. Two cups (7) and (42).	Remove from item (14).	
10. Ring gear and drive pinion (31), two cones (6) and (43), and differential assembly (1).	Remove as an assembly from item (14).	Use a suitable chain hoist attached to a steel bar. Insert the steel bar though the center of item (31) and lift out.
	NOTE The differential case assembly and ring gear screws require excessive force to remove. It may be helpful to mount the assembly in a hydraulic press to initially loosen the screws.	
11. Sixteen screws (44).	Remove from item (33).	If item (33) will not drop off, tap outer diameter with soft mallet to loosen.
12. Twelve screws (3).	Remove from item (2) and discard items (3).	
13. Side gear and pinion assembly (35).	Remove from items (2) and (4).	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CASE ASSEMBLY
2. PLAIN CASE HALF
3. HEX HEAD SCREW (12)
4. FLANGED CASE HALF
6. DIFFERENTIAL BEARING CONE
7. DIFFERENTIAL BEARING CUP
8. DIFFERENTIAL BEARING ADJUSTER
10. FLAT WASHER (4)
12. DRILLED HEX HEAD SCREW (4)
13. BEARING CAP (2)
14. REAR CARRIER
31. RING GEAR AND DRIVE PINION
33. RING GEAR
35. SIDE GEAR AND PINION ASSEMBLY
41. DIFFERENTIAL BEARING ADJUSTER
42. DIFFERENTIAL BEARING CUP
43. DIFFERENTIAL BEARING CONE
44. SPECIAL HEAD SCREW (16)

TA 238400

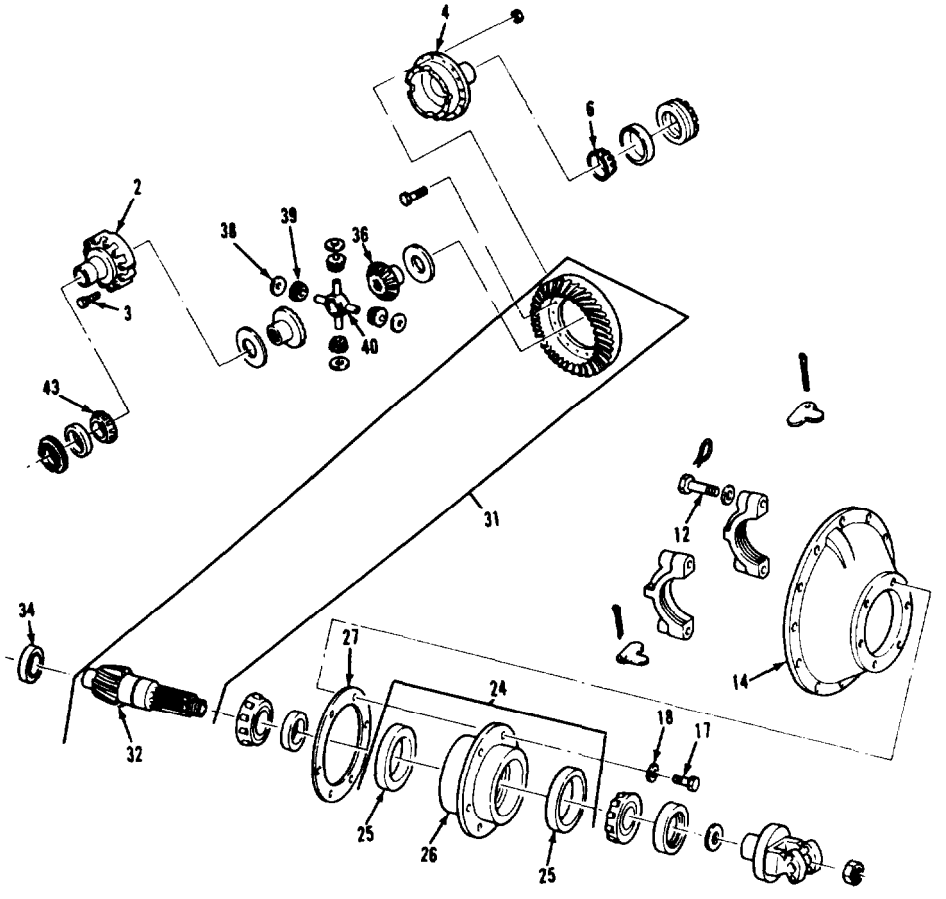
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
	NOTE Bearing cones and bearing cups which are pressed on, are only to be removed if they fail inspection. Refer to step 26 for inspection. Removal of any bearing cup or cone will usually result in damage to the cone or cup.	
14. Two washers (36).	Remove from items (2) and (4).	
15. Four washers (38) and pinions (39).	Remove from item (40).	Do not mix items (38) and (39).
16. Two cones (6) and (43).	Remove from items (4) and (2) using a suitable puller.	Discard items (6) and (43).
	NOTE Rotate rear-rear carrier so that flange end of drive pinion faces up.	
17. Six screws (17) and lockwashers (18).	Remove from item (26).	
	NOTE •More than one shim may be used under the bearing cage. Count all shims and tag for use during assembly. •Rotate rear-rear carrier so that flange end of drive pinion faces down.	
18. Pinion bearing cage and cup assembly (24), shim (27), pinion (32), and bearing (34).	Remove from item (14).	Use a long drift punch seated a ainst the back of item 9 32) and hammer out. Use an assistant to hold onto item (24) while hammering out.

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

2. PLAIN CASE HALF
4. FLANGED CASE HALF
6. DIFFERENTIAL BEARING CONE
12. DRILLED HEX HEAD SCREW (4)
14. REAR CARRIER
17. SCREW (6)
18. LOCKWASHER (6)
24. PINION BEARING CAGE AND CUP ASSEMBLY
25. PINION BEARING CUP (2)
26. PINION BEARING CAGE
27. PINION BEARING SHIM
31. RING GEAR AND DRIVE PINION
32. DRIVE PINION
34. PINION PILOT BEARING
36. SIDE GEAR THRUST WASHER (2)
38. SIDE PINION THRUST WASHER (4)
39. SIDE PINION (4)
40. SPIDER
43. DIFFERENTIAL BEARING CONE

TA 238401

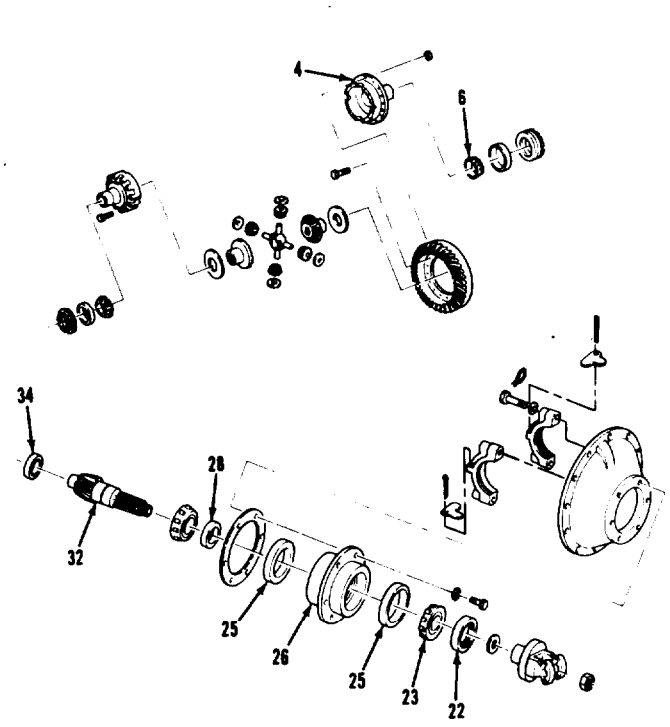
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
19. Pinion (32) and bearing (34).	Remove from item (26) using a suitable press.	
20. Seal (22).	Remove from item (26) and discard item (22).	
21. Cone (23).	Remove from item (26).	
22. Two cups (25).	Remove from item (26).	Tag for correct location during assembly. Use a drift punch seated against the backs of item (25) to drive out,
23. Spacer (28).	Remove from item (32).	
34. Cone (23) and bearing (34).	Remove from item (32).	Use a split type bearing puller to push item (23) and (34) away from teeth of item (32). Mount item (32) in a hydraulic press and remove items (23) and (34).
B. CLEANING.		
25. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
26. All parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY.		
	CAUTION Coat all parts with OE/HDO 30 lubricating oil before assembly.	
27. New cone (6).	Press onto item (4) using suitable bearing installation tool and hydraulic press.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

4. FLANGED CASE HALF
6. DIFFERENTIAL BEARING CONE
22. OIL SEAL
23. PINION BEARING CONE (2)
25. PINION BEARING CUP (2)
26. PINION BEARING CAGE
28. PINION BEARING SPACER
32. DRIVE PINION
34. PINION PILOT BEARING

TA 238402

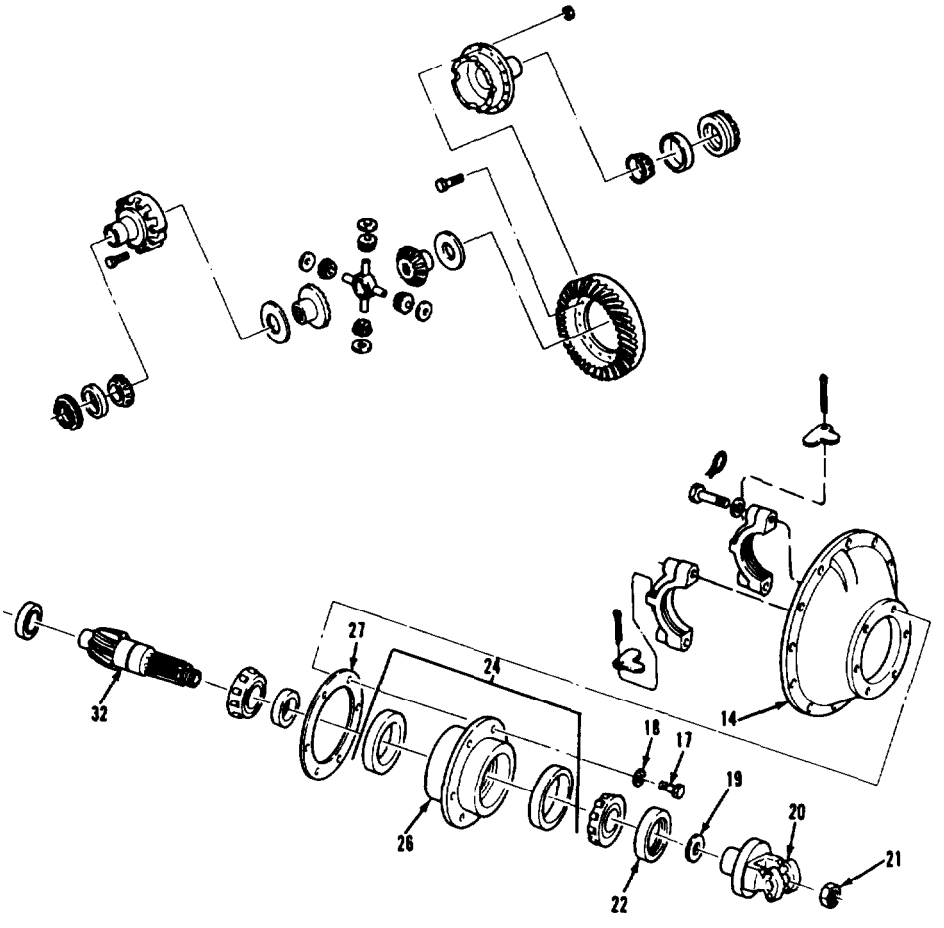
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
28. New cone (43).	Press onto item (2) using suitable bearing installation tool and hydraulic press.	
29. Washer (36) and gear (37).	Install in item (4).	
30. Four pinions (39) and washers (38).	Install onto item (40).	
31. Remaining gear (37) and washer (36).	Place on item (35).	
32. Side gear pinion assembly (35).	Rotate gears and check for proper mesh.	
33. Case half (2).	Aline punch marks with item (4) and install onto item (4).	
34. Twelve new screws (3).	Install in item (2) and torque to 150-180 lb-ft.	
	CAUTION Make certain ring gear sits flat on flange case. Any unevenness will result in incorrect adjustment and damage to the ring and pinion gear.	
35. Gear (33).	Install onto item (4).	
36. Sixteen screws (44) and locknuts (5).	Install in item (33) and (4), and torque to 195-245 lb.ft.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

2. PLAIN CASE HALF
3. HEX HEAD SCREW (12)
4. FLANGED CASE HALF
5. LOCKNUT (16)
33. RING GEAR
35. SIDE GEAR AND PINION ASSEMBLY
36. SIDE GEAR THRUST WASHER (2)
37. DIFFERENTIAL SIDE GEAR (2)
38. SIDE PINION THRUST WASHER (4)
39. SIDE PINION (4)
40. SPIDER
43. DIFFERENTIAL BEARING CONE
44. SPECIAL HEAD SCREWS (16)

TA238403

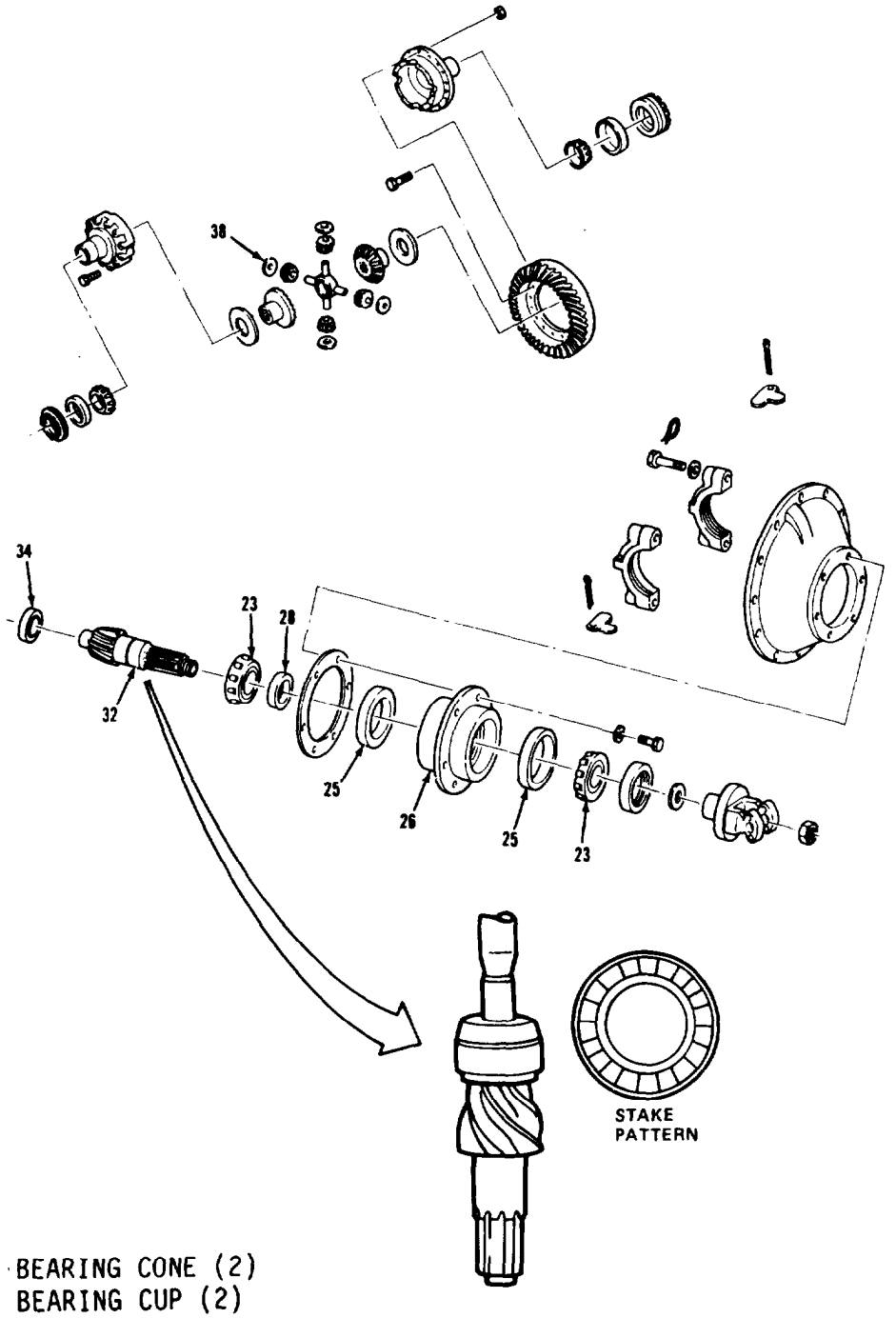
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
37. Two new cups (25).	Install in item (26) using a suitable bearing sleeve and hydraulic press.	Make certain items (25) bottom in item (26).
	CAUTION Before complete reassembly of drive pinion, the correct bearing spacer will have to be determined after installation of pilot bearing and pinion bearing cone. Refer to step 51 for trial build-up and step 52 for final pinion bearing preload test to determine the correct size of spacer to be used.	
38. New bearing (34).	Install onto end of item (32) using suitable bearing sleeve for installation and hydraulic press.	Stake item (34) as shown using tool No. J-26883,
39. New cone (23).	Install onto item (32) using suitable bearing sleeve for installation and hydraulic press.	Make certain item (23) bottoms on item (32).
40. New spacer (28).	Install onto item (32).	Item (28) is available in thirty-two different sizes. Use the correct size as determined in steps 51 and 52.
41. Cage (26).	Install onto item (32).	
42. New cone (23).	Install onto item (32) using a suitable bearing sleeve and hydraulic press for installation.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

23. PINION BEARING CONE (2)
25. PINION BEARING CUP (2)
26. PINION BEARING CAGE
28. PINION BEARING SPACER
32. DRIVE PINION
34. PINION PILOT BEARING
38. SIDE PINION THRUST WASHER (4)

TA 2384

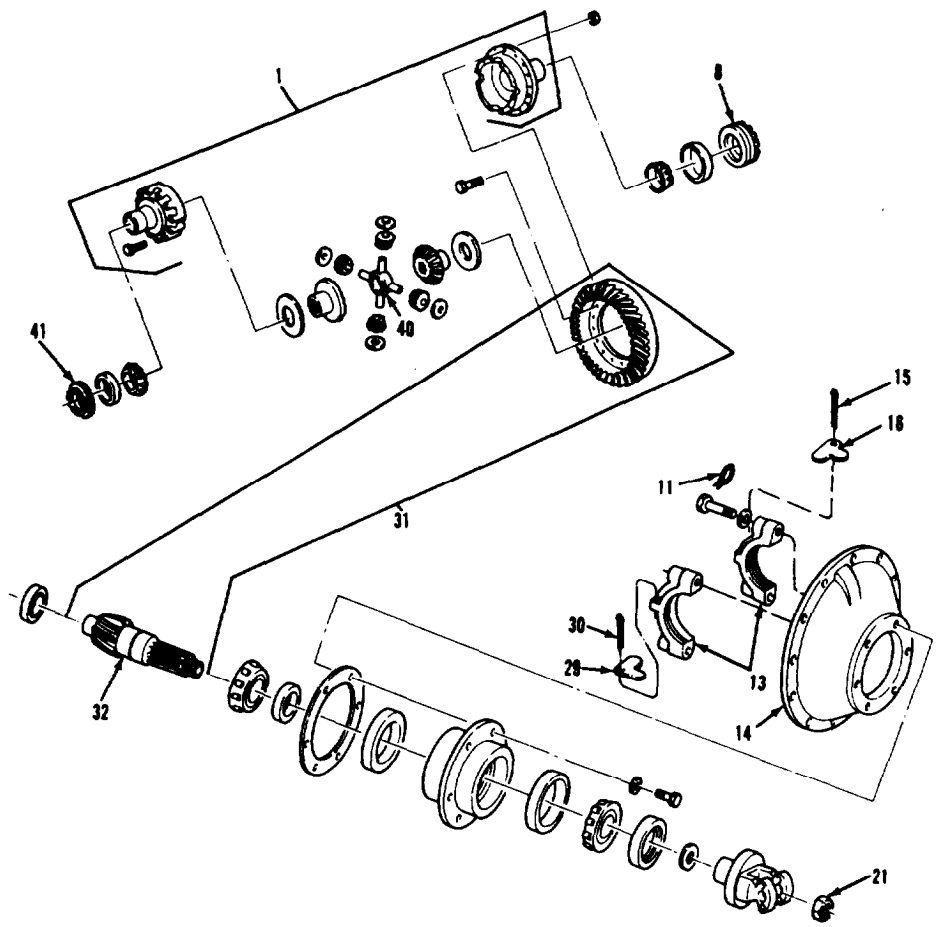
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
	CAUTION After installation of outer bearing cone, make a final check of pinion bearing preload. Refer to step 52 for preload adjustment.	
43. New seal (22).	Install in item (26) using a suitable press.	Make certain new item (22) seats firmly in item (26).
44. Washer (19), flange (20), and nut (21).	Install onto item (32). Torque item (21) to 560-700 lb-ft.	Item (32) will have to be firmly secured in a large vise with jaw protectors to prevent it from slipping when torquing item (21).
	NOTE If ring gear and drive pinion assembly are to be reused, install the same amount and size of shims removed during disassembly. When installing a new ring gear and drive pinion use a nominal shim pack of 0.029 inch.	
45. Shims (27).	Place on item (14) and make certain lube hole is clear.	Items (27) is available in five different sizes. The total number and sizes will be determined during adjustments.
46. Assembled pinion bearing cage and cup assembly (24).	Install into item (14).	
47. Six screws (17) and lockwashers (18).	Install in item (26) and torque item (17) to 100-130 lb-ft.	Items (17) and (24) may have to be removed during final adjustment for changing for items (27).

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

14. REAR CARRIER
17. SCREW (6)
18. LOCKWASHER (6)
19. FLAT WASHER
20. INPUT FLANGE
21. PINION NUT
22. OIL SEAL
24. PINION BEARING CAGE AND CUP ASSEMBLY
26. PINION BEARING CAGE
27. PINION BEARING SHIM
32. DRIVE PINION

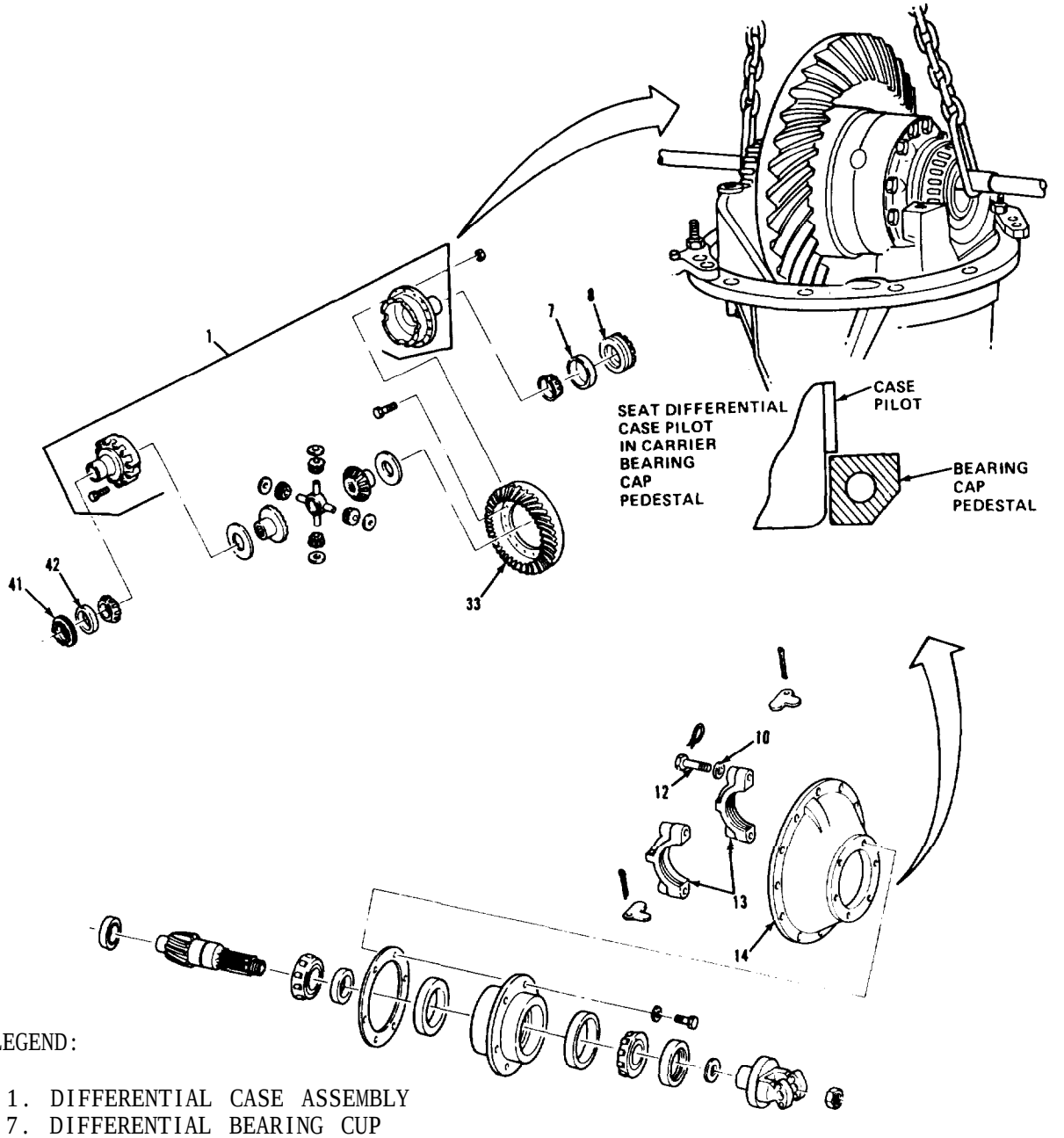
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
48. Ring gear (33) and differential case assembly (1).	Install into item (14).	During installation, tilt item (1) to allow differential case pilot to mesh properly with edge of bearing cap pedestal as shown.
49. Two cups (7) and (42), adjusters (8) and (41), and caps (13).	Install in item (14).	Make certain punch marks are properly alined and threads of items (8) and (41) are not cross threaded with items (13).
	CAUTION Do not torque the four drilled hex screws until all adjustments have been made.	
50. Four screws (12) and washers (10).	Install and finger tighten. If necessary, use a hand tool.	Refer to steps 51 thru 59 under adjustments for setting differential preload and ring gear backlash.
E. ADJUSTING PINION BEARING PRELOAD.		
	CAUTION • Once correct pinion bearing preload has been established note the pinion bearing spacer size used. Select a pinion bearing spacer 0.001 inch larger for use in the final pinion bearing cage assembly. • After adjusting pinion bearing preload without drive pinion a final preload test must be made. Proceed to step 52 for adjustments with drive pinion installed in bearing cage assembly.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

1. DIFFERENTIAL CASE ASSEMBLY
7. DIFFERENTIAL BEARING CUP
8. DIFFERENTIAL BEARING ADJUSTER
10. FLAT WASHER (4)
12. DRILLED HEX HEAD SCREW (4)
13. BEARING CAP (2)
14. REAR CARRIER
33. RING GEAR
42. DIFFERENTIAL BEARING CUP
41. DIFFERENTIAL BEARING ADJUSTER

TA 238406

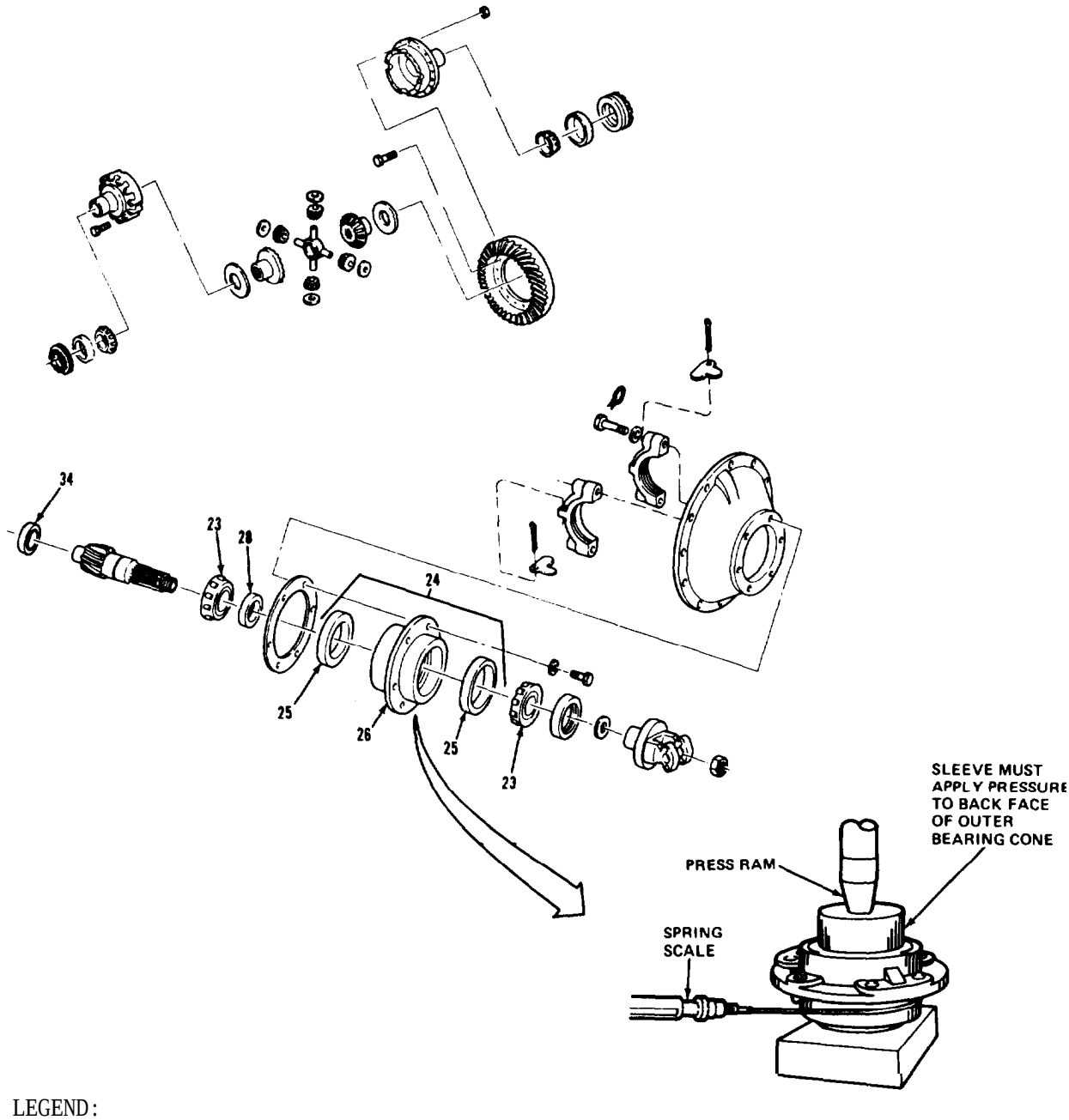
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. ADJUSTING PINION BEARING PRELOAD.		
	NOTE Use a bearing spacer with a thickness of 0.638 inch with a new gear set or pinion bearings. Use original bearing spacer with original parts.	
51. Assembled pinion bearing cage and cup assembly (24).	For trial build-up of pinion bearing preload test, adjust as follows:	Item (24) should be assembled with items (25), (23), (38), and correct item (28).
	a. Place item (24) in press. Position sleeve so that load is applied directly to the back face of item (25) as shown.	
	b. Apply hydraulic press load of 13.5 to 15.5 tons to item (24).	
	c. Wrap soft wire around item (24) and attach a spring scale as shown.	
	d. Pull spring scale. Preload is correct when torque required to rotate item (26) is from 10-20 lb-in..	If necessary, adjust pinion bearing preload by changing item (28). A thicker item (28) will decrease preload. A thinner item (28) will increase preload.
	NOTE Drive pinion and pinion pilot bearing must be installed in bearing cage assembly for final bearing preload test.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

23. PINION BEARING CONE (2)
24. PINION BEARING CAGE AND CUP ASSEMBLY
25. PINION BEARING CUP (2)
26. PINION BEARING CAGE
28. PINION BEARING SPACER
34. PINION PILOT BEARING

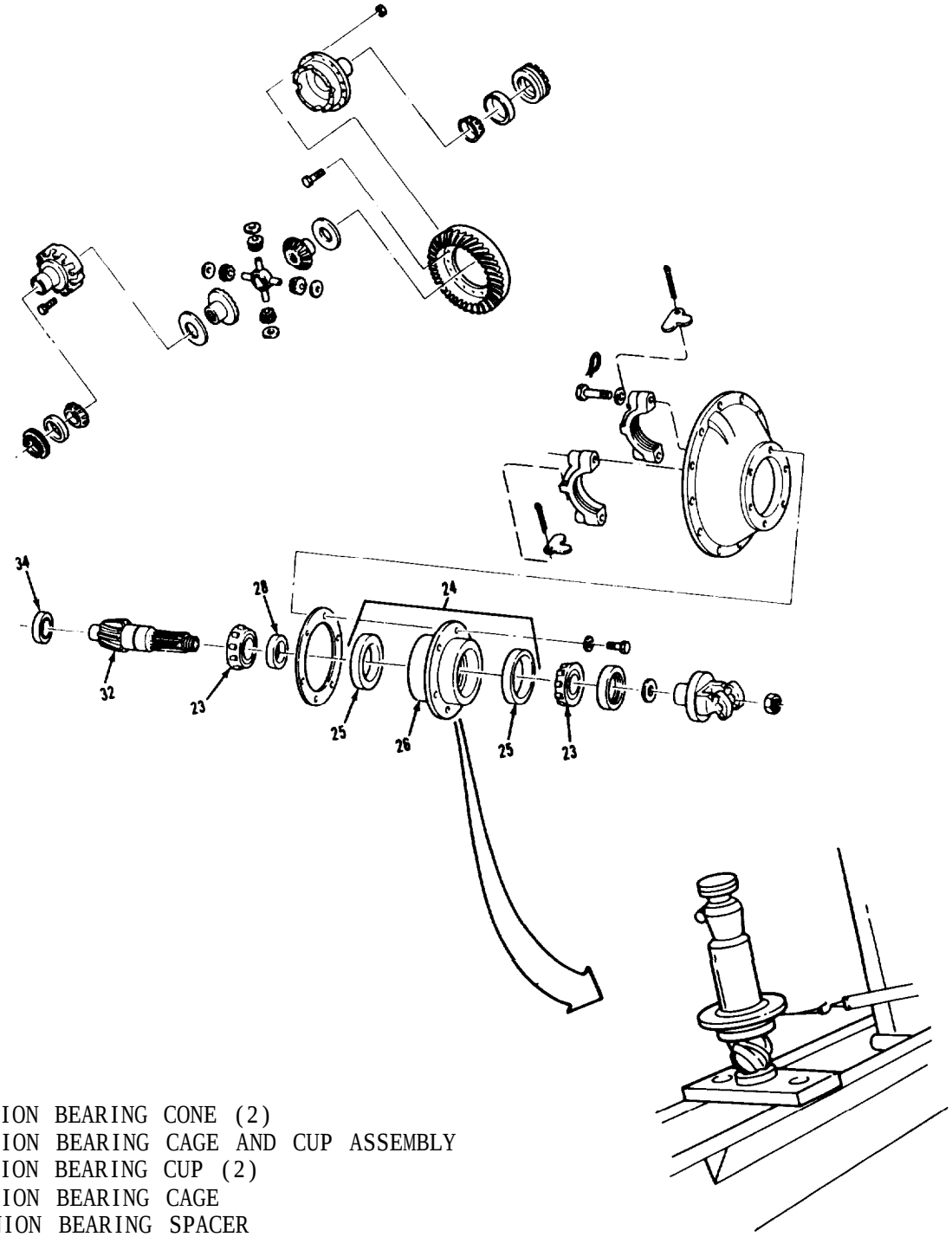
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. ADJUSTING PINION BEARING PRELOAD (Continued).		
52. Assembled pinion bearing cage and cup assembly (24).	For final pinion bearing preload test, adjust as follows:	Item (26) should be assembled with items (25), (23), (34), (32), and correct item (28).
	a. Place assembled item (26) with a suitable sleeve or spacer so that load is applied directly to the back face of item (25) as shown.	
	b. Apply hydraulic press load of 13.5 to 15.5 tons to item (24).	
	c. Wrap soft wire around assembled item (26) and attach a spring scale as shown.	
	d. Pull spring scale. Preload is correct when torque required to rotate assembled item (24) is from 15-35 lb-in..	If necessary, adjust pinion bearing preload by changing item (28). A thicker item (28) will decrease preload. A thinner item (28) will increase preload.

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

23. PINION BEARING CONE (2)
24. PINION BEARING CAGE AND CUP ASSEMBLY
25. PINION BEARING CUP (2)
26. PINION BEARING CAGE
28. PINION BEARING SPACER
32. DRIVE PINION
34. PINION PILOT BEARING

TA 23840

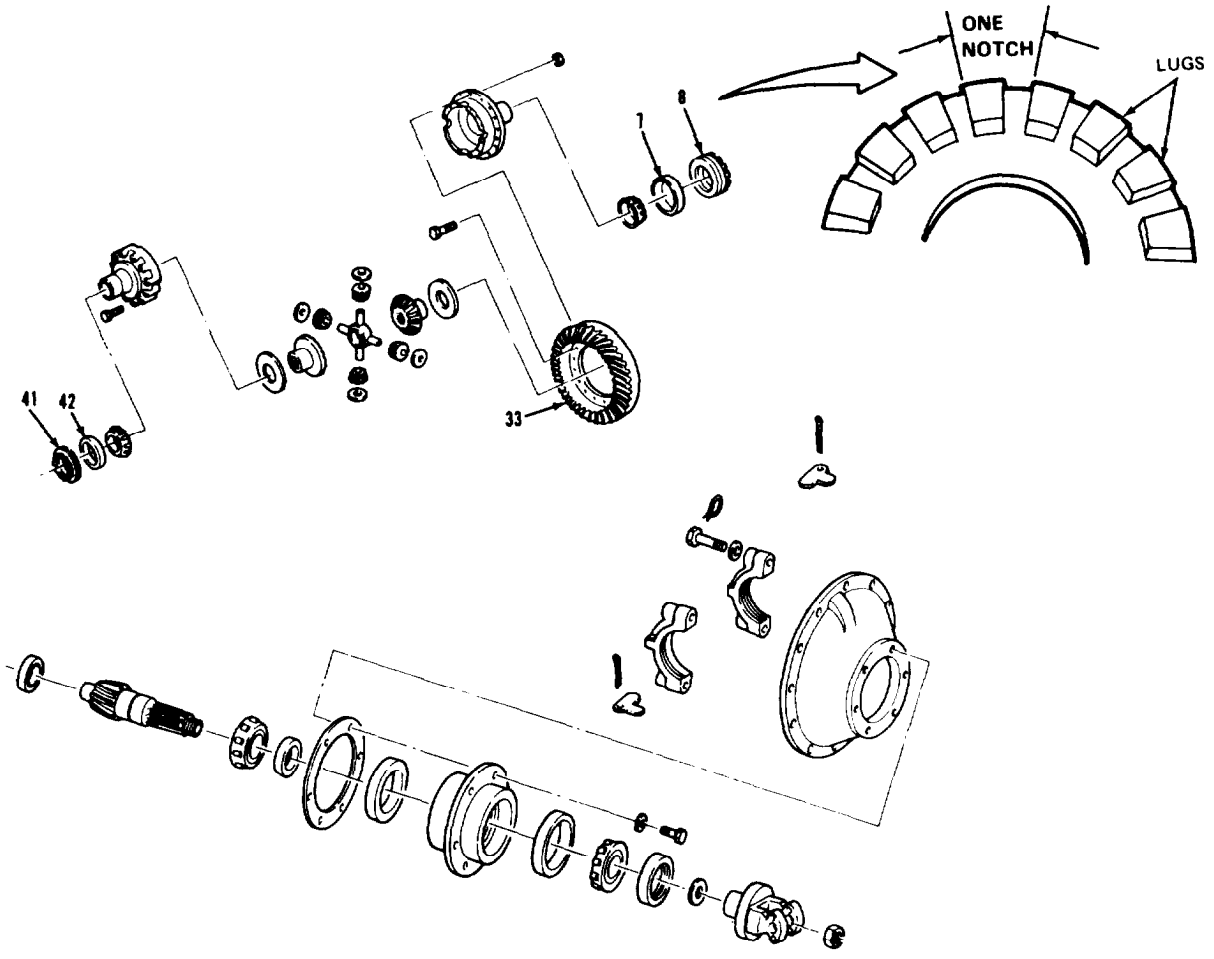
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
F. ADJUSTING DIFFERENTIAL PRELOAD.		
53. Adjusters (8) and (41).	Adjust differential preload as follows:	Tightening preloads the bearings, and provides proper gear backlash.
	a. Loosen item (41) on same side as ring gear teeth until its first thread is visible.	
	b. Tighten item (8) on other side until there is not backlash.	This can be tested by facing item (33) and pushing item (33) away from the body while gently rocking item (33) from side to side. There should be no free movement.
	c. Rotate item (33) and check for any point where item (33) may bind. If such a point exists, loosen and retighten item (41). Make all further adjustments from the point of tightest mesh.	
G. ADJUSTING RING GEAR BACKLASH.		
54. Adjusters (8) and (41).	Adjust ring gear backlash as follows:	
	a. Loosen item (8) on notch.	One notch is the movement of the lead edge of one adjuster lug to the lead edge of the next lug post at a preselected point as shown.
	b. Tighten item (41) on the teeth side of item (33) until it contacts item (42).	Contact is felt in the form of increased resistance to item (41) movement.

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

7. DIFFERENTIAL BEARING CUP
8. DIFFERENTIAL BEARING ADJUSTER
33. RING GEAR
41. DIFFERENTIAL BEARING ADJUSTER
42. DIFFERENTIAL BEARING CUP

TA 238409

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
G. ADJUSTING RING GEAR BACKLASH (Continued).		
	NOTE Backlash specifications are for new ring gear and drive pinion assemblies only. Reset used gearing to backlash recorded before disassembly.	
54. Adjusters (8) and (41) (continued).	Adjust ring gear backlash as follows (continued):	
	c. Mount dial indicator as shown. Tighten item (41) two or three notches and check item (33) backlash.	Backlash should be between 0.006 and 0.016.
	d. To add backlash loosen item (8) on back face side of item (33) one notch at a time. Tighten item (41) on opposite side until it contacts item (42). Continue to tighten item (41) two or three notches.	
	e. To remove backlash loosen item (41) on the teeth side of item (33) one notch at a time. Tighten item (8) until it contacts item (7). Continue to tighten item (8) two or three notches. Recheck backlash.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LEGEND:

7. DIFFERENTIAL BEARING CUP
8. DIFFERENTIAL BEARING ADJUSTER
33. RING GEAR
41. DIFFERENTIAL BEARING ADJUSTER
42. DIFFERENTIAL BEARING CUP

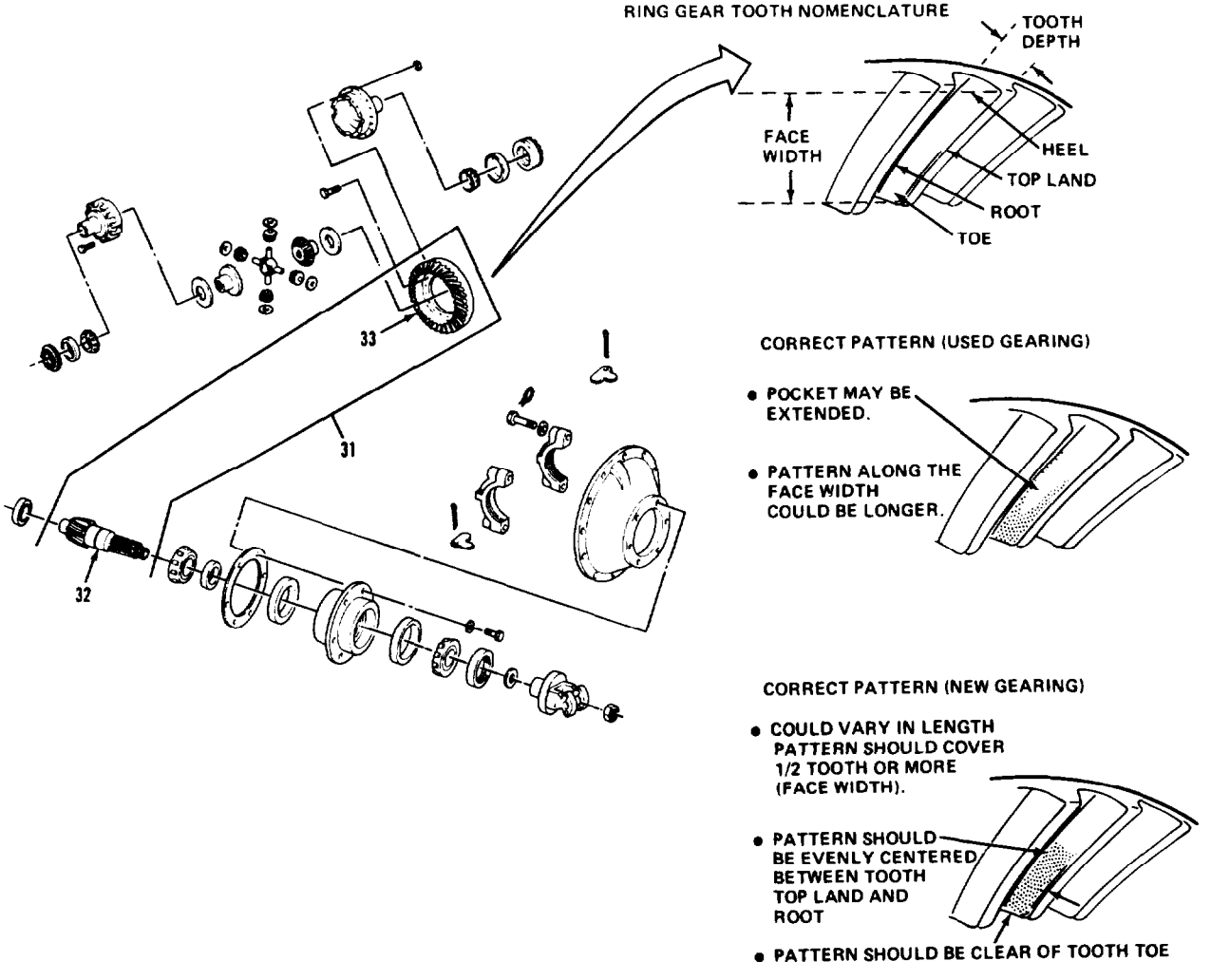
TA23841

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
H. RING GEAR AND PINION TOOTH CONTACT.		
55. Gear (33).	Coat nine teeth on item (33) with marking compound.	This represents the total number of teeth on item (32).
56. Used ring gear and drive pinion (31).	Used item (31) tooth contact should show the following:	Roll item (33) to obtain a contact pattern. Refer to illustration for item (33) tooth nomenclature and correct tooth patterns.
	a. Used item (31) will have a pocket at the toe-end of the gear tooth which tails into a contact line along the root of tooth.	
	b. A correct pattern is clear of the toe and centers evenly along the face width between the top land and root.	The length and shape of the pattern are considered acceptable as long as it does not run off the tooth at any point.
57. New ring gear and drive pinion (31).	New item (31) tooth contact should show the following:	Roll item (33) to obtain a contact pattern. Refer to illustration for item (33) tooth nomenclature and correct tooth patterns.
	a. The pattern is well centered on the tooth of item (33) with lengthwise contact clear of the toe.	
	b. The length of the pattern in an unloaded condition is approximately one-half to two-thirds of tooth of item (33).	

REAR TANDEM AXLES.



LEGEND:

31. RING GEAR AND DRIVE PINION
32. DRIVE PINION
33. RING GEAR

TA 238411

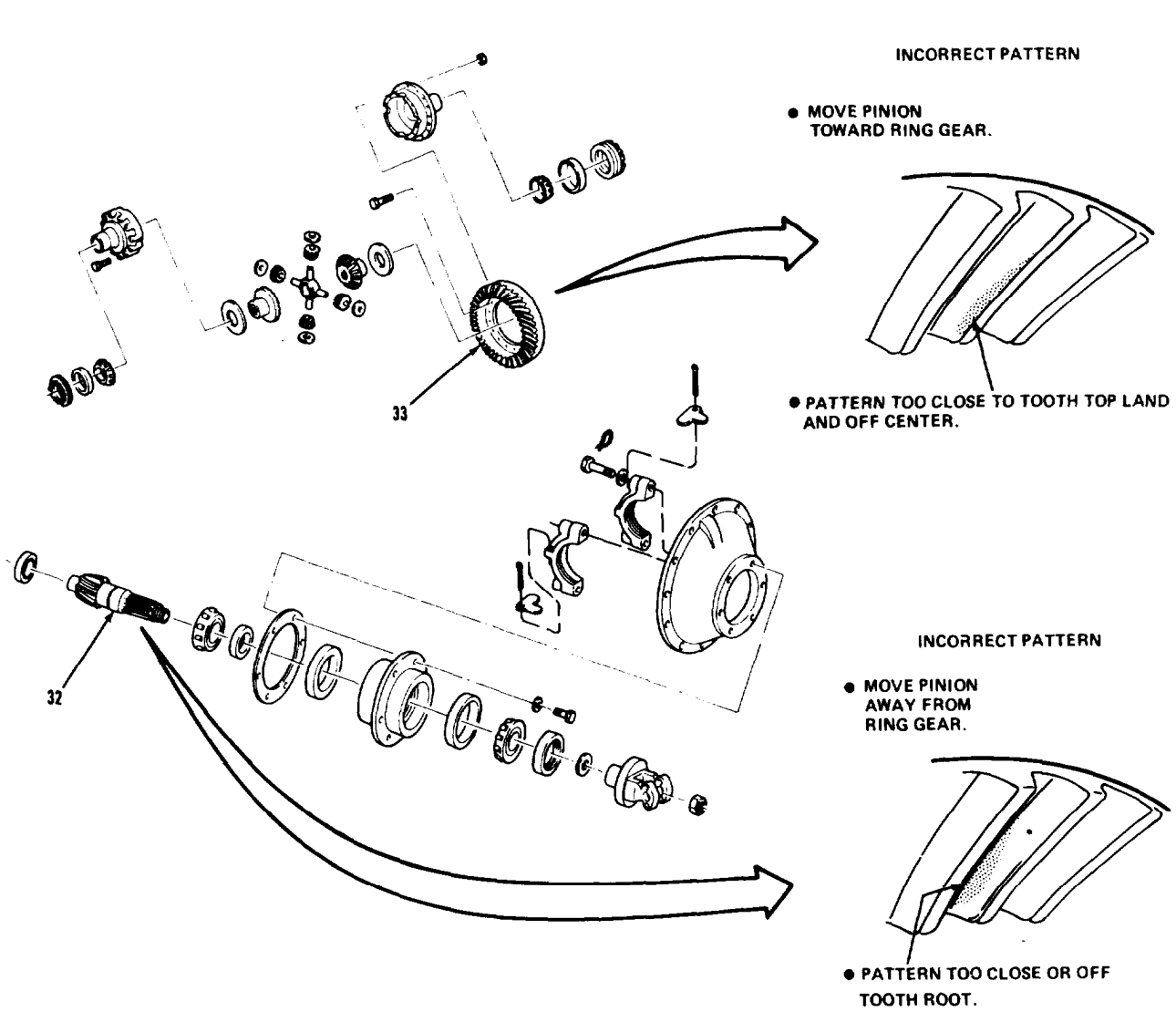
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
I. ADJUSTING TOOTH CONTACT PATTERN.		
	NOTE Ring gear backlash controls the ring gear position. This adjustment moves the contact pattern along the face width of the ring gear tooth. Pinion position is determined by the size of the pinion bearing cage shim pack. It controls contacts on the tooth depth of the ring gear tooth. When making adjustments, first adjust the drive pinion, then the backlash. Continue this method, until the pattern is correct. Check ring gear backlash after each shim change and adjust if necessary to maintain the 0.006 to 0.016 inch for new ring and pinion gear.	
58. Pinion (32).	Refer to illustrations and adjust item (32) position as follows: a. If item (33) tooth pattern is too close to the top land, move item (32) toward item (33) by removing shims. b. If item (.33) tooth pattern is too close to the root of the tooth, move pinion away from item (33) by adding shims.	Refer to steps 18 and 45 for shim removal and installation.

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

32. DRIVE PINION
33. RING GEAR

TA 238412

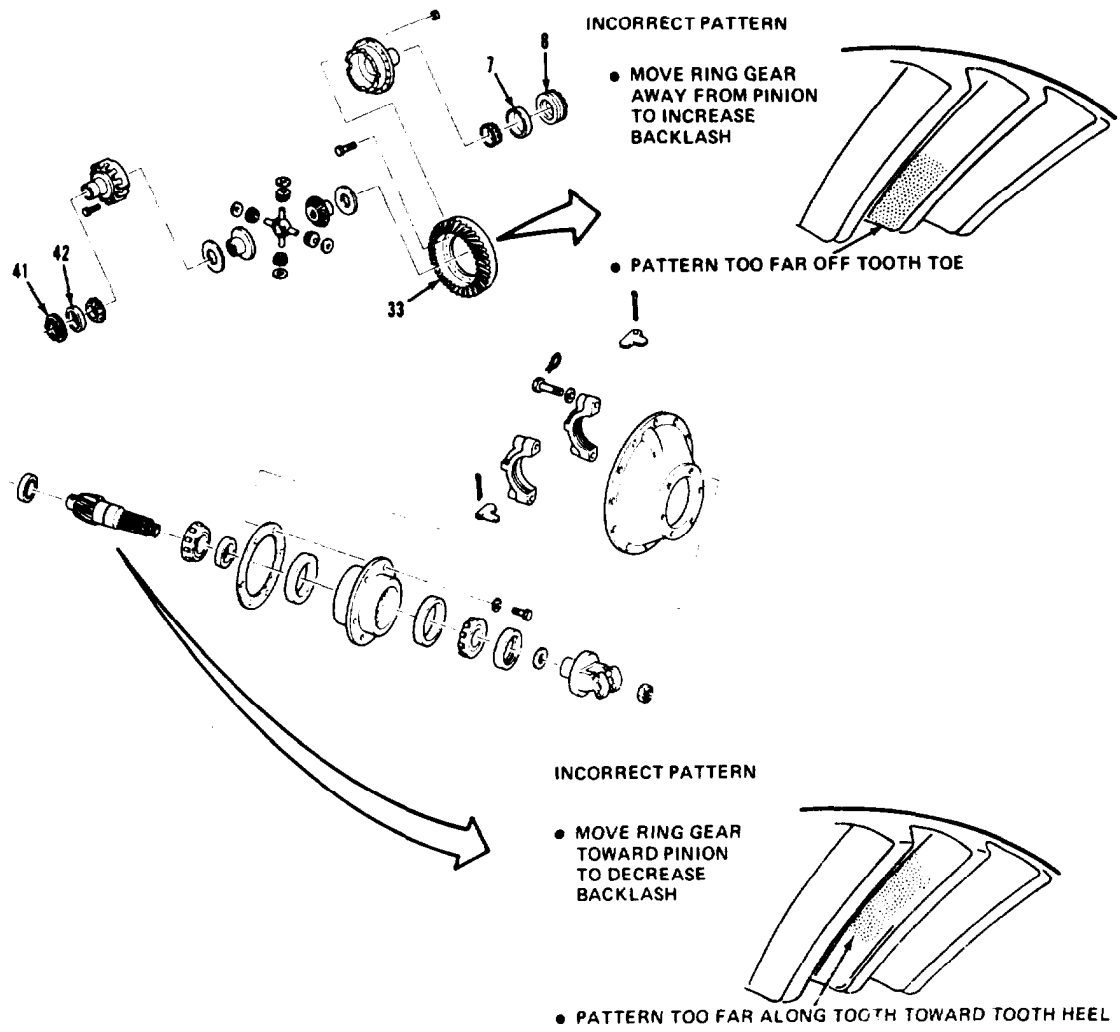
REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
I . ADJUSTING TOOTH CONTACT PATTERN (Continued).		
59. Adjusters (8) and (41).	Refer to illustrations and adjust backlash if contact patterns are similar to illustrations. a. If pattern is too far off tooth toe, add backlash by loosening item (8) on the back face side of item (33) one notch at a time. Tighten item (41) until it contacts item (42). Continue to tighten item (41) two or three notches. Recheck backlash. b. If pattern is too far toward tooth heel, remove backlash by loosening item (41) on the tooth side of item (33) one notch at a time. Tighten item (8) until it contacts item (7). Continue to tighten the same item (8) two or three notches. Recheck backlash.	

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR



LEGEND:

7. DIFFERENTIAL BEARING CUP
8. DIFFERENTIAL BEARING ADJUSTER
33. RING GEAR
41. DIFFERENTIAL BEARING ADJUSTER
42. DIFFERENTIAL BEARING CUP

TA 23841

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
J. FINAL ASSEMBLY.		
60. Four screws (12) and washers (10).	Torque to 360-440 lb-ft.	
61. Two locks (16) and (29) and new pins (15) and (30).	Install on item (13).	
62. New lockwire (11).	Install in item (12) on each item (13).	

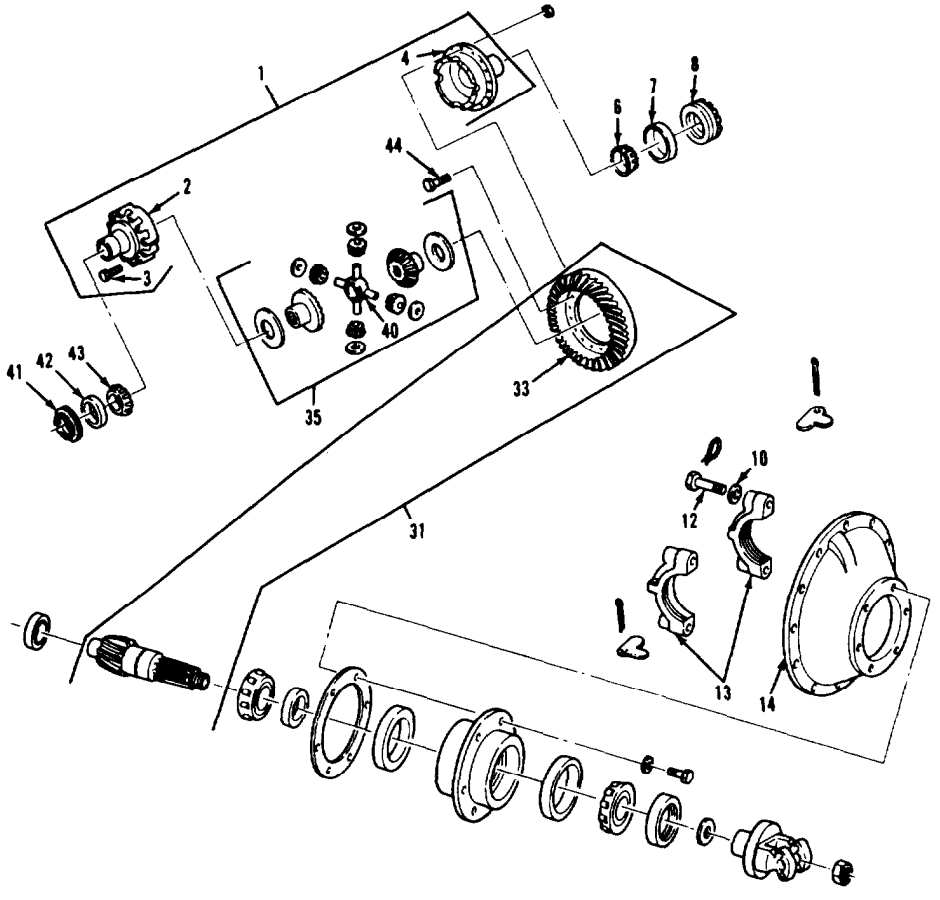
NOTE

Follow-on maintenance action required:

Install rear-rear axle carrier (para 3-75).

REAR TANDEM AXLES.

3-76. REAR-REAR AXLE CARRIER REPAIR (Continued).



LEGEND:

10. FLAT WASHER (4)
11. LOCKWIRE
12. DRILLED HEX HEAD SCREW (4)
13. BEARING CAP (2)
15. COTTER PIN
16. BEARING ADJUSTER LOCK
29. BEARING ADJUSTER LOCK
30. COTTER PIN

TA 238414

Section IX. BRAKE SYSTEM

3-77. GENERAL.

This section provides procedures authorized at direct and general support maintenance levels to adjust, replace, and repair brake sytem components. To find a specific procedure contained in this section, see the task summary below.

3-78. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
(Refer to specific paragraph for this	

TEST EQUIPMENT
Gage, air pressure, 0-200 psi

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)

Paint
Item 25, Appendix B.
Oil, lubricating: OE/HDO 30
Item 17, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B
Grease, pneumatic
Item 10, Appendix B.
Tape, thread sealing
Item 35, Appendix B.
Preformed packing
(06853) 239898.
O-ring
(06853) 238327.
Preformed packing
(06853) 232068.
Preformed packing
(06853) 231159.
Gasket
(06853) 240457.
Kit, brake valve repair
(06853) 289352.
Lining (2)
(52304) 5731471.
Lining (2)
(52304) 5731493.
Rivet (52)
(52304) 5731473.
Diaphragm (2)
(50153) 1126M009.
O-ring
(50153) 11M114
Governor gasket
(06853) 237202.
O-ring (2)
(06853) 239658.
O-ring (2)
(06853) 230175.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

REFERENCE (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Block rear wheels.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

BRAKE SYSTEM.

3-78. TASK SUMMARY (Continued).

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
1	Trailer Handbrake Valve Repair	3-79	
	a. Disassembly.	3-79a	
	b. Cleaning.	3-79b	
	c. Inspection.	3-79c	
	d. Assembly.	3-79d	
2	Brake Treadle Valve Repair	3-80	
	a. Disassembly.	3-80a	
	b. Cleaning and Inspection.	3-80b	
	c. Assembly.	3-80c	
	d. Operational Check.	3-80d	
3	Brake Shoe Repair	3-81	
	a. Disassembly.	3-81a	
	b. Cleaning.	3-81 b	
	c. Inspection.	3-81c	
	d. Assembly.	3-81d	
	e. Final Inspection.	3-81e	
4	Forward Rear Axle Brake Chamber Repair	3-82	
	a. Disassembly.	3-82a	
	b. Cleaning.	3-82b	
	c. Inspection.	3-82c	
	d. Assembly.	3-824	
5	Air Compressor Governor Adjustment	3-83	2-7
6	Air Compressor Governor Replacement	3-84	2-7
	a. Removal.	3-84a	
	b. Cleaning.	3-84b	
	c. Inspection.	3-84c	
	d. Installation.	3-84d	
7	Air Compressor Governor Repair	3-85	2-7
	a. Disassembly.	3-85a	
	b. Cleaning.	3-85b	
	c. Inspection.	3-85c	
	d. Assembly.	3-85d	

REAR TANDEM AXLES.

3-79. TRAILER HANDBRAKE VALVE REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

EQUIPMENT CONDITION
PARAGRAPH
TM 9-2320-283-20.

CONDITION DESCRIPTION
Trailer handbrake valve removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Staking tool
(33287) J-26883.

MATERIALS/PARTS (P/N)
Solvent, drycleaning, SD-2
Item 31, Appendix B.
Grease, pneumatic
Item 10, Appendix B.
Preformed packing
(06853) 239898.
O-ring
(06853) 238327.
Preformed packing
(06853) 232068.
Preformed packing
(06853) 231159.
Gasket
(06853) 240457.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

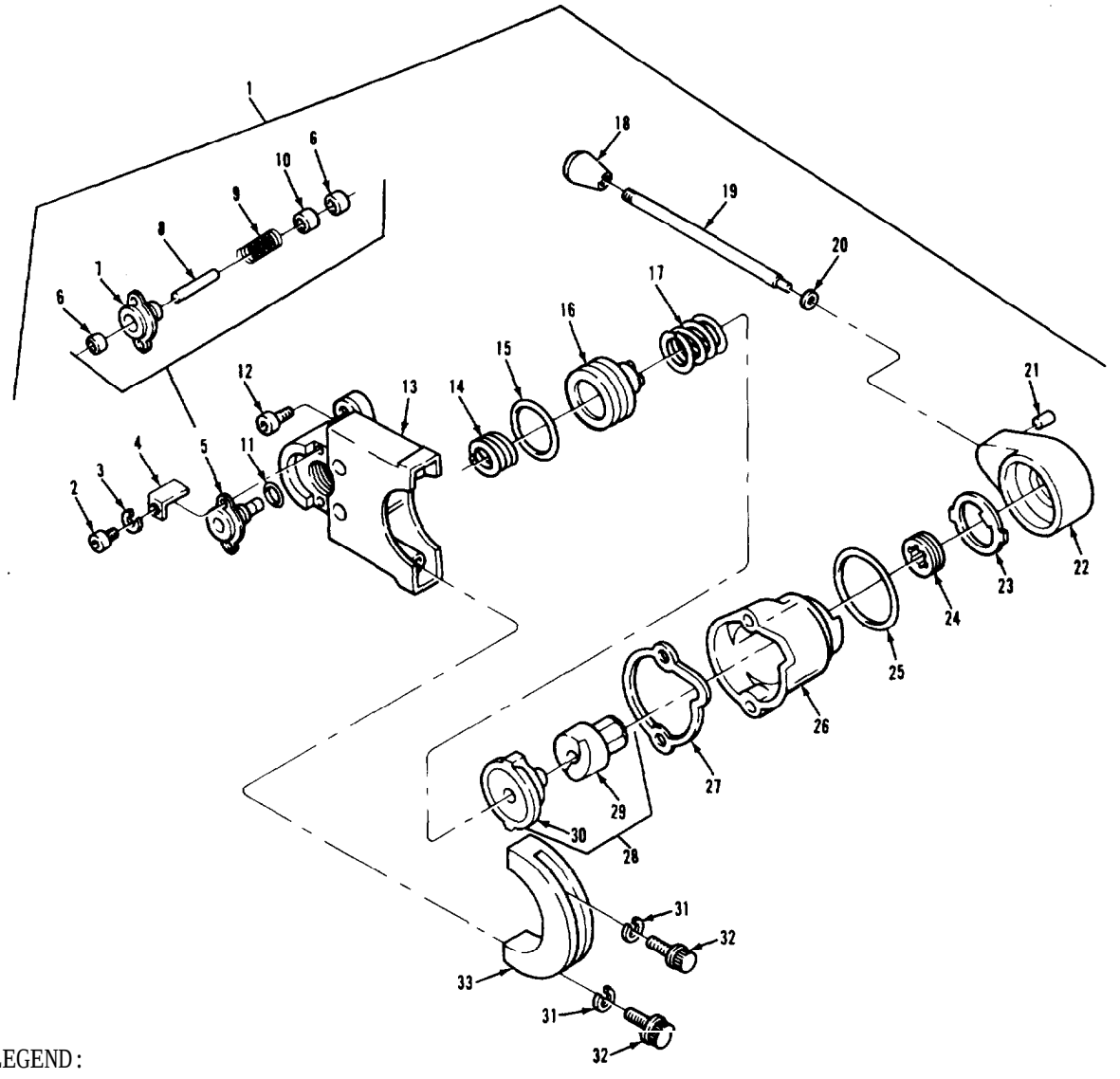
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).



LEGEND:

1. HAND CONTROL VALVE
2. SCREW (2)
3. LOCKWASHER (2)
4. DESIGNATION PLATE
5. VALVE ASSEMBLY
6. VALVE (2)
7. VALVE SEAT
8. VALVE STEM
9. SPRING
10. VALVE GUIDE
11. PREFORMED PACKING
12. SCREW (2)
13. VALVE BODY
14. SPRING
15. O-RING
16. PISTON
17. SPRING
18. KNOB
19. LEVER
20. PREFORMED PACKING
21. PIN
22. HEAD
23. LOCKING RING
24. ADJUSTING RING
25. PREFORMED PACKING
26. VALVE COVER
27. GASKET
28. CAM AND FOLLOWER
29. CAM FOLLOWER
30. CAM
31. LOCKWASHER (2)
32. BOLT (2)
33. RETAINING STRAP

TA238416

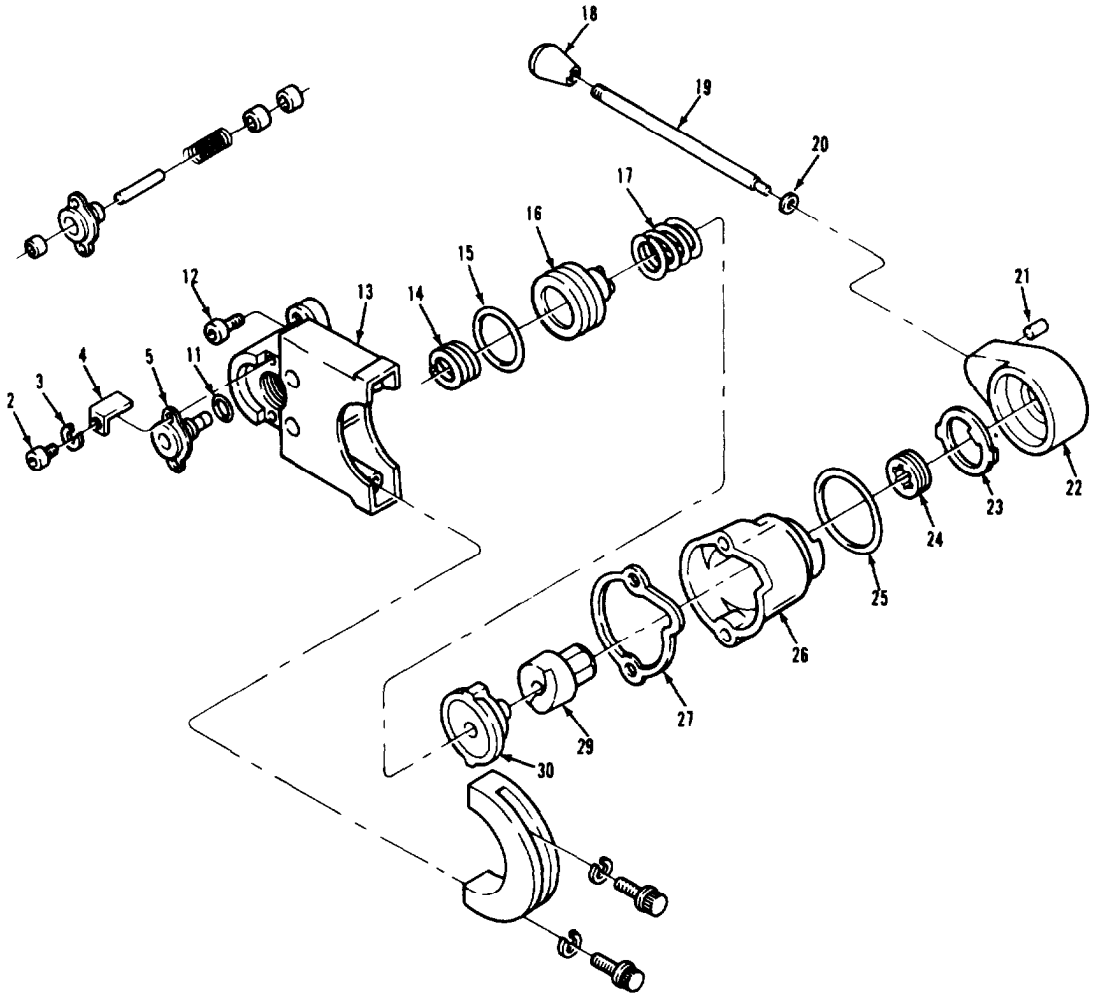
BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Two screws (2) and lockwashers (3).	Remove.	
2. Plate (4).	Lift off.	
3. Valve assembly (5).	Pull out of item (13).	
4. Packing (11).	Remove.	Discard.
5. Two screws (12).	Remove.	
6. Body (13) and cover (26).	Separate.	
7. Spring (17) and gasket (27).	Remove.	Discard item (27).
8. Piston (16).	Push out of item (13).	
9. O-ring (15).	Remove from item (16).	Discard item (15).
10. Spring (14).	Remove.	
11. Pin (21).	Drive out of item (22).	Use pin punch.
12. Lever (19).	Remove.	
13. Packing (20).	Remove from item (19).	Discard item/(20).
14. Knob (18).	Remove from item (19) by pulling and twisting.	
15. Cam (30) and follower (29).	Remove from item (26).	
16. Gasket (27).	Discard.	
17. Packing (25).	Remove.	Discard.
18. Rin (23) and ring (24).	Remove from item (26).	Unscrew item (24).
19. Two valves (6).	Remove.	

BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).



LEGEND:

2. SCREW (2)
3. LOCKWASHER (2)
4. DESIGNATION PLATE
5. VALVE ASSEMBLY
11. PREFORMED PACKING
12. SCREW (2)
13. VALVE BODY
14. SPRING
15. O-RING
16. PISTON
17. SPRING
18. KNOB
19. LEVER
20. PREFORMED PACKING
21. PIN
22. HEAD
23. LOCKING RING
24. ADJUSTING RING
25. PREFORMED PACKING
26. VALVE COVER
27. GASKET
29. CAM FOLLOWER
30. CAM

TA 238416

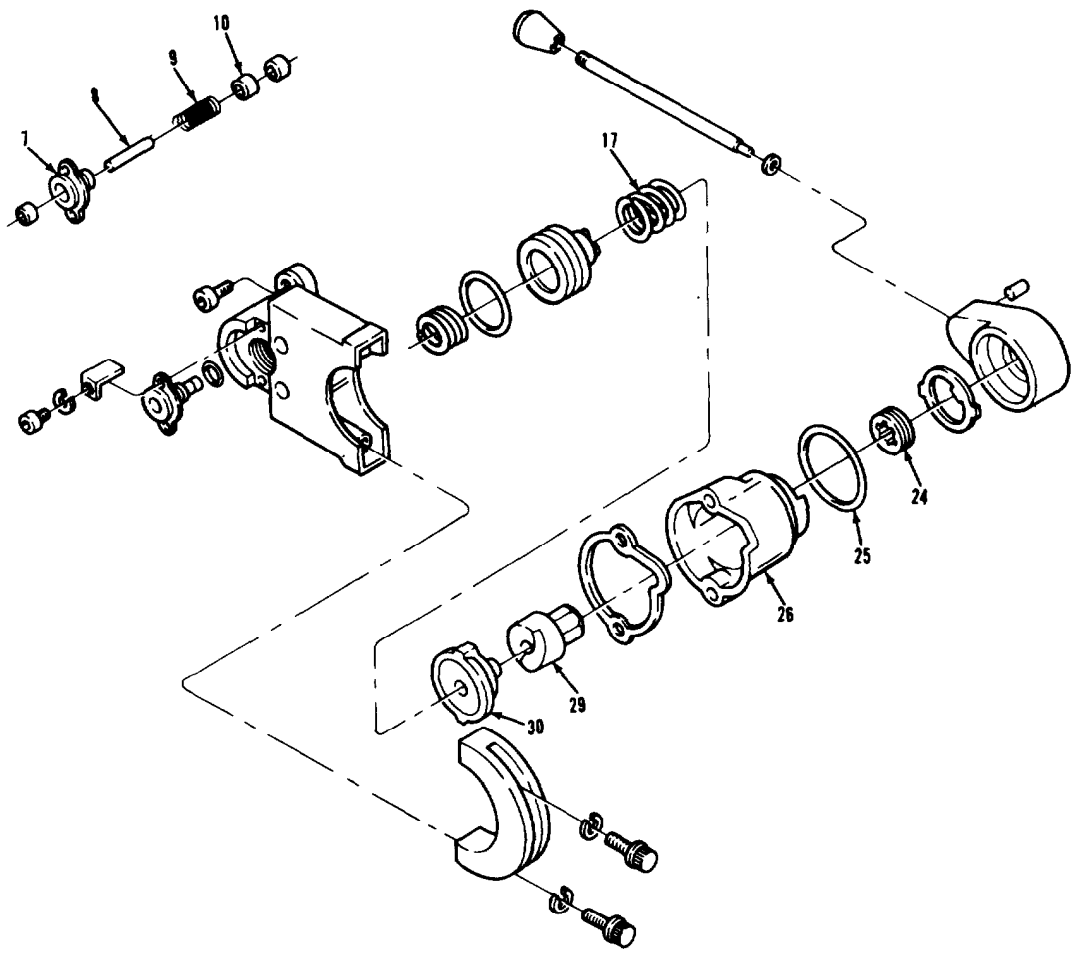
BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
20. Seat (7), stem (8), spring (9), and guide (10).	Disassemble.	
B. CLEANING.		
	CAUTION Do not clean rubber parts in solvent. Wipe them clean and dry with lint free towel.	
21. All metal parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
22. All parts.	a. Inspect item (7) for nicks or burrs.	Remove any deposits.
	b. Inspect item (9) and item (17) for distortion, cracks, and corrosion.	Replace if not serviceable.
	c. Inspect all other parts for wear, cracks, corrosion, nicks, and burrs.	Replace all broken parts and parts failing inspection.
D. ASSEMBLY.		
23. Packing (25).	Install on item (26).	
24. Cam (30) and follower (29).	Lubricate with pneumatic grease, assemble and install.	Aline tabs on item (29) with opening in item (26).
25. Ring (24).	Install until flush with tip of item (26).	

BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).



LEGEND:

7. VALVE SEAT
8. VALVE STEM
9. SPRING
10. VALVE GUIDE
17. SPRING
24. ADJUSTING RING
25. PREFORMED PACKING
26. VALVE COVER
29. CAM FOLLOWER
30. CAM

TA 238417

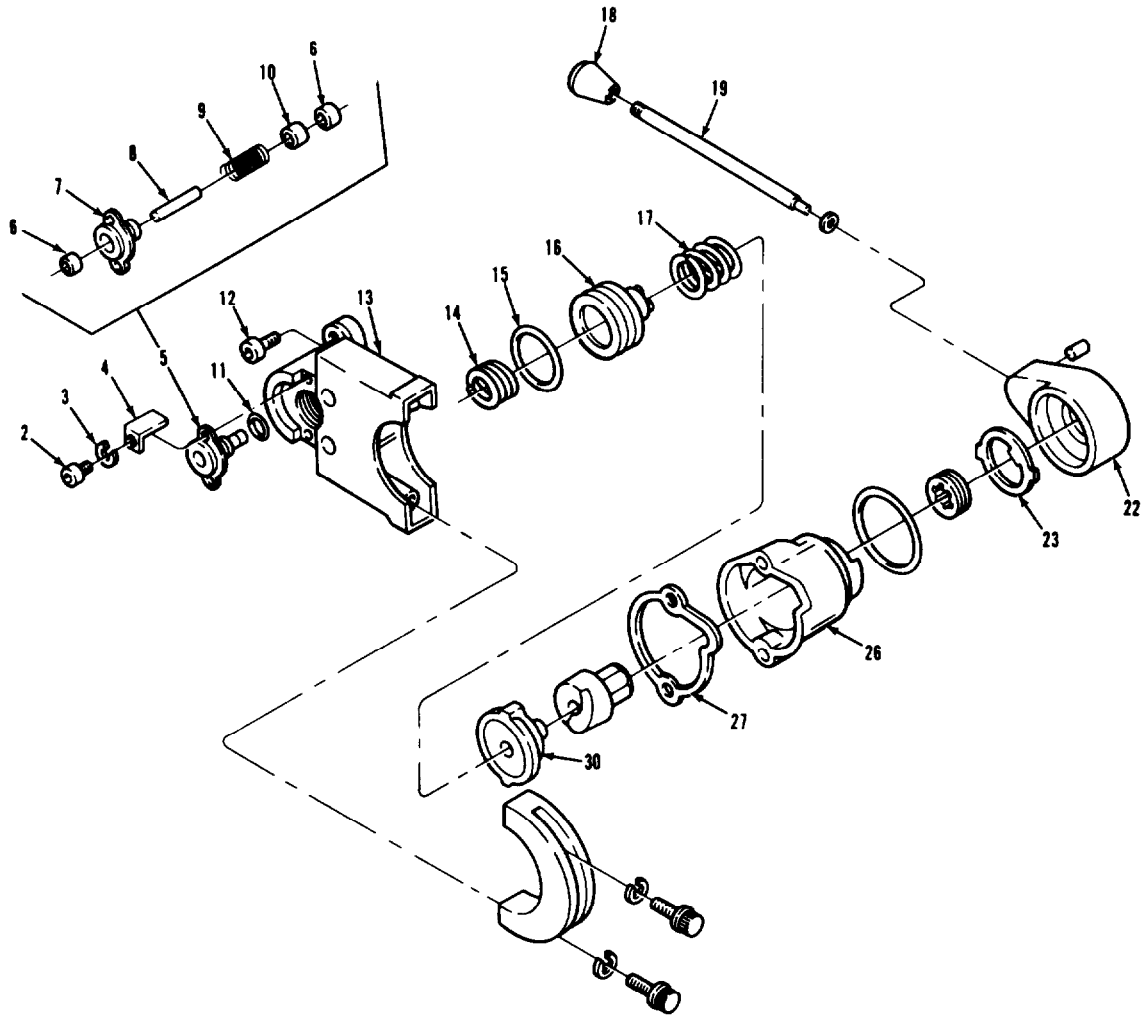
BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
26. Spring (17).	Install onto item (30).	
27. Spring (14).	Install onto item (13).	
28. O-ring (15).	Install onto item (16).	Lubricate with pneumatic grease.
29. Piston (16) and O-ring (15).	Press into item (13).	
30. Gasket (27).	Position on item (26).	
31. Body,(13) and cover items (12).	Assemble. Secure with two Torque to 75-95 lb-in..	
32. One valve (6).	Press onto item (8).	
33. Stem (8) with valve (6).	Place into item (7).	Use capscrew to hold item (6) in item (7).
34. Spring (9) and guide (10).	Install on item (8) and depress into item (7).	
35. Valve (6).	Press onto item (8).	
36. Packing (11).	Install on item (5).	
37. Valve assembly (5).	Install into item (13).	
38. Plate (4).	Install.	
39. Two screws (2) and two lockwashers (3).	Install and torque to 60-80 lb-in..	
40. Ring (23).	Install.	
41. Head (22).	Install on item (26).	
42. Knob (18).	Push and twist onto item (19).	

BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).



LEGEND:

2. SCREW (2)
3. LOCKWASHER (2)
4. DESIGNATION PLATE
5. VALVE ASSEMBLY
6. VALVE (2)
7. VALVE SEAT
8. VALVE STEM
9. SPRING
10. VALVE GUIDE
11. PREFORMED PACKING
12. SCREW (2)
13. VALVE BODY
14. SPRING
15. O-RING
16. PISTON
17. SPRING
18. KNOB
19. LEVER
22. HEAD
23. LOCKING RING
26. VALVE COVER
27. GASKET
30. CAM

TA 238418

BRAKE SYSTEM.

3-79. TRAILER HANDBRAKE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
43. Packing (20).	Install on item (19).	
44. Knob (18), lever and packing (20).	Install onto item (22).	End of item (19) fits into hole in item (29).
45. Pin (22).	Install.	Use hammer.

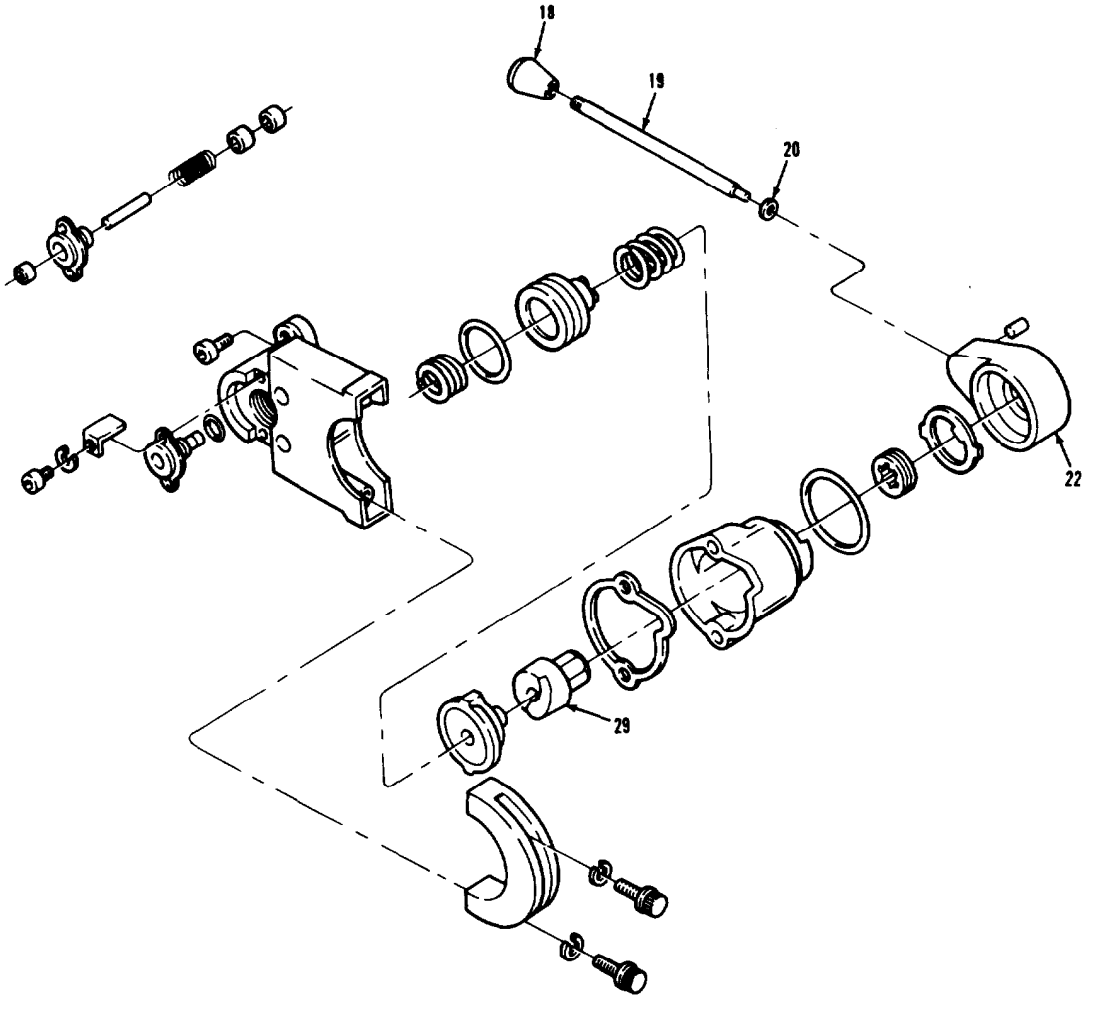
NOTE

Follow-on maintenance action required:

Install trailer handbrake valve (TM 9-2320-283-20).
Do trailer handbrake valve operational check (TM 9-2320-283-10).

BRAKE SYSTEM.

3-79. TRAILER HAND BRAKE VALVE REPAIR (Continued).



LEGEND:

18. KNOB
19. LEVER
20. PREFORMED PACKING
22. HEAD
25. PREFORMED PACKING
29. CAM FOLLOWER

TA 238419

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.
d. Operational Check.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
	TM 9-2320-283-20	Brake treadle valve removed.

TEST EQUIPMENT
Gage, air presssure, O-200 psi.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
'Grease, automotive and artillery, GAA
Item 7, Appendix B.
Kit, brake valve repair kit
(06853) 289352.
O-ring
(06853) 294515.

PERSONNEL REQUIRED
One (MOS-63s).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

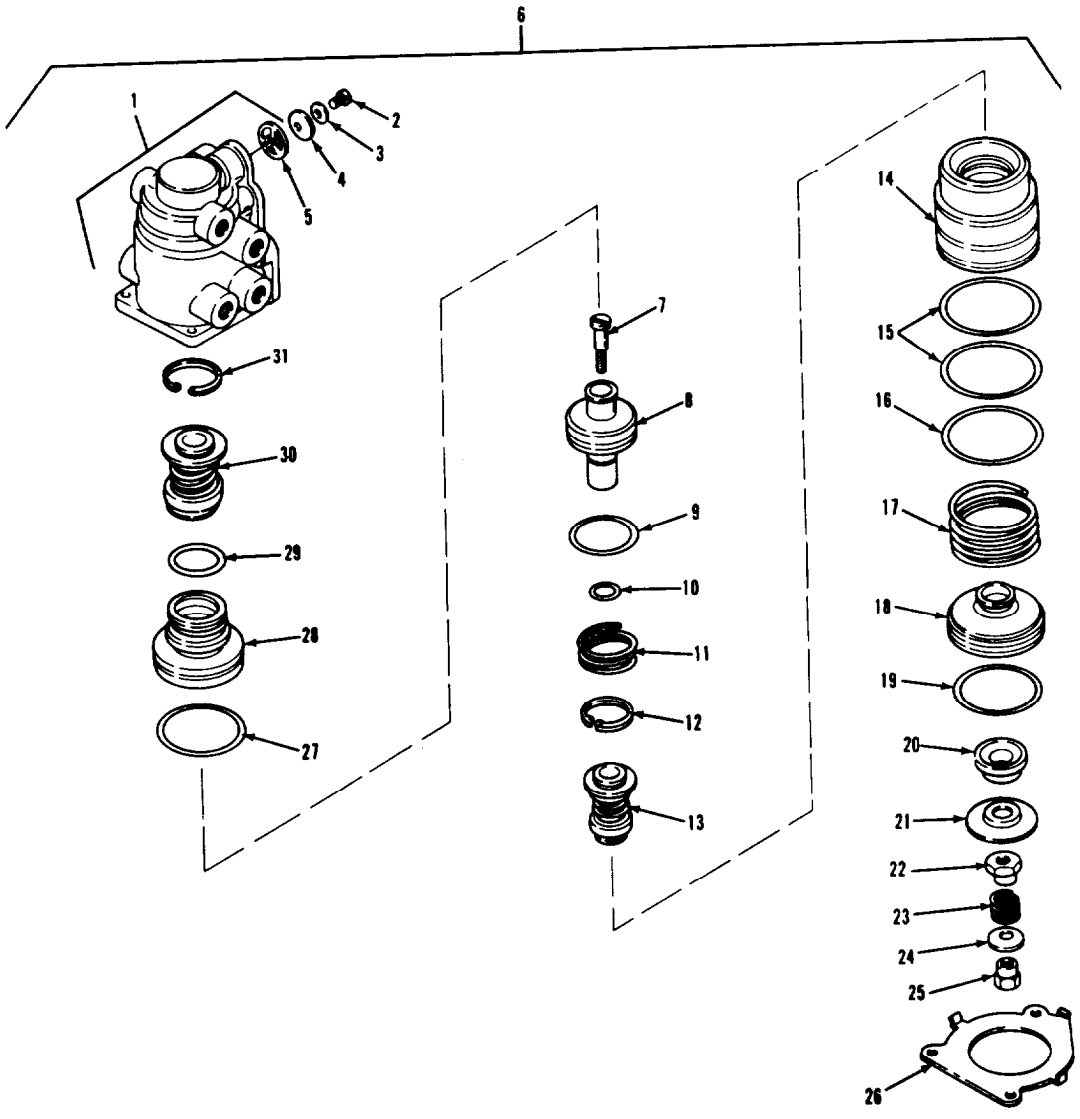
REFERENCE (TM)
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

1. BRAKE VALVE BODY
2. SCREW
3. DIAPHRAGM WASHER
4. DIAPHRAGM
5. DIAPHRAGM RETAINER
6. BRAKE VALVE
7. STEM
8. RELAY PISTON
9. PREFORMED PACKING
10. PREFORMED PACKING
11. SPRING
12. RETAINER CLIP
13. INLET AND EXHAUST VALVE
14. LOWER STATIC PISTON
15. PREFORMED PACKING (2)
16. PREFORMED PACKING
17. RETURN SPRING
18. PISTON
19. PREFORMED PACKING
20. RUBBER SPRING
21. SPRING SEAT
22. SPRING SEAT NUT
23. STEM SPRING
24. SPRING SEAT
25. HEXAGON HEAD NUT
26. RETAINER
27. PREFORMED PACKING
28. UPPER STATIC PISTON
29. O-RING
30. INLET AND EXHAUST VALVE
31. RETAINING RING

TA 238420

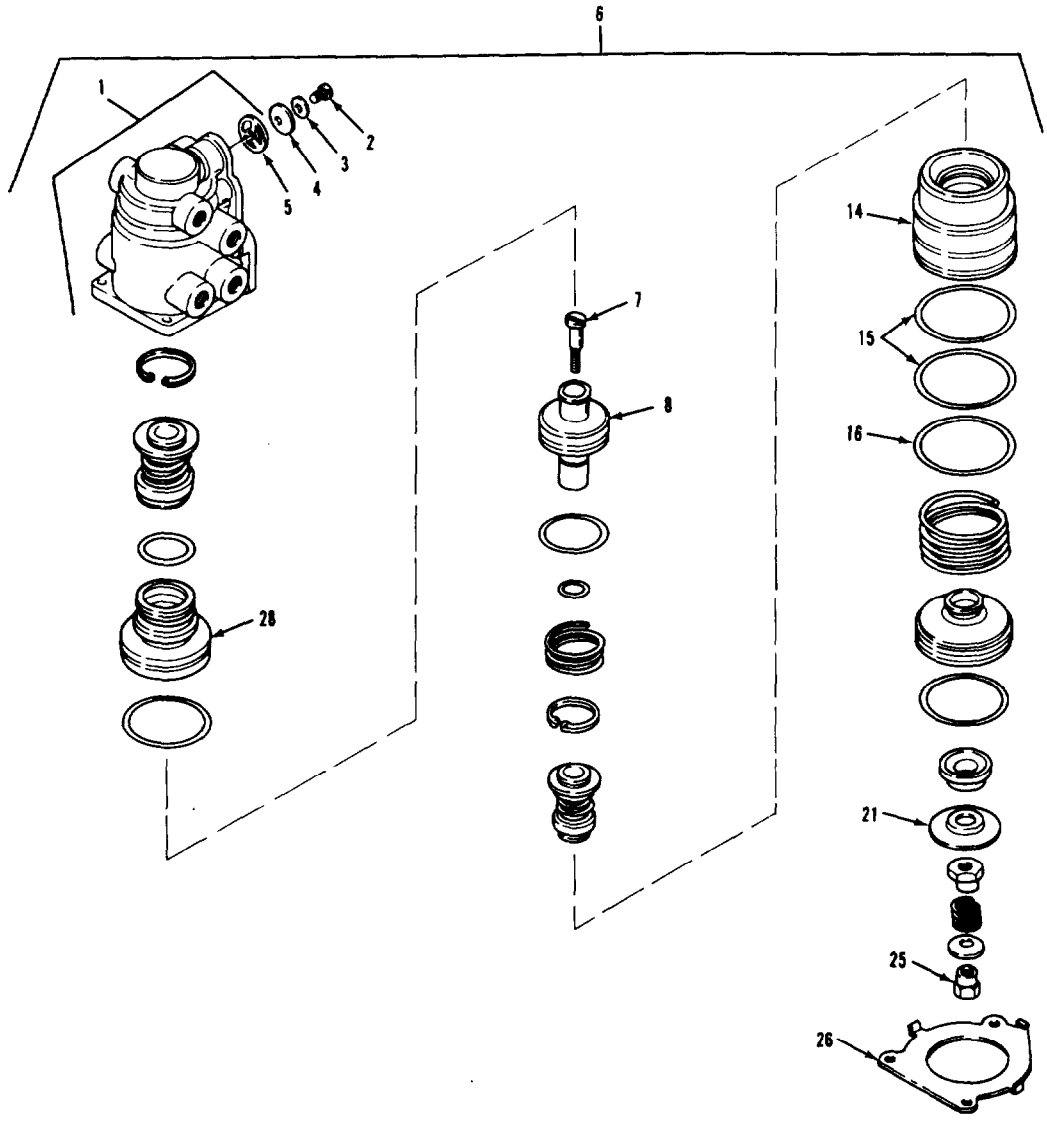
BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
	WARNING Never work on air system components without first draining air pressure. Failure to follow this precaution can result in serious injury.	
A. DISASSEMBLY.		
1. Retainer (26).	Remove from bottom of item (6).	
2. Screw (2), washer (3), and diaphragm (4).	Remove from top of item (6).	Do not remove item (5) unless damaged or loose. Discard item (4).
3. Valve (6).	Clamp in vise so that item (14) may be removed.	
4. Piston (14).	Using pliers, grasp item (25) and remove entire assembly of item (14).	
5. Piston (28).	Remove from upper part of item (1).	Use a heavy gage wire with the end bent at a 90 degree angle. Insert bent end through center hole of item (28) and pull.
6. Body (1).	Remove from vise.	
7. Two packings (15) and one packing (16).	Remove from item (14).	Discard items (15) and (16).
8. Piston (14).	Mount so top and bottom are secured against vise jaws.	Make certain item (21) is compressed while in vise. Do not compress item (25).
9. Nut (25).	Remove from item (7).	Discard item (25). Insert a screwdriver through top of item (8) and onto item (7) to prevent turning while removing item (25).

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

1. BRAKE VALVE BODY
2. SCREW
3. DIAPHRAGM WASHER
4. DIAPHRAGM
5. DIAPHRAGM RETAINER
6. BRAKE VALVE
7. STEM
8. RELAY PISTON
14. LOWER STATIC PISTON
15. PREFORMED PACKING (2)
16. PREFORMED PACKING
21. SPRING SEAT
25. HEXAGON HEAD NUT
26. RETAINER
28. UPPER STATIC PISTON

TA 228421

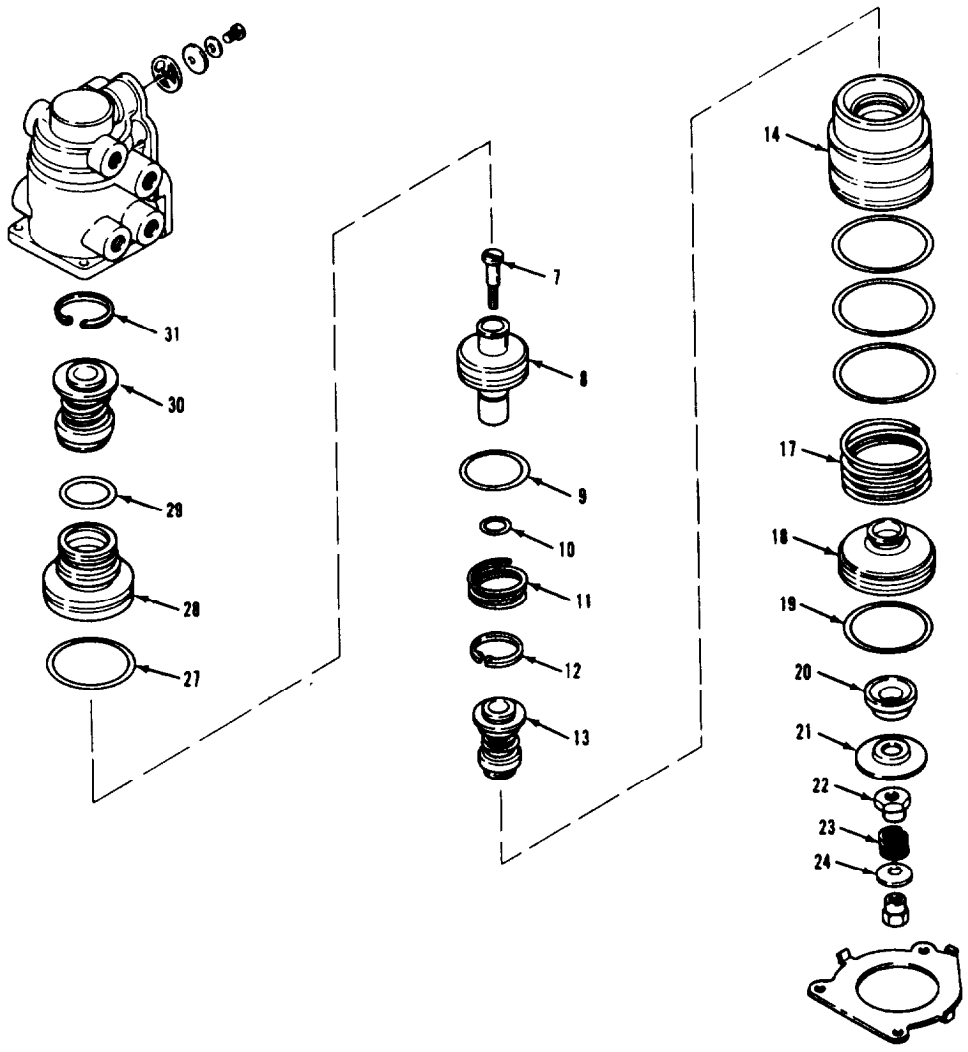
BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
10. Spring (23) and seat (24).	Remove from item (7).	Discard item (28).
11. Lower static piston (14).	Slowly loosen vise jaws to release spring tension and remove assembly,	When tension is released, items (7), (8), (11), (17), and (18) will fall out due to spring tension. Discard items (11) and (17).
12. Packing (19).	Remove from item (18).	Discard item (19).
13. Nut (22).	Remove from item (18).	Discard item (22).
14. Spring (20) and seat (21).	Remove from item (18).	Discard item (20).
15. Clip (12).	Using snapring pliers, remove item (12) from item (14).	
16. Valve (13).	Remove from item (14).	Discard item (13).
17. Packings (9) and (10).	Remove from item (8).	Discard items (9) and (10).
18. O-ring (29) and packing (27).	Remove from item (28).	Discard items (27) and (29).
19. Ring (31).	Using snapring pliers, remove item (31) from item (28).	
20. Valve (30).	Remove from item (28).	Discard item (30).
B. CLEANING AND INSPECTION.		
21. All metal parts.	Clean and inspect.	Refer to paragraphs 3-4 and 3-5.

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

7. STEM
8. RELAY PISTON
9. PREFORMED PACKING
10. PREFORMED PACKING
11. SPRING
12. RETAINER CLIP
13. INLET AND EXHAUST VALVE
14. LOWER STATIC PISTON
17. RETURN SPRING
18. PISTON
19. PREFORMED PACKING
20. RUBBER SPRING
21. SPRING SEAT
22. SPRING SEAT NUT
23. STEM SPRING
24. SPRING SEAT
27. PREFORMED PACKING
28. UPPER STATIC PISTON
29. O-RING
30. INLET AND EXHAUST VALVE
31. RETAINING RING

TA238422

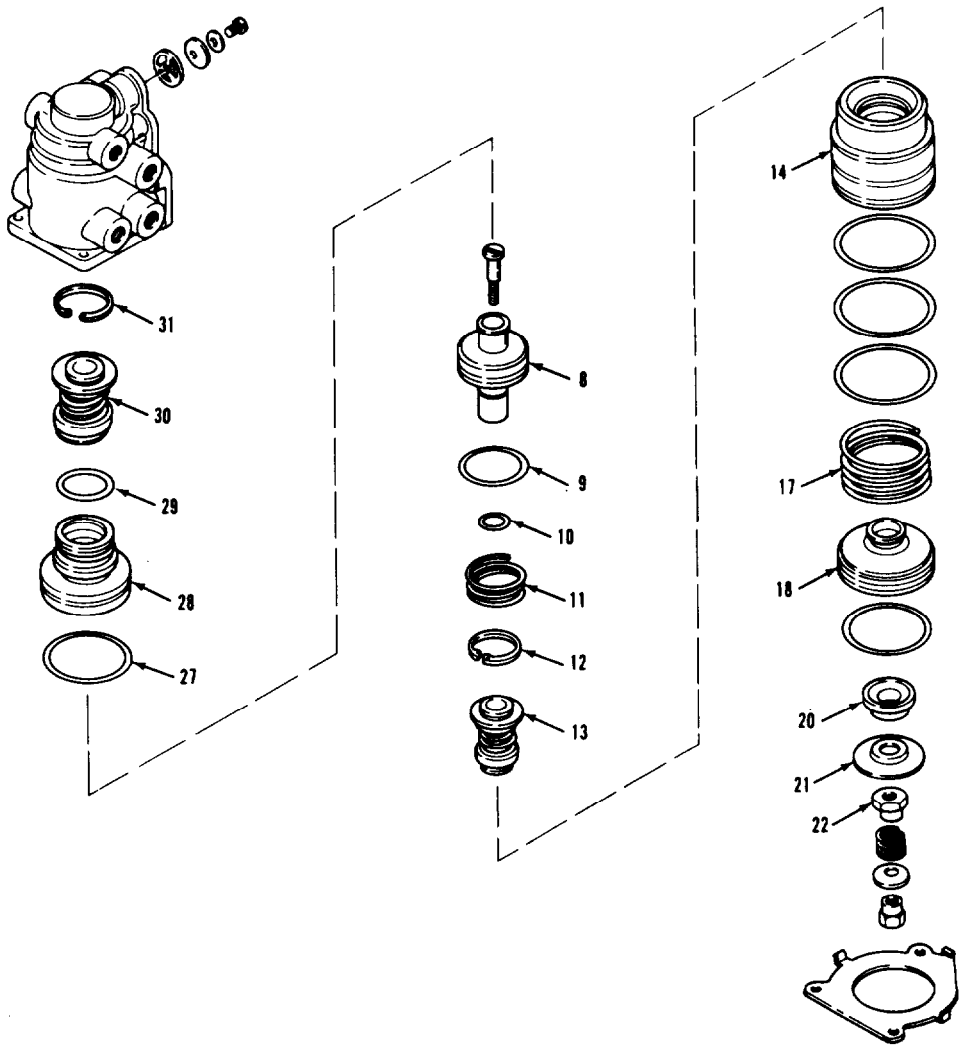
BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY.		
	NOTE Before assembly, lubricate all preformed packings, O-rings, bores, and mating surfaces with GAA grease.	
22. New valve (30).	Install onto item (28).	
23. New packing (27) and O-ring (29).	Install in item (28).	
24. Ring (31).	Using snapring pliers, install item (31) into item (28).	Make certain item (31) fits correctly in the groove of item (28). Set assembled item (28) aside.
25. New packings (9) and (10).	Install onto item (8).	
26. New valve (13).	Install in item (14).	
27. Clip (12).	Using snapring pliers, install item 12) into item (14).	Make certain item (12) fits correctly in the groove of item (14).
28. New spring (20).	Install with beveled side of item (20) towards top of item (18).	
29. Seat (21).	Install onto item (20).	
30. New nut (22).	Install and tighten onto item (18).	
31. New packing (19).	Install onto item (18).	
32. Spring (11).	Install into top of item (14).	Item (11) is a small diameter spring as compared to item (17).
33. Piston (8).	Place onto item (11).	

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

8. RELAY PISTON
9. PREFORMED PACKING
10. PREFORMED PACKING
11. SPRING
12. RETAINER CLIP
13. INLET AND EXHAUST VALVE
14. LOWER STATIC PISTON
17. RETURN SPRING
18. PISTON
20. RUBBER SPRING
21. SPRING SEAT
22. SPRING SEAT NUT
27. PREFORMED PACKING
28. UPPER STATIC PISTON
29. O-RING
30. INLET AND EXHAUST VALVE
31. RETAINING RING

TA 238423

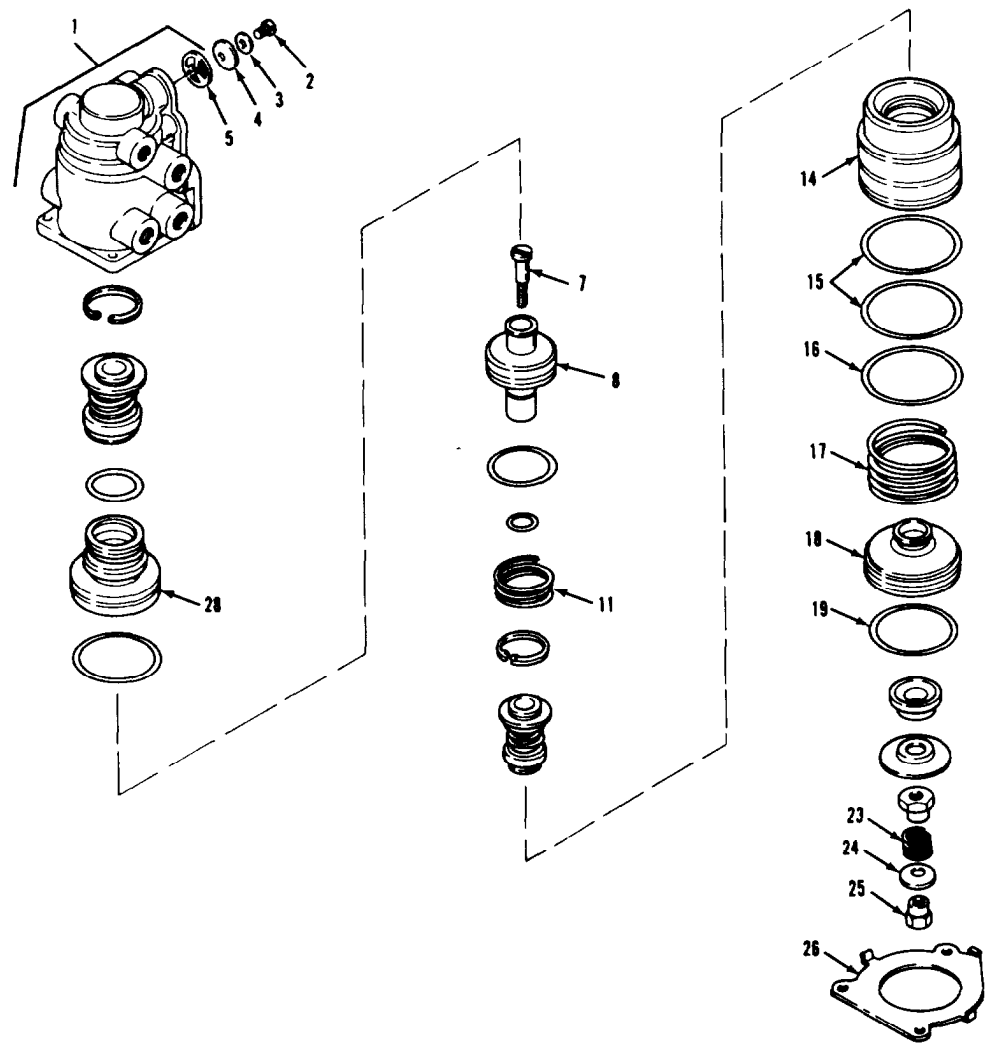
BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
34. Two new packings (15) and one packing (16).	Install two items (15) on last two grooves and item (16) on remaining groove of item (14).	
35. Piston (14).	Hold onto items (8) and (11) and turn item (14) so that slots are at the top.	
36. Spring (17).	Install into remaining end of item (14).	
37. Piston (18) with packing (19).	Place on item (17).	
38. Pistons (14), (8), and (18) and springs (11) and (17).	Compress the assembly and mount in a vise as was done in step 8.	
39. Stem (7).	Install through hole of item (8) and (18).	
40. New spring (23), seat (24), and new nut (25).	Install in that order onto item (7). Tighten item (25).	Use a screwdriver on item (7) to prevent it from turning while tightening item (25). Remove completed assembly from vise.
41. New diaphragm (4), washer (3), and screw (2).	Install in that order onto item (5).	If item (5) was not damaged or loose within item (1), it was not removed during disassembly.
42. Piston (28).	Install into item (1) with small end towards top.	
43. Piston (14).	Install into item (1) with item (25) towards the bottom.	
44. Retainer (26).	Install onto bottom of item (1).	

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

1. BRAKE VALVE BODY
2. SCREW
3. DIAPHRAGM WASHER
4. DIAPHRAGM
5. DIAPHRAGM RETAINER
7. STEM
8. RELAY PISTON
11. SPRING
14. LOWER STATIC PISTON
15. PREFORMED PACKING (2)
16. PREFORMED PACKING
17. RETURN SPRING
18. PISTON
19. PREFORMED PACKING
23. STEM SPRING
24. SPRING SEAT
25. HEXAGON HEAD NUT
26. RETAINER
28. UPPER STATIC PISTON

TA 238424

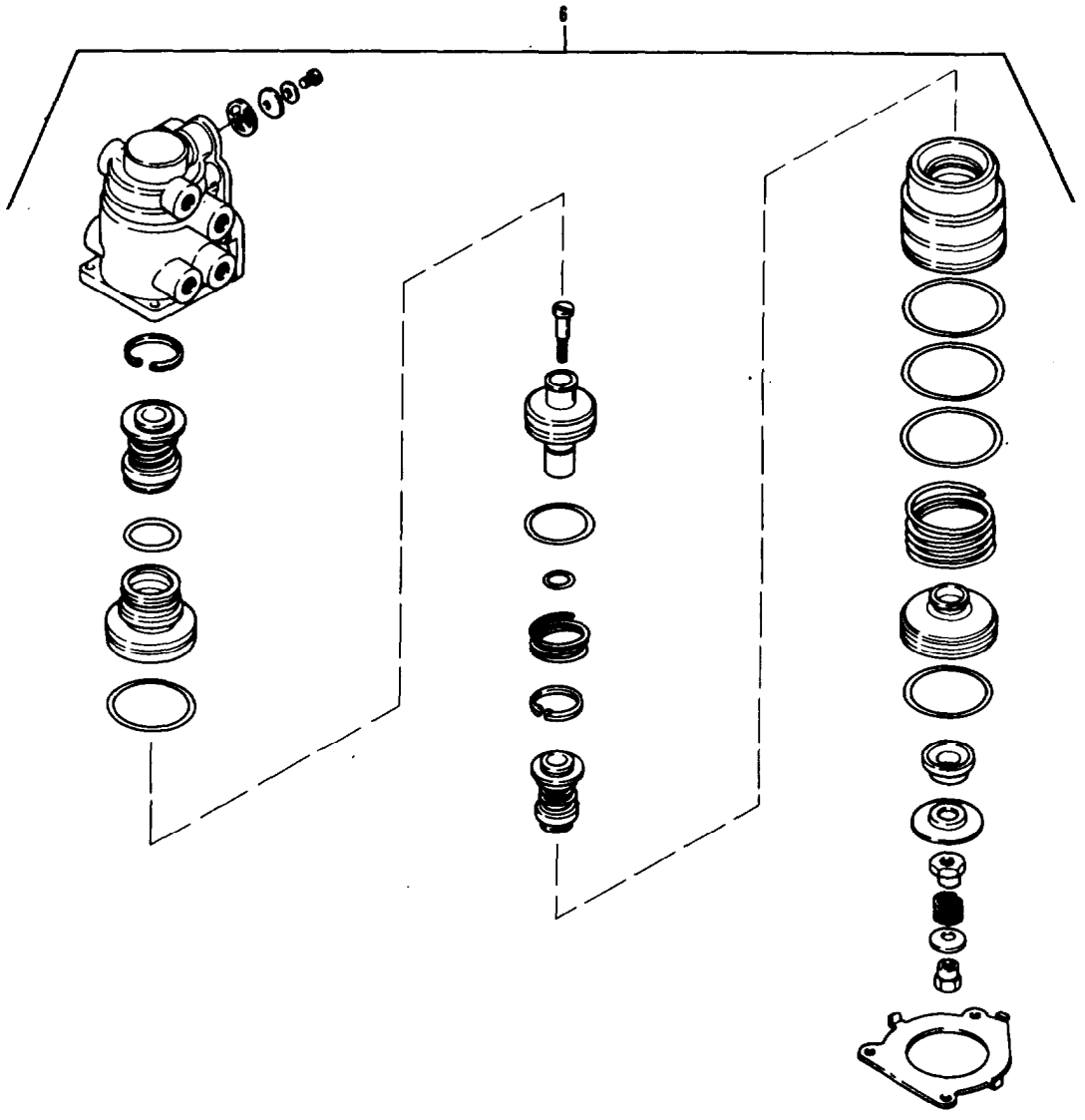
BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. OPERATIONAL CHECK.		
	NOTE The testing procedure for delivery port No. 2 is similar to delivery port No. 1. The delivery pressure of port No. 2 may be 2 psi less than delivery port No. 1.	
45, Valve (6).	Install on truck.	Refer to TM 9-2320-283-20.
46. Air system draincocks.	Close.	Refer to TM 9-2320-283-10.
47. Delivery port No. 1 on right-hand side of valve (6).	Remove nonmetallic tube.	Refer to TM 9-2320-283-20.
48. Air pressure gage.	Connect to port No. 1.	Suitable gage, O-200 psi.
49. Engine.	Start up. Operate until maximum reservoir pressure is reached.	Maximum pressure is approximately 120 lbs.
50. Pedal.	Depress the pedal to several positions between the fully released and full applied positions.	The delivered air pressure on the air pressure gage should vary proportionately with the movement of the brake pedal. When the pedal is fully depressed, the reading on the air pressure gage should fall off to zero when the pedal is released. If gage does not return to zero, refer to steps 1 through 42 for repair of brake valve.
51. Engine.	Shutdown.	Refer to TM 9-2320-283-10.

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

6. BRAKE VALVE

TA238425

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
52. Air pressure gage.	Remove from delivery port No. 1.	
53. Nonmetallic tube.	Connect to delivery port No. 1.	Refer to TM 9-2320-283-20.
54. Delivery port No. 2 on right-hand side of valve (6):		Checking procedure is same as the procedure for delivery port No. 1. Refer to steps 46 through 53.

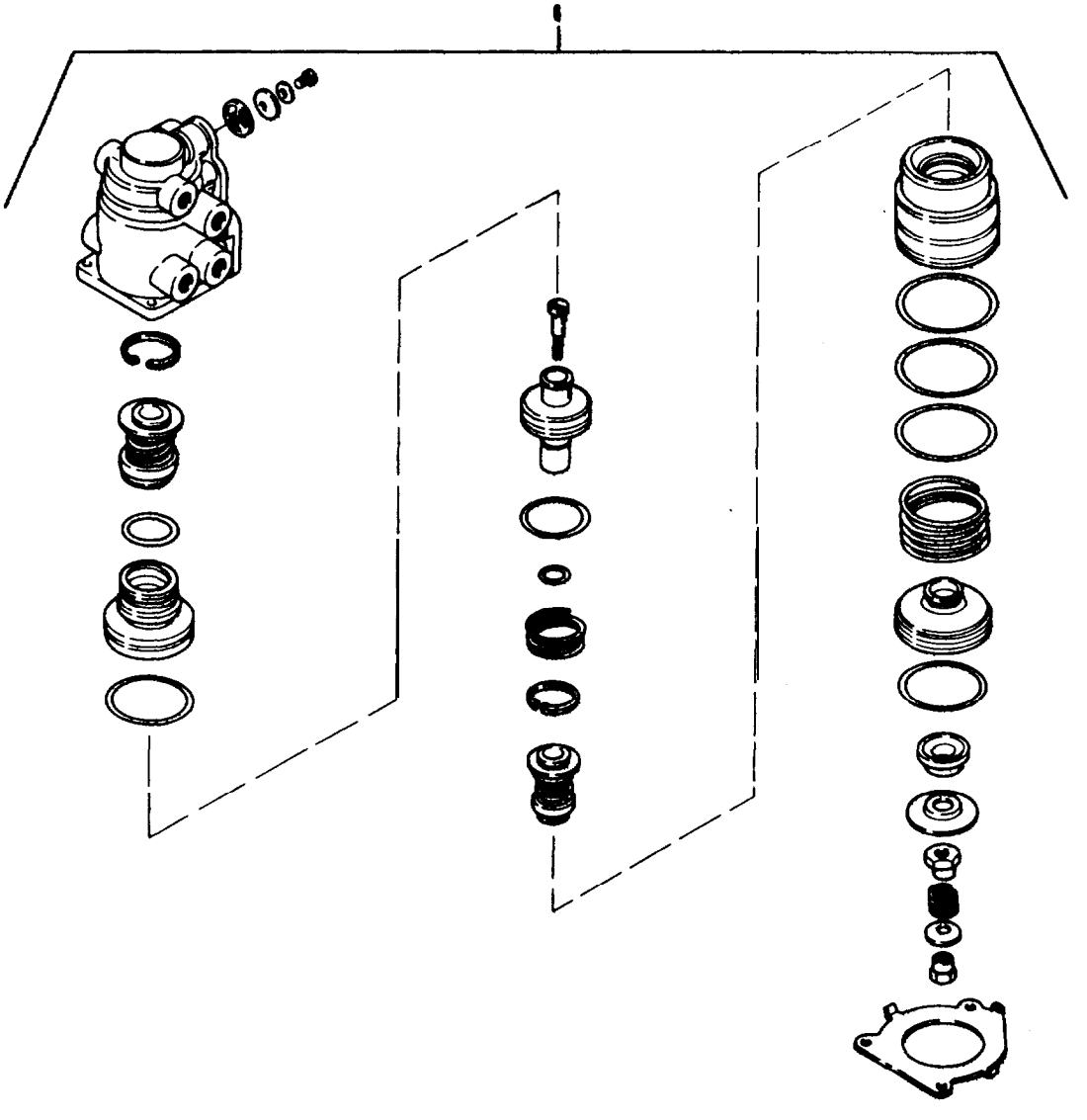
NOTE

Follow-on maintenance action required:

Check air systems for leaks (para 3-4).

BRAKE SYSTEM.

3-80. BRAKE TREADLE VALVE REPAIR (Continued).



LEGEND:

6. BRAKE VALVE

TA 238426

BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning.
c. Inspection.
d. Assembly.
e. Final Inspection.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-2830-20.	Brake shoes removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Paint
Item 25, Appendix B.
Lining (2)
(52304) 5731493.
Lining (2)
(52304) 5731493.
Rivet (52)
(52304) 5731473.

PERSONNEL REQUIRED
One (MOS-63S).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

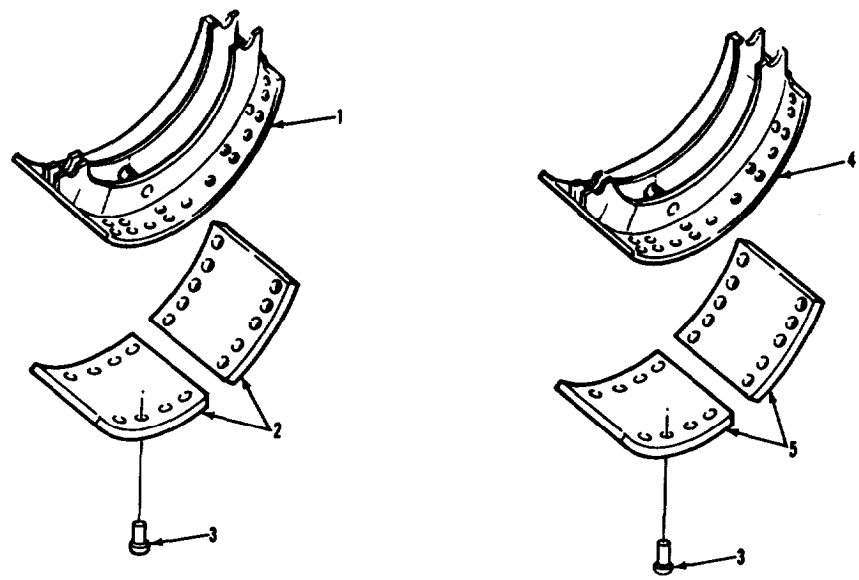
REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).



LEGEND:

1. SHOE (REAR BRAKE)
2. LINING (REAR BRAKE) (2)
3. RIVET (52)
4. SHOE (FRONT BRAKE)
5. LINING (FRONT BRAKE) (2)

TA 238427

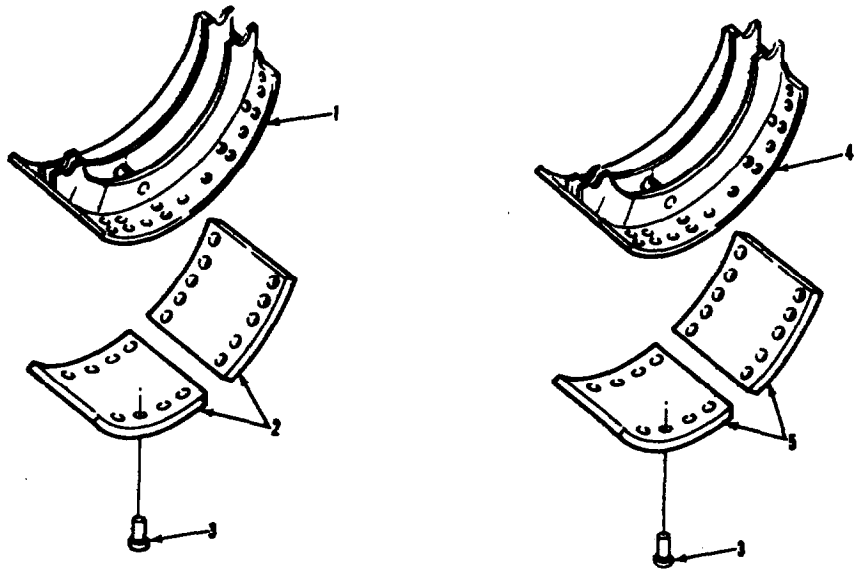
BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	CAUTION Do not drill out old rivets. Drilling out old rivets can enlarge holes and prevent new rivets from holding.	
	NOTE •The procedure covers lining replacement for one front and one rear brake shoe. Use this same procedure from any front or rear brake shoe and always reline in pairs. For example, if the lining is replaced on the left front brake, the right front brake should be relined also. Relining a brake on one axle end only may cause uneven braking. •To remove oil rivets, push out using brake and clutch reliner or a 1/8" diameter flat head drift.	
1. Two linings (2) and thirty rivets (3).	Remove from item (1).	Discard items (2) and (3).
2. Two linings (5) and twenty-two rivets (3).	Remove from item (4).	
B. CLEANING.		
3. Shoes (1) and (4).	Remove dirt, scale, rust, and paint.	

BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).



LEGEND:

1. SHOE (REAR BRAKE)
2. LINING (REAR BRAKE) (2)
3. RIVET (52)
4. SHOE (FRONT BRAKE)
5. LINING (FRONT BRAKE) (2)

TA 238428

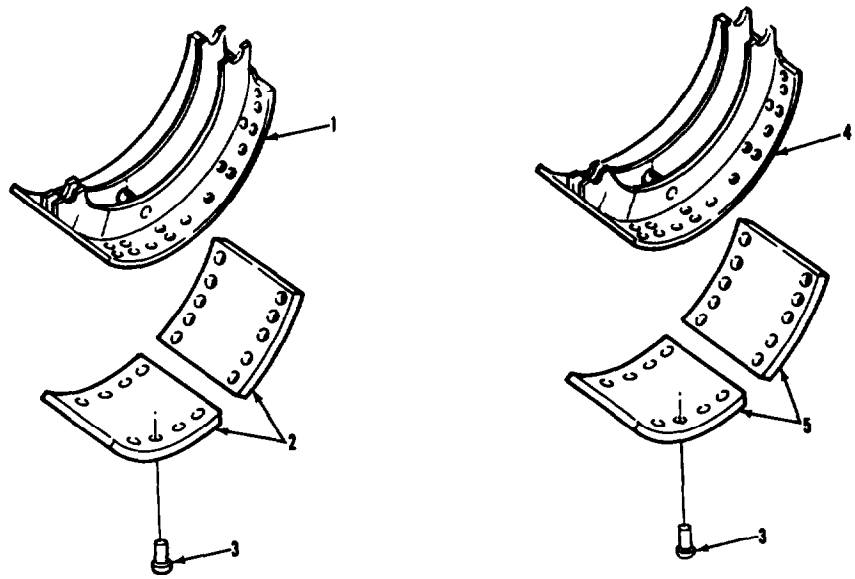
BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSPECTION.		
4. Shoes (1) and (4).	Inspect.	Refer to paragraph 3-4.
5. All new parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY.		
6. Shoes (1) and (4).	Apply two coats of new paint.	
	CAUTION Install rivets starting at the center and working alternately outward toward the sides and end. Failure to do so may cause linings to be loose.	
	NOTE Use brake and clutch reliner to install new linings.	
7. Two linings (2) and thirty rivets (3).	Install on item (1).	Drive rivets squarely into holes as far as they will go.
8. Two linings (5) and twenty-two rivets (3).	Install on item (4).	Drive rivets squarely into holes as far as they will go.
F. FINAL INSPECTION.		
9. Shoe (1), two linings (2), and thirty rivets (3).	Inspect for evidence of improper assembly.	You should not be able to insert a 0.008 inch feeler gage between item (1) and (2).

BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).



LEGEND:

1. SHOE (REAR BRAKE)
2. LINING (REAR BRAKE) (2)
3. RIVET (52)
4. SHOE (FRONT BRAKE)
5. LINING (FRONT BRAKE) (2)

TA 238429

BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
F. FINAL INSPECTION (Continued).		
10. Two linings (2).	Inspect for cracks or damage resulting from assembly process.	
11. Shoe (4), two linings (5), and twenty-two rivets (3).	Inspect for evidence of improper assembly techniques.	You should not be able to insert a 0.008 inch feeler gage between items (4) and (5).
12. Two linings (5).	Inspect for cracks or damage resulting from assembly process.	

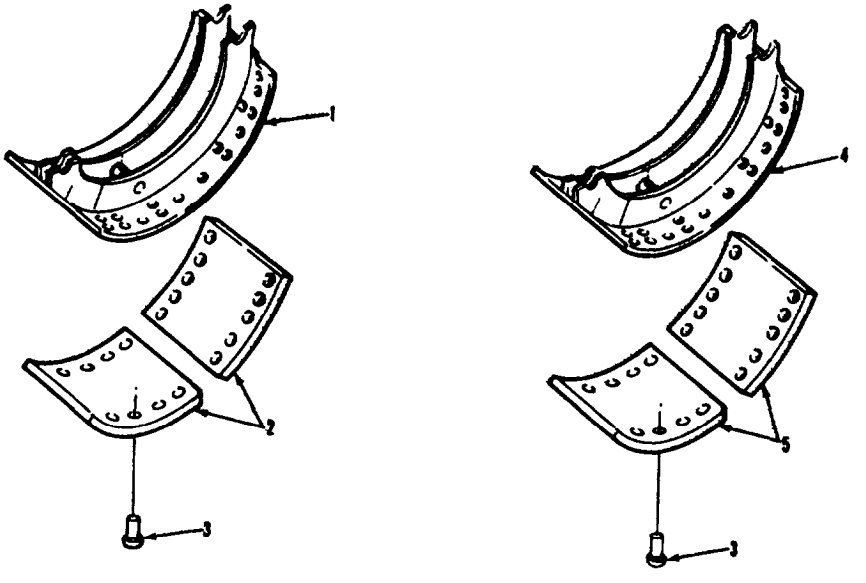
NOTE

Follow-on maintenance action required:

Install brake shoes (TM 9-2320-283-20).

BRAKE SYSTEM.

3-81. BRAKE SHOE REPAIR (Continued).



LEGEND:

1. SHOE (REAR BRAKE)
2. LINING (REAR BRAKE) (2)
3. RIVET (52)
4. SHOE (FRONT BRAKE)
5. LINING (FRONT BRAKE) (2)

TA 238430

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
TM 9-2320-283-20.

CONDITION DESCRIPTION
'Forward-rear axle brake chamber removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Oil, lubricating: OE/HDO 30
Item 17, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning SD-2
Item 31, Appendix B.
Diaphragm (2)
(50153) 1126M009.
O-ring
(50153) 11M114.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

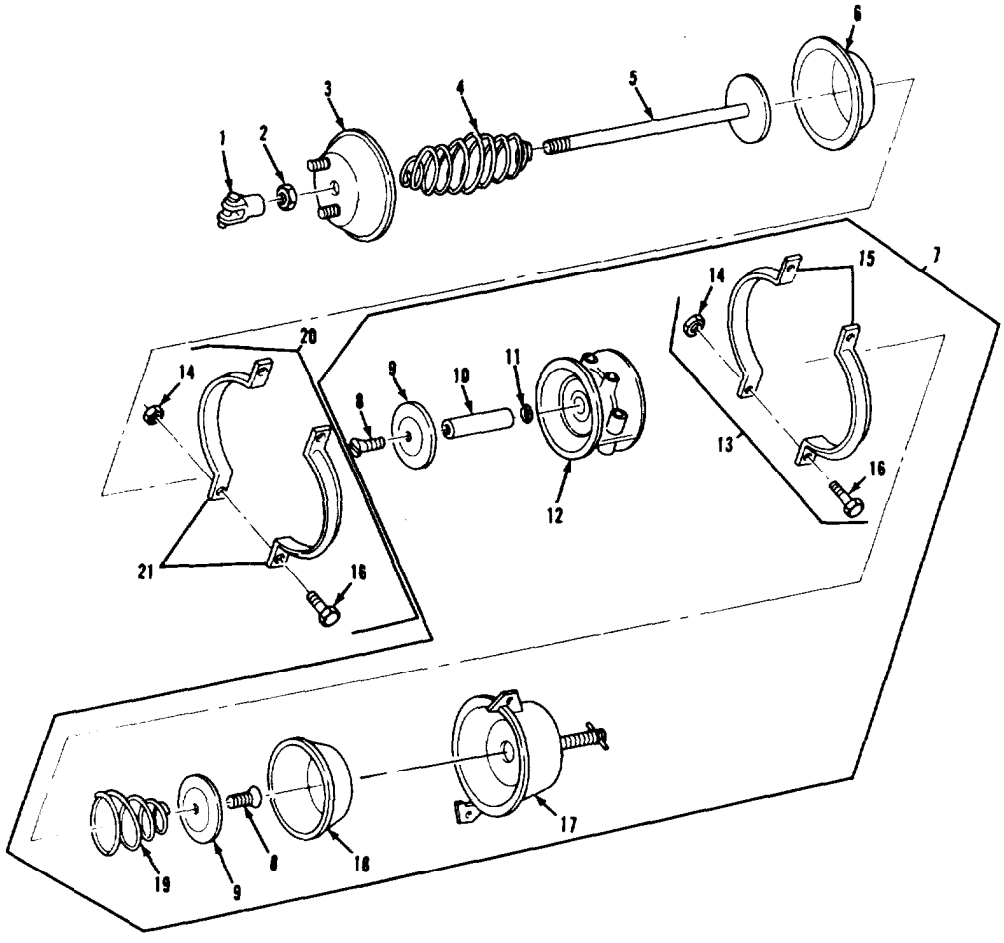
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).



LEGEND:

1. CLEVIS
2. JAM NUT
3. HOUSING ASSEMBLY
4. RETURN SPRING
5. PUSH ROD ASSEMBLY
6. DIAPHRAGM
7. PIGGY BACK SERVICE SUBASSEMBLY SPRING BRAKE
8. NYLOK SCREW (2)
9. PLATE (2)
10. PUSH ROD ADAPTER
11. O-RING
12. ADAPTER HOUSING
13. CLAMP ASSEMBLY
14. CARRIAGE NUT (4)
15. SERVICE BRAKE CLAMP
16. CARRIAGE BOLT (4)
17. SERVICE BRAKE CHAMBER HOUSING ASSEMBLY
18. SERVICE BRAKE CHAMBER DIAPHRAGM
19. SERVICE BRAKE RETURN SPRING
20. CLAMP ASSEMBLY
21. FORWARD-REAR CHAMBER CLAMP

TA 238431

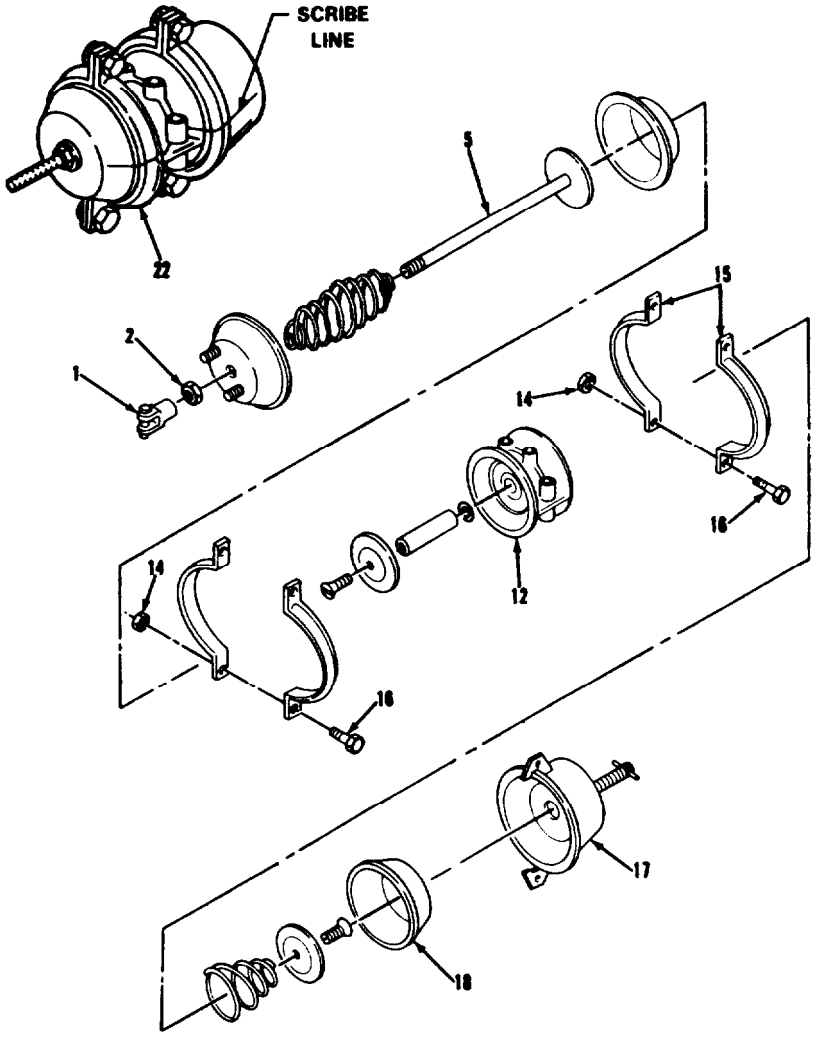
BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Clevis (1) and nut (2).	Remove from item (5).	
2. Chamber (22).	a. Using clean rags wipe clean.	
	b. Scribe line across item (22). (See illustration).	Used to aid in assembly.
	WARNING • The service brake chamber housing assembly contains a spring under high spring force. Be sure forward rear axle brake chamber is caged before disassembly. Failure to observe this precaution may result in serious injury to you or other personnel. • Refer to TM 9-2320-283-10 for caging procedure.	
3. Two nuts (14), bolts (16), and one clamp (15).	Remove from item (12) and (17).	
	WARNING Do not disassemble service brake chamber housing assembly. Failure to observe this precaution may result in injury to you and other personnel.	
4. Service brake chamber housing assembly (17) and diaphragm (18).	Slide off end of item (12).	Item (18) may have to be pulled away from item (12) when removing.
5. Diaphragm (18).	Remove from item (17).	Set item (17) away from work area. Item (17) contains caged spring. Discard item (18).

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).



LEGEND:

1. CLEVIS
2. JAM NUT
5. PUSH ROD ASSEMBLY
12. ADAPTER HOUSING
14. CARRIAGE NUT (4)
15. SERVICE BRAKE CLAMP
16. CARRIAGE BOLT (4)
17. SERVICE BRAKE CHAMBER HOUSING ASSEMBLY
18. SERVICE BRAKE CHAMBER DIAPHRAGM
22. FORWARD-REAR BRAKE CHAMBER

TA 238432

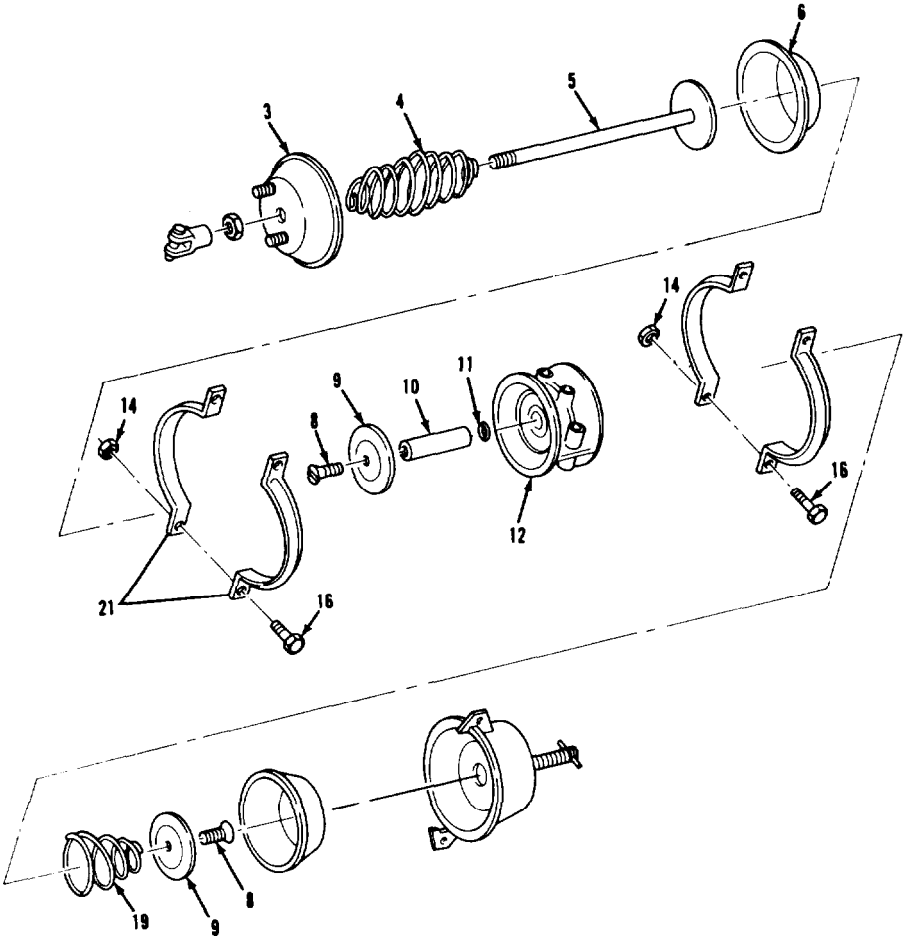
BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
	WARNING Return spring is under just enough pressure where injury could result if held incorrectly during disassembly. To avoid injury position housing assembly away from you and other personnel. Failure to observe this precaution may result in injury to you and other personnel.	
6. Two nuts (14), bolts (16), and one clamp (21).	Remove from item (12) and (3).	Assistant holds item (3) and item (12) together.
7. Housing (3) with attached spring (4) and push rod (5).	Remove from item (12).	a. Assistant helps in removal. b. Item (6) may fall from item (12).
8. Diaphragm (6).	Remove from item (12).	Discard item (6).
9. Housing assembly (3).	Slide off of item (5).	
10. Spring (4).	Slide from item (5).	
	NOTE There will be a slight spring force when removing screws and plate assemblies.	
11. Two screws (8).	Unscrew and remove two items (9) and one item (19).	Two items (8) may be difficult to remove.
12. Adapter (10).	Remove from item (12).	
13. O-ring (11).	Remove from item (10).	Discard item (11).

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).



LEGEND:

3. HOUSING ASSEMBLY
4. RETURN SPRING
5. PUSH ROD ASSEMBLY
6. DIAPHRAGM
8. NYLOK SCREW (2)
9. PLATE (2)
10. PUSH ROD ADAPTER
11. O-RING
12. ADAPTER HOUSING
14. CARRIAGE NUT (4)
16. CARRIAGE BOLT (4).
19. SERVICE BRAKE RETURN SPRING
21. FORWARD-REAR CHAMBER CLAMP

TA 238433

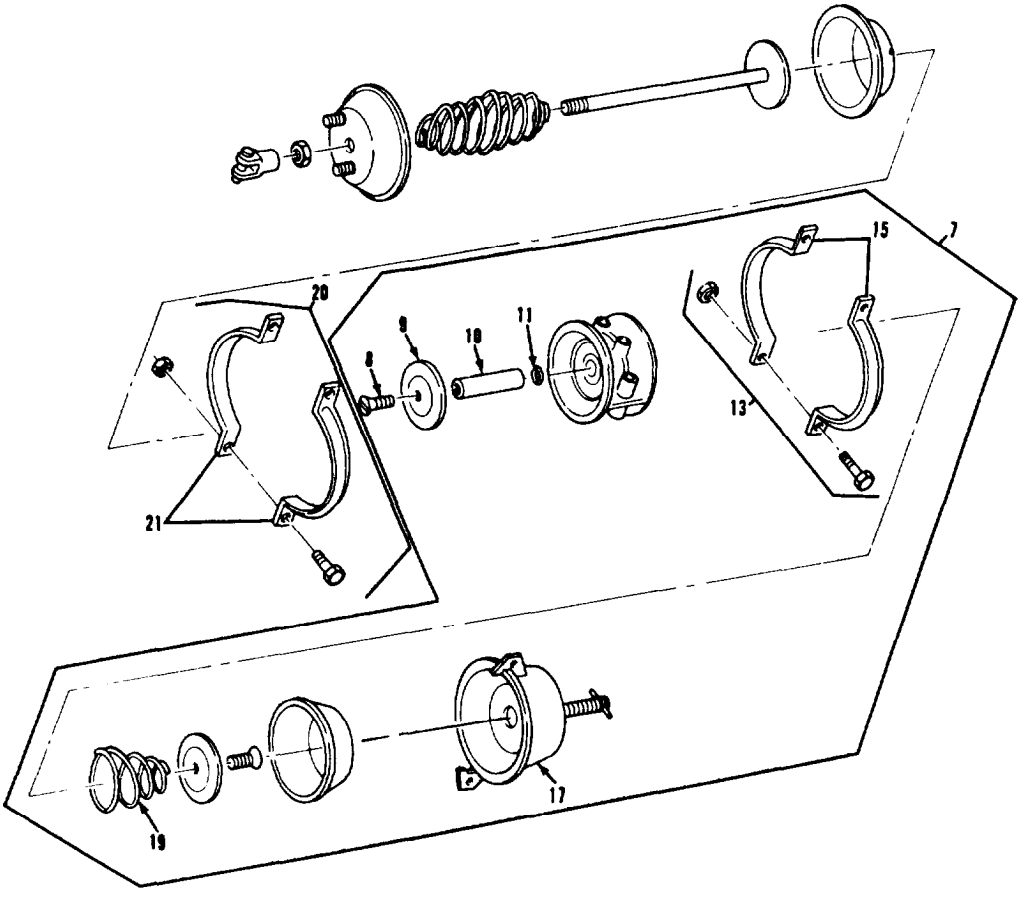
BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING.		
14. All parts.	Clean with drycleaning solvent and rags.	Clean grooves carefully in item (15) and (21).
C. INSPECTION.		
15. All parts,	Inspect.	a. Replace damaged parts. b. If item (17) is unserviceable, replace item (7). c. If item (15) is unserviceable, replace item (13). d. If item (21) is unserviceable, replace item (20). e. Refer to paragraph 3-5.
D. ASSEMBLY.		
16. Plate (9).	a. Install on item (10). b. Secure with one item (8).	
17. Adapter (10).	Push through opening in item (12).	
18. New O-ring (11).	a. Lubricate. b. Install on item (10).	
19. Spring (19).	Slide over item (10).	
20. Plate (9).	a. Position over item (19). b. Secure with one item (8).	Press item (19) toward item (12) with item (9) when securing item (8).

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).



LEGEND:

7. PIGGY BACK SERVICE SUBASSEMBLY SPRING BRAKE
8. NYLOK SCREW (2)
9. PLATE (2)
10. PUSH ROD ADAPTER
11. O-RING
12. ADAPTER HOUSING
13. CLAMP ASSEMBLY
15. SERVICE BRAKE CLAMP
17. SERVICE BRAKE CHAMBER HOUSING ASSEMBLY
19. SERVICE BRAKE RETURN SPRING
20. CLAMP ASSEMBLY
21. FORWARD-REAR CHAMBER CLAMP

TA 238434

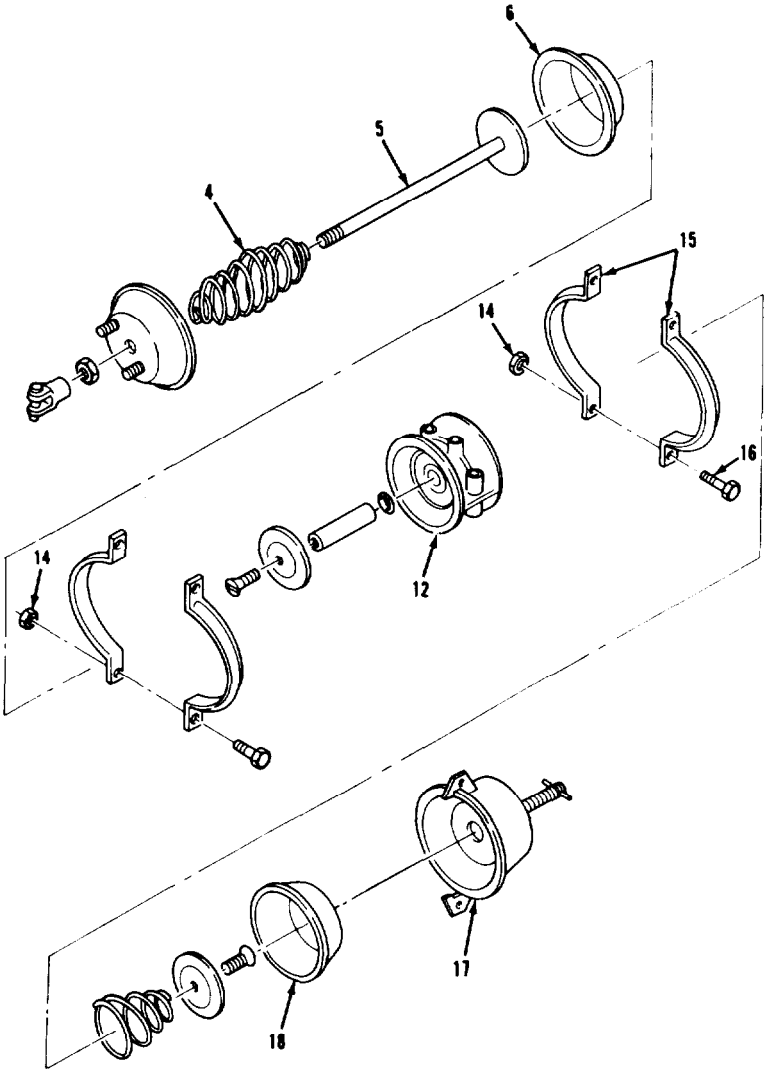
BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
	WARNING Do not disassemble service brake chamber housing assembly. Failure to observe this precaution may result in injury to you and other personnel.	
21. New diaphragm (18).	Place in item (17).	
22. Service brake chamber housing, assembly (17) and diaphragm (18).	Slide on item (12).	Item (18) may have to be pulled against item (17) when installing.
23. Clamp (15).	a. Place around item (17) and (12). b. Line up scribe line on item (17) with line on item (12) by rotating item (17).	
24. Two nuts (14) and bolts (16).	Secure.	Tighten alternately while assistant taps item (15) several times. Item (15) will then seat around item (12) and item (17) when securing.
25. New diaphragm (6).	Place in item (12).	
26. Spring (4).	Slide on item (5).	
27. Spring (4) and rod (5).	Place in item (6).	

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).



LEGEND:

4. RETURN SPRING
5. PUSH ROD ASSEMBLY
6. DIAPHRAGM
12. ADAPTER HOUSING
14. CARRIAGE NUT (4)
15. SERVICE BRAKE CLAMP
16. CARRIAGE BOLT (4)
17. SERVICE BRAKE CHAMBER HOUSING ASSEMBLY
18. SERVICE BRAKE CHAMBER DIAPHRAGM

TA 238435

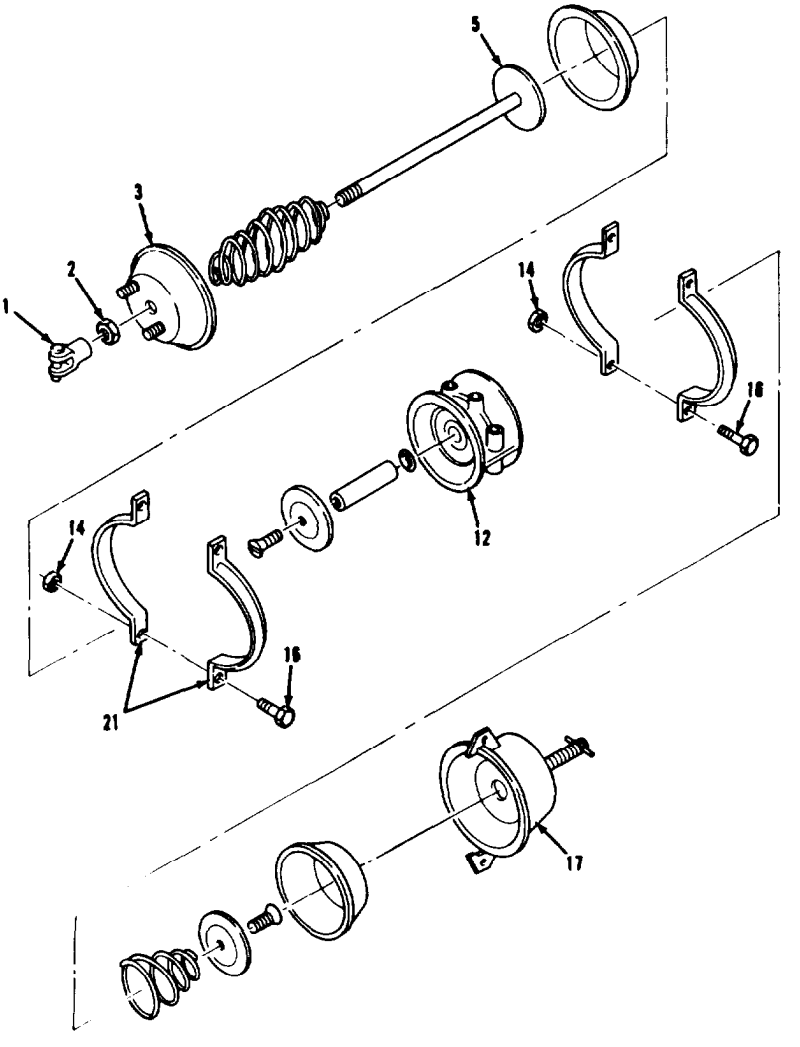
BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
	WARNING Return spring is under just enough pressure where injury could result if held incorrectly during assembly. To avoid injury position housing assembly away from you and other personnel. Failure to observe this precaution may result in injury to you and other personnel.	
28. Housing assembly (3).	a. Place on item (5).	Assistant holds item (3) against item (12) until secure.
	b. Slide item (3) down item (5) against item (12).	
29. Clamp (21).	a. Place around item (3) and (12).	
	b. Line up scribe line on item (3) with line on item (12) by rotating item (3).	
30. Two nuts (14) and bolts (16).	Secure.	Tighten alternately while assistant taps item (21) several times. Item (21) will then seat around item (12) and item (17) when securing.
31. Clevis (1) and nut (2).	Install on item (5).	
	NOTE Follow-on maintenance action required: Install forward-rear axle brake chamber (TM 9-2320-283-20).	

BRAKE SYSTEM.

3-82. FORWARD-REAR AXLE BRAKE CHAMBER REPAIR (Continued).



LEGEND:

1. CLEVIS
2. JAM NUT
3. HOUSING ASSEMBLY
5. PUSH ROD ASSEMBLY
12. ADAPTER HOUSING
14. CARRIAGE NUT (4)
16. CARRIAGE BOLT (4)
17. SERVICE BRAKE CHAMBER HOUSING ASSEMBLY
21. FORWARD-REAR CHAMBER CLAMP

TA238436

BRAKE SYSTEM.

3-83. AIR COMPRESSOR GOVERNOR ADJUSTMENT.

THIS TASK COVERS

Adjustment.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	None.	None.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

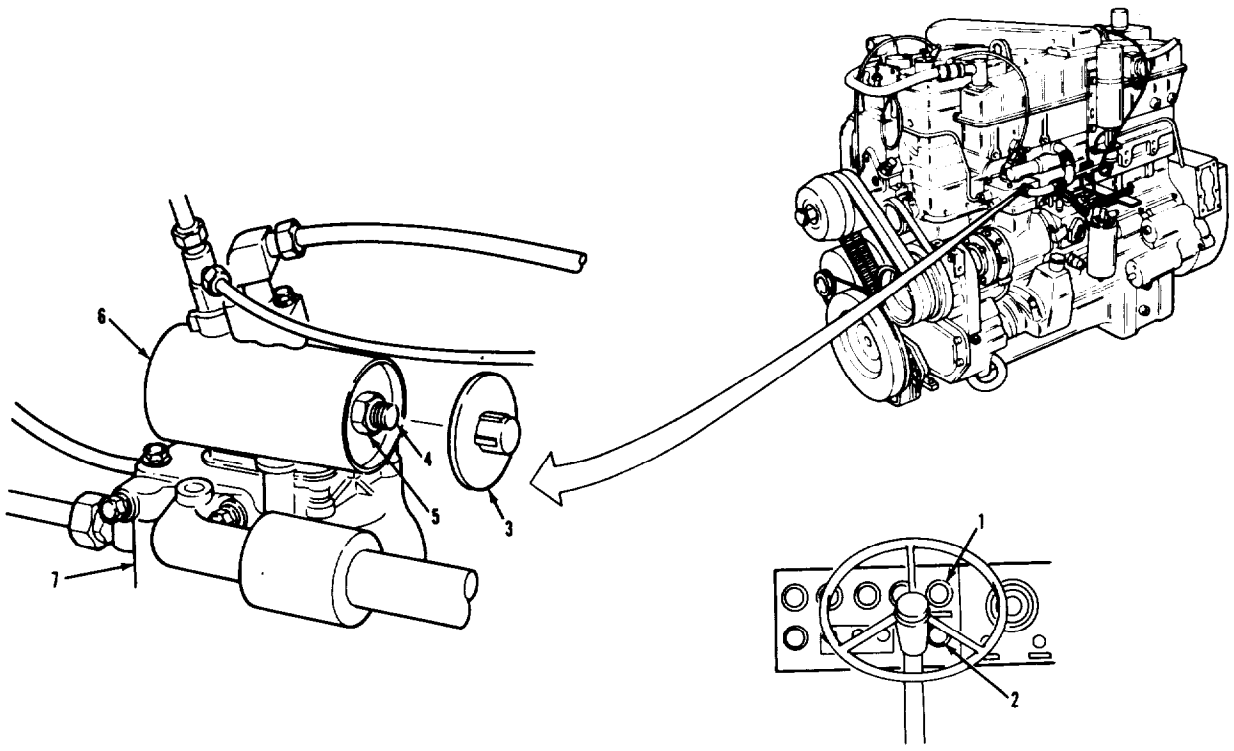
REFERENCES (TM)
TM 9-2320-283-10.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

BRAKE SYSTEM.

3-83. AIR COMPRESSOR GOVERNOR ADJUSTMENT (Continued).



LEGEND:

1. FRONT BRAKE SYSTEM AIR PRESSURE GAGE
2. REAR BRAKE SYSTEM AIR PRESSURE GAGE
3. ACCESS COVER
4. MACHINE SCREW
5. NUT
6. GOVERNOR ASSEMBLY
7. AIR COMPRESSOR

TA 238437

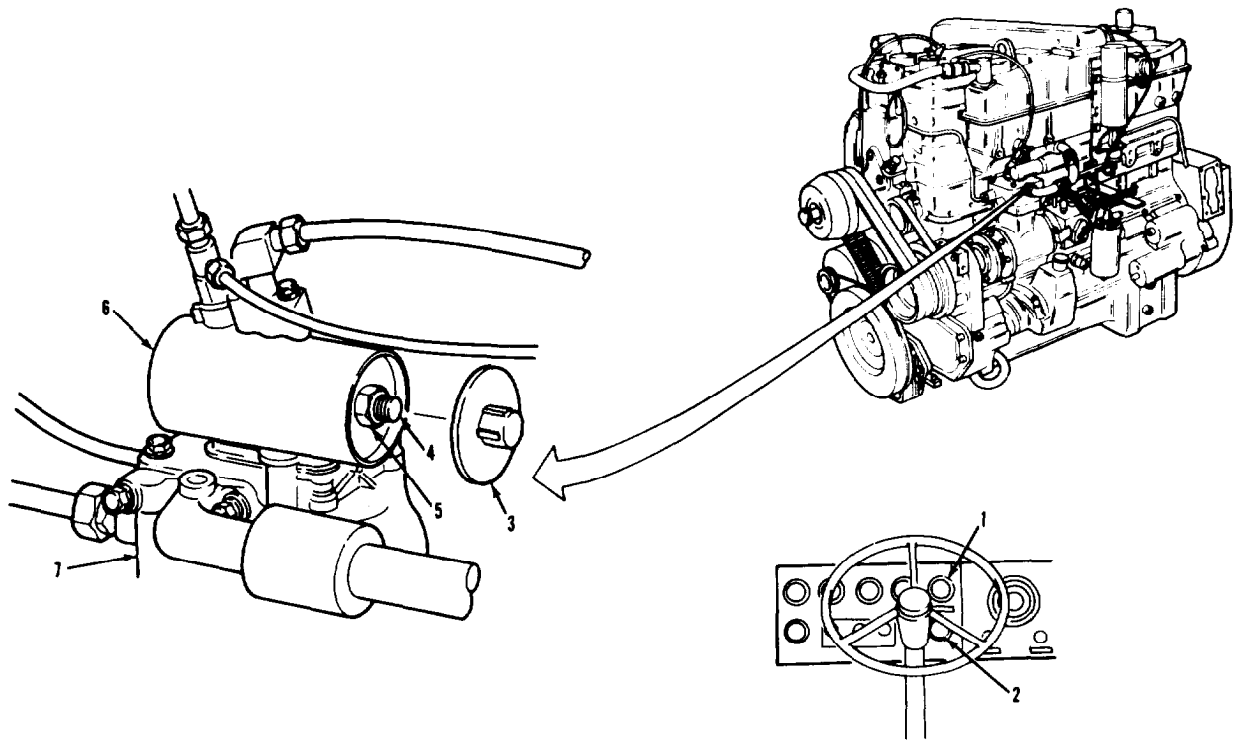
BRAKE SYSTEM.

3-83. AIR COMPRESSOR GOVERNOR ADJUSTMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
ADJUSTMENT.		
1. Engine.	Start and operate.	Refer to TM 9-2320-283-10.
2. Gage (1 or 2).	Observe pressure when item (6) cuts out, stopping compression of air by item (7).	Cutout pressure should be between 122-128 psi. If pressure is correct, skip steps 3 thru 9 and go to step 10. If pressure is too high or too low, go to step 3.
3. Engine.	Shutdown,	Refer to TM 9-2320-283-10.
	WARNING To avoid injury, do not work in engine compartment with engine running.	
4. Cover (3).	Remove from items (4) and (6).	
5. Nut (5).	Loosen, but do not remove.	
6. Screw (4).	a. To raise cutout pressure, turn counterclockwise. To lower cutout pressure, turn clockwise.	One-half turn will change pressure about 5 psi.
	b. Repeat steps 1 and 2 after each adjustment.	When cutout pressure is correct, shutdown engine and go to step 7.
7. Nut (5).	While holding item (4), tighten item (5).	
8. Cover (3).	Install on items (4) and (6).	
9. Engine.	Start and operate.	Refer to TM 9-2320-283-10.

BRAKE SYSTEM.

3-83. AIR COMPRESSOR GOVERNOR ADJUSTMENT (Continued).



LEGEND:

1. FRONT BRAKE SYSTEM AIR PRESSURE GAGE
2. REAR BRAKE SYSTEM AIR PRESSURE GAGE
3. ACCESS COVER
4. MACHINE SCREW
5. NUT
6. GOVERNOR ASSEMBLY
7. AIR COMPRESSOR

TA 238438

BRAKE SYSTEM.

3-83. AIR COMPRESSOR GOVERNOR ADJUSTMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
10. Gage (1 or 2).	While engine is running, press down on brake pedal a number of times to reduce air pressure. Observe pressure when item (6) cuts in, starting compression of air by item (7).	Cut-in pressure should be between 97-103 psi. If cut-in pressure is not correct, replace or repair air compressor governor (para 3-83 or 3-84).
11. Engine.	Shutdown.	Refer to TM 9-2320-283-10.

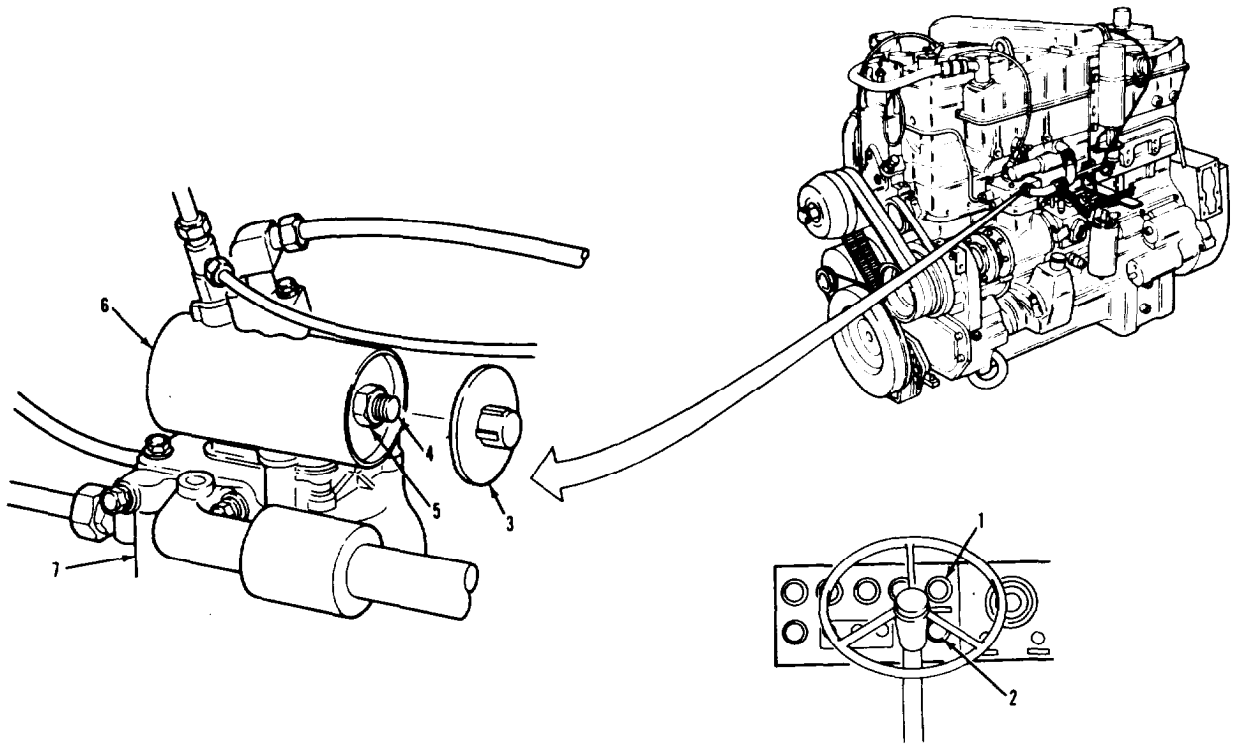
NOTE

Follow-on maintenance action required:

None.

BRAKE SYSTEM.

3-83. AIR COMPRESSOR GOVERNOR ADJUSTMENT (Continued).



LEGEND:

1. FRONT BRAKE SYSTEM AIR PRESSURE GAGE
2. REAR BRAKE SYSTEM AIR PRESSURE GAGE
3. ACCESS COVER
4. MACHINE SCREW
5. NUT
6. GOVERNOR ASSEMBLY
7. AIR COMPRESSOR

TA 238439

BRAKE SYSTEM.

3-84. AIR COMPRESSOR GOVERNOR REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
TM 9-2320-283-20.

CONDITION DESCRIPTION
Air compressor governor air lines and fittings removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Governor gasket
(06853) 237202.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

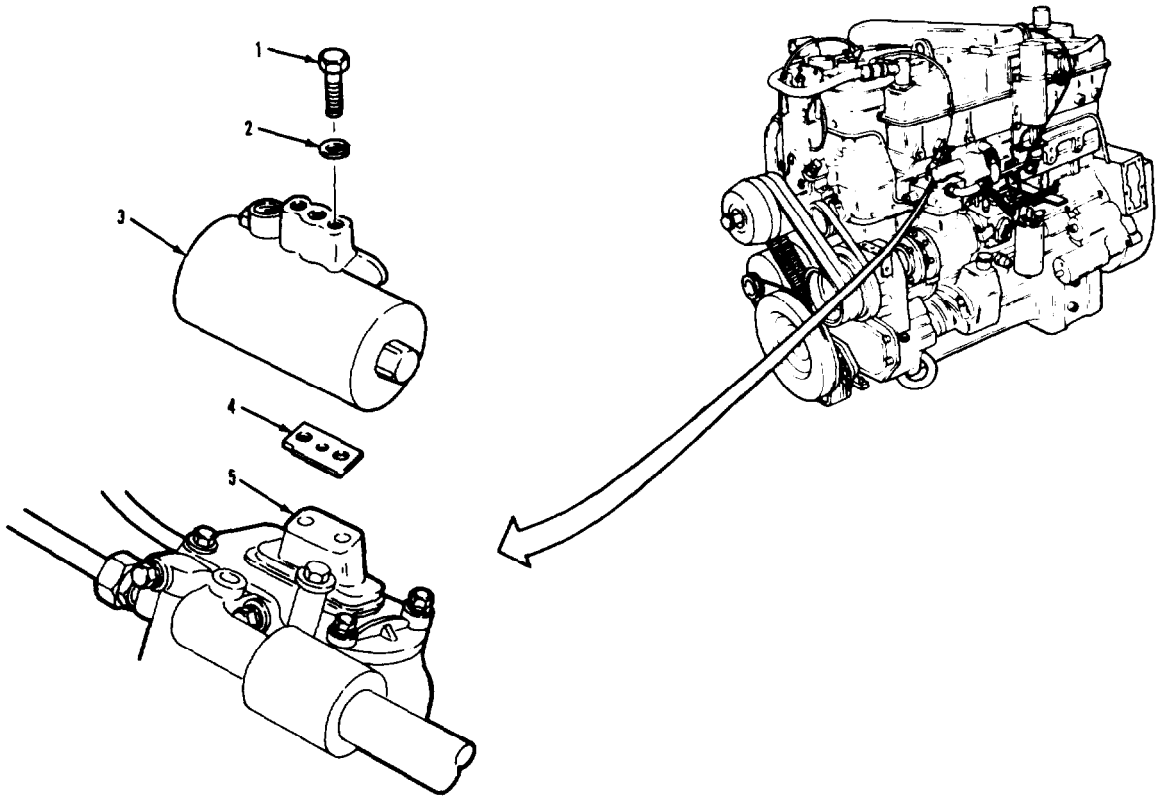
REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

BRAKE SYSTEM.

3-84. AIR COMPRESSOR GOVERNOR REPLACEMENT (Continued).



LEGEND:

1. MACHINE SCREW (2)
2. LOCKWASHER (2)
3. GOVERNOR ASSEMBLY
4. GOVERNOR GASKET
5. AIR COMPRESSOR UNLOADER VALVE

TA 238440

BRAKE SYSTEM.

3-84. AIR COMPRESSOR GOVERNOR REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Two screws (1) and lockwashers (2).	Remove from item (3).	
2. Governor assembly (3) and gasket (4).	Remove from item (5).	Discard item (4).
B. CLEANING.		
3. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
4. All parts.	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
5. Governor assembly (3) and valve (5).	Clean mating surfaces.	Refer to paragraph 3-4.
6. Governor assembly (3) and new gasket (4).	Install on item (5).	
7. Two screws (1) and lockwashers (2).	Install into item (3), and tighten.	

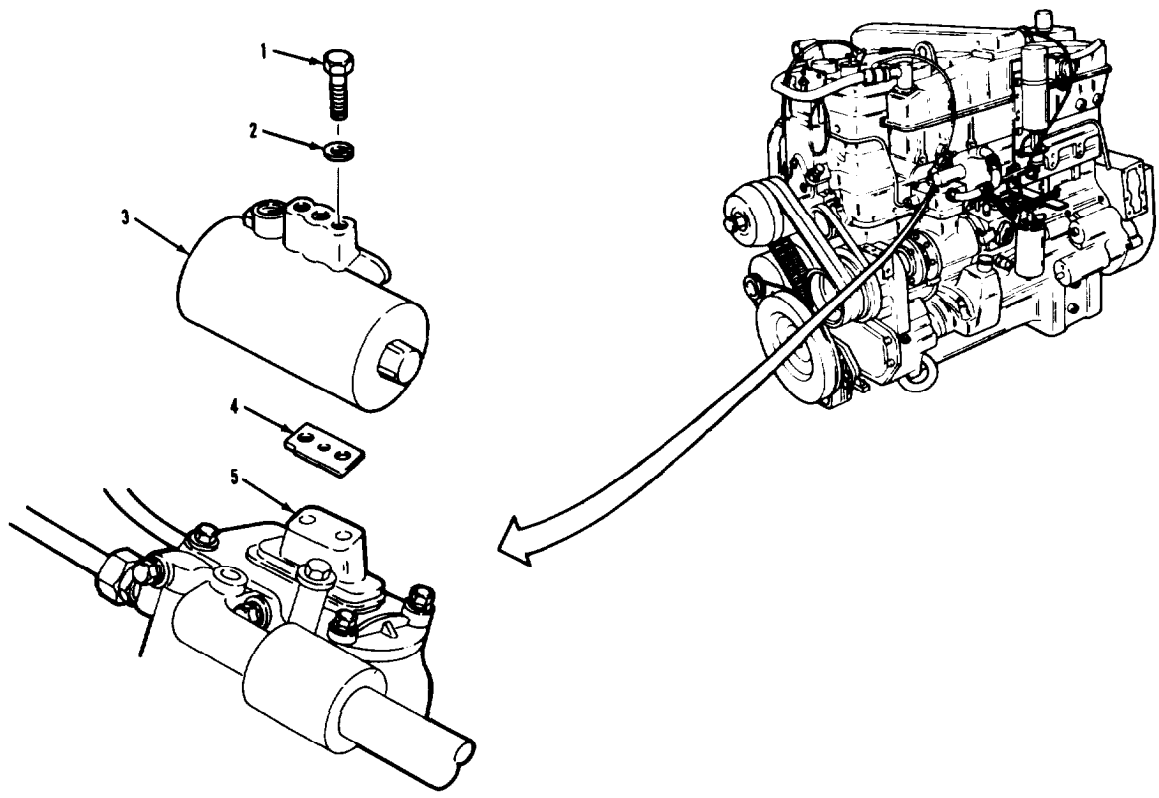
NOTE

Follow-on maintenance action required:

Install air compressor governor air lines and fittings (TM 9-2320-283-20).
Adjust air compressor governor (para 3-83).

BRAKE SYSTEM.

3-84. AIR COMPRESSOR GOVERNOR REPLACEMENT (Continued).



LEGEND:

1. MACHINE SCREW (2)
2. LOCKWASHER (2)
3. GOVERNOR ASSEMBLY
4. GOVERNOR GASKET.
5. AIR COMPRESSOR UNLOADER VALVE

TA 238441

BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	3-84.	Air compressor governor removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Grease, pneumatic
Item 10, Appendix B.
Tape, thread sealing
Item 35, Appendix B.
O-ring (2)
(06853) 239658.
O-ring
(06853) 230175.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

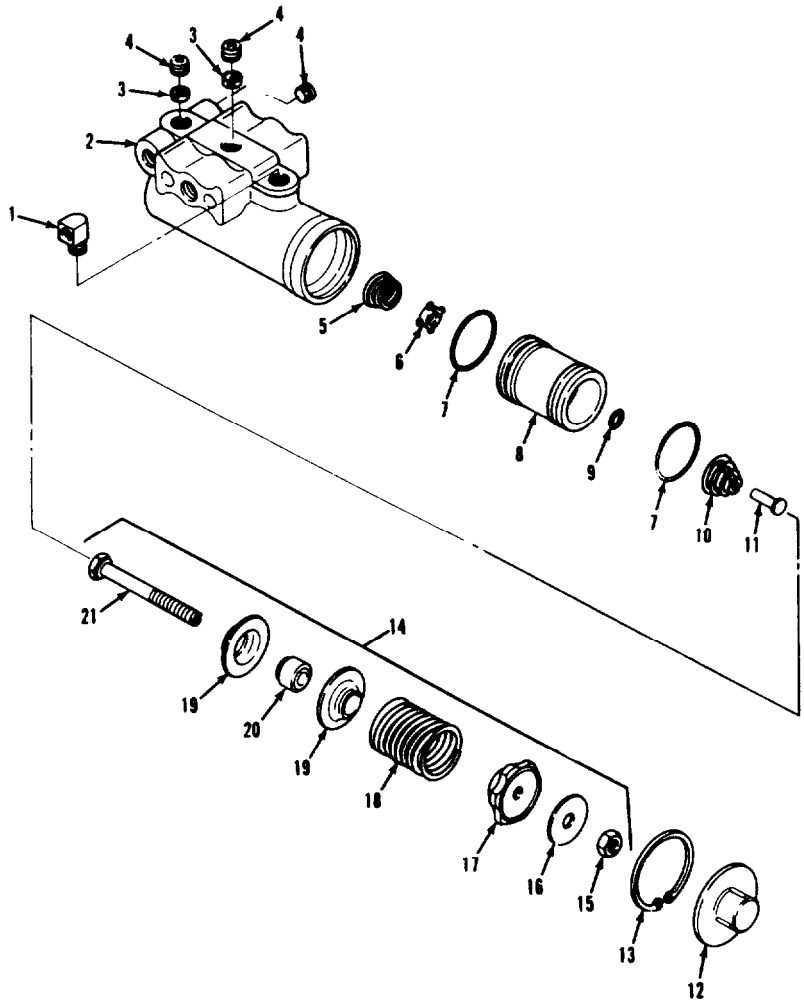
REFERENCES (TM)
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR (Continued).



LEGEND:

1. MALE ELBOW
2. GOVERNOR BODY
3. STRAINER ELEMENT (2)
4. PLUG (3)
5. SPRING
6. EXHAUST VALVE
7. O-RING (2)
8. GOVERNOR PISTON
9. O-RING
10. HELICAL COMPRESSION SPRING
11. EXHAUST STEM
12. ACCESS COVER
13. RETAINER CLIP
14. SCREW AND SPRING ASSEMBLY
15. NUT
16. WASHER
17. UPPER SPRING SEAT
18. HELICAL COMPRESSION SPRING
19. LOWER SPRING SEAT (2)
20. SPRING GUIDE
21. MACHINE SCREW

TA 238442

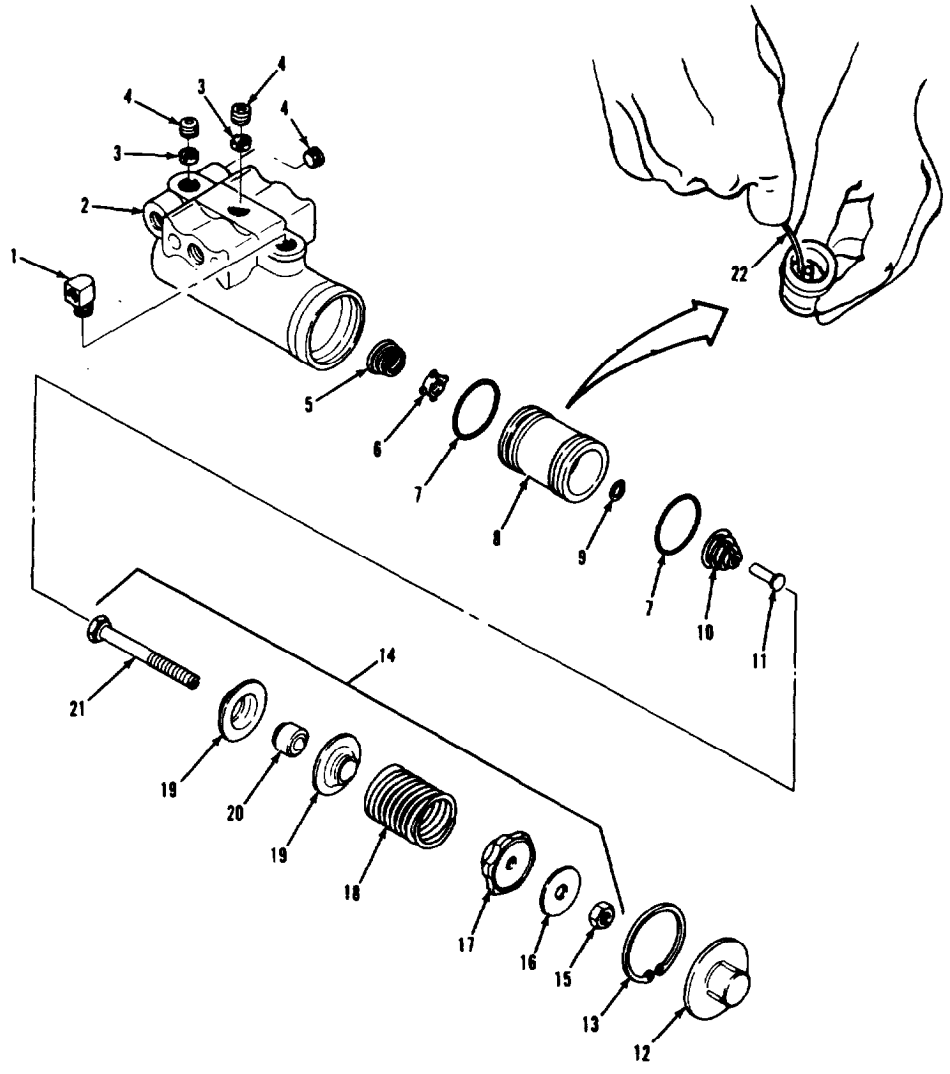
BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Cover (12).	Remove from items (2) and (21).	
2. Clip (13).	Remove from item (2).	
3. Screw and spring assembly (14).	Remove from item (2).	
4. Nut (15), washer (16), seat (17), spring (18), two seats (19), and guide (20).	Remove from item (21).	
5. Spring (10) and stem (11).	Remove from item (8).	
6. Spring (5), valve (6), two O-rings (7), piston (8), and O-ring (9) (assembled).	Remove from item (2) by tapping on wood surface.	
7. Spring (5) and valve (6).	Remove from item (8).	
8. Two O-rings (7).	Remove from item (8).	Discard two items (7).
9. O-ring (9).	Using item (22), remove from item (8).	Discard item (9).
10. Elbow (1), three plugs (4), and two elements (3).	Remove from item (2).	
B. CLEANING.		
11. All parts.	Clean.	Refer to paragraph 3-4. Be sure that air passages in items (2), (3), (6), and (8) are not blocked.

BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR (Continued).



LEGEND:

1. MALE ELBOW
2. GOVERNOR BODY
3. STRAINER ELEMENT (2)
4. PLUG (3)
5. SPRING
6. EXHAUST VALVE
7. O-RING (2)
8. GOVERNOR PISTON
9. O-RING
10. HELICAL COMPRESSION SPRING
11. EXHAUST STEM
12. ACCESS COVER
13. RETAINER CLIP
14. SCREW AND SPRING ASSEMBLY
15. NUT
16. WASHER
17. UPPER SPRING SEAT
18. HELICAL COMPRESSION SPRING
19. LOWER SPRING SEAT (2)
20. SPRING GUIDE
21. MACHINE SCREW
22. HOOKED WIRE

TA 238443

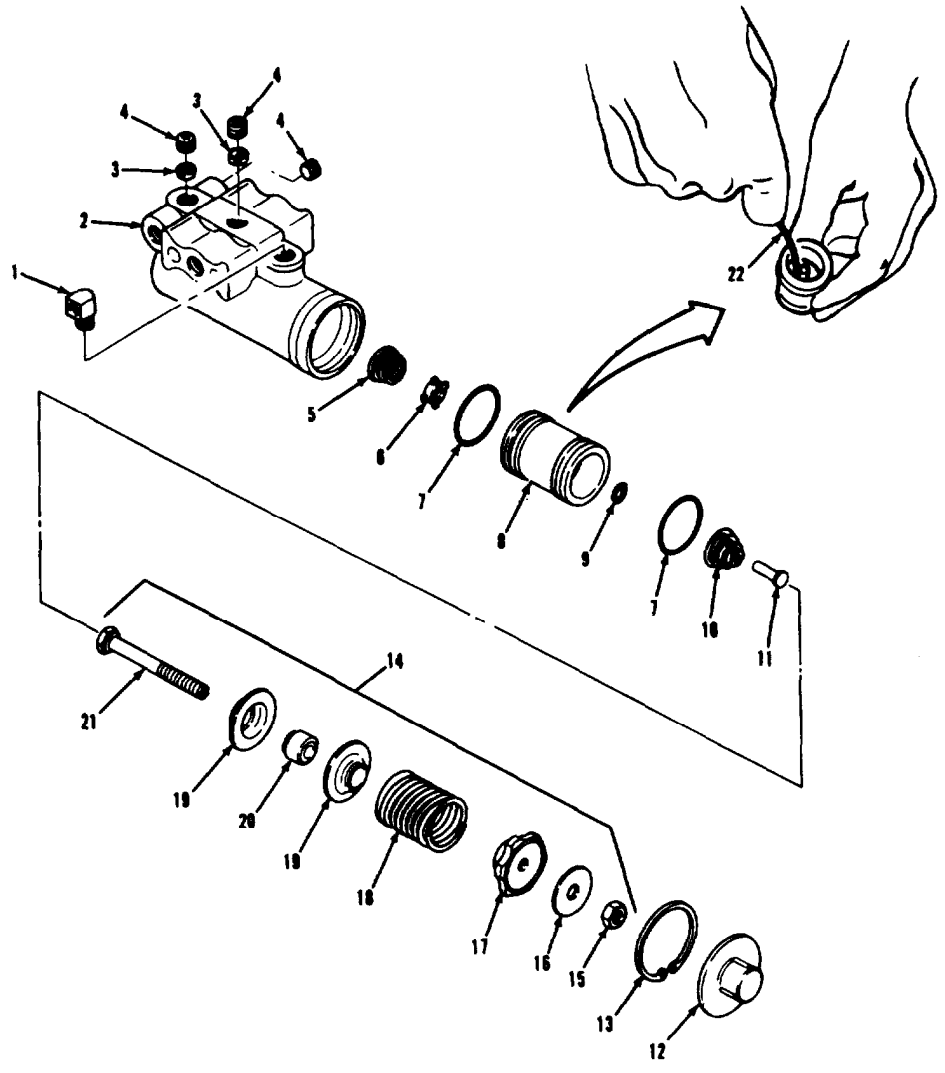
BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSPECTION.		
12. All parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY.		
	NOTE Before assembling, lubricate all parts with pneumatic grease.	
13. Elbow (1), two elements (3), and three plugs (4).	a. Wrap items (1) and (4) with thread sealing tape. b. Install into item (2).	Refer to paragraph 3-7.
14. New O-ring (9).	Using item (22), install into groove inside item (8).	
15. Two new O-rings (7).	Install on item (8).	
16. Spring (5) and valve (6).	Install in item (8).	Make sure small coil end of item (5) is against item (6). Press item (5) into item (8) until large coil end snaps into groove inside item (8).
17. Spring (10).	Install on item (11).	Make sure small coil end of item (10) is toward head of item (11).
18. Spring (10) and stem (11) (assembled).	Carefully install into stem bore of item (8).	

BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR (Continued).



LEGEND:

1. MALE ELBOW
2. GOVERNOR BODY
3. STRAINER ELEMENT (2)
4. PLUG (3)
5. SPRING
6. EXHAUST VALVE
7. O-RING (2)
8. GOVERNOR PISTON
9. O-RING
10. HELICAL COMPRESSION SPRING
11. EXHAUST STEM
12. ACCESS COVER
13. RETAINER CLIP
14. SCREW AND SPRING ASSEMBLY
15. NUT
16. WASHER
17. UPPER SPRING SEAT
18. HELICAL COMPRESSION SPRING
19. LOWER SPRING SEAT (2)
20. SPRING GUIDE
21. MACHINE SCREW
22. HOOKED WIRE

TA 238444

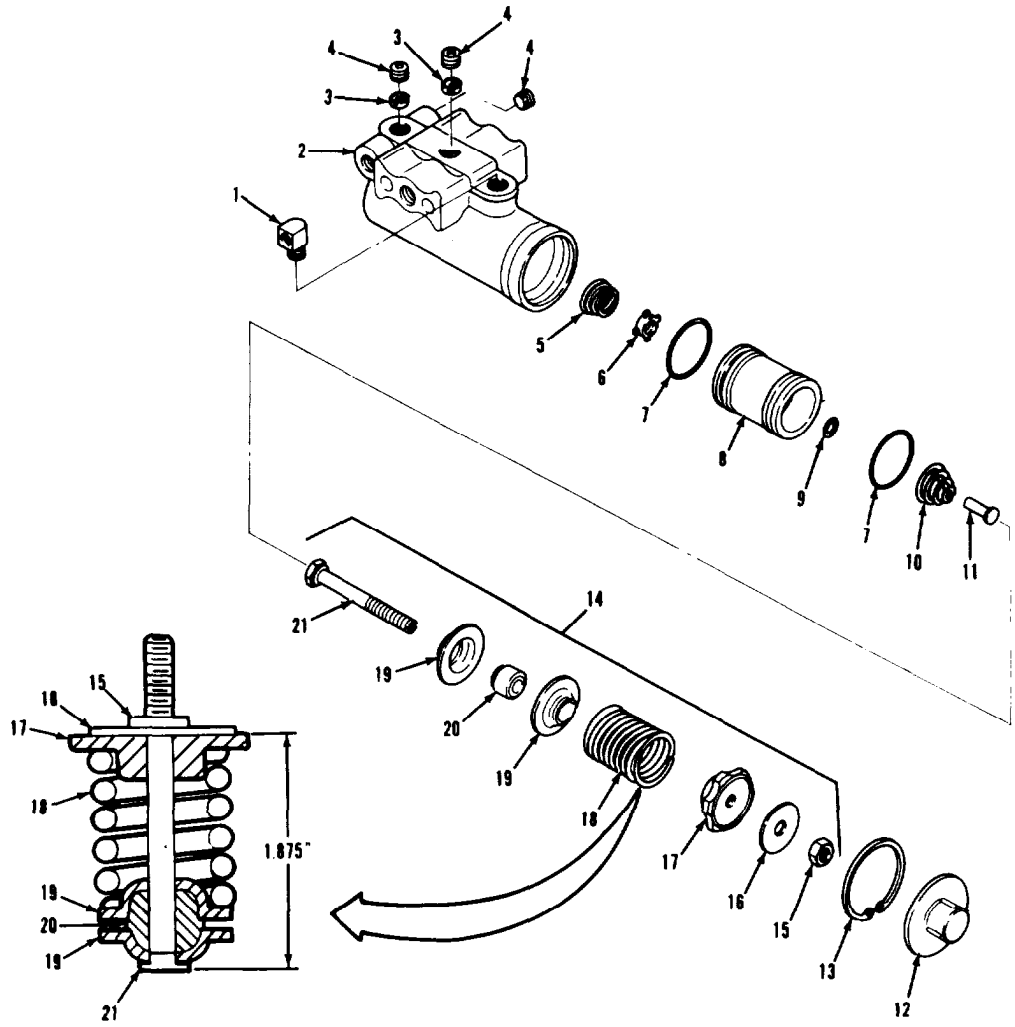
BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
19. Spring (5), valve (6), two O-rings (7), piston (8), O-ring (9), spring (10), and stem (11) (assembled).	Install into item (2).	Make sure end of item (8) with items (5) and (6) goes in first. Push item (8) in until it bottoms.
20. Seat (17), spring (18), two seats (19), and guide (20).	Install on item (21) as shown in illustration.	Screw on and tighten item (17) to obtain a measurement of 1.875 inch from the top of item (17) to the bottom of item (21).
21. Nut (15) and washer (16).	Install on item (21) and tighten.	
	NOTE Before installing assembly, make sure stem and spring are in place.	
22. Screw and spring assembly (14).	Install into item (2).	Make sure head end of item (21) goes in first. Item (17) should seat into item (2).
23. Clip (13).	Install in item (2).	
24. Cover (12).	Install onto item (2) and item (21).	
	NOTE Follow-on maintenance action required: Install air compressor governor (para 3-84).	

BRAKE SYSTEM.

3-85. AIR COMPRESSOR GOVERNOR REPAIR (Continued).



LEGEND:

1. MALE ELBOW
2. GOVERNOR BODY
3. STRAINER ELEMENT (2)
4. PLUG (3)
5. SPRING
6. EXHAUST VALVE
7. O-RING (2)
8. GOVERNOR PISTON
9. O-RING
10. HELICAL COMPRESSION SPRING
11. EXHAUST STEM
12. ACCESS COVER
13. RETAINER CLIP
14. SCREW AND SPRING ASSEMBLY
15. NUT
16. WASHER
17. UPPER SPRING SEAT
18. HELICAL COMPRESSION SPRING
19. LOWER SPRING SEAT (2)
20. SPRING GUIDE
21. MACHINE SCREW

TA 238445

Section X. WHEELS

This section provides procedures authorized at direct and general support maintenance levels to repair wheel components. To find a specific procedure contained in this section, see the task summary below.

3-87. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-20.	Brakedrums removed, cleaned and inspected.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Brakedrum lathe
4910-00-516-6192.

MATERIALS/PARTS (P/N)
80 Grit emery cloth
Item 2, Appendix B.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

REFERENCES (TM)
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

LIST OF TASKS

TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
Brakedrum Repair	2-88	

WHEELS.

3-88. BRAKEDRUM REPAIR.

THIS TASK COVERS

Repair of front and rear brakedruns.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-20.	Brakedrums removed, cleaned and inspected.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Brakedrum lathe
4910-00-516-6192.

MATERIALS/PARTS (P/N)
80 Grit emery cloth
Item 2, Appendix B.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

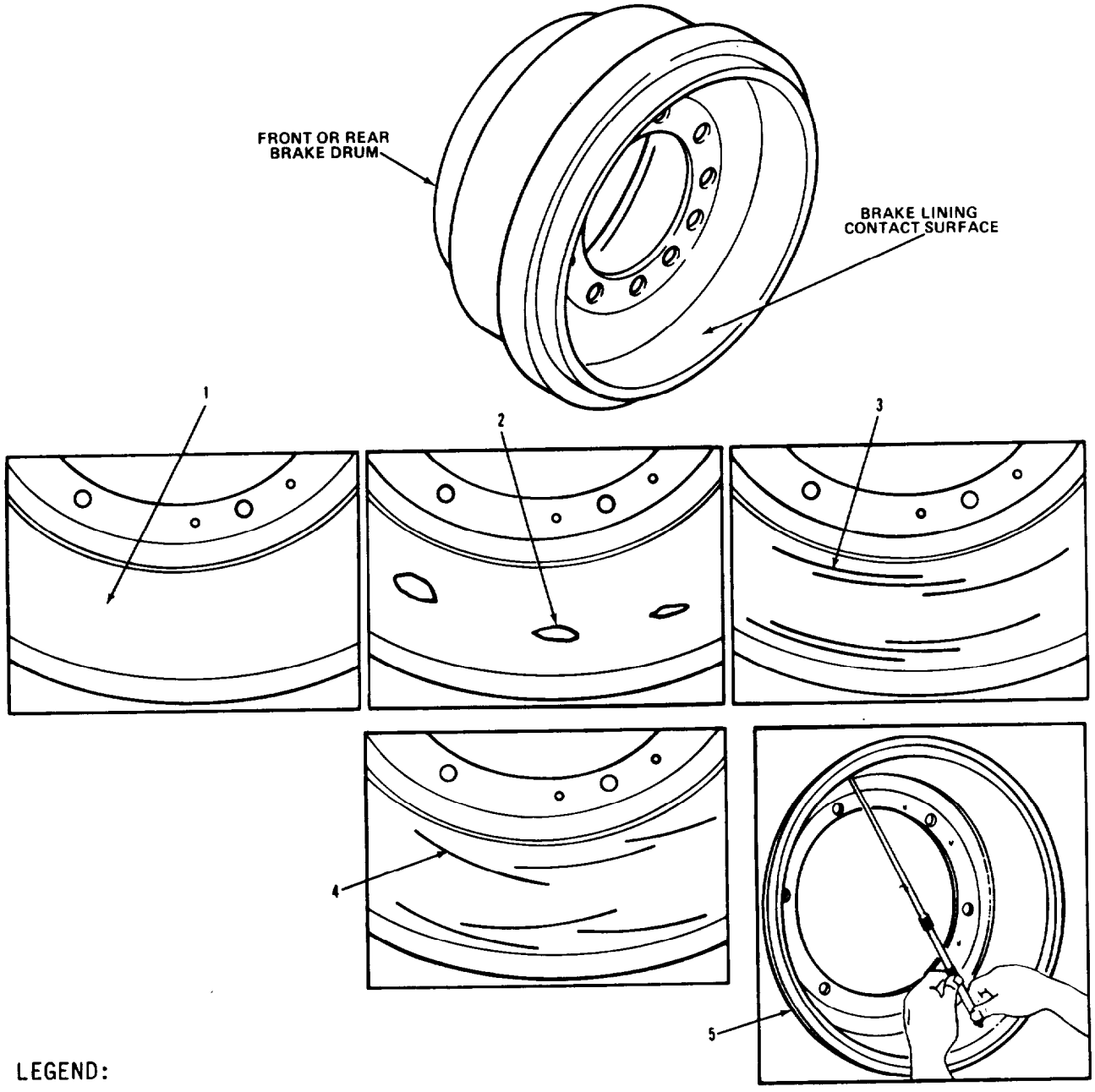
REFERENCES (TM)
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

WHEELS.

3-88. BRAKEDRUM REPAIR (Continued).



LEGEND:

LISTED BELOW ARE THE FOLLOWING TYPES OF BRAKEDRUM DEFECTS:

1. POLISHED BRAKING SURFACE
2. HEAT SPOTS
3. SCORED
4. HAIRLINE CRACKS
5. OUT-OF-ROUND

TA 238446

WHEELS.

3-88. BRAKEDRUM REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS

NOTE

This procedure describes the methods used to repair defects to the brake lining contact surface. Before you start, measure the inside diameter to determine the maximum amount of machining that can be done. The diameter at time of manufacture was 16.500 inches. The total amount of actual wear allowed before replacement is 0.120 inches. The maximum amount that can be machined is 0.080 inches.

REPAIR OF FRONT AND REAR BRAKEDRUMS.

1. Polished braking surface (1).	Sand with 80 grit emery cloth to remove gloss like finish.	This is recognized by mirror-like finish on the braking surface.

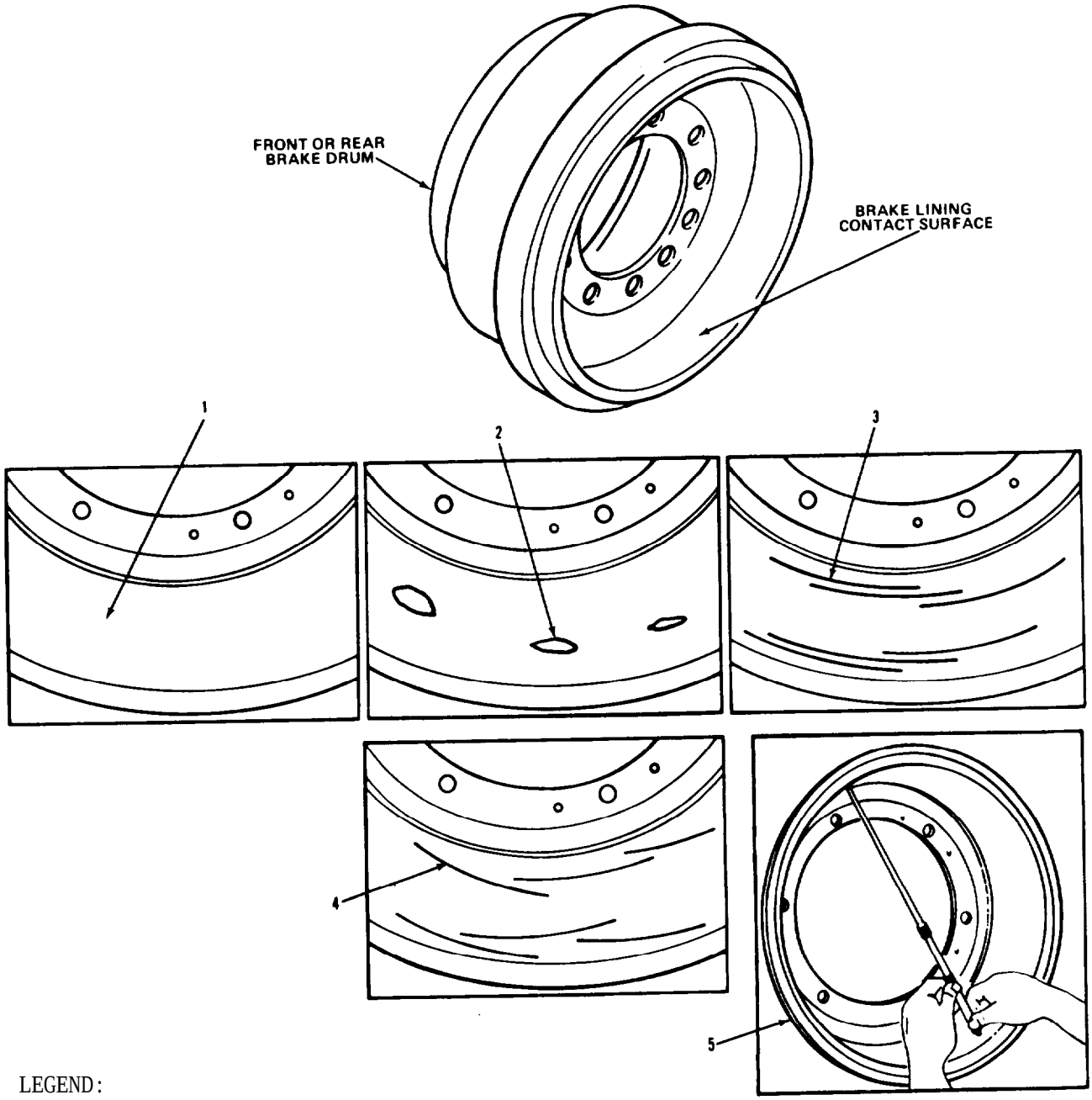
CAUTION

Do not exceed allowable machining limits.

2. Heat spots (2). scoring (3), cracks (4), and out-of-round (5).	Using brakedrum lathe, machine surface until defect is removed.	Only machine to the extent required to remove defect.

WHEELS.

1-88. BRAKEDRUM REPAIR (Continued).



LEGEND:

LISTED BELOW ARE THE FOLLOWING TYPES OF BRAKEDRUM DEFECTS:

1. POLISHED BRAKING SURFACE
2. HEAT SPOTS
3. SCORED
4. HAIRLINE CRACKS
5. OUT-OF-ROUND

TA 238447

Section XI. SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS

3-89. GENERAL.

This section provides procedures authorized at direct and general support maintenance levels to adjust, replace, and repair steering system components. To find a specific procedure contained in this section, see the task summary below:

3-90. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
(Refer to specific paragraph for this information).

CONDITION DESCRIPTION

TEST EQUIPMENT
Power steering analyzer
(for poppet valve adjustment only)
(33287) J-26487.

SPECIAL TOOLS
Seal driver tool
(33287) J-26653.
Seal driver tool
(33287) J-26654.

MATERIALS/PARTS (P/N)
Grease, automotive and artillery
Item 7, Appendix B.
Cotter pin (for sector shaft adjustment only)
(24617) 103389.
Gasket
(19954) ER-82141.
Filter
(19954) ER-93983.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

REFERENCES (TM
TM 9-2320-283-10.
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
Block rear wheels.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

STEERING SYSTEM.

3-90. TASK SUMMARY (Continued).

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
1	Steering Gear Internal Leakage Test	3-91	
	Steering Gear Internal Leakage Test.	3-91	
2	Steering Gear Adjustment	3-92	2-7
	a. Worm Shaft Preload Adjustment.	3-92a	
	b. Sector Shaft Adjustment.	3-92b	
	c. Poppet Valve Adjustment.	3-92c	
3	Steering Gear Replacement	3-93	2-7
	a. Removal.	3-93a	
	b. Cleaning and Inspection.	3-93b	
	c. Installation.	3-93c	
4	Steering Pump and Reservoir Repair	3-94	
	a. Disassembly.	3-94a	
	b. Cleaning and Inspection.	3-94b	
	c. Assembly.	3-94c	

STEERING SYSTEM.

3-91. STEERING GEAR INTERNAL LEAKAGE TEST.

THIS TASK COVERS

Steering Gear Internal Leakage Test.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-20.	Power steering analyzer installed.

TEST EQUIPMENT
Power steering analyzer (33287) J-26487.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

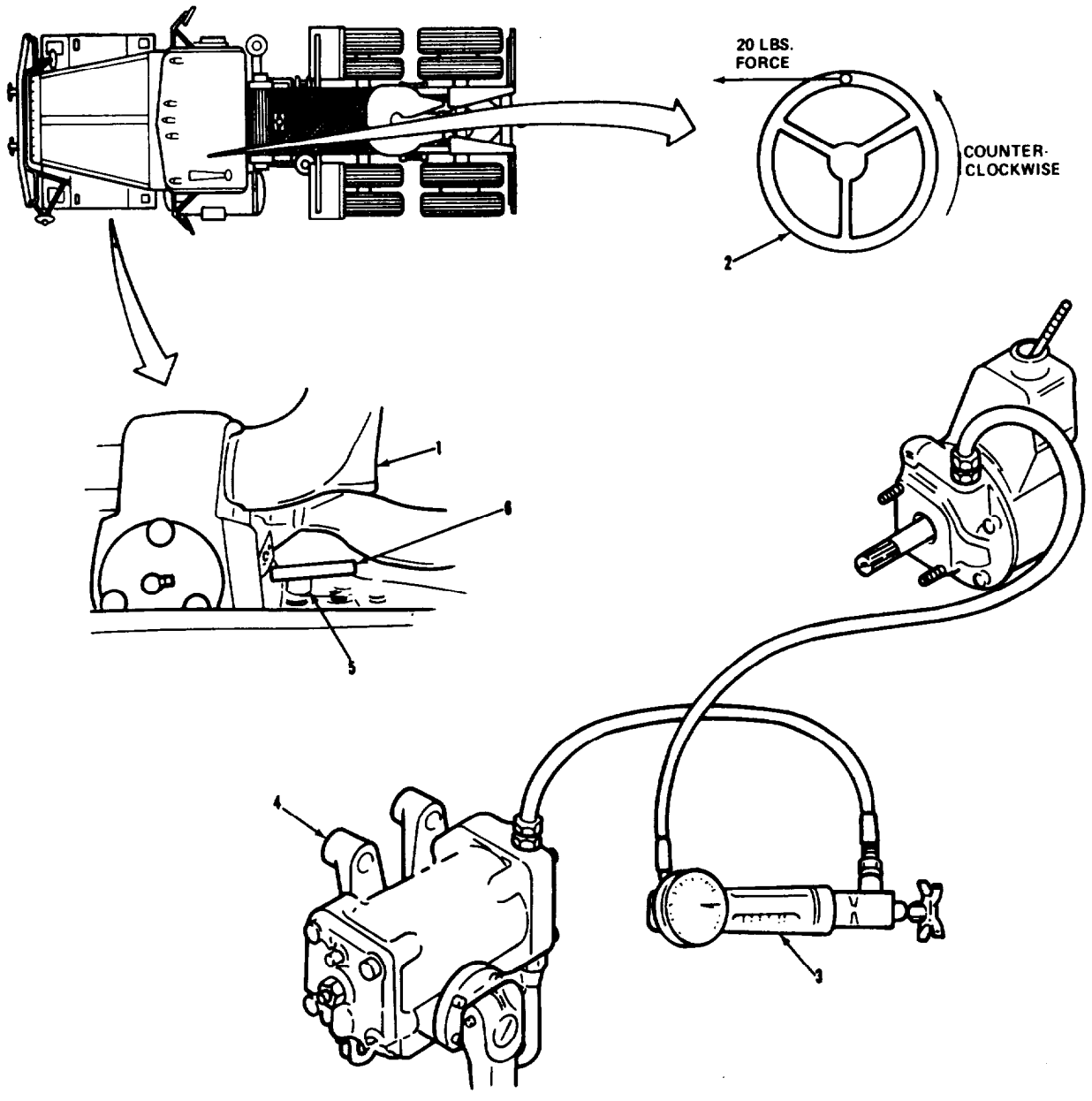
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
Engine off.
Transmission in neutral.
Park brake set.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

STEERING SYSTEM.

3-91. STEERING GEAR INTERNAL LEAKAGE TEST (Continued).



LEGEND:

1. STEERING ARM
2. STEERING WHEEL
3. POWER STEERING ANALYZER
4. POWER STEERING GEAR ASSEMBLY
5. AXLE STOP
6. 3/16-INCH SPACER BLOCK

TA 238448

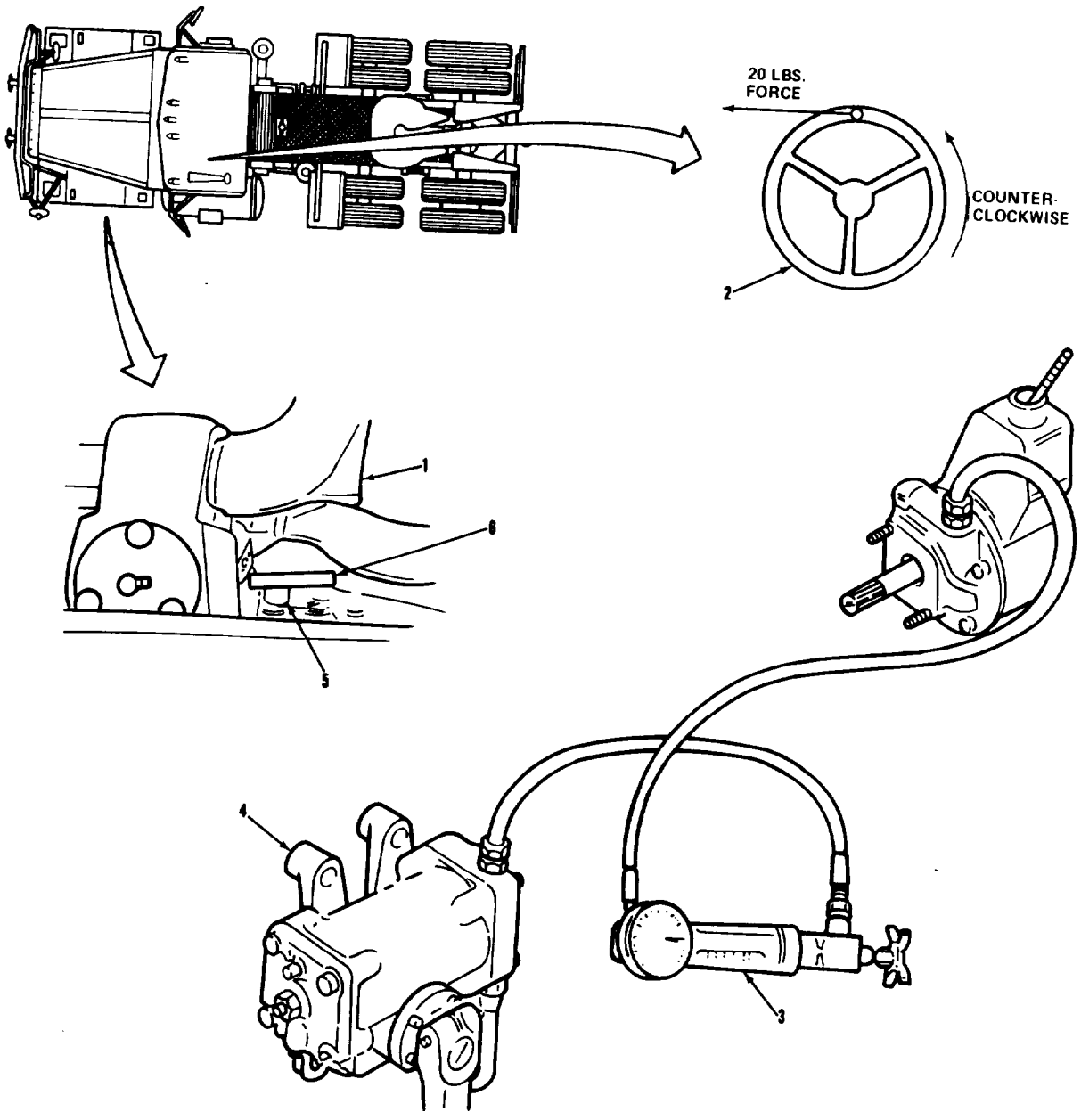
STEERING SYSTEM.

3-91. STEERING GEAR INTERNAL LEAKAGE TEST (Continued).

LOCATION/ITEM	ACTION	REMARKS
STEERING GEAR INTERNAL LEAKAGE TEST.		
	WARNING To avoid injury, use a malleable (soft metal) spacer block, and keep fingers clear of axle stop and spacer block during steps 1 and 3. Also make sure spacer block contacts axle stop squarely. Contact that is not square could break axle stop or dangerously throw or eject spacer block.	
	CAUTION Do not hold steering wheel in full turn position for longer than 5 to 10 seconds at a time to avoid damaging steering pump.	
1. Block (6).	Hold between items (1) and (5) on left side of vehicle during step 2a.	
2. Wheel (2).	a. Have assistant turn counterclockwise until item (5) bottoms on item (6).	
	b. Read pressure and flow rate on item (3), while assistant applies 20 lbs force to rim of item (2).	Use a suitable spring scale to apply force. Pressure reading should be at least 1850 psi. Flow rate should be between 0 and 1 gpm. If pressure is below 2850 psi, replace steering pump and reservoir (TM 9-2320-283-20). If flow rate is more than 1 gpm replace steering gear, refer to paragraph 3-93.

STEERING SYSTEM.

3-91. STEERING GEAR INTERNAL LEAKAGE TEST (Continued).



LEGEND:

1. STEERING ARM
2. STEERING WHEEL
3. POWER STEERING ANALYZER
4. POWER STEERING GEAR ASSEMBLY
5. AXLE STOP
6. 3/16-INCH SPACER BLOCK

TA 238449

STEERING SYSTEM.

3-91. STEERING GEAR INTERNAL LEAKAGE TEST (Continued).

LOCATION/ITEM	ACTION	REMARKS
STEERING GEAR INTERNAL LEAKAGE TEST (Continued).		
3. Block (6) and wheel (2).	Repeat steps 1 and 2 for right side of vehicle, then remove item (6).	

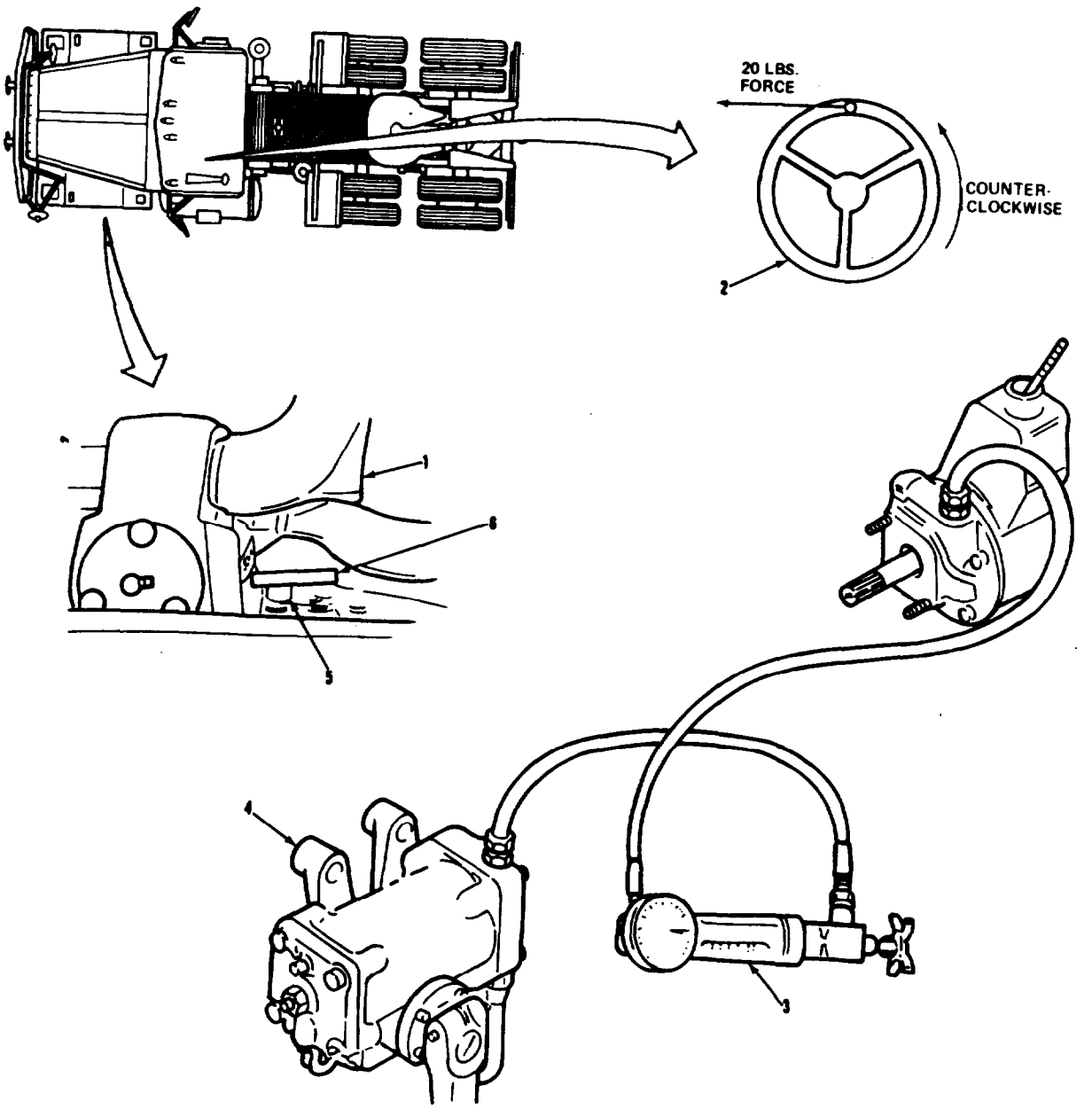
NOTE

Follow-on maintenance action required:

Remove power steering analyzer (TM 9-2320-283-20).

STEERING SYSTEM.

3-91. STEERING GEAR INTERNAL LEAKAGE TEST (Continued).



LEGEND:

1. STEERING ARM
2. STEERING WHEEL
3. POWER STEERING ANALYZER
4. POWER STEERING GEAR ASSEMBLY
5. AXLE STOP
6. 3/16-INCH SPACER BLOCK

TA 238450

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT.

THIS TASK COVERS

a. Worm Shaft Preload Adjustment.
b. Sector Shaft Adjustment.
c. Poppet Valve Adjustment

INITIAL SETUP

APPLICABLE CONFIGURATIONS
ALL.

EQUIPMENT CONDITION

PARAGRAPH
None.

CONDITION DESCRIPTION
None.

TEST EQUIPMENT
(for poppet valve adjustment only)
(33287) J-26487.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Cotter pin (for sector shaft adjustment only)
(24617) 103389.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

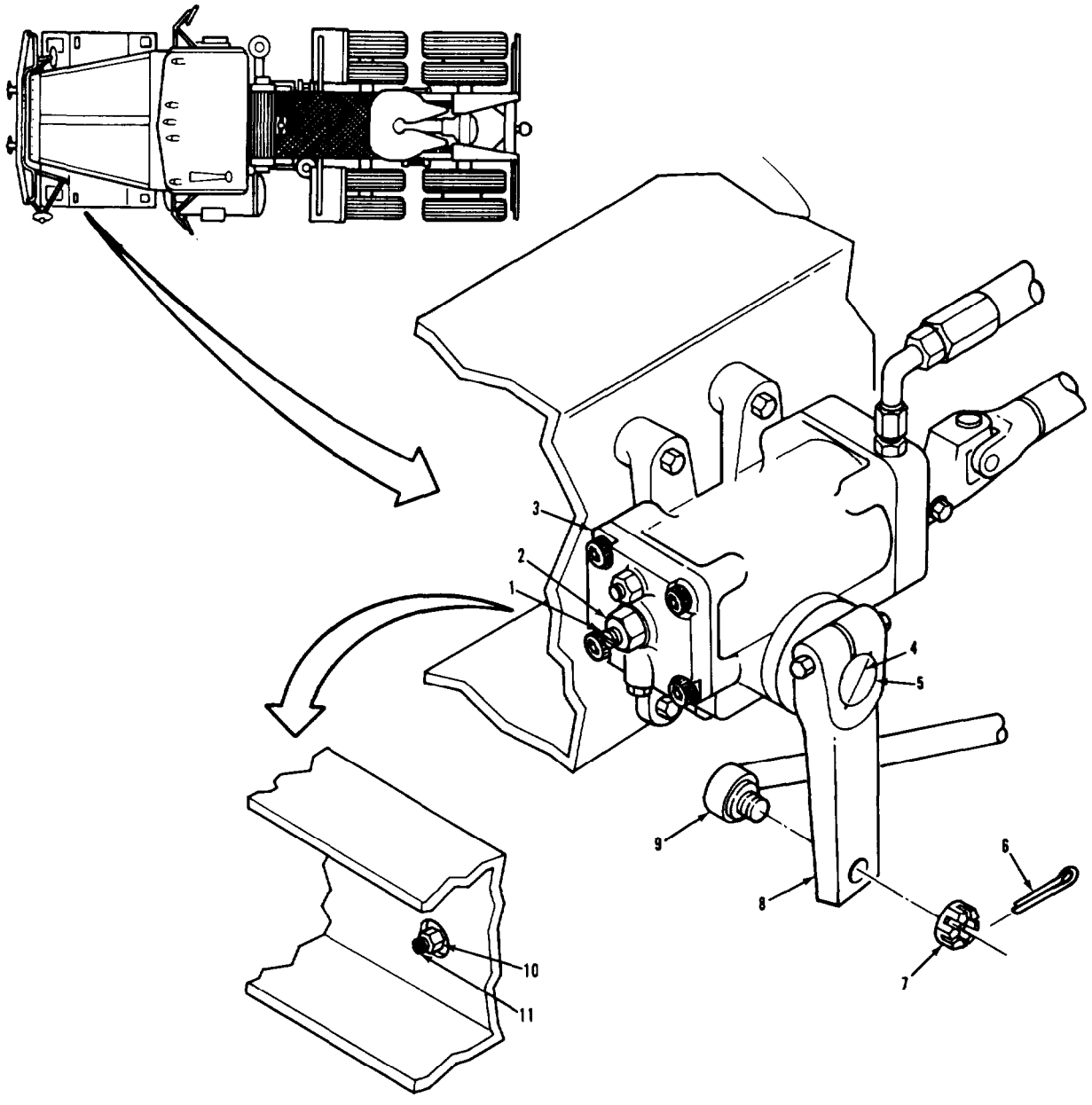
REFERENCES (TM
TM 9-2320-283-10
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).



LEGEND:

1. ADJUSTING SCREW
2. NUT
3. END COVER
4. ALINEMENT MARK
5. SECTOR SHAFT
6. COTTER PIN
7. CASTLE NUT
8. STEERING ARM
9. VERTICAL LINK
10. ADJUSTING SCREW NUT
11. ADJUSTING SCREW

TA 238451

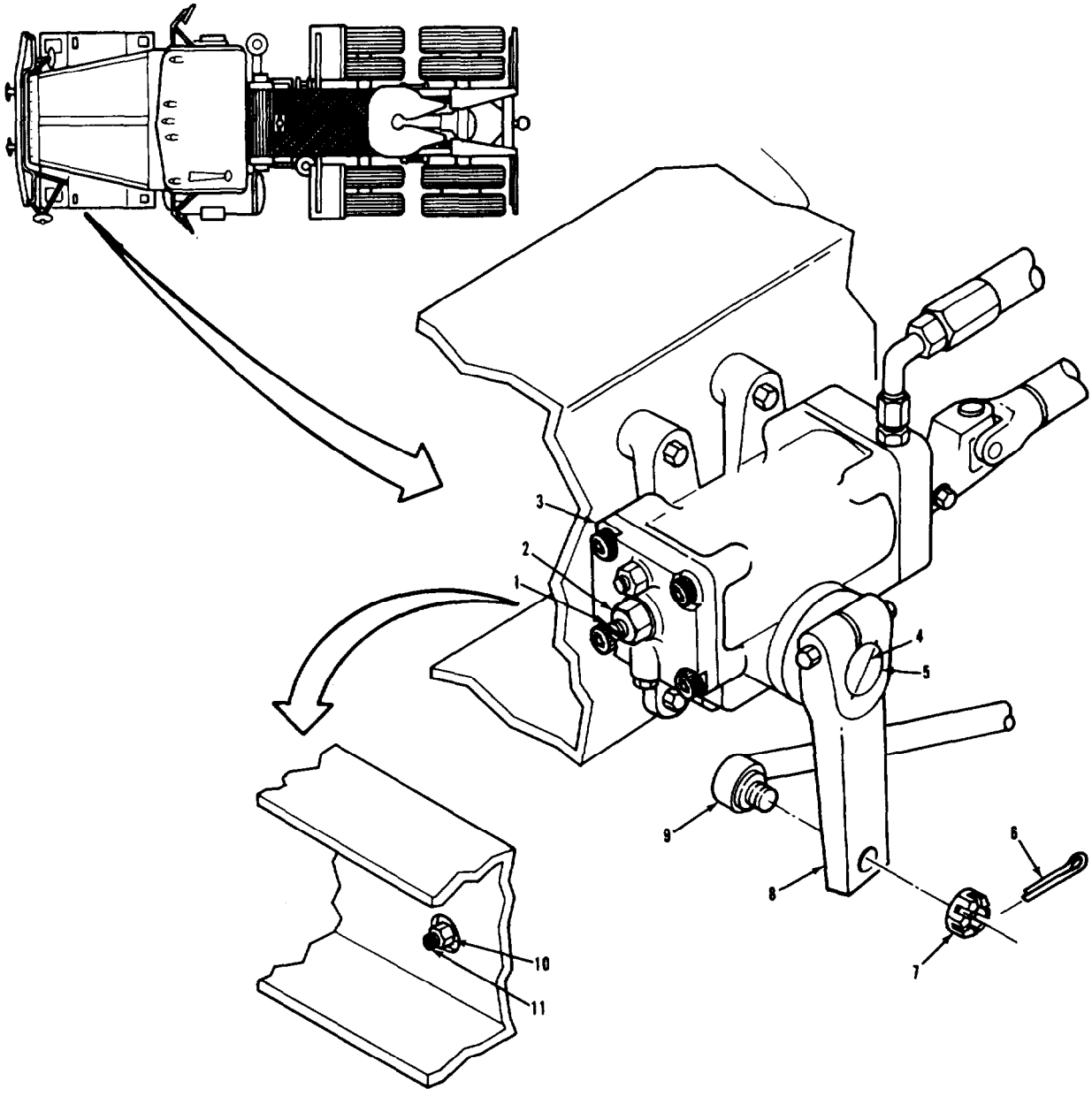
STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. WORM SHAFT PRELOAD ADJUSTMENT		
1. Nut (2).	While holding item (1), unscrew item (2) a few turns, but do not remove.	
2. Screw (1).	a. Unscrew one turn.	
	b. Inspect threads between items (2) and (3).	Clean threads of item (1) if necessary. If sealing material in item (2) has separated, remove items (1) and (2), and discard item (2). Install new item (2) onto non-slotted end of item (1) and install item (1) into item (3).
	c. While assistant lightly moves steering wheel back and forth about one inch total, torque item (1) to 60-70 1b-in..	Make sure item (2) does not tighten against item (3) during this step.
3. Nut (2).	While holding item (1), torque to 70-80 lb-ft.	If sealing material of item (2) has separated, replace item (2) and repeat wormshaft pre-load adjustment (steps 1 thru 3).
B. SECTOR SHAFT ADJUSTMENT		
4. Pin (6).	Remove from items (7) and (9).	Discard item (6).
5. Nut (7) and link (9).	Remove from item (8).	

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).



LEGEND:

1. ADJUSTING SCREW
2. NUT
3. END COVER
4. ALINEMENT MARK
5. SECTOR SHAFT
6. COTTER PIN
7. CASTLE NUT
8. STEERING ARM
9. VERTICAL LINK
10. ADJUSTING SCREW NUT
11. ADJUSTING SCREW

TA 228452

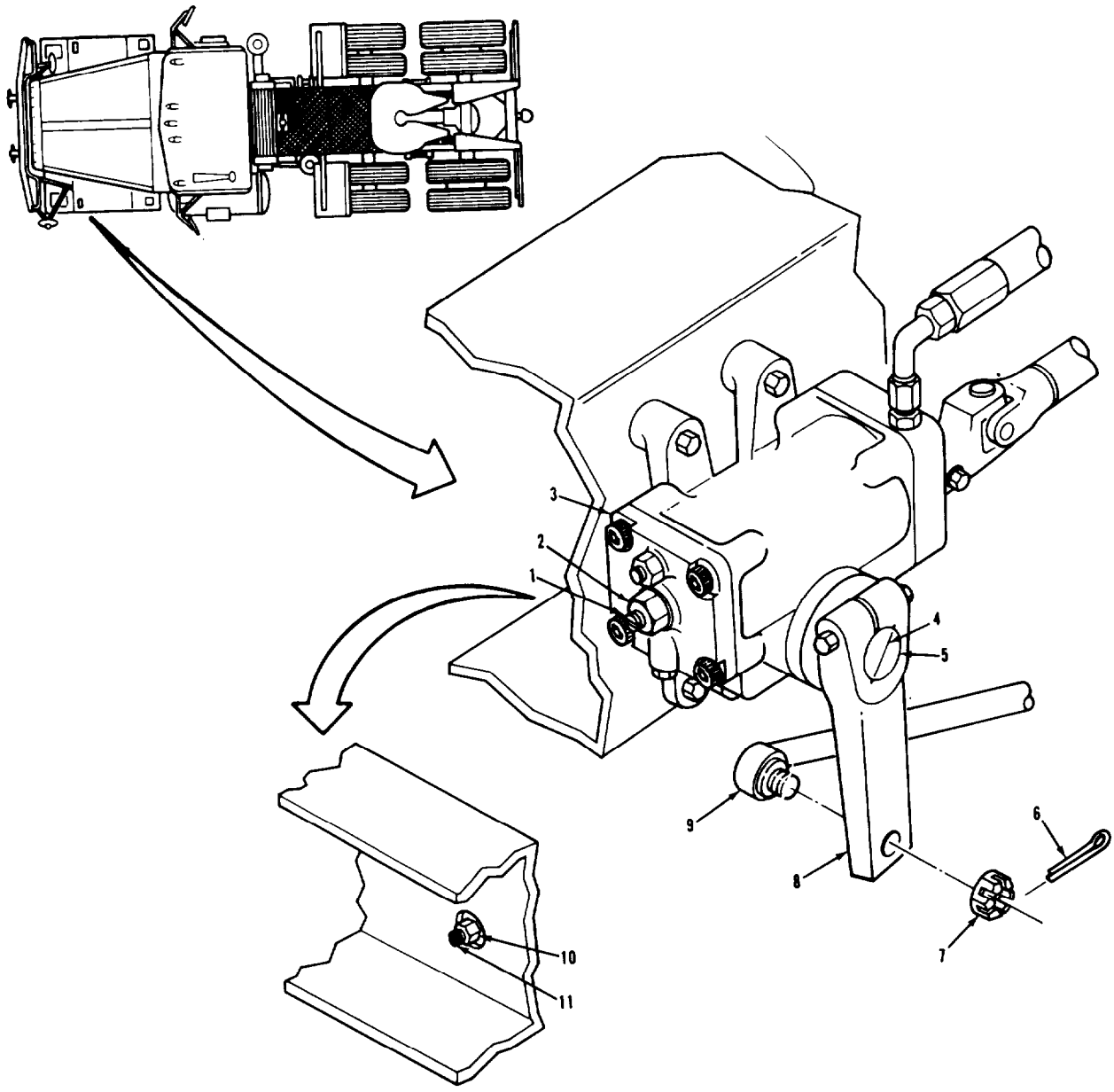
STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. SECTOR SHAFT ADJUSTMENT (Continued).		
6. Shaft (5).	Have assistant rotate steering wheel until item (4) is straight up and down.	Item (5) is on its center of travel when item (4) is straight up and down. This adjustment must be made with item (5) on its center of travel.
7. Arm (8).	Using fingertip force, gently try to move back and forth in direction of travel.	There must be no movement of item (5). If there is movement, adjust item (11) as shown in steps 8 thru 10. If there is no movement, skip steps 8 thru 10 and go to step 11.
8. Nut (10).	While holding item (11), unscrew item (10) a few turns, but do not remove.	
9. Screw (11).	a. Screw in until contact is made, but do not torque to more than 10 lb-ft.	
	b. Unscrew one turn.	
	c. Screw in until no movement of item (5) is felt.	At this point there should be movement of item (5).
10. Nut (10).	While holding item (11), torque to 40-45 lb-ft.	
11. Link (9) and nut (7).	Install on item (8).	When item (11) has been properly torqued, repeat step 7.
12. New pin (6).	Install into items (7) and (9).	Torque item (7) to 120 lb-ft.

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).



LEGEND:

1. ADJUSTING SCREW
2. NUT
3. END COVER
4. ALINEMENT MARK
5. SECTOR SHAFT
6. COTTER PIN
7. CASTLE NUT
8. STEERING ARM
9. VERTICAL LINK
10. ADJUSTING SCREW NUT
11. ADJUSTING SCREW

TA 238483

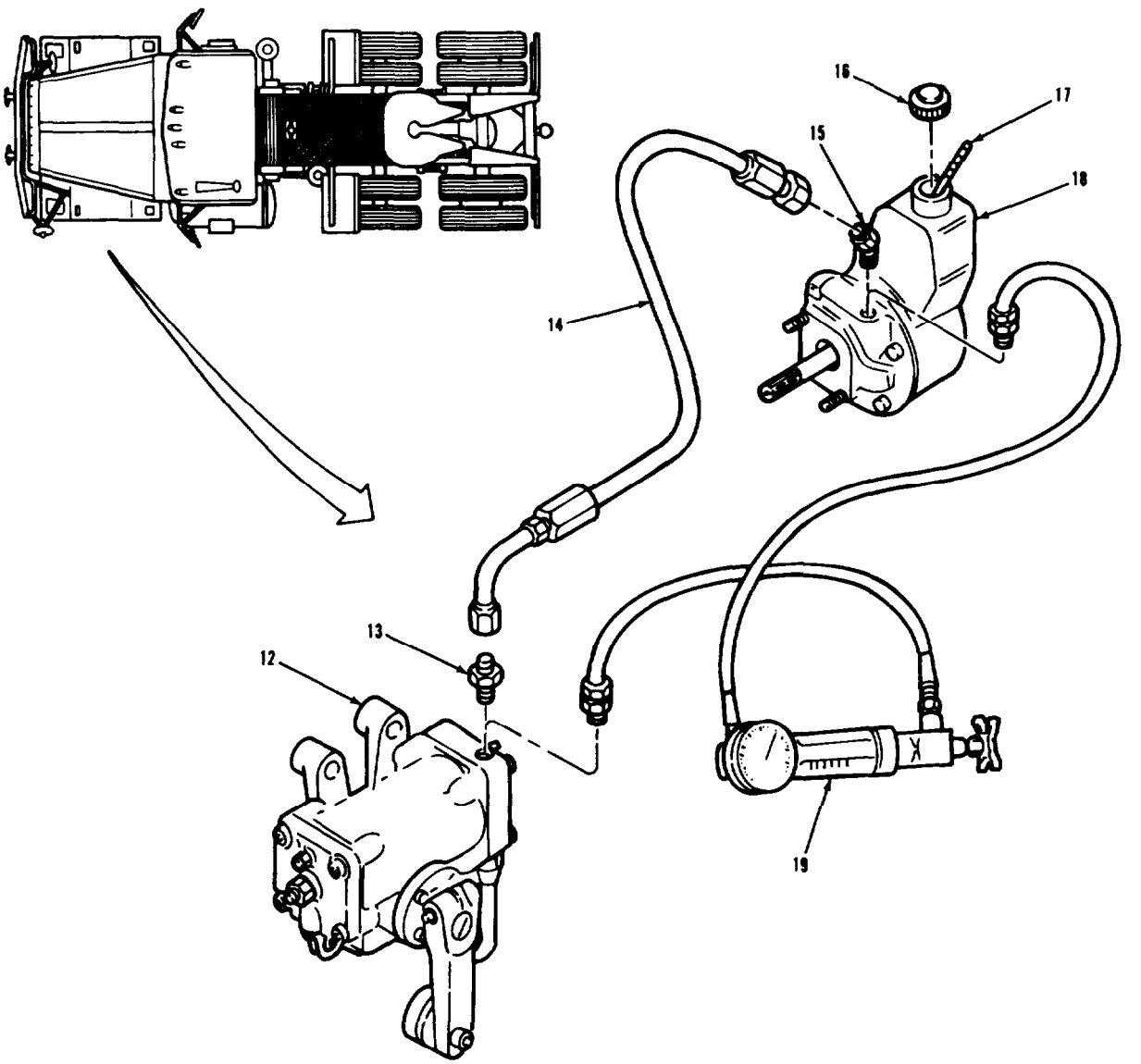
STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued):

LOCATION/ITEM	ACTION	REMARKS
C. POPPET VALVE ADJUSTMENT.		
13. Supply hose (14), elbow (15), and connector (13).	Remove from items (12) and (18).	
14. Analyzer (19).	Install into items (12) and (18) (as shown in illustration).	
15. Cap (16).	Remove from item (18).	
16. Thermometer (17).	Place in item (18).	
	CAUTION Do not close valve of analyzer completely and leave it closed, or the pump may be damaged. At no time should fluid temperature exceed 180•F. To prevent damage from high temperatures, perform this adjustment within a temperature range of 125'F-135'F.	
17. Engine.	Start and let idle at about 600 rpm.	Refer to TM 9-2320-283-10.
18. Analyzer (19).	a. Close valve part way until pressure gage reads 1000 psi. b. When item (17) shows between 125°F and 135°F, open valve.	

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).



LEGEND:

12. STEERING GEAR ASSEMBLY
13. MALE CONNECTOR
14. SUPPLY HOSE ASSEMBLY
15. 45' ELBOW
16. FILLER CAP
17. THERMOMETER
18. POWER STEERING PUMP ASSEMBLY
19. POWER STEERING ANALYZER

TA 238454

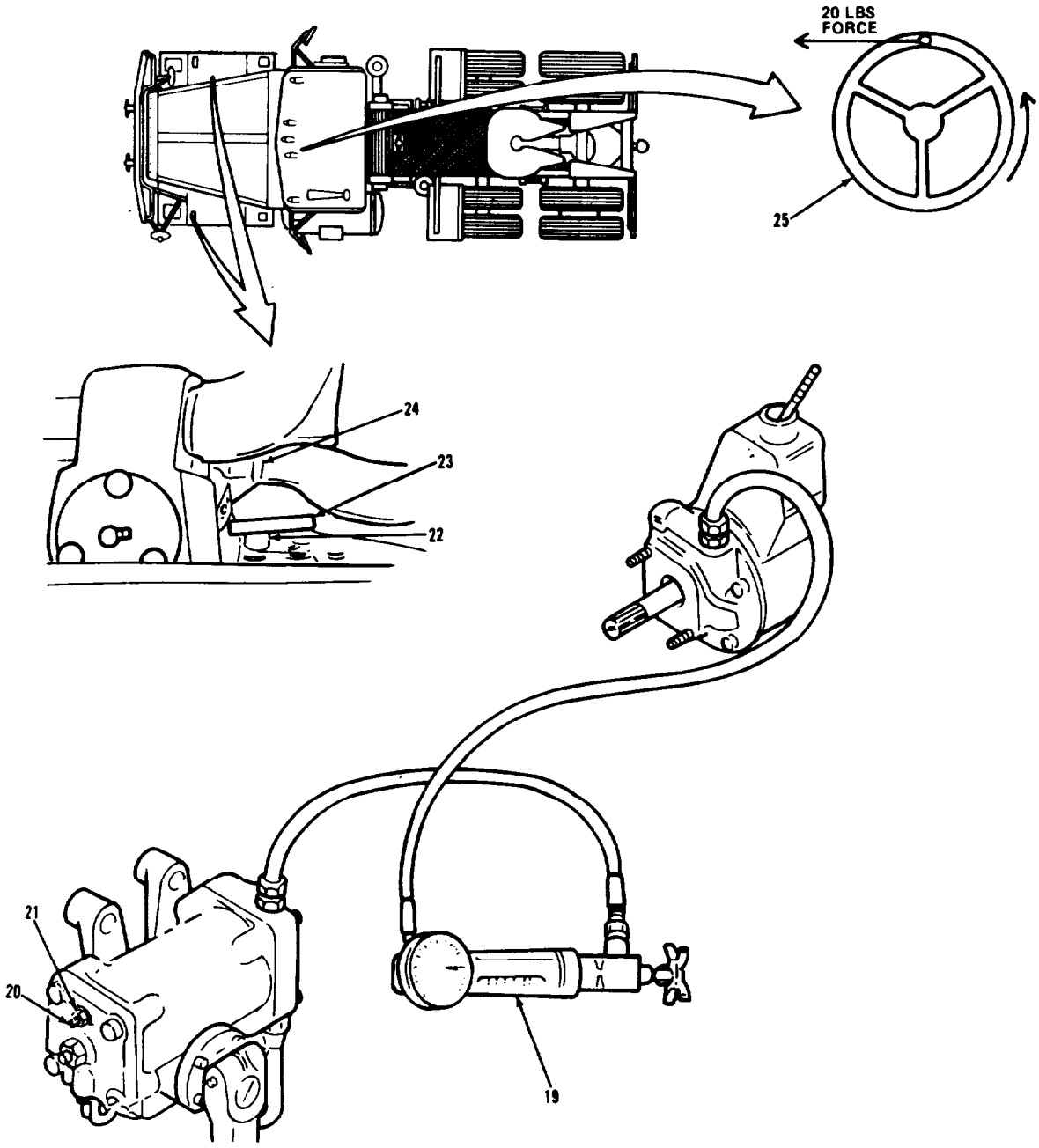
STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. POPPET VALVE ADJUSTMENT (Continued).		
	WARNING To avoid injury, keep fingers clear of axle stop and spacer block during steps 19 and 21.	
	CAUTION Do not hold steering wheel in full turn position for longer than 5 to 10 secondds at a time to avoid damageing steering pump.	
19. Block (23).	Hold between items (22) and (24) on left side of vehicle during step 20a.	
20. Wheel (25).	a. Have assistant turn counterclockwise until item (22) bottoms on item (23).	
	b. Read pressure on item (19), while assistant applies 20 1bs force to rim (see illustration).	Use a suitable spring scale
	c. Loosen item (21) and adjust item (20) until pressure on item (19) is between 700 psi and 900 psi.	When pressure is properly set, hold item (20) and torque item (21) to 12-18 lb-ft.
21. Block (23).	Hold between items (22) and (24) on right side of vehicle during step 22a.	

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).



LEGEND:

19. POWER STEERING ANALYZER
20. ADJUSTING SCREW
21. NUT
22. AXLE STOP
23. 3/16-INCH SPACER BLOCK
24. STEERING ARM
25. STEERING WHEEL

TA 238455

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. POPPET VALVE ADJUSTMENT (Continued).		
22. Wheel (25).	a. Have assistant turn clockwise until item (22) bottoms on item (23).	
	b. Read pressure on item (19), while assistant applies 20 1bs force to rim (see illustration).	Use a suitable spring scale.
	c. Loosen item (27) and adjust item (26) until pressure on item (19) is between 700 psi and 900 psi.	When pressure is properly set, hold item (26) and torque item (27) to 8-11 lb-ft.
23. Block (23).	Remove.	
24. Engine.	Shutdown.	Refer to TM 9-2320-283-10.
25. Thermometer (17).	Remove from item (18).	
26. Cap (16).	Install onto item (18).	
27. Analyzer (19).	Remove from items (12) and (18) l	
28. Elbow (15) connector (13), and supply hose assembly (14).	Install on items (12) and (18) (as shown in illustration).	

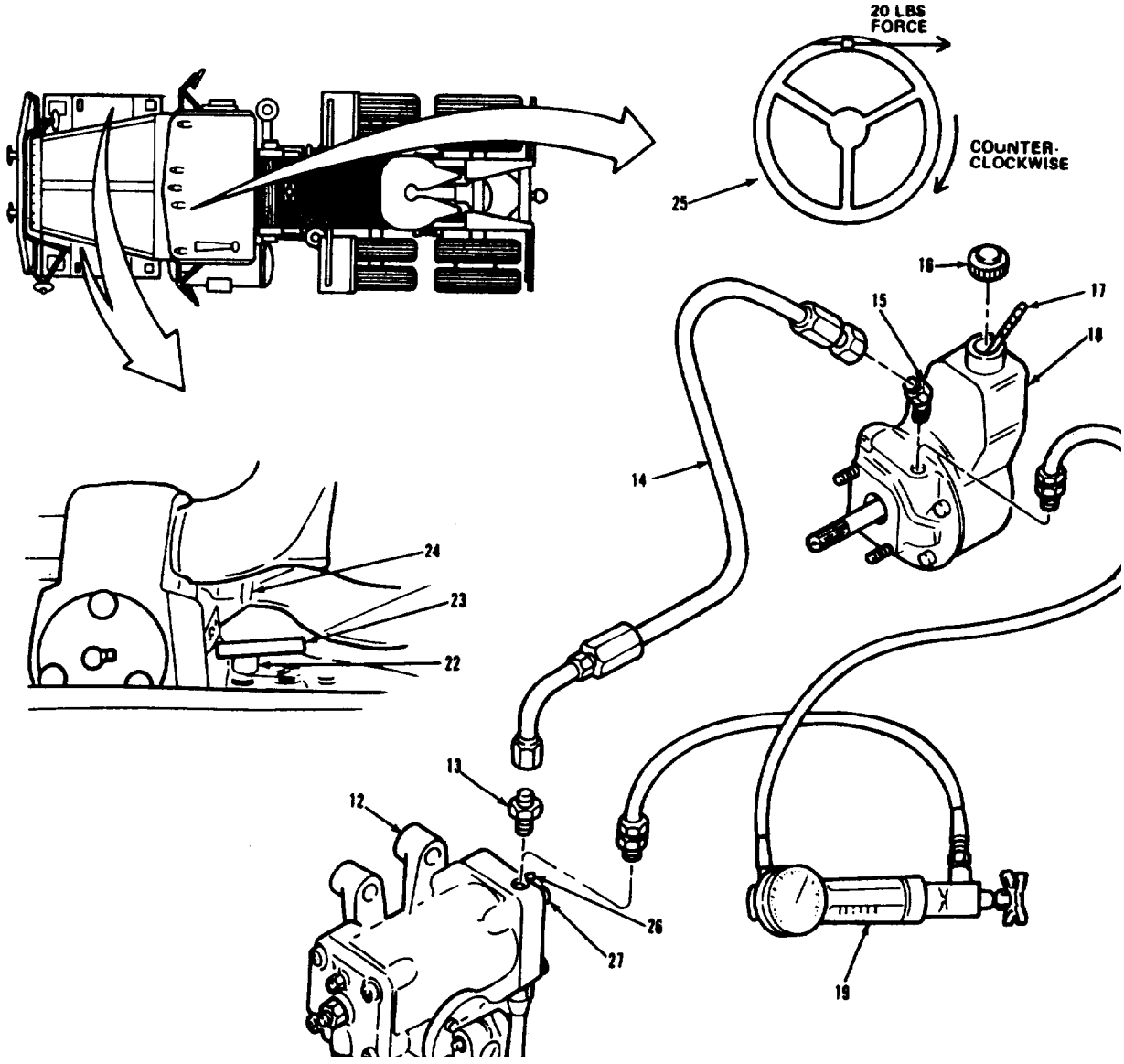
NOTE

Follow-on maintenance action required:

Operate vehicle and check steering system for leaks and proper operation (TM 9-2320-283-10).

STEERING SYSTEM.

3-92. STEERING GEAR ADJUSTMENT (Continued).



LEGEND:

12. STEERING GEAR ASSEMBLY
13. MALE CONNECTOR
14. SUPPLY HOSE ASSEMBLY
15. 45' ELBOW
16. FILLER CAP
17. THERMOMETER
18. POWER STEERING PUMP ASSEMBLY
19. POWER STEERING ANALYZER
22. AXLE STOP
23. 3/16-INCH SPACER BLOCK
24. STEERING ARM
25. STEERING WHEEL
26. ADJUSTING SCREW
27. HEXAGON NUT

TA 238456

STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
TM 9-2320-283-10

CONDITION DESCRIPTION
Front wheels turned completely to left.

TEST EQUIPMENT

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

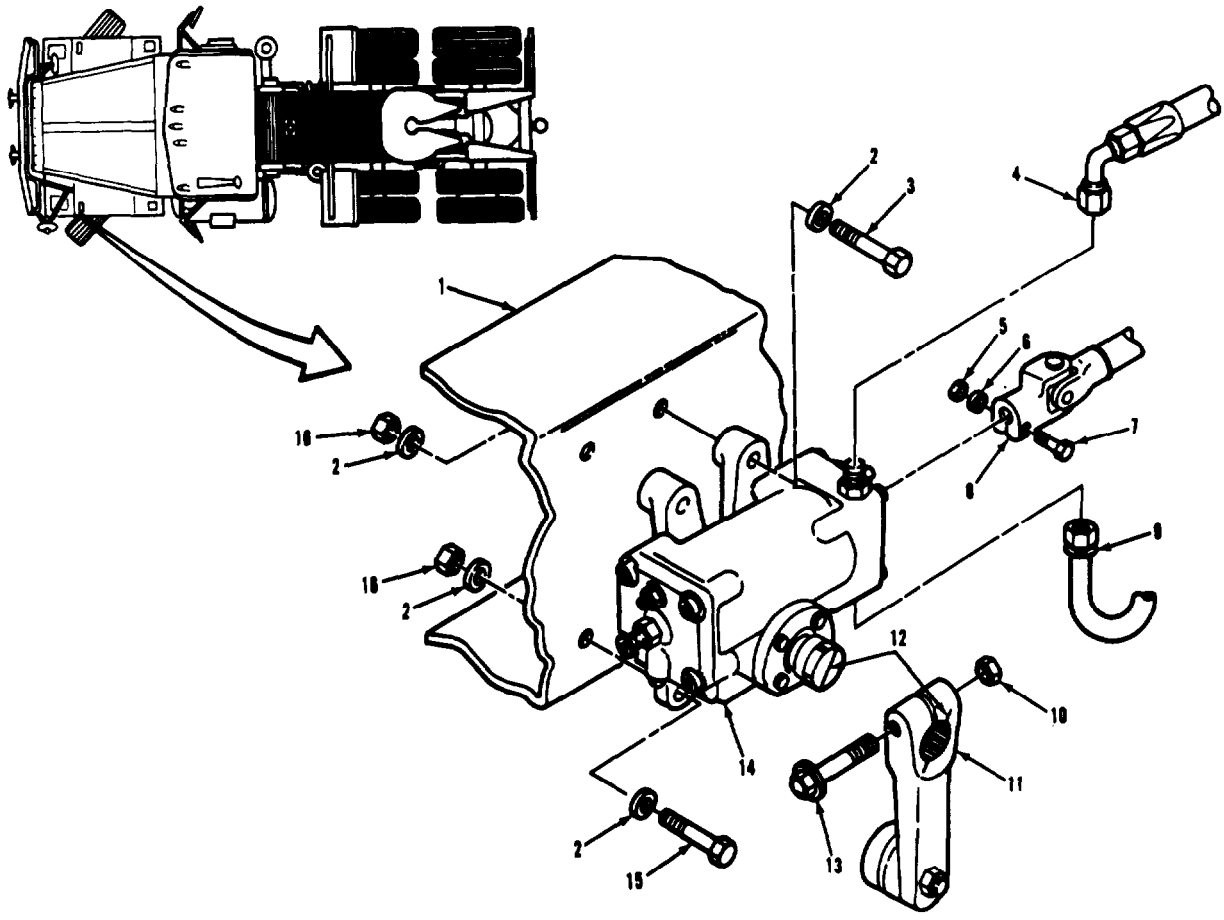
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
Block rear wheels.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. PLAIN WASHER (8)
3. HEXAGON HEAD BOLT (3)
4. SUPPLY HOSE ASSEMBLY
5. HEXAGON NUT
6. LOCKWASHER
7. CAPSCREW
8. YOKE
9. GEAR TO COOLER TUBE ASSEMBLY
10. NUT
11. STEERING ARM
12. ALINEMENT MARK (2)
13. FLANGE HEAD BOLT
14. STEERING GEAR ASSEMBLY
15 HEXAGON HEAD BOLT
16. PREVAILING TORQUE NUT (4)

TA 238457

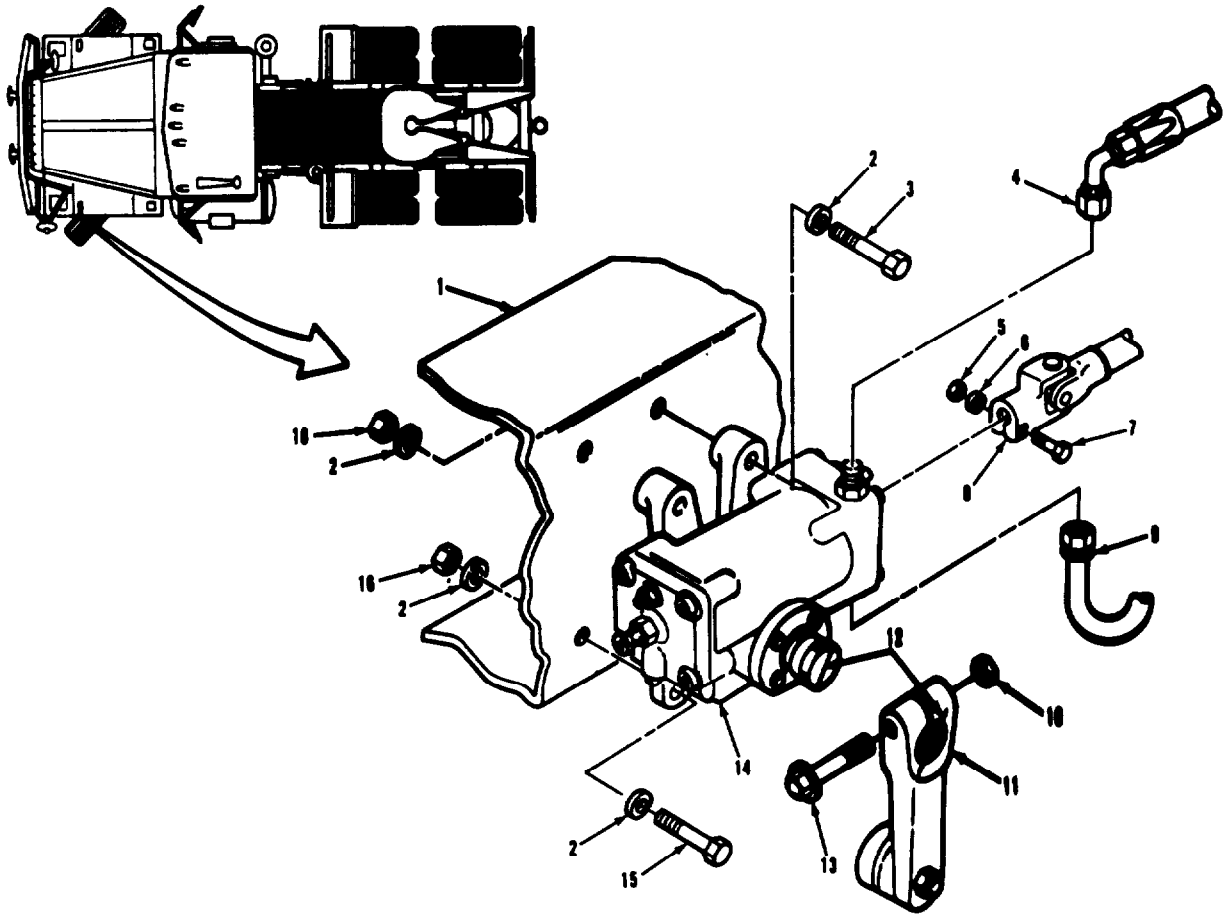
STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Supply hose assembly (4) and gear to cooler tube assembly (9).	Disconnect from item (14).	Use a suitable container to catch power steering fluid from items (4), (9), and (14). When fluid stops draining, plug items (4) and (9), and cap openings in item (14).
2, Nut (5), lockwasher (6), and capscrew (7).	Remove from item (8).	
3, Yoke (8).	Remove from item (14).	
4. Nut (10) and bolt	Remove from item (11).	
5. Arm (11).	Remove from shaft of item (14).	Put alinement marks (12) on item (11) and shaft of item (14), if not already done. Use a suitable puller to remove item (11), if necessary.
	WARNING Steering gear assembly is heavy. To avoid injury, be very careful and have assistant help when removing steering gear assembly.	
6. Four nuts (16), six washers (2), and two lower bolts (15).	Remove from items (14) and (1).	Have assistant hold item (14) against item (1) during this step. Do not remove item (3) and upper item (15) until next step.

STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. PLAIN WASHER (8)
3. HEXAGON HEAD BOLT (3)
4. SUPPLY HOSE ASSEMBLY
5. HEXAGON NUT
6. LOCKWASHER
7. CAPSCREW
8. YOKE
9. GEAR TO COOLER TUBE ASSEMBLY
10. NUT
11. STEERING ARM
12. ALINEMENT MARK (2)
13. FLANGE HEAD BOLT
14. STEERING GEAR ASSEMBLY
15. HEXAGON HEAD BOLT
16. PREVAILING TORQUE NUT (4)

TA 238456

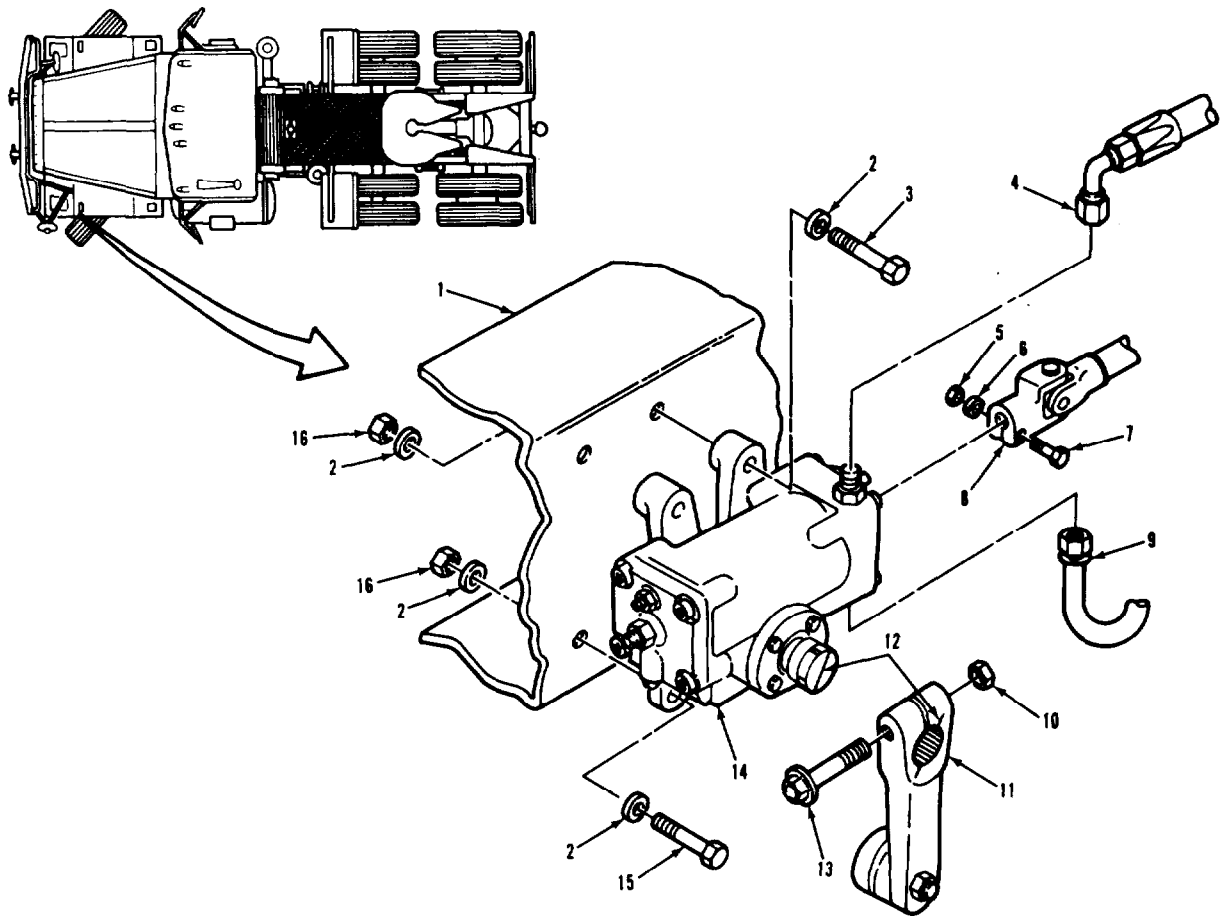
STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
7. Steering ear assembly (14), bolt (3), bolt (15), and two washers (2).	Remove from item (1).	Have assistant help remove item (14).
8. Steering gear assembly (14).	Drain out remaining steering fluid into suitable container.	Do this step only when repairing item (14).
B. CLEANING AND INSPECTION.		
9. All parts.	Clean.	Refer to paragraph 3-4, Clean outside of item (14) only.
10. All parts.	Inspect.	Refer to paragraph 3-5. If item (14) is damaged, refer to paragraph 3-93 for replacement procedure.
C. INSTALLATION.		
	WARNING Steering gear assembly is heavy. To avoid injury, be very careful and have assistant help when Installing steering gear assembly.	
11. Two bolts (3) and washers (2).	Install into top mounting holes of Item (14) and hold in place.	
12. Steering gear assembly (14), with two bolts (3), bolt (15), and two washers (2).	Install item (14) onto item (1) and push item (3) into upper holes In Item (1).	Have assistant help install item (14) and hold in place while doing next step.

STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. PLAIN WASHER (8)
3. HEXAGON HEAD BOLT (3)
4. SUPPLY HOSE ASSEMBLY
5. HEXAGON NUT
6. LOCKWASHER
7. CAPSCREW
8. YOKE
9. GEAR TO COOLER TUBE ASSEMBLY
10. NUT
11. STEERING ARM
12. ALINEMENT MARK (2)
13. FLANGE HEAD BOLT
14. STEERING GEAR ASSEMBLY
15. HEXAGON HEAD BOLT
16. PREVAILING TORQUE NUT (4)

TA 238459

STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).

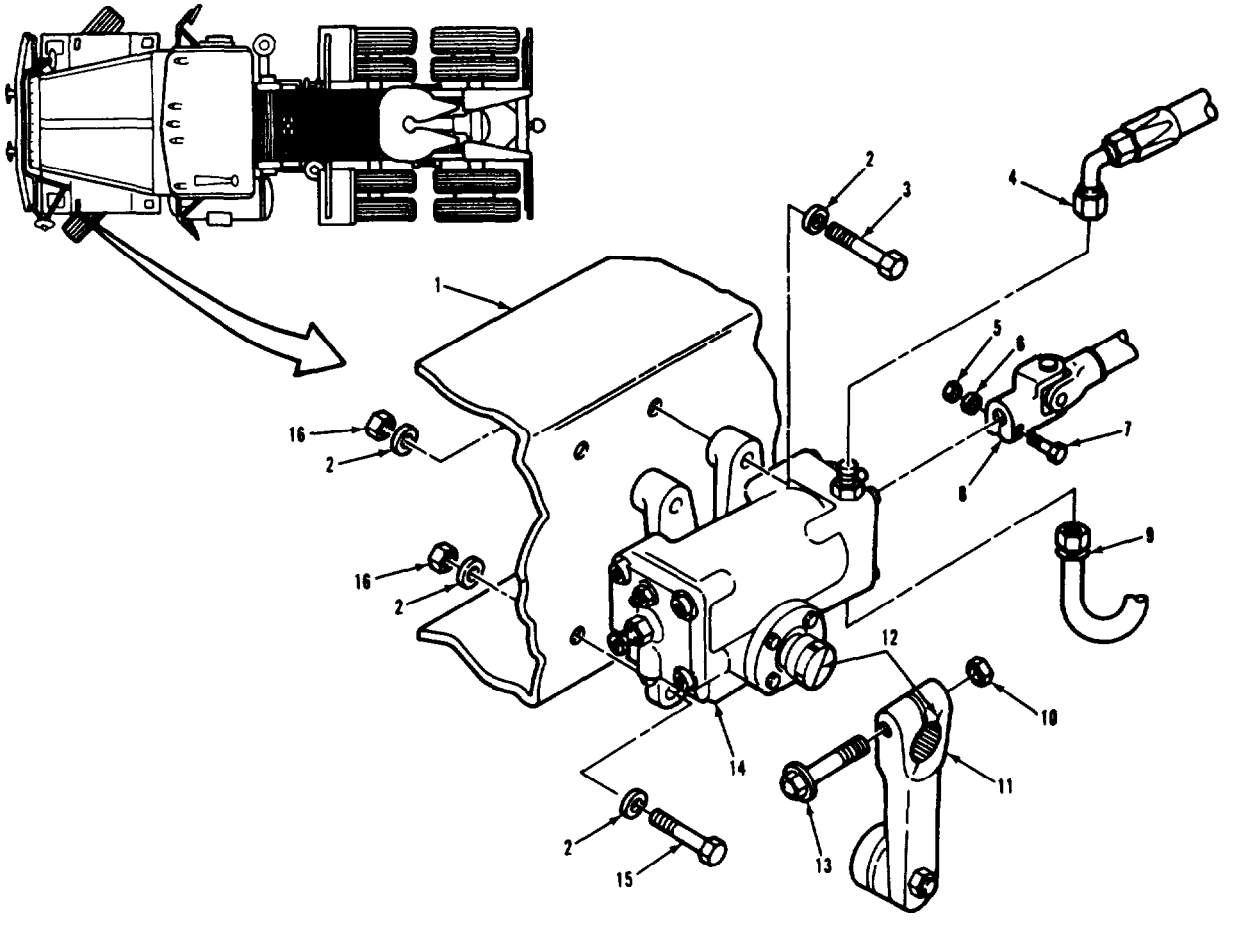
LOCATION/ ITEM	ACTION	REMARKS
C. INSTALLATION (Continued).		
13. Two nuts (16) and washers (2).	Install on items (3).	Screw in until snug, but do not tighten. Assistant is no longer needed after this step.
14. Two bolts (3) and (15), washers (2), and nuts (16).	Install into items (14) and (1).	Torque all four items (16) to 260-280 1b-ft.
15. Yoke (8).	Install onto shaft on end of item (14).	
16. Capscrew (7). lockwasher (6), and nut (5).	Install into item (8).	Torque item (5) to 35 lb-ft.
17. Arm (11).	a. Drive a wedge into slot to open it up slightly. b. Rotate item (8) until alinement marks (12) on item (11) and shaft of item (14) line up. c. Using a soft faced hammer, tap item (11) onto shaft of item (14). d. When item (11) has been properly installed, remove wedge.	
18. Bolt (13) and nut (10).	Install into item (11).	Torque item (10) to 380-420 lb-ft.

NOTE

Follow-on maintenance action required:
Fill and bleed steering system (TM 9-2320-283-20).
If steering gear is new or repaired, adjust poppet valves (para 3-92).

STEERING SYSTEM.

3-93. STEERING GEAR REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. PLAIN WASHER (8)
3. HEXAGON HEAD BOLT (3)
4. SUPPLY HOSE ASSEMBLY
5. HEXAGON NUT
6. LOCKWASHER
7. CAPSCREW
8. YOKE
9. GEAR TO COOLER TUBE ASSEMBLY
10. NUT
11. STEERING ARM
12. ALINEMENT MARK (2)
13. FLANGE HEAD BOLT
14. STEERING GEAR ASSEMBLY
15. HEXAGON HEAD BOLT
16. PREVAILING TORQUE NUT (4)

TA 238460

STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
ALL.	TM 9-2320-283-20.	Steering pump and reservoir-removed.

TEST EQUIPMENT

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Grease, automotive and artillry
Item 7, Appendix B.
Seal washer (4)
(19954) ER-93765.
Gasket
(19954) ER-82141.
Filter
(19954) ER-93983.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

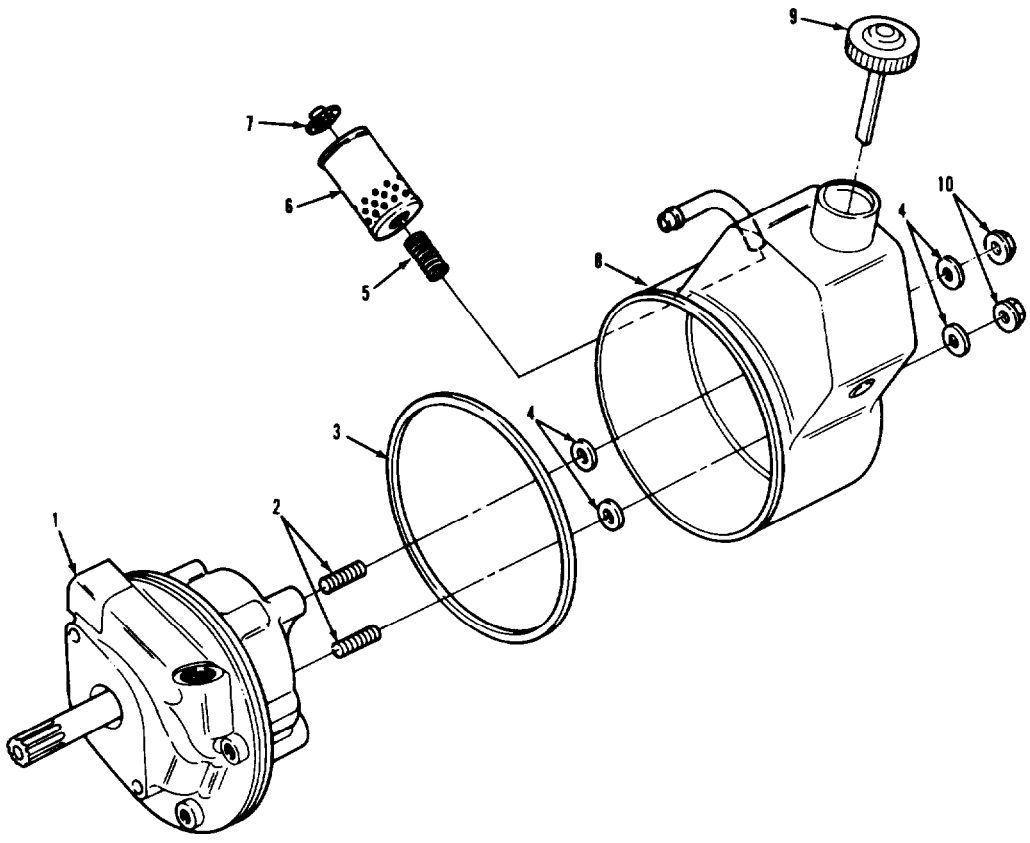
REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
hone.

TROUBLESHOPOING REFERENCES
None.

STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).



LEGEND:

1. BASE PUMP ASSEMBLY
2. RESERVOIR STUD (2)
3. GASKET
4. SEAL WASHER (4)
5. FILTER SPRING
6. FILTER
7. CUP AND SPACER
8. RESERVOIR
9. FILLER CAP
10. HEXAGON FLANGE NUT

TA 238461

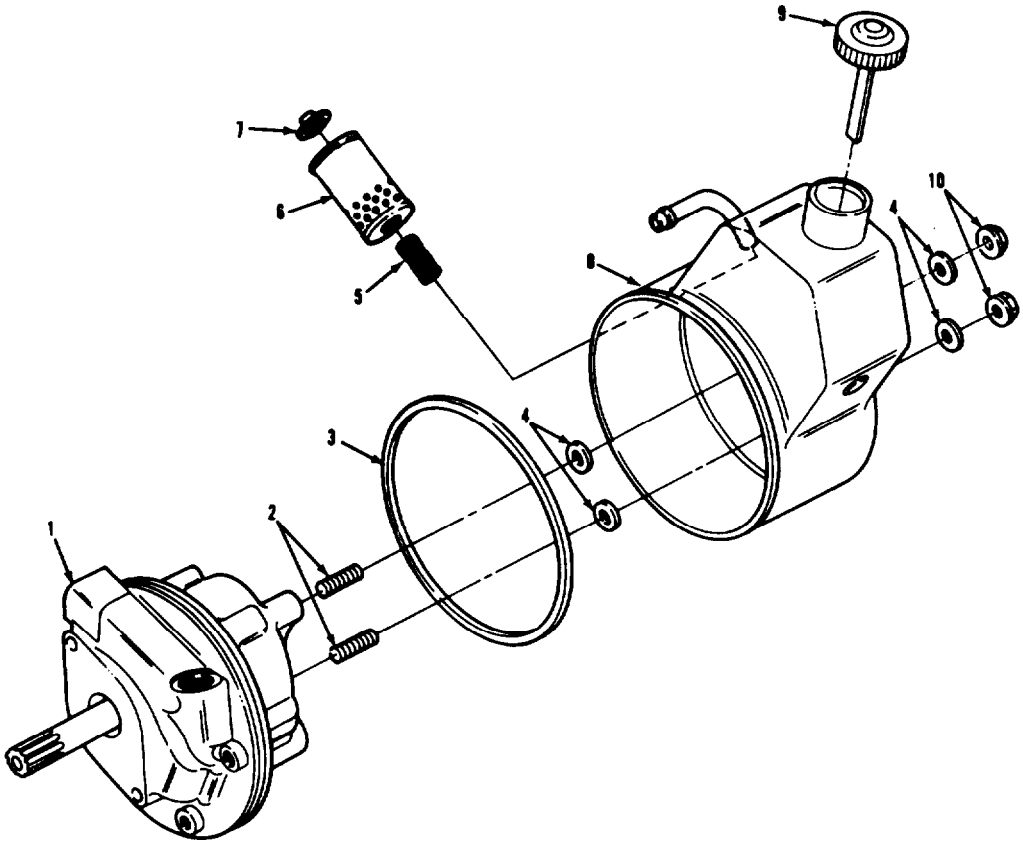
STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	NOTE Before disassembling steering pump and reservoir, make sure external surfaces are clean.	
1. Cap (9).	Remove from item (8).	
2. Reservoir (8).	Drain any remaining oil into suitable container.	
	CAUTION To avoid damage to pump and reservoir, do not clamp in a vise.	
3. Two nuts (10) and washers (4).	Remove from two items (2) and item (8).	Discard items (4).
	CAUTION To avoid damage to reservoir, do not pry it off of pump.	
4. Reservoir (8).	a. Note position of item (1).	Mark item (1) and (8) for proper alinement during reassembly.
	b. Carefully remove from item (1) by gently tapping side with soft-faced hammer or mallet.	Have suitable container ready to catch oil when item (8) is removed.

STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).



LEGEND:

1. BASE PUMP ASSEMBLY
2. RESERVOIR STUD (2)
3. GASKET
4. SEAL WASHER (4)
5. FILTER SPRING
6. FILTER
7. CUP AND SPACER
8. RESERVOIR
9. FILLER CAP
10. HEXAGON FLANGE NUT

TA 23846

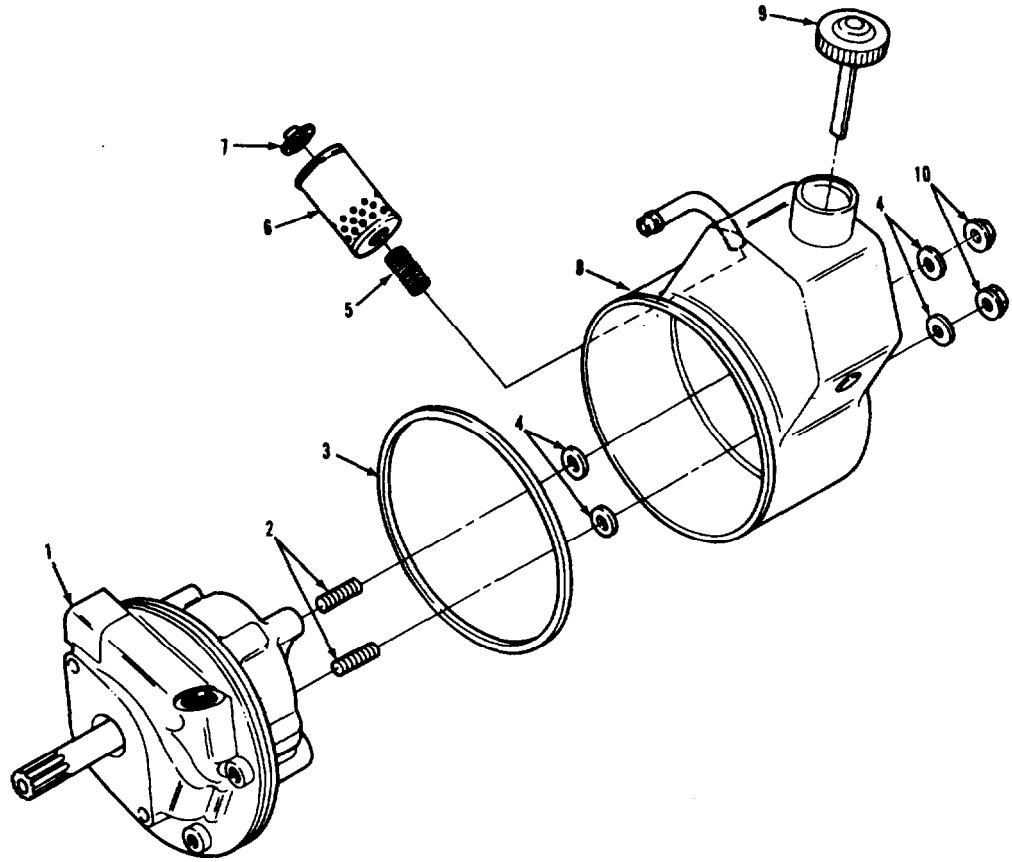
STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
5. Gasket (3) and two washers (4).	Remove from item (1) or item (8).	Discard items (3) and (4).
6. Two studs (2).	Remove from item (1).	Remove items (2) only if damaged.
7. Spring (5).	Using screwdriver, pry out from items (6) and (8).	
8. Filter (6) and cup and spacer (7).	Remove from item (8).	Discard item (6).
B. CLEANING AND INSPECTION.		
9. All parts.	Clean and inspect.	Refer to paragraphs 3-4 and 3-5. Clean outside only of item (1).
C. ASSEMBLY.		
	NOTE Before assembling pump and reservoir, make sure all parts are clean.	
10. New filter (6) and cup and spacer (7).	a. Place item (7) on open end of item (6).	
	b. Install items (6) and (7) into item (8).	Make sure item (7) fits over end of item (11) on the inside of item (8).
11. Spring (5).	Install into closed end of item (6) and push items (5) and (6) into position in item (8).	

STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).



LEGEND:

1. BASE PUMP ASSEMBLY
2. RESERVOIR STUD (2)
3. GASKET
4. SEAL WASHER (4)
5. FILTER SPRING
6. FILTER
7. CUP AND SPACER
8. RESERVOIR
9. FILLER CAP
10. HEXAGON FLANGE NUT

TA 238463

STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
12. Two studs (2).	Install into item (1).	If removed during step 6.
13. New gasket (3).	a. Install on item (1) with color side facing out.	
	b. Coat with a small amount of clean grease.	This is done to hold item (3) in place during assembly of items (1) and (8).
14. Two new washers (4).	Place on two items (2).	
15. Reservoir (8).	Carefully aline and place on item (1).	Some tapping with a soft-faced hammer or mallet may be necessary to position reservoir properly.
16. Two nuts (10) and two new washers (4).	Screw onto two items (2).	Torque items (10) to 20-30 lb-ft.
17. Cap (9).	Install into item (8).	

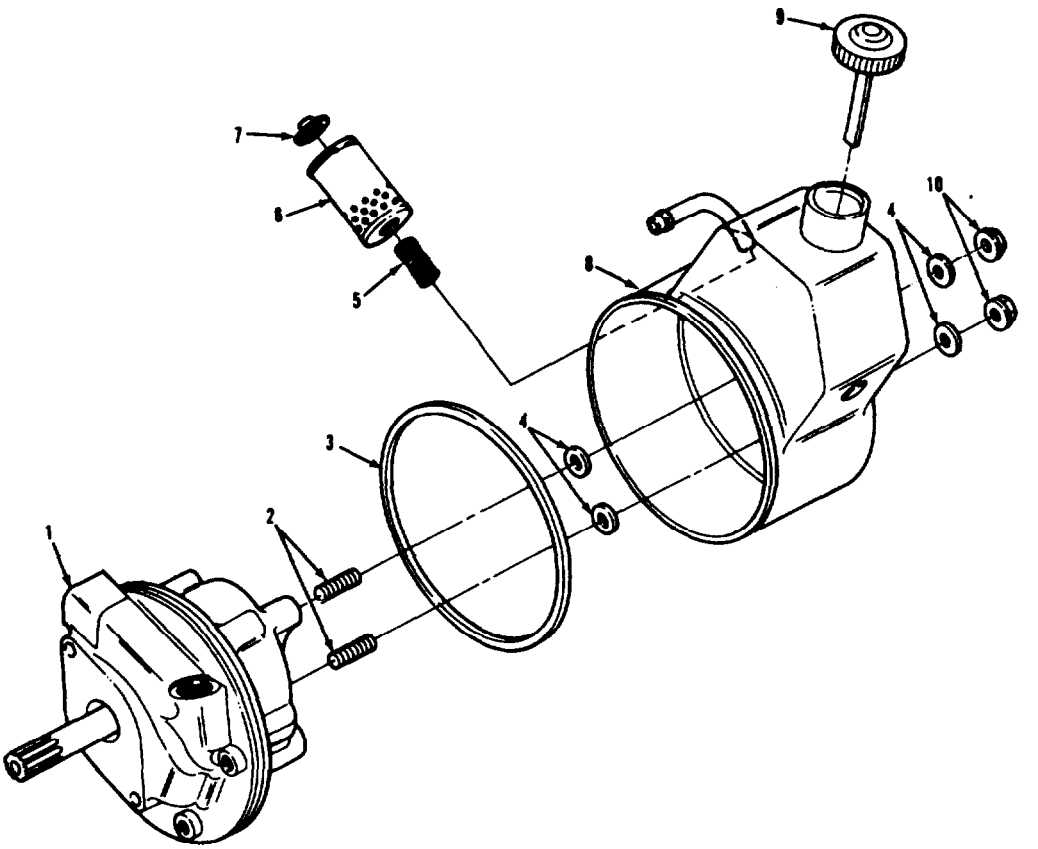
NOTE

Follow-on maintenance action required:

Install steering pump and reservoir (TM 9-2320-283-20).
Fill and bleed steering system (TM 9-2320-283-20).
Check steering pun operation (TM 9-2320-283-20).

STEERING SYSTEM.

3-94. STEERING PUMP AND RESERVOIR REPAIR (Continued).



LEGEND:

1. BASE PUMP ASSEMBLY
2. RESERVOIR STUD (2)
3. GASKET
4. SEAL WASHER (4)
5. FILTER SPRING
6. FILTER
7. CUP AND SPACER
8. RESERVOIR
9. FILLER CAP
10. HEXAGON FLANGE NUT

TA 238464

Section XII. FRAME AND TOWING ATTACHMENTS

3-95 GENERAL.

This section provides procedures authorized at direct and general support maintenance levels to replace and repair frame and towing attachment components. Frame rails and crossmembers are not covered in this manual. Refer to TB 9-2300-247-40 for frame rail and crossmember maintenance and repair. Simplified maintenance procedures should be locally devised depending on environmental conditions and geographical location.

3-96. TASK SUMMARY,

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
ATT.	(Refer to specific paragraph for this information).	

TEST EQUIPMENT
None.

SPECIAL TOOLS
Slider spring compressor
(74410) TLN-2500.

MATERIALS/PARTS (P/N)
Grease, automotive and artillery
Item 7, Appendix B.
Cotter pin (2)
(77410) XB-16.
Cotter pin (2)
(77410) XB-5.
Lock kit (for replacement of lock only)
(74410) 63503).
Fifth wheel rebuild kit (for complete rebuild only)
(77410) 63506.

PERSONNEL REQUIRE0
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

FRAME AND TOWING ATTACHMENTS.

3-96. TASK SUMMARY (Continued).

INITIAL SETUP

REFERENCES (TM)
TM 9-2320-283-20
TM 9-2320-283-34;.
LO 9-2320-283-12.

TROUBLESHOOTING REFERENCES
None.

GENERAL SAFETY INSTRUCTIONS
Fifth wheel assembly is very heavy. To avoid personal injury, use suitable lifting device and be careful when repairing fifth wheel.

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
	Fifth Wheel Repair	3-97	
	a. Disassembly.	3-97a	
	b. Cleaning and Inspection.	3-97b	
	c. Assembly.	3-97c	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
ALL.	TM 9-2320-283920.	Fifth wheel removed.

TEST EQUIPMENT

SPECIAL TOOLS
Slider spring compressor
(74410) TLN-2500.

MATERIALS/PARTS (P/N)
Grease. automotive and artillery
Item 7, Appendix B.
Cotter pin (2)
(74410) XB-16.
Cotter pin (2)
(74410) XB-5.
Lock kit (for replacement of lock only)
(74410) 63503.
Fifth wheel rebuild kit (for complete rebuild only)
(74410) 63506.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

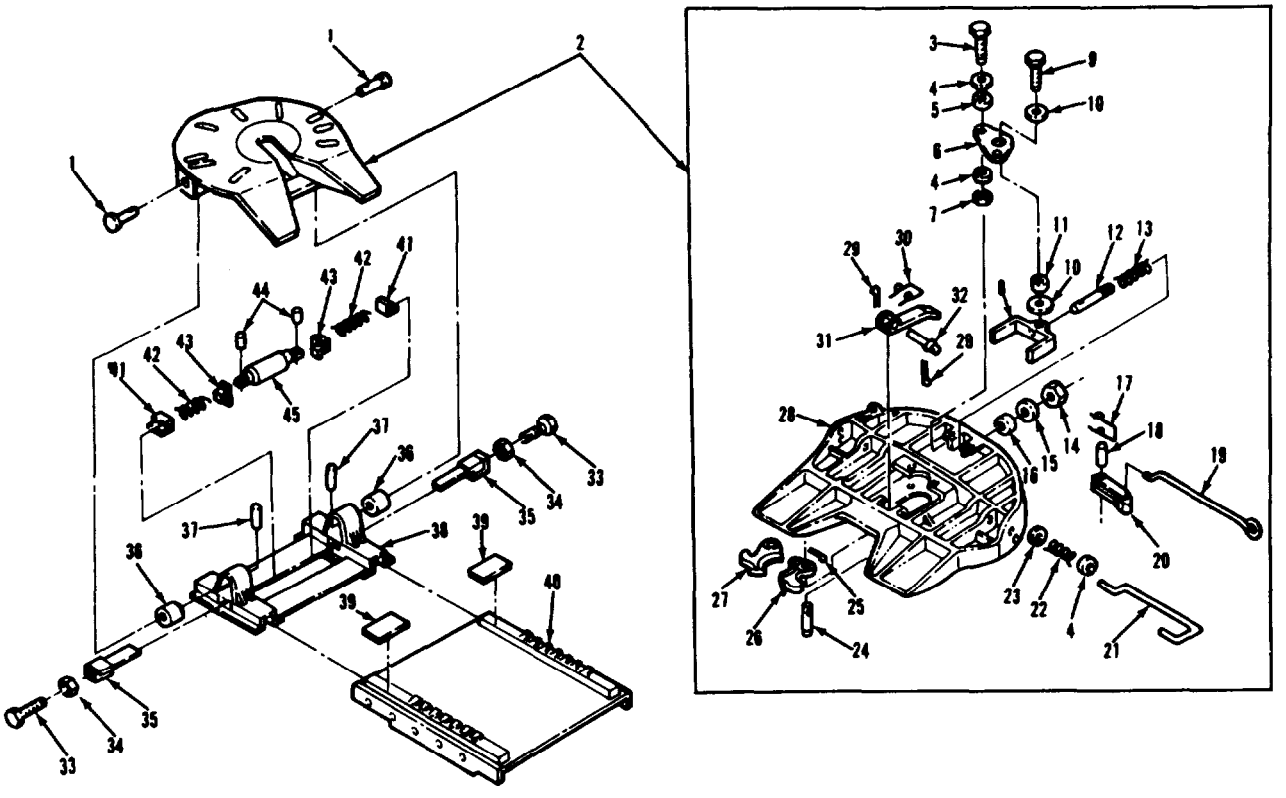
REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.
LO 9-2320-283-12.
TB 9-237.

GENERAL SAFETY INSTRUCTIONS
Fifth wheel assembly is very heavy. To avoid personal injury, use suitable lifting device and be careful when repairing fifth wheel.

TROUBLESHOOTING REFERENCES
Paragraph 2-7.

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).



LEGEND:

1. BRACKET PIN (2)
2. FIFTH WHEEL ASSEMBLY
3. HEXAGON HEAD SCREW
4. WASHER (3)
5. ROLLER
6. CAM PLATE
7. HEXAGON HEAD NUT
8. YOKE
9. HEXAGON HEAD SCREW
10. WASHER (2)
11. ROLLER
12. YOKE SHANK
13. YOKE SPRING
14. HEXAGON HEAD NUT
15. WASHER
16. RUBBER BLOCK
17. SPRING
18. ROLLED PIN
19. SECONDARY LOCK HANDLE
20. SECONDARY LOCK
21. RELEASE HANDLE
22. SPRING
23. WASHER
24. LOCK PIN (2)
25. COTTER PIN (2)
26. LEFT-HAND LOCKJAW
27. RIGHT-HAND LOCKJAW
28. FIFTH WHEEL PLATE
29. COTTER PIN (2)
30. TORSION SPRING
31. LOCK GUARD
32. PIN
33. ADJUSTING SCREW (2)
34. NUT (2)
35. PLUNGER (2)
36. RUBBER CUSHION (2)
37. ROLLED PIN (2)
38. SLIDE BRACKET
39. STOP (2)
40. BASE PLATE ASSEMBLY
41. SPRING STOP (2)
42. SPRING (2)
43. SPRING RETAINER (2)
44. PIN (2)
45. AIR CYLINDER

TA 238465

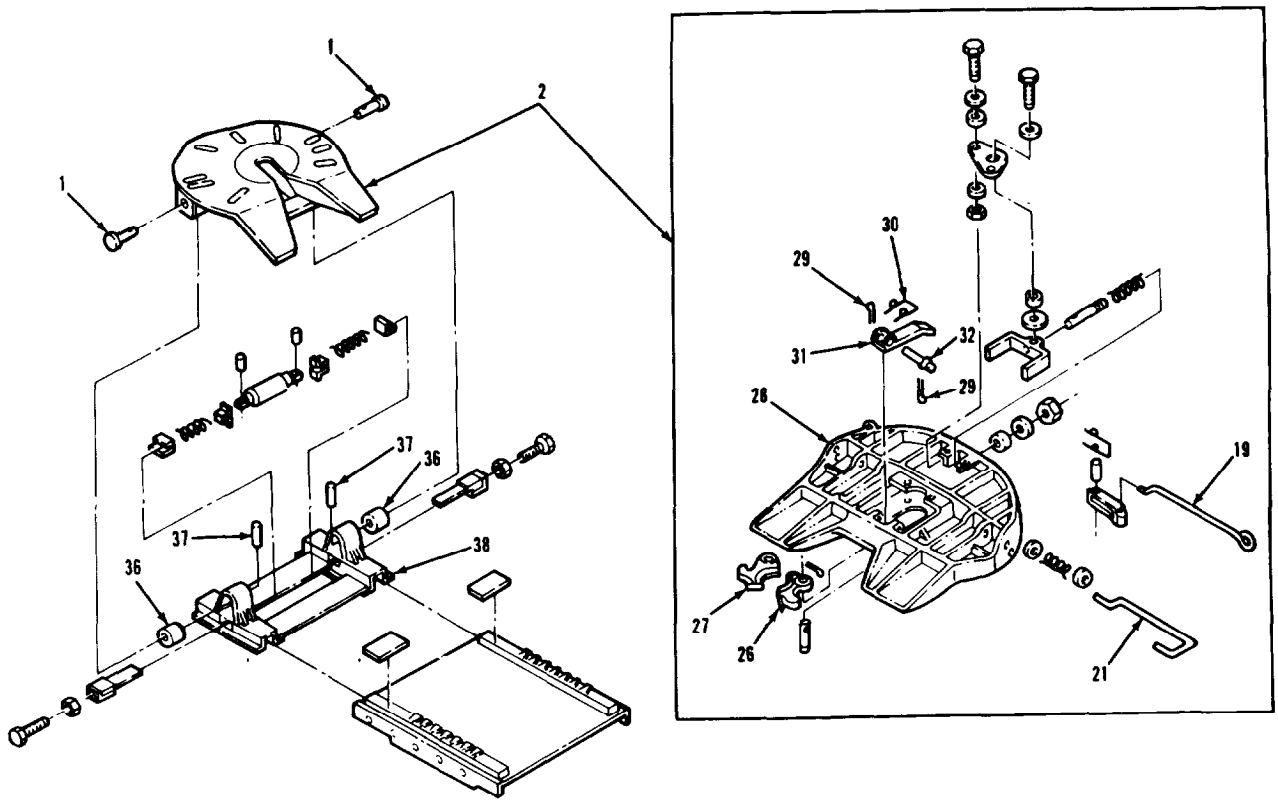
FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Fifth wheel assembly (2).	Clean off all grease.	
	CAUTION Secure fifth wheel in up position prior to removing two pins.	
2. Two pins (37).	Remove from two items (1).	
3. Fifth wheel assembly (2).	Support weight with suitable chain and hoist.	
4. Two pins (1).	Remove from items (2) and (36).	
5. Fifth wheel assembly (2).	a. Using hoist, lift off of item (38). b. Turn upside down and set on wood blocks. c. Clean off all grease from underside.	
6. Two handles (19) and (21)	a. Pull out item (19) until it catches on item (28). b. Pull out item (21) until items (26) and (27) are locked in open position.	
7. Two pins (29).	Remove from item (32).	Discard two items (29).
8. Pin (32), spring (30), and guard (31) l	Remove from item (28).	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).



LEGEND:

1. BRACKET PIN (2)
2. FIFTH WHEEL ASSEMBLY
19. SECONDARY LOCK HANDLE
21. RELEASE HANDLE
26. LEFT-HAND LOCKJAW
27. RIGHT-HAND LOCKJAW
28. FIFTH WHEEL PLATE
29. COTTER PIN (2)
30. TORSION SPRING
31. LOCK GUARD
32. PIN
36. RUBBER CUSHION (2)
37. ROLLED PIN (2)
38. SLIDE BRACKET

TA 238466

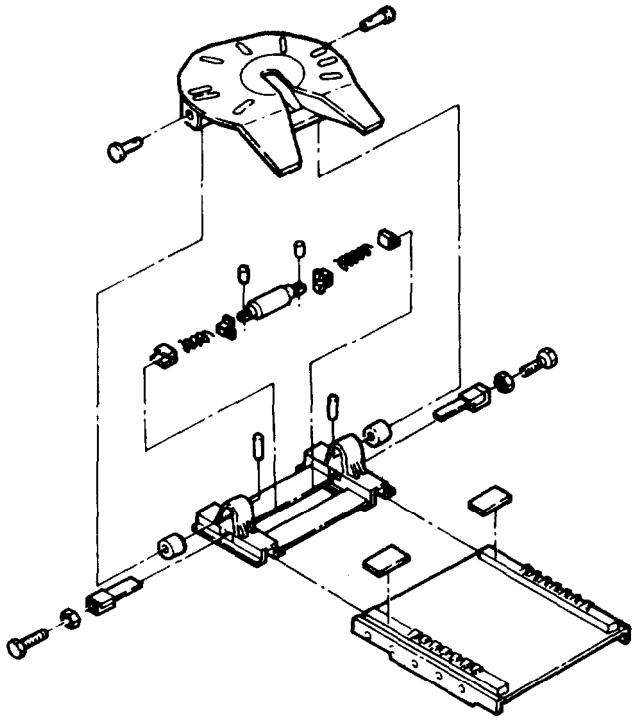
FRAME AND TOWING ATTACHMENTS.

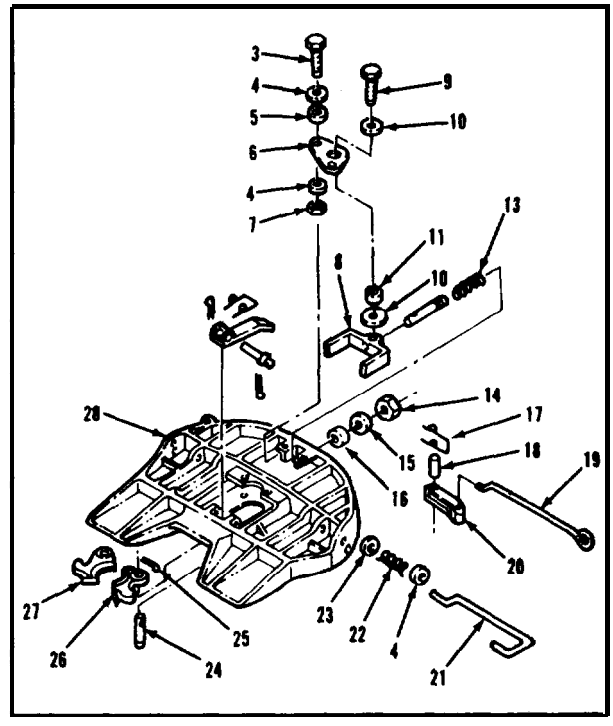
3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
9. Two lockjaws (26) and (27).	a. Place crowbar against item (27) and hit crowbar sharply with ball peen hammer to lock item (27). b. Repeat step 9a for item (26).	
10. Handle (19).	Pull out and release.	
11. Pin (18).	Remove from items (17), (20), and (28).	
12. Spring (17), lock (20), and handle (19).	a, Remove from item (28). b. Remove item (20) from item (19).	
13. Two pins (25).	Remove from two items (24).	Discard items (25).
14. Two pins (24).	Remove from items (26), (27),	It may be necessary to lift item (28) to remove items (24).
15. Two lockjaws (26) and (27).	Remove from item (28).	
16. Nut (14), washer (15), and block (16)	Remove from item (12).	This step is done to relieve tension of item (13).
17. Screw (9), two washers (10), and rolelr (11).	Remove from items (6) and (8).	
18. Screw (3), two washers (4), roller (5), plate (6), and nut (7).	Remove from items (28) and (21).	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).





LEGEND:

3. HEXAGON HEAD SCREW
4. WASHER (3)
5. ROLLER
6. CAM PLATE
7. HEXAGON HEAD NUT
8. YOKE
9. HEXAGON HEAD SCREW
10. WASHER (2)
11. ROLLER
13. YOKE SPRING
14. HEXAGON HEAD NUT
15. WASHER
16. RUBBER BLOCK
17. SPRING
18. ROLLED PIN
19. SECONDARY LOCK HANDLE
20. SECONDARY LOCK
21. RELEASE HANDLE
22. SPRING
23. WASHER
24. LOCK PIN (2)
25. COTTER PIN (2)
26. LEFT-HAND LOCKJAW
27. RIGHT-HAND LOCKJAW
28. FIFTH WHEEL PLATE

TA 238467

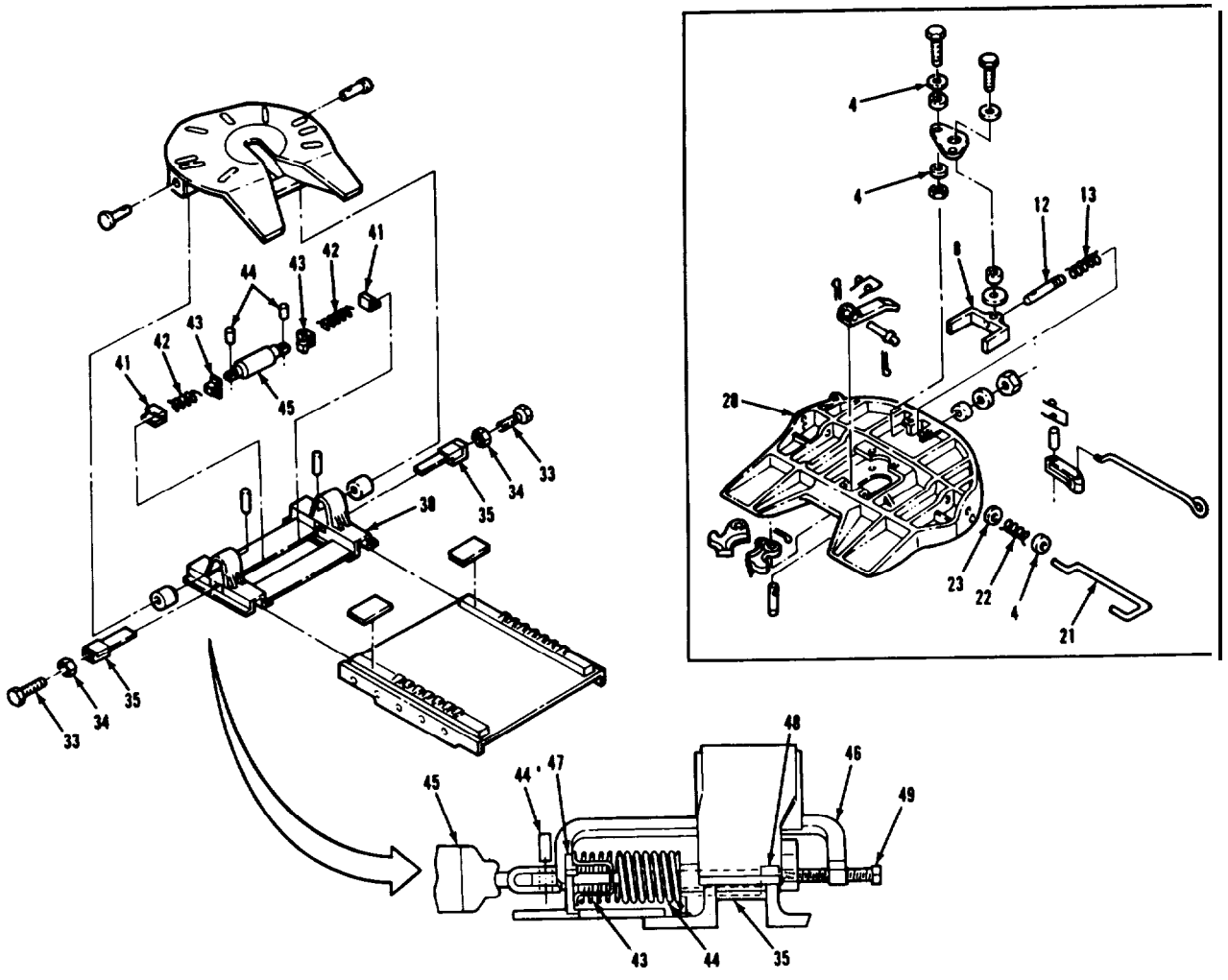
FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
19. Handle (21) (with washer (4), spring (22), and washer (23) (attached).	Remove from item (28).	
20. Washer (4), spring (22). and washer (23).	Remove from item (21).	
21. Shank (12), spring (13), and yoke (8).	Remove from item (28).	
22. Air line and fittings.	Remove.	Refer to TM 9-2320-283-20.
23. Screw (33) and nut Text	Remove from item (35).	
24. Compressor (46).	a. Install item (47) over item (43) and item (48) onto item (35) (see illustration). b. Screw in item (49) until item (44) can be removed. c. Remove item (44) from items (45) and (35). d. Unscrew item (49) until tension is relieved from item (42). e. Remove item (46).	Wear safety goggles when using item (46). Use tool No. TLN-2500.
25. Plunger (35), stop (41), spring (42), and retainer (43).	Remove from items (38) and (45).	Repeat steps 23 thru 25 for other side of item (38) .
26. Cylinder (45).	Remove from item (38).	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).



LEGEND:

4. WASHER (3)
8. YOKE
12. YOKE SHANK
13. YOKE SPRING
21. RELEASE HANDLE
22. SPRING
23. WASHER
28. FIFTH WHEEL PLATE
33. ADJUSTING SCREW (2)
34. NUT (2)
35. PLUNGER (2)
38. SLIDE BRACKET
41. SPRING STOP (2)
42. SPRING (2)
43. SPRING RETAINER (2)
44. PIN (2)
45. AIR CYLINDER
46. SLIDER SPRING COMPRESSOR
47. HOOKED END
48. PIVOT BLOCK
49. COMPRESSING SCREW

TA 238468

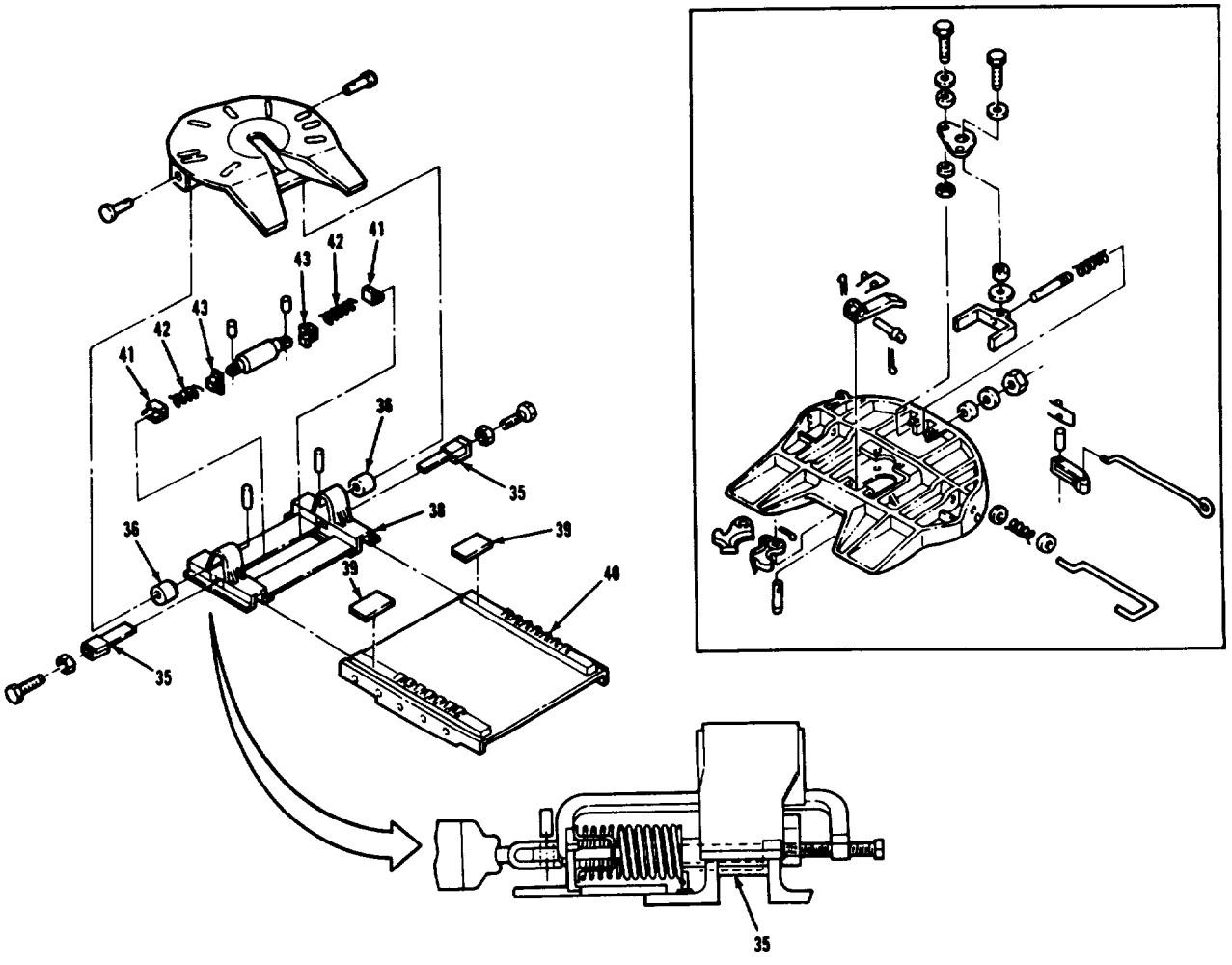
FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING AND INSPECTION.		
	WARNING To avoid injury during operation, do not repair fifth wheel plate if cracked or bent, or if lock pins do not fit tightly.	
27. All parts.	Clean and inspect.	Refer to paragraph 3-4 Text If fifth wheel is being rebuilt, replace all cotter pins, springs, nuts, bolts, and washers.
28. Two cushions (36).	Inspect for wear and damage.	Press out of item (38) if worn or damaged. Install new item (36) as needed.
29. Bracket (38) and plate (40).	Check sliding ability of item (38) on item (40).	If item (38) does not slide very well on item (40), cut two items (39) off item (40) and discard damaged part(s). Reassemble items (38) and (40), and weld two items (39) on item (40) (see TB 9-237, Welding Theory and Application).
C. ASSEMBLY.		
	NOTE Lubricate all moving parts with grease as they are assembled.	
30. Plunger (35).	Install into item (38).	Make sure wedge part of item (35) fits onto wedge part of item (40).
31. Stop (41), spring (42), and retainer (43).	Install on item (35).	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR.(Continued).



LEGEND:

35. PLUNGER (2)
36. RUBBER CUSHION (2)
38. SLIDE BRACKET
39. STOP (2)
40. BASE PLATE ASSEMBLY
41. SPRING STOP (2)
42. SPRING (2)
43. SPRING RETAINER (2)

TA 238469

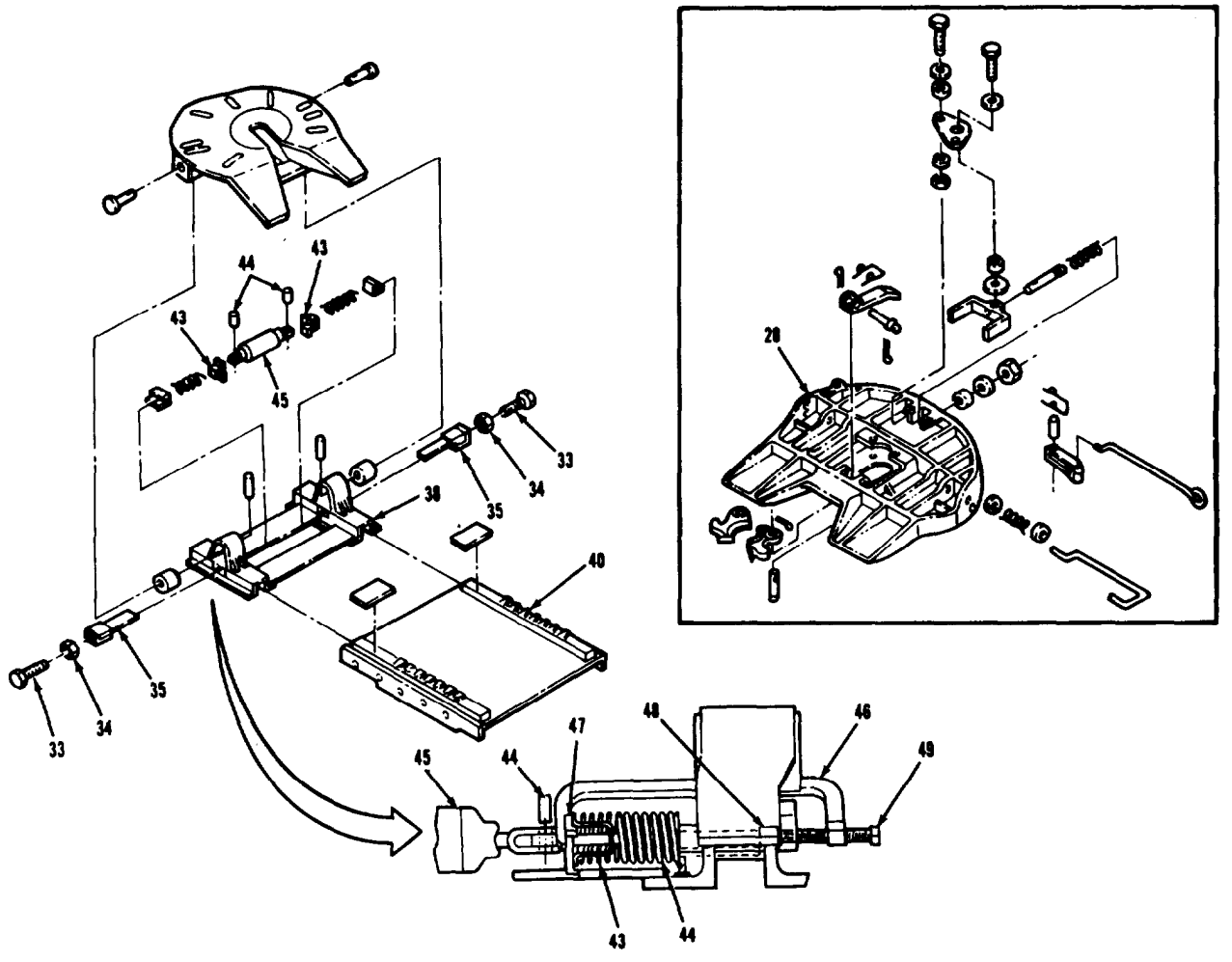
FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
32. Compressor (46).	a. Install item (47) over item (43), and item (48) onto item (35) (see illustration).	Wear safety goggles when using item (46).
	b. Screw in Item (49) until item (44) can be installed.	
33. Cylinder (45).	a. Install onto item (35).	Make sure item (45) is installed so that air fitting hole in it is closest to air fitting hole in item (40).
	b. Line up holes in yoke of item (45) with hole in item (35).	
	c. Secure with item (44).	
34. Compressor (46).	Unscrew item (49) and remove from items (35) and (43).	Item (44) should be covered completely by item (43).
35. Nut (34) and screw (33).	a. Install item (34) onto item (33).	
	b. Install item (33) into item (35) until end of item (33) bottoms on item (40).	
	c. Hold item (33) and tighten item (34).	Repeat steps 30, 31, 32, 33 (b and c only), 34, and 35 for other side of item (38).
36. Plate (28).	Turn item (28) right side up.	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).



LEGEND:

28. FIFTH WHEEL PLATE
33. ADJUSTING SCREW (2)
34. NUT (2)
35. PLUNGER (2)
38. SLIDE BRACKET
40. BASE PLATE ASSEMBLY
43. SPRING RETAINER (2)
44. PIN (2)
45. AIR CYLINDER
46. SLIDER SPRING COMPRESSOR
47. HOOKED END
48. PIVOT BLOCK
49. COMPRESSING SCREW

TA 238470

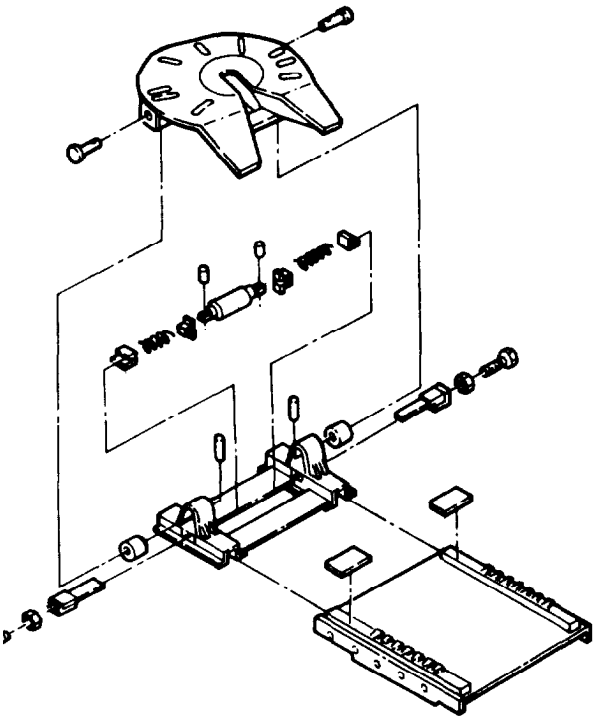
FRAME AND TOWING ATTACHMENTS.

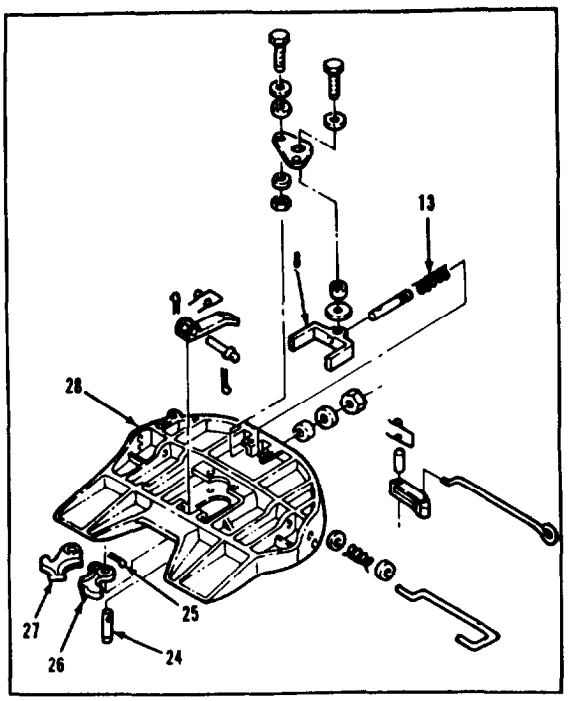
3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
37. Two lockjaws (26)	a. Lubricate holes with grease.	
	b. Install into item (28) with recessed diameters facing item (28).	
38. Two pins (24).	Install into items (28), (26), and (27).	Install two items (24) so that alinement of holes in items (24) will not interfere with installation of items (25).
39. Two new pins (25).	Turn item (28) upside down and install two items (25) into two items (24).	
40. Two lockjaws (26) and (27)	Open and install a 2-inch pipe in between.	This step is done to help keep items (26) and (27) close to proper adjustment while assembling remaining parts. Final adjustment of items (26) and (27) is done after fifth wheel has been installed on vehicle.
41. Yoke (8).	a. Install into item (28) with hole facing away from item (28).	
	b. Slide a against items (26) and (27)	Open ends of item (8) should fit to the end of items (26) and (27). If not, grind item (8) lightly on outside surfaces only. Do not grind on inside surfaces of item (8) that come in contact with items (26) and (27).
42. Spring (13).	Install onto items (8) and (28).	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).





LEGEND:

8. YOKE
13. YOKE SPRING
24. LOCK PIN (2)
25. COTTER PIN (2)
26. LEFT-HAND LOCKJAW
27. RIGHT-HAND LOCKJAW
28. FIFTH WHEEL PLATE

TA 238471

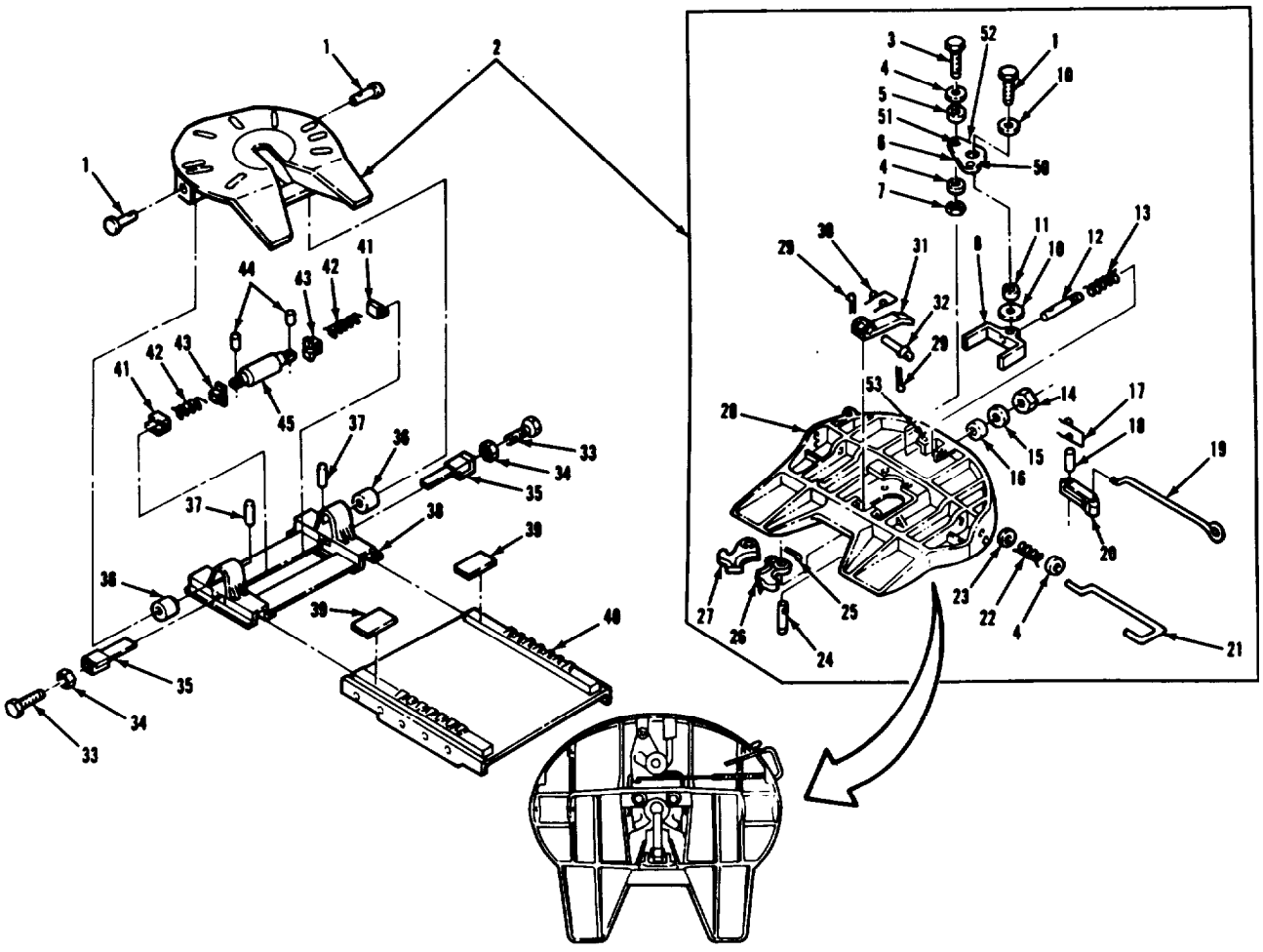
FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
43. Shank (12).	Insert thru items (28) and (13), and into item (8).	Line up recess in item 12) with hole in item (8).
44. Washer (23), spring (22), and washer (4).	Install onto item (21).	
	NOTE The art pages in the rest of this procedure will include an assembled view of the fifth wheel to be used as an aid during assembly.	
45. Handle (21).	a. Insert hooked end thru loop of item (28).	
	b. Install offset end into hole (50) in item (6).	
46. Plate (6).	a. Position on item (28) so that hole (51) in item (6) lines up with hole (53) in item (28).	
	b. Secure to item (28) with items (3), (4), (5), and (7).	When properly assembled, there should be one item (4) above item (6) and one item (4) below item (6). Tighten item (7) enough to allow free movement of item (6).
	c. Position over item (8) so that opening (52) in item (6) lines up with hole in	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).



LEGEND:

3. HEXAGON HEAD SCREW
4. WASHER (3)
5. ROLLER
6. CAM PLATE
7. HEXAGON HEAD NUT
8. YOKE
12. YOKE SHANK
13. YOKE SPRING
21. RELEASE HANDLE
22. SPRING
23. WASHER
28. FIFTH WHEEL PLATE
50. HANDLE HOLE
51. HOLE
52. CAM PLATE OPENING
53. HOLE

TA 238472

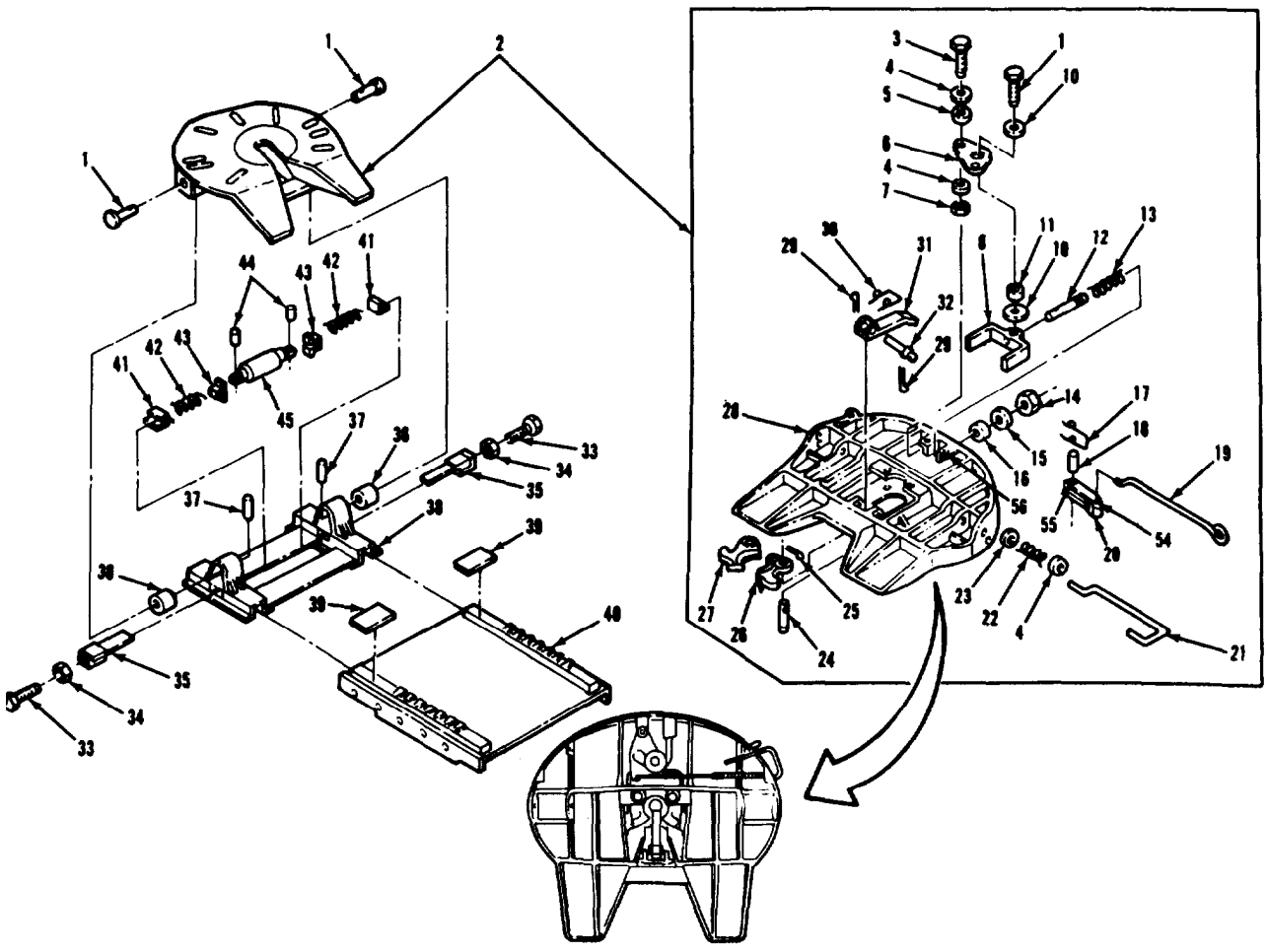
FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
46. Plate (6) (continued).	d. Secure to item (8) with items (9), (10), and (11).	When properly assembled, there should be one item (10) above item (6) and one item (10) below item (6). Tighten item (9) enough to allow free movement of item (6). Make sure item (9) goes into recess of item (12) when installed.
47. Block (16), washer (15), and nut (14).	Install onto item (12).	Tighten item (14) until item (16) is against item (28). Do not compress item (13) by tightening item (14).
48. Handle (19).	Insert offset end thru loop of item (28), and into hole (54) in item (20).	
49. Lock (20) and spring (17).	a. Install onto item (28) and line up holes in item (17) and hole (55) in item (20) with hole (56) in item (28).	
	b. Secure with item (18).	Use suitable hoist to lift item (28) if necessary to install item (18). Use a suitable drift pin to keep items (17), (20), and (28) lined up while installing item (18).
50. Handles (19) and (21), and two lockjaws (26) and (27)	a. Pull out item (19) until it catches on item (28).	
	b. Pull out item (21) and pry open items (26) and (27).	

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued)..



LEGEND:

6. CAM PLATE
8. YOKE
9. HEXAGON HEAD SCREW
10. WASHER (2)
11. ROLLER
12. YOKE SHANK
13. YOKE SPRING
14. HEXAGON HEAD NUT
15. WASHER
16. RUBBER BLOCK
17. SPRING
18. ROLLED PIN
19. SECONDARY LOCK HANOLE
20. SECONDARY LOCK
21. RELEASE-HANDLE
26. LEFT-HAND LOCKJAW
27. RIGHT-HAND LOCKJAW
28. FIFTH WHEEL PLATE
54. HANDLE HOLE
55. HOLE
56. HOLE

TA 238473

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
51. Guard (31) and spring (30).	a. Position on item (28) and line up holes.	Use a guide pin to aid in alining holes.
	b. Secure to item (28) with item (32).	
52. Two new pins (29).	Install into item (32).	
53. Air line and fittings.	Install between items (45) and (50).	Refer to TM 9-2320-283-20.
54. Fifth wheel assembly (2).	a. Using chain and suitable hoist lift off wood blocks and position on item (38).	Make sure item (2) is facing the correct direction when positioned on item (38) (see illustration).
	b. Secure to item (38) with two pins (1).	
55. Two pins (37).	Install into two pins (1).	

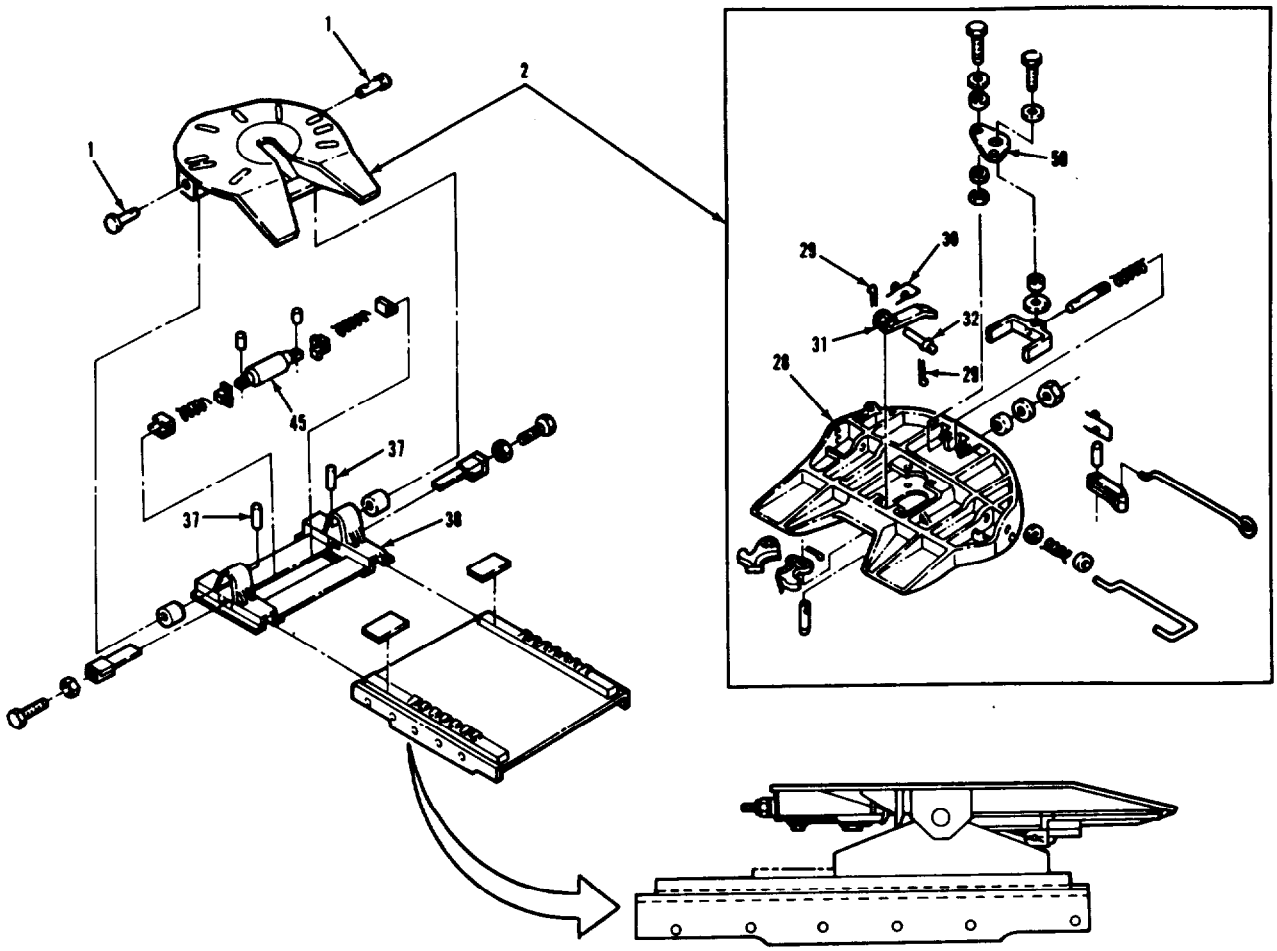
NOTE

Follow-on maintenance action required:

Install fifth wheel (TM 9-2320-283-20).
Lubricate fifth wheel (LO 9-2320-283-12).
Adjust fifth wheel (TM 9-2320-283-20).

FRAME AND TOWING ATTACHMENTS.

3-97. FIFTH WHEEL REPAIR (Continued).



LEGEND:

1. BRACKET PIN (2)
2. FIFTH WHEEL ASSEMBLY
28. FIFTH WHEEL PLATE
29. COTTER PIN (2)
30. TORSION SPRING
31. LOCK GUARD
32. PIN
37. ROLLED PIN (2)
38. SLIDE BRACKET
45. AIR CYLINDER
50. HANDLE HOLE

TA 238474

Section XIII. SPRING SHOCK ABSORBERS, AND TORQUE RODS

3-98. GENERAL.

This section provides procedures authorized at direct and general support maintenance levels to replace and repair springs, shock absorbers, and torque rod components. To find a specific procedure contained in this section, see the task summary below:

3-99. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
(Refer to specific paragraph for this information).	

TEST EQUIPMENT
None.

SPECIAL TOOLS

Equalizing beam service set (45225) Y-8500A.
Receiving tube (45225) Y-860.
Removing adapter (45225) Y-862.
Installing adapter (45225) Y-862.
Torque rod bushing service set (45225) Y-820.

MATERIALS/PARTS (P/N)

Solvent, drycleaning, SD-2 Item 31, Appendix C.
Grease, automotive and artillery Item 7, Appendix C.
Rags, wiping Item 26, Appendix C.
Spring assembly (28158) 45121.
Sleeve bushing (center; as required) (28158) 5919.
Sleeve bushing (end; as required) (28158) 6572.
Cotter pin (3) (24617) 1034111.
Special shackle pin screw (3) (34623) MB279-20000.
Spring clip rivet (3) (24617) 110432.
Bushing (as required) (281583 44695.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

REFERENCE (TM)
TM 9-2320-283-10.
TM 9-2320-283-30.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Block front wheels.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-99. TASK SUMMARY (Continued).

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
1	Rear Tandem Axle Spring and Saddle Replacement	3-100	
	a. Removal.	3-100a	
	b. Cleaning.	3-100b	
	c. Inspection.	3-100c	
	d. Installation.	3-100d	
2	Rear Tandem Axle Spring Hanger Replacement	3-101	
	a. No. 1 Rear Spring Hanger Removal.	3-101a	
	b. No. 2 and No. 3 Rear Spring Hangers Removal.	3-101b	
	c. Cleaning,	3-101c	
	d. Inspection.	3-101d	
	e. No. 2 and No. 3 Rear Spring Hangers Installation.	3-101e	
	f. No. 1 Rear Spring Hanger Installation.	3-101f	
3	Equalizer Beam Replacement	3-102	
	a. Removal.	3-102a	
	b. Cleaning.	3-102b	
	c. Inspection.	3-102c	
	d. Installation.	3-102d	
4	Equalizer Beam Repair	3-103	
	a. Center Bushing Replacement.	3-103a	
	b. End Bushing Replacement.	3-103b	
5	Front Spring Replacement	3-104	
	a. Removal.	3-104a	
	b. Cleaning.	3-104b	
	c. Inspection.	3-104c	
	d. Installation.	3-104d	
6	Front Spring Repair	3-105	
	a. Disassembly.	3-105a	
	b. Cleaning and Inspection.	3-105b	
	c. Assembly.	3-105c	
7	Torque Rod Repair	3-106	
	a. Disassembly.	3-106a	
	b. Cleaning and Inspection.	3-106b	
	c. Assembly.	3-106c	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
TM 9-2320-283-10.

CONDITION DESCRIPTION
Forward-rear tandem tires removed on side which spring assembly will be replaced.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Solvent, drycleaning, SD-2
Item 31, Appendix C.
Grease, automotive and artillery
Item 7, Appendix C.
Rags, wiping
Item 26, Appendix C.
Spring assembly
(28158) 45121.

PERSONNEL REQUIRE0
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

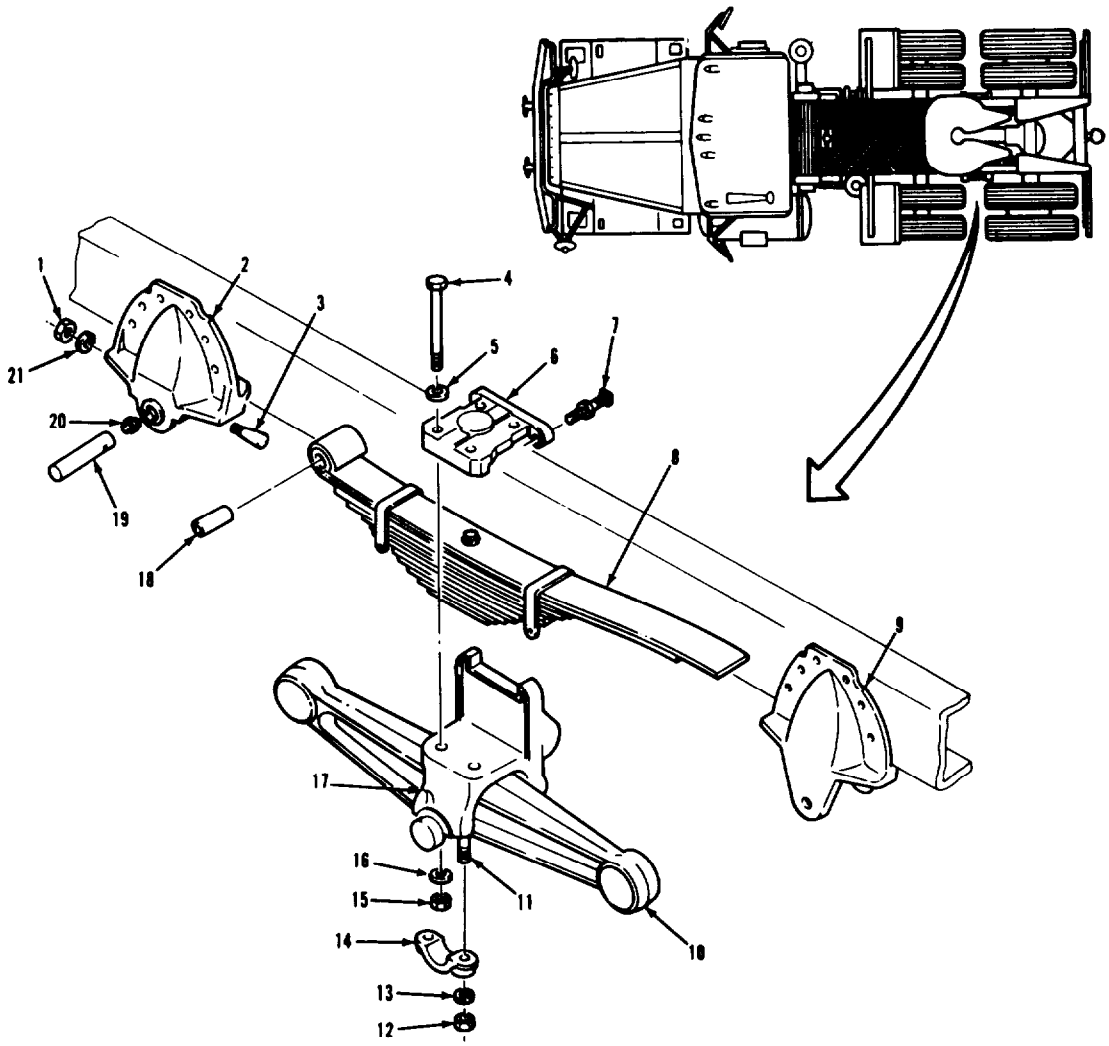
REFERENCE (TM)
TM 9-2320-283-10.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).



LEGEND:

1. NUT
2. NO. 1 REAR SPRING HANGER
3. DRAWKEY
4. HEX HEAD SCREW (4)
5. WASHER (4)
6. TOP PAD
7. SETSCREW (2)
8. SPRING ASSEMBLY
9. NO. 2 REAR SPRING HANGER
10. EQUALIZER BEAM
11. STUD (4)
12. HEX HEAD NUT (4)
13. PLAIN WASHER (4)
14. SADDLE CAP (2)
15. HEX HEAD NUT (4)
16. WASHER (4)
17. SADDLE
18. SLEEVE BUSHING
19. VEHICULAR LEAF PIN
20. FITTING
21. LOCKWASHER

TA 238475

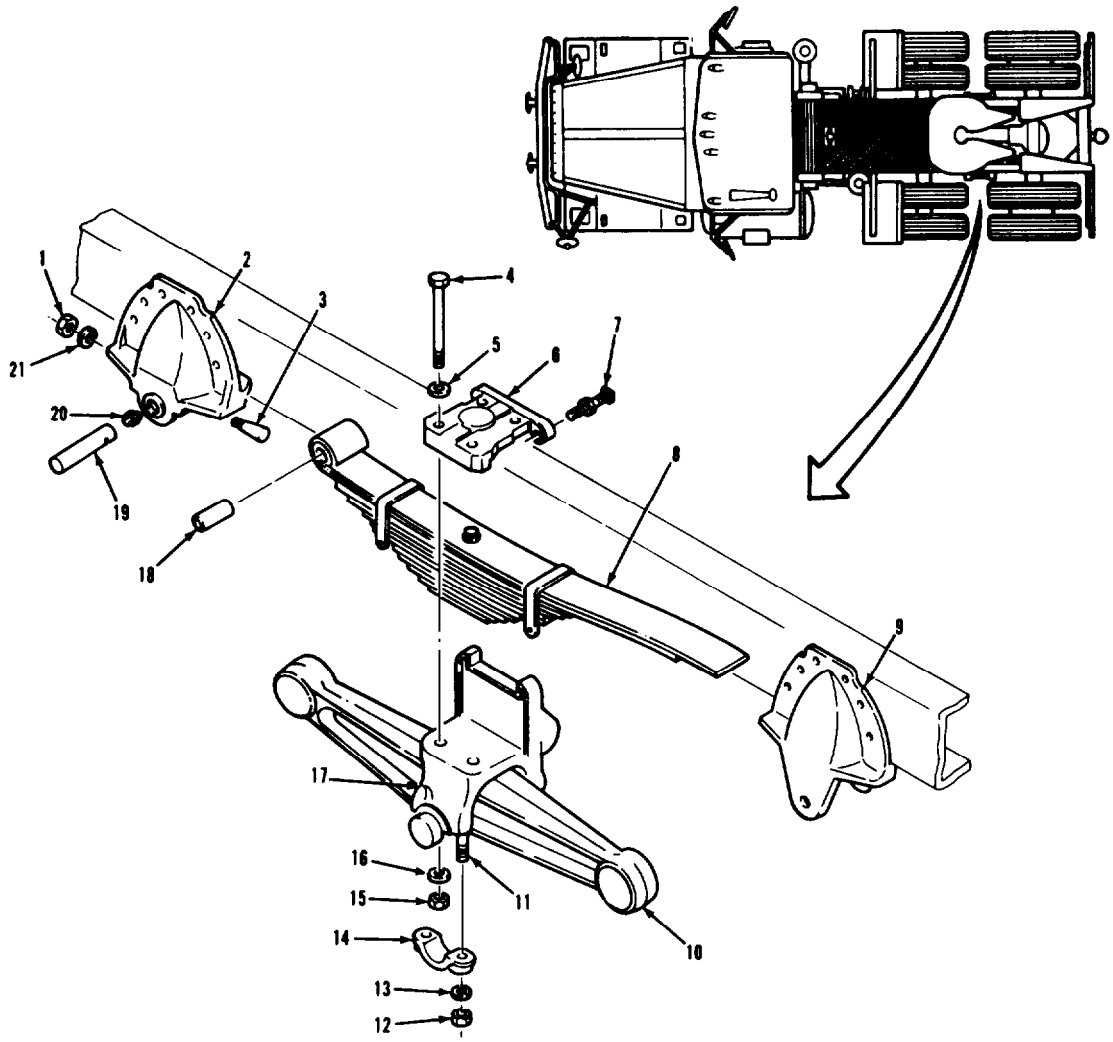
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Four nuts (12) and washers (13).	Remove from four items (11).	
2. Two caps (14).	Remove from items (11) and (17).	Item (14) may have to be hit with a ball peen hammer so it will drop from items (17) and (11).
3. Two setscrews (7).	Loosen four turns.	Locknut on items (7) must be loosened prior to loosening items (7). Not necessary to remove items (7) from item (6).
4. Four nuts (15) and washers (16).	Remove from item (4).	
	NOTE Using a suitable lifting device, raise side of frame on which spring assembly is being replaced. Lift frame at lifting hook, high enough so all frame weight is removed from spring assembly. Position a jack stand under frame nearest lifting hook.	
5. Two outer screws (4) and washers (5).	Remove from items (6) and (7).	The two inside items (4) and (5) may be removed when tilting item (6) toward the inside of the frame.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).



LEGEND:

1. NUT
2. NO. 1 REAR SPRING HANGER
3. DRAWKEY
4. HEX HEAD SCREW (4)
5. WASHER (4)
6. TOP PAD
7. SETSCREW (2)
8. SPRING ASSEMBLY
9. NO. 2 REAR SPRING HANGER
10. EQUALIZER BEAM
11. STUD (4)
12. HEX HEAD NUT (4)
13. PLAIN WASHER (4)
14. SADDLE CAP (2)
15. HEX HEAD NUT (4)
16. WASHER (4)
17. SADDLE
18. SLEEVE BUSHING
19. VEHICULAR LEAF PIN
20. FITTING
21. LOCKWASHER

TA 238476

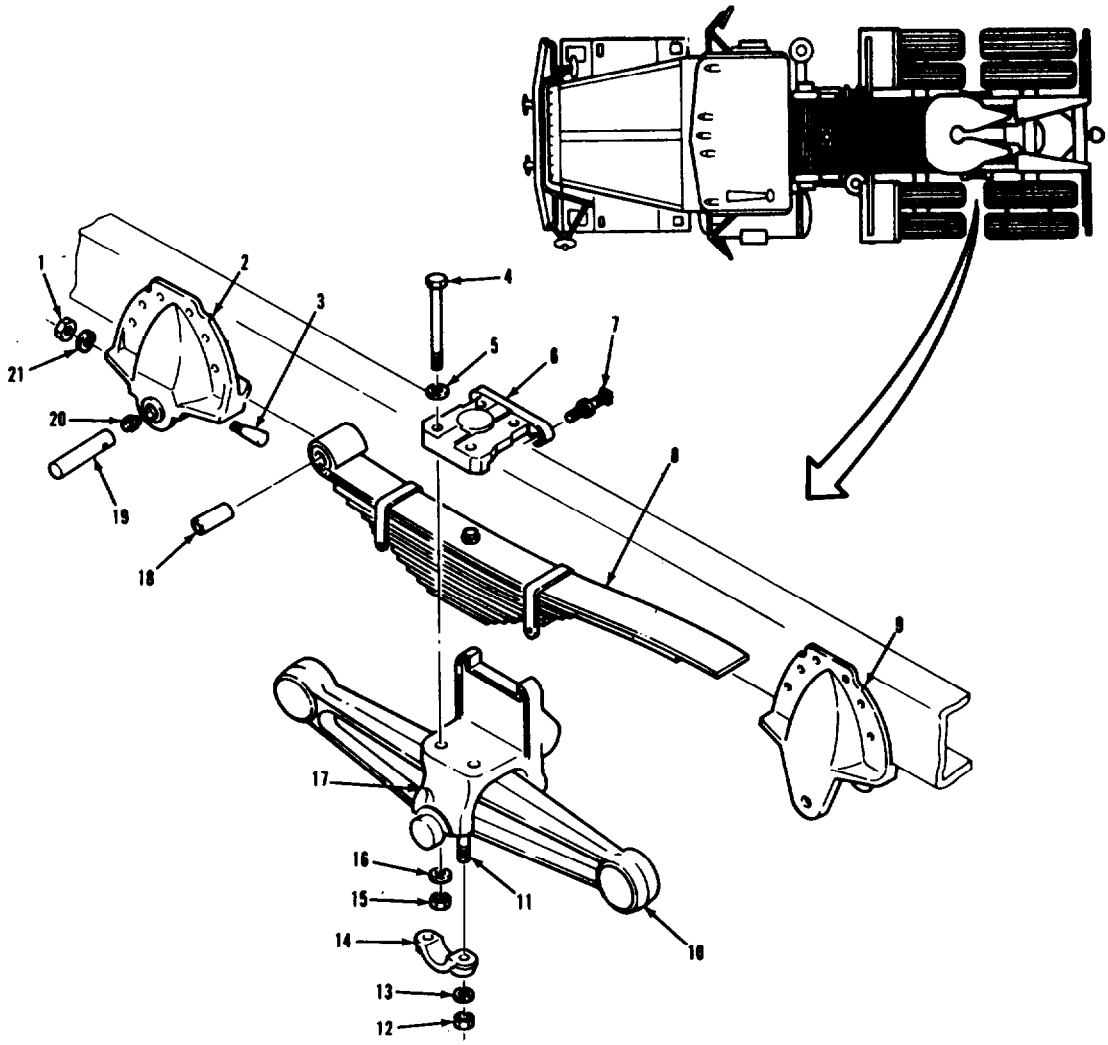
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION,	REMARKS
A. REMOVAL (Continued).		
6. Pad (6).	Remove from item (8).	To loosen item (6) it may be necessary to hit with a ball peen hammer.
7. Nut (1), lock-washer (21). and drawkey (3).	Remove from item (2).	
8. Fitting (20).	Remove from item (19).	
9. Pin (19).	Remove from item (2).	Use a brass drift and hammer to drive through pin bushing hole of item (2).
	WARNING The spring assembly is heavy and awkward and could cause personal injury. Use a suitable lifting device to remove from saddle.	
10. Spring assembly (8).	Remove from item (17).	It may be necessary to slide item (8) forward to clear item (9).
11. Bushing (18).	Remove from item (8).	Use a drift punch and hamner'to remove.
12. Saddle (17).	Remove from item (10).	
B. CLEANING.		
13. All parts.	Clean.	Refer to paragraph 3-4.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).



LEGEND:

1. NUT
2. NO. 1 REAR SPRING HANGER
3. DRAWKEY
4. HEX HEAD SCREW (4)
5. WASHER (4)
6. TOP PAD
7. SETSCREW (2)
8. SPRING ASSEMBLY
9. NO. 2 REAR SPRING HANGER
10. EQUALIZER BEAM
11. STUD (4)
12. HEX HEAD NUT (4)
13. PLAIN WASHER (4)
14. SADDLE CAP (2)
15. HEX HEAD NUT (4)
16. WASHER (4)
17. SADDLE
18. SLEEVE BUSHING
19. VEHICULAR LEAF PIN
20. FITTING
21. LOCKWASHER

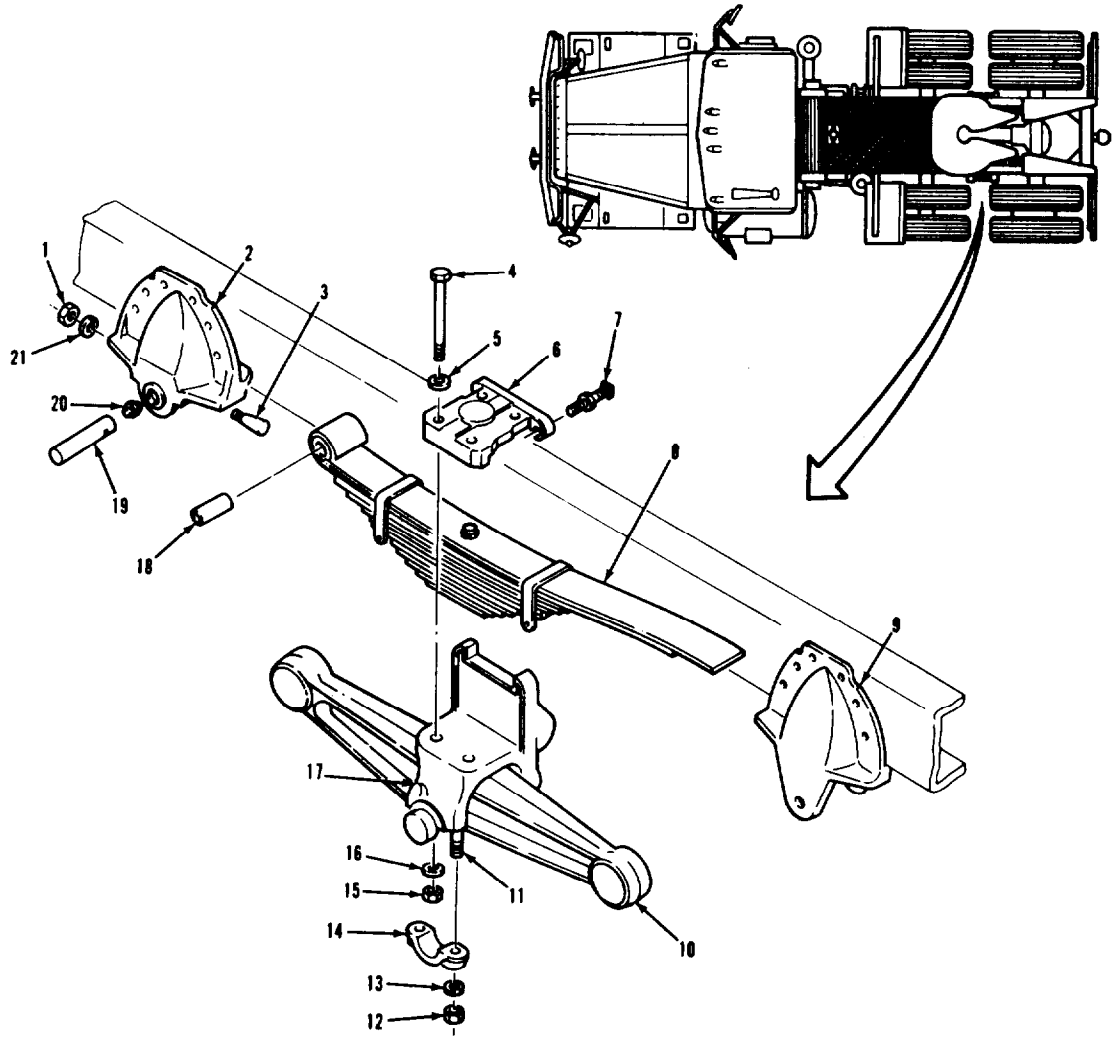
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSPECTION.		
14. All parts.	Inspect,	Refer to paragraph 3-5.
D. INSTALLATION.		
15. Saddle (17).	Position on item (10).	
16. Bushing (18).	Install in item (8).	Use a suitable bushing driver for installation.
17. Spring assembly (8).	Slide into item (9) and item (2) then position onto item (17).	Use a floor crane for lifting and sliding into position.
18. Pin (19).	Install in item (2).	Coat outside of pin with assembly lube. Insert slotted end of item (19) toward inside of item (2).
19. Drawkey (3).	Carefully insert into drawkey hole of item (2).	Item (3) is installed at the rear of item (2). Threads of item (3) are exposed at the front of item (2).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).



LEGEND:

1. NUT
2. NO. 1 REAR SPRING HANGER
3. DRAWKEY
4. HEX HEAD SCREW (4)
5. WASHER (4)
6. TOP PAD
7. SETSCREW (2)
8. SPRING ASSEMBLY
9. NO.2 REAR SPRING HANGER
10. EQUALIZER BEAM
11. STUD (4)
12. HEX HEAD NUT (4)
13. PLAIN WASHER (4)
14. SADDLE CAP (2)
15. HEX HEAD NUT (4)
16. WASHER (4)
17. SADDLE
18. SLEEVE BUSHING
19. VEHICULAR LEAF PIN
20. FITTING
21. LOCKWASHER

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SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
20. Nut (1) and lockwasher (21).	Install onto item (3) and torque to 75-100 lb-ft.	
21. Fitting (20).	Install in item (19).	Lubricate item (20) with grease.
22. Pad (6).	Position, with setscrew holes on the inside, onto item (8).	
23. Four screws (4) and washers (5).	Insert into holes of item (6).	
24. Four nuts (15) and washers (16).	Install onto four items (4) and torque to 275-300 lb-ft.	
25. Two setscrews (7).	Install into item (6) and torque to 100-1500 lb-ft.	
26. Beam (10).	Lift up and into item (17).	Use a suitable floor jack for lifting.
27. Four nuts (12) and washers (13).	Install onto four items (11) and torque to 225-275 lb-ft.	Detach overhead crane when step 27 is completed.

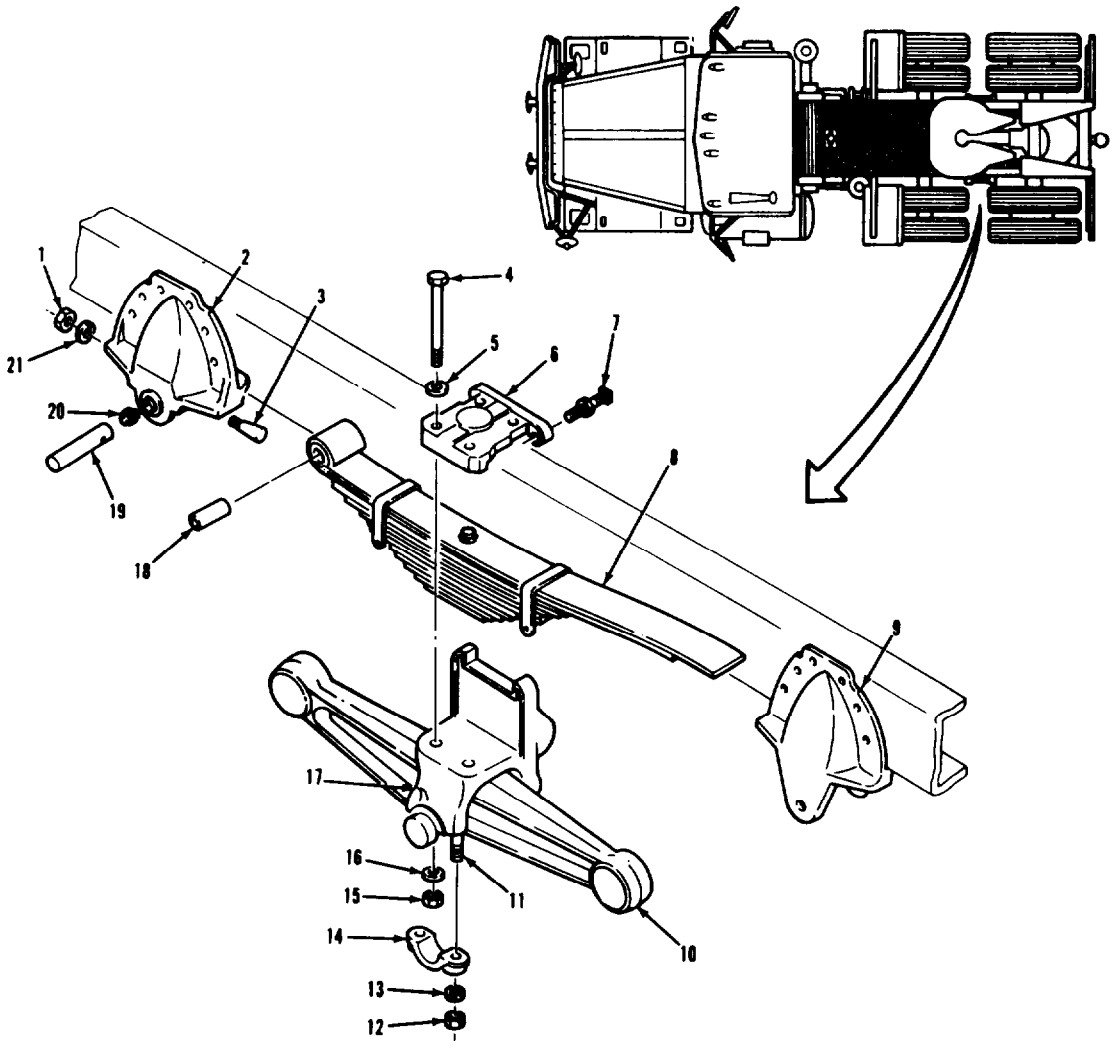
NOTE

Follow-on maintenance action required:

Install forward-rear tandem tires (TM 9-2320-283-10).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-100. REAR TANDEM AXLE SPRING AND SADDLE REPLACEMENT (Continued).



LEGEND:

1. NUT
2. NO. 1 REAR SPRING HANGER
3. DRAWKEY
4. HEX HEAD SCREW (4)
5. WASHER. (4)
6. TOP PAD
7. SETSCREW (2)
8. SPRING ASSEMBLY
9. NO. 2 REAR SPRING HANGER
10. EQUALIZER BEAM
11. STUD (4)
12. HEX HEAD NUT (4)
13. PLAIN WASHER (4)
14. SADDLE CAP (2)
15. HEX HEAD NUT (4)
16. WASHER (4)
17. SADDLE
18. SLEEVE BUSHING
19. VEHICULAR LEAF PIN
20. FITTING
21. LOCKWASHER

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SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT.

THIS TASK COVERS

a. No. 1 rear Spring Hanger Removal.
b. No. 2 and No. 3 Rear Spring Hangers Removal.
c. Cleaning.
d. Inspection.
e. No. 2 and No.3 Rear Spring Hangers Installation.
f. No. 1 rear spring hanger Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
Text

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
One (MOS-63W).

REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.

TROUBLESHOOTING REFERENCES
None.

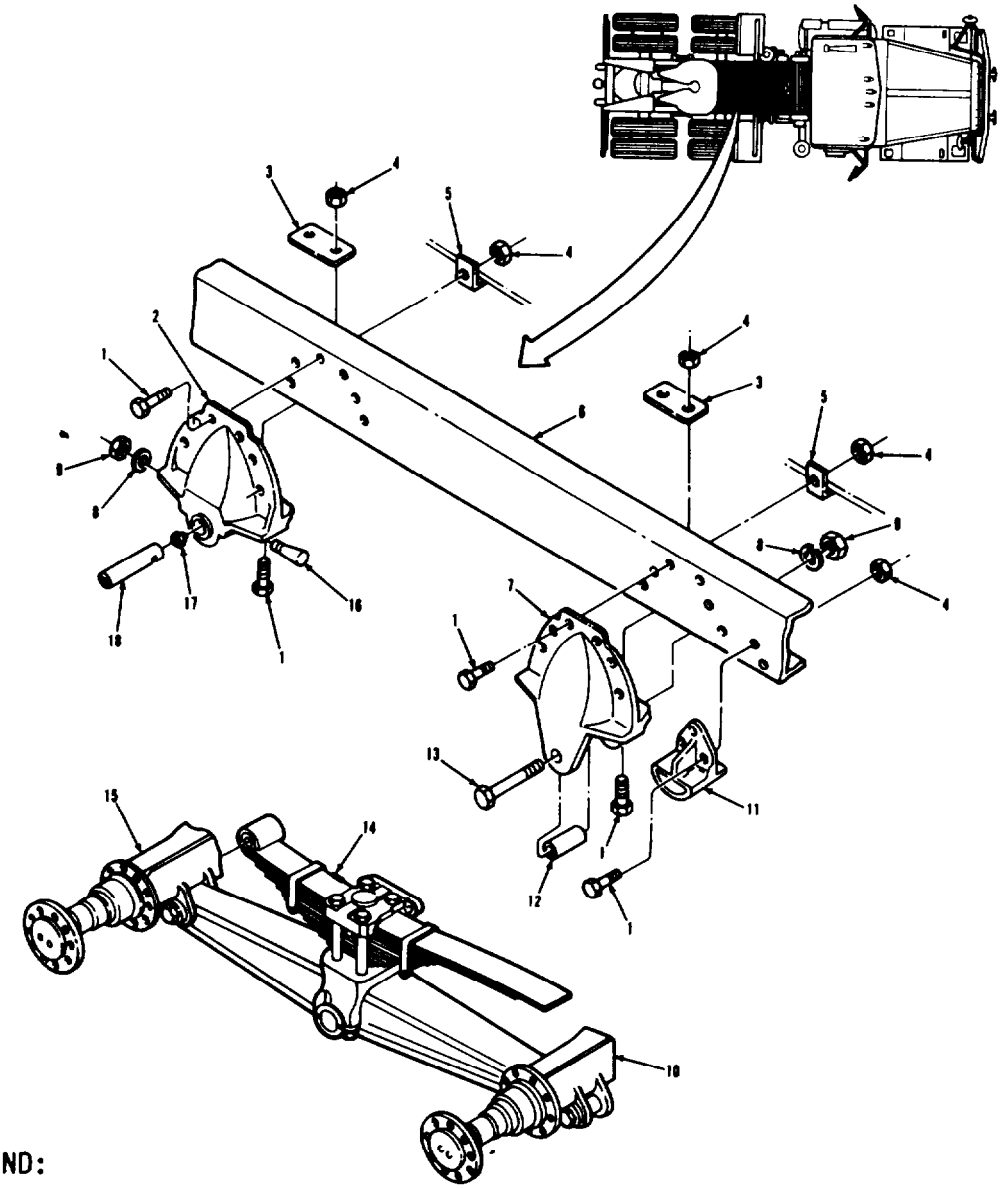
EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-10	Forward-rear tandem tires removed on side in which spring hanger is replaced.
TM 9-2320-283-20.	Forward-rear axle stop removed on side which spring hanger is removed.

SPECIAL ENVIRONMENTAL CONDITIONS
None.

GENERAL SAFETY INSTRUCTIONS
Block front wheels.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (19)
2. NO. 1 REAR SPRING HANGER
3. SPACER PLATE (2)
4. HEXAGON HEAD NUT (19)
5. TUBE SUPPORT BRACKET (2)
6. FRAME ASSEMBLY
7. NO. 2 REAR SPRING HANGER
8. LOCKWASHER (2)
9. NUT (2)
10. REAR-REAR AXLE ASSEMBLY
11. NO. 3 REAR SPRING HANGER
12. REBOUND BOLT SPACER
13. REBOUND BOLT
14. SPRING ASSEMBLY
15. FORWARD-REAR AXLE ASSEMBLY
16. DRAWKEY ASSEMBLY
17. FITTING
18. VEHICULAR LEAF PIN

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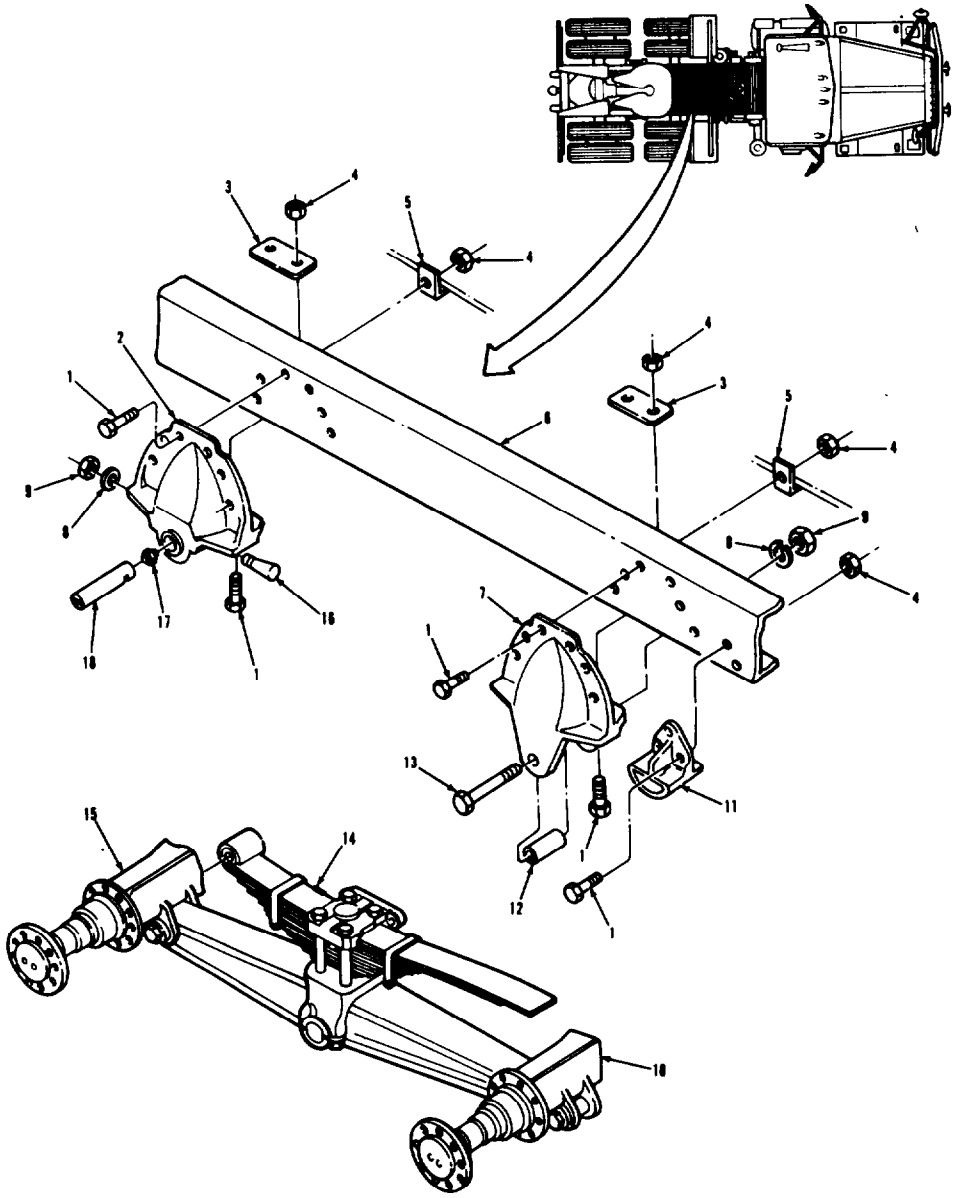
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE Rear tandem axle spring hangers on the right side of truck are same as those on left side. This procedure applies for hangers on either side of truck.	
A. NO. 1 REAR SPRING HANGER REMOVAL.		
1. Frame assembly (6).	a. Using suitable lifting device, lift until weight of vehicle is off item (14).	
	b. Support with jack stands.	
2. Froward-rear axle assembly (15).	Using floor jack, raise until weight of item (14) is off item (2).	
3. Nut (9) and lock-washer (8).	Remove from item (16).	
4. Drawkey assembly (16).	Drive out of item (2).	
5. Fitting (17).	Remove from item (18).	Adjust floor jack as neccessary to relieve tension of item (18) in items (2) and (14). To check for tension, put screwdriver in slot of item (18) and turn.
6. Pin (18).	Drive out of items (2) and (14).	
7. Two screws (1) and nuts (4).	Remove from items (2), (3), and (6).	
8. Six screws (1), nuts (4), bracket (5), hanger (2), and plate (3).	Remove from item (6).	Force item (14) down if necessary to remove item (2).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (19)
2. NO. 1 REAR SPRING HANGER
3. SPACER PLATE (2)
4. HEXAGON HEAD NUT (19)
5. TUBE SUPPORT BRACKET (2)
6. FRAME ASSEMBLY
7. NO. 2 REAR SPRING HANGER
8. LOCKWASHER (2)
9. NUT (2)
10. REAR-REAR AXLE ASSEMBLY
11. NO. 3 REAR SPRING HANGER
12. REBOUND BOLT SPACER
13. REBOUND BOLT
14. SPRING ASSEMBLY
15. FORWARD-REAR AXLE ASSEMBLY
16. DRAWKEY ASSEMBLY
17. FITTING
18. VEHICULAR LEAF PIN

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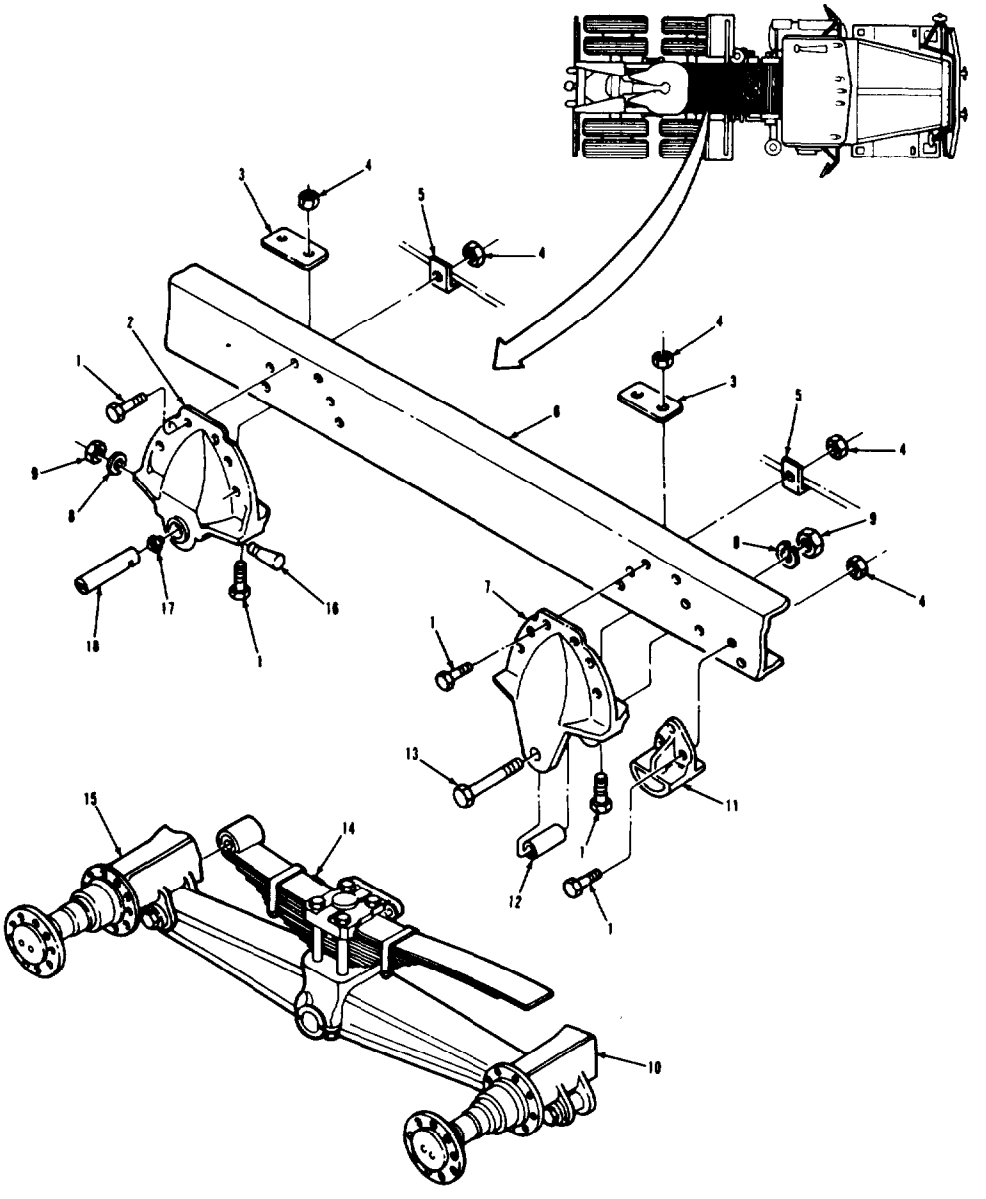
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. NO. 2 AND NO. 3 REAR SPRING HANGERS REMOVAL.		
9. Frame assembly (6).	a. Using suitable lifting device, lift until weight of vehicle Is off item (14). b. Support with jack stands.	
10. Rear-rear axle assembly (10).	Using floor jack, raise until weight of item (14) is off item (7).	
11. Two screws (1) and nuts (4).	Remove from items (7), (3), and (6).	
12. Six screws (1), nuts (4), bracket (51, hanger (7), and plate (3).	Remove from item (6).	Item (7) cannot be removed from item (14) at this time.
13. Rear-rear axle assembly (10).	Using floor jack, lower until tension of item (14) is off item (11).	
14. Three screws (1), nuts (4), and hanger (11).	Remove from item (6).	
15. Hanger (7).	Remove from item (14).	
16. Bolt (13), Iock-washer (8), nut (9), and spacer (12).	Remove from item (7).	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT(Continued).



LEGEND:

1. HEXAGON HEAD SCREW (19)
2. NO. 1 REAR SPRING HANGER
3. SPACER PLATE (2)
4. HEXAGON HEAD NUT (19)
5. TUBE SUPPORT BRACKET (2)
6. FRAME ASSEMBLY
7. NO. 2 REAR SPRING HANGER
8. LOCKWASHER (2)
9. NUT (2)
10. REAR-REAR AXLE ASSEMBLY
11. NO. 3 REAR SPRING HANGER
12. REBOUND BOLT SPACER
13. REBOUND BOLT
14. SPRING ASSEMBLY
15. FORWARD-REAR AXLE ASSEMBLY
16. DRAWKEY ASSEMBLY
17. FITTING
18. VEHICULAR LEAF PIN

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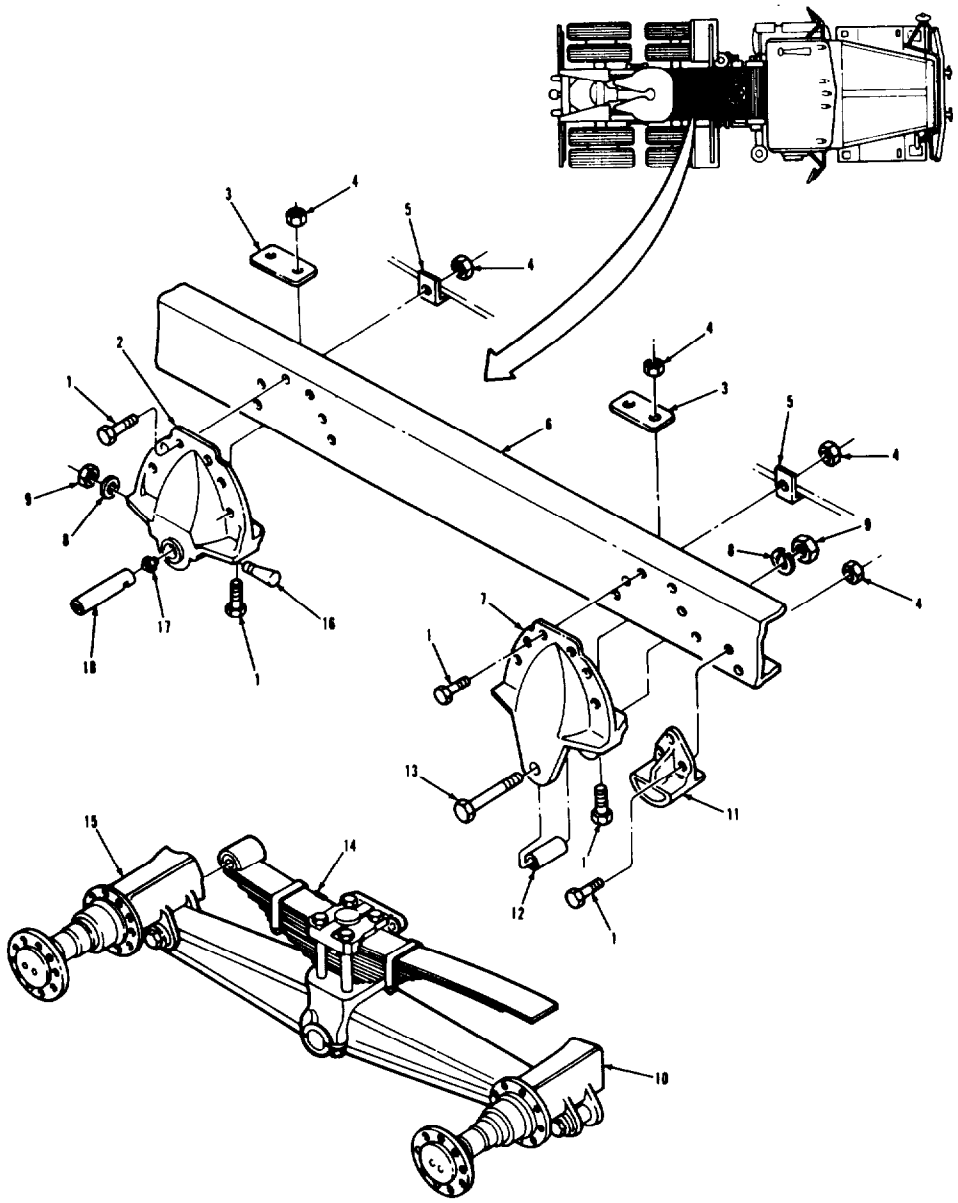
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. CLEANING.		
17. All parts.	Clean.	Refer to paragraph 3-4.
D. INSPECTION.		
18. All parts.	Inspect.	Refer to paragraph 3-5.
19. Hanger (2).	Inspect outside pin hole for cracks and elongation.	Discard item (2) if hole is elongated or if area around hole is cracked.
E. NO. 2 AND NO. 3 REAR SPRING HANGERS INSTALLATION.		
20. Spacer (12), bolt (13), lockwasher (8), and nut (9).	Install in item (7).	Torque item (9) to 70-80 lb-ft.
21. Hanger (7).	Slide onto item (14).	Item (12) should be under item (14) when installed.
22. Hanger (11), three screws (1), and nuts (4).	Install on item (6).	Tighten three items (4).
23. Rear-rear axle assembly (15).	Using floor jack, raise until holes in item (7) line up with holes in item (6).	
24. Hanger (7), bracket (5), six screws (1), and nuts (4).	Install on side of item (6), but do not tighten.	Do not install two items (1) and (4) in bottom of item (7) and (6) until step 28.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (19)
2. NO. 1 REAR SPRING HANGER
3. SPACER PLATE (2)
4. HEXAGON HEAD NUT (19)
5. TUBE SUPPORT BRACKET (2)
6. FRAME ASSEMBLY
7. NO. 2 REAR SPRING HANGER
8. LOCKWASHER (2).
9. NUT (2)
10. REAR-REAR AXLE ASSEMBLY
11. NO. 3 REAR SPRING HANGER
12. REBOUND BOLT SPACER
13. REBOUND BOLT
14. SPRING ASSEMBLY
15. FORWARD-REAR AXLE ASSEMBLY
16. DRAWKEY ASSEMBLY
17. FITTING
18. VEHICULAR LEAF PIN

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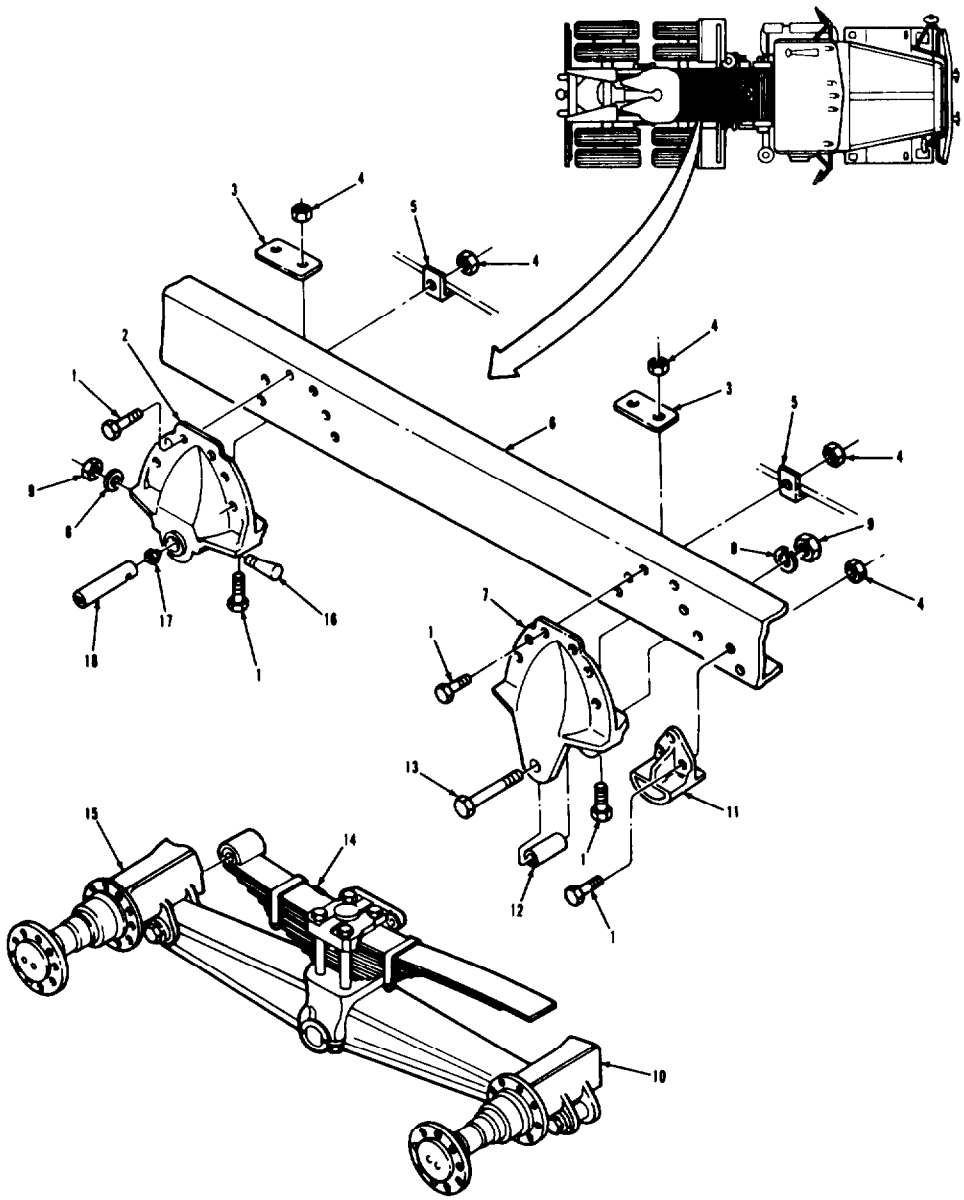
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. NO. 2 AND NO. 3 REAR SPRING HANGERS INSTALLATION (Continued).		
25. Plate (3).	Install between item (7) and bottom of item (6).	
26. Two screws (1) and nuts (4).	Install into items (7), (3), and (6), but do not tighten.	
27. Eight screws (1) and nuts (4).	Tighten.	
F. NO. 1 REAR SPRING HANGER INSTALLATION.		
28. Hanger (2), bracket (5), six screws nuts (4).	Install on side of item (6), but do not tighten.	Force item (14) down if necessary to install item (2). Do not install two items (1) and (4) in bottom of items (2) and (6) until step 32.
29. Plate (3).	Install between item (2) and bottom of item (6).	
30. Two screws (1) and nuts (4).	Install into items (2), (3), and (6), but do not tighten.	
31. Eight screws (1) and nuts (4).	Tighten.	
32. Forward-rear axle assembly (15).	Using floor jack, raise or lower until pin hole in item (2) lines up hole in item item (14).	
33. Pin (18).	Drive into items (2) and (14).	Make sure drawkey slot in item (18) is toward bottom of item (2). Adjust floor jack as necessary to install item (18).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (19)
2. NO. 1 REAR SPRING HANGER
3. SPACER PLATE (2)
4. HEXAGON HEAD NUT (19)
5. TUBE SUPPORT BRACKET (2)
6. FRAME ASSEMBLY
7. NO. 2 REAR SPRING HANGER
8. LOCKWASHER (2)
9. NUT (2)
10. REAR-REAR AXLE ASSEMBLY
11. NO. 3 REAR SPRING HANGER
12. REBOUND BOLT SPACER
13. REBOUND BOLT
14. SPRING ASSEMBLY
15. FORWARD-REAR AXLE ASSEMBLY
16. DRAWKEY ASSEMBLY
17. FITTING
18. VEHICULAR LEAF PIN

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SPRINGS, STOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
F. NO. 1 REAR SPRING HANGER INSTALLATION (Continued).		
34. Fitting (17).	Install into item (18).	
35. Drawkey assembly (16).	Drive into item (2).	
36. Nut (9) and lockwasher (8).	Install on item (16), and tighten.	
37. Forward-rear axle assembly (15) and frame (6).	Remove floor jack, jack stands, and lifting device.	

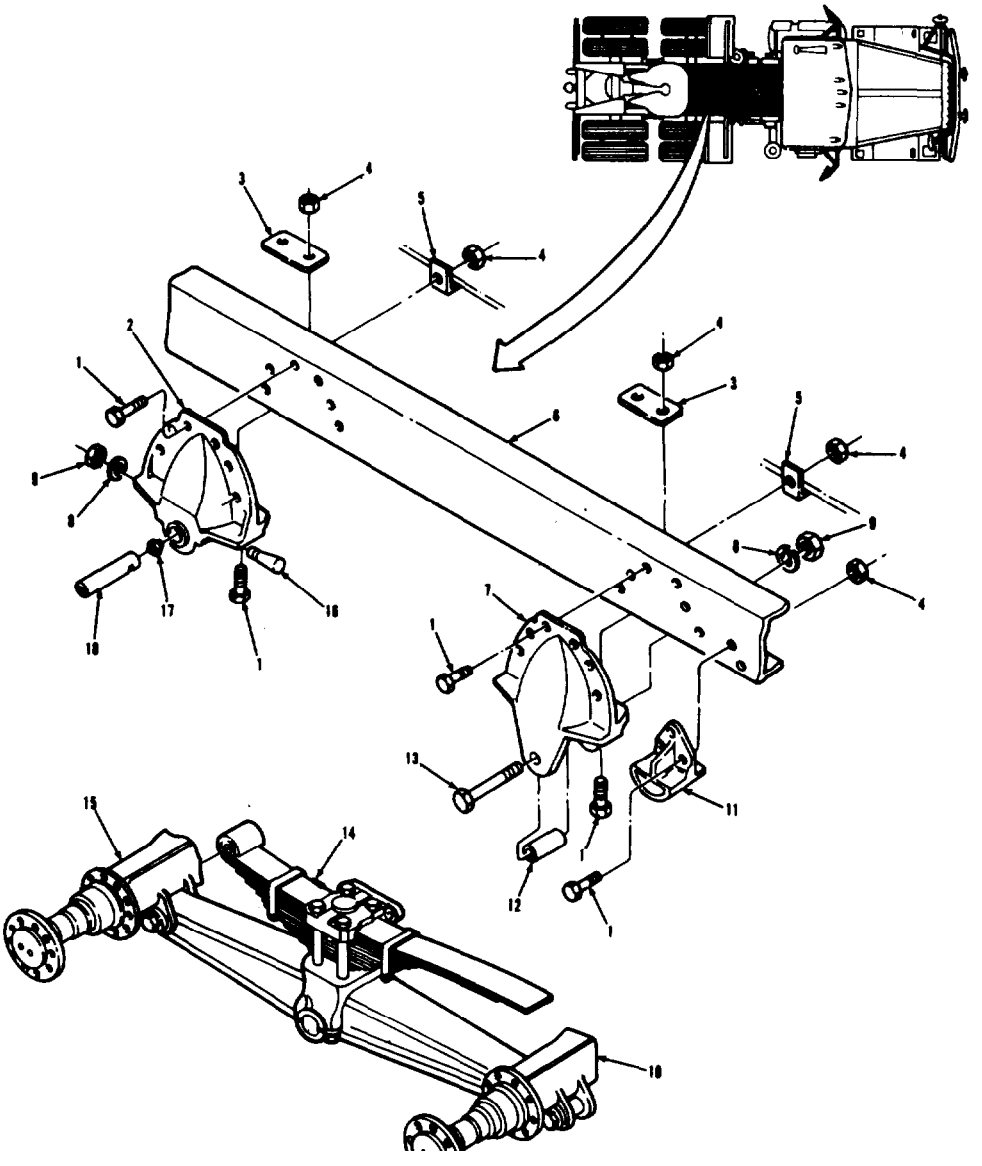
NOTE

Follow-on maintenance action required

Install forward-rear axle stop (TM 9-2320-283-20).
Install rear axle dual tires (TM 9-2320-283-10).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-101. REAR TANDEM AXLE SPRING HANGER REPLACEMENT (Continued).



LEGEND:

1. HEXAGON HEAD SCREW (19)
2. NO. 1 REAR SPRING HANGER
3. SPACER PLATE (2)
4. HEXAGON HEAD NUT (19)
5. TUBE SUPPORT BRACKET (2)
6. FRAME ASSEMBLY
7. NO. 2 REAR SPRING HANGER
8. LOCKWASHER (2)
9. NUT (2)
10. REAR-REAR AXLE ASSEMBLY
11. NO. 3 REAR SPRING HANGER
12. REBOUND BOLT SPACER
13. REBOUND BOLT
14. SPRING ASSEMBLY
15. FORWARD-REAR AXLE ASSEMBLY
16. DRAWKEY ASSEMBLY
17. FITTING
18. VEHICULAR LEAF PIN

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SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	9-2320-283-10.	Dual tires removed from both sides of forward-rear axle.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
None.

PERSONNEL REQUIRED
Two (MDS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

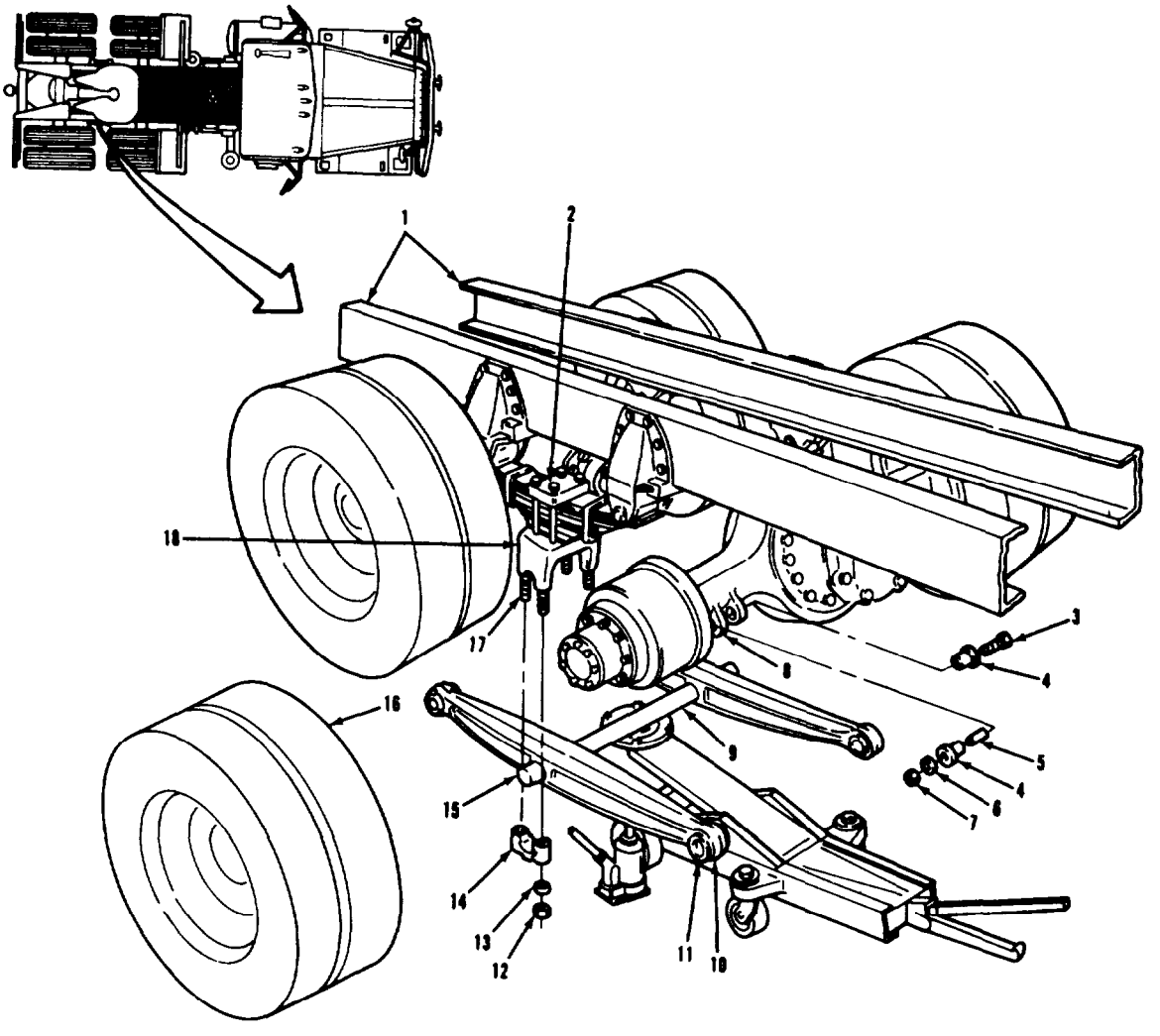
REFERENCE (TM)
TM 9-2320-283-10.

GENERAL SAFETY INSTRUCTIONS
Block front wheels.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY (2)
3. HEXAGON HEAD SCREW (4)
4. BEAM END ADAPTER (8)
5. ADAPTER SLEEVE (4)
6. HARDENED PLAIN WASHER (4)
7. HEXAGON HEAD NUT (4)
8. AXLE ASSEMBLY (2)
9. CROSS TUBE
10. EQUALIZER BEAM (2)
11. END SLEEVE BUSHING (4)
12. HEXAGON HEAD NUT (8)
13. PLAIN WASHER (8)
14. SADDLE CAP (4)
15. CENTER SLEEVE BUSHING (2)
16. INSIDE DUAL TIRE (2)
17. HEXAGON HEAD SCREW (8)
18. SADDLE (2)

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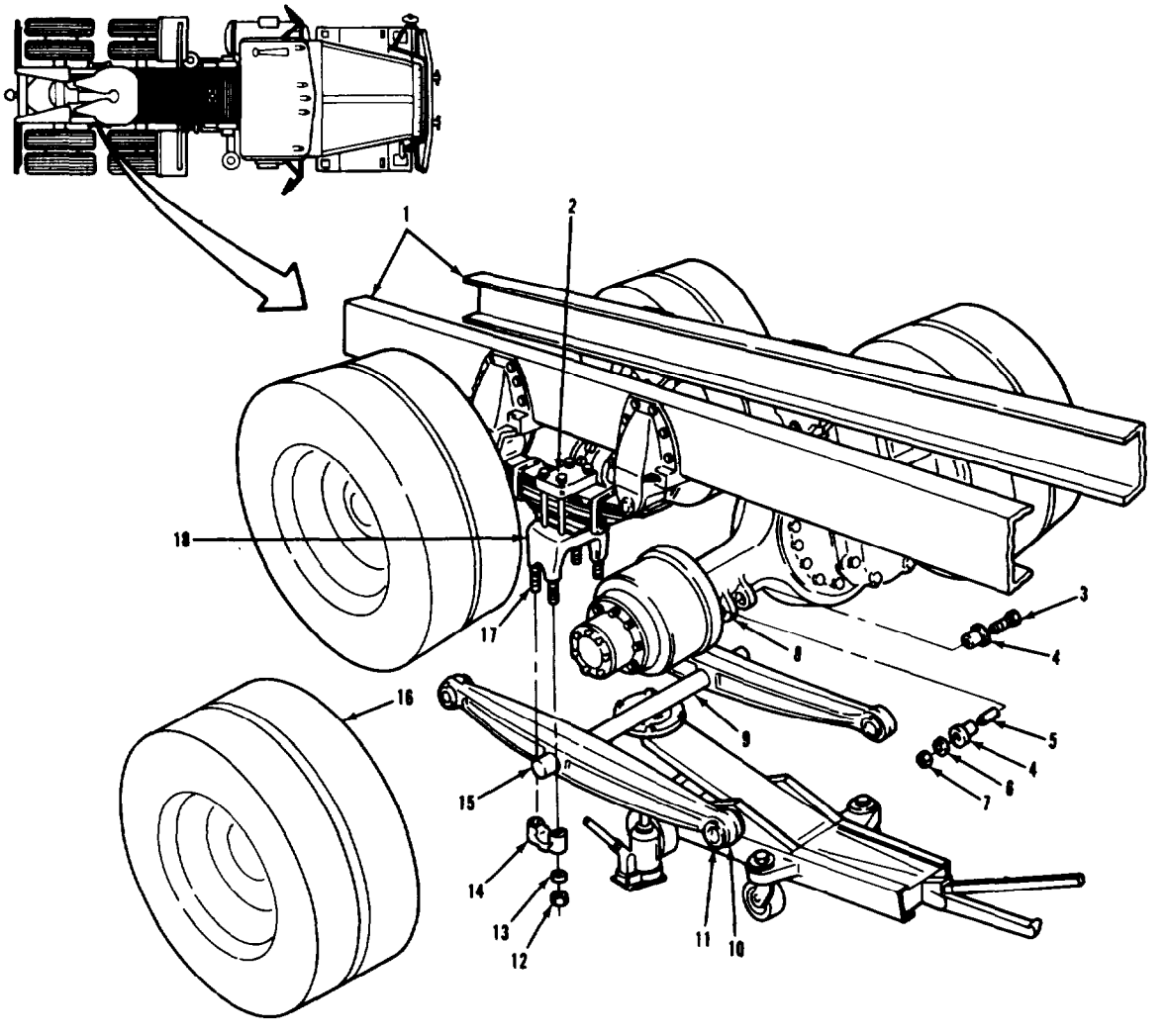
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Frame (1).	a. Using suitable lifting device, lift until weight of vehicle is off two items (2).	
	b. Support with jack stands.	Use jack stands with a minimum ten ton capacity.
2. Two tires (16).	Turn around and reinstall one on each end of item (8).	This is done to prevent item (8) from dropping when items (9) and (10) are removed.
	NOTE Repeat steps 3 thru 5 for each of the four equalizer beam ends.	
3. Nut (7), washer (6), and screw (3).	Remove from two items (4).	
4. End of beam (10).	Using hydraulic jack, lift until weight is off item (8).	This is done so that it will be easier to remove two items (4) and item (5).
5. Two adapters (4) and sleeve (5).	Remove from end of item (10).	It may be necessary to adjust hydraulic jack so that two items (4) and item (5) can be removed.
6. Tube (9).	Support in center with floor jack.	Make sure item (9) is centered on floor jack before doing step 7.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY (2)
3. HEXAGON HEAD SCREW (4)
4. BEAM END ADAPTER (8)
5. ADAPTER SLEEVE (4)
6. HARDENED PLAIN WASHER (4)
7. HEXAGON HEAD NUT (4)
8. AXLE ASSEMBLY (2)
9. CROSS TUBE
10. EQUALIZER BEAM (2)
11. END SLEEVE BUSHING (4)
12. HEXAGON HEAD NUT (8)
13. PLAIN WASHER (8)
14. SADDLE CAP (4)
15. CENTER SLEEVE BUSHING (2)
16. INSIDE DUAL TIRE (2)
17. HEXAGON HEAD SCREW (8)
18. SADDLE (2)

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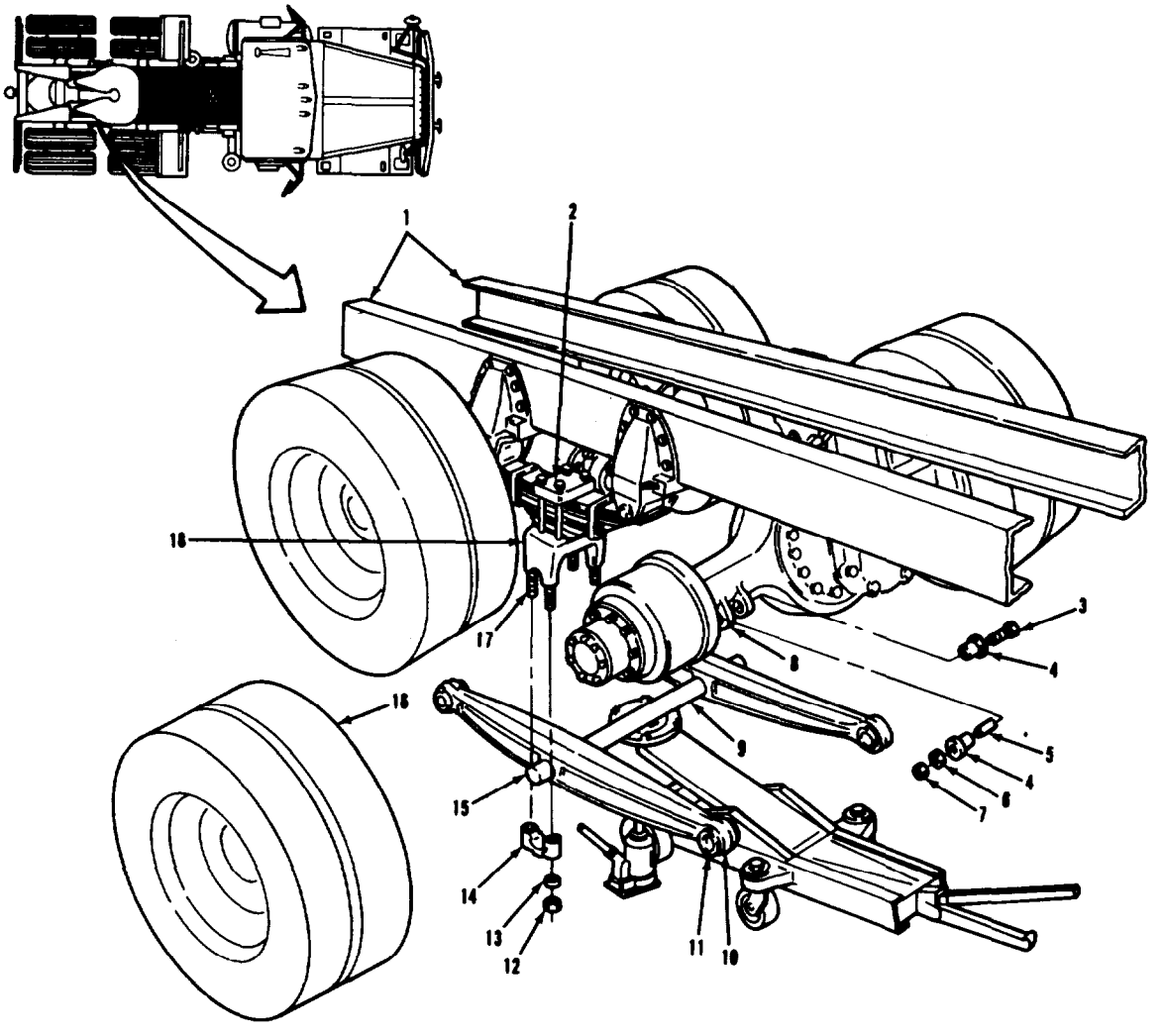
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
	WARNING Equalizer beams and cross tube are heavy. To avoid injury, be very careful during removal.	
7. Eight nuts (12) and washers (13), and four caps (14).	Remove from items (15), (17). and (18).	Have assistant hold items (9) and (10) steady during this step.
8. Tube (9) and two beams (10) (assembled).	Using floor jack, lower and remove from vehicle.	Have assistant help steady items (9) and (10) during removal. Roll items (9) and (10) under item (8) to remove.
9. Two beams (10).	Remove from item (9).	Have assistant help if necessary.
B. CLEANING.		
10. All parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
11. All parts.	Inspect.	Refer to paragraph 3-5.
12. Six bushings (11) AND (15).	Inspect for damage and wear.	Replace items (11) and (15) if damaged or worn (refer to paragraph 3-103).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY (2)
3. HEXAGON HEAD SCREW (4)
4. BEAM END ADAPTER (8)
5. ADAPTER SLEEVE (4)
6. HARDENED PLAIN WASHER (4)
7. HEXAGON HEAD NUT (4)
8. AXLE ASSEMBLY (2)
9. CROSS TUBE
10. EQUALIZER BEAM (2)
11. END SLEEVE BUSHING (4)
12. HEXAGON HEAD NUT (8)
13. PLAIN WASHER (8)
14. SADDLE CAP (4)
15. CENTER SLEEVE BUSHING (2)
16. INSIDE DUAL TIRE (2)
17. HEXAGON HEAD SCREW (8)
18. SADDLE (2)

TA238488

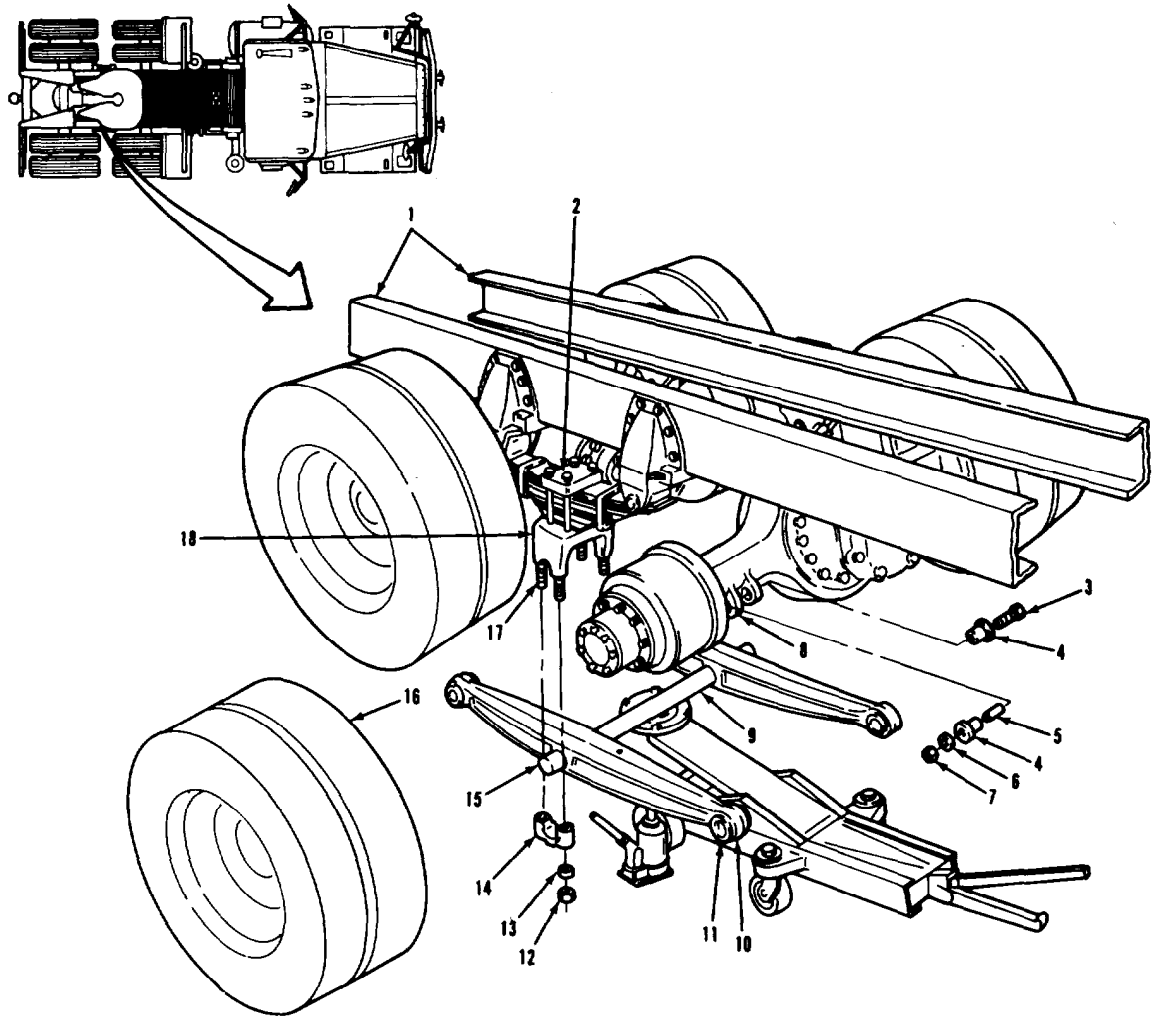
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION.		
	WARNING Equalizer beams and cross tube are heavy. To avoid injury, be very careful during installation.	
13. Tube (9).	Position on floor jack.	
14. Two beams (10).	Install on item (9).	Have assistant help if necessary. When both items (10) are installed, position item (9) on floor jack so that weight is balanced.
15. Tube (9) and two beams (10).	Using floor jack, position under vehicle and raise until two items (15) are up against two items (18).	
16. Four caps (14), and eight nuts (12) and washers (13).	Install on items (15), (17), and (18).	Torque items (12) to 225-275 lb-ft.
	NOTE Repeat steps 17 thru 19 for each of the four equalizer beams ends.	
17. End of beam (10).	Using hydraulic jack, lift until bushing bore of item (10) is lined up with center of bracket in item (8).	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY (2)
3. HEXAGON HEAD SCREW (4)
4. BEAM END ADAPTER (8)
5. ADAPTER SLEEVE (4)
6. HARDENED PLAIN WASHER (4)
7. HEXAGON HEAD NUT (4)
8. AXLE ASSEMBLY (2)
9. CROSS TUBE
10. EQUALIZER BEAM (2)
11. END SLEEVE BUSHING (4)
12. HEXAGON HEAD NUT (8)
13. PLAIN WASHER (8)
14. SADDLE CAP (4)
15. CENTER SLEEVE BUSHING (2)
16. INSIDE DUAL TIRE (2)
17. HEXAGON HEAD SCREW (8)
18. SADDLE (2)

TA 238489

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
18. Sleeve (5) and two adapters (4).	Install into items (8) and (10).	Adjust hydraulic jack as necessary to install item (5) and two items (4).
19. Nut (7), washer (6), and screw (3).	Install into two item (4).	Torque item (7) to 210-240 lb-ft.
20. Two tires (16).	Remove.	
21. Tube (9), two beams (10), and frame (11).	Remove floor jack, hydraulic jack, and jack stands.	

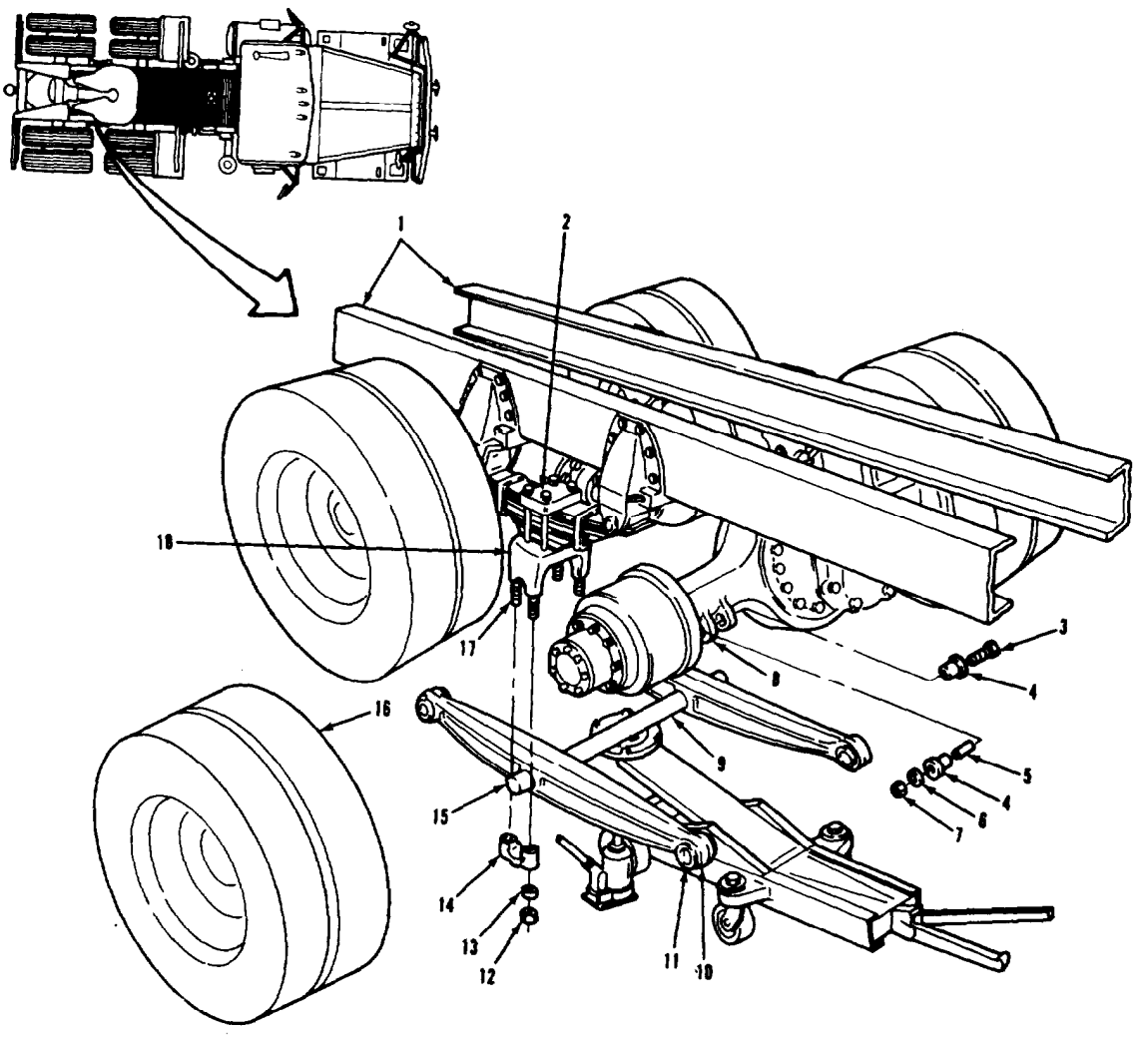
NOTE

Follow-on maintenance action required:

Install dual tires on both sides of forward-rear axle (TM 9-2320-283-10).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-102. EQUALIZER BEAM REPLACEMENT (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY (2)
3. HEXAGON HEAD SCREW (4)
4. BEAM END ADAPTER (8)
5. ADAPTER SLEEVE (4)
6. HARDENED PLAIN WASHER (4)
7. HEXAGON HEAD NUT (4)
8. AXLE ASSEMBLY (2)
9. CROSS TUBE
10. EQUALIZER BEAM (2)
11. END SLEEVE BUSHING (4)
12. HEXAGON HEAD NUT (8)
13. PLAIN WASHER (8)
14. SADDLE CAP (4)
15. CENTER SLEEVE BUSHING (2)
16. INSIDE DUAL TIRE (2)
17. HEXAGON HEAD SCREW (8)
18. SADDLE (2)

TA238490

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR.

THIS TASK COVERS

a. Center Bushing Replacement.
b. End Bushing Replacement.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
None.

CONDITION DESCRIPTION
None.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Equalizing beam service set
(45225) Y-850-A.
Receiving tube
(45225) Y-860.
Removing adapter
(45225) Y-861.
Installing adapter
(45225) Y-862.

MATERIALS/PARTS (P/N)
Sleeve bushing (center; as required)
(28158) 5919.
Sleeve bushing (end; as required)
(28158) 6572.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

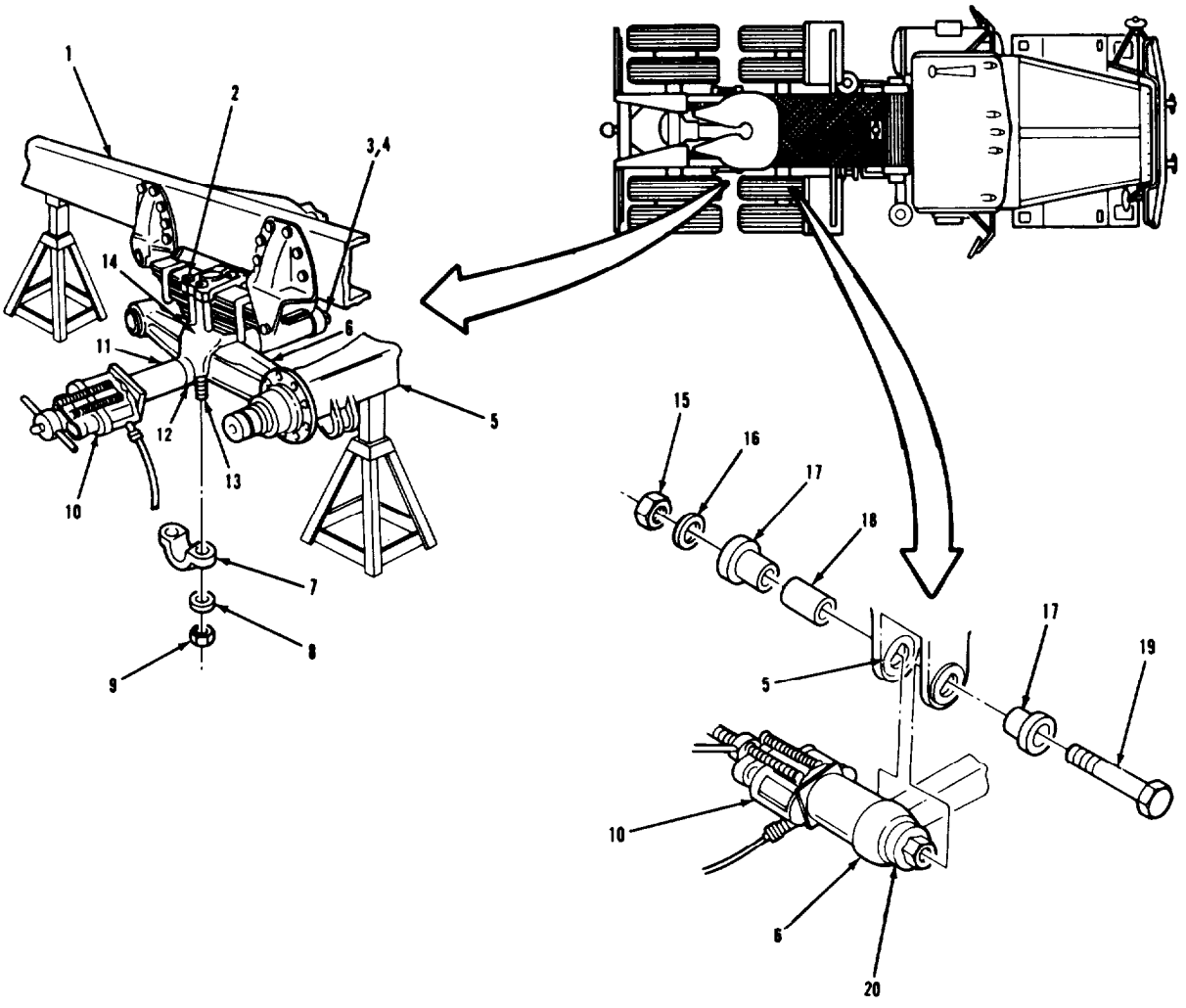
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY
3. REMOVING ADAPTER
4. INSTALLING ADAPTER
5. AXLE ASSEMBLY
6. EQUALIZER BEAM
7. SADDLE CAP (2)
8. PLAIN WASHER (4)
9. HEXAGON HEAD NUT (4)
10. EQUALIZING BEAM SERVICE SET
11. RECEIVING TUBE
12. SLEEVE BUSHING (CENTER)
13. HEXAGON HEAD SCREW (4)
14. SADDLE
15. HEXAGON HEAD NUT
16. HARDENED PLAIN WASHER
17. BEAM END ADAPTER (2)
18. ADAPTER SLEEVE
19. HEXAGON HEAD SCREW
20. SLEEVE BUSHING (END)

TA 238491

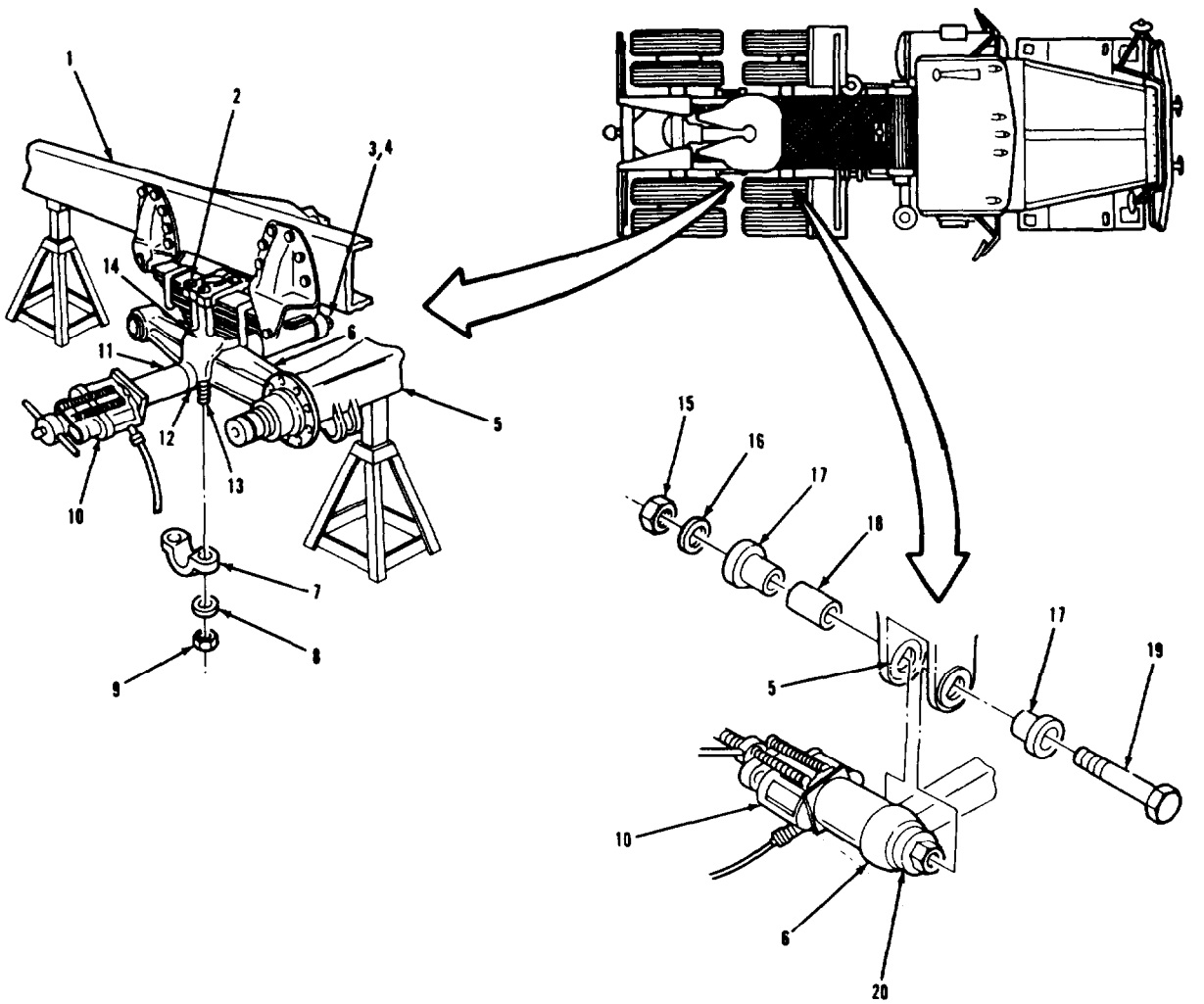
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE Repair of equalizer beam is limited to replacement of bushings. Use this procedure to replace any bushing on either equalizer beam. The tools shown in this procedure can be used with the equalizer beam on or off the vehicle.	
A. CENTER BUSHING REPLACEMENT.		
1. Rear of frame (1).	a. Using suitable lifting device, raise until weight of vehicle is off item (2).	
	b. Support with jack stands.	Use jack stands with a minimum ten ton capacity.
2. Beam (6).	Support with suitable hydraulic jack.	
3. Four nuts (9) and washers (8), and two caps (7).	Remove from items (12), (13), and (14).	
4. Beam (6).	Using hydraulic jack, lower away from item (14).	
5. Bushing (12).	Using items (10), (11), and (3), press out of item (6).	Discard item (12).
6. Bean (6).	Clean and inspect center bushing bore.	Refer to paragraph 3-4 and 3-5. Be sure to check for scoring and wear.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY
3. REMOVING ADAPTER
4. INSTALLING ADAPTER
5. AXLE ASSEMBLY
6. EQUALIZER BEAM
7. SADDLE CAP (2)
8. PLAIN WASHER (4)
9. HEXAGON HEAD NUT (4)
10. EQUALIZING BEAM SERVICE SET
11. RECEIVING TUBE
12. SLEEVE BUSHING (CENTER)
13. HEXAGON HEAD SCREW (4)
14. SADDLE
15. HEXAGON HEAD NUT
16. HARDENED PLAIN WASHER
17. BEAM END ADAPTER (2)
18. ADAPTER SLEEVE
19. HEXAGON HEAD SCREW
20. SLEEVE BUSHING (END)

TA 238492

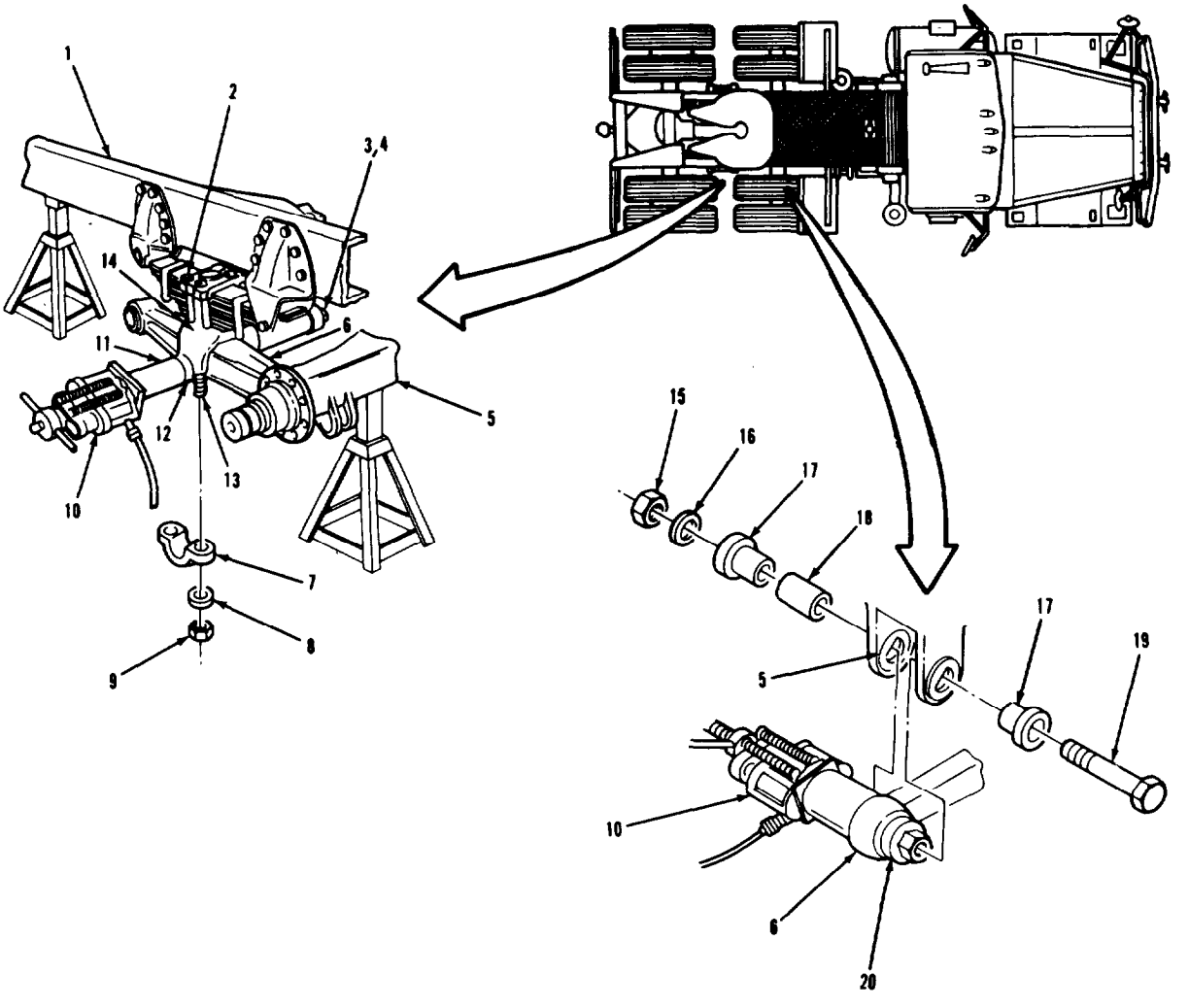
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. CENTER BUSHING REPLACEMENT (Continued).		
7. New bushing (12).	Using items (10), (11), and (4), press into item (6).	Make sure item (12) is centered in item (6).
8. Beam (6).	Using hydraulic jack, raise until items (6) and (12) are against item (14).	
9. Two caps (7), four nuts (9), and washers (8).	Install onto items (12). (13), and (14).	
10. Beam (6) and frame (1).	Remove hydraulic jack and jack stands.	
B. END BUSHING REPLACEMENT.		
11. Dual tires over bushing being replaced.	Remove.	Refer to TM 9-2320-283-10.
12. End of axle assembly (5).	Support with jack stand.	
13. End of beam (6).	Support with hydraulic jack.	
14. Nut (15), washer (16), and screw (19).	Remove from two items (17).	
15. Two adapters (17) and sleeve (18).	Remove from items (5) and (6).	Adjust hydraulic jack as needed to remove two items (17) and item (18).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY
3. REMOVING ADAPTER
4. INSTALLING ADAPTER
5. AXLE ASSEMBLY
6. EQUALIZER BEAM
7. SADDLE CAP (2).
8. PLAIN WASHER (4)
9. HEXAGON HEAD NUT (4)
10. EQUALIZING BEAM SERVICE SET
11. RECEIVING TUBE
12. SLEEVE BUSHING (CENTER)
13. HEXAGON HEAD SCREW (4)
14. SADDLE
15. HEXAGON HEAD NUT
16. HARDENED PLAIN WASHER
17. BEAM END ADAPTER (2)
18. ADAPTER SLEEVE
19. HEXAGON HEAD SCREW
20. SLEEVE BUSHING (END)

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SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. END BUSHING REPLACEMENT (Continued).		
16. End of beam (6).	Using hydraulic jack, lower away from item (5).	
17. Bushing (20).	Using item (lo), press out of item (6).	Discard item (20).
18. Beam (6).	Clean and inspect end bushing bore.	Refer to paragraphs 3-4 and 3-5. Be sure to check for scoring and wear.
19. New bushing (20).	Using item (10), press into item (6).	Make sure item (20) is centered in item (6).
20. End of beam (6).	Using hydraulic jack, raise until center of item (20) is lined up with bracket in item (5).	
21. Sleeve (18) and two adapters (17).	Install into items (5) and (6).	Adjust hydraulic jack as needed to install two items (18) and item (17).
22. Screw (19), washer (16), and nut (15).	Install into two items (17).	Torque nut to 210-240 lb-ft.
23. Beam (6) and axle assembly (5).	Remove hydraulic jack and jack stand.	
24. Dual tires.	Install.	Refer to TM 9-2320-283-10.

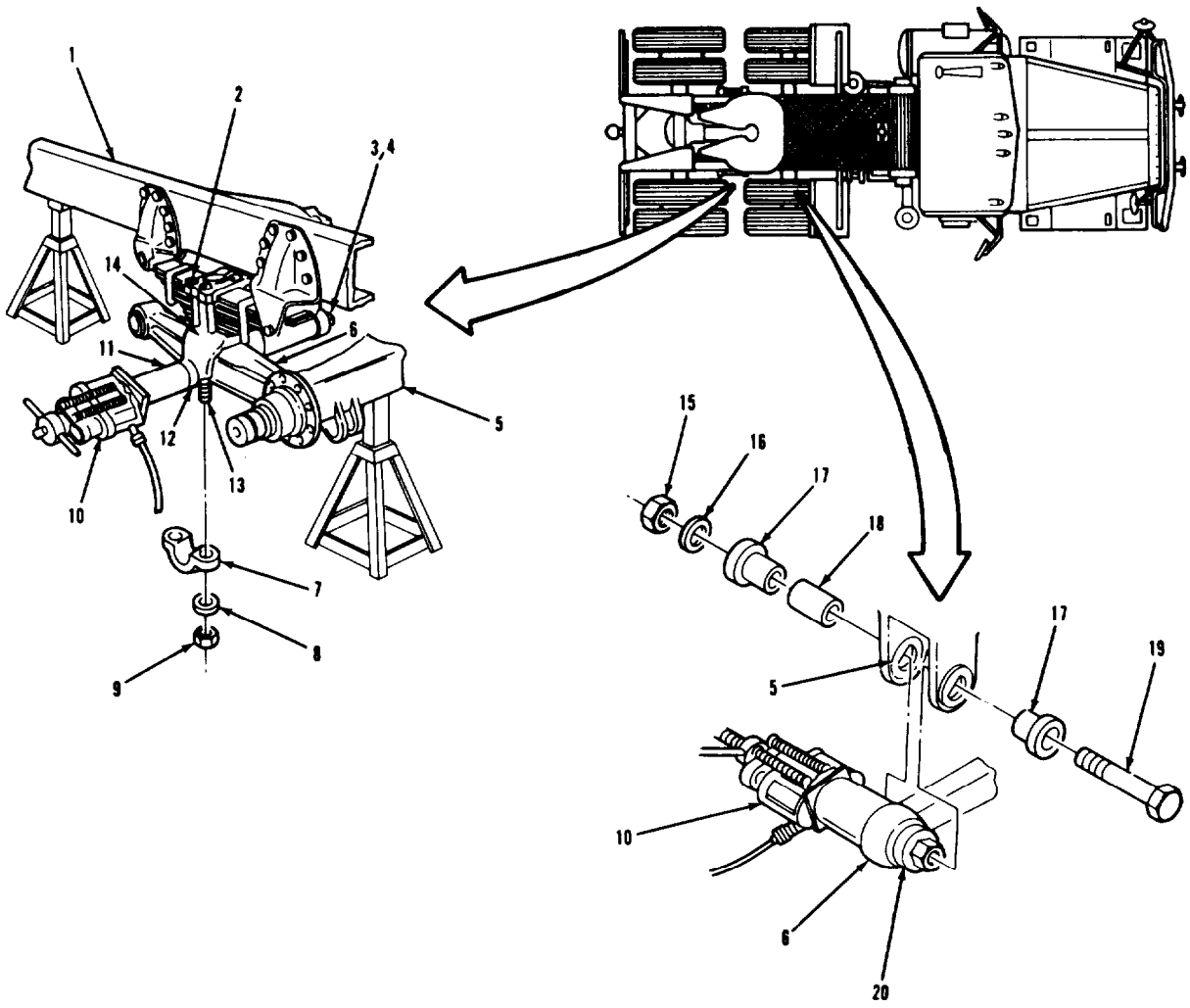
NOTE

Follow-on maintenance action required:

None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-103. EQUALIZER BEAM REPAIR (Continued).



LEGEND:

1. FRAME
2. SPRING ASSEMBLY
3. REMOVING ADAPTER
4. INSTALLING ADAPTER
5. AXLE ASSEMBLY
6. EQUALIZER BEAM
7. SADDLE CAP (2)
8. PLAIN WASHER (4)
9. HEXAGON HEAD NUT (4)
10. EQUALIZING BEAM SERVICE SET
11. RECEIVING TUBE
12. SLEEVE BUSHING (CENTER)
13. HEXAGON HEAD SCREW (4)
14. SADDLE
15. HEXAGON HEAD NUT
16. HARDENED PLAIN WASHER
17. BEAM END ADAPTER (2)
18. ADAPTER SLEEVE
19. HEXAGON HEAD SCREW
20. SLEEVE BUSHING (END)

TA238494

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-10	Front tire removed.
	TM 9-2320-283-20.	Shock absorber removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Cotter pin (3)
(24617) 1034111.
Special shackle pin screw (3)
(34623) MB279-20000.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

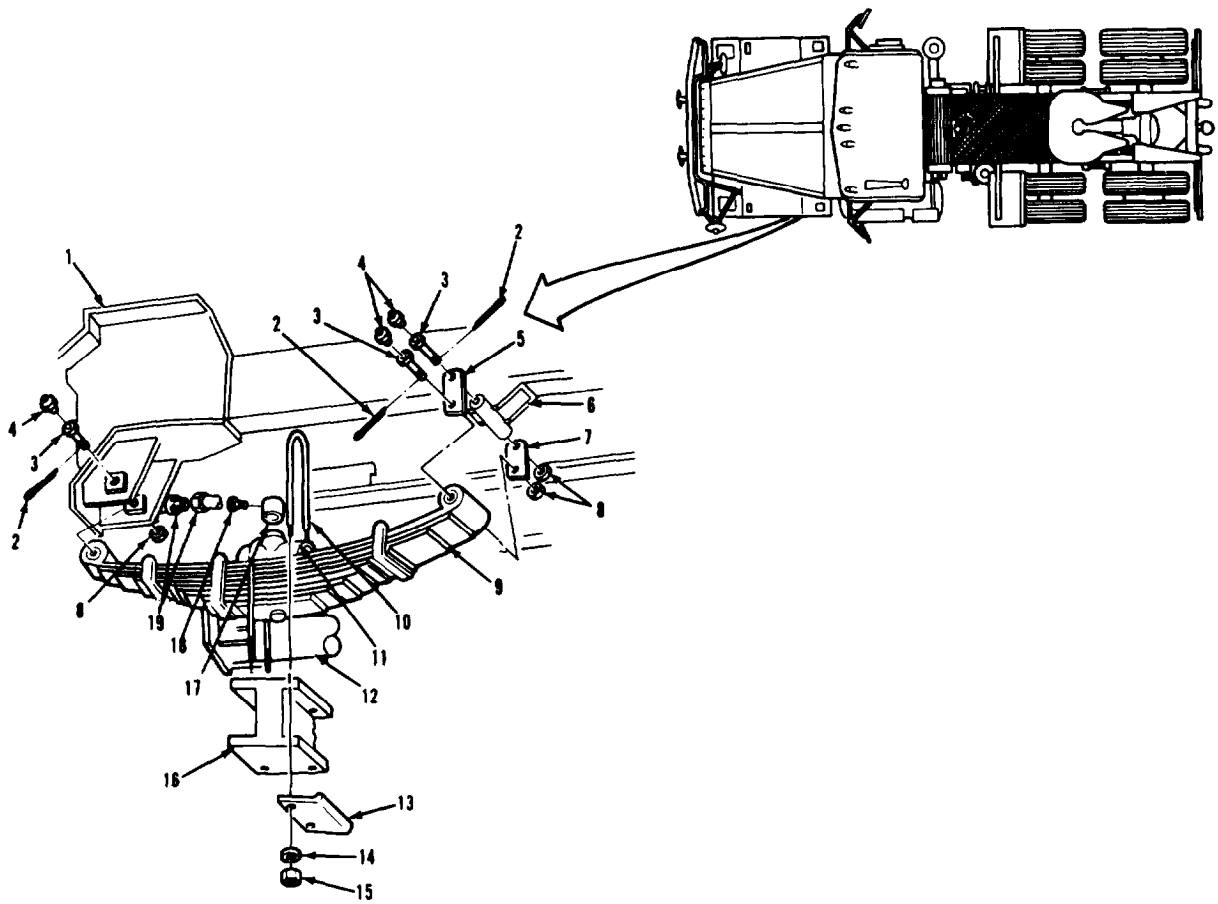
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. COTTER'PIN (3)
3. SPECIAL SHACKLE PIN SCREW (3)
4. LUBRICATION FITTING (3)
5. OUTER SPRING SHACKLE
6. CAB FRONT SUPPORT ASSEMBLY
7. INNER SPRING SHACKLE
8. HEXAGON CASTELLATED NUT (3)
9. FRONT SPRING ASSEMBLY
10. U-BOLT (2)
11. FRONT SPRING SADDLE
12. RADIATOR OUTLET HOSE
13. LOWER SHOCK MOUNTING BRACKET ASSEMBLY (2)
14. FLAT WASHER (2)
15. HEXAGON HEAD NUT (2)
16. FRONT AXLE
17. AXLE BUMPER
18. PAN HEAD SCREW
19. TRANSMISSION COOLER HOSE (2)

TA238495

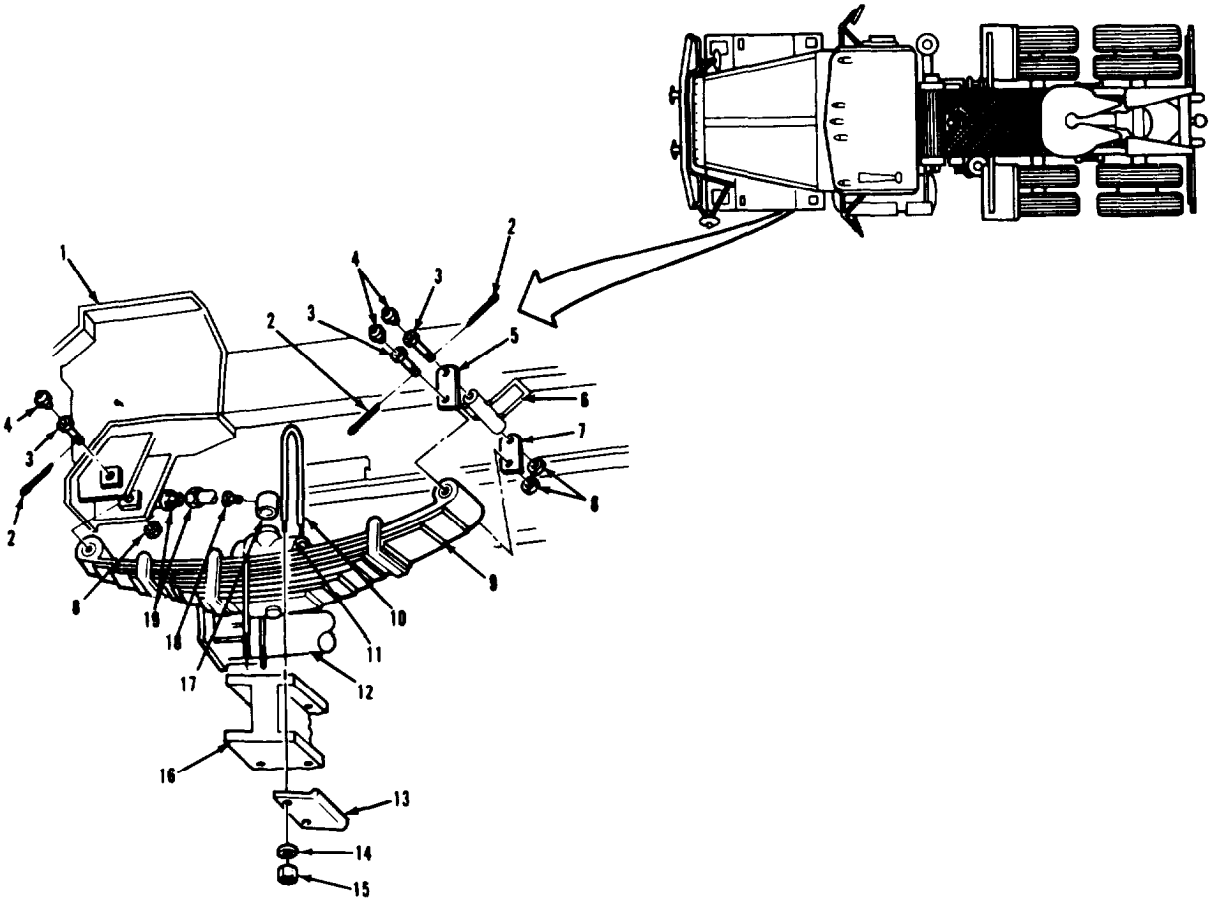
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
	WARNING To avoid injury when removing front spring, make sure front of vehicle and front axle are supported by jack stands with a minimum ten ton capacity. Each front spring weighs approximately To avoid injury, be very careful when removing front spring.	
	NOTE Right and left side front springs are replaced in the same way, except as noted. Use this procedure to replace either front spring.	
A. REMOVAL.		
1. Two hoses (19).	Disconnect and move away from item (9).	Do this step for left side only. Use suitable container to catch transmission oil.
2. Cooling system.	Drain.	Do this step for right side only. Refer to TM 9-2320-283-10 for cooling system draining procedures.
3. Hose (12).	Disconnect and move away from item (9).	Do this step for right side only. Use suitable container to catch any remaining coolant.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. COTTER PIN (3)
3. SPECIAL SHACKLE PIN SCREW (3)
4. LUBRICATION FITTING (3)
5. OUTER SPRING SHACKLE
6. CAB FRONT SUPPORT ASSEMBLY
7. INNER SPRING SHACKLE
8. HEXAGON CASTELLATED NUT (3)
9. FRONT SPRING ASSEMBLY
10. U-BOLT (2)
11. FRONT SPRING SADDLE
12. RADIATOR OUTLET HOSE
13. LOWER SHOCK MOUNTING BRACKET ASSEMBLY (2)
14. FLAT WASHER (2)
15. HEXAGON HEAD NUT (2)
16. FRONT AXLE
17. AXLE BUMPER
18. PAN HEAD SCREW
19. TRANSMISSION COOLER HOSE (2)

TA 238496

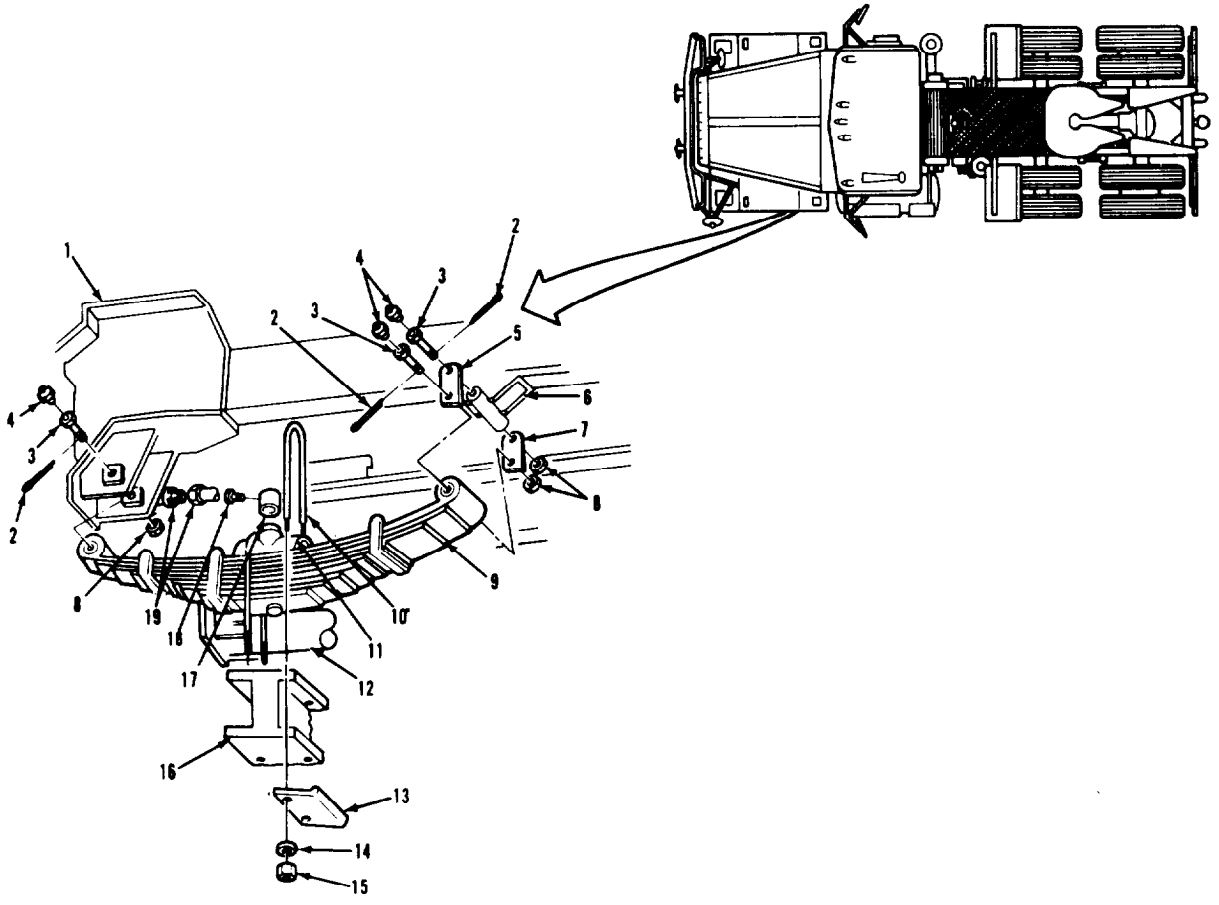
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
4. Three pins (2).	Remove from three items (3).	Discard three items (2).
5. Three nuts (8).	Remove from three items (3).	
6. Screw (3).	Using porta-power, press out of items (1) and (9).	
7. Screw (3).	Using porta-power, press out of items (7), (9), and (5).	
8. Front spring assembly (9).	Wrap with chain and support with suitable lifting device.	
9. Four nuts (15), washers (14), and two lower shock mounting bracket assemblies (13).	Remove from items (10) and (11).	
10. Two U-bolts (10) and saddle (11).	Remove from item (9).	
11. Front spring assembly (9).	Using chain and hoist, lift off of item (16) and place in a clean work area.	
12. Screw (18) and bumper (17).	Remove from item (11).	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. COTTER PIN (3)
3. SPECIAL SHACKLE PIN SCREW (3)
4. LUBRICATION FITTING (3)
5. OUTER SPRING SHACKLE
6. CAB FRONT SUPPORT ASSEMBLY
7. INNER SPRING SHACKLE
8. HEXAGON CASTELLATED NUT (3)
9. FRONT SPRING ASSEMBLY
10. U-BOLT (2)
11. FRONT SPRING SADDLE
12. RADIATOR OUTLET HOSE
13. LOWER SHOCK MOUNTING BRACKET ASSEMBLY (2)
14. FLAT WASHER (2)
15. HEXAGON HEAD NUT (2)
16. FRONT AXLE
17. AXLE BUMPER
18. PAN HEAD SCREW
19. TRANSMISSION COOLER HOSE (2)

TA 238497

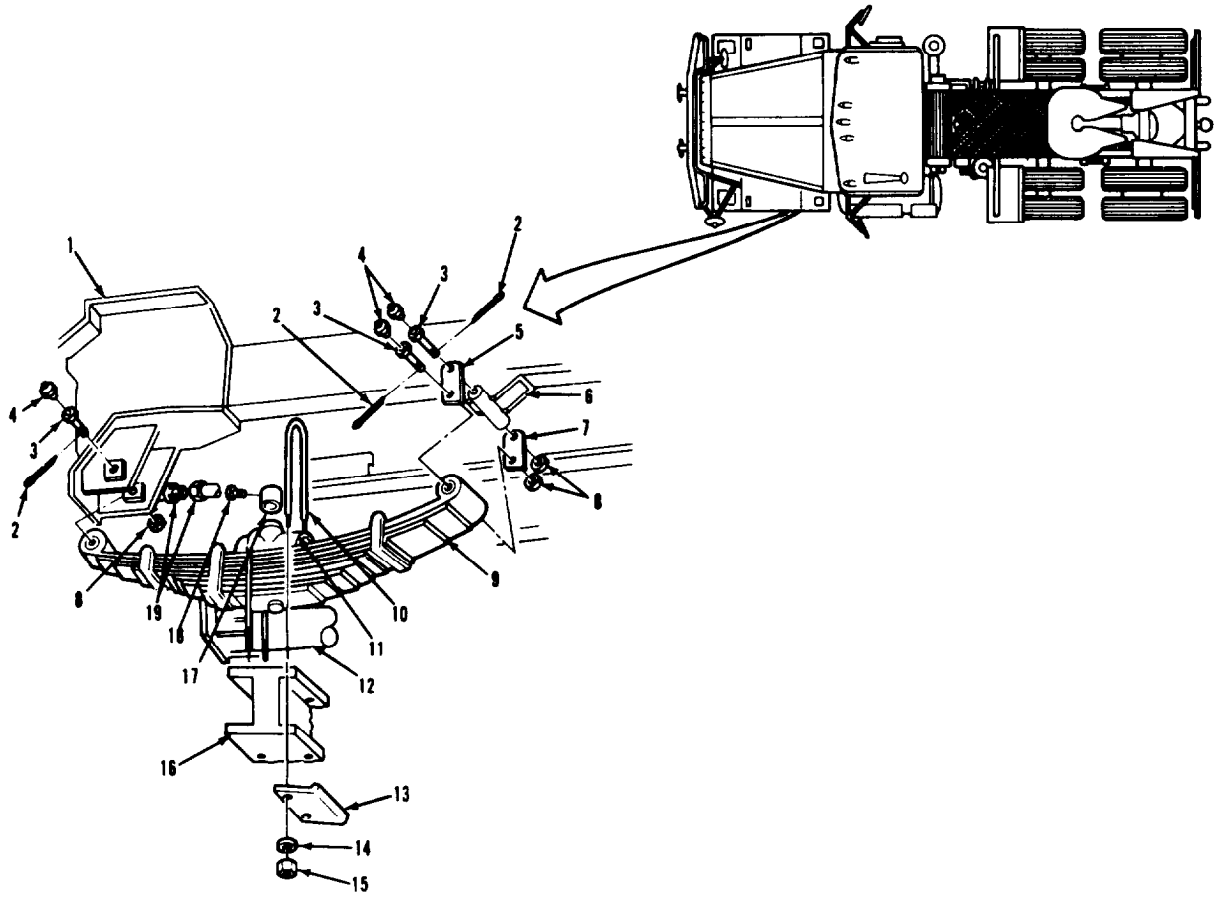
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
13. Screw (3) and shackles (5) and (7).	a. Using porta-power, press item (3) out of items (7), (6), and (5). b. Remove items (5) and (7) from item (6).	
14. Three fittings (4).	Remove from three items (3).	Discard three items (3).
B. CLEANING.		
15. All parts.	Clean.	Refer to paragraph 3-4. Be sure to clean spring mounting areas on items (1) and (6).
C. INSPECTION.		
16. All parts.	Inspect.	Refer to paragraph 3-5. Be sure to inspect spring mounting areas on items (1) and (6).
D. INSTALLATION.		
17. Three fittings (4).	Install into three new items (3).	
18. Shackles (5) and (7).	a. Hold in place on item (6). b. Secure with new item (3).	Use porta-power to install item (3), if necessary.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. COTTER PIN (3)
3. SPECIAL SHACKLE PIN SCREW (3)
4. LUBRICATION FITTING (3)
5. OUTER SPRING SHACKLE
6. CAB FRONT SUPPORT ASSEMBLY
7. INNER SPRING SHACKLE
8. HEXAGON CASTELLATED NUT (3)
9. FRONT SPRING ASSEMBLY
10. U-BOLT (2)
11. FRONT SPRING SADDLE
12. RADIATOR OUTLET HOSE
13. LOWER SHOCK MOUNTING BRACKET ASSEMBLY (2)
14. FLAT WASHER (2)
15. HEXAGON HEAD NUT (2)
16. FRONT AXLE
17. AXLE BUMPER
18. PAN HEAD SCREW
19. TRANSMISSION COOLER HOSE (2)

TA 238498

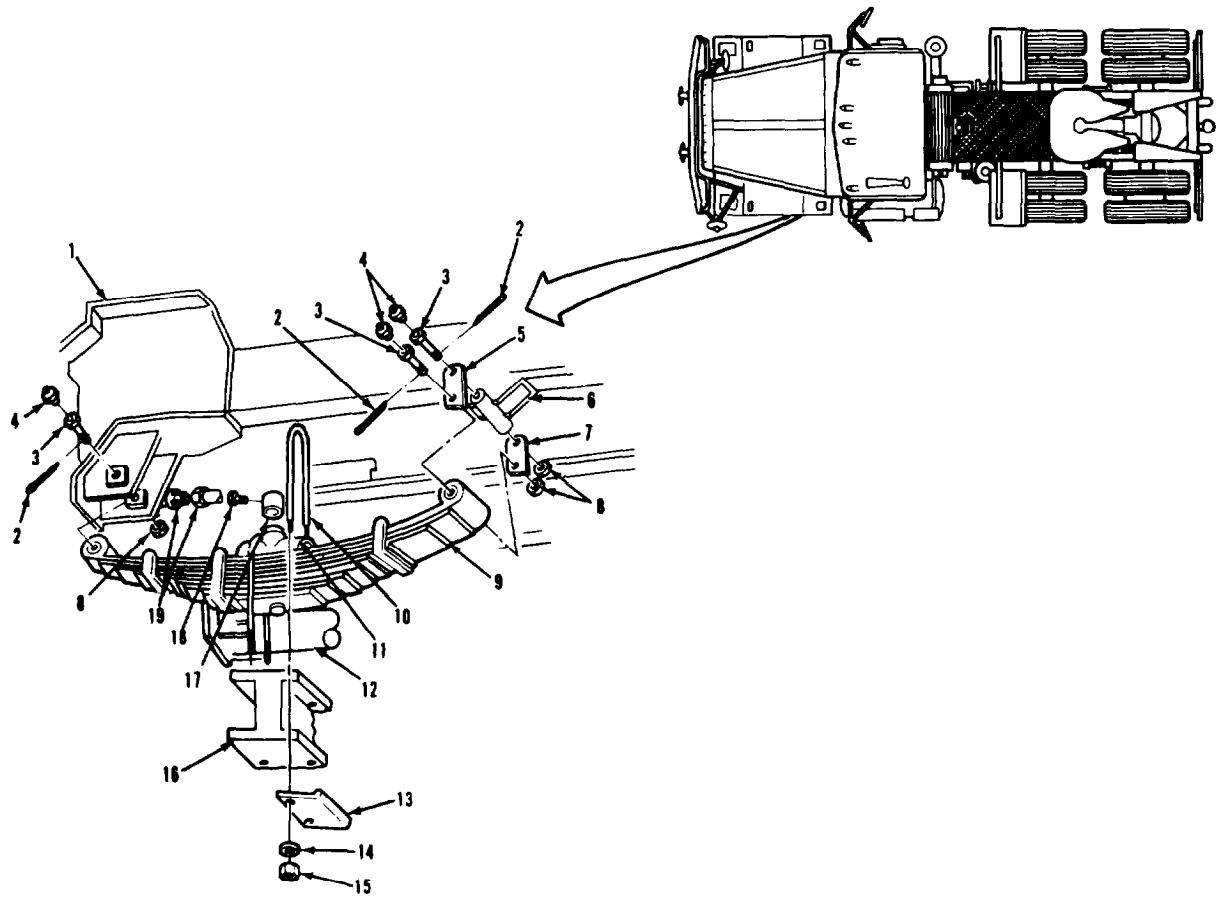
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
19. Bumper (17).	a. Install on item (11). b. Secure with item (18).	
20. Front spring assembly (9).	Using chain and hoist, put into place on item (16).	Make sure screw head on item (9) fits into hole in item (16).
21. Saddle (11) and two U-bolts (10).	Install on top of item (9).	Make sure hole in item (11) fits over nut on item (9).
22. Two lower shock mounting bracket assemblies (13), four nuts (15), and washers (14).	Install on items (16) and (10).	Screw items (15) on until snug, but do not tighten at this time.
23. Front spring assembly (9).	Remove chain and lifting device.	
24. Front axle (16).	Using hydraulic jack, raise or lower until bushing in rear end of item (9) lines up with holes in items (5) and (7).	
25. New screw (3).	Install into items (5), (9), and (7).	Use porta-power to install item (3), if necessary.
26. Front axle (16).	Using hydraulic jack, raise or lower until bushing in, front end of item (9) lines up with holes in item (1).	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. COTTER PIN (3)
3. SPECIAL SHACKLE PIN SCREW (3)
4. LUBRICATION FITTING (3)
5. OUTER SPRING SHACKLE
6. CAB FRONT SUPPORT ASSEMBLY
7. INNER SPRING SHACKLE
8. HEXAGON CASTELLATED NUT (3)
9. FRONT SPRING ASSEMBLY
10. U-BOLT (2)
11. FRONT SPRING SADDLE
12. RADIATOR OUTLET HOSE
13. LOWER SHOCK MOUNTING BRACKET ASSEMBLY (2)
14. FLAT WASHER (2)
15. HEXAGON HEAD NUT (2)
16. FRONT AXLE
17. AXLE BUMPER
18. PAN HEAD SCREW
19. TRANSMISSION COOLER HOSE (2)

TA 238499

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
27. New screw (3).	Install into items (1) and (9).	Use porta-power to install item (3), if necessary.
28. Three nuts (8).	Install onto three items (3).	Torque three items (8) to 300-400 lb-ft.
29. Three new pins (2).	Install into three items (3).	
30. Four nuts (15).	Torque to 110-125 lb-ft.	
31. Hose (12).	Connect to bottom of radiator.	Do this step for right side only. Make sure hose clamps are tight.
32. Cooling system.	Fill.	Do this step for right side only. Refer to TM 9-2320-283-10 for cooling system filling procedures.
33. Two hoses (19).	Connect.	Do this step for left side only. Make sure hose fittings are tight. Check level of transmission oil (refer to TM 9-2320-283-10).

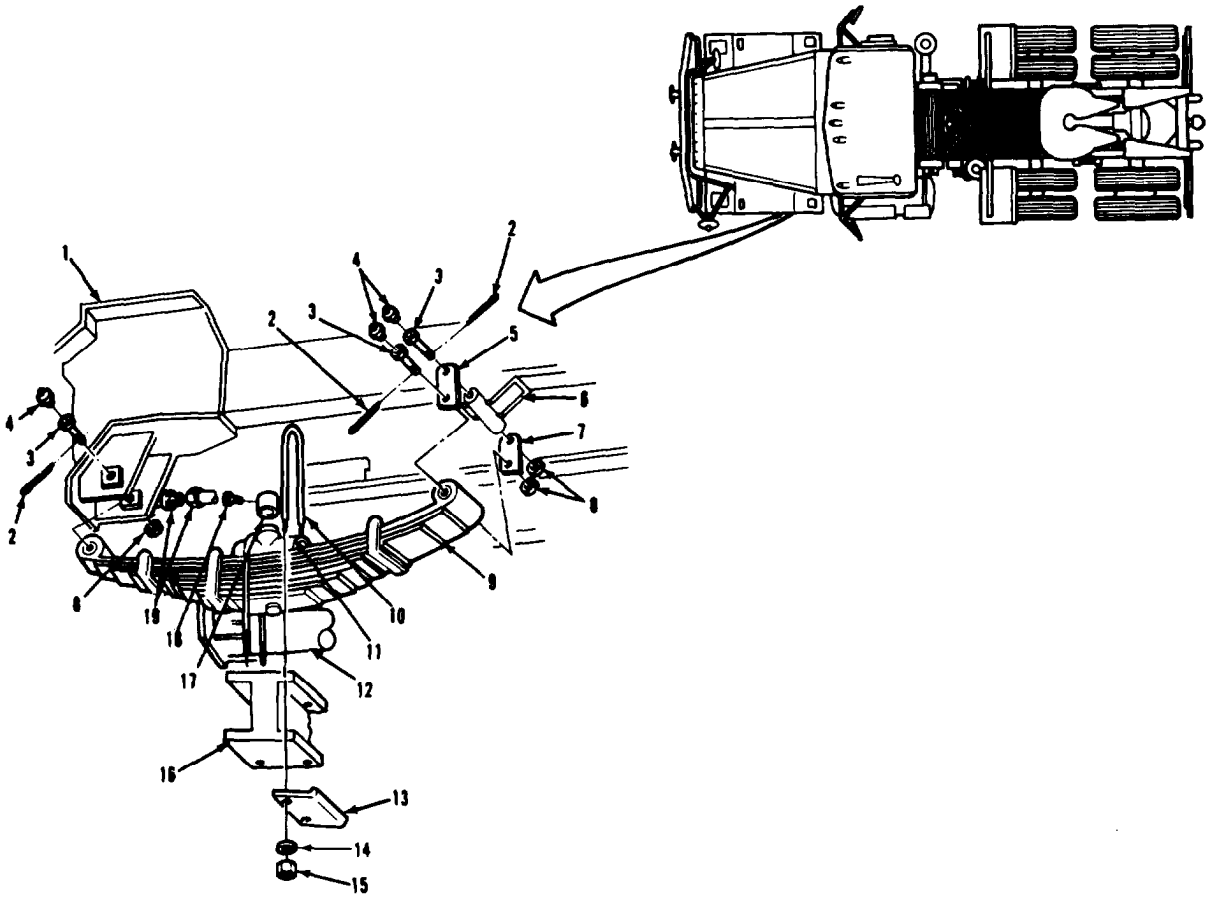
NOTE

Follow-on maintenance action required:

Install shock absorber (TM 9-2320-283-20).
Install front tire (TM 9-2320-283-20).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-104. FRONT SPRING REPLACEMENT (Continued).



LEGEND:

1. FRAME FRONT SUPPORT BRACKET ASSEMBLY
2. COTTER PIN (3)
3. SPECIAL SHACKLE PIN SCREW (3)
4. LUBRICATION FITTING (3)
5. OUTER SPRING SHACKLE
6. CAB FRONT SUPPORT ASSEMBLY
7. INNER SPRING SHACKLE
8. HEXAGON CASTELLATED NUT (3)
9. FRONT SPRING ASSEMBLY
10. U-BOLT (2)
11. FRONT SPRING SADDLE
12. RADIATOR OUTLET HOSE
13. LOWER SHOCK MOUNTING BRACKET ASSEMBLY (2)
14. FLAT WASHER (2)
15. HEXAGON HEAD NUT (2)
16. FRONT AXLE
17. AXLE BUMPER
18. PAN HEAD SCREW
19. TRANSMISSION COOLER HOSE (2)

TA 238500

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-105. FRONT SPRING REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	3-104.	Front spring removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Spring clip rivet (3)
(24617) 110432.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

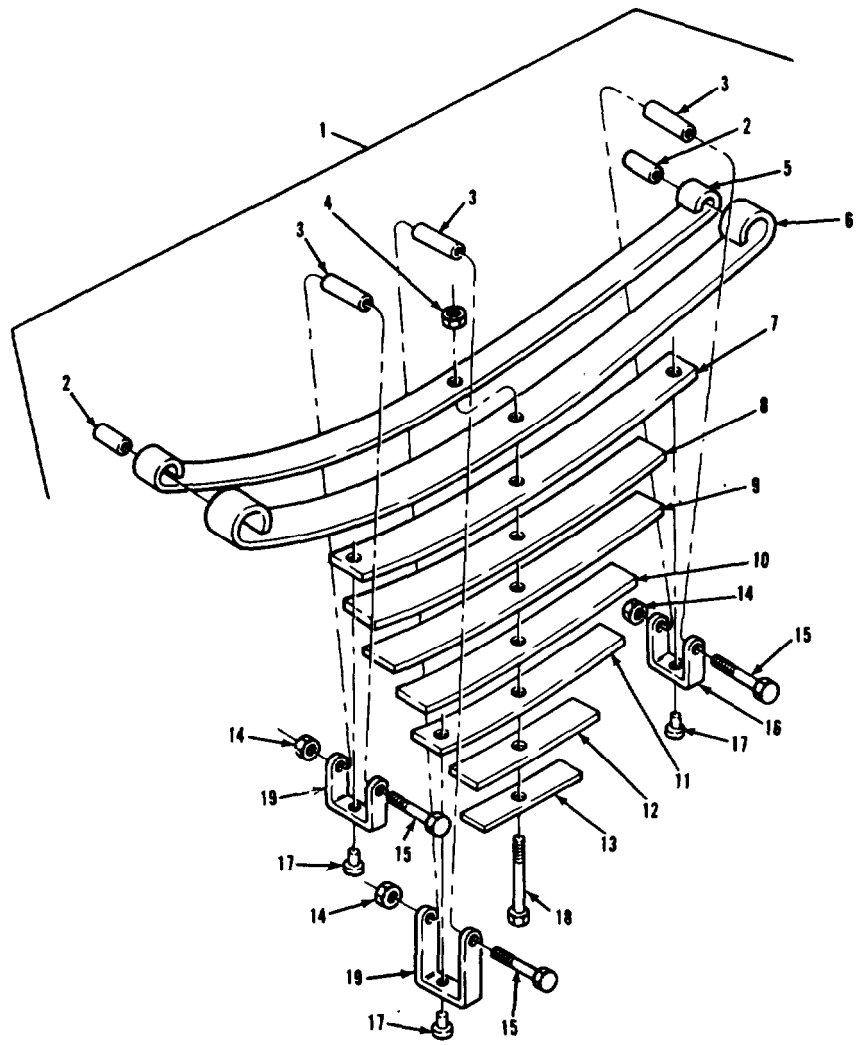
REFERENCES (TM)
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-105. FRONT SPRING REPAIR (Continued).



LEGEND:

1. FRONT SPRING ASSEMBLY
2. BUSHING (2)
3. SLEEVE SPACER (3)
4. HEXAGON HEAD CENTER NUT
5. 54 INCH LONG LEAF
6. 55 INCH LONG LEAF
7. 46-1/8 INCH LONG LEAF
8. 40-5/8 INCH LONG LEAF
9. 35-1/8 INCH LONG LEAF
10. 29-1/2 INCH LONG LEAF
11. 23-3/4 INCH LONG LEAF
12. 17-1/8 INCH LONG LEAF
13. 12-1/8 INCH LONG LEAF
14. CLIP BOLT NUT (3)
15. SPRING CLIP SCREW (3)
16. FOUR-LEAF SPRING CLIP (2)
17. SPRING CLIP RIVET (3)
18. HEXAGON HEAD CENTER SCREW
19. SIX-LEAF SPRING CLIP

TA 238501

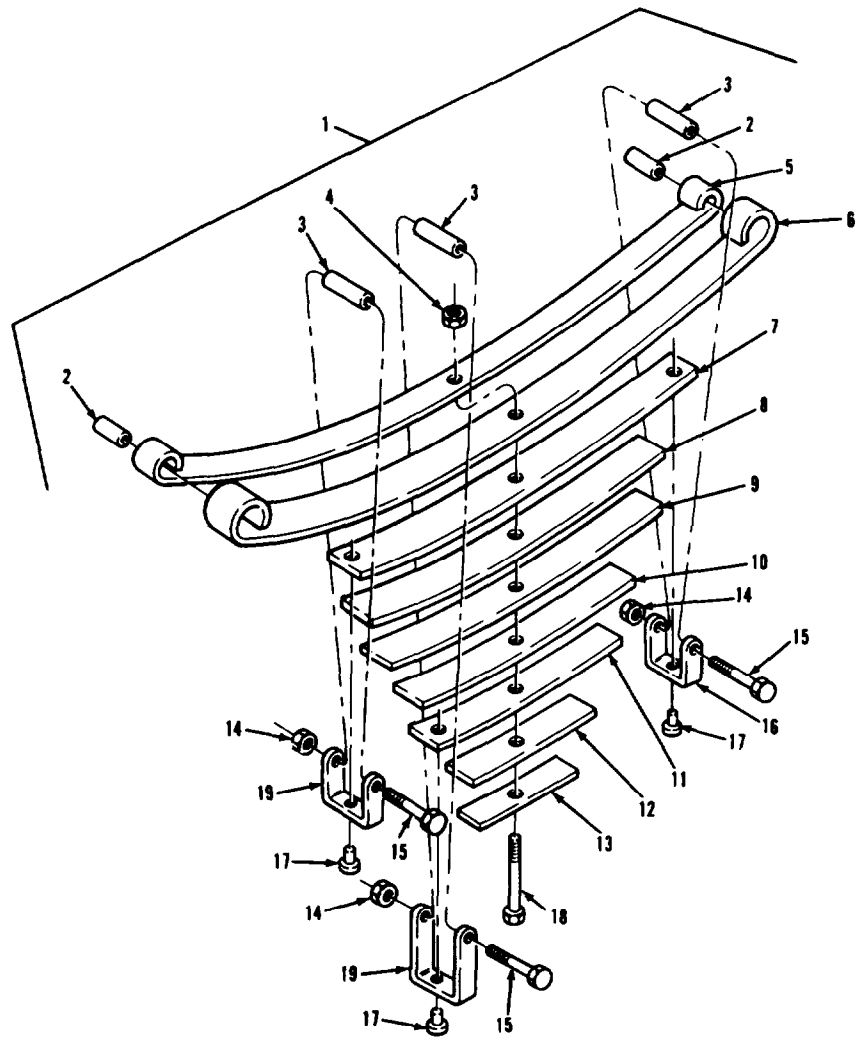
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-105. FRONT SPRING REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE Use this procedure to repair any one of the two front springs.	
A. DISASSEMBLY.		
1. Front spring assembly (1).	Turn on side and clamp in vise.	This step is needed to hold items (5) thru (13) during removal of items (4) and (18).
2. Three nuts (14), screws (15), spacers (3), rivets (17), two clips (16), and clip (19).	Remove from items (5) thru (13).	Discard three items (17).
3. Nut (4) and screw (18).	Remove from items (5) thru (13).	
4. Leaves (5) thru (13).	a. Insert a long drift pin through center hole. b. Slowly open vise until all spring tension has been released. c. When all tension has been released, remove from vise and drift pin.	
5. Leaf (5).	Remove from item (6).	
6. Two bushings (2).	Drive out of item (5).	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-105. FRONT SPRING REPAIR (Continued).



LEGEND:

1. FRONT SPRING ASSEMBLY
2. BUSHING (2)
3. SLEEVE SPACER (3)
4. HEXAGON HEAD CENTER NUT
5. 54 INCH LONG LEAF
6. 55 INCH LONG LEAF
7. 46-1/8 INCH LONG LEAF
8. 40-5/8 INCH LONG LEAF
9. 35-1/8 INCH LONG LEAF
10. 29-1/2 INCH LONG LEAF
11. 23-3/4 INCH LONG LEAF
12. 17-1/8 INCH LONG LEAF
13. 12-1/8 INCH LONG LEAF
14. CLIP BOLT NUT (3)
15. SPRING CLIP SCREW (3)
16. FOUR-LEAF SPRING CLIP (2)
17. SPRING CLIP RIVET (3)
18. HEXAGON HEAD CENTER SCREW
19. SIX-LEAF SPRING CLIP

TA 238502

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-105. FRONT SPRING REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING AND INSPECTION.		
7. All parts.	Clean and inspect.	Refer to paragraph 3-4 and 3-5.
C. ASSEMBLY.		
8. Two bushings (2).	Drive into item (5).	
9. Leaf (5).	Install in item (6).	
10. Leaves (5) thru (13).	a. Install on long drift pin in order shown in illustration. b. Place on side in vise, c. Slowly tighten vise until items (5) thru (13) are flat against each other. d. Remove drift pin.	
11. Screw (18) and nut (4).	Install into items (5) thru (13).	Torque items (4) to 75-85 lb-ft.
12. Two clips (16), clip (19), three new rivets (17), spacers (3), screws (15), and nuts (14).	Install onto items (5) thru (13).	Torque items (14) to 48-55 lb-ft.
13. Front spring assembly (1).	Remove from vise.	

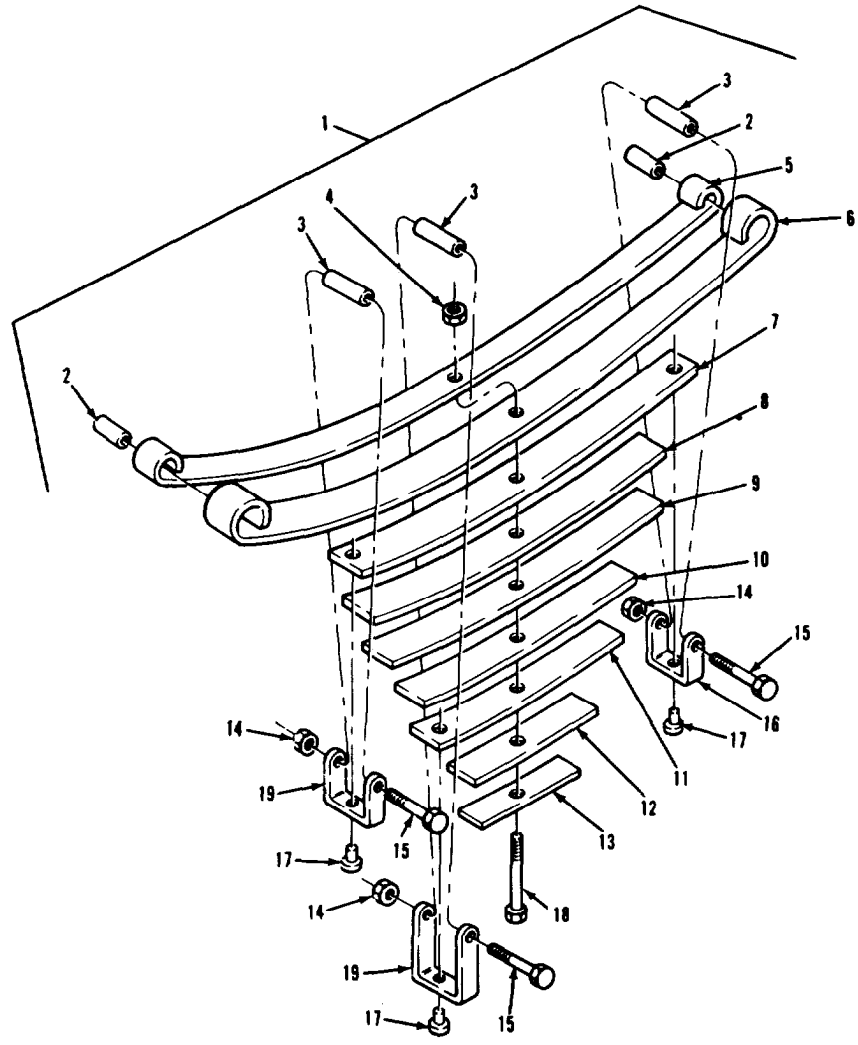
NOTE

Follow-on maintenance action required:

Install front spring (TM 9-2320-283-20).

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-105. FRONT SPRING REPAIR (Continued).



LEGEND:

1. FRONT SPRING ASSEMBLY
2. BUSHING (2)
3. SLEEVE SPACER (3)
4. HEXAGON HEAD CENTER NUT
5. 54 INCH LONG LEAF
6. 55 INCH LONG LEAF
7. 46-1/8 INCH LONG LEAF
8. 40-5/8 INCH LONG LEAF
9. 35-1/8 INCH LONG LEAF
10. 29-1/2 INCH LONG LEAF
11. 23-3/4 INCH LONG LEAF
12. 17-1/8 INCH LONG LEAF
13. 12-1/8 INCH LONG LEAF
14. CLIP BOLT NUT (3)
15. SPRING CLIP SCREW (3)
16. FOUR-LEAF SPRING CLIP (2)
17. SPRING CLIP RIVET (3)
18. HEXAGON HEAD CENTER SCREW
19. SIX-LEAF SPRING CLIP

TA 238503

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-106. TORQUE ROD REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-20.	Torque rod removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Torque rod bushing service set (45225) Y-820.

MATERIALS/PARTS (P/N)
Bushing (as required) (28158) 44695.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

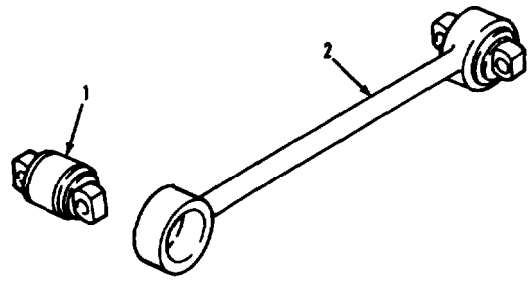
REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-106. TORQUE ROD REPAIR (Continued).



LEGEND:

1. BUSHING (2)
2. TORQUE ROD ASSEMBLY

TA 238504

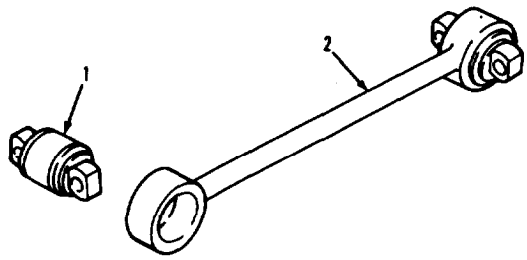
SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-106. TORQUE ROD REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE Repair of torque rod is limited to replacement of bushings. Use this procedure to replace bushings on either torque rod.	
A. DISASSEMBLY.		
1. Bushing (1).	Using suitable hydraulic press and torque rod bushing service set, press out of item (2).	Hydraulic press should have a minimum capacity of 25-tons. Discard item (1). Repeat this step for other item (1) if necessary.
B. CLEANING AND INSPECTION.		
2. Torque rod assembly (2).	a. Clean.	Refer to paragraph 3-4.
	b. Inspect.	Refer to paragraph 3-5. Be sure to check for cracks and wear in bushing bores of item (2).
C. ASSEMBLY.		
3. New bushing (1).	Using suitable hydraulic press and torque rod bushing service set, press into item (2).	Hydraulic press should have a minimum capacity of 25-tons. Make sure item (1) is centered in item (2). Repeat this step for other item (1) if necessary.
	NOTE Follow-on maintenance action required: Install torque rod (TM 9-2320-283-20).	

SPRINGS, SHOCK ABSORBERS, AND TORQUE RODS.

3-106. TORQUE ROD REPAIR (Continued).



LEGEND:

1. BUSHING (2)
2. TORQUE ROD ASSEMBLY

TA 238505

Section XIV. CAB AND BODY

3-107. GENERAL.

This section provides procedures authorized at direct and general support maintenance levels to replace and repair cab and body components. To find a specific procedure contained in this section, see the task summary below:

3-108. TASK SUMMARY.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	(Refer to specific paragraph for this information).	

TEST EQUIPMENT
None.

SPECIAL TOOLS
Windshield installer/remover
5120-00-279-8422.

MATERIALS/PARTS (P/N)

Grease, automotive and artillery
Item 7, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B.
Solution, soap
Item 30, Appendix B.
Grease, white (suitable)
Item 11, Appendix B.
Oil, lubricating, engine, OE/HDO-30
Item 17, Appendix B.
Window sealer
Item 39, Appendix B.
Window cleaner
Item 38, Appendix B.
Paper towels
Item 37, Appendix B.
Tape, pressure sensitive, adhesive
Item 34, Appendix B.
PT nut
(24617) 9422307.
PT nut (2)
(34623) M/219B-2003.
Lockwasher (9)
(24617) 138489.
Lockwasher (2)
(24617) 9417953.
Lockwasher (8)
(24617) 138489.
Shim, door latch striker pin
(75418) 04336-2.

PERSONNEL REQUIRED	SPECIAL ENVIRONMENTAL CONDITIONS
Three (MOS-63W)	Work area clean and away from blowing dirt and dust.

CAB AND BODY.

3-109. TASK SUMMARY (Continued).

INITIAL SETUP (Continued).

REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-34.
TM 9-2320-283-20P.
TM 9-2320-283-34P.
TM 9-2320-283-12.

TROUBLESHOOTING REFERENCES
None.

GENERAL SAFETY INSTRUCTIONS
Both vehicles on level ground with wheels blocked.

Use extreme care when handling windshield glass. Broken, chipped, or cracked glass can cause serious injury. When removing broken glass, wear protective face shield and gloves.

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
1	Cab Insulators Replacement	3-109	
	a. Removal of Front Insulators.	3-109a	
	b. Removal of Rear Insulators.	3-109b	
	c. Cleaning.	3-109c	
	d. Inspection.	3-109d	
	e. Installation of Rear Insulators.	3-109e	
	f. Installation of Front Insulators.	3-109f	
2	Cab Shell Replacement	3-110	
	a. Removal.	3-110a	
	b. Disassembly/Assembly.	3-110b	
	c. Installation.	3-110c	
3	Door Replacement	3-111	
	a. Removal.	3-111a	
	b. Cleaning.	3-111b	
	c. Inspection.	3-111c	
	d. Installation.	3-111d	
4	Door Repair	3-112	
	a. Disassembly.	3-112a	
	b. Cleaning.	3-112b	
	c. Inspection.	3-112c	
	d. Assembly.	3-112d	

CAB AND BODY.

3-109, TASK SUMMARY (Continued).

LIST OF TASKS

TASK NO.	TASK	TASK REF	TROUBLESHOOTING REF NO. (PARA)
5	Door Striker Assembly Replacement	3-113	
	a. Removal.	3-113a	
	b. Disassembly.	3-113b	
	c. Cleaning and Inspection.	3-113c	
	d. Assembly.	3-113d	
	e. Installation.	3-113e	
	f. Adjustment.	3-113f	
6	Windshield Replacement	3-114	
	a. Removal.	3-114a	
	b. Cleaning.	3-114b	
	c. Inspection.	3-114c	
	d. Installation.	3-114d	
7	Rear Window Replacement	3-115	
	a. Removal.	3-115a	
	b. Cleaning.	3-115b	
	c. Inspection.	3-115c	
	d. Installation.	3-115d	
8	Rear Window Repair	3-116	
	a. Disassembly.	3-116a	
	b. Cleaning.	3-116b	
	c. Inspection.	3-116c	
	d. Assembly.	3-116d	
9	Driver's Seat Repair	3-117	
	a. Disassembly.	3-117a	
	b. Cleaning and Inspection.	3-117b	
	c. Assembly.	3-117c	
10	Companion Seat Repair	3-118	
	a. Disassembly.	3-118a	
	b. Cleaning and Inspection.	3-118b	
	c. Assembly.	3-118c	

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT.

THIS TASK COVERS

a. Removal of Front Insulators.
b. Removal of Rear Insulators.
c. Cleaning.
d. Inspection.
e. Installation of Rear Insulators.
f. Installation of Front Insulators.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-10.	Start engine. Turn front tires all the way left and shutdown engine.

NOTE

If removing a front insulator, do the following:

MATERIALS/PARTS (P/N)
Grease, automotive and artillery
Item 7, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B.
PT nut (front)
(24617) 9422307.
PT nut (2) (rear)
(24617) 9422307.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

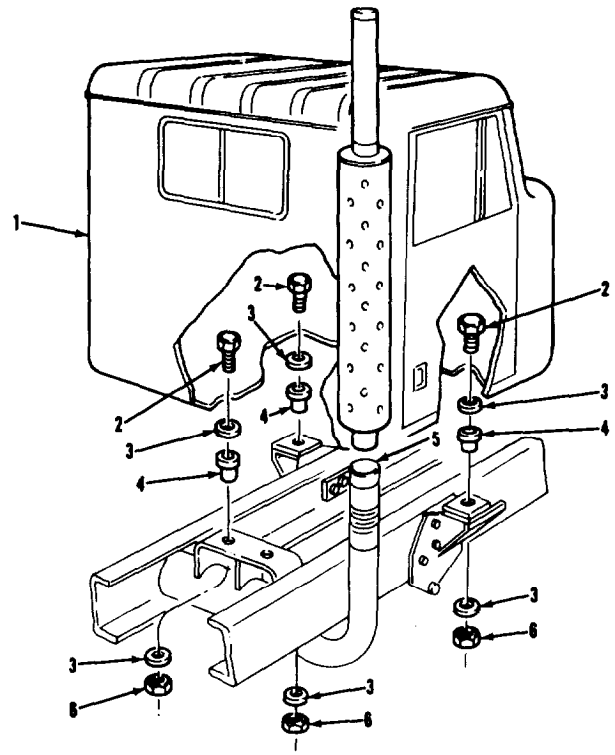
REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-20P.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEXAGON MACHINE SCREW (4)
3. FLAT WASHER (8)
4. INSULATOR (4)
5. COUPLING REDUCER
6. PT NUT (4)

TA 238506

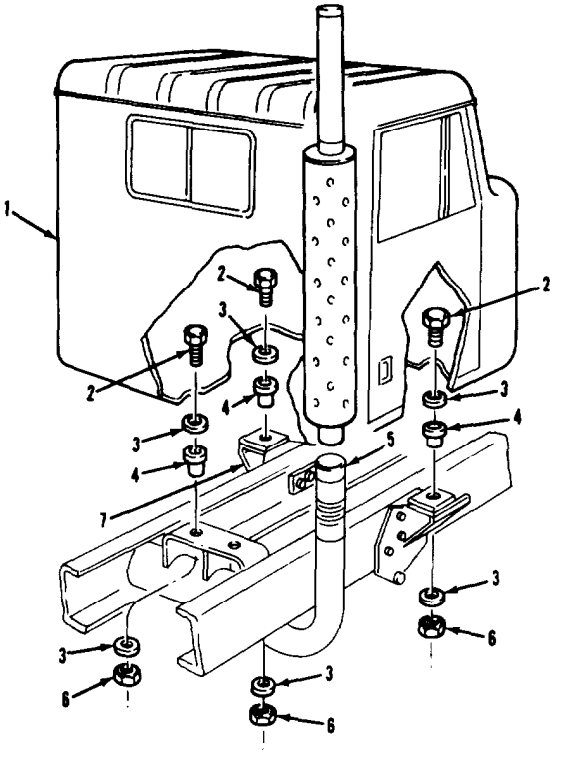
CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL OF FRONT INSULATORS.		
	NOTE •Left and right front insulator removal is similar, except as noted below, Left front insulator is removed here. •Skip step 1 if removing right front insulator.	
1. Front left corner of floormat.	Pull back far enough to reach access hole.	
2. Screw (2), washer (3) (lower), and nut (6).	Remove from item (4).	Assistant helps remove item (2), (3) (lower), and (6). Discard item (6).
	WARNING Cab is heavy. Do not attempt to work below cab once raised, unless cab is safely blocked. Failure to follow this precaution may result in serious injury to you and to other personnel.	
3. Cab (1).	a. Using suitable lifting device, raise left side of item (1) about 1-1/2 to 2 inches above item (3) (upper) and (4). b. Support with wood block.	
4. Washer (3) (upper).	Remove from item (4).	

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEXAGON MACHINE SCREW (4)
3. FLAT WASHER (8)
4. INSUL ATOR (4)
5. COUPLING REDUCER
6. PT NUT (4)
7. LEFT-HAND CAB FRONT SUPPORT ASSEMBLY

TA 238507

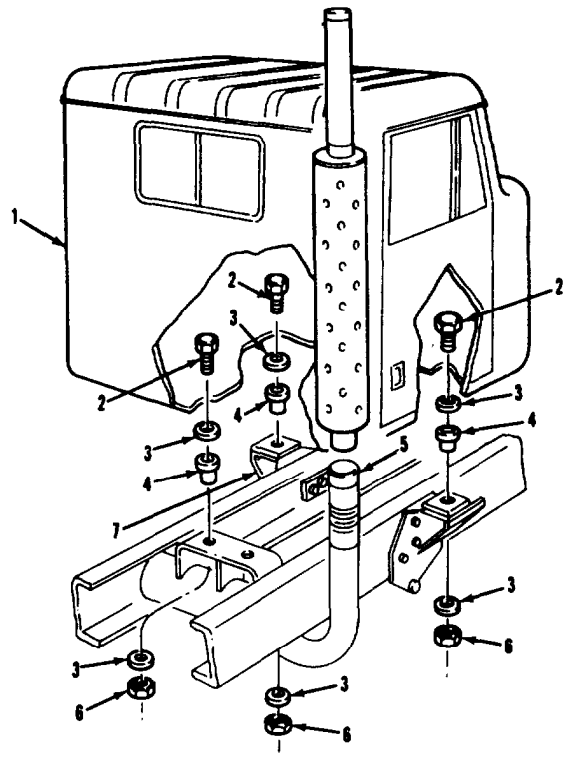
CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL OF FRONT INSULATORS (Continued).		
5. Insulator (4).	Pry out from item (7).	Assistant helps remove item (4).
B. REMOVAL OF REAR INSULATORS.		
	NOTE Left and right rear insulators are removed in same way. Left rear shown here.	
6. Spare tire.	Move out from behind item (1).	Refer to TM 9-2320-283-10.
7. Reducer (5).	Loosen and slide down.	
8. Fire extinguisher.	Remove.	Refer to TM 9-2320-283-10.
9. Center rear part of floormat.	Pull back far enough to reach two access holes.	
10. Two screws (2), washers (3) (lower), and nuts (6).	Remove from two items (4).	Assistant helps remove two items (2), (3) (lower), and (6). Discard two items (6).

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEXAGON MACHINE SCREW (4)
3. FLAT WASHER (8)
4. INSULATOR (4)
5. COUPLING REDUCER
6. PT NUT (4)
7. LEFT-HAND CAB FRONT SUPPORT ASSEMBLY

TA 238508

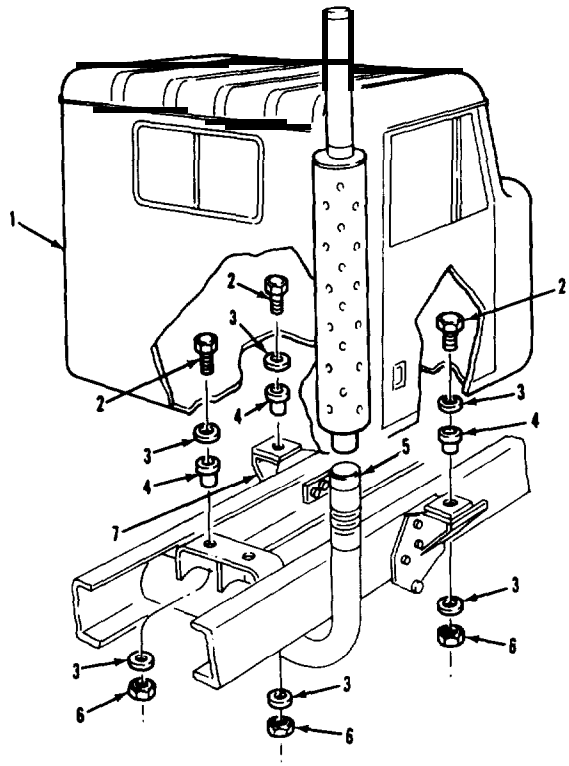
CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. REMOVAL OF REAR INSULATORS (Continued).		
	WARNING Cab is heavy. Do not attempt to work below cab, once raised, unless cab is safely blocked. Failure to follow this precaution may result in serious injury to you and other personnel.	
11. Cab (1).	a. Using suitable lifting device, raise rear of item (1) about 1-1/2 to 2 inches above item (3) (upper) and (4). b. Support with wood blocks.	
12. One washer (3) (upper).	Remove from item (4).	Other item (3) (upper) stays in place.
13. Insulator (4).	Pry out from item (8).	Assistant helps remove item (4).
C. CLEANING.		
14. All metal parts.	Clean.	Refer to paragraph 3-4.
15. Rubber parts.	Clean.	Refer to paragraph 3-4.
16. Crossmember (8).	Remove rust and dirt from around mounting hole for' item (4).	
D. INSPECTION.		
17. All metal parts.	Inspect.	Refer to paragraph 3-5.
18. All rubber parts.	Inspect.	Refer to paragraph 3-5.

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEXAGON MACHINE SCREW (4)
3. FLAT WASHER (8)
4. INSULATOR (4)
5. COUPLING REDUCER
6. PT NUT (4)
8. CAB REAR CROSSMEMBER ASSEMBLY

TA 238509

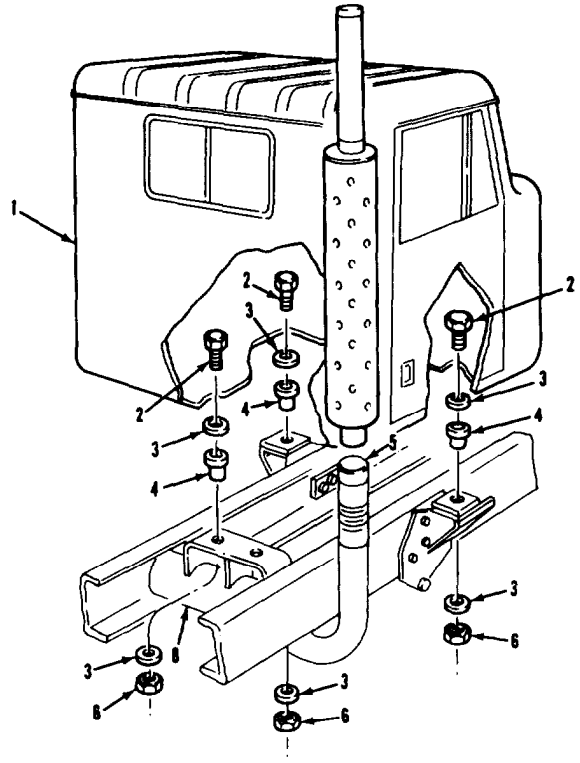
CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. INSTALLATION OF REAR INSULATORS.		
	NOTE Left and right rear insulators are installed in same way. Left rear shown here.	
19. Insulator (4).	a. Lubricate.	
	b. Install in item (8).	
20. Washer (3) (upper).	Slide over item (4) and line up hole in item (3) (upper) with hole in item (4).	
21. Cab (1).	a. Remove support blocks.	
	b. Using suitable lifting device, lower onto item (3) (upper) and (4).	
	c. Secure with two items (2), (3) (lower), two new items (6).	Assistant helps secure items (2), (3) (lower), and (6). Torque to 130 lb-ft.
22. Center rear floor-mat.	Lay into position.	
23. Fire extinguisher.	Install.	Refer to TM 9-2320-283-10.
24. Reducer (5).	a. Slide up in position.	
	b. Tighten.	Check for exhaust leaks. If leaks are found, replace item (5). Refer to TM 9-2320-283-20.
25. Spare tire.	Install in carrier.	Refer to TM 9-2320-283-10.

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEXAGON MACHINE SCREW (4)
3. FLAT WASHER (8)
4. INSULATOR (4)
5. COUPLING REDUCER
6. PT NUT (4)
8. CAB REAR CROSSMEMBER ASSEMBLY

TA 238510

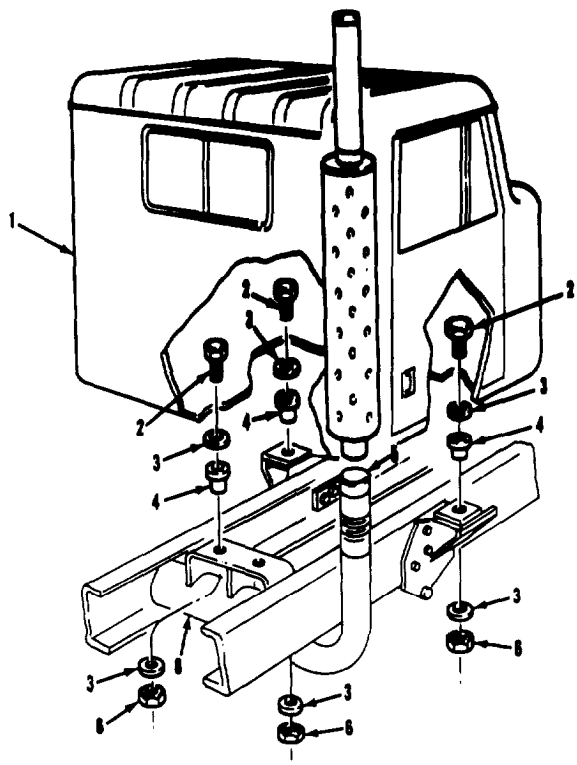
CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
F. INSTALLATION OF FRONT INSULATORS.		
	NOTE Left and right front insulator installation is similar, except as noted below, Left front insulator is installed here.	
26. Insulator (4).	a. Lubricate.	
	b. Install in item (7).	
27. Washer (3) (upper).	Slide over item (4) and line up hole in item (3) (upper) with hole in item (4).	
28. Cab (1).	a. Remove support block.	
	b. Using suitable lifting device, lower onto item (3) (upper) and (4).	
	c. Secure with items (2), (3) (lower), and new item (6).	Assistant helps secure items (2), (3) (lower), and (6). Torque to 130 lb-ft.
	NOTE Skip step 30 if installing right front insulator.	
30. Front left corner of floormat.	Lay into position.	
	NOTE Follow-on maintenance action required: None.	

CAB AND BODY.

3-109. CAB INSULATORS REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEXAGON MACHINE SCREW (4)
3. FLAT WASHER (8)
4. INSULATOR (4)
5. COUPLING REDUCER
6. PT NUT (4)
7. LEFT-HAND CAB FRONT SUPPORT ASSEMBLY

TA 238511

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Disassembly/Assembly.
c. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
PT nut (34623) M/219B-2003.
PT nut (4) (24617) 9422307.

EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-10.	Start engine. Turn front tires all the way left and shutdown engine.
TM 9-2320-283-10.	Spare tire removed.
TM 9-2320-283-20.	Disconnect batteries.
TM 9-2320-283-20.	Hood panels removed.
TM 9-2320-283-20.	Crossbar supports removed.
TM 9-2320-283-20.	Front fenders removed.
TM 9-2320-283-20.	Air cleaner removed.
TM 9-2320-283-20.	Radiator drained.
TM 9-2320-283-10.	Air system draincocks opened.
TM 9-2320-283-20.	Lower steering column disconnected.
TM 9-2320-283-10.	Fire extinguisher removed.

NOTE

Refer to the appropriate M915A1 technical manual when a specific material or part is needed during assembly of new cab.

PERSONNEL REQUIRED
Three (MOS-63W).

REFERENCES (TM)
TM 9-2320-283-10.
TM 9-2320-283-20.
TM 9-2320-283-34.
TM 9-2320-283-20P.
TM 9-2320-283-34P.
LO 9-2320-283-12.

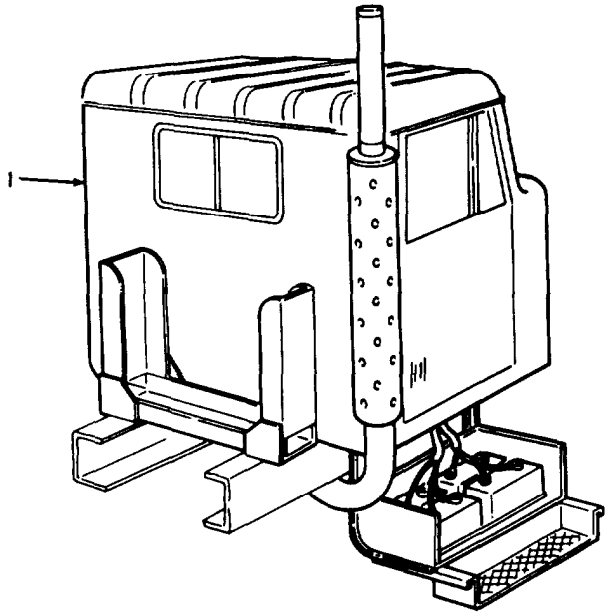
TROUBLESHOOTING REFERENCES
None.

SPECIAL ENVIRONMENTAL CONDITIONS
None.

GENERAL SAFETY INSTRUCTIONS
Both vehicles on level ground with eels blocked.

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL

TA 238512

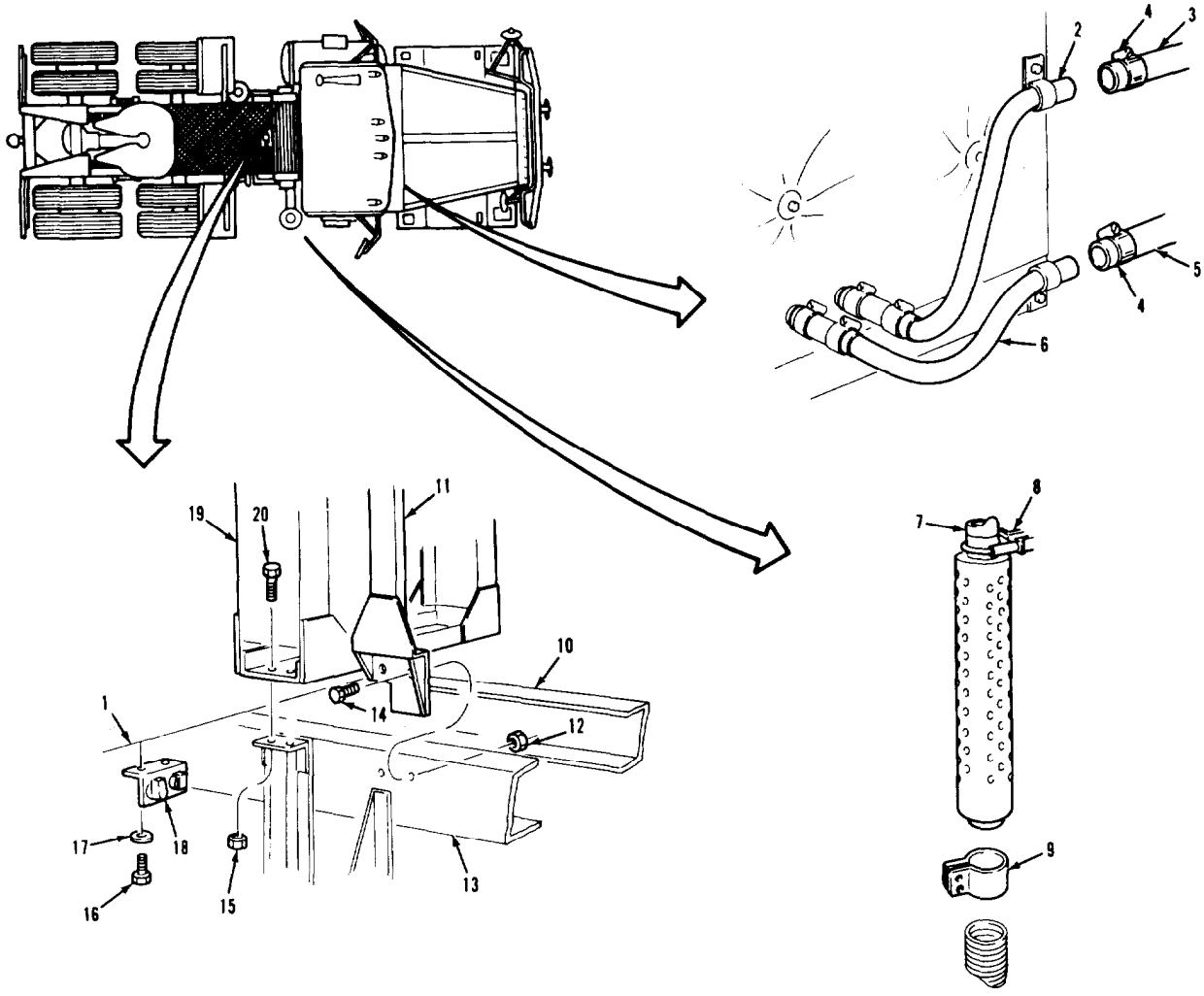
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
1. Clamp (4).	a. Loosen.	
	b. Slide down item (3).	
2. Hose (3).	Pull off of item (2).	Catch excess coolant in container.
3. Clamp (4).	a Loosen.	
	b. Slide down item (5).	
4. Hose (5).	Pull off from item (6).	Catch excess coolant in container.
5. Reducer (9).	Loosen and slide down.	
6. Four screws (20) and nuts (15).	Remove from item (19).	
7. Carrier (19).	Remove from item (13) and (10).	
	NOTE When removing cab Indoors, ceiling clearance may be a problem. If this problem exists, do steps 8 thru 10; otherwise, go to step 11.	
8. Two screws (14) and nuts (12).	Remove from item (11).	
9. Pillar (11).	Remove from item (13).	Assistant helps remove item (11).
10. Clamp (8).	Loosen and remove item (7).	
11. Three screws (16) and lockwashers (17) l	a. Remove from item (18).	
	b. Remove item (18) from item (1).	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. HEATER INLET TUBE
3. HEATER HOSE
4. HOSE CLAMP (2)
5. HEATER TO FUEL HEATER HOSE
6. HEATER OUTLET TUBE
7. EXHAUST STACK PIPE
8. CLAMP
9. REDUCER COUPLING
10. RIGHT-HAND MAIN RAIL
11. WINCH PILLAR ASSEMBLY
12. HEXAGON HEAD NUT (2)
13. LEFT-HAND MAIN RAIL
14. HEXAGON HEAD SCREW (2)
15. HEXAGON HEAD NUT (4)
16. HEXAGON HEAD SCREW (3)
17. LOCKWASHER (3)
18. TRAILER RECEPTACLE BRACKET
19. SPARE TIRE CARRIER ASSEMBLY
20. HEXAGON HEAD SCREW (4)

TA 238513

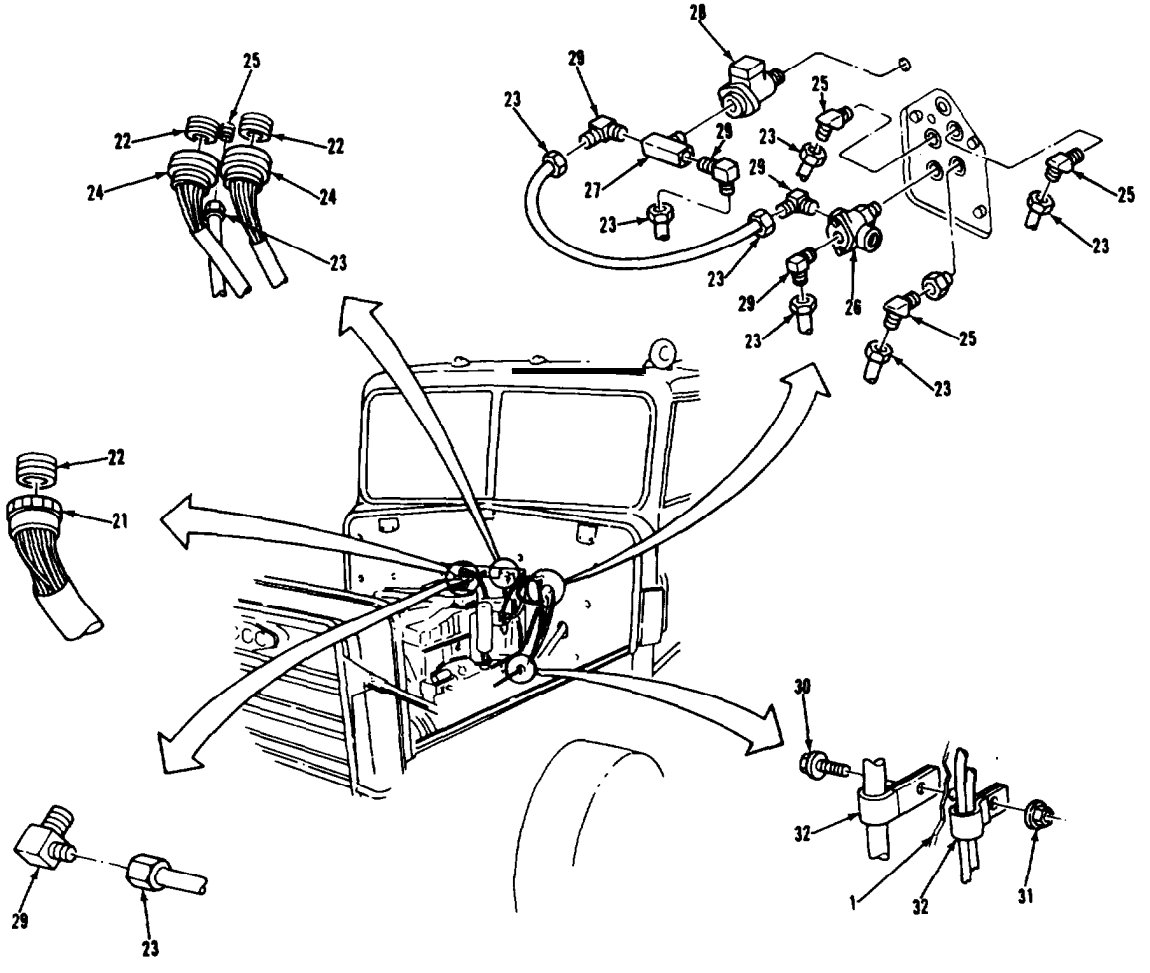
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
	NOTE Be sure to tag all air and electrical system connectors that are removed below.	
12. Connector (23).	Remove from item (26).	
13. Connector (23).	Remove from item (27).	
14. Connector (23).	Remove from item (28).	
15. Three connectors (23).	Remove from three items (29).	
16. Bolt (30) and nut (31).	a. Remove from two items (32). b. Remove two items (32) from item (1).	
17. Connector (23) (black).	Remove from item (29).	
18. Connector (23) (yellow).	Remove from item (25).	
19. Connector (21).	Remove from item (22).	
20. Two connectors (24).	Remove from two items (22).	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
21. ENGINE HARNESS
22. CONNECTOR (3)
23. MALE CONNECTOR (13)
24. CHASSIS AND FRONT CAB HARNESS CONNECTOR (2)
25. ELBOW
26. CHECK VALVE
27. TEE
28. DOUBLE CHECK AND STOP VALVE
29. CONNECTOR ELBOW (4)
30. HEXAGON BOLT (2)
31. HEXAGON NUT (2)
32. CUSHIONED CLAMP (3)

TA 238514

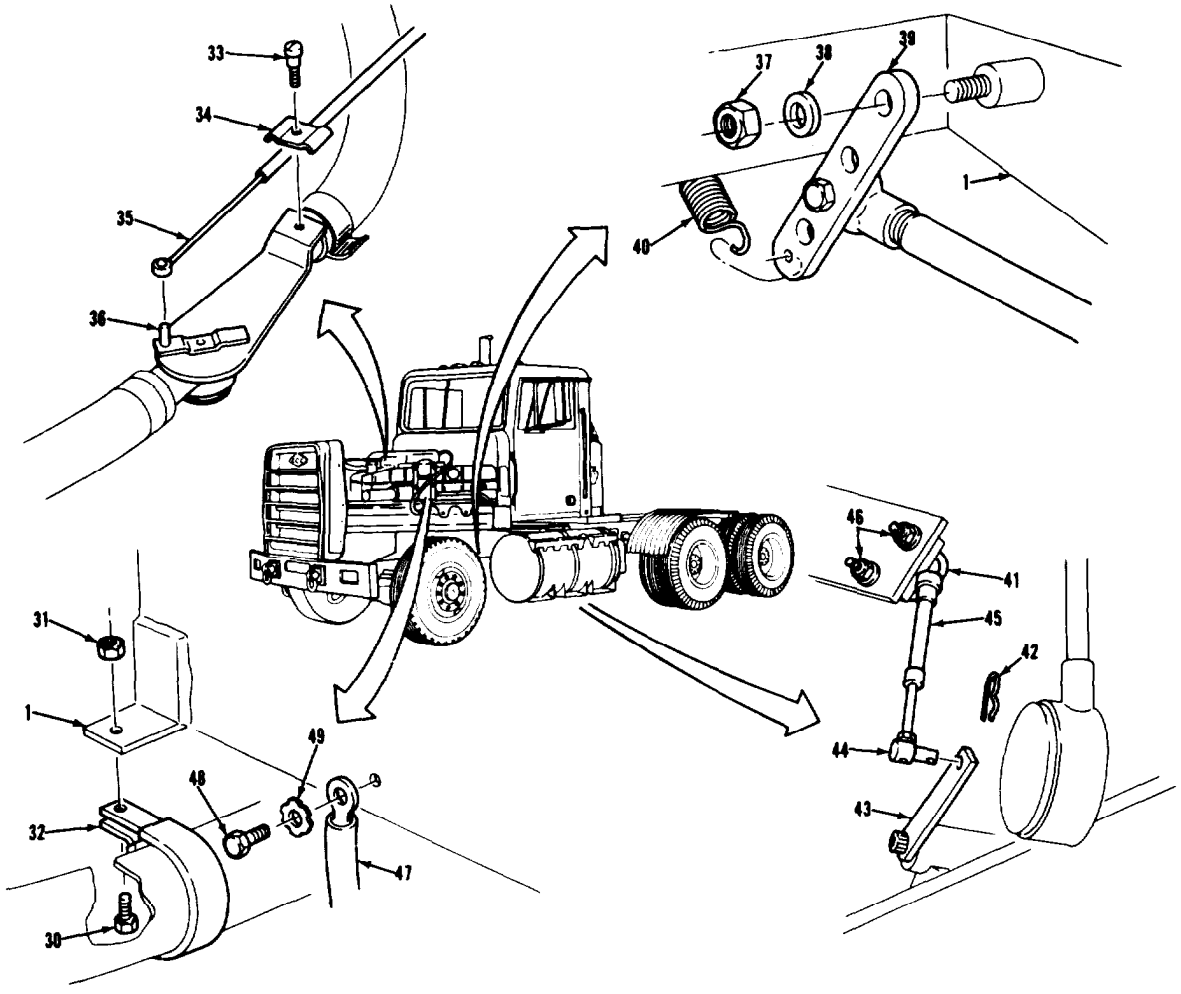
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
21. Bolt (30) and nut (31).	a. Remove from item (32).	
	b. Remove one item (32) from item (1).	
22. Screw (48), lockwasher (49), and cable (47).	Remove from item (1).	Tag item (47).
23. Spring (40).	Remove from item (34).	
24. Nut (37) and washer (38).	a. Remove from item (39).	Discard item (37).
	b. Remove item (39) from item (1).	
25. Screw (33).	a. Loosen.	
	b. Pull end of item (35) off of item (36).	
	c. Remove item (35) from item (34) l	
26. Pin (42).	a. Remove from item (44).	Gain access from under vehicle.
	b. Pull item (44) from item (43) l	
	c. Pull item (44) from item (45) l	
27. Two nuts (46).	a. Loosen enough to allow item (45) to be pulled through item (41).	
	b. Pull item (45) through item (41).	Position loose item (45) away from obstacles to prevent snagging when item (1) is lifted.

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
30. HEXAGON BOLT (2)
31. HEXAGON NUT (2)
32. CUSHIONED CLAMP (3)
33. SCREW
34. CLAMP
35. BODEN WIRE
36. CHECK VALVE
37. PT NUT
38. WASHER
39. ACCELERATOR BELLCRANK LEVER
40. LEVER RETURN SPRING
41. U-BOLT
42. COTTER PIN
43. LEVER
44. TRUNNION
45. TRANSMISSION SHIFT CONNECT CABLE ASSEMBLY
46. HEXAGON HEAD LOCKNUT
47. CAB TO FRAME CABLE GROUND
48. TAPPING SCREW
49. INTERNAL/EXTERNAL LOCKWASHER

TA 238515

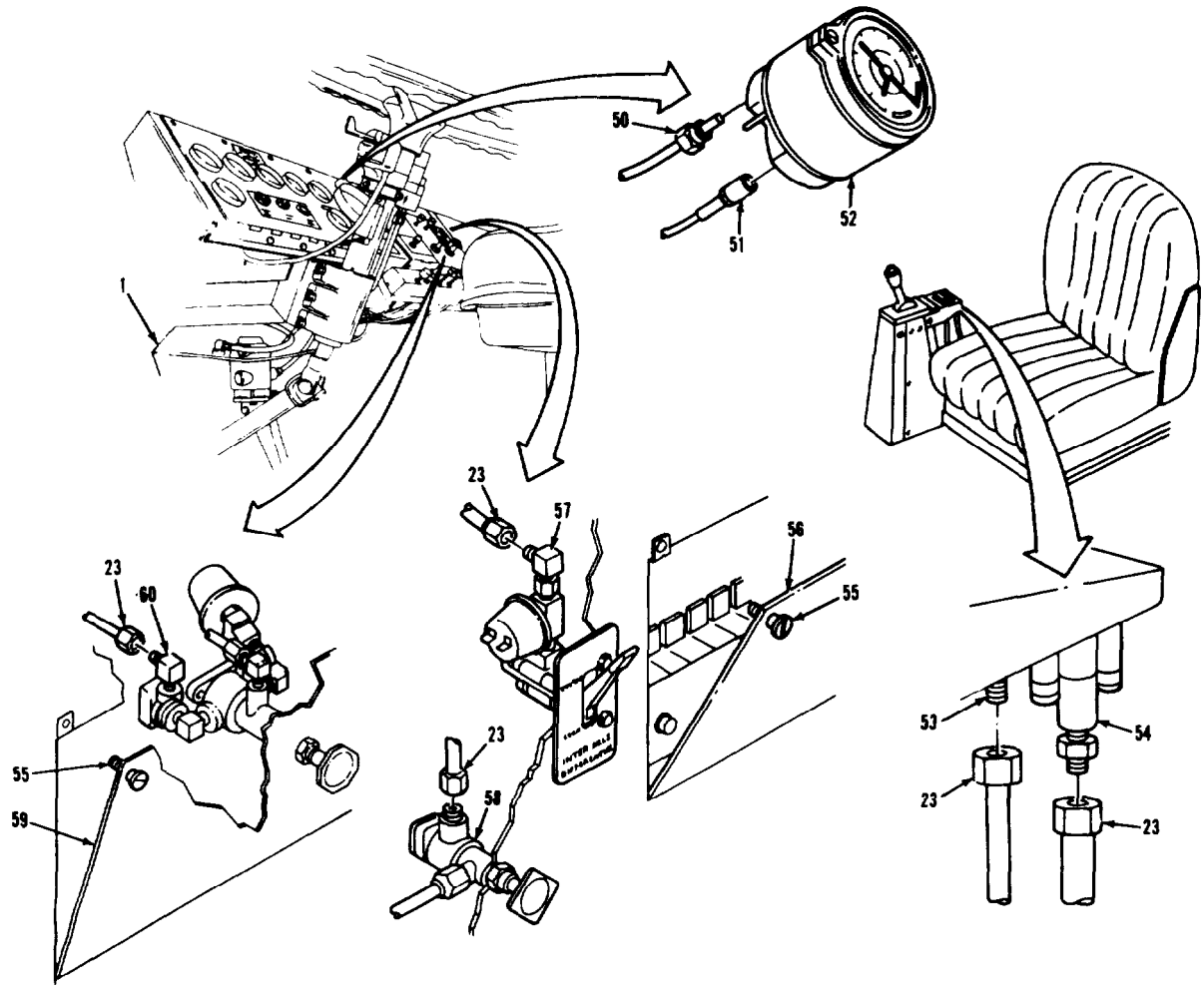
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
28. Connector (23).	Remove from item (54).	
29. Connector (23).	Remove from item (53).	
30. Two loose connectors (23).	Push through hole in floor of item (1).	Tag two items (23) after pulling from item (1). Assistant helps from under item (1).
31. Three screws (55).	a. Turn 1/4-turn counterclockwise.	
	b. Open item (56).	
	CAUTION Pull instrument panel door open slowly to prevent damage to equipment.	
32. Two screws (55).	a. Turn 1/4 turn counterclockwise.	
	b. Open item (59).	
33. Connector (23).	Remove from item (57).	
34. Connector (23).	Remove from item (58).	
35. Connector (23).	Remove from item (60).	
36. Three connectors (23).	Push through hole in item (1).	Tag items (23) after pushing from item (1).
37. Cable (50).	a. Remove from item (52).	
	b. Push through hole in item (1).	Tag item (50) after pushing from item (1).
38. Cable (51).	a. Remove from item (52).	
	b. Push through hole in item (1).	Tag item (51) after pushing from item (1).

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
23. MALE CONNECTOR (13)
50. SPEEDOMETER CABLE
51. TACHOGRAPH CABLE
52. TACHOGRAPH
53. ELBOW
54. TOGGLE VALVE
55. QUARTER-TURN SCREW (5)
56. CIRCUIT BREAKER PANEL DOOR
57. INTERAXLE DIFFERENTIAL VALVE ELBOW
58. PARKING BRAKE VALVE
59. INSTRUMENT PANEL DOOR
60. TRAILER AIR SUPPLY VALVE ELBOW

TA 238516

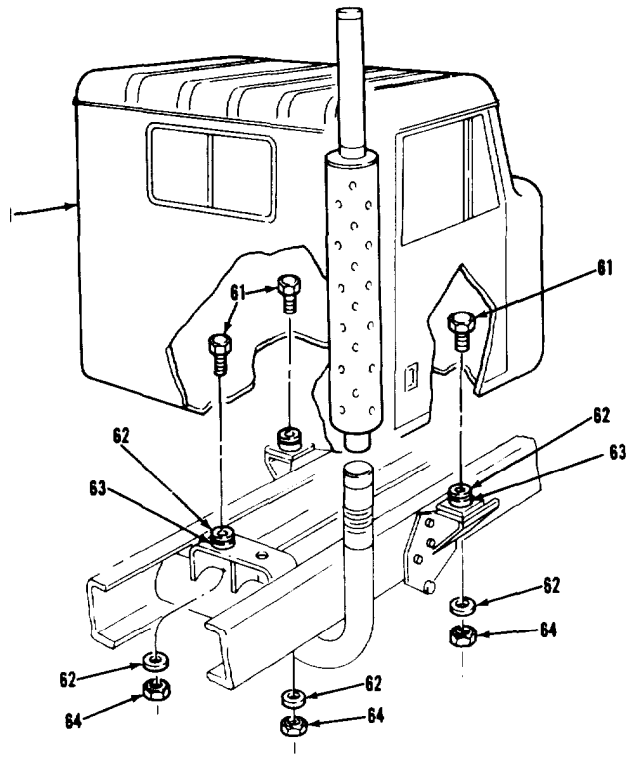
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
39. Front left corner of floormat.	Pull back far enough to reach access hole.	Access hole located behind engine retarder foot switch pedal.
40. Two screws (61), washer (62) (lower) and nut (64).	Remove from two front items (63).	Assistant helps remove items (61), (62) (lower), and (64). Upper two items (62) stay in place, Discard two items (64).
41. Center rear part of floormat.	Pull back far enough to reach two access holes.	
	NOTE One rear nut, screw, and lower washer shown here. Other rear nut, screw, and lower washer removed in same way.	
42. Two screws (61), washers (62) (lower) and nuts (64).	Remove from two rear items (63).	Assistant helps remove two items (61), (62) (lower), and (64). Discard two items (64).
	WARNING Do not stand under or near cab when lifting. Cab could fall causing serious injury to you and other personnel.	
	CAUTION Air and electrical connectors may get snagged as cab is lifted. Prevent damage by moving them clear before lifting cab.	
43. Cab (1).	a. Attach guide ropes.	One assistant operates hoist, other assistant helps guide item (1) onto wood blocks.
	b. Using suitable lifting device, raise item (1) and lower onto wood blocks.	Remove guide ropes.

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
61. HEXAGON MACHINE SCREW (4)
62. FLAT WASHER (8)
63. INSULATOR (4)
64. PT NUT (4)

TA 238517

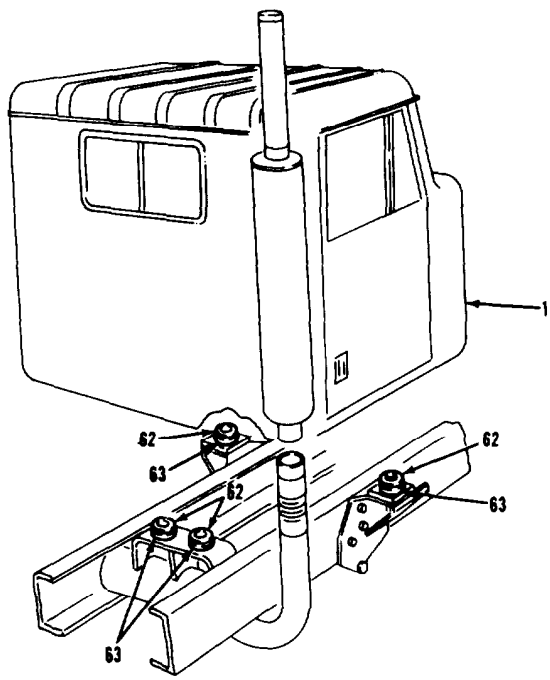
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. DISASSEMBLY/ASSEMBLY.		
	NOTE If old cab shell is being replaced, then good parts from it can be used to build up new cab shell. Use old cab shell as a guide. Since condition of old cab shell will vary, it will be up to you to determine which parts will be used. To help you decide if a part is usable, refer to your TM 9-2320-283-20 and TM 9-2320-283-34. These maintenance manuals will provide you with specific and general cleaning and inspecting instructions, as well as detailed instructions for removal and installation of specific parts.	
C. INSTALLATION.		
44. Four upper washers (62).	Line up holes in four items (62) with holes in four items (63).	Check four items (63) for defects. If unserviceable replace (refer to paragraph 3-109).
	WARNING Do not stand under or near cab when lifting. Cab could fall causing serious injury to you and other personnel.	
	CAUTION Air and electrical connectors may get pinched as cab is set in place. Prevent damage by keeping them clear.	
45. Cab (1).	a. Attach guide ropes,	
	b. Using suitable lifting device, raise in place about two inches above frame.	Line up holes in item (1) with holes in for items (62) and (53)

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
62. FLAT WASHER (8)
63. INSULATOR (4)

TA 238518

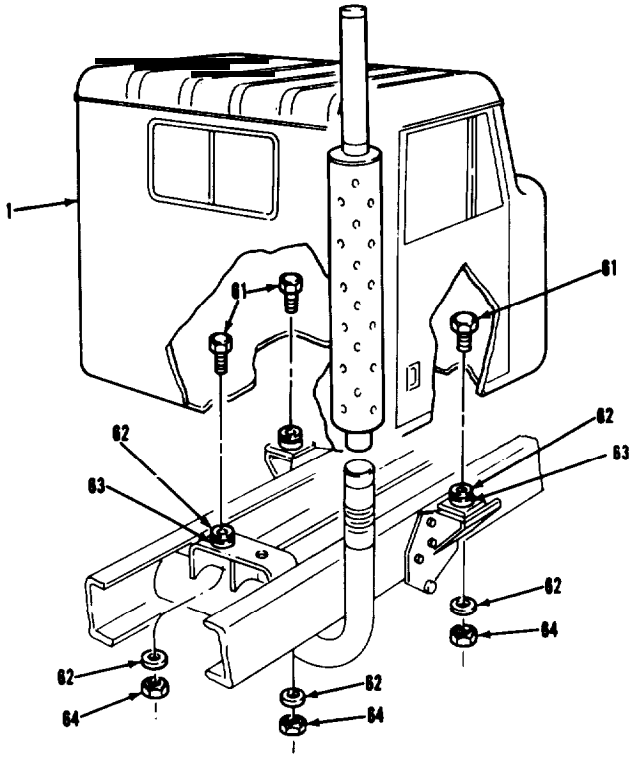
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued)

LOCATION/ITEM	ACTION	REMARKS
C. INSTALLATION (Continued).		
46. Cab (1).	Slowly lower into position.	
47. Front left corner of floormat.	Pull back far enough to reach access hole behind engine retarder foot switch pedal.	
48. Center rear part of floormat.	Pull back far enough to reach access holes.	
	NOTE One rear nut, screw, and lower washer shown here. Other rear nut, screw, and lower washer installed in same way.	
49. Four screws (61).	Push into position.	Assistants may have to push item (1) slightly to allow four items (61) to fall down through four items (63).
50. Cab (1).	a. Secure with four items (61), (62) (lower), and new items (64).	Assistant helps secure items (61), (62) (lower), and new items (64). Torque to 130 lb-ft.
	b. Remove guide ropes.	
51. Front left corner of floormat.	Lay back into position.	
52. Center rear part of floormat.	Lay back into position.	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
61. HEXAGON MACHINE SCREW (4)
62. FLAT WASHER (8)
63. INSULATOR (4)
64. PT NUT (4)

TA 238519

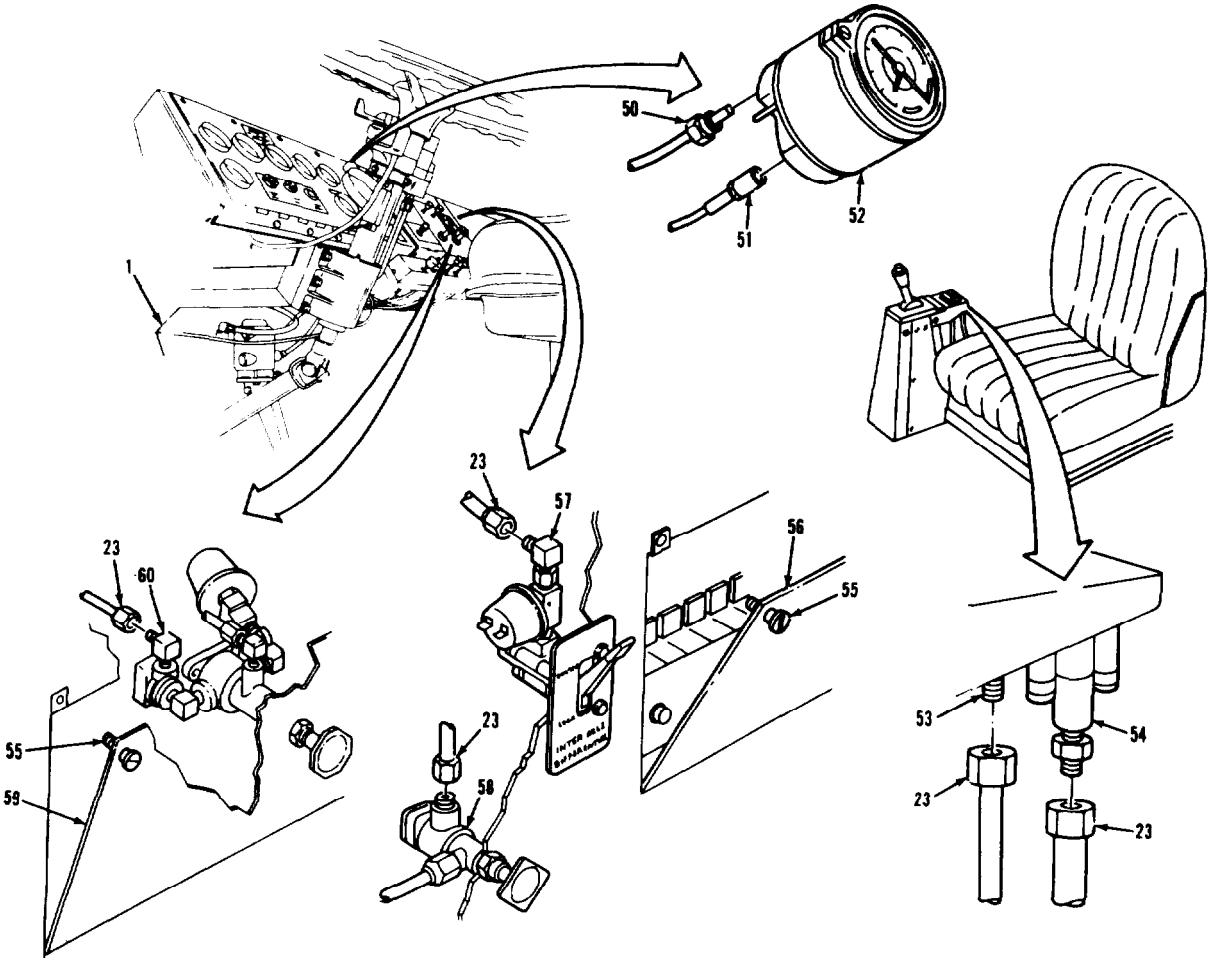
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSTALLATION (Continued).		
53. Cable (51).	a. Push through hole in item (1).	
	b. Install to item (52).	
54. Cable (50).	a. Push through hole in item (1).	
	b. Install to item (52).	
55. Three connectors (23).	Push through hole in item (1).	
56. Connector (23).	Install to item (60).	
57. Connector (23).	Install to item (58).	
58. Connector (23).	Install to item (57).	
59. Door (59).	a. Close.	
	b. Secure by turning two items (55) clockwise.	
60. Door (56).	a. Close.	
	b. Secure by turning three items (55) clockwise.	
61. Two connectors (23).	Push through hole in floor in item (1).	Assistant helps push two items (23) into item (1) from underneath.
62. Connector (23).	Install to item (53).	
63. Connector (23).	Install to item (54).	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
23. MALE CONNECTOR (13)
50. SPEEDOMETER CABLE
51. TACHOGRAPH CABLE
52. TACHOGRAPH
53. ELBOW
54. TOGGLE VALVE
55. QUARTER-TURN SCREW (5)
56. CIRCUIT BREAKER PANEL DOOR
57. INTERAXLE DIFFERENTIAL VALVE ELBOW
58. PARKING BRAKE VALVE
59. INSTRUMENT PANEL DOOR
60. TRAILER AIR SUPPLY VALVE ELBOW

TA 238520

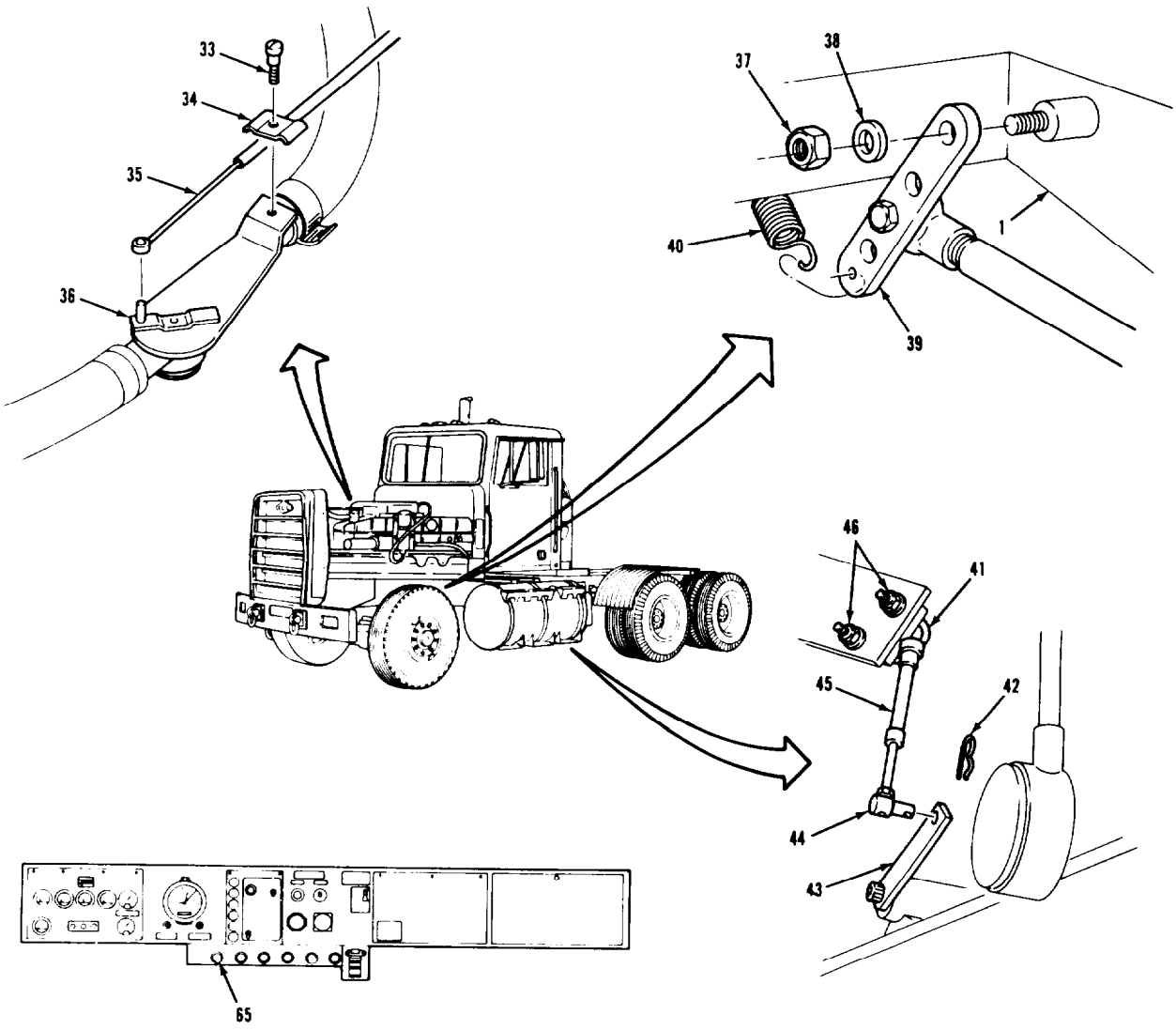
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSTALLATION (Continued).		
64. Cable (45).	a. Feed through item (41).	
	b. Put item (44) through hole at end of item (45).	
	c. Put item (44) in item (43) and secure with item (42).	
	d. Secure with two items (46)	
	e. Adjust item (45).	Refer to TM 9-2320-283-20.
65. Valve (36).	a. Push in item (65).	
	b. Push lever on item (36) all the way forward.	
	c. Position end of item (35) onto lever on item (36).	
	d. Position item (35) under item (34).	
66. Screw (33).	Tighten.	
67. Lever (39).	a. Line up top hole in item (39) with hole in item (1).	
	b. Secure with item (37) and (38).	
68. Spring (40).	Install on item (39).	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
33. SCREW
34. CLAMP
35. BODEN WIRE
36. CHECK VALVE
37. PT NUT
38. WASHER
39. ACCELERATOR BELLCRANK LEVER
40. LEVER RETURN SPRING
41. U-BOLT
42. COTTER PIN
43. LEVER
44. TRUNNION
45. TRANSMISSION SHIFT CONNECT CABLE ASSEMBLY
46. HEXAGON HEAD LOCKNUT
65. HEAT CONTROL KNOB

TA 238521

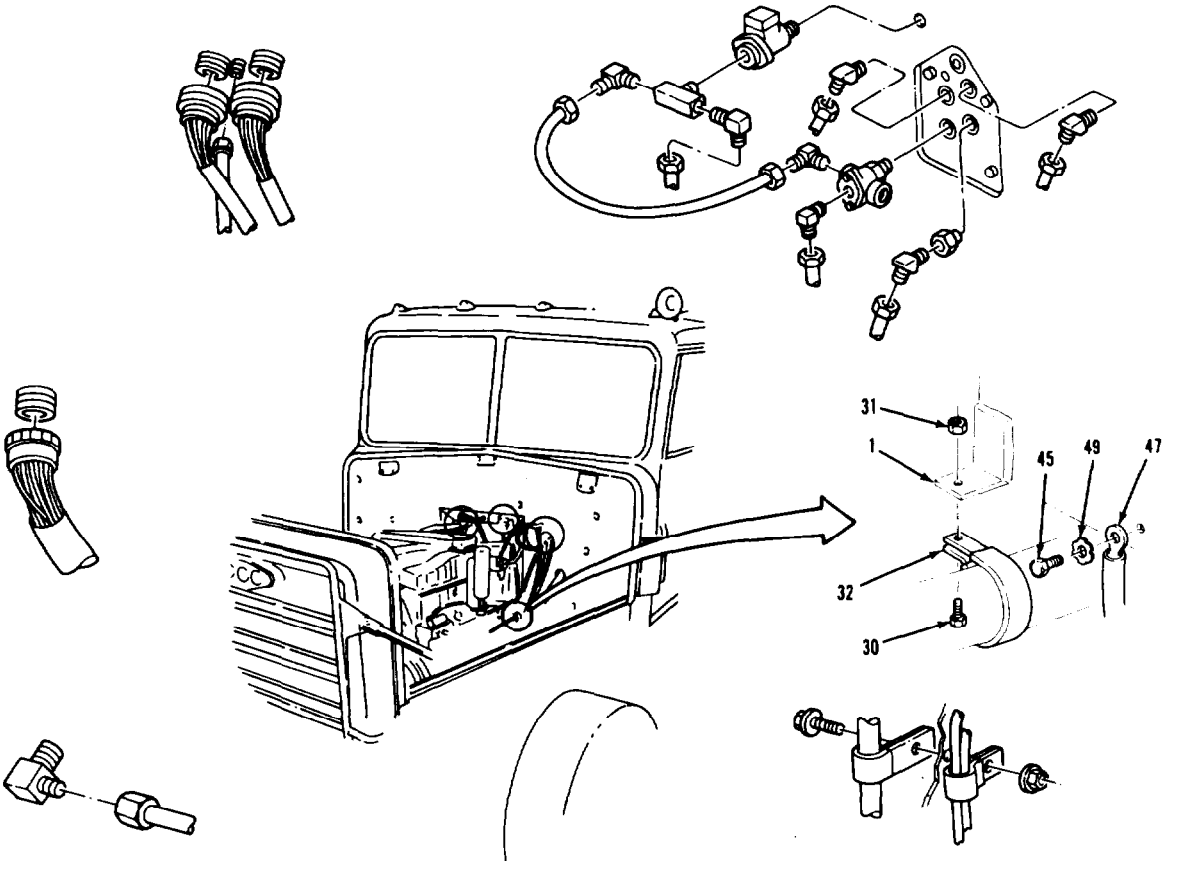
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSTALLATION (Continued).		
69. Cable (47).	a. Line up hole in terminal at end of item (47) with hole in item (1).	
	b. Secure with items (48) and (49).	
70. Clamp (32).	a. Line up hole in item (32) with hole in item (1).	
	b. Secure with items (30) and (31).	
71. Connector (21).	Install to item (22).	
72. Two connectors (24).	Install to two items (22).	
73. Connector (23).	Install to item (25).	
74. Connector (23).	Install to item (29).	
75. Two clamps (32).	a. Line up holes in two items (32) with hole in item (1).	Position one item (32) on each side of item (1).
	b. Secure with item (30) and item (31).	
76. Three connectors (23).	Install to three items (29).	
77. Connector (23).	Install to item (28).	
78. Connector (23).	Install to item (27).	
79. Connector (23).	Install to item (26).	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
21. ENGINE HARNESS
22. CONNECTOR (3)
23. MALE CONNECTOR (13)
24. CHASSIS AND FRONT CAB HARNESS CONNECTOR (2)
25. ELBOW
26. CHECK VALVE
27. TEE
28. DOUBLE CHECK AND STOP VALVE
29. CONNECTOR ELBOW (4)
30. HEXAGON BOLT (2)
31. HEXAGON NUT (2)
32. CUSHIONED CLAMP (3)
47. CAB TO FRAME CABLE GROUND
48. TAPPING SCREW
49. INTERNAL/EXTERNAL LOCKWASHER

TA 238521

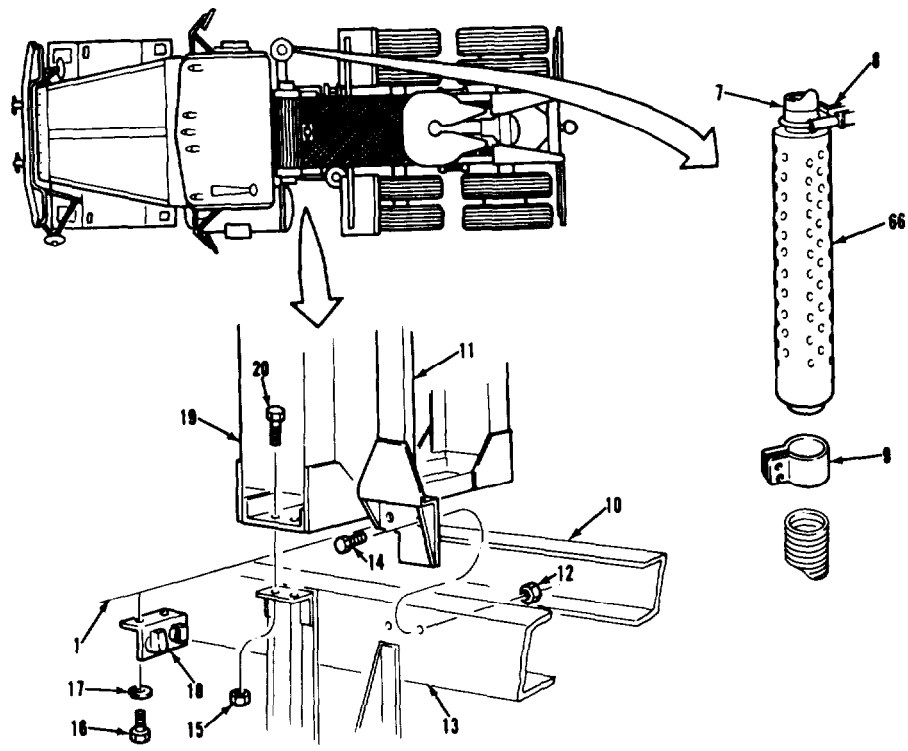
CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSTALLALTION (Continued).		
	NOTE If exhaust stack and winch pillar were removed; then do steps 85 and 86, otherwise, go to step 87.	
80. Pipe (7).	a. Install on item (66).	
	b. Secure with item (8).	
81. Pillar (11).	a. Line up holes in item (11) with holes in item (13).	
	b. Secure with two items (14) and two items (12).	Assistant helps install item (11).
82. Bracket (18).	a. Line up holes in item (18) with holes in item (1).	
	b. Secure with three items (17) and (16).	
83. Spare tire carrier assembly (19).	a. Line up holes in item (19) with holes in item (13) and item (14).	
	b. Secure with four items (20) and (15).	
84. Reducer (9).	a. Slide up into position.	
	b. Tighten.	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
7. EXHAUST STACK PIPE
8. CLAMP
9. REDUCER COUPLING
10. RIGHT-HAND MAIN RAIL
11. WINCH PILLAR ASSEMBLY
12. HEXAGON HEAD NUT (2)
13. LEFT-HAND MAIN RAIL
14. HEXAGON HEAD SCREW (2)
15. HEXAGON HEAD NUT (4)
16. HEXAGON HEAD SCREW (3)
17. LOCKWASHER (3)
18. TRAILER RECEPTACLE BRACKET
19. SPARE TIRE CARRIER ASSEMBLY
20. HEXAGON HEAD SCREW (4)
66. MUFFLER AND HEAT SHIELD ASSEMBLY

TA 238523

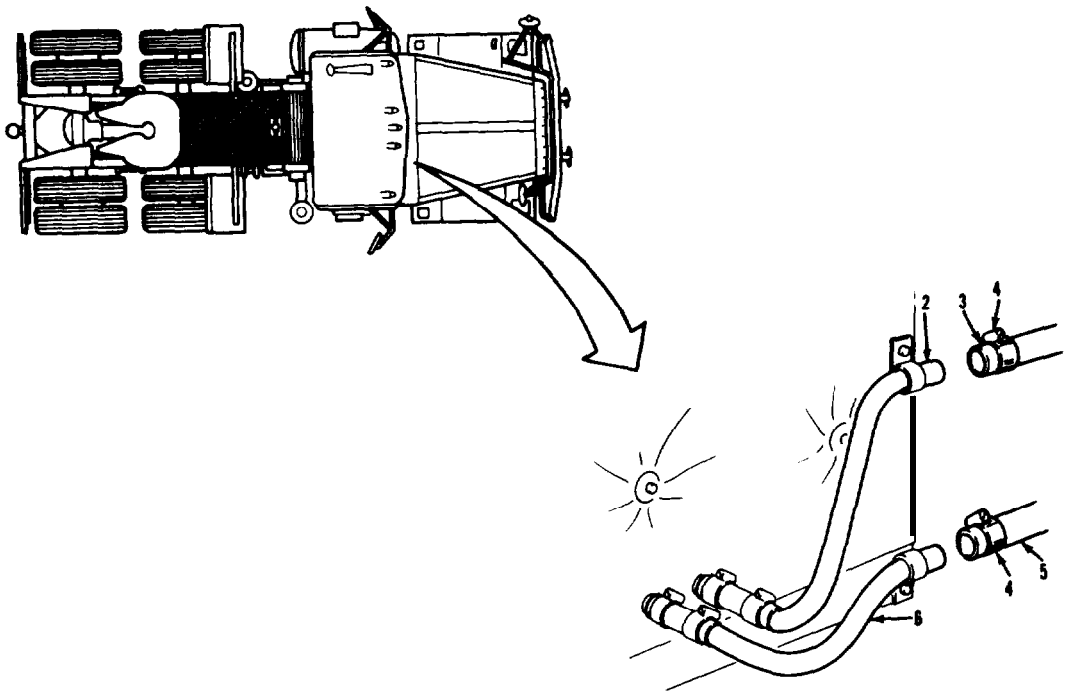
CAB AND BODY..

3-110. CAB SHELL REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSTALLATION (Continued).		
85. Hose (5).	a. Push onto item (6).	
	b. Slide item (4) in place.	
	c. Tighten item (4).	
86. Hose (3).	a. Push onto item (2).	
	b. Slide item (4) in place,	
	c. Tighten item (4).	
	NOTE Follow-on maintenance action required: Service cooling system (TM 9-2320-283-20). Install air cleaner (TM 9-2320-283-20). Install front fenders (TM 9-2320-283-20). Install crossbar supports (TM 9-2320-283-20). Install hood panels (TM 9-2320-283-20). Connect battery power (TM 9-2320-283-20). Perform operators before and weekly preventive maintenance checks and service (TM 9-2320-283-10). Perform organizational weekly and quarterly preventive maintenance checks and services (TM 9-2320-283-20). Install lower steering column (TM 9-2320-283-20). Install spare tire in carrier (TM 9-2320-283-10). Install fire extinguisher (TM 9-2320-283-10).	

CAB AND BODY.

3-110. CAB SHELL REPLACEMENT (Continued).



LEGEND:

2. HEATER INLET TUBE
3. HEATER HOSE
4. HOSE CLAMP (2)
5. HEATER TO FUEL HEATER HOSE
6. HEATER OUTLET TUBE

TA 238524

CAB AND BODY.

3-111. DOOR REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS

TEST EQUIPMENT

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Solution, soap
Item 30, Appendix B.
Lockwasher (9)
(24617) 138489.
Lockwasher (2)
(24617) 9417953.

PERSONNEL REQUIRED
Two (MOS-63W)

REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

TROUBLESHOOTING REFERENCES
None.

EQUIPMENT CONDITION

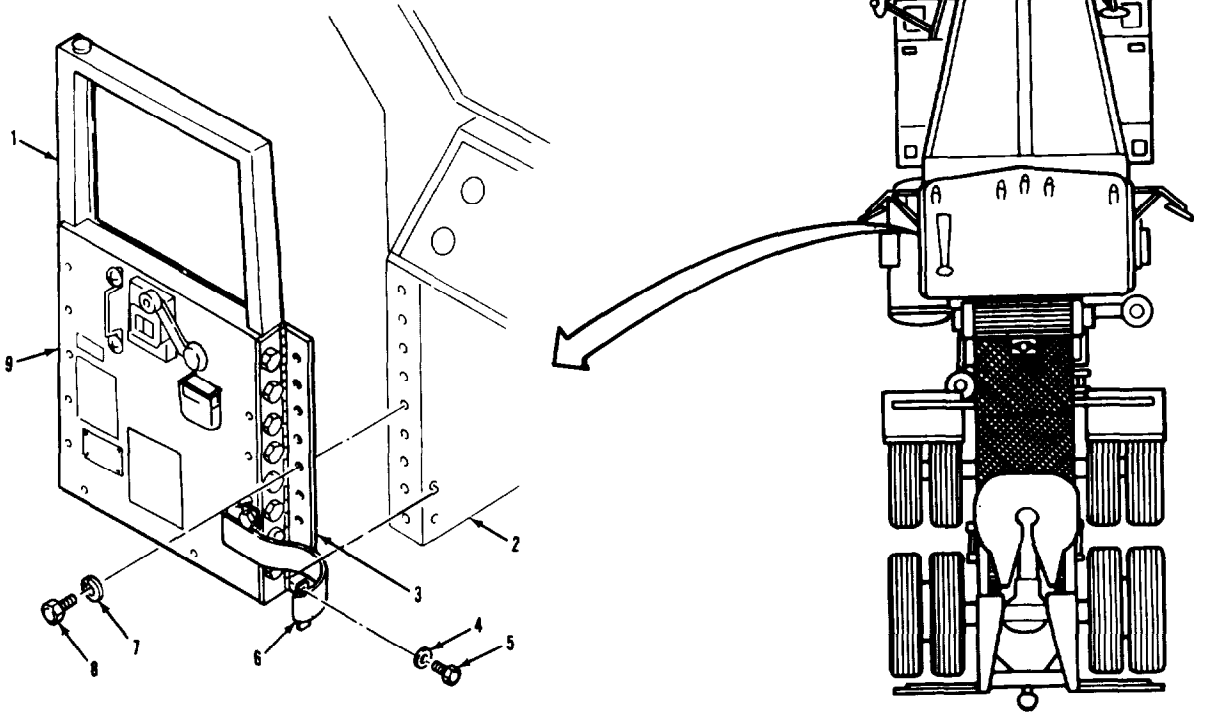
PARAGRAPH	CONDITION DESCRIPTION
	NOTE Only remove door mirror if repairing door assembly. Do not remove mirror if accessing other parts.
TM 9-2320-283-20.	Door mirror removed.

SPECIAL ENVIRONMENTAL CONDITIONS
None.

GENERAL SAFETY INSTRUCTIONS
None.

CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).



LEGEND:

1. LEFT-HAND DOOR SHELL FRAME
2. CAB SHELL
3. LEFT-HAND DOOR HINGE ASSEMBLY
4. LOCKWASHER (2)
5. MACHINE SCREW (2)
6. DOOR CHECK STRAP
7. LOCKWASHER (9)
8. MACHINE SCREW (9)
9. LEFT-HAND PANEL ASSEMBLY

TA 238525

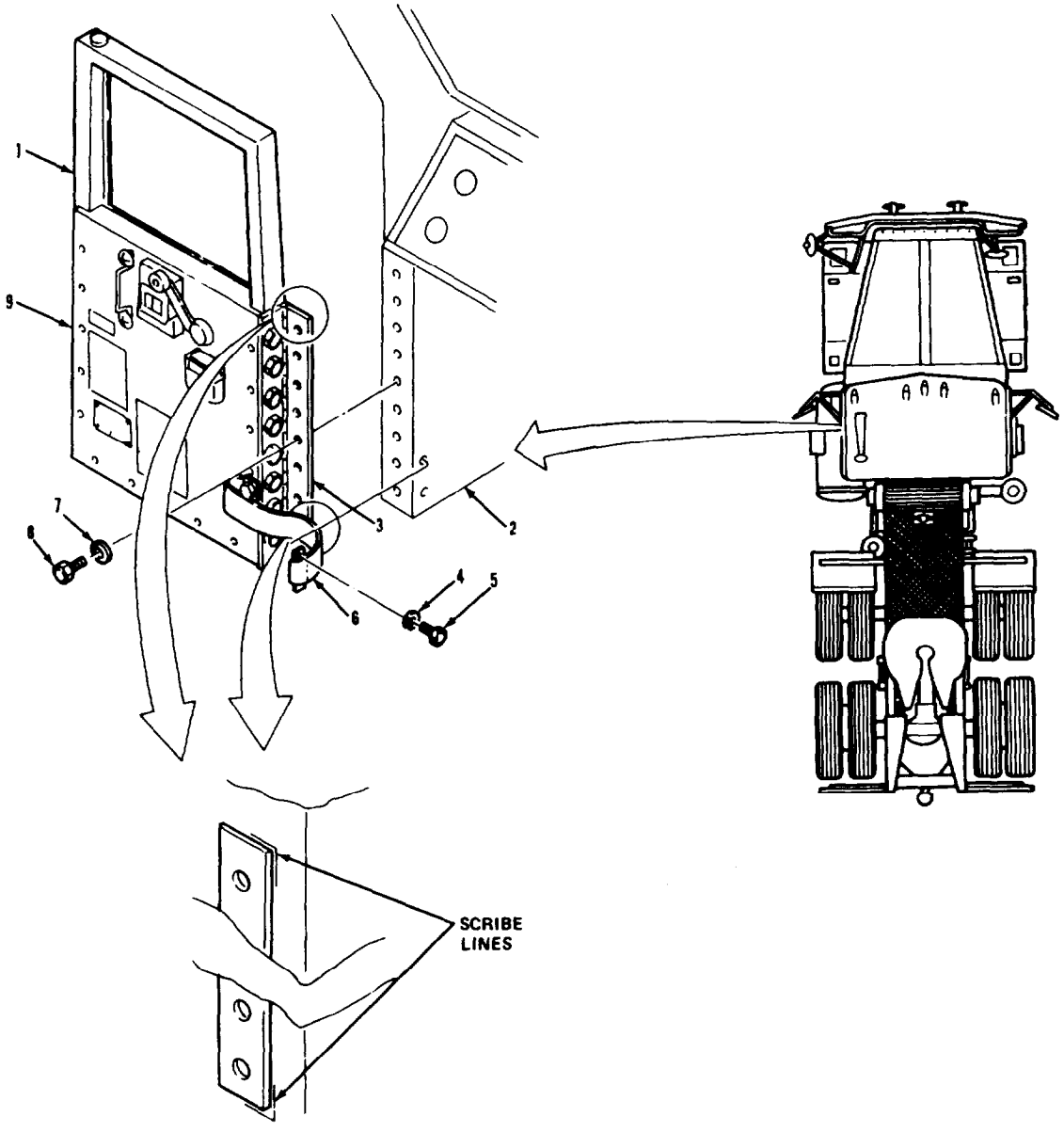
CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
	NOTE Right-hand and left-hand door assemblies are removed in same way. Left-hand door assembly is shown here.	
1. Door (1).	Open.	
2. Two screws (5), lockwashers (4), and one strap (6).	Remove from item (2).	Leave item (6) on item (9) l
3. Left-hand door hinge assembly (3) and cab shell (2).	Scribe a line on item (2) around top and bottom corners of item (3). (See illustration).	This will aid you when you aline item (1) during installation.
4. Door (1).	Use suitable lifting device to support item (1).	Assistant will operate lifting device.
	WARNING Direct all personnel to stand cl ear during hoisting operations. A heavy or swinging load can cause severe injury.	
5. Nine screws (8), lockwashers (7), and door (1).	a. Remove from item (2).	Item (1) must be held to prevent swinging.
	b. Lower item (1) on wood blocks.	Discard items (4).
	c. Remove lifting device.	

CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).



LEGEND:

1. LEFT-HAND DOOR SHELL FRAME
2. CAB SHELL
3. LEFT-HAND DOOR HINGE ASSEMBLY
4. LOCKWASHER (2)
5. MACHINE SCREW (2)
6. DOOR CHECK STRAP
7. LOCKWASHER (9)
8. MACHINE SCREW (9)
9. LEFT-HAND PANEL ASSEMBLY

TA 238526

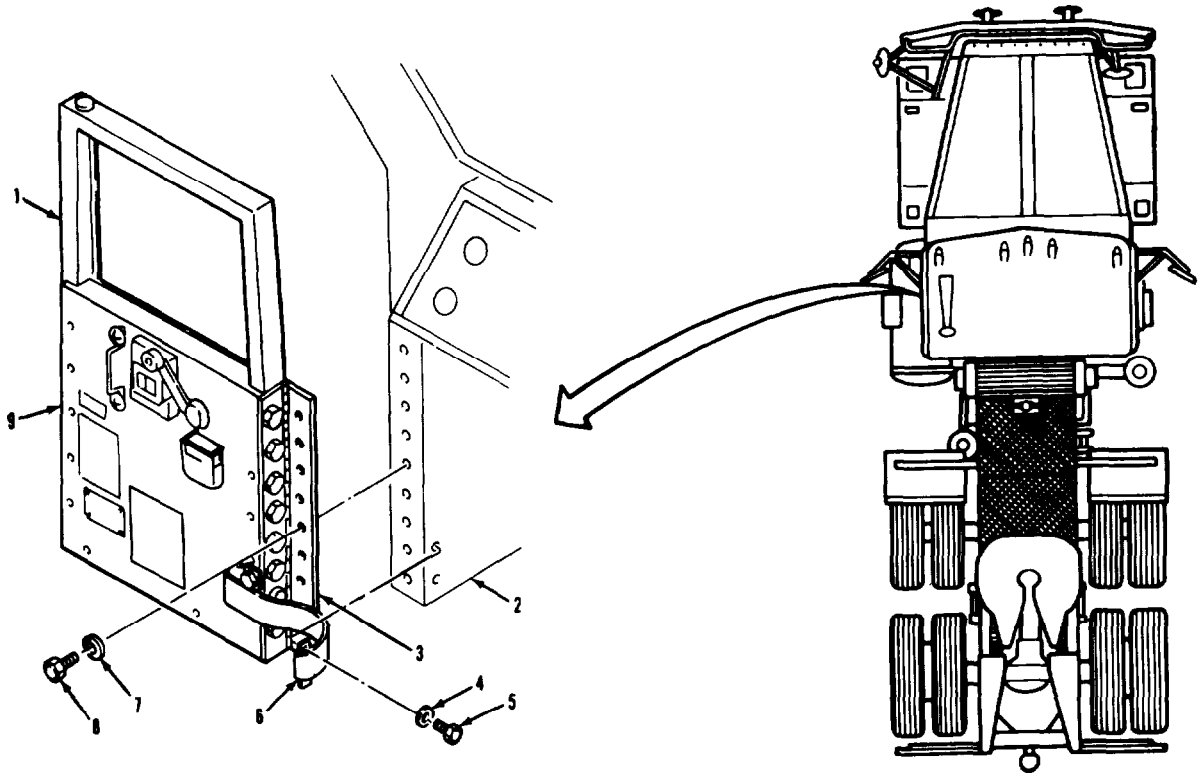
CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING.		
6. Door (1).	Clean with soap and water.	
C. INSPECTION.		
7. Door (1).	Inspect.	Repair damaged parts paragraph 3-112.
D. INSTALLATION.		
	WARNING Direct all personnel to stand clear during hoisting operations. A heavy or swinging load can cause severe injury.	
	NOTE Right-hand or left-hand door assemblies are installed in the same way. Left-hand door assembly is shown here.	
8. Door (1).	a. Install suitable lifting device for support.	Assistant will operate lifting device.
	b. Lift in position and line up holes in item (3) with holes in item (2).	
	c. Secure finger tight with nine items (8) and new items (7).	Start with center hole.
	d. Remove lifting device.	

CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).



LEGEND:

1. LEFT-HAND DOOR SHELL FRAME
2. CAB SHELL
3. LEFT-HAND DOOR HINGE ASSEMBLY
4. LOCKWASHER (2)
5. MACHINE SCREW (2)
6. DOOR CHECK STRAP
7. LOCKWASHER (9)
8. MACHINE SCREW (9)
9. LEFT-HAND PANEL ASSEMBLY

TA 238527

CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
9. Left-hand door hinge assembly (3).	a. Line up corners of item (3), with scribe lines on item (2).	Assistant lifts and holds door (1).
	b. Tighten nine items (8).	
10. Door (1).	a. Swing up to Item (2) opening and check alinement.	If item (1) is too high or too low with respect to opening, then do step 11. If Item (1) fits opening, then skip step 11.
	b. Open.	
11. Eight screws (10).	a. Loosen.	
	b. Approximate your adjustment and tighten eight items (10).	Assistant raises or lowers item (1) as directed.
	c. Repeat step 10.	Assistant holds item (1) in place until secure.
12. Door (1).	Close and open.	If item (1) does not lock properly, adjust striker plate, refer to paragraph 3-113.
13. Strap (6).	a. Place in position on item (2).	
	b. Secure with two items (5) and two new items (4).	
14. Door (1).	Close.	

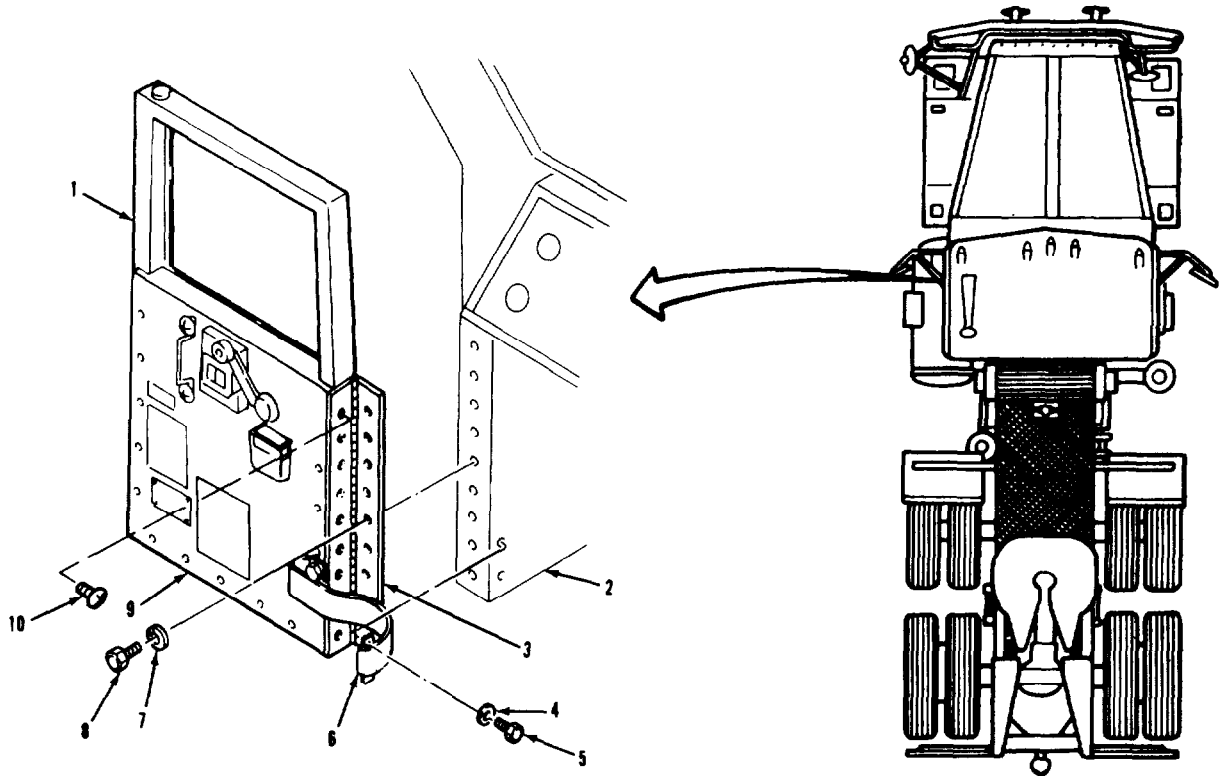
NOTE

Follow-on maintenance action required:

Install door mirror (TM 9-2320-283-20).

CAB AND BODY.

3-111. DOOR REPLACEMENT (Continued).



LEGEND:

1. LEFT-HAND DOOR SHELL FRAME
2. CAB SHELL
3. LEFT-HAND DOOR HINGE ASSEMBLY
4. LOCKWASHER (2)
5. MACHINE SCREW (2)
6. DOOR CHECK STRAP
7. LOCKWASHER (9)
8. MACHINE SCREW (9)
9. LEFT-HAND PANEL ASSEMBLY

TA 238528

CAB AND BODY.

3-112. DOOR REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	None.	None.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)

Grease, white (suitable)
Item 11, Appendix B.
Oil, lubricating, engine, OE/HDO-30
Item 17, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B.
Soap, detergent
Item 30, Appendix B.
Lockwasher (8)
(24617) 138489.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

REFERENCES (TM)
TM 9-2320-283-20.
TM 9-2320-283-20P.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

CAB AND BODY.

3-112. DOOR REPAIR (Continued).

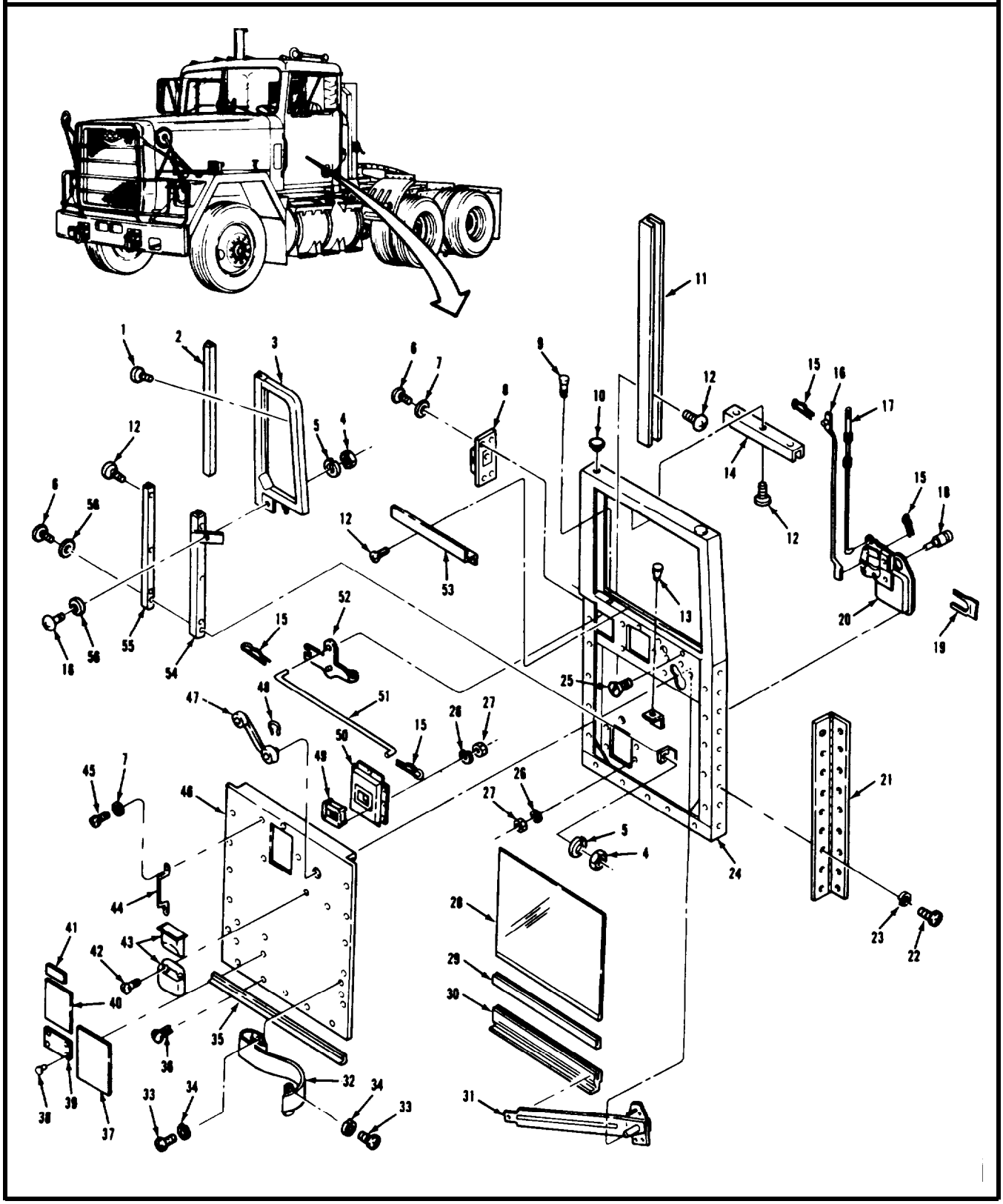
LOCATION/ITEM	ACTION	REMARKS

NOTE

Due to the many parts being serviced in this procedure, the art presentation has been modified to improve clarity. The next two pages contain the art and legend for the door assembly. The first page shows the door assembly completely disassembled and the second page contains a complete legend. In the step-by-step instructions, art and legend will show and list only parts of the door assembly being discussed in the text. To avoid confusion, use the art and legend on the next two pages along with the detailed views in the text. They will aid you in seeing and understanding the exact disassembly and assembly procedure.

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LEGEND:

1. MACHINE SCREW (3)
2. FRONT UPPER WEATHER CHANNEL
3. LEFT-HAND DOOR VENT WINDOW ASSEMBLY
4. NUT (2)
5. LOCKWASHER (2)
6. MACHINE SCREW (6)
7. LOCKWASHER (8)
8. LEFT-HAND DOOR LATCH ASSEMBLY
9. DOOR LOCKING KNOB
10. BUTTON PLUG (5)
11. DOOR REAR WEATHER CHANNEL
12. MACHINE SCREW (16)
13. WINDOW STOP BUMPER
14. DOOR UPPER WEATHER CHANNEL
15. DOOR LATCH ROD CLIP (4)
16. OUTSIDE LATCH RELEASE DOOR ROD
17. INSIDE LATCH RELEASE DOOR ROD ASSEMBLY
18. LOCK AND KEY ASSEMBLY
19. LOCK ASSEMBLY RETAINER
20. LEFT-HAND OUTSIDE DOOR HANDLE ASSEMBLY
21. LEFT-HAND DOOR HINGE ASSEMBLY
22. MACHINE SCREW (8)
23. LOCKWASHER (8)
24. LEFT-HAND DOOR SHELL
25. MACHINE SCREW (4)
26. LOCKWASHER (8)
27. NUT (8)
28. DOOR GLASS
29. GLASS SETTING STRIP
30. DOOR WINDOW GLASS CHANNEL ASSEMBLY
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
32. DOOR CHECK STRAP
33. MACHINE SCREW (4)
34. LOCKWASHER (4)
35. LOWER DOOR WEATHER SEAL
36. SELF-TAPPING SCREW (17)
37. TOWING INSTRUCTION DECAL
38. BLIND RIVET
39. NOMENCLATURE IDENTIFICATION DECAL
40. CERTIFICATION DECAL
41. RUST PROOFING DECAL
42. MACHINE SCREW (2)
43. LEFT-HAND DOOR ASH RECEPTACLE
44. DRIVER PULL HANDLE
45. MACHINE SCREW (4)
46. LEFT-HAND PANEL ASSEMBLY
47. HANDLE ASSEMBLY
48. SPRING CLIP
49. LEFT-HAND INSIDE DOOR HANDLE ASSEMBLY
50. LEFT-HAND INSIDE DOOR HANDLE BRACKET
51. DOOR LATCH RELEASE ROD
52. LEFT-HAND PLATE AND LEVER ASSEMBLY
53. DOOR PANEL WEATHER STRIP
54. LEFT-HAND LOWER CHANNEL ASSEMBLY
55. LOWER FRONT WEATHER CHANNEL
56. FLAT WASHER (2)

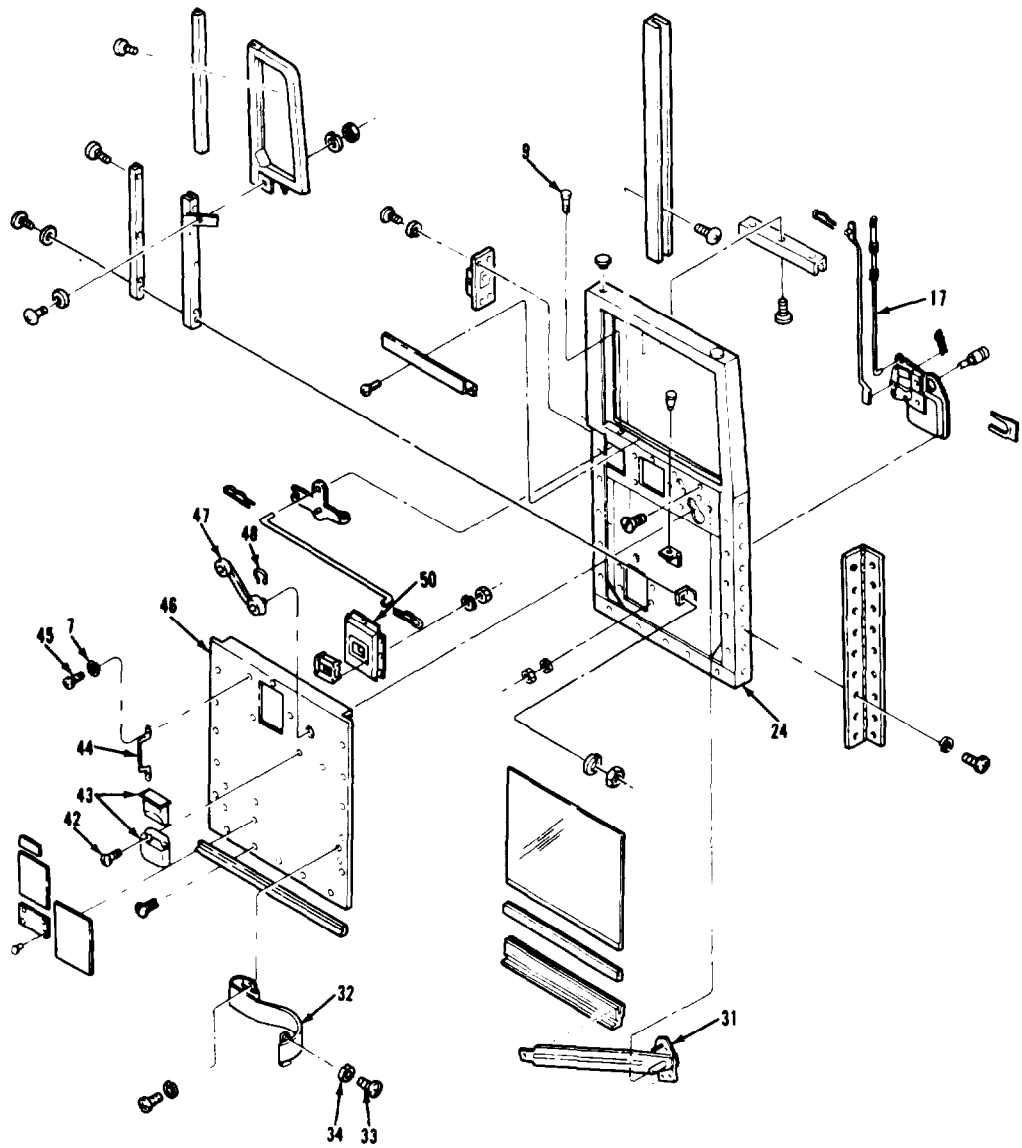
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	NOTE Left-hand and right-hand door are disassembled in same way, except as noted below. Left door shown here.	
1. Knob (9).	Remove from item (17).	
2. Clip (48).	Remove from item (47).	
3. Handle assembly (47).	Remove from item (31).	
	NOTE Skip step 4 and 5 if repairing right door.	
4. Receptacle (43)	Pull apart.	
5. Two screws (42).	a. Remove from item (43). b. Remove item (43) from item (46).	
6. Four screws (33) and lockwashers (34).	a. Remove from item (32). b. Remove item (32).	
7. Two screws (45) and lockwashers (7).	Remove from items (44) and (46).	Item (50) will be loose in item (24).

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



7. LOCKWASHER (8)
9. DOOR LOCKING KNOB
17. INSIDE LATCH RELEASE DOOR ROD ASSEMBLY
24. LEFT-HAND DOOR SHELL
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
32. DOOR CHECK STRAP
33. MACHINE SCREW (4)
34. LOCKWASHER (4)
42. MACHINE SCREW (2)
43. LEFT-HAND DOOR ASH RECEPTACLE
44. DRIVER PULL HANDLE
45. MACHINE SCREW (4)
46. LEFT-HAND PANEL ASSEMBLY
47. HANDLE ASSEMBLY
48. SPRING CLIP
50. LEFT-HAND INSIDE DOOR HANDLE BRACKET

TA 238621

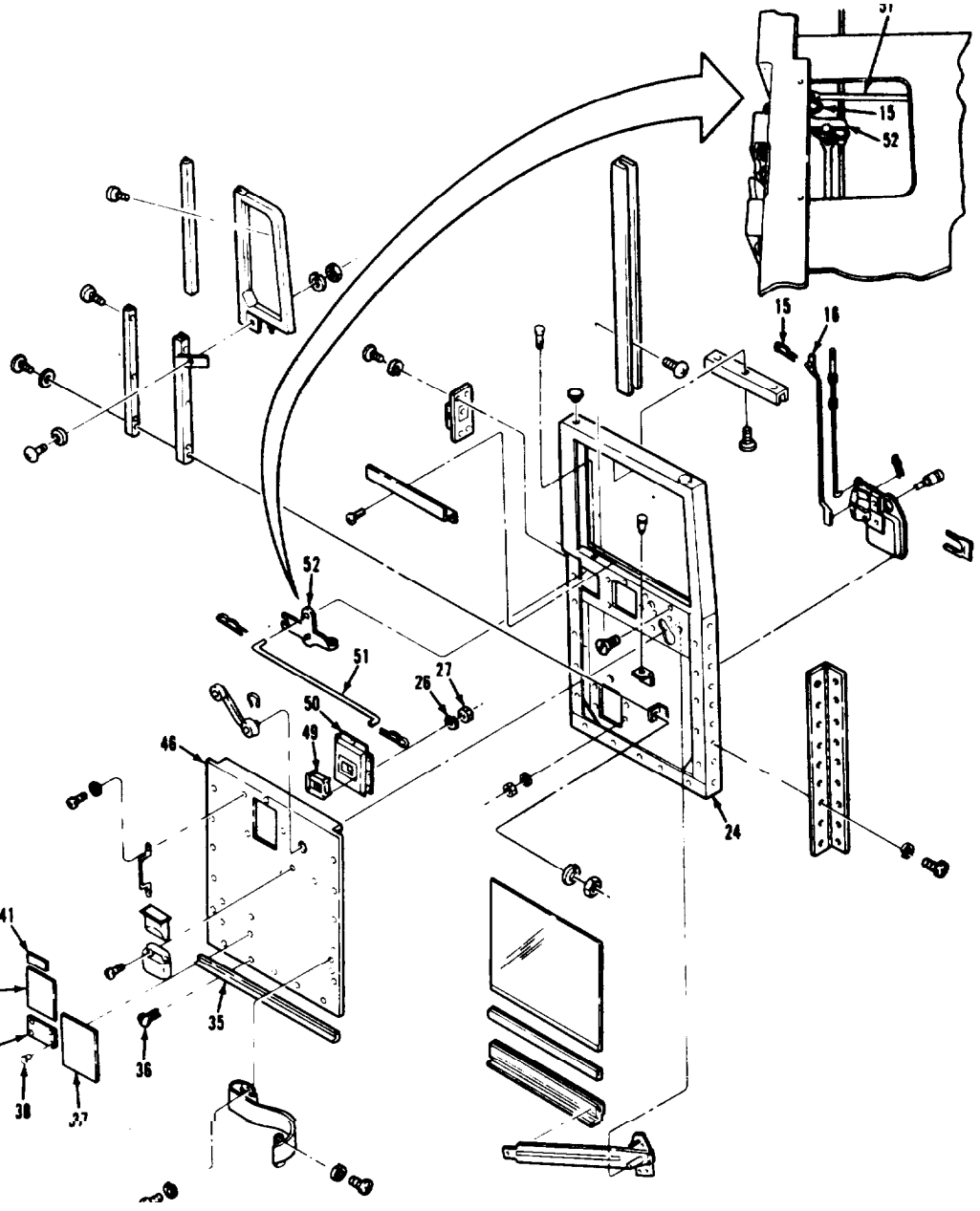
CAB AND BODY:

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A DISASSEMBLY (Continued).		
8. Seventeen screws (36).	a. Remove from item (46). b. Remove item (46) from item (24).	
9. Seal (35).	Pull from item (46).	
	NOTE Do step 11 if left-hand or right-hand panel assembly is replaced.	
10. Decals (37), (39), (40), (41), and four rivets (38).	Remove from item (46).	Refer to TM 9-2320-283-20.
11. Clip (15).	a. Pull from item (51) at item (52). b. Remove item (51) from item (52). (See illustration).	
12. Handle (49), bracket (50), and rod (51).	Remove from opening in item (24).	Items (49), (50), and (51) are removed as an assembly.
13. Clip (15).	a. Pull from item (51) at item (49). b. Remove item (51) from item (49).	
14. Four nuts (27) and lockwashers (26).	a. Remove from item (49). b. Remove item (49) from item (50).	
15. Clip (15).	a. Pull from top of item (16). b. Pull item (16) from item (52).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

15. DOOR LATCH ROD CLIP (4)
16. OUTSIDE LATCH RELEASE DOOR ROD
24. LEFT-HAND DOOR SHELL
26. LOCKWASHER (8)
27. NUT
35. LOWER DOOR WEATHER SEAL
36. SELF-TAPPING SCREW (17)
37. TOWING INSTRUCTION DECAL
38. BLIND RIVET (4)
39. NOMENCLATURE IDENTIFICATION DECAL
40. CERTIFICATION DECAL
41. RUST PROOFING DECAL
46. LEFT-HAND PANEL ASSEMBLY
49. LEFT-HAND INSIDE DOOR HANDLE ASSEMBLY
50. LEFT-HAND INSIDE DOOR HANDLE BRACKEl
51. DOOR LATCH RELEASE ROD
52. LEFT-HAND PLATE AND LEVER ASSEMBLY

TA 238532

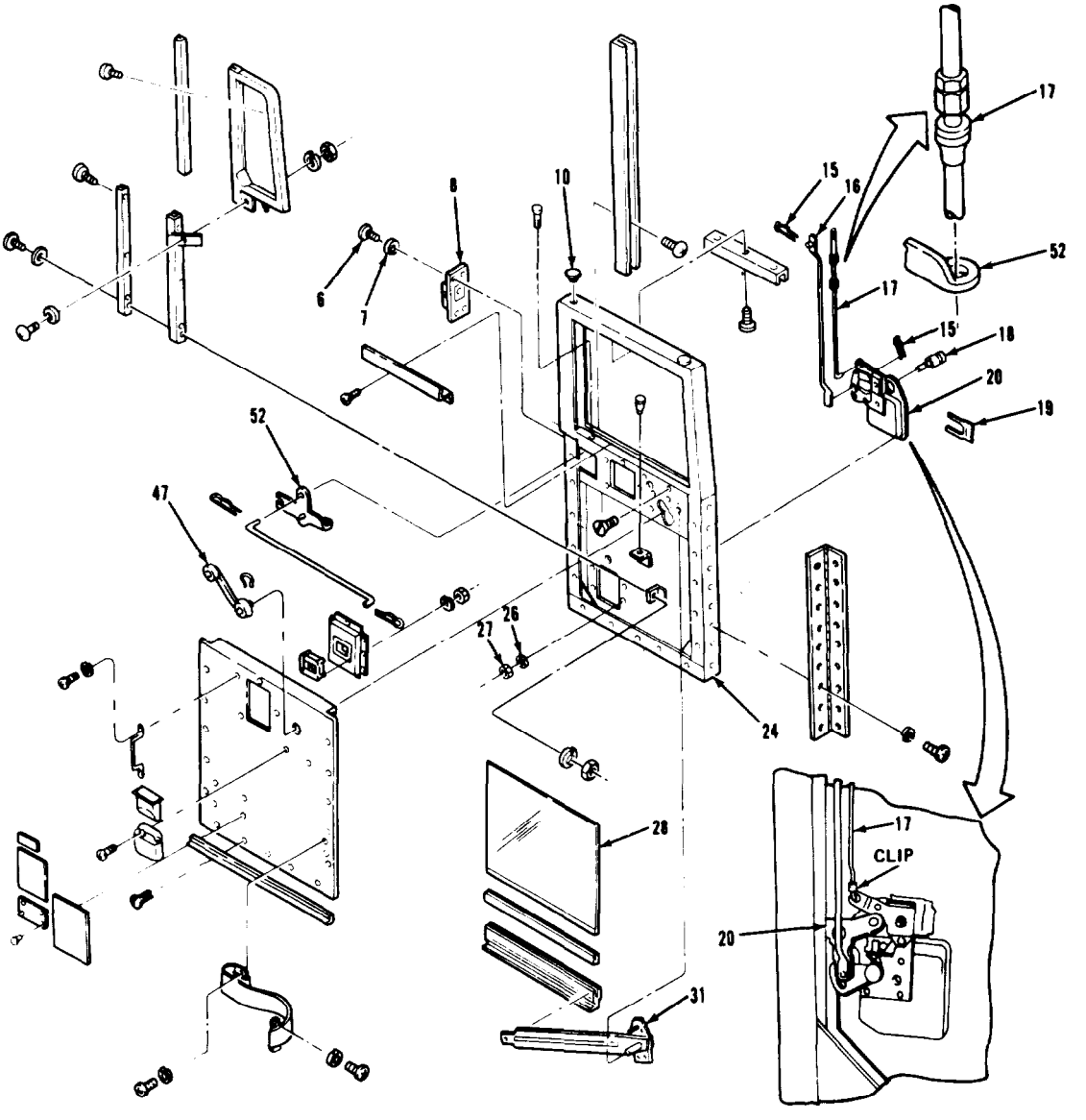
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
DISASSEMBLY (Continued).		
16. Four screws (6) and lockwashers (7).	a. Remove from item (8). b. Remove item (8) from item (24).	
17. Clip on handle (20).	a. Remove from item (17) (see illustration). b. Remove item (17) from item (20) .	
18. Left-hand plate and lever assembly (52) with attached rod (17).	Remove from item (24).	
19. Rod (17).	Remove from item (52) (see illustration).	
20. Retainer (19).	Pull from item (18).	
21. Lock assembly (18) .	Push out from item (24).	
22. Four nuts (27) and lockwashers (26).	Remove from item (20).	
23. Handle assembly (20) with attached rod (16).	Pull from item (24).	
24. Clip (15).	a. Remove from item (16) at item (20). b. Remove item (10) from item (20) l	
25. Handle assembly (47).	a. Place on item (31). b. Using item (47) roll item (28) all the way up.	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

6. MACHINE SCREW (6)
7. LOCKWASHER (8)
8. LEFT-HAND DOOR LATCH ASSEMBLY
10. BUTTON PLUG (5)
15. DOOR LATCH ROD CLIP (4)
16. OUTSIDE LATCH RELEASE DOOR ROD
17. INSIDE LATCH RELEASE DOOR ROD
18. LOCK AND KEY ASSEMBLY
19. LOCK ASSEMBLY RETAINER
20. LEFT-HAND OUTSIDE DOOR HANDLE ASSEMBLY
24. LEFT-HAND DOOR SHELL
26. LOCKWASHER (8)
27. NUT (8)
28. DOOR GLASS
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
47. HANDLE ASSEMBLY
52. LEFT-HAND PLATE AND LEVER ASSEMBLY

TA 238533

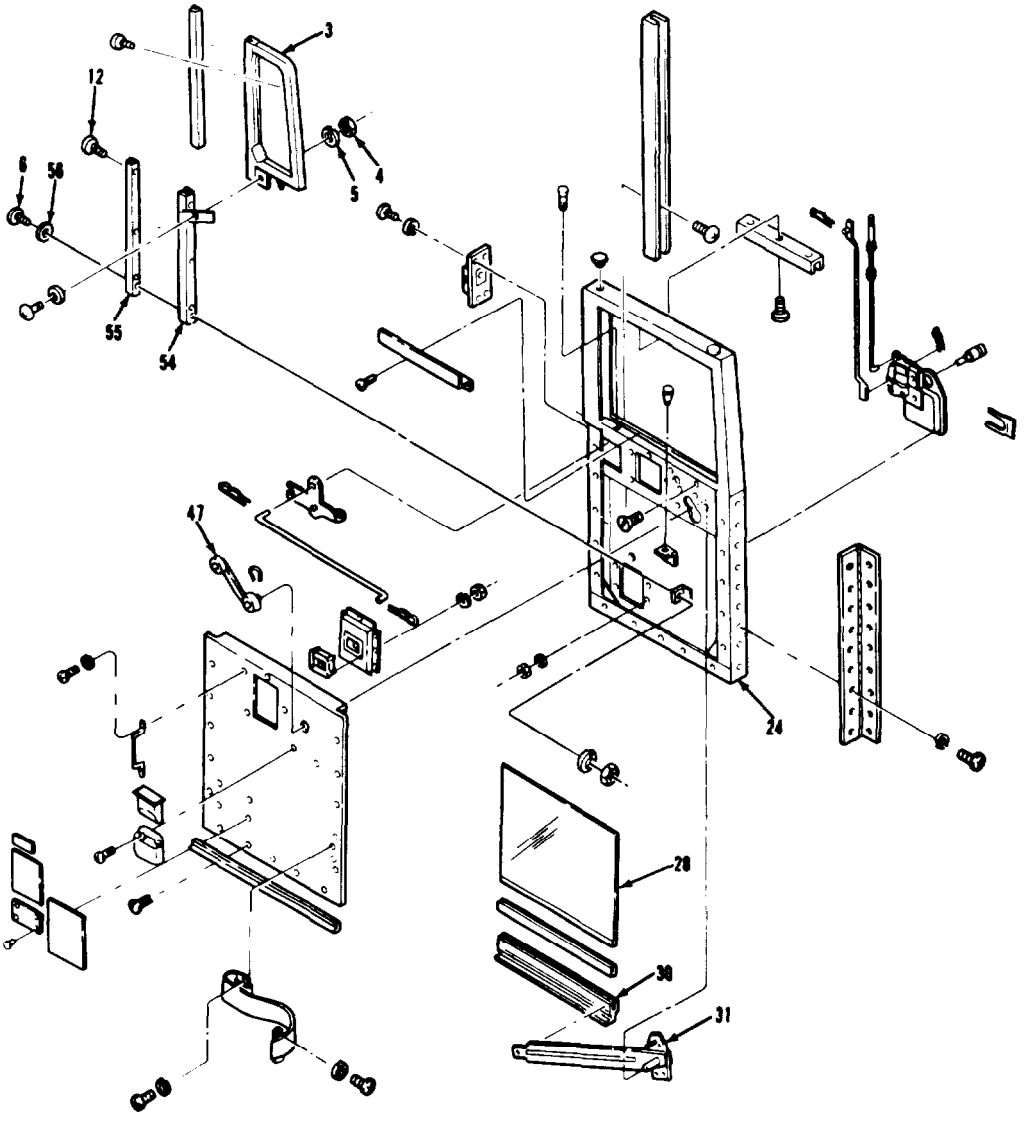
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
26. Two nuts (4), lockwashers (5), washers (56), and screws (6).	a. Remove from item (54). b. Remove item (54) from item (3) at item (24).	Use access hole below item (3) to remove one item (6).
27. Three screws (12).	a. Remove from item (55). b. Remove item (55) from item (54).	
	CAUTION Support door glass to prevent breakage or scratches.	
28. Handle assembly (47).	a. Using item (47) roll item (28) all the way down. b. Remove item (47) from item (31).	Assistant supports item (28) until item (28) is down.
	CAUTION Support regulator to prevent regulator from striking and breaking door glass.	
29. Four screws (25).	Remove from item (31).	Assistant supports item (31) until clear of item (28).
30. Left-hand window regulator assembly (31).	a. Slide roller on item (31) out of groove in item (30). b. Remove item (31) from item (24).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

3. LEFT-HAND DOOR VENT WINDOW ASSEMBLY
4. NUT (2)
5. LOCKWASHER (2)
6. MACHINE SCREW (6)
12. MACHINE SCREW (16)
24. LEFT-HAND DOOR SHELL
25. MACHINE SCREW (4)
28. DOOR GLASS
30. DOOR WINDOW GLASS CHANNEL ASSEMBLY
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
47. HANDLE ASSEMBLY
54. LEFT-HAND LOWER CHANNEL ASSEMBLY
55. LOWER FRONT WEATHER CHANNEL
56. FLAT WASHER (2)

TA 238534

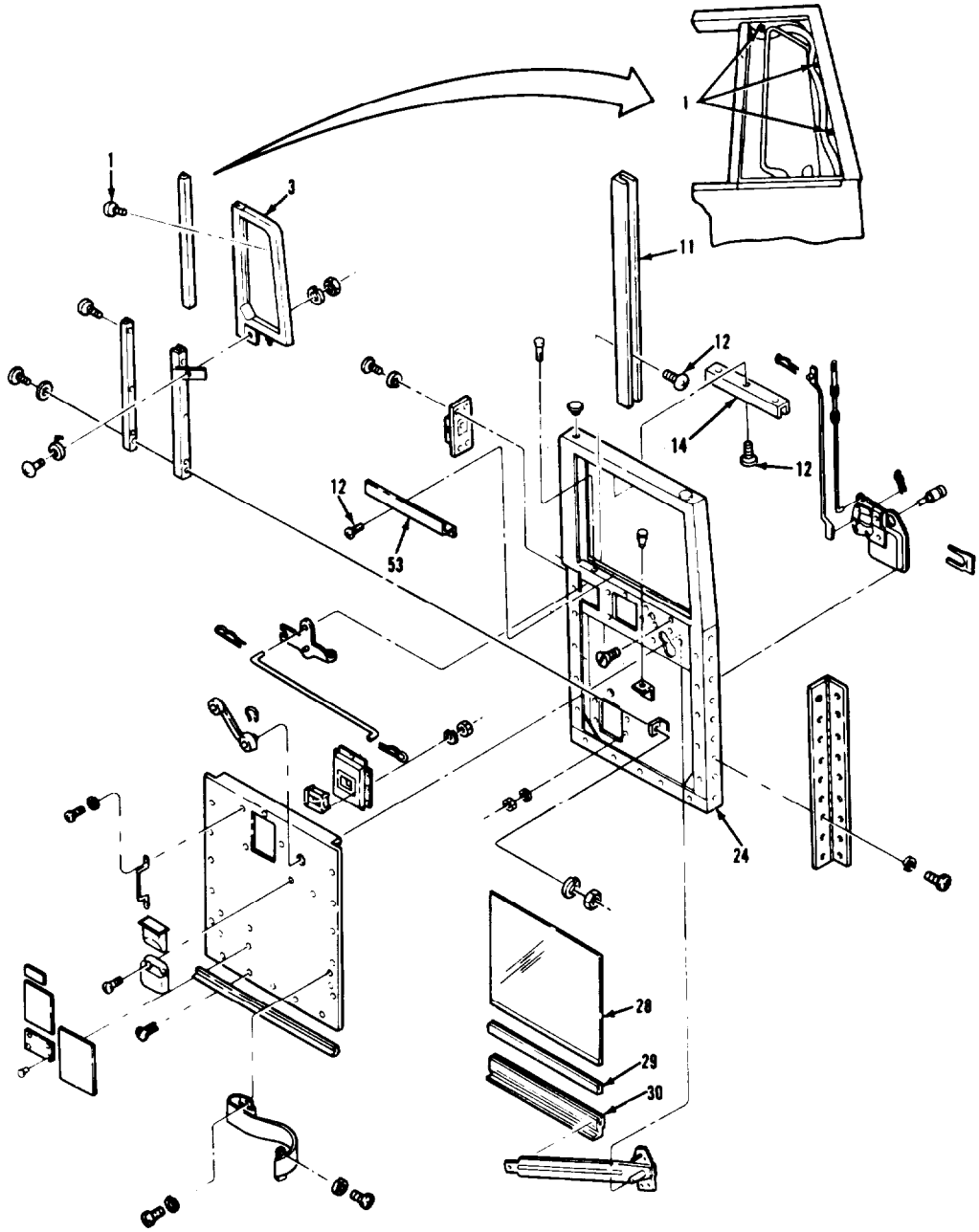
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
31. Glass (28), strip (29), and channel assembly (30) assembled.	Remove from item (24).	
32. Door window glass assembly (30).	Pull from item (29) and item (28).	Assistant holds item (28) until item (30) is removed.
33. Strip (29).	Pull from item (28).	Assistant holds item (28) until item (29) is removed.
34. Three screws (12).	a. Remove from item (14). b. Remove item (14) from item (24).	
35. Five screws (12).	a. Remove from item (11). b. Remove item (11) from item (24).	
36. Five screws (12).	a. Remove from item (53). b. Remove item (53) from item (24).	
37. Vent window assembly (30).	Open.	
38. Seal in vent window assembly (3).	Pull out in three places. (See illustration).	Done to gain access to three items (1).
39. Three screws (1).	Remove from item (3).	Assistant pulls and holds seal in item (3) down and out of way to aid in removal of three item (1).

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

1. MACHINE SCREW (3)
3. LEFT-HAND DOOR VENT WINDOW ASSEMBLY
11. DOOR REAR WEATHER CHANNEL
12. MACHINE SCREW (16)
14. DOOR UPPER WEATHER CHANNEL
24. LEFT-HAND DOOR SHELL
28. DOOR GLASS
29. GLASS SETTING STRIP
30. DOOR WINDOW GLASS CHANNEL ASSEMBLY
53. DOOR PANEL WEATHER STRIP

TA 238535

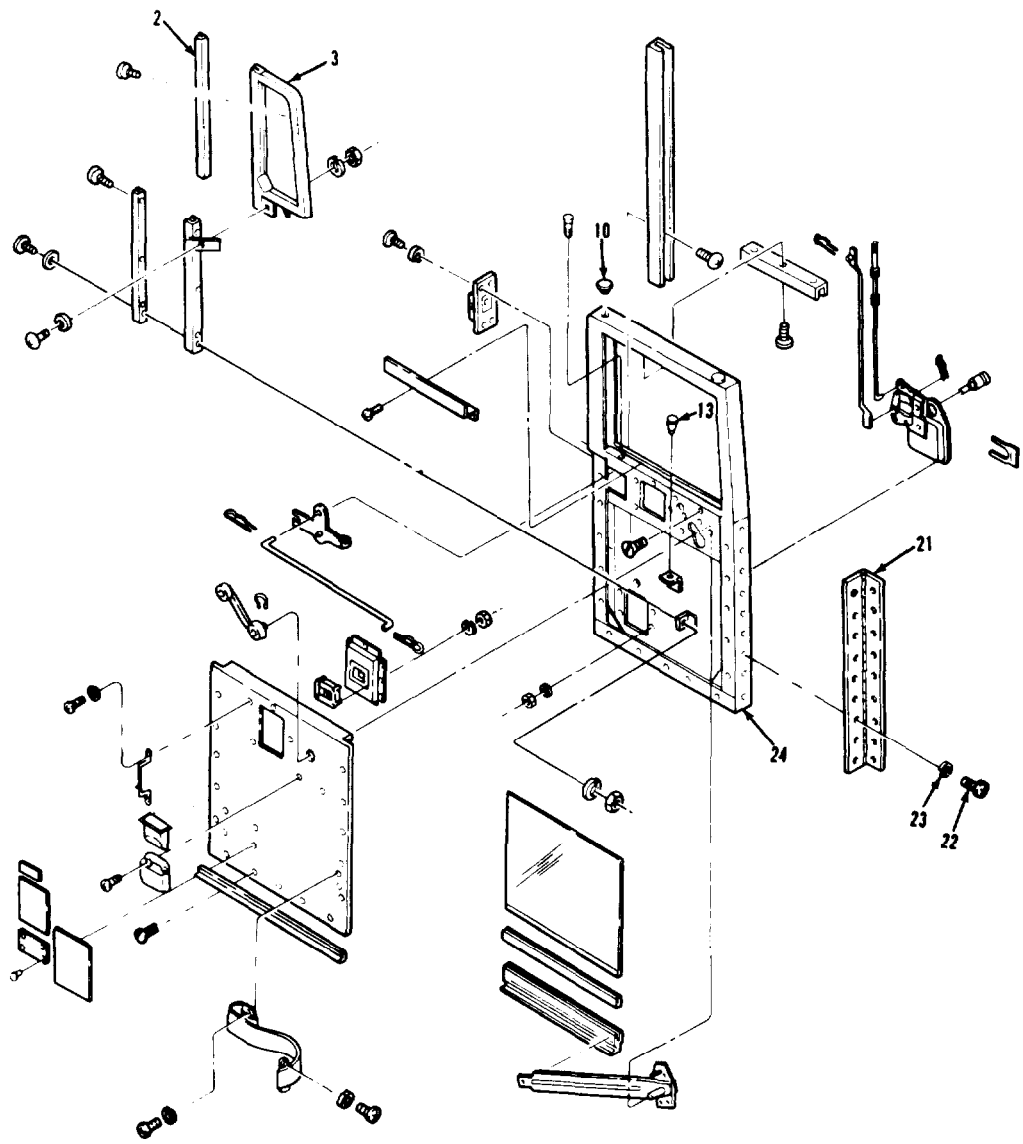
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
DISASSEMBLY (Continued).		
40. Vent window assembly (3).	Remove from item (24).	Assistant helps slide out item (3).
41. Channel (2).	Peel out from item (3).	
42. Bumper (13).	Remove from item (24).	
43. Five plugs (10).	Remove from item (24).	
	NOTE Do steps 45 and 46 only when hinge is to be replaced.	
44. Door shell (24).	Remove.	Refer to paragraph 3-111.
45. Eight screws (22) and lockwashers (23) .	a. Remove from item (21). b. Remove item (21) from item (24).	Discard eight items (23) l
B. CLEANING.		
46. All metal parts.	Clean.	Refer to paragraph 3-4.
47. All rubber parts.	Clean.	Refer to paragraph 3-4.
48. All plastic parts.	Clean.	Refer to paragraph 3-4.
49. All glass.	a. Clean with soap and water. b. Dry with clean dry rags.	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

2. FRONT UPPER WEATHER CHANNEL
3. LEFT-HAND DOOR VENT WINDOW ASSEMBLY
10. BUTTON PLUG (5)
13. WINDOW STOP BUMPER
21. LEFT-HAND DOOR HINGE ASSEMBLY
22. MACHINE SCREW (8)
23. LOCKWASHER (8)
24. LEFT-HAND DOOR SHELL

TA 238536

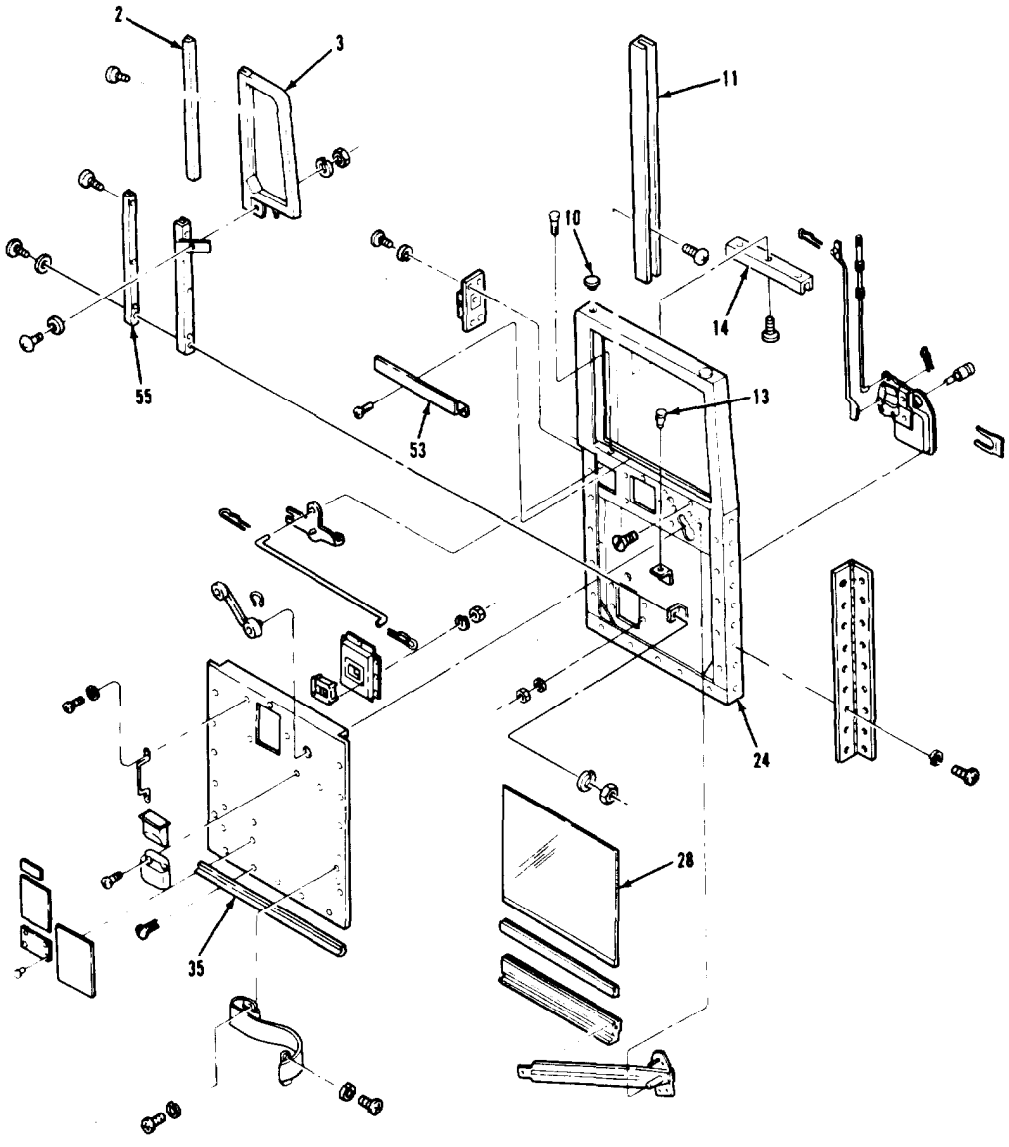
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSPECTION.		
50. Channels (2), (11), and (14), strip (53), channel (55), and seal (35).	Inspect for tears, fraying, and missing pieces.	If damaged, replace.
51. Door glass (28) and glass in vent window (3).	Inspect for excessive scratches, pitting, chips, and cracks.	If damaged, replace.
52. All rubber parts.	Inspect.	Refer to paragraph 3-5.
53. All plastic parts.	Inspect.	Refer to paragraph 3-5.
54. All metal parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY		
	NOTE Left-hand and right-hand door are assembled in same way, except as noted below. Left door shown here.	
55. Five plugs (10).	Install in item (24).	
56. Bumper (13).	Install in item (24).	
57. Channel (2).	Install in item (3).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

2. FRONT UPPER WEATHER CHANNEL
3. LEFT-HAND DOOR VENT WINDOW ASSEMBLY
10. BUTTON PLUG (5)
11. DOOR REAR WEATHER CHANNEL
13. WINDOW STOP BUMPER
14. DOOR UPPER WEATHER CHANNEL
24. LEFT-HAND DOOR SHELL
28. DOOR GLASS
35. LOWER DOOR WEATHER SEAL
53. DOOR PANEL WEATHER STRIP
55. LOWER FRONT WEATHER CHANNEL

TA 238537

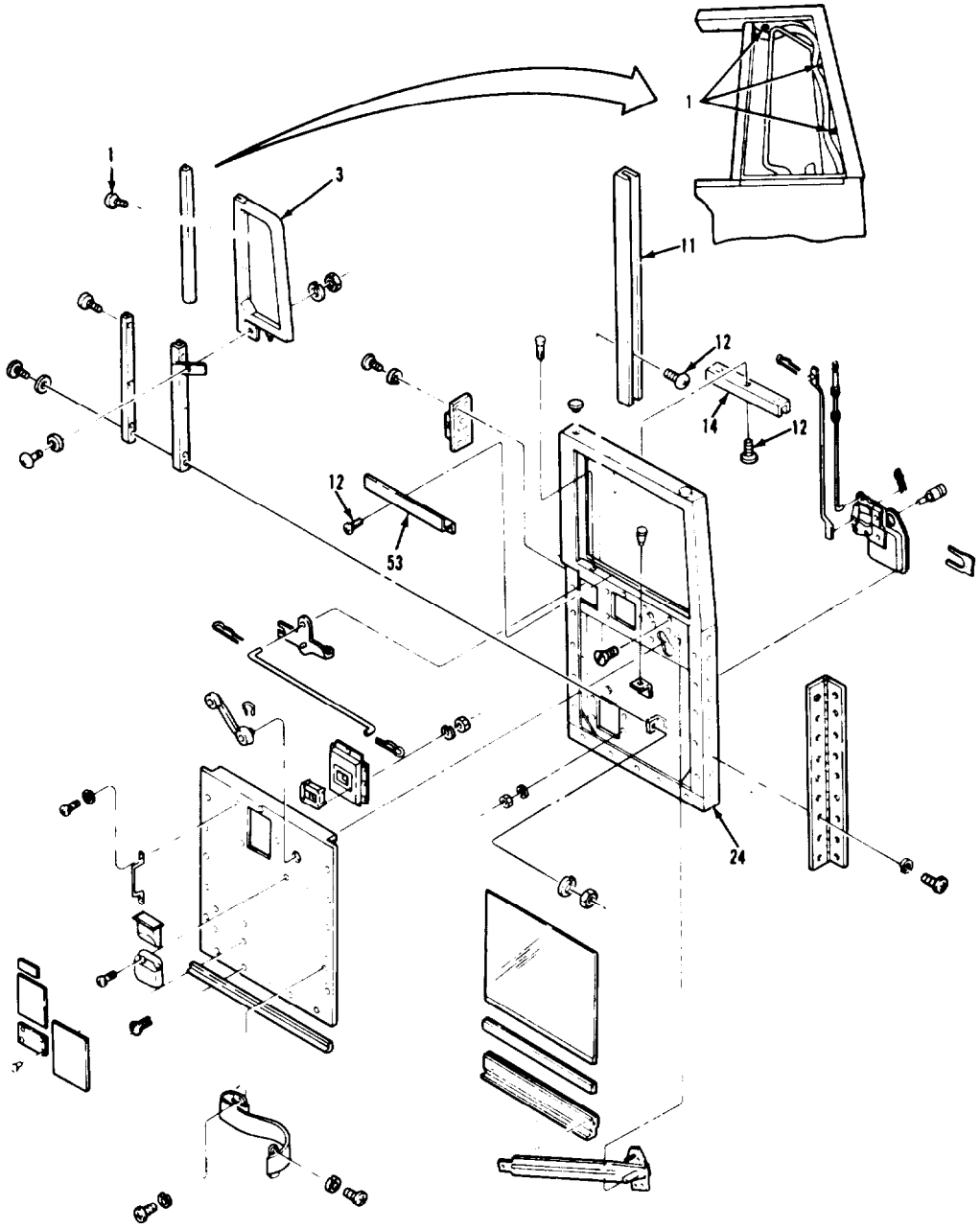
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
58. Vent window assembly (3).	a. Install in item (24).	Assistant helps slide item (3) into position.
	b. Secure with three items (1).	Assistant pulls and holds seal in item (3) down and out of way to ease installation of three items (1).
59. Seal in vent window assembly (3).	Push in position at three places. (See illustration).	
60. Vent window assembly (3).	Close.	
61. Strip (53).	a. Line up holes in item (53) with holes in item (24).	
	b. Secure with five items (12).	
62. Channel (11).	a. Line up holes in item (11) with holes in item (24).	
	b. Secure with five items (12) .	
63. Channel (14).	a. Line up holes in item (14) with holes in item (24).	
	b. Secure with three items (12).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

1. MACHINE SCREW (3)
3. LEFT-HAND DOOR VENT WINDOW ASSEMBLY
11. DOOR REAR WEATHER CHANNEL
12. MACHINE SCREW (16)
14. DOOR UPPER WEATHER CHANNEL
24. LEFT-HAND DOOR SHELL
53. DOOR PANEL WEATHER STRIP

TA 238538

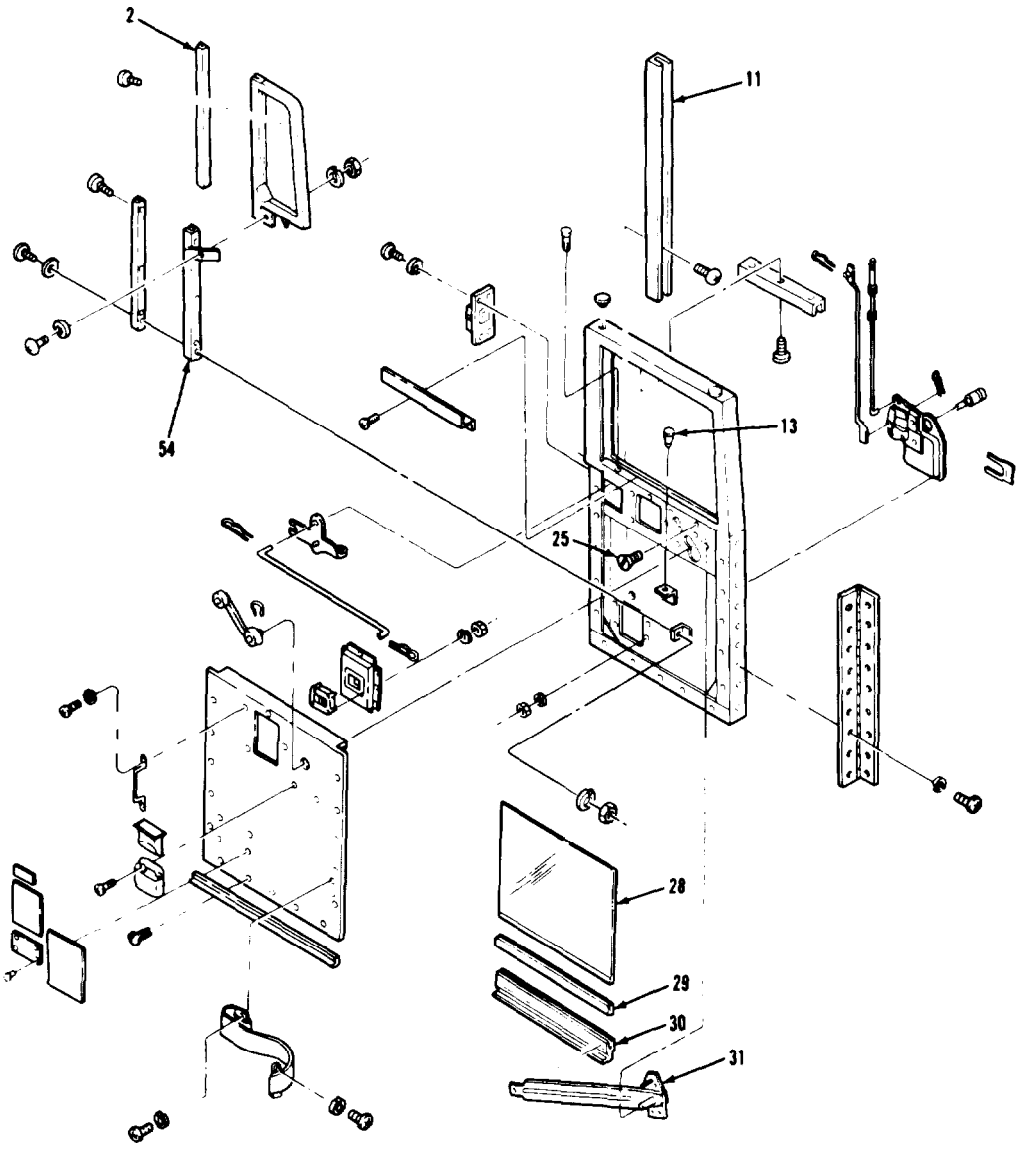
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
64. Strip (29).	Push on item (28).	Assistant holds item (28) until item (29) is installed.
65. Door window glass channel assembly (30).	Push on item (29).	Assistant holds item (28) until item (29) is installed.
66. Glass (28), strip (29), and channel assembly (30) assembled.	Slide into item (11) and (2).	Assistant holds item (28) up into position until item (54) is installed.
67. Teeth on regulator assembly (31) and groove in channel assembly (30).	Lubricate with suitable white grease.	Assistant lowers item (28).
68. Glass (28).	Lower far enough to install item (31).	
69. Roller on regulator assembly (31).	Slide into groove in item (30).	
70. Regulator assembly (31).	a. Line up holes in item (31) with holes in item (24).	Assistant raises and lowers window to help line up holes in item (31) with holes in item (24).
	b. Secure with four items (25) .	Assistant holds item (31) until secure.

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

2. FRONT UPPER WEATHER CHANNEL
11. DOOR REAR WEATHER CHANNEL
13. WINDOW STOP BUMPER
25. MACHINE SCREW (4)
28. DOOR GLASS
29. GLASS SETTING STRIP
30. DOOR WINDOW GLASS CHANNEL ASSEMBLY
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
54. LEFT-HAND LOWER CHANNEL ASSEMBLY

TA 238539

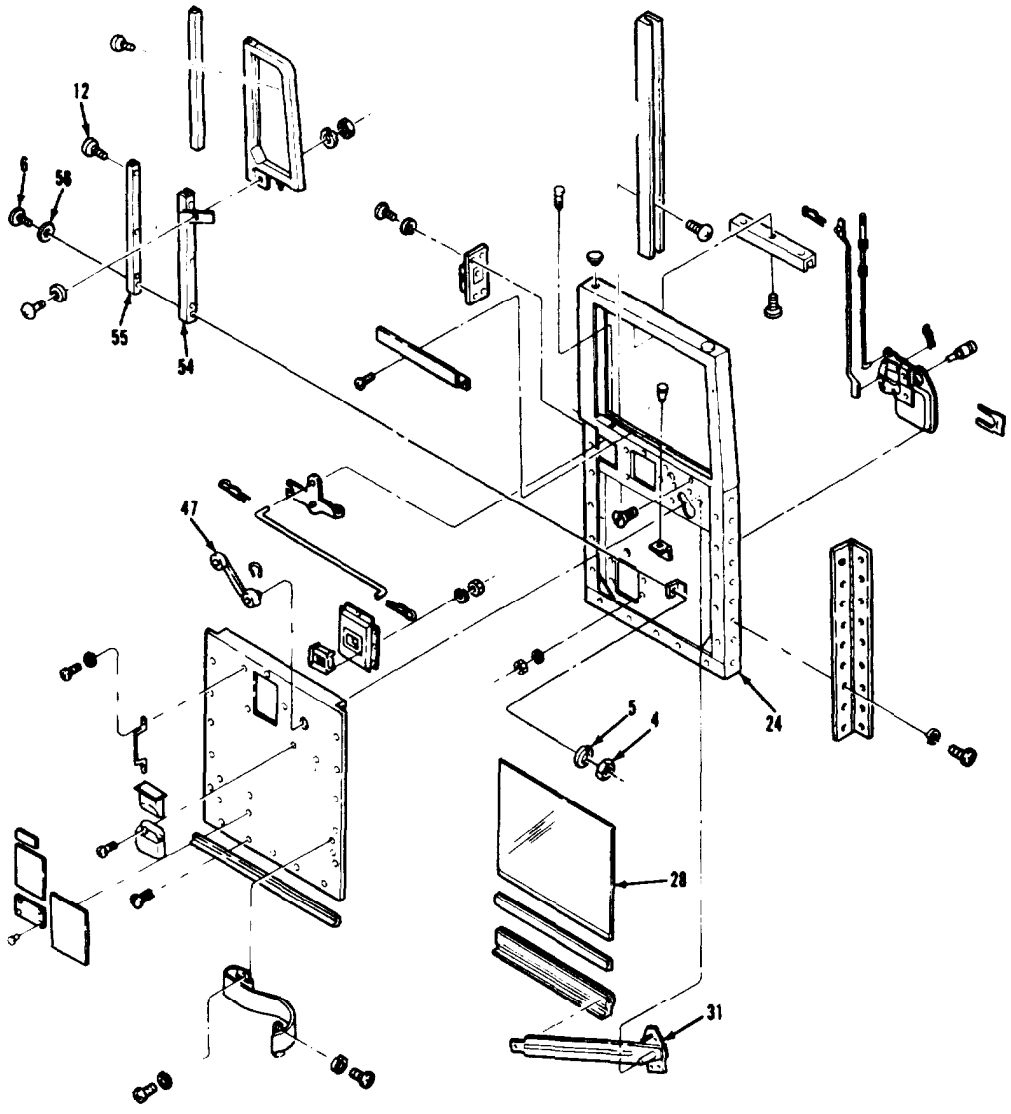
CAB AND BODY.

3-112. DOOR REPAIR (Continued)

LOCATION/ITEM	ACTION.	REMARKS
D. ASSEMBLY (Continued).		
	CAUTION Support door glass to prevent breakage or scratches.	
71. Handle assembly (47).	a. Place on item (31).	
	b. Roll item (28) all the way up.	Assistant helps guide item (28) up
72. Channel (55).	a. Line up holes in item (55) with holes in item (54).	
	b. Secure with three items (12).	
73. Channel assembly (54).	a. Line up one hole at top and one hole at bottom of item (54) with holes item (24).	
	b. Secure finger tight with one item (4), item (5), item (56), and item (6).	Fasten bottom first.
	c. Secure with one item (4), item (5), item (56), and item (6).	Assistant helps fasten item (54) at top.
	d. Tighten item (4) and (6) at bottom of item (54).	
74. Handle assembly (47).	a. Roll item (28) down.	
	b. Remove from item (31).	

CAB AND BODY.

3-112. DOOR REPAIR [Continued).



LEGEND:

4. NUT (2)
5. LOCKWASHER (2).
6. MACHINE SCREW (6)
12. MACHINE SCREW (16)
24. LEFT-HAND DOOR SHELL
28. DOOR GLASS
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
47. HANDLE ASSEMBLY
54. LEFT-HAND LOWER CHANNEL ASSEMBLY
55. LOWER FRONT WEATHER CHANNEL
56. FLAT WASHER (2)

TA 238540

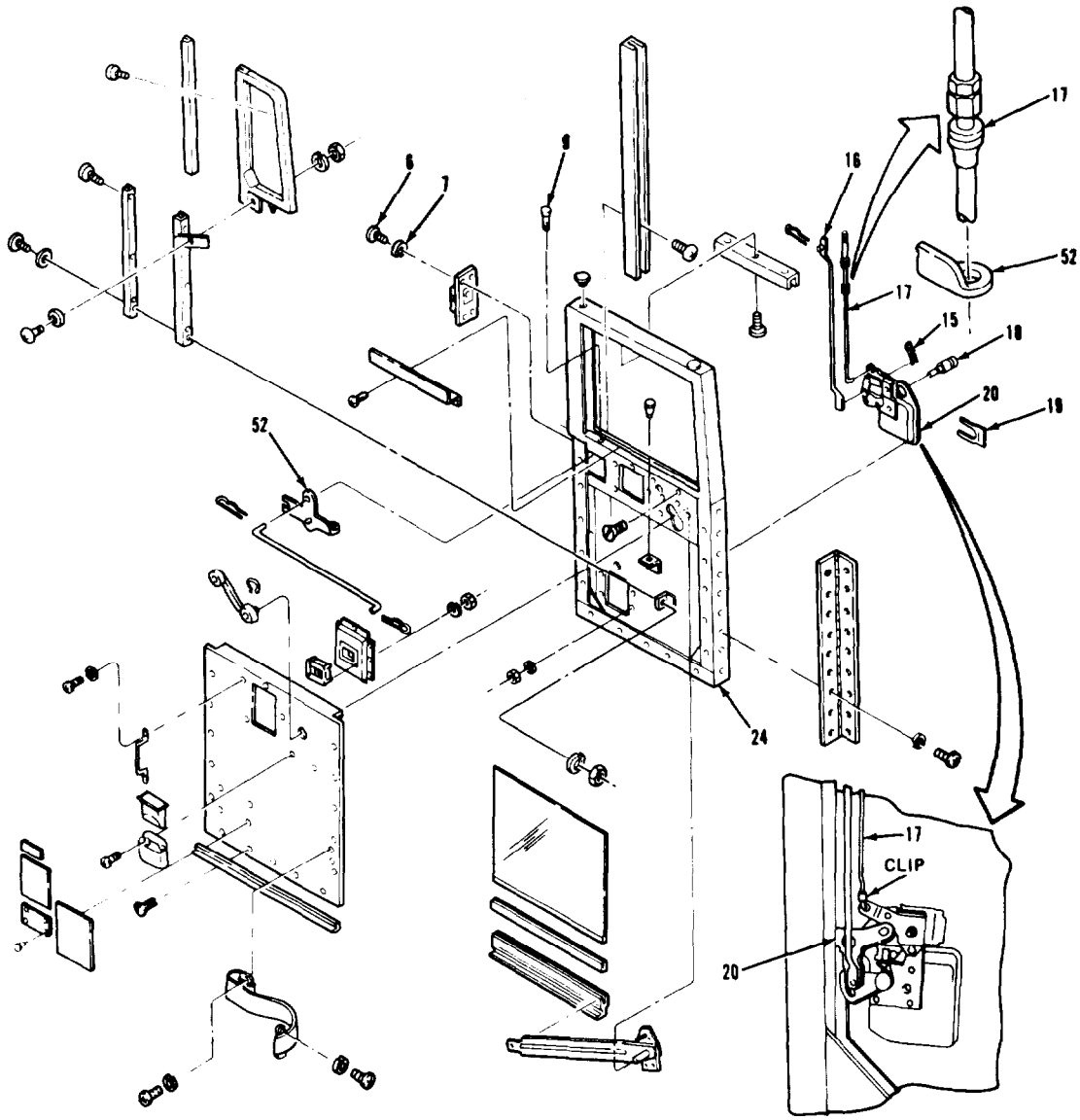
CAB AND BODY.

3-112. DOOR REPAIR (Continued)

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
75. Rod (16).	a. Place into position in item (20).	
	b. Secure with one item (15).	
76. Handle assembly (20) with attached rod (16).	a. Slide through opening in item (24).	
	b. Push four studs in item item through four holes in item (24).	
	c. Secure with four items (6) and items (7).	
77. Lock assembly (18) .	a. Push into hole in item (24).	
	b. Secure with item (19).	
78. Plate and lever assembly (52).	Install item (17). (See illustration).	
79. Plate and lever assembly (52) with attached rod (17).	Install in place inside item (24) .	Top of item (17) enters hole for item (9).
80. Rod assembly (17).	a. Install in item (20).	
	b. Secure with clip on item (20). (See illustration).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

6. MACHINE SCREW (6)
7. LOCKWASHER (8)
9. DOOR LOCKING KNOB
15. DOOR LATCH ROD CLIP (4)
16. OUTSIDE LATCH RELEASE DOOR ROD
17. INSIDE LATCH RELEASE DOOR ROD ASSEMBLY
18. LOCK AND KEY ASSEMBLY
19. LOCK ASSEMBLY RETAINER
20. LEFT-HAND OUTSIDE DOOR HANDLE ASSEMBLY
24. LEFT-HAND DOOR SHELL
52. LEFT-HAND PLATE AND LEVER ASSEMBLY

TA 238541

CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
81. Latch assembly (8).	a. Install on item (24) so that end of item (52) fits over lever inside of slot in item (8). (See illustration).	
	b. Secure with four items (6) and item (7).	
82. Rod (16).	a. Install in hole in item (52) .	
	b. Secure with one item (15).	
83. Handle assembly (49)	a. Install in item (50).	
	b. Secure with four items (27) and (26).	
84. Rod (51).	a. Install on item (49).	
	b. Secure with one item (15).	
85. Handle assembly (49), bracket (50), and rod (51) assembled.	Guide item (51) through opening in item (24).	
86. Rod (51).	a. Install on item (52).	
	b. Secure with one item (15).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LEGEND:

6. MACHINE SCREW (6)
7. LOCKWASHER (8)
8. LEFT-HAND DOOR LATCH ASSEMBLY
15. DOOR LATCH ROD CLIP (4)
16. OUTSIDE LATCH RELEASE DOOR ROD
24. LEFT-HAND DOOR SHELL
26. LOCKWASHER (8)
27. NUTS (8)
49. LEFT-HAND INSIDE DOOR HANDLE ASSEMBLY
50. LEFT-HAND INSIDE DOOR HANDLE BRACKET
51. DOOR LATCH RELEASE ROD
52. LEFT-HAND PLATE AND LEVER ASSEMBLY

TA 238542

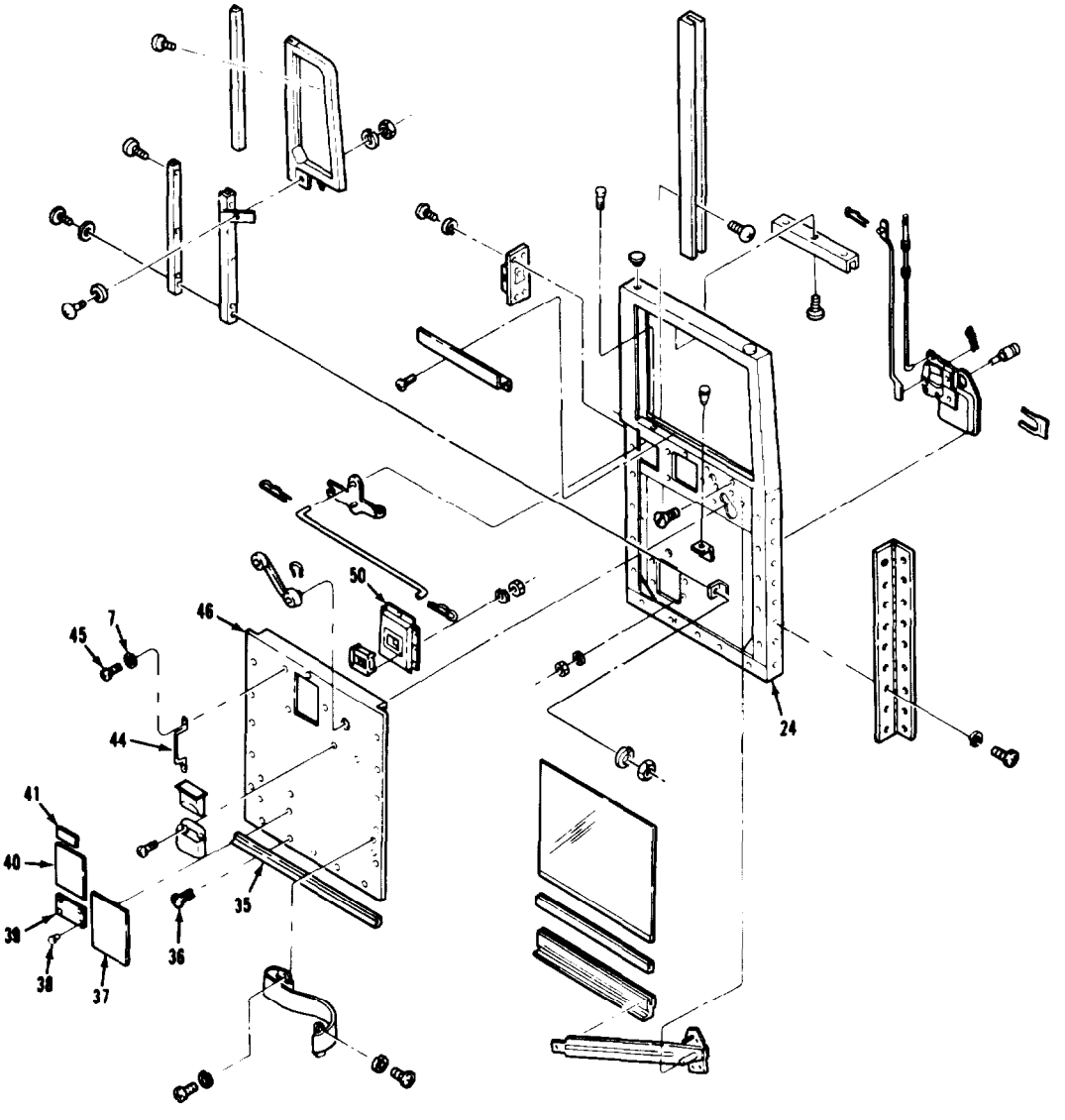
CAB AND BODY.

3-112. DOOR REPAIR (Continued)

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
	NOTE Do step 88 if left-hand or right-hand panel assembly was replaced.	
87. Decals (37), (39), (40), (41), and four rivets (38).	Install on item (46).	Refer to TM 9-2320-283-20.
88. Seal (35).	Install on item (46).	
89. Panel assembly (46).	a. Line up holes in item (46) with holes in item (24). b. Secure with seventeen items (36).	
90. Handle (44).	a. Line up holes in item (44) with holes in item (46), (50), and (24). b. Secure with two items (45) and (7).	
91. Bracket (50).	a. Line up holes in item (50) with holes in item (24) and (46). b. Secure with two items (45) and (7).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

7. LOCKWASHER (8)
24. LEFT-HAND DOOR SHELL
35. LOWER DOOR WEATHER SEAL
36. SELF-TAPPING SCREW (17)
37. TOWING INSTRUCTION DECAL
38. BLIND RIVET (4)
39. NOMENCLATURE IDENTIFICATION DECAL
40. CERTIFICATION DECAL
41. RUST PROOFING DECAL
44. DRIVER PULL HANDLE
45. MACHINE SCREW (4)
46. LEFT-HAND PANEL ASSEMBLY
50. LEFT-HAND INSIDE DOOR HANDLE BRACKET

TA 238642

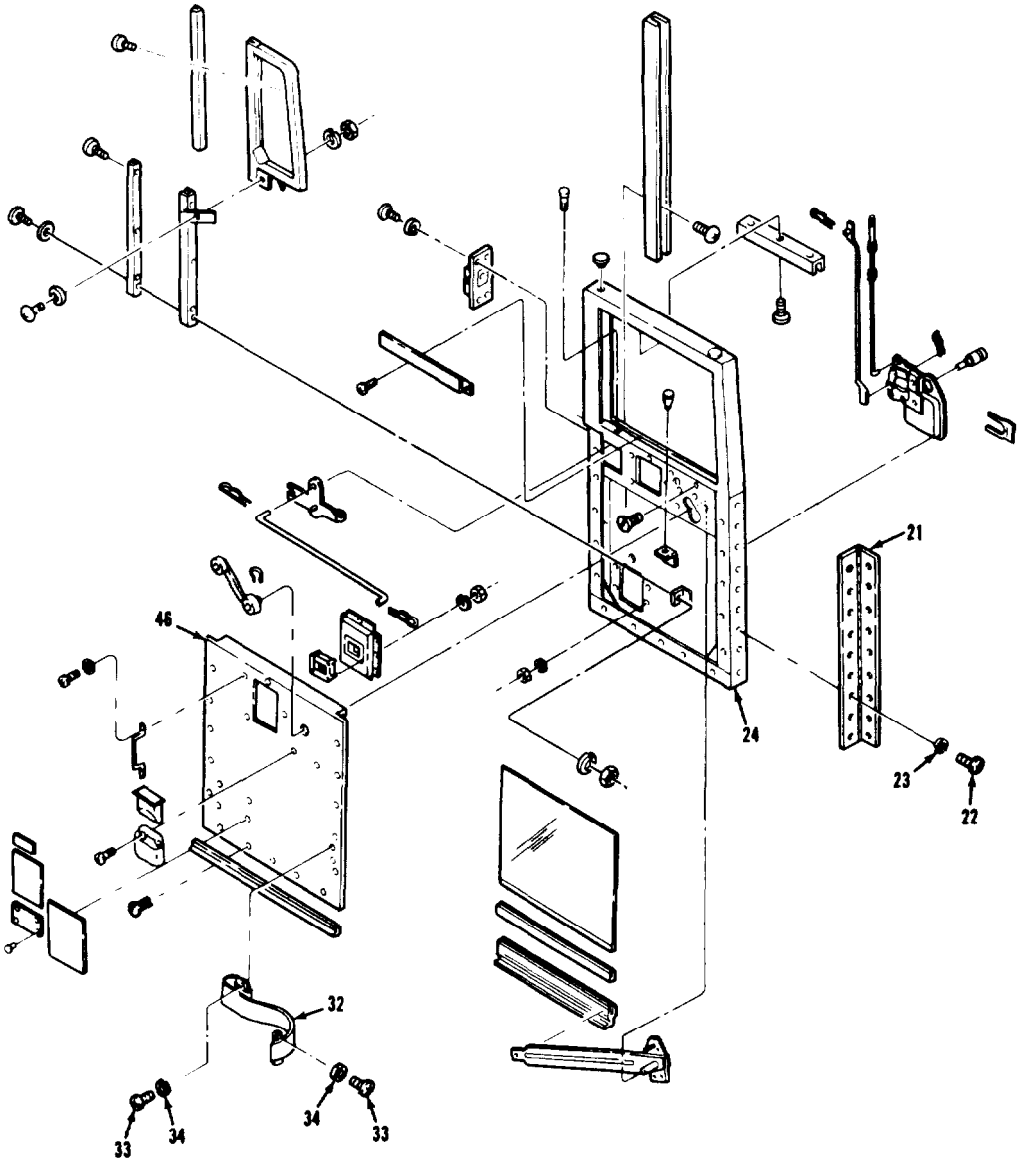
CAB AND BODY.

3-112. DOOR REPAIR (Continued)

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).		
	NOTE Skip steps 93 thru 95 if hinge was not removed.	
92. Hinge assembly (21).	a. Line up holes in item (21) with holes in item (24).	
	b. Secure finger tight with eight items (22) and new items (23).	Position item (21) so that items (22) are centered in holes in item (21). This will help you aline item (24) when installed.
	c. Lubricate with oil.	
93. Eight screws (22).	Tighten.	
94. Door (24).	Install.	Refer to paragraph 3-111.
95. Strap (32).	a. Line up holes in item (32) with holes in cab shell.	
	b. Secure with two items (33) and (34).	
	c. Line up holes at other end of item (32) with holes in item (46).	
	d. Secure with two items (33) and (34).	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

21. LEFT-HAND DOOR HINGE ASSEMBLY
22. MACHINE SCREW (8)
23. LOCKWASHER (8)
24. LEFT-HAND DOOR SHELL
32. DOOR CHECK STRAP
33. MACHINE SCREW (4)
34. LOCKWASHER (4)
46. LEFT-HAND PANEL ASSEMBLY

TA 238544

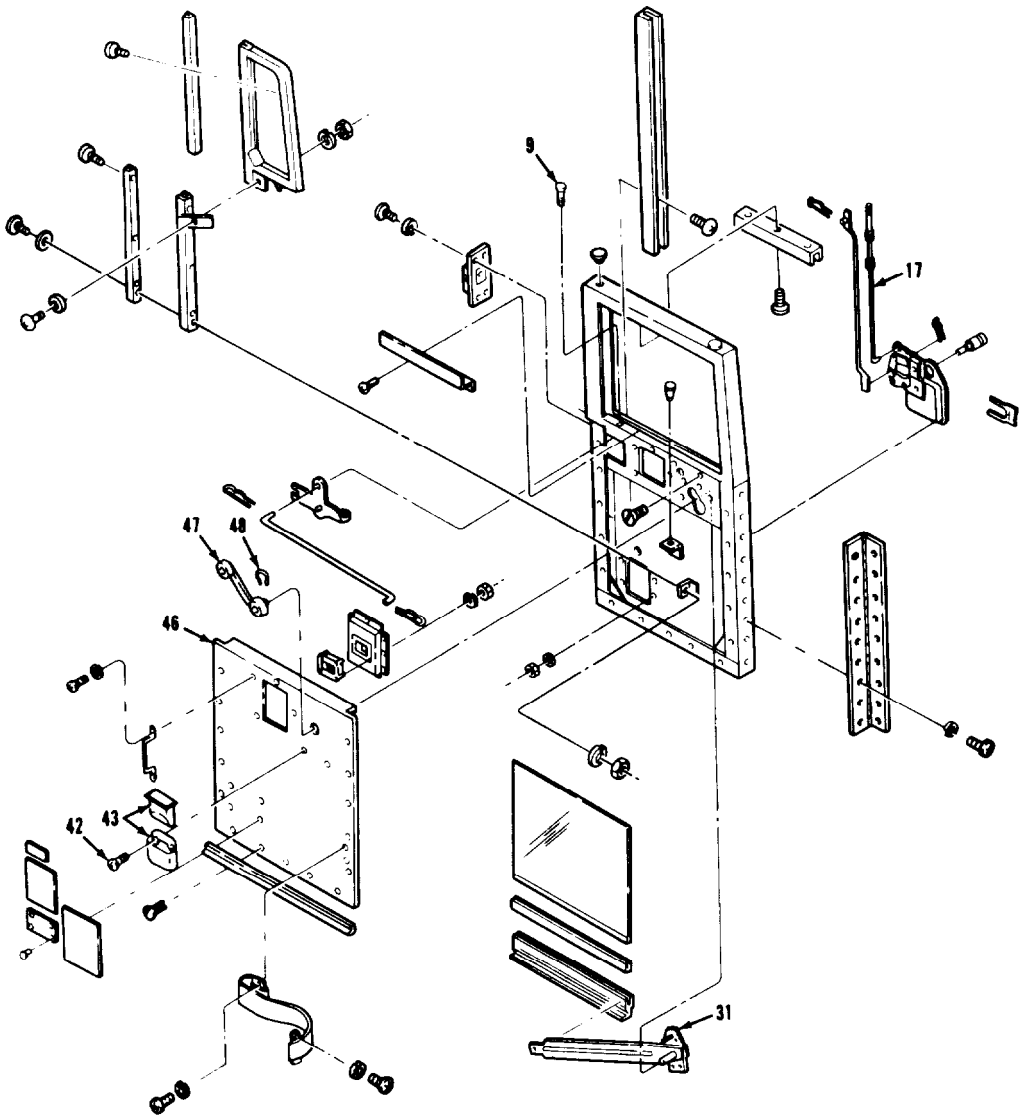
CAB AND BODY.

3-112. DOOR REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY (Continued).]		
	NOTE Skip step 97 and 98 if assembling right door.	
96. Ash receptacle (43).	a. Line up holes in item (43) with holes in item (46).	
	b. Secure with two items (42).	
97. Ash receptacle tray.	Push inside item (43).	
98. Clip (48).	Push part way in slot in item (47).	
99. Handle assembly (47).	a. Position on item (31).	
	b. Push item (48) completely in slot in item (47).	Item (48) locks item (47) to item (31).
100. Knob (9).	Install on item (17).	
	NOTE Follow-on maintenance action required: None.	

CAB AND BODY.

3-112. DOOR REPAIR (Continued).



LEGEND:

9. DOOR LOCKING KNOB
17. INSIDE LATCH RELEASE DOOR PAD
31. LEFT-HAND WINDOW REGULATOR ASSEMBLY
42. MACHINE SCREW (2)
43. LEFT-HAND DOOR ASH RECEPTACLE
46. LEFT-HAND PANEL ASSEMBLY
47. HANDLE ASSEMBLY
48. SPRING CLIP

TA 238545

CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Disassembly.
c. Cleaning and Inspection.
d. Assembly.
e. Installation.
f. Adjustment.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION
PARAGRAPH
hone.

CONDITION DESCRIPTION
None.

TEST EQUIPMENT
None..

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B.
Shim, door latch striker pin
(75418), 04336-2.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
'None.

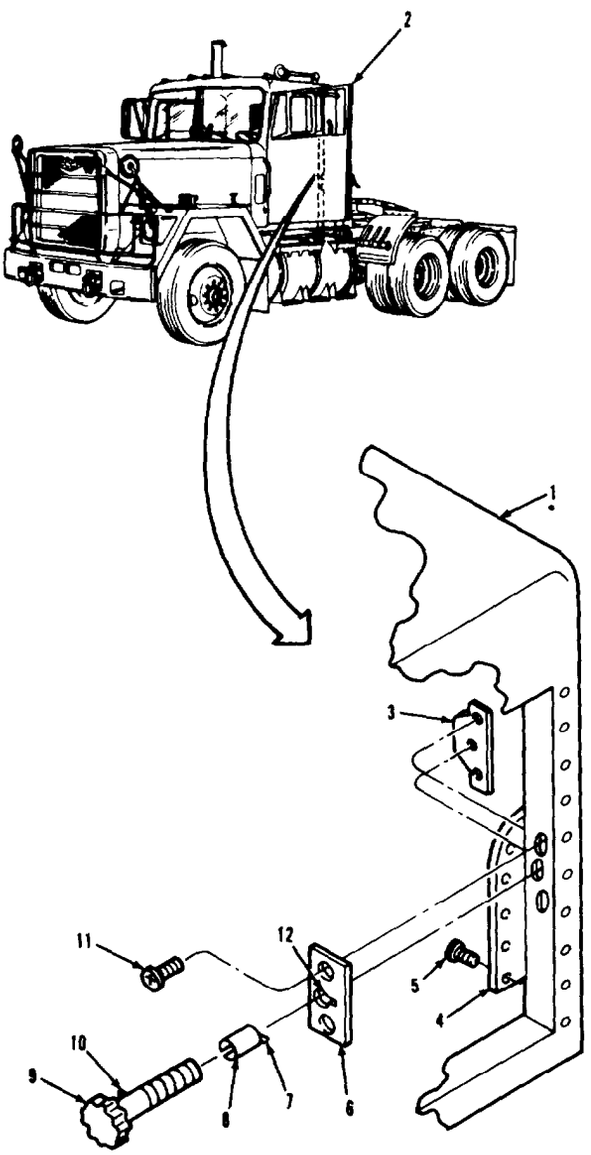
REFERENCES (TM)
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None

CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. DOOR
3. DOOR LATCH STRIKER PLATE ASSEMBLY
4. TRIM CAB LEFT-HAND PANEL
5. MACHINE SCREW (4)
6. DOOR LATCH STRIKER PIN PLATE ASSEMBLY
7. SHIM TANG
8. DOOR LATCH STRIKER PIN SHIM
9. DOOR LATCH STRIKER PIN
10. PIN TANG
11. MACHINE FLAT HEAD SCREW (2)
12. KEYWAY

TA 238546

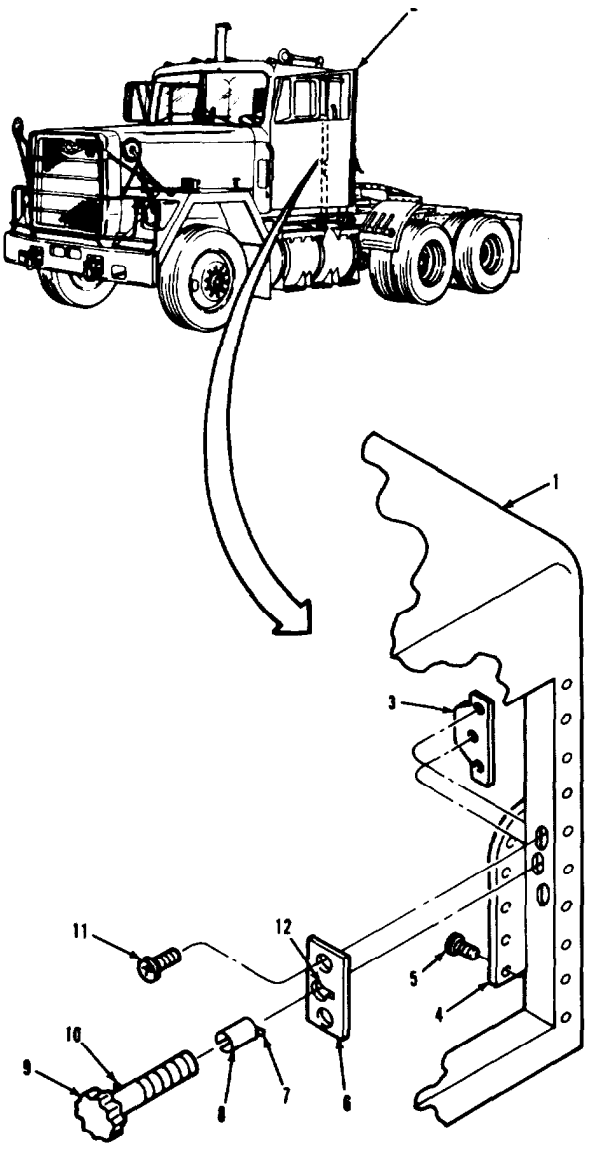
CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
	NOTE Left and right side door striker assemblies are replaced in same way. Left side shown here.	
A. REMOVAL.		
1. Four screws (5).	Remove from item (4).	Pull back to gain access to item (3).
2. Two screws (11).	Remove from item (6).	
3. Pin (9).	a. Remove from item (6) and (7). b. Remove item (6) from item (1) and remove item (3) from inside of item (1).	Hold item (3) to prevent falling from place.
B. DISASSEMBLY.		
4. Shim (8).	Remove from item (9).	
C. CLEANING AND INSPECTION.		
5. All metal parts.	Clean and inspect.	Refer to paragraph 3-4 and paragraph 3-5.
D. ASSEMBLY.		
6. New shim (8).	a. Line up opening in item (8) with item (10). b. Install on item (9).	Check that item (8) rotates freely on item (9).

CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
3. DOOR LATCH STRIKER PLATE ASSEMBLY
4. TRIM CAB LEFT-HAND PANEL
5. MACHINE SCREW (4)
6. DOOR LATCH STRIKER PIN PLATE ASSEMBLY
7. SHIM TANG
8. DOOR LATCH STRIKER PIN SHIM
9. DOOR LATCH STRIKER PIN
10. PIN TANG
11. MACHINE FLAT HEAD SCREW (2)

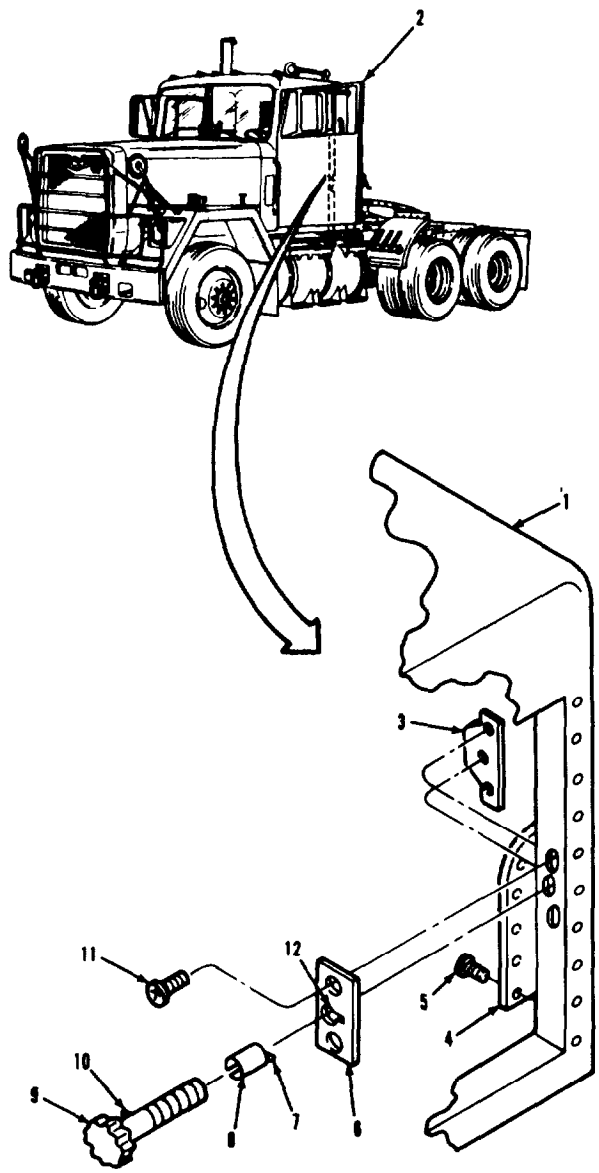
TA 238547

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
E. INSTALLATION.		
7. Plate assembly (3).	Place into position inside item (1).	
8. Plate assembly (6).	a. Line up holes in Item (6) with holes in item (3).	
	b. Secure fingertight with two items (11).	
9. Pin (9).	Secure fingertight in item	Keep item (7) lined up with item (12) while item (9) is installed.
10. Pin (9) and two screws (11).	Tighten enough to barely allow item (9) with attached items (3) and (6) to move up and down.	
11. Two plates (3) and (6) and pin (9).	Adjust.	Go to step 13.
	NOTE Only do step 12 if you were referenced from another procedure, otherwise go to step 13.	
12. Two screws (11) and pin (9).	Loosen enough to barely move item (9) with attached items (3) and (6) up and down.	

CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
3. DOOR LATCH STRIKER PLATE ASSEMBLY
6. DOOR LATCH STRIKER PIN PLATE ASSEMBLY
7. SHIM TANG
9. DOOR LATCH STRIKER PIN
11. MACHINE FLAT HEAD SCREW (2)
12. KEYWAY

TA 238548

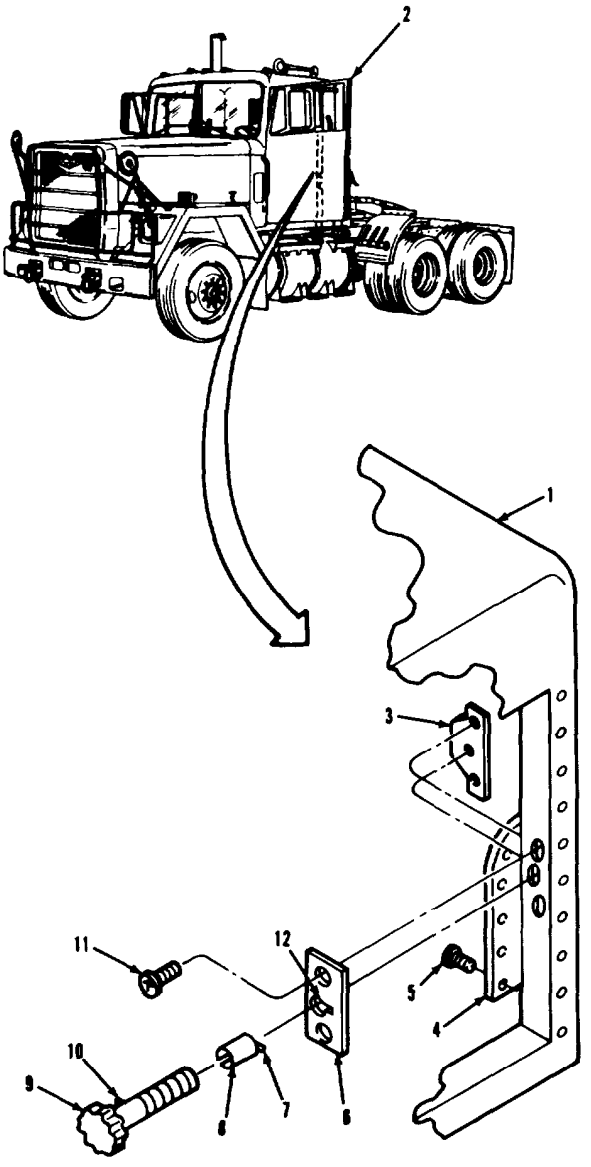
CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
F. ADJUSTMENT.		
	NOTE Closing door will move striker assembly into proper adjustment.	
13. Door (2).	a. Close. b. Open. c. Tighten item (9) and two items (11).	
14. Panel (4).	a. Set against item (1). b. Secure with four items (5).	
	NOTE Follow-on maintenance action required: None.	

CAB AND BODY.

3-113. DOOR STRIKER ASSEMBLY REPLACEMENT (Continued).



LEGEND:

1. CAB SHELL
2. DOOR
4. TRIM CAB LEFT-HAND PANEL
5. MACHINE SCREW (4)
9. DOOR LATCH STRIKER PIN
11. MACHINE FLATHEAD SCREW (2)

TA238549

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320 283-20	Windshield wiper arm removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Windshield installer/remover
5120-00-279-8422.

MATERIALS/PARTS (P/N)
Window sealer
Item 39, Appendix B.
Soap solution
Item 30, Appendix B.
Window cleaner
Item 38, Appendix B.
Paper towels
Item 37, Appendix B.

PERSONNEL REQUIRED
Two (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

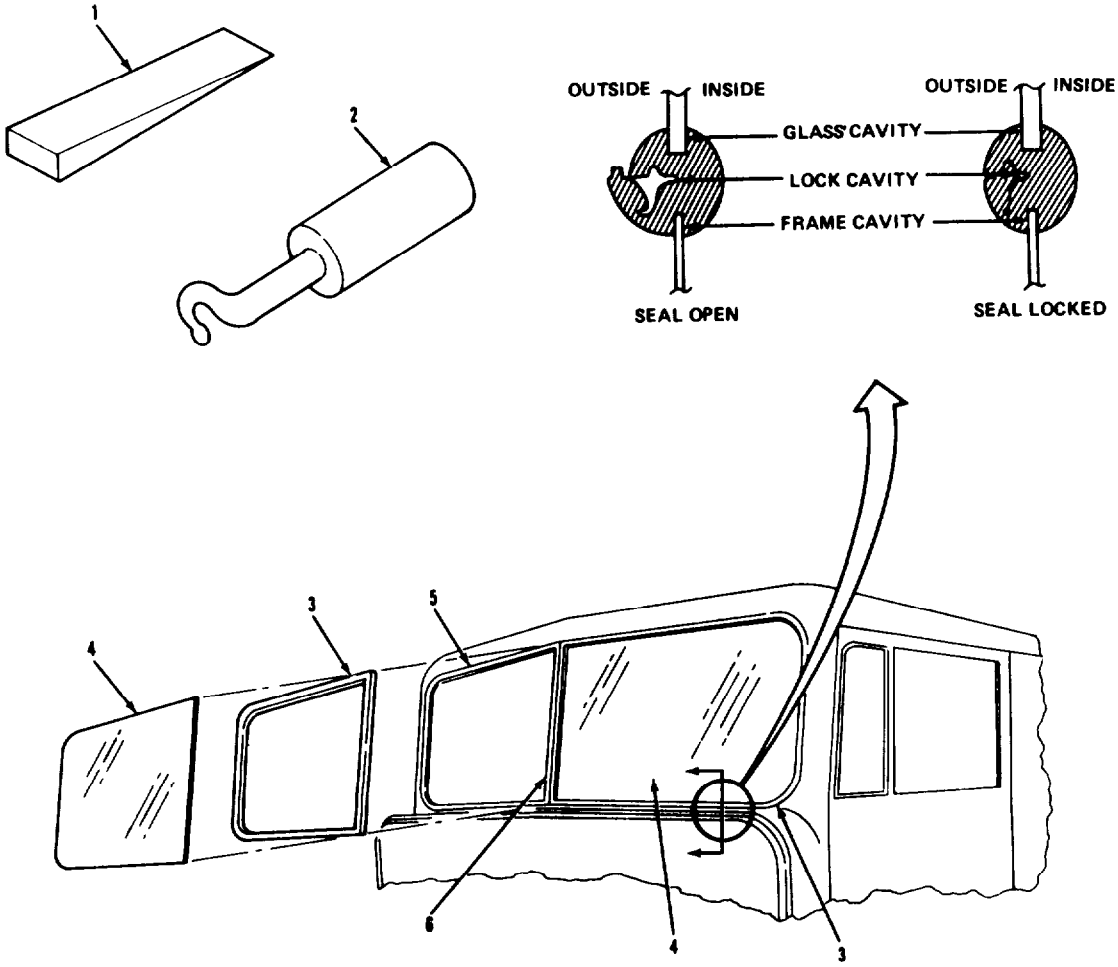
REFERENCE (TM)
TM 9-2320-283-20.
TM 9-2320-283-34P.

GENERAL SAFETY INSTRUCTIONS
Use extreme care when handling windshield glass. Broken, chipped, or cracked glass can cause serious injury. When removing broken glass, wear protective face shield and gloves.

TROUBLESHOOTING REFERENCES
None.

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDSHIELD WEATHER SEAL
4. WINDSHIELD GLASS (2)
5. WINDSHIELD FRAME
6. CENTER SUPPORT

TA238550

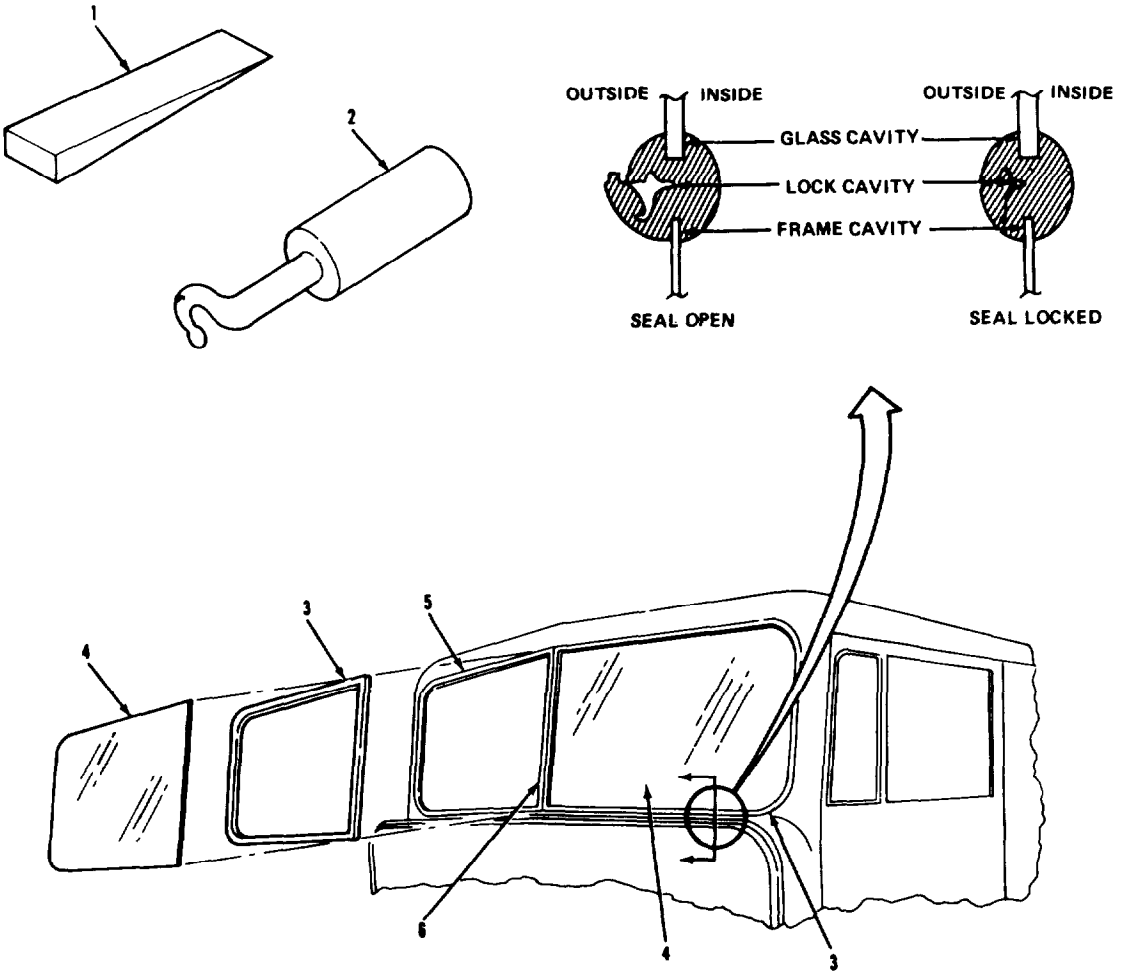
CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
	NOTE • If fiber stick (item 1) is not available, make it out of formica using illustration. The approximate dimensions are: 1" decreasing to 1/64" high; 1/2" wide; and 10" long. • The same procedure is used to remove either the left or right windshield glass.	
1. Seal (3).	a. Remove paint from outside.	Rub off with item (1).
	b. Insert tip of item (2) into lock cavity.	
	c. Gently twist item (2) and pull item (2) around complete length of item (3).	If done correctly, item (3) should be open.
	CAUTION • Do not bend windshield glass. • Do not use metal objects between windshield glass and windshield weather seal as glass may crack.	
	NOTE For the next step, one mechanic should work outside removing the glass, while a second mechanic applies pressure to the glass from inside the vehicle.	

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDSHIELD WEATHER SEAL
4. WINDSHIELD GLASS (2)
5. WINDSHIELD FRAME
6. CENTER SUPPORT

TA 238551

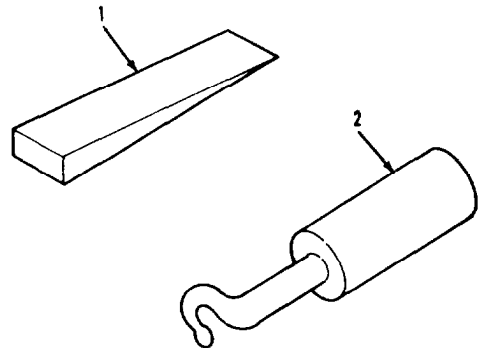
CAB AND BODY.

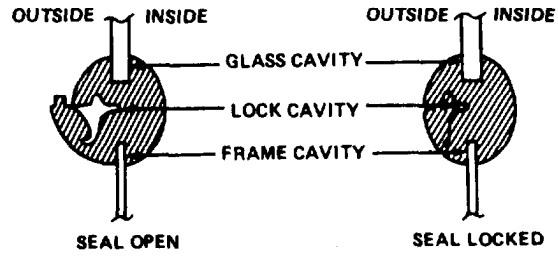
3-114. WINDSHIELD REPLACEMENT (Continued).

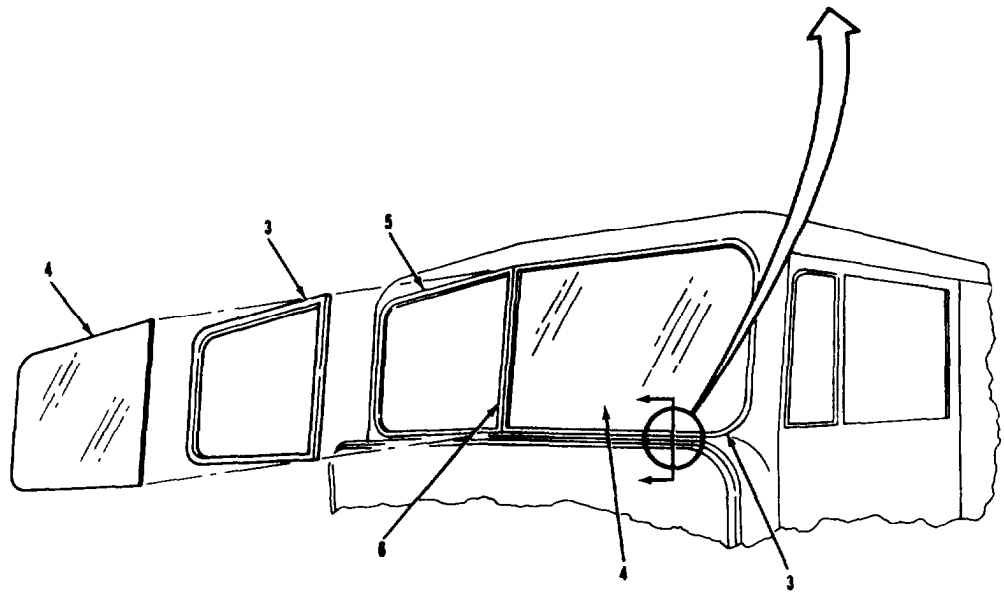
LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL (Continued).		
2. Glass (4) and seal (3).	Starting at the top of items (4) and (6), work item (4) out of item (3) as follows: a. Work across the top and down either side. b. Work from the top to the bottom of item (6). c. Remove items (4) and (3).	Use soap solution and item (1) to slide item (3) over edge of item (4).
B. CLEANING.		
3. All metal parts.	Clean.	Refer to paragraph 3-4.
4. Glass (4) and seal (3).	Clean.	Use item (1) and soap solution to remove old sealer. Use window cleaner and paper towels to remove dirt and dust.
C. INSPECTION.		
5. All metal parts.	Inspect.	Refer to paragraph 3-5.
6. Glass (4).	Inspect for cracks, chips, stained, or damaged surfaces.	Discard if chipped, cracked, stained, or damaged.
7. Seal (3).	Inspect for cuts, tears, and signs of damage.	Discard if cut, torn, or damaged.
D. INSTALLATION.		
8. Seal (3).	a. Apply window sealer to frame cavity. b. Install item (3) on items (5) and (6).	

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).







LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDSHIELD WEATHER SEAL
4. WINDSHIELD GLASS (2)
5. WINDSHIELD FRAME
6. CENTER SUPPORT

TA238552

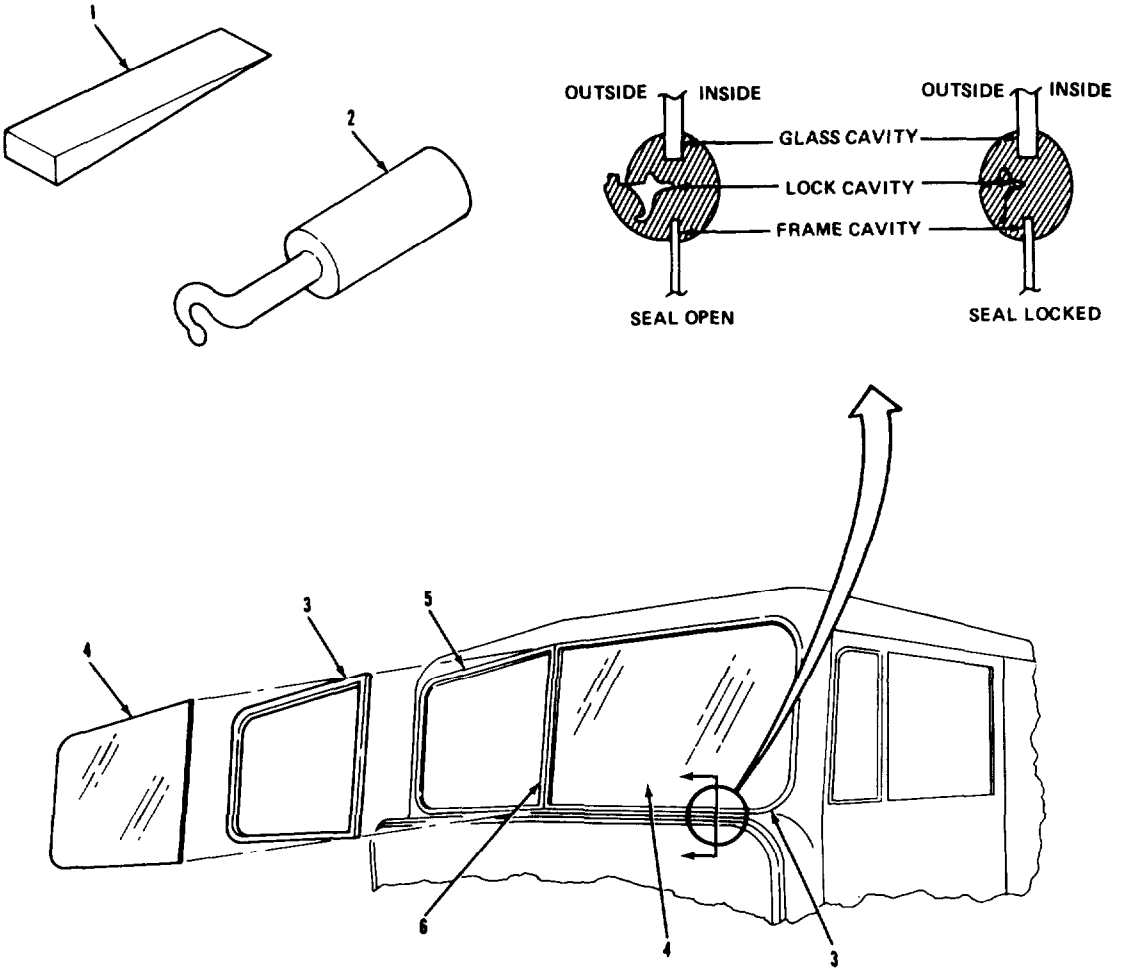
CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
8. Seal (3) (continued).	NOTE If windshield seal is locked repeat steps lb and 1c.	
	c. Apply window sealer to glass cavity.	
	CAUTION • Do not bend windshield glass. • Do not use metal objects between windshield glass and windshield weather seal as glass may break.	
	NOTE For the next step, one mechanic should work outside while a second mechanic steadies the glass from inside.	
9. Glass (4).	a. Insert into the bottom glass cavity of item (3).	From outside.
	b. Slide up against item (6).	
	NOTE Install the top corner, next to the center support, last.	
	c. Work into item (3) halfway up the side of item (6).	Use soap solution and item (1) to aid in installation.

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDSHIELD WEATHER SEAL
4. WINDSHIELD GLASS (2)
5. WINDSHIELD FRAME
6. CENTER SUPPORT

TA22866

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
9. Glass (4) (continued).	d. Work into item (3) across the bottom, up either side, and halfway across the top.	Use soap solution and item (1) to aid in installation. During installation press item (4) against item (6), but do not bend item (4).
	e. Carefully work remaining portions and the corner into item (3) using soap solution and item (1).	
10. Seal (3).	a. Insert.tip of item (2) into lock cavity.	
	b. Twist and pull around the total length.	If done correctly, seal should be locked.
11. Glass (4).	Clean.	Use window cleaner and paper towels to wipe off dirt. Use item (1) to scrape off excess sealer.

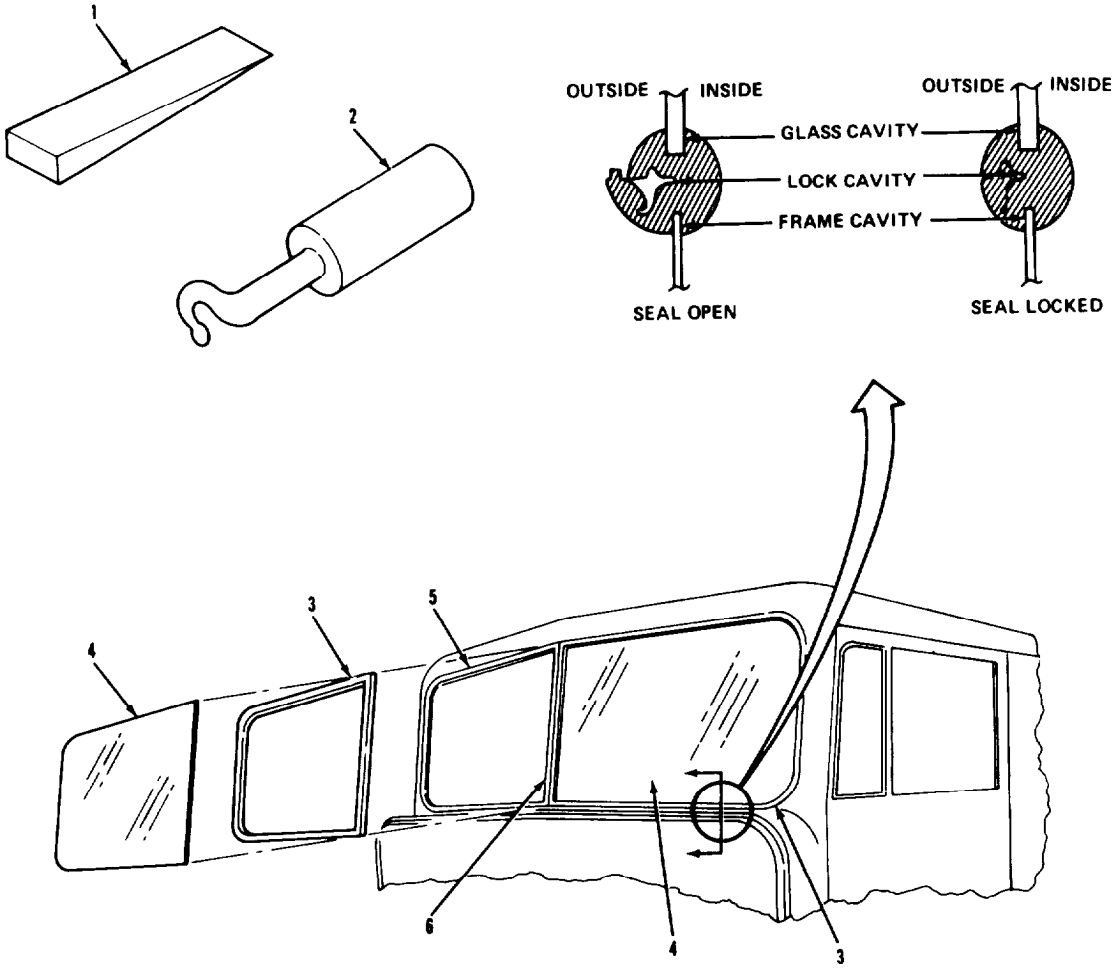
NOTE

Follow-on maintenance action required:

Install windshield wiper arm (TM 9-2320-283-20).

CAB AND BODY.

3-114. WINDSHIELD REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDSHIELD WEATHER SEAL
4. WINDSHIELD GLASS (2)
5. WINDSHIELD FRAME
6. CENTER SUPPORT

TA 238554

CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT.

THIS TASK COVERS

a. Removal.
b. Cleaning.
c. Inspection.
d. Installation.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
	None.	None.

TEST EQUIPMENT
None.

SPECIAL TOOLS
Windshield installer/remover
5120-00-279-8422.

MATERIALS/PARTS (P/N)
Soap solution
Item 30, Appendix B.
Window sealer
Item 39, Appendix B.
Paper towels
Item 37, Appendix B.
Window cleaner
Item 38, Appendix B.

PERSONNEL REQUIRED
One (MOS-63W).

REFERENCE (TM)
TM 9-2320-283-34p.

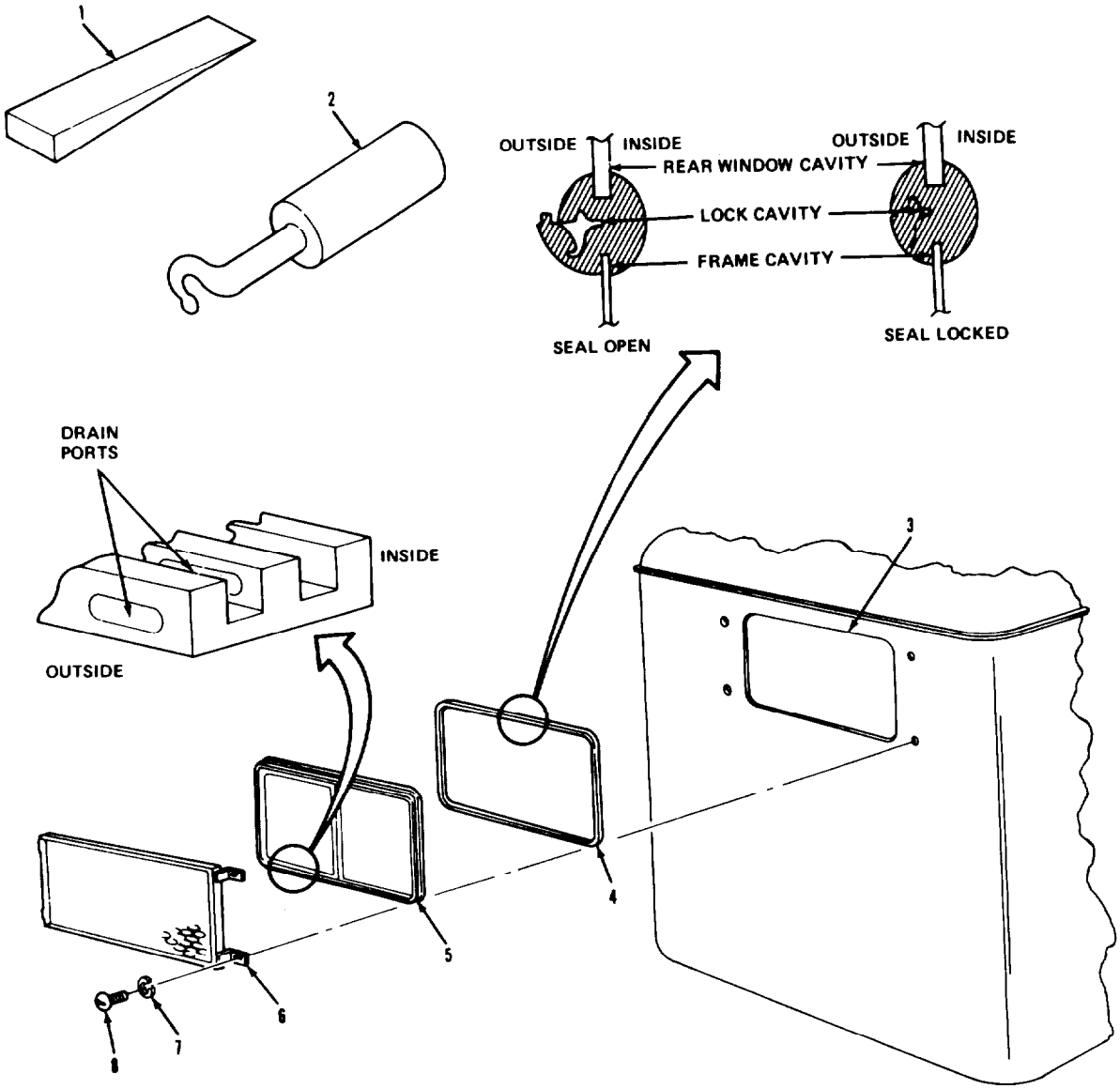
TROUBLESHOOTING REFERENCES
None.

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

GENERAL SAFETY INSTRUCTIONS
Use extreme care when handling glass. Broken, chipped, or cracked glass can cause serious injury. When removing broken glass, wear protective face shield and gloves.

CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDOW FRAME
4. WINDSHIELD WEATHER SEAL
5. REAR WINDOW ASSEMBLY
6. REAR WINDOW SHIELD ASSEMBLY
7. LOCKWASHER (4)
8. MACHINE SCREW (4)

TA 238555

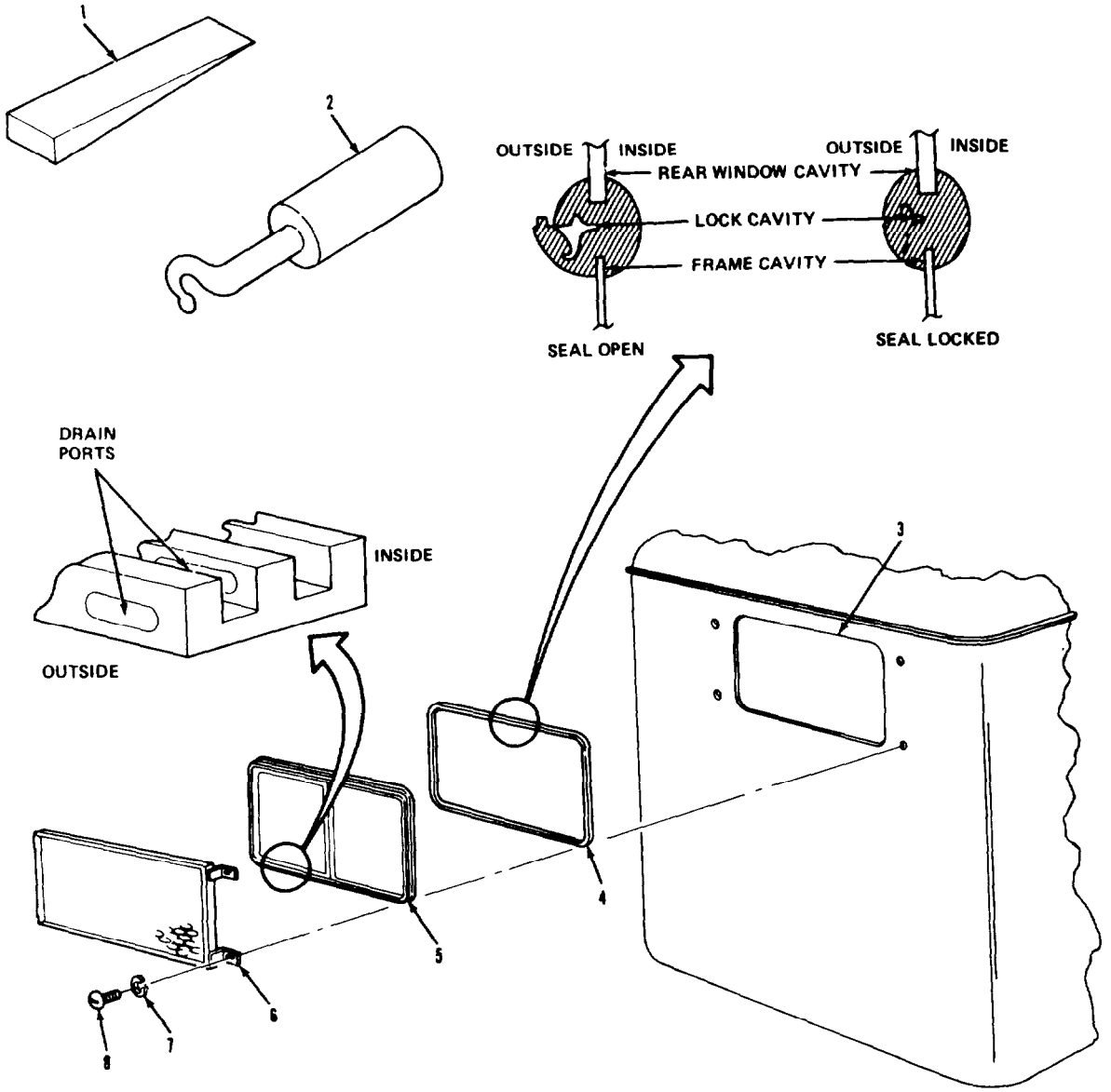
CAB AND BODY,

3-115. REAR WINDOW REPLACEMENT (Continued)

LOCATION/ITEM	ACTION	REMARKS
A. REMOVAL.		
	NOTE If fiber stick, item (1), is not available, make it out of formica using illustration. The approximate dimensions are: 1" decreasing to 1/64" high; 1/2" wide; and 10" long.	
1. Rear window shield assembly (6), four screws (8), and lockwashers (7).	Remove from item (3).	
2. Seal (4).	a. Remove paint.	Rub off with item (1).
	b. Insert tip of item (2) into lock cavity.	
	c. Gently twist item (2) and pull around complete length.	If done correctly, item (4) should be open.
3. Rear window assembly (5).	a. While pulling outward, work out of item (4) around the top, sides and bottom.	Use item (1) and soap solution to work item (4) over the edge of item (5).
	b. Remove item (5).	
4. Seal (4).	Remove.	

CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDOW FRAME
4. WINDSHIELD WEATHER SEAL
5. REAR WINDOW ASSEMBLY
6. REAR WINDOW SHIELD ASSEMBLY
7. LOCKWASHER (4)
8. MACHINE SCREW (4)

TA 238556

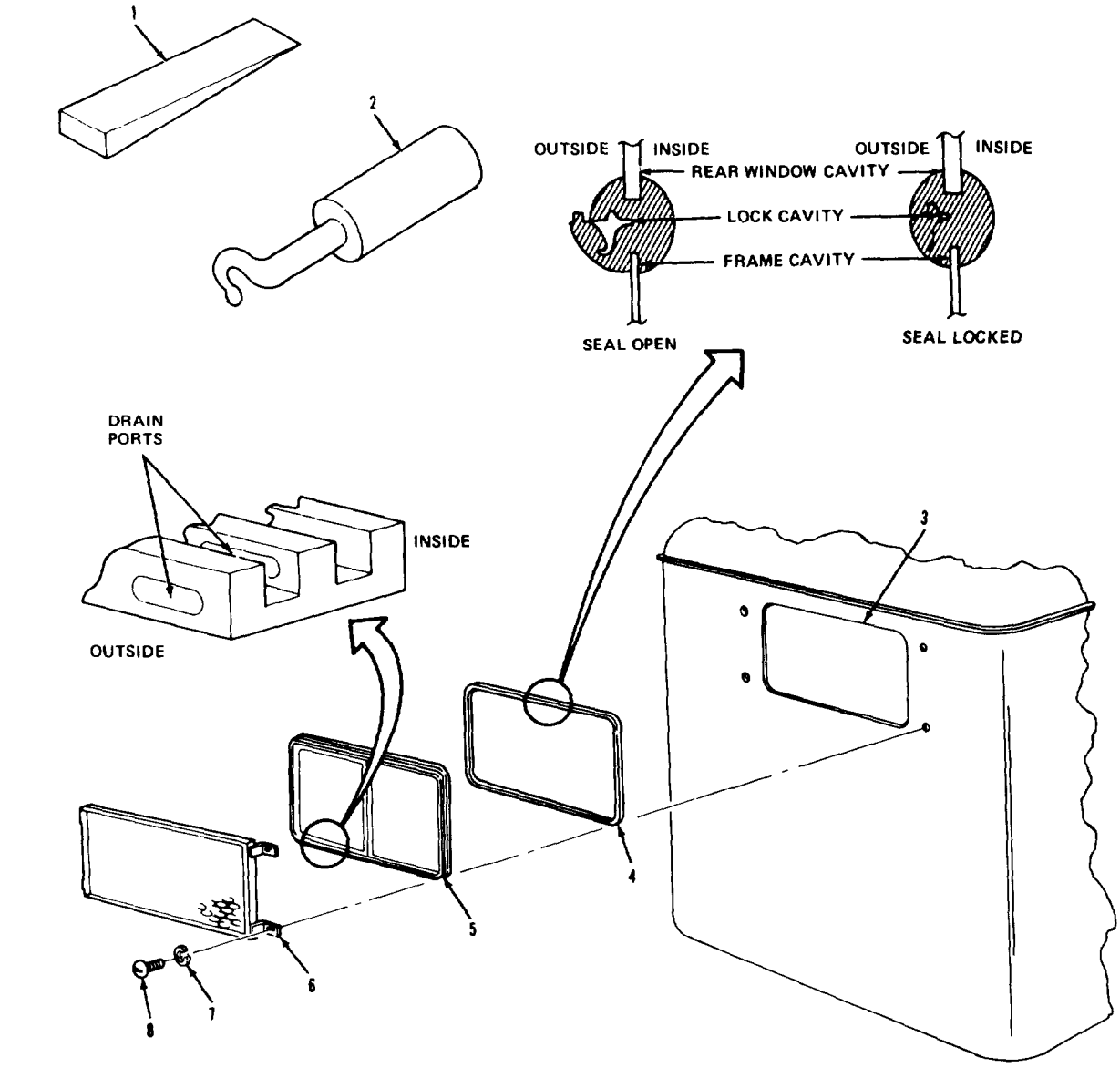
CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
B. CLEANING.		
5. Seal (4).	Clean off old window sealer, paint, and dirt.	Use item (1), soap solution, and paper towels.
6. Rear window assembly (5).	Clean glass.	Use window cleaner and paper towels.
7. All metal parts.	Clean.	Refer to paragraph 3-4.
C. INSPECTION.		
8. Seal (4).	Inspect for cuts, tears, or other damage.	Discard if cut, torn, or damaged.
9. Rear window assembly (5) and shield assembly (6).	Inspect.	Refer to paragraph 3-5.
D. INSTALLATION.		
10. Seal (4).	a. Apply window sealer to frame cavity.	
	b. Install on item (3).	Be sure opening of lock cavity is positioned outside truck cab.
	c. Apply window sealer to rear window cavity.	

CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDOW FRAME
4. WINDSHIELD WEATHER SEAL
5. REAR WINDOW ASSEMBLY
6. REAR WINDOW SHIELD ASSEMBLY
7. LOCKWASHER (4)
8. MACHINE SCREW (4)

TA238557

CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. INSTALLATION (Continued).		
11. Rear window assembly (5).	a. Position bottom edge in the bottom rear window cavity of item (4).	Ensure drain ports are facing the outside of truck.
	b. Work the bottom, sides, and top into item (4).	Use item (1) and soap solution to work item (4) over the edge of item (5).
	c. Clean off excess window sealer and dirt.	Use item (1), window cleaner, and paper towels.
12. Seal (4).	a. Insert tip of item (2) into lock cavity.	
	b. Gently twist and pull item (2) around complete length.	If done correctly, item (4) should be locked.
13. Rear window shield assembly (6).	a. Place in position on item (3).	
	b. Fasten to item (3) using four items (8) and (7).	

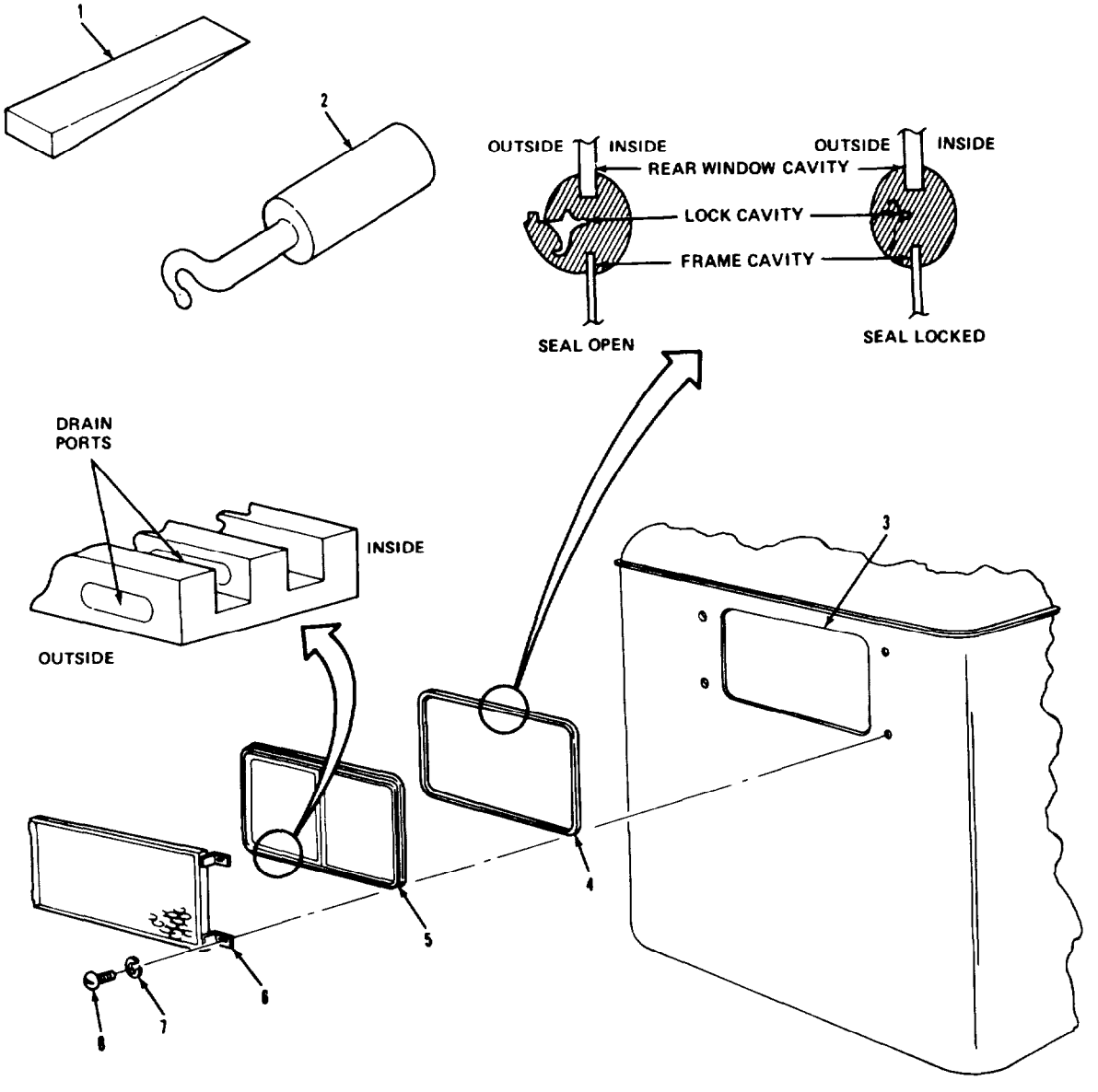
NOTE

Follow-on maintenance action required:

None.

CAB AND BODY.

3-115. REAR WINDOW REPLACEMENT (Continued).



LEGEND:

1. FIBER STICK (FORMICA)
2. WINDSHIELD INSTALLER/REMOVER
3. WINDOW FRAME
4. WINDSHIELD WEATHER SEAL
5. REAR WINDOW ASSEMBLY
6. REAR WINDOW SHIELD ASSEMBLY
7. LOCKWASHER (4)
8. MACHINE SCREW (4)

TA238558

CAB AND BODY.

3-116. REAR WINDOW REPAIR.

THIS TASK COVERS

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

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
3-115.	Rear window removed.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Soap solution
Item 30, Appendix B.
Paper towels
Item 37, Appendix B.
Window cleaner
Item 38, Appendix B.

PERSONNEL REQUIRED
One (MOS-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
Work area clean and away from blowing dirt and dust.

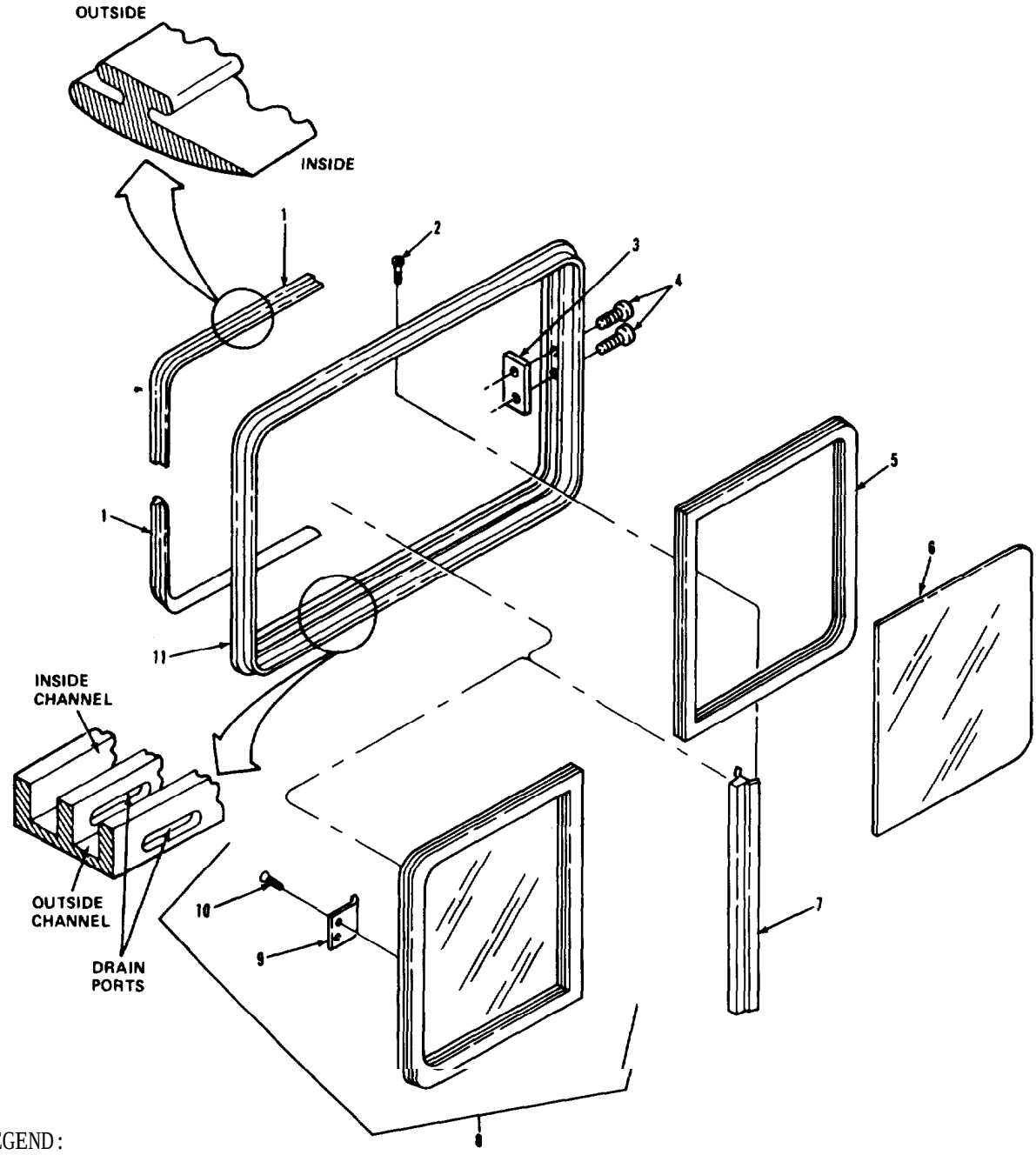
REFERENCE (TM)
None.

GENERAL SAFETY INSTRUCTIONS
Use extreme care when handling broken glass. Broken, chipped, or cracked glass can cause serious injury. When removing broken glass, wear protective face shield and gloves.

TROUBLESHOOTING REFERENCES
None.

CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).



LEGEND:

1. OUTER FRAME FILLER STRIP (2)
2. SCREW (2)
3. COUPLER PLATE
4. SCREW (2)
5. GLAZING STRIP
6. STATIONARY GLASS
7. GLASS RETAINER
8. SLIDE SASH ASSEMBLY
9. LATCH ASSEMBLY
10. LATCH SCREW (2)
11. FRAME

TA 238559

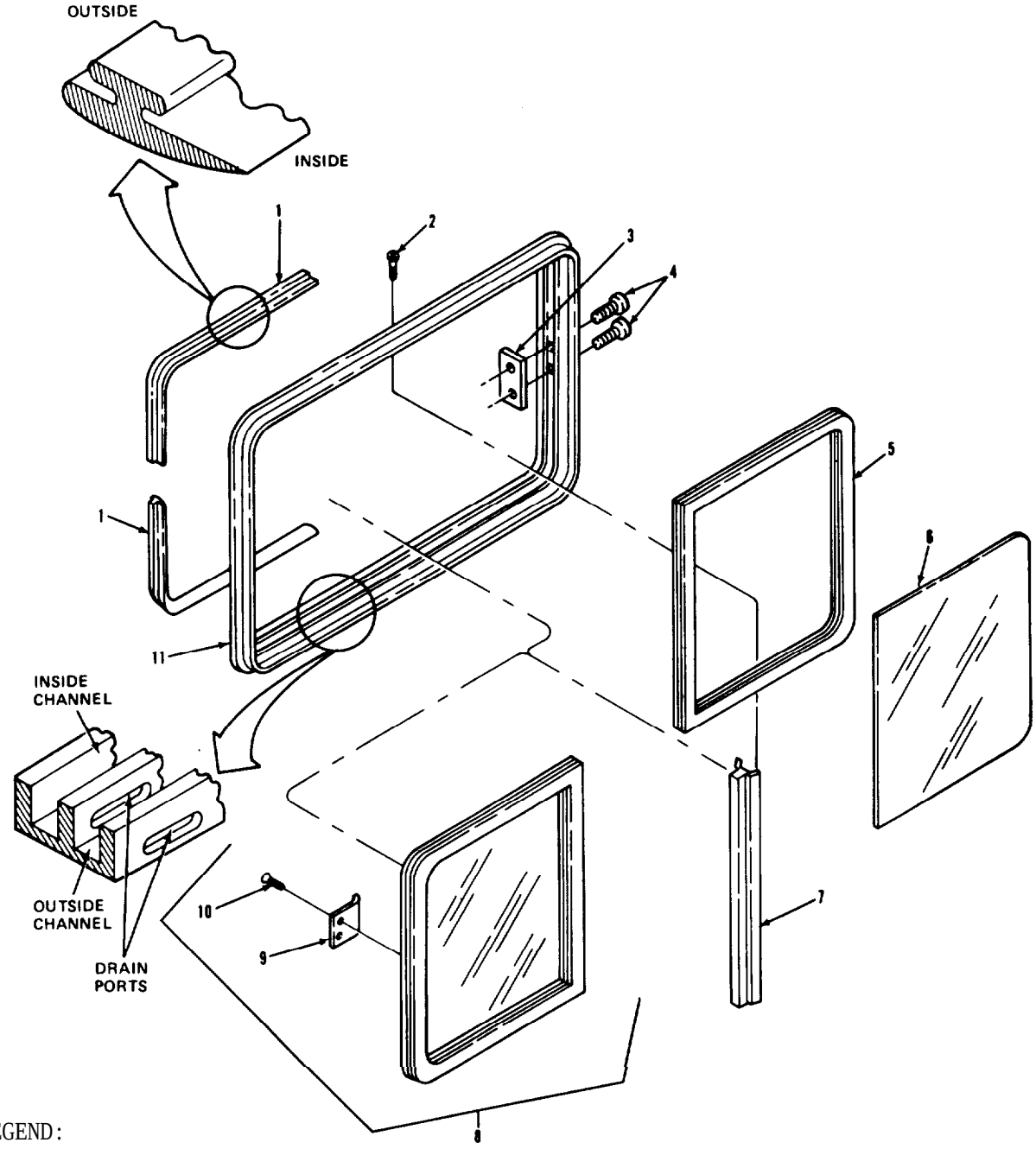
CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Two strips (1).	Remove.	
2. Latch assembly (9) and two screws (10).	Remove from item (8).	
3. Retainer (7) and two screws (2).	Remove from item (11).	
	CAUTION Use extreme care to ensure that the stationary glass and slide sash assembly do not fall and break when frame is opened.	
4. Plate (3), two screws (4), strip (5), glass (6), and slide sash assembly (8).	a. Remove two items (4).	
	b. Slide item (8) to side of item (11) against item (3).	
	c. Insert tip of flat head screwdriver between metal frame surfaces of items (8) and (11).	Tip of screwdriver should be 3/8" wide.
	d. Gently twist screwdriver.	This should force item (11) to open.
	e. Remove items (5), (6), (8), and (3).	
B. CLEANING.		
5. Strips (1) and (5).	Clean.	Use soap solution and paper towels.
6. Slide sash assembly (8).	Clean.	Use window cleaner and paper towels.
7. All metal parts.	Clean.	Refer to paragraph 3-4.
8. Glass (6).	Clean.	Use window cleaner and paper towels.

CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).



LEGEND:

1. OUTER FRAME FILLER STRIP (2)
2. SCREW (2)
3. COUPLER PLATE
4. SCREW (2)
5. GLAZING STRIP
6. STATIONARY GLASS
7. GLASS RETAINER
8. SLIDE SASH ASSEMBLY
9. LATCH ASSEMBLY
10. FRAME SCREW (2)
11. FRAME

TA238560

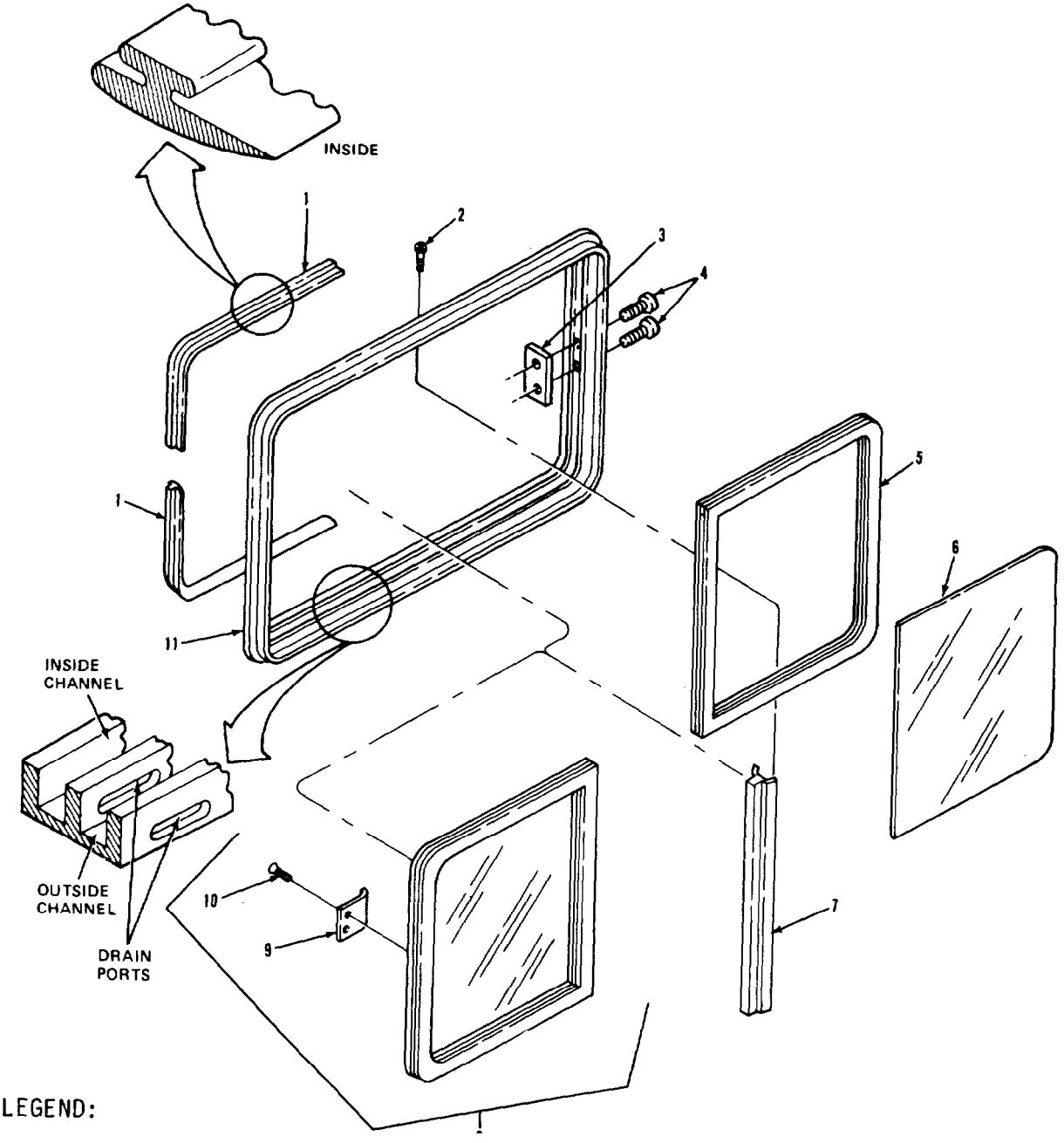
CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. INSPECTION.		
9. Strips (1) and (5).	Inspect for cuts, tears, and signs of damage.	Discard if cut, torn, or damaged.
10. Glass (6) and slide sash assembly (8).	Inspect glass for chipped, cracked, stained, or damaged surfaces.	Discard if chipped, cracked, stained, or damaged.
11. All metal parts.	Inspect.	Refer to paragraph 3-5.
D. ASSEMBLY.		
12. Plate (3).	Install one end to item (3) with item (4).	Leave other end disconnected.
13. Slide sash assembly 03).	Install into the inside channel of item (11).	
14. Strip (5) and glass (6).	a. Install item (5) on item (6). b. Install into the outside channel of item (11).	
15. Frame (11) and plate (3).	Close up and secure with item (4).	
16. Retainer (7).	a. Insert into the outside channel of item (11) and press firmly up against items (5) and (6). b. Secure in place with two items (2).	

CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).



LEGEND:

1. OUTER FRAME FILLER STRIP (2)
2. SCREW (2)
3. COUPLER PLATE
4. SCREW (2)
5. GLAZING STRIP
6. STATIONARY GLASS
7. GLASS RETAINER
8. SLIDE SASH ASSEMBLY
9. LATCH ASSEMBLY
10. LATCH SCREW (2)
11. FRAME

TA 238561

CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
D. ASSEMBLY.		
17. Latch assembly (9).	a. Place in position on item (8).	
	b. Secure with two items (10).	
18. Two strips (1).	Install into the outside channel of item (11).	

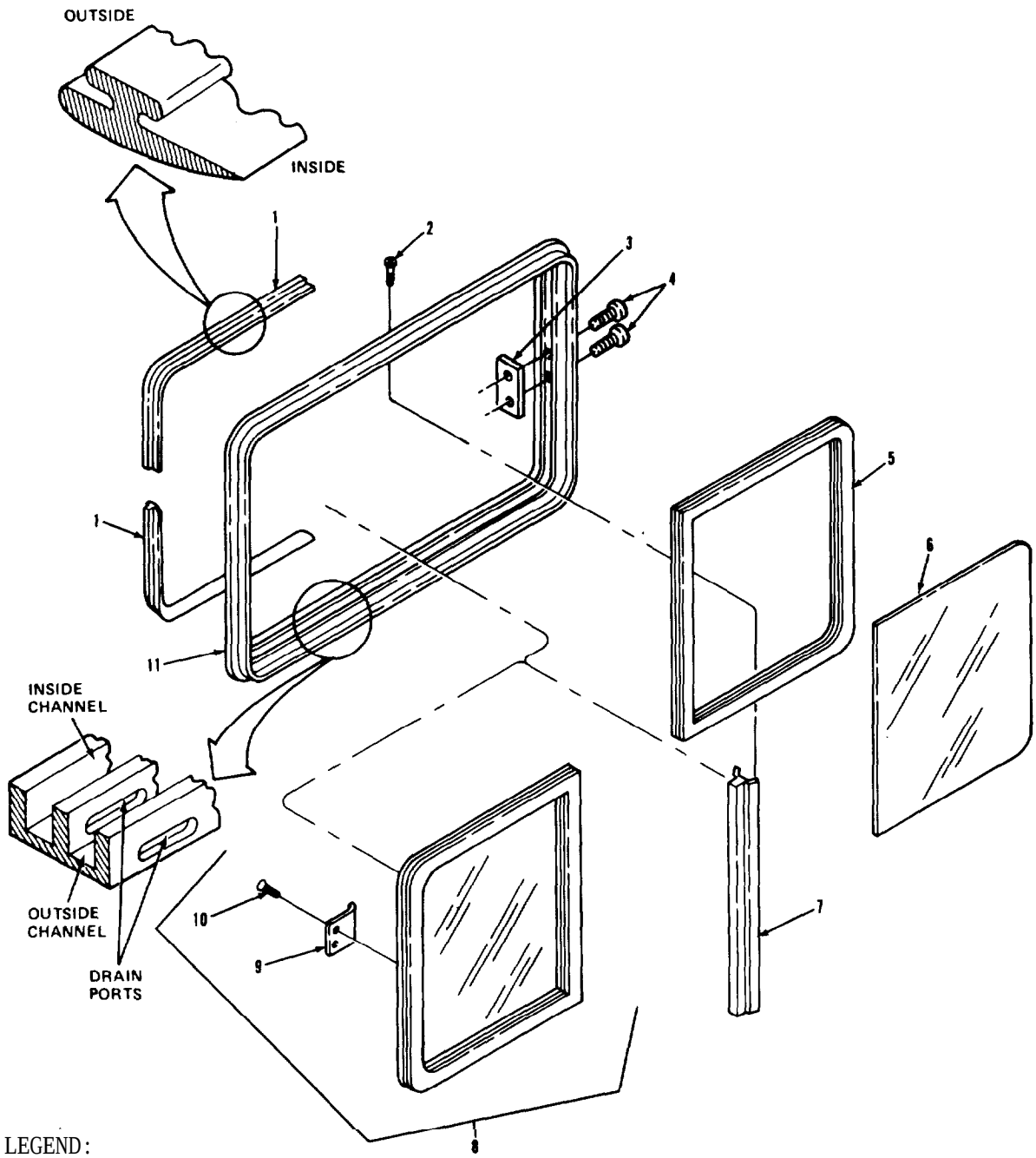
NOTE

Follow-on maintenance action required:

Install rear window (para 3-115).

CAB AND BODY.

3-116. REAR WINDOW REPAIR (Continued).



LEGEND:

1. OUTER FRAME FILLER STRIP (2)
2. SCREW (2)
3. COUPLER PLATE
4. SCREW (2)
5. GLAZING STRIP
6. STATIONARY GLASS
7. GLASS RETAINER
8. SLIDE SASH ASSEMBLY
9. LATCH ASSEMBLY
10. LATCH SCREW (2)
11. FRAME

TA 238562

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS
All.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Grease, white (suitable)
Item 11, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B.

PERSONNEL REQUIRED
two (MOS-63W).

REFERENCE (TM).
TM 9-2320-283-20.
L0 9-2320-283-12.

TROUBLESHOOTING REFERENCES
None.

EQUIPMENT CONDITION

PARAGRAPH	CONDITION DESCRIPTION
TM 9-2320-283-20.	Driver's seat removed.

NOTE

Do the following equipment condition when replacing entire seat assembly. New seat assembly comes with new seat belts.

TM 9-2320-283-20.	Seat belts removed.

SPECIAL ENVIRONMENTAL CONDITIONS
None.

GENERAL SAFETY INSTRUCTIONS
None.

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

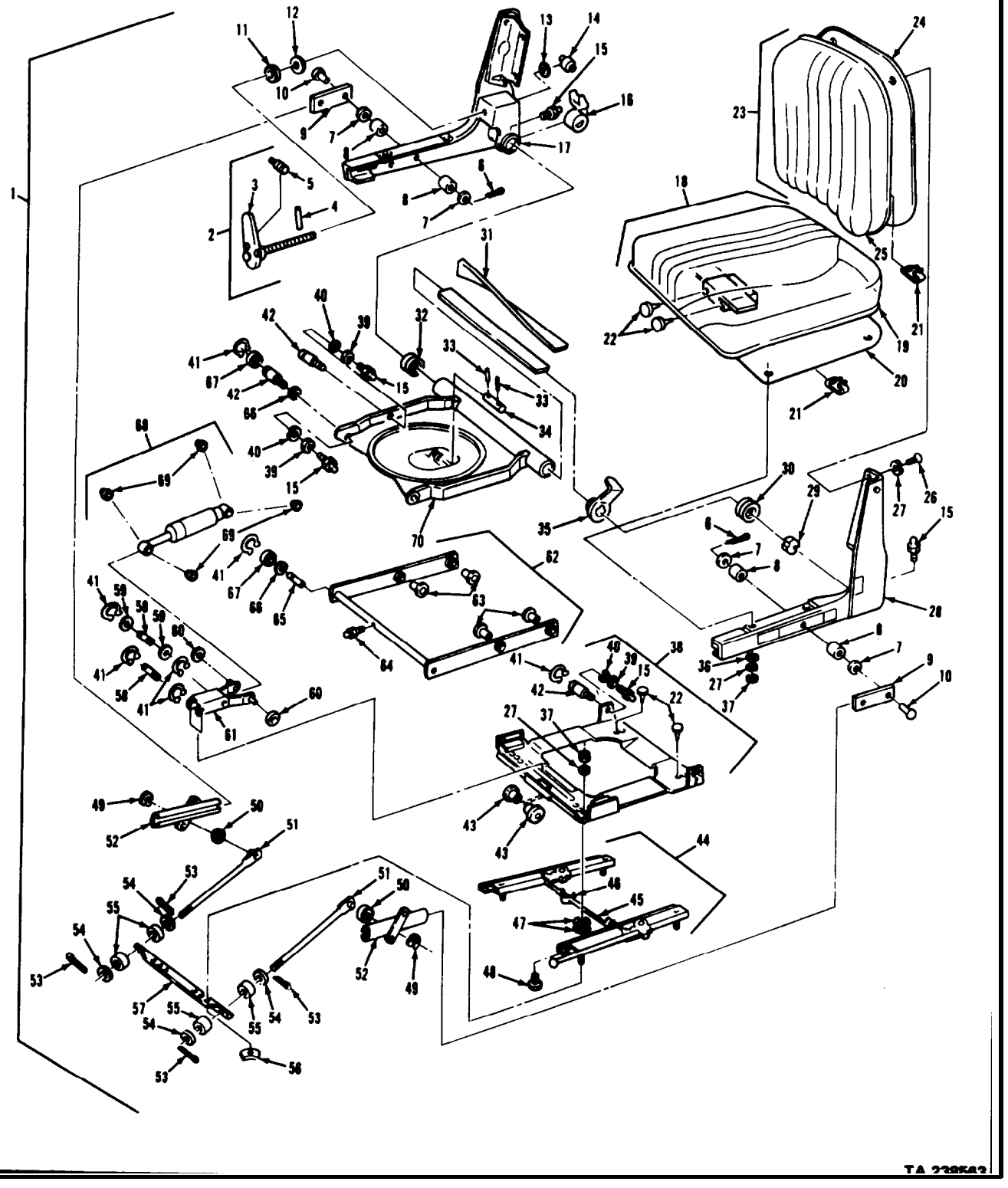
LOCATION/ITEM	ACTION	REMARKS

NOTE

Due to the many parts being serviced in this procedure, the art presentation has been modified to improve clarity. The next two pages contain the art and legend for the seat assembly. The first page shows the driver's seat completely disassembled and the second page contains a complete legend. In the step-by-step instructions, art and legend will show and list only parts of the seat assembly being discussed in the text. To avoid confusion, use the art and legend on the next two pages along with the detailed views in the text. They will aid you in seeing and understanding the exact disassembly and assembly procedure.

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LEGEND:

1. DRIVER'S SEAT ASSEMBLY
2. ADJUSTER SCREW AND LEVER ASSEMBLY
3. LEVER ASSEMBLY
4. DRIVE PIN
5. TENSION SPRING
6. COTTER PIN (4)
7. FLAT WASHER (4)
8. RUBBER WASHER (8)
9. SLIDE RAIL (2)
10. HEADED PIN (4)
11. THRUST BALL BEARING
12. FLAT WASHER
13. WASHER
14. ADJUSTER PIN
15. SHANK LUBRICATION FITTING (8)
16. ADJUSTER YOKE
17. RIGHT-HAND SIDE PANEL ASSEMBLY
18. SEAT CUSHION ASSEMBLY
19. SEAT CUSHION COVER ASSEMBLY
20. SEAT CUSHION PAN
21. CUSHION FASTENER CLIP (12)
22. BOTTOM AND TOPPING BUMPER (4)
23. BACK CUSHION ASSEMBLY
24. BACK CUSHION PAN
25. BACK CUSHION COVER ASSEMBLY
26. FILLISTER-PHILLIPS HEAD SCREW (4)
27. LOCKWASHER (12)
28. LEFT-HAND SIDE PANEL ASSEMBLY
29. TORSION BAR RETAINER
30. LEFT-HAND HOUSING BEARING
31. TORSION BAR SET (1-SET)
32. RIGHT-HAND HOUSING BEARING
33. ROLL PIN (2)
34. SHOCK ABSORBER HINGE SHAFT
35. RIDE POSITION INDICATOR
36. WASHER (4)
37. HEXAGON HEAD NUT (8)
38. BASE ASSEMBLY
39. HEXAGON HEAD LOCKNUT (6)
40. LOCKWASHER (6)
41. SNAPRING (10)
42. STUD (6)
43. FLANGE BEARING (2)
44. SLIDE RAIL ASSEMBLY
45. CATCH WIRE
46. CLIP
47. WASHER (8)
48. HEXAGON HEAD SCREW (4)
49. SNAPRING (2)
50. BRONZE OILITE BEARING (2)
51. SUPPORT ROD (2)
52. SLIDE CHANNEL (2)
53. DRIVE LOCKPIN (4)
54. FLAT WASHER (4)
55. RUBBER WASHER (4)
56. SPRING CLIPS (2)
57. SUPPORT
58. SHOCK ABSORBER HINGE SHAFT (2)
59. FLAT WASHER (2)
60. NYLON ROLLER (2)
61. SHOCK LEVER ASSEMBLY
62. OUTER LEVER ASSEMBLY
63. FLANGE BEARING (4)
64. SHANK LUBRICATION FITTING
65. DRIVE PIN (2)
66. WASHER (4)
67. ROLLER AND BEARING ASSEMBLY
68. SHOCK ABSORBER ASSEMBLY
69. FLANGE BEARING (4)
70. CENTER SUPPORT ASSEMBLY

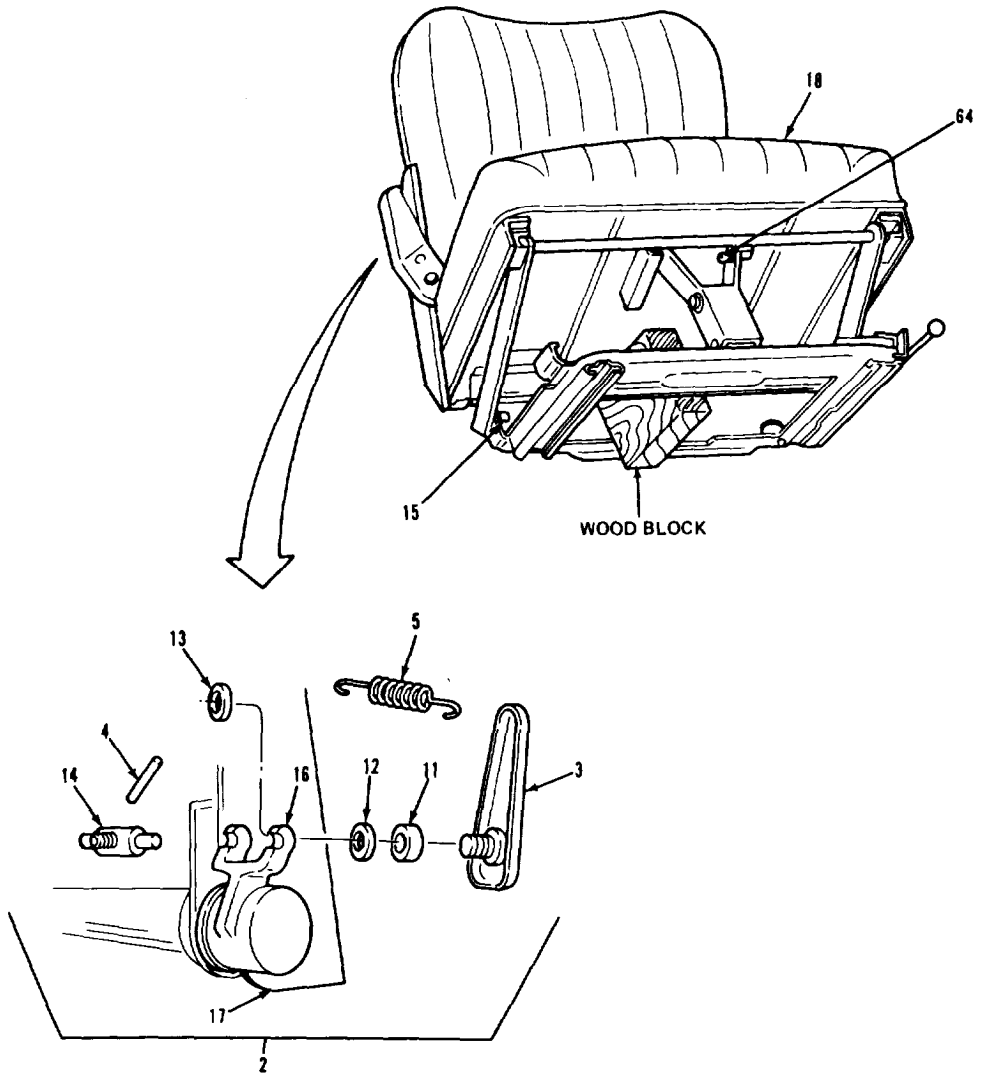
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
	WARNING Driver's seat assembly is under tension. To avoid injury to you and other personnel be sure to release tension as prescribed below.	
	NOTE Mark all parts that are disassembled so that they can be properly assembled later, Transfer marks from replaced parts to new parts.	
RELEASE PRELOAD TENSION ON TORSION BARS		
1. Two inch-by-four inch wood block.	Place between torsion bar housing on item (70) and item (38) at rear of item (1).	Block should be no more than 3-inches high to allow item (1) to drop l-inch so that item (18) may be removed.
2. Pin (4).	Remove from item (3).	
3. Adjuster screw and lever assembly (2).	Rotate counterclockwise until item (14) falls from item (3) and (16).	Turning item (2) counterclockwise releases tension.
4. Washer (13).	Remove from item (3).	
5. Lever assembly (3) with attached parts.	Remove from item (17).	
6. Bearing (11) and washer (12).	Remove from item (3).	
7. Spring (5).	Remove from item (3).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

1. DRIVER'S SEATS ASSEMBLY
2. ADJUSTER SCREW AND LEVER ASSEMBLY
3. LEVER ASSEMBLY
4. DRIVE PIN
5. TENSION SPRING
11. THRUST BALL BEARING
12. FLAT WASHER
13. WASHER
14. ADJUSTER PIN
16. ADJUSTER YOKE
17. RIGHT-HAND SIDE PANEL ASSEMBLY
18. SEAT CUSHION ASSEMBLY
38. BASE ASSEMBLY
70. CENTER SUPPORT ASSEMBLY

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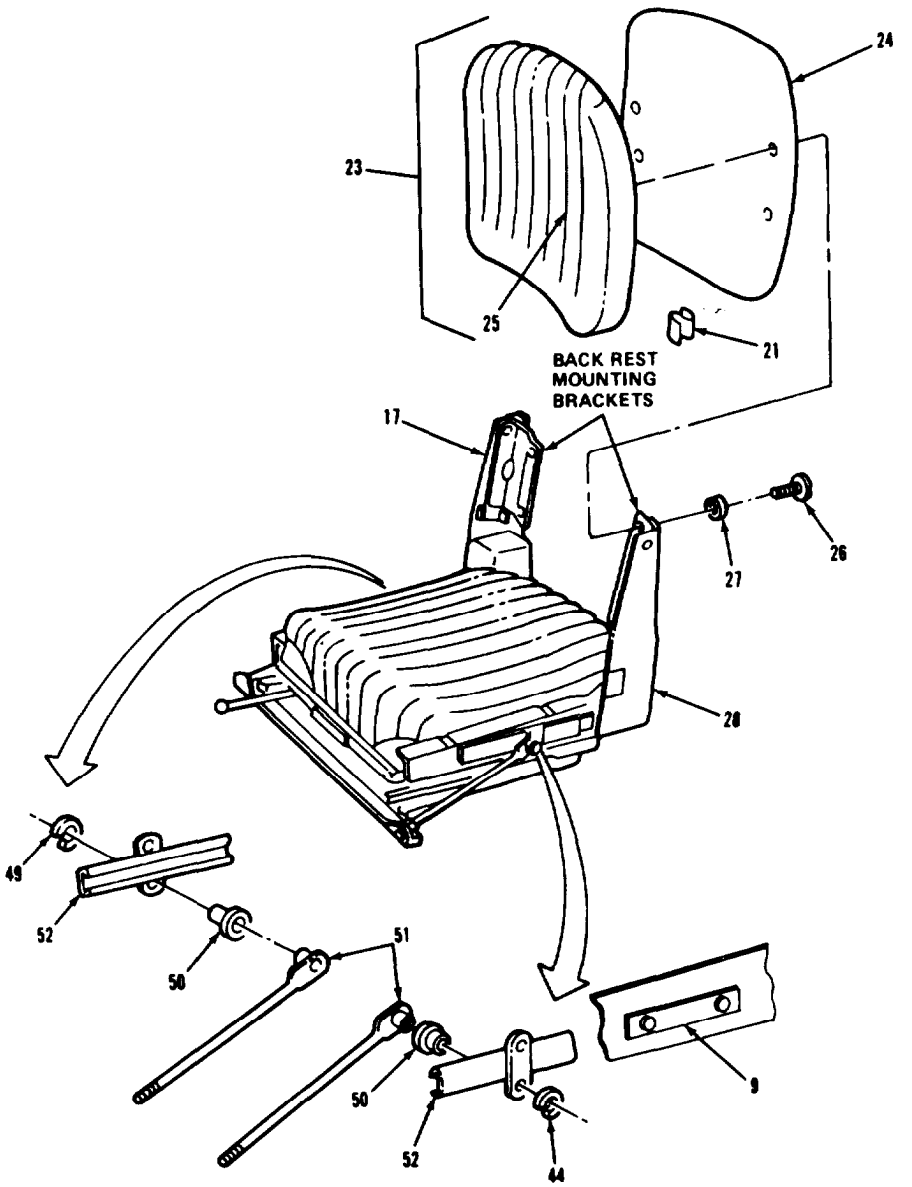
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued)		
BACK CUSHION ASSEMBLY		
8. Four screws (26) and lock-washers (27).	a. Remove from item (23). b. Remove item (23) from items (17) and (28).	
9. Back cushion cover assembly (25).	a. Remove from six items (21). b. Separate item (25) from item (24).	
10. Six clips (21).	Remove from item (24).	
SEAT CUSHION ASSEMBLY		
11. Two snaprings (49).	Remove from two items (51).	
12. Two rods (51).	Remove from two items (52).	
13. Two channels (52).	Remove from two items (9).	
	NOTE If bearings are damaged, do step 14; otherwise, go to step 15.	
14. Two bearings (50).	Remove from two items (52), if necessary.	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

9. SLIDE RAIL (2)
17. RIGHT-HAND SIDE PANEL ASSEMBLY
21. CUSHION FASTENER CLIP (12)
23. BACK CUSHION ASSEMBLY
24. BACK CUSHION PAN
25. BACK CUSHION COVER ASSEMBLY
26. FILLISTER-PHILLIPS HEAD SCREW (4)
27. LOCKWASHER (12)
28. LEFT-HAND SIDE PANEL ASSEMBLY
49 SNAPRING (2)
50. BRONZE OILITE BEARING (2)
51. SUPPORT ROD (2)
52. SLIDE CHANNEL (2)

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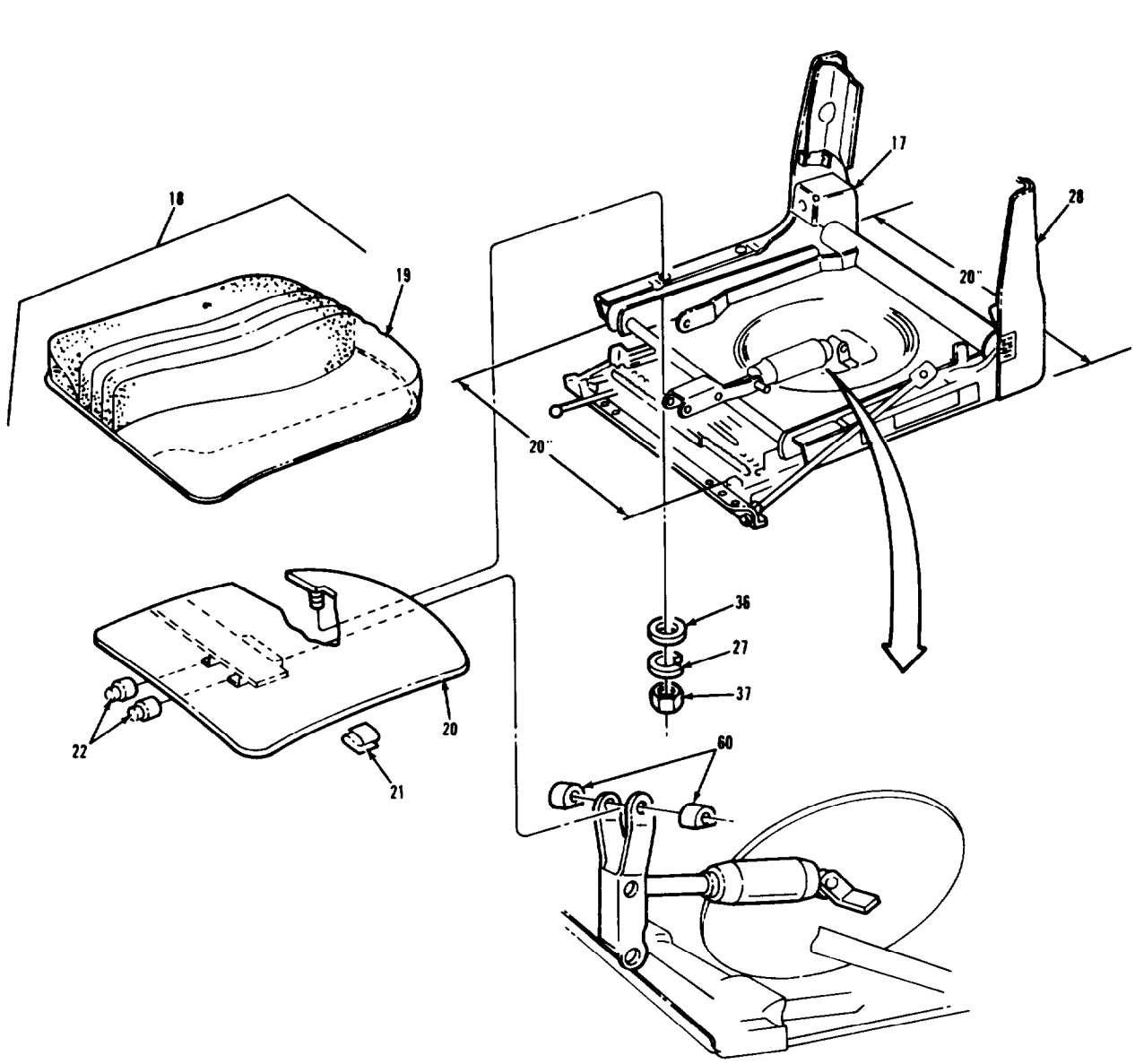
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
15. Four nuts (37), lockwashers (27), washers (36), and seat cushion assembly (18).	Remove from item (17) and (28).	
16. Seat cushion assembly (18).	Lift up and move forward to free from two items (60).	
17. Seat cushion cover assembly (19).	a. Remove from six items (21). b. Separate item (19) from item (20).	
18. Six clips (21).	Remove from item (20).	
	NOTE If bumpers are damaged, do step 19; otherwise, go to step 20.	
19. Two bumpers (22).	Remove from channel on item (20) if necessary.	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

17. RIGHT-HAND SIDE PANEL ASSEMBLY
18. SEAT CUSHION ASSEMBLY
19. SEAT CUSHION COVER ASSEMBLY
20. SEAT CUSHION PAN
21. CUSHION FASTENER CLIP (12)
22. BOTTOM AND TOPPING BUMPER (4)
27. LOCKWASHER (12)
28. LEFT-HAND SIDE PANEL ASSEMBLY
36. WASHER (4)
37. HEXAGON HEAD NUT (8)
60. NYLON ROLLER (2)

TA 238566

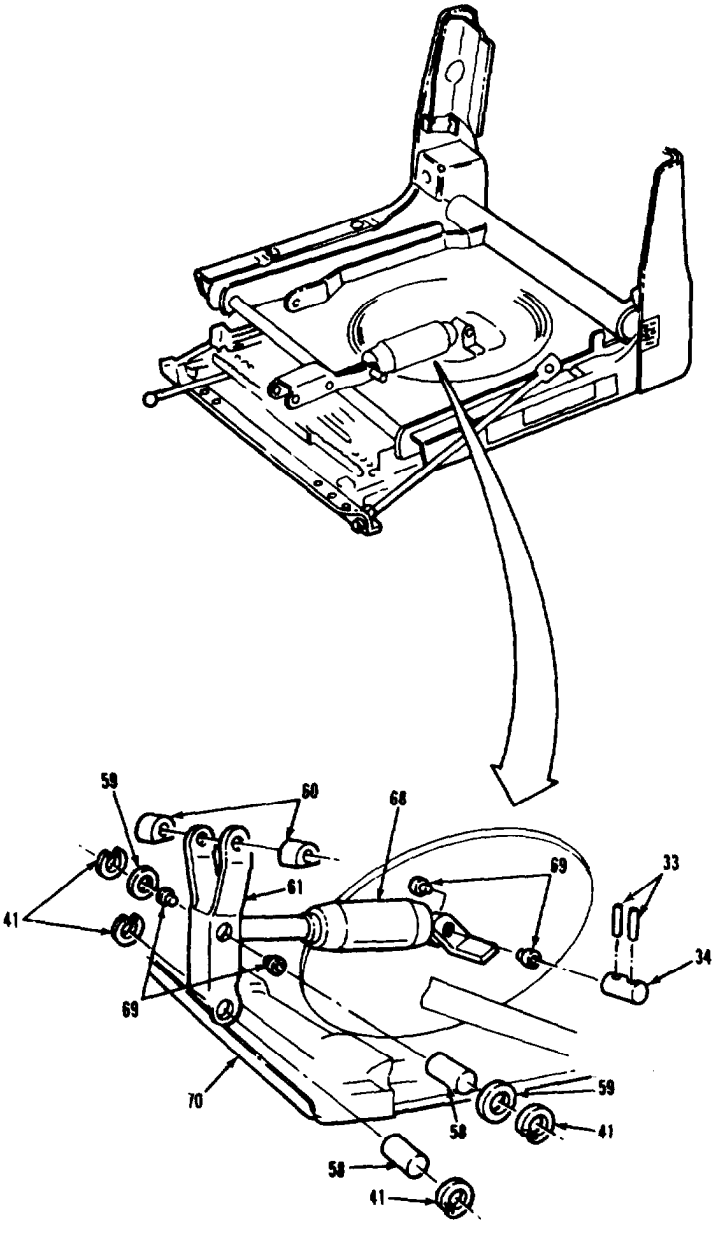
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
SHOCK ABSORBER ASSEMBLY		
20. Two snaprings (41).	Remove from item (58).	
21. Shaft (58).	a. Remove from item (70) and item (61).	
	b. Raise item (61) from item (70).	
22. Two snaprings 41 and washers 59.	Remove from item (58).	
23. Shaft (58).	a. Remove from item (61) and item (68).	
	b. Remove item (61) from item (68).	
24. Two rollers (60).	Remove from item (61).	
25. Two pins (33).	Remove from item (34).	
26. Shaft (34).	a. Remove from item (70) and item (68).	
	b. Remove item (68) from item (70).	
	NOTE If flange bearings in shock absorber are damaged, do step 27; otherwise, go to step 28.	
27. Four bearings (69).	Remove from item (68).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

33. ROLL PIN (2)
34. SHOCK ABSORBER HINGE SHAFT
41. SNAPRING (10)
58. SHOCK ABSORBER HINGE SHAFT (2)
59. FLAT WASHER (2)
60. NYLON ROLLER (2)
61. SHOCK LEVER ASSEMBLY
68. SHOCK ABSORBER ASSEMBLY
69. FLANGE BEARING (4)
70. CENTER SUPPORT ASSEMBLY

TA 238567

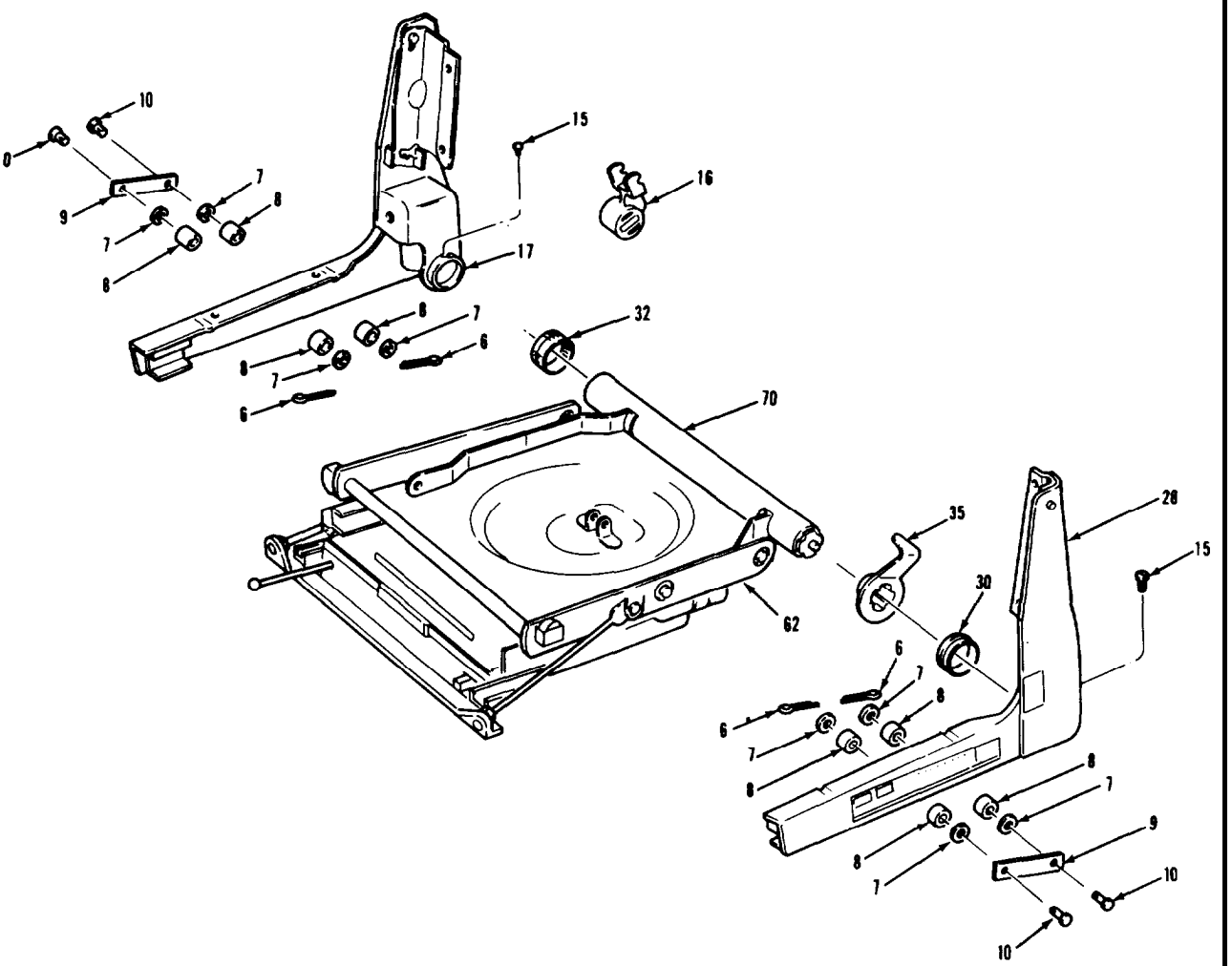
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
SIDE PANEL ASSEMBLIES		
28. Left-hand side panel assembly (28).	Pull from items (70) and (62).	Item (30) may stay with item (70).
29. Bearing (30).	Remove from item (28) or item (70).	
30. Indicator (35).	Slide from item (70).	
31. Two pins (6).	a. Remove from two items (10). b. Remove two items (10), four items (7), four items (8), and item (9).	
32. Right-hand side panel assembly (7).	a. Pull from items (70) and (62). b. Remove item (16).	Item (32) may stay in place.
33. Bearing (32).	Remove from item (17) or item (70).	
34. Two pins (6).	a. Remove from two items (10). b. Remove two items (10), four items (7), four items (8), and item (9).	
	NOTE If fittings are damaged, do step 35; otherwise, go to step 36.	
35. Two fittings (15).	Remove one item (15) from either item (17) or (28).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

6. COTTER PIN (4)
7. FLAT WASHER (4)
8. RUBBER WASHER (8)
9. SLIDE RAIL (2)
10. HEADED PIN (4)
15. SHANK LUBRICATION FITTING (8)
16. ADJUSTER YOKE
17. RIGHT-HAND SIDE PANEL ASSEMBLY
28. LEFT-HAND SIDE PANEL ASSEMBLY
30. LEFT-HAND HOUSING BEARING
32. RIGHT-HAND HOUSING BEARING
35. RIDE POSITION INDICATOR
62. OUTER LEVER ASSEMBLY
70. CENTER SUPPORT ASSEMBLY

TA 238568

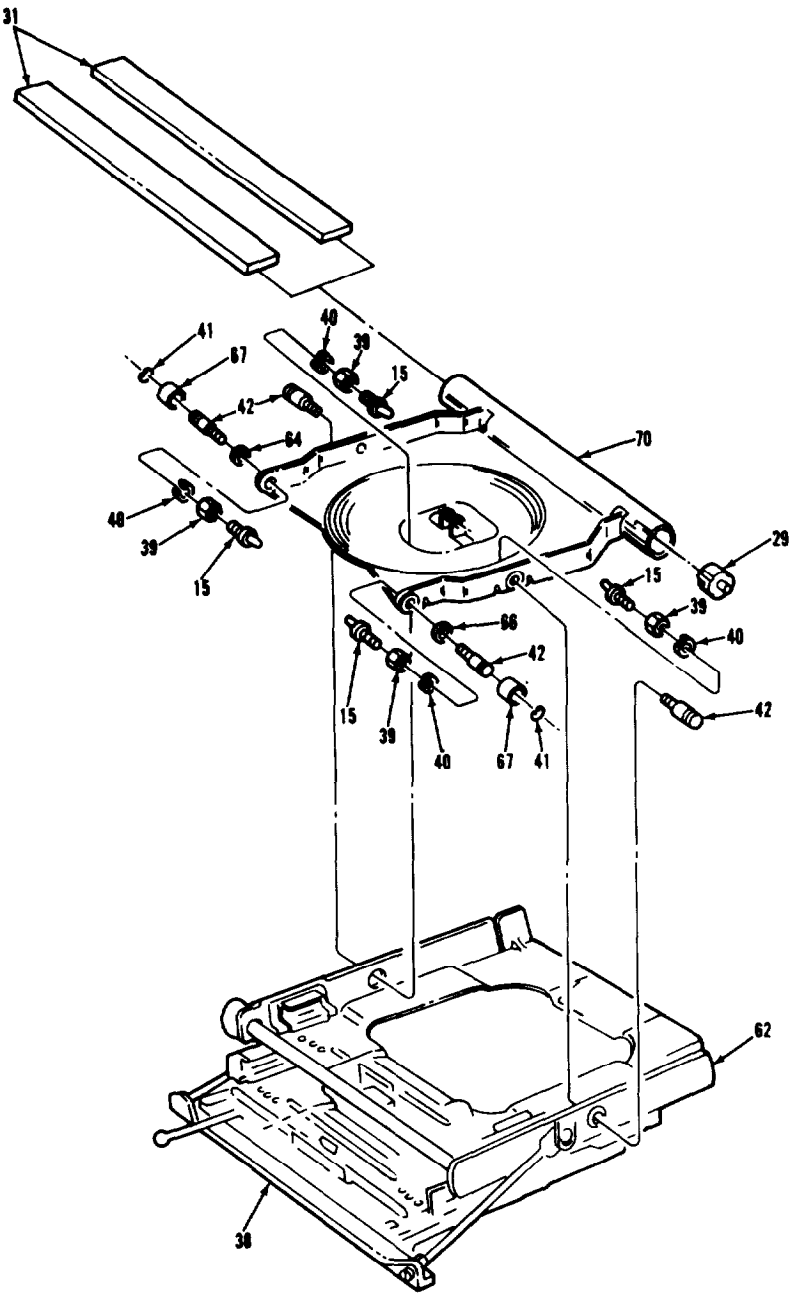
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
CENTER SUPPORT ASSEMBLY		
36. Wood block.	Remove.	
37. Retainer (29).	Remove from item (70).	
38. Bar set (31).	Remove from item (70).	
39. Two locknuts (39) and lockwashers (40).	Remove from two center holes in item (42).	
40. Two center studs (42).	Remove from item (62) and (70).	
41. Support (70).	Slide from two channels in item (38).	
42. Two locknuts (39), lockwashers (40), and snaprings (41).	Remove from two front items (42).	
43. Two washers (66) and roller and bearing assemblies (67).	Remove from two items (42).	
44. Two studs (42).	Remove from item (70).	
	NOTE If any fitting is damaged, do step 45; otherwise, go to step 46.	
45. Four fittings (15).	Remove from four items (42) if necessary.	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

15. SHANK LUBRICATION FITTING (8)
29. TORSION BAR RETAINER
31. TORSION BAR SET (l-SET)
38. BASE ASSEMBLY
39. HEXAGON HEAD LOCKNUT (6)
40. LDCKWASHER (6)
41. SNAPRING (10)
42. STUD (6)
62. OUTER LEVER ASSEMBLY
66. WASHER (4)
67. ROLLER AND BEARING ASSEMBLY (2)
70. CENTER SUPPORT ASSEMBLY

TA 238569

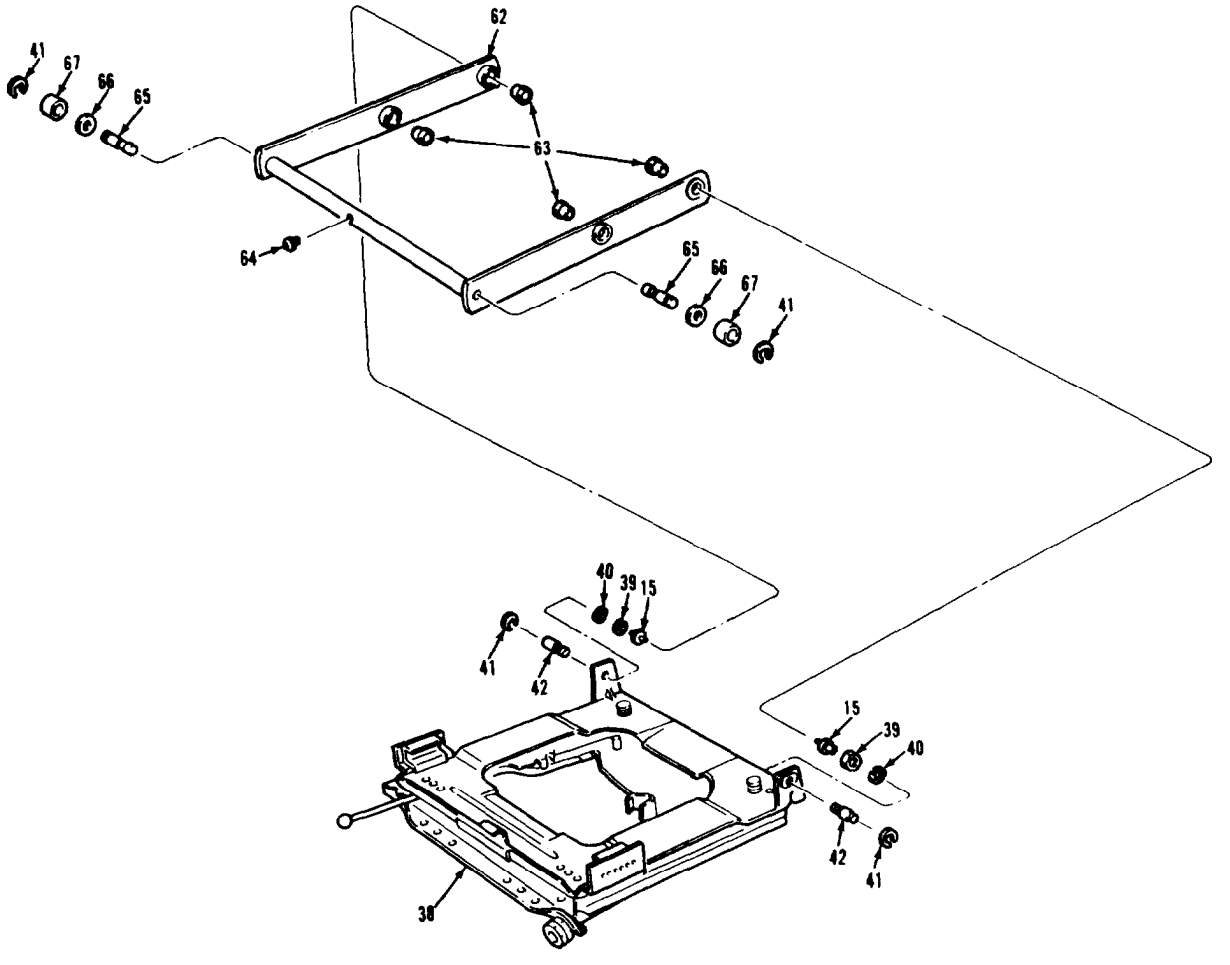
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
OUTER LEVER ASSEMBLY		
46. Two locknuts (39), lockwashers (40), and snaprings (41).	Remove from two items (42).	
47. Two studs (42).	Remove from item (38) and (62).	
48. Outer lever assembly (62).	Remove from item (38).	
49. Two snaprings (41), roller and bearing assemblies (67), and washers (66).	Remove from two items (65).	
50. Two pins (65).	Remove from item (62).	
	NOTE • If any fitting is damaged, do step 51 or 52; otherwise, go to step 53. • If any flange bearing is damaged, do step 53; otherwise, go to step 54.	
51. Two fittings (15).	Pull from two items (42), if necessary.	
52. Fitting (64).	Pull from item (38), if necessary.	
53. Four bearings (63).	Remove from item (38), if necessary.	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

15. SHANK LUBRICATION FITTING (8)
38. BASE ASSEMBLY
39. HEXAGON HEAD LOCKNUT (6)
40. LOCKWASHER (6)
41. SNAPRING (10)
42. STUD (6)
62. OUTER LEVER ASSEMBLY
63. FLANGE BEARING (4)
64. SHANK LUBRICATION FITTING
65. DRIVE PIN (2)
66. WASHER (4)
67. ROLLER AND BEARING ASSEMBLY

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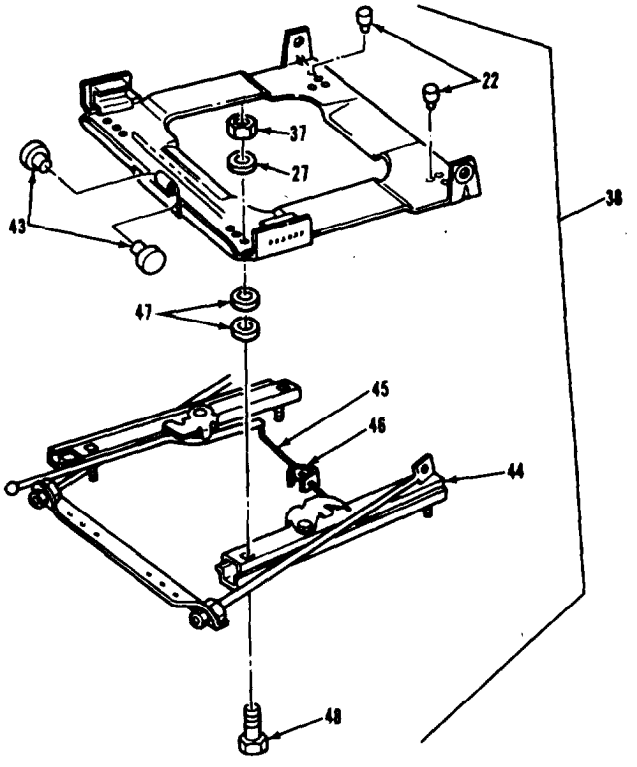
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
BASE ASSEMBLY		
	NOTE Move slide rail assembly as necessary to access mounting hardware.	
54. Four nuts (37), lockwashers (27), screws (48), and eight washers (47).	a. Remove from item (38). b. Remove item (38) from item (44).	Remove eight items (47) after removing item (38).
	NOTE • If either bumper is damaged, do step 55; otherwise, go to step 56. • If either flange bearing is damaged, do step 56; otherwise, go to step 57.	
55. Two bumpers (22).	Remove from item (38), if necessary.	
56. Two bearings (43).	Remove from item (38), if necessary.	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

22. BOTTOM AND TOPPING BUMPER (4)
27. LOCKWASHER (12)
37. HEXAGON HEAD NUT (8)
38. BASE ASSEMBLY
43. FLANGE BEARING (2)
44. SLIDE RAIL ASSEMBLY
45. CATCH WIRE
46. CLIP
47. WASHER (8)
48. HEXAGON HEAD SCREW (4)

TA 238577

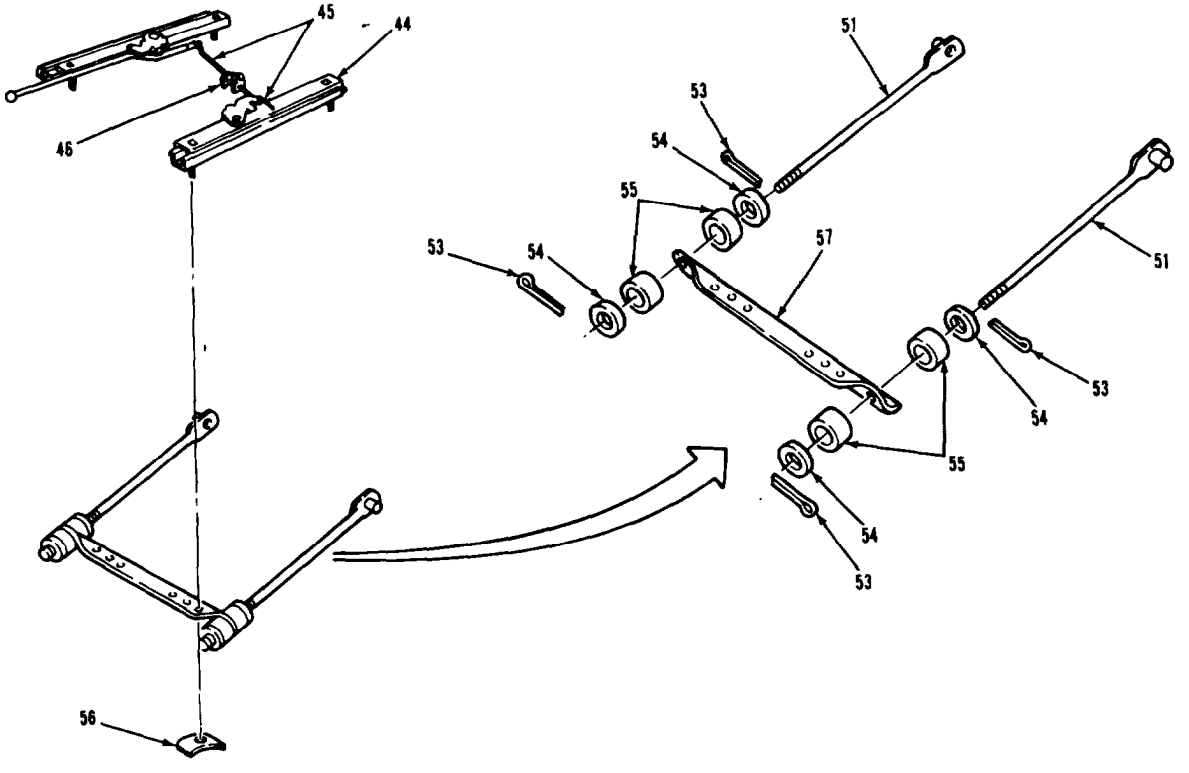
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
SLIDE RAIL ASSEMBLY		
57. Clip (46).	Remove from item (45).	
58. Wire (45).	Remove from item (44).	Note mounting hole positions before removing item (45).
59. Two clips (56).	Remove from item (57).	
60. Support (57) with attached parts.	Remove from item (44).	Note mounting hole positions before removing item (57).
61. Two lockpins (53).	Remove from two items (51).	Assistant helps remove two items (53).
62. Two washers (54) and washers (55).	Remove from two items (51).	
63. Two rods (51).	Remove from item (57).	
64. Two washers (55), washers (54), and lockpins (53).	Remove from two items (51).	
B. CLEANING AND INSPECTION.		
65. All parts.	Clean and inspect.	Refer to paragraphs 3-4 and 3-5.

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

44. SLIDE RAIL ASSEMBLY
45. CATCH WIRE
46. CLIP
51. SUPPORT ROD (2)
53. DRIVE LOCKPIN (4)
54. FLAT WASHER (4)
55. RUBBER WASHER (4)
56. SPRING CLIPS (2)
57. SUPPORT

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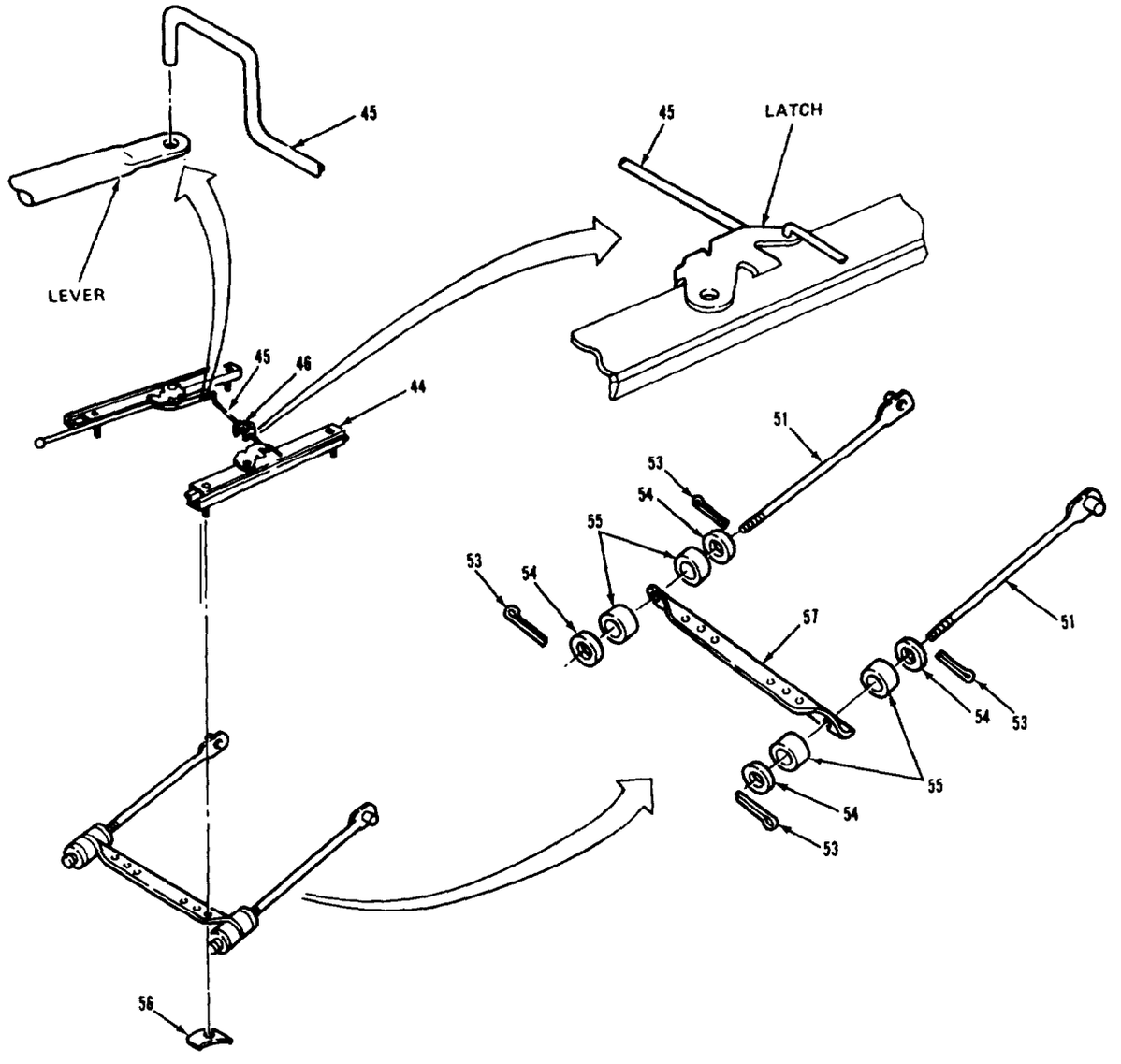
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY.		
SLIDE RAIL ASSEMBLY		
66. Two lockpins (53), washers (54), and washers (55).	Install on two items (51).	
67. Two rods (51) with attaching parts.	Install in item (57).	
68. Two washers (55), washers (54), and lockpins (53).	Install on two items (51).	Assistant helps install two items (53).
69. Support (57) with attached parts.	a. Line up two outside holes in item (57) with two studs on item (44).	Item (57) is positioned at end where lever on item (44) sticks out. This is front position for item (I).
	b. Secure with two items (56).	
70. Wire (45).	a. Install in position holes in item (44). (See illustration).	
	b. Secure with item (46).	
71. Slide rail assembly (44).	Lubricate with suitable white grease.	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

44. SLIDE RAIL ASSEMBLY
45. CATCH WIRE
46. CLIP
51. SUPPORT ROD (2)
53. DRIVE LOCKPIN (4)
54. FLAT WASHER (4)
55. RUBBER WASHER (4)
56. SPRING CLIP (2)
57. SUPPORT

TA 23857

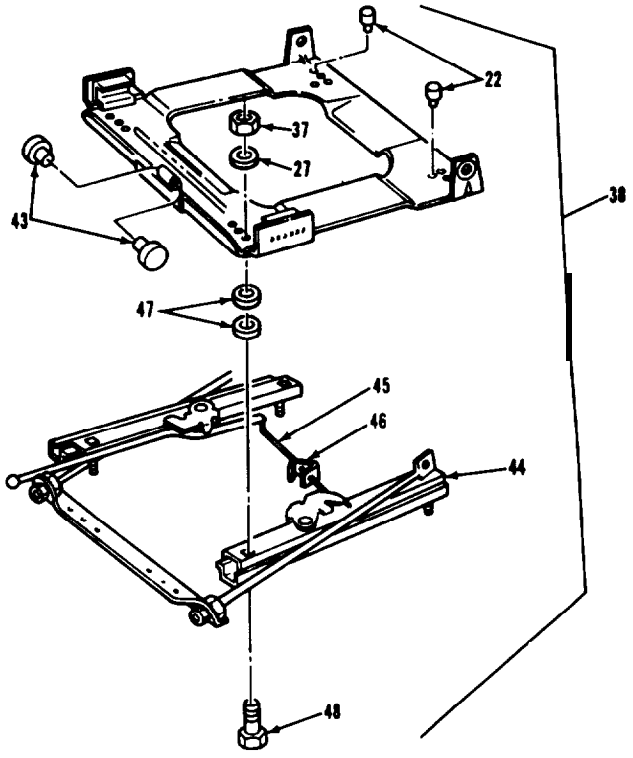
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
BASE ASSEMBLY		
	NOTE • If either flange bearing was removed, do step 72; otherwise, go to step 73. • If either bumper was removed, do step 73; otherwise, go to step 74.	
72. Two bearings (43).	Install in item (38), if necessary.	
73. Two bumpers (22).	Install in item (38), if necessary.	
	NOTE Move slide rail assembly as necessary to access mounting hardware.	
74. Eight washers (47).	Place two items (47) each over four holes in item (44).	
75. Base assembly (38)	a. Line up four holes in item (38) with four holes in item (44) and (47).	In order to line up holes between item (38) and (47), you may have to pinch item (46) closed to Slide item (45) to correct length.
	b. Secure with four items (37), (27), and (48).	
76. Slide rail assembly (44).	Check that latches on item (44) open and close together.	Adjust position of latches by pinching item (46) closed until item (45) automatically slides into position.

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

22. BOTTOM AND TOPPING BUMPER (4)
27. LOCKWASHER (12)
37. HEXAGON HEAD NUT (8)
38. BASE ASSEMBLY
43. FLANGE BEARING (2)
44. SLIDE RAIL ASSEMBLY
45. CATCH WIRE
46. CLIP
47. WASHER (8)
48. HEXAGON HEAD SCREW (4)

TA 238574

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS

C. ASSEMBLY (Continued).

OUTER LEVER ASSEMBLY

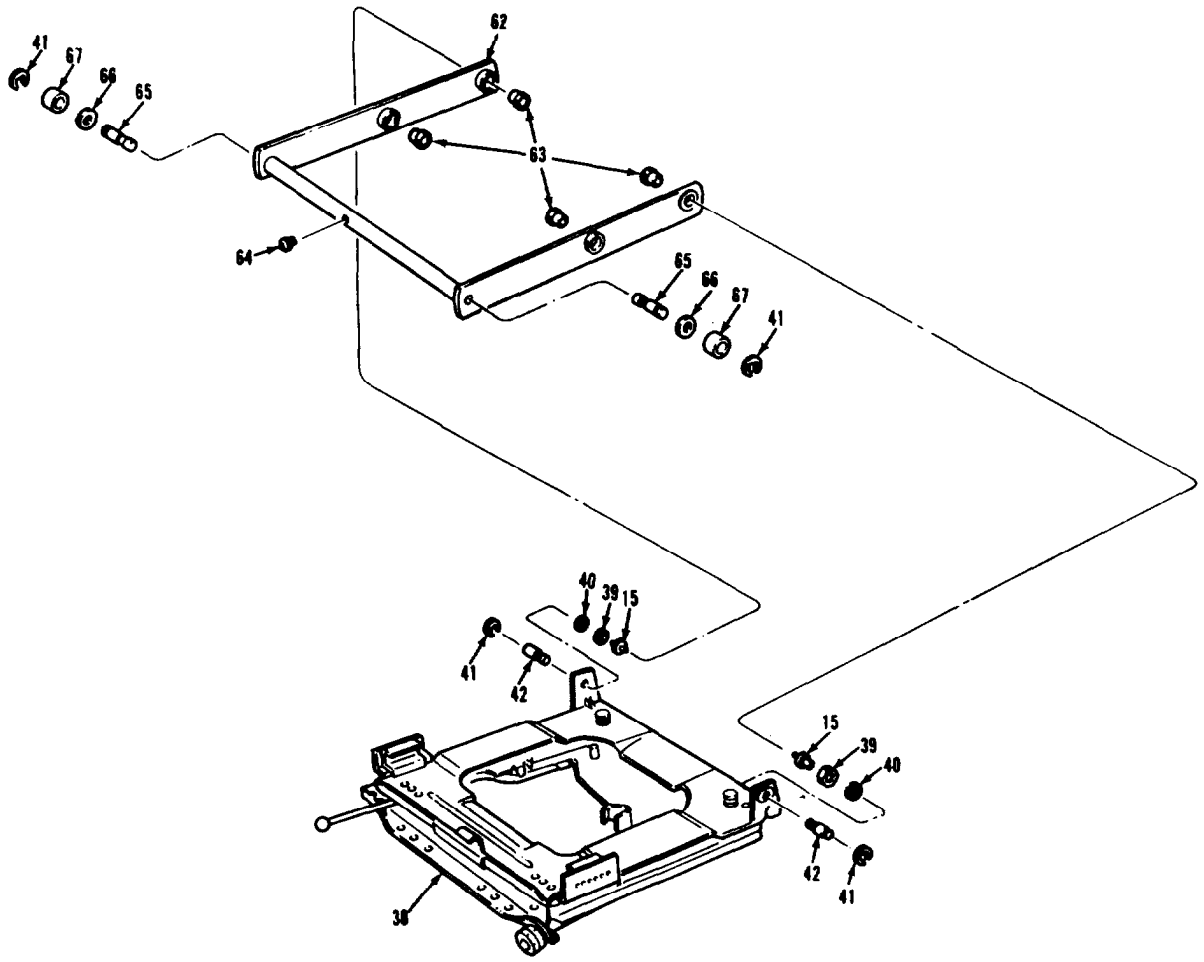
NOTE

- If any flange bearing was removed; do step 77, otherwise go to step 78.
- If any fitting was removed; do step 78 or 79, otherwise go to step 80.

77. Four bearings (63).	Install in item (62) if necessary.	
78. Fitting (64).	Install in item (62) if necessary.	
79. Two fittings (15).	Install in two items (42) if necessary.	
80. Two pins (65).	Install in item (62).	
81. Two washers (66) and roller and bearing assemblies (67).	a. Install on two items (65). b. Secure with two items (41).	
82. Outer lever assembly (62).	Line up two rear holes in item (62) with two rear holes in item (38).	
83. Two studs (42).	a. Install in item (38) and (62). b. Secure with two items (39), (40), and (41).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

15. SHANK LUBRICATION FITTING (8)
38. BASE ASSEMBLY
39. HEXAGON HEAD LOCKNUT (6)
40. LOCKWASHER (6)
41. SNAPRING (10)
42. STUD (6)
62. OUTER LEVER ASSEMBLY
63. FLANGE BEARING (4)
64. SHANK LUBRICATION FITTING
65. DRIVE PIN (2)
66. WASHER (4)
67. ROLLER AND BEARING ASSEMBLY (2)

TA 238575

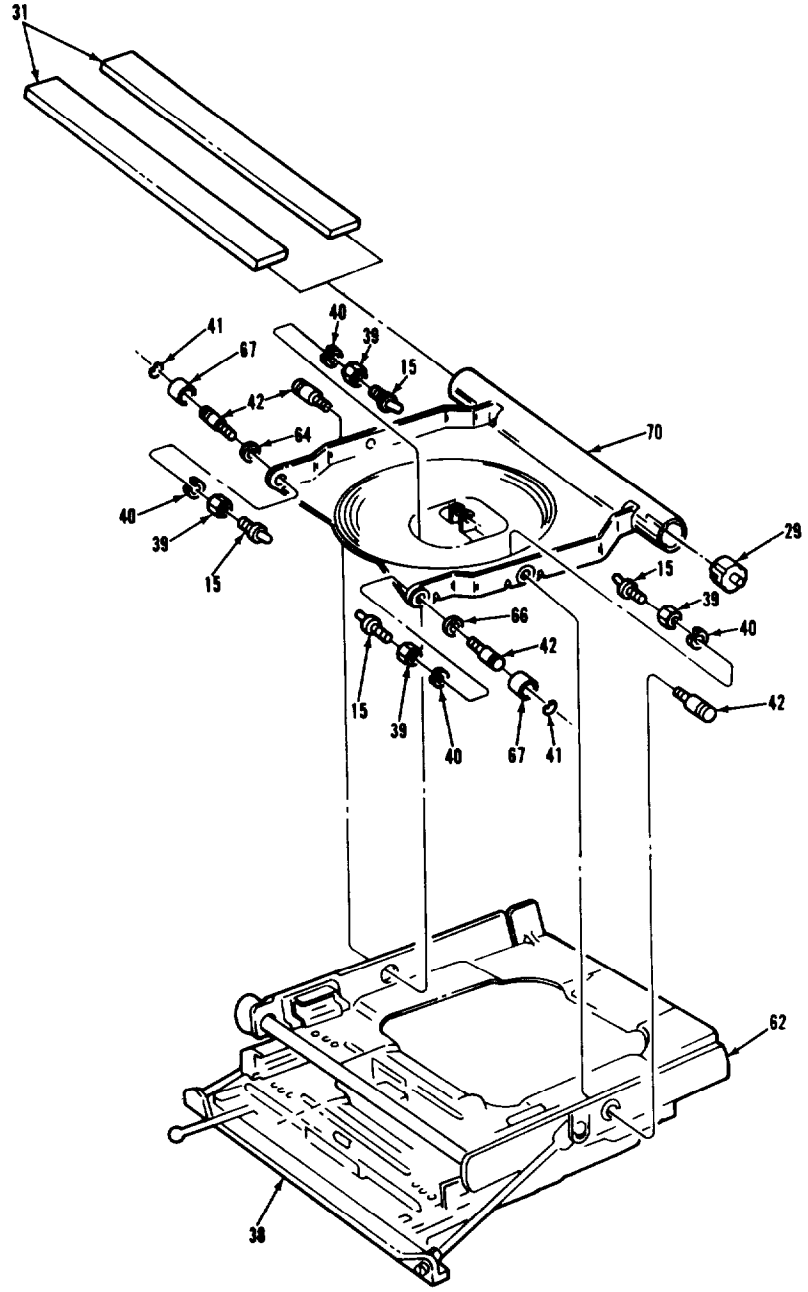
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
CENTER SUPPORT ASSEMBLY		
	NOTE If any fitting was removed; do step 84, otherwise go to step 85.	
84. Four fittings (15).	Install in four items (42), if necessary.	
85. Two studs (42).	Install in item (70).	
86. Two washers (66) and roller and bearing assemblies (67).	a. Install on two items (42). b. Secure with two items (39), (40), and (41).	
87. Center support assembly (70).	a. Slide into two channels in item (38). b. Line up two center holes in item (70) with two center holes in item (62). c. Place two items (42) in two center holes in items (70) and (62). d. Secure with two items (39) and (40).	
88. Bar set (31).	a. Liberally lubricate with suitable white grease. b. Install in item (70).	
89. Retainer (29).	a. Line up slot in item (29) with item (31). b. Install in item (70).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

15. SHANK LUBRICATION FITTING (8)
29. TORSION BAR RETAINER
31. TORSION BAR SET (1-SET)
38. BASE ASSEMBLY
39. HEXAGON HEAD LOCKNUT (6)
40. LOCKWASHER (6)
41. SNAPRING (10)
42. STUD (6)
62. OUTER LEVER ASSEMBLY
66. WASHER (4)
67. ROLLER AND BEARING ASSEMBLY (2)
70. CENTER SUPPORT ASSEMBLY

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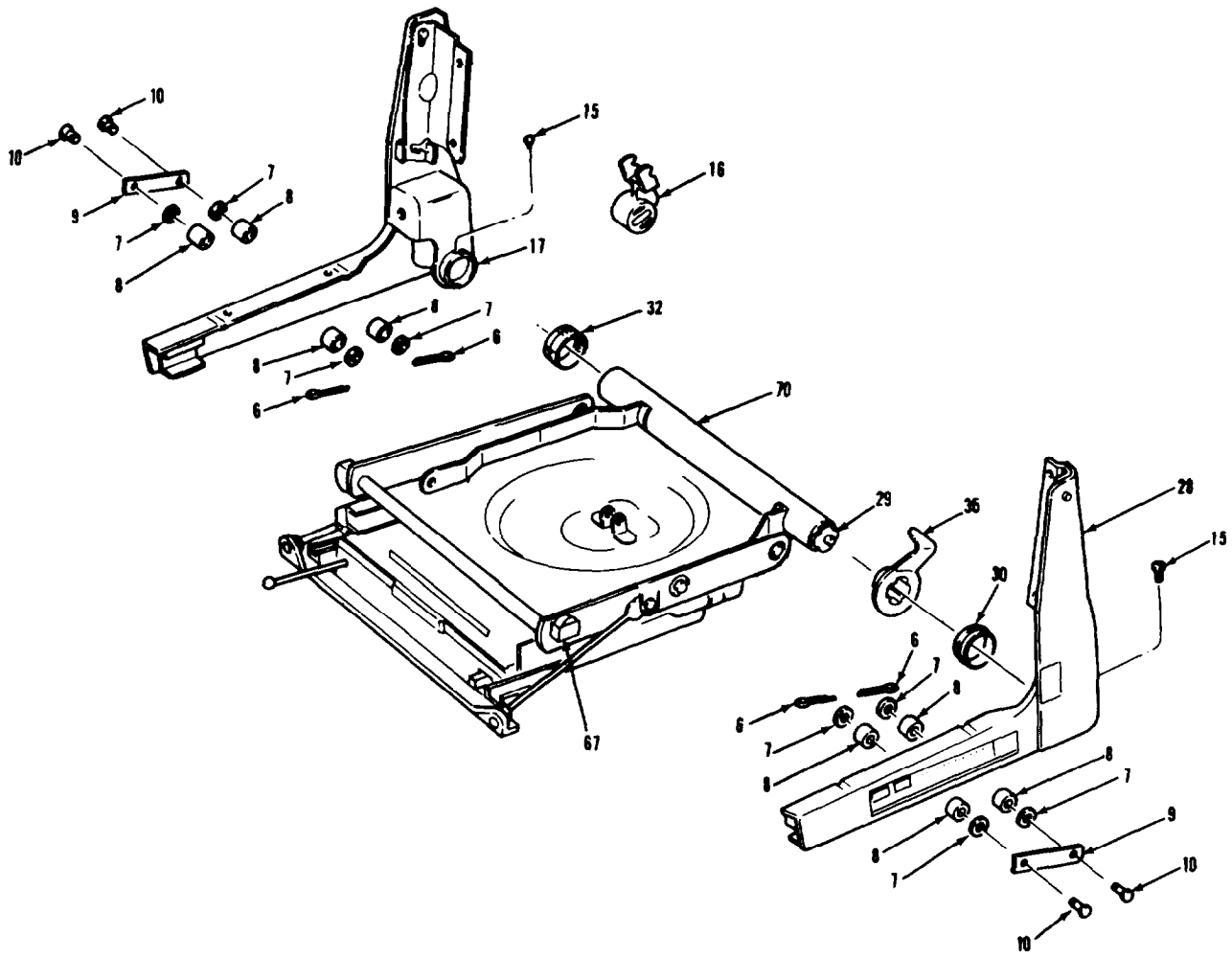
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
SIDE PANEL ASSEMBLIES		
	NOTE If any fitting was removed; do step 90, otherwise go to step 91.	
90. Two fittings (15).	Install one item (15) each in either item (17) or item (28).	
91. Two pins (10). rail (9), and washers (7) and (8).	a. Install on item (17). b. Secure with two items (6).	Assistant helps with installation.
92. Bearing (32).	a. Lubricate with suitable white grease. b. Install in item (17).	
93. Yoke (16).	Install in item (17).	
94. Panel asssembly (17) and yoke (16).	a. Line up item (31) with slot in item (16). b. Push item (17) in place on items (70) and (67).	Be sure that item (31) does not come out of item (29). Assistant holds item (16) until item (17) is in place.
95. Two pins (10), rail (9), and four washer (7) and (8).	a. Install on item (28). b. Secure with two items (6).	Assistant helps with installation.
96. Indicator (35).	Slide on item (70).	Position pointer forward.
97. Bearing (30).	a. Lubricate with suitable white grease. b. Install in item (28).	
98. Panel assembly (28).	Push in place on items (70) and (67).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

6. COTTER PIN (4)
7. FLAT WASHER (4)
8. RUBBER WASHER (8)
9. SLIDE RAIL (2)
10. HEADED PIN (4)
15. SHANK LUBRICATION FITTING (8)
16. ADJUSTER YOKE
17. RIGHT-HAND SIDE PANEL ASSEMBLY
28. LEFT-HAND SIDE PANEL ASSEMBLY
29. TORSION BAR RETAINER
30. LEFT-HAND HOUSING BEARING
31. TORSION BAR SET (1-SET)
32. RIGHT-HAND HOUSING BEARING
35. RIDE POSITION INDICATOR
67. ROLLER AND BEARING ASSEMBLY
70. CENTER SUPPORT ASSEMBLY

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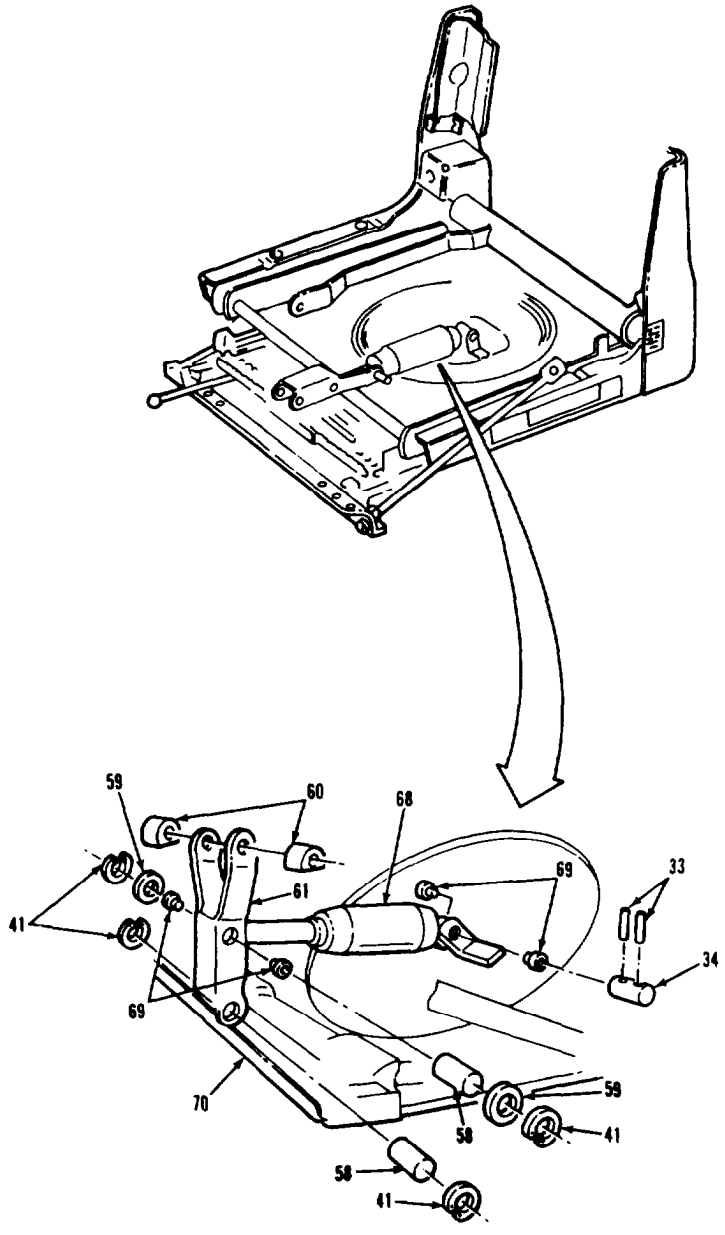
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
SHOCK ABSORBER ASSEMBLY		
	NOTE If any shock absorber flange bearing was removed; do step 99, otherwise go to step 100.	
99. Four bearings (69).	Install in item (68) if necessary.	
100. Shock absorber assembly (68).	a. Line up hole in item (68) with holes in item (70). b. Install together with item (34). c. Secure item (34) with two items (33).	
101. Shock lever assembly (61).	a. Line up hole in item (61) with holes in item (68). b. Install together with one item (58). c. Secure with two items (59) and (41).	
102. Two rollers (60).	Install on item (61).	
103. Shock lever assembly (61).	a. Line up hole in item (61) with holes in item (70). b. Install together with one item (58). c. Secure with two items (41).	

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

33. ROLL PIN (2)
34. SHOCK ABSORBER HINGE SHAFT
41. SNAPRING (10)
58. SHOCK ABSORBER HINGE SHAFT (2)
59. FLAT WASHER (2)
60. NYLON ROLLER (2)
61. SHOCK LEVER ASSEMBLY
68. SHOCK ABSORBER ASSEMBLY
69. FLANGE BEARING (4)
70. CENTER SUPPORT ASSEMBLY

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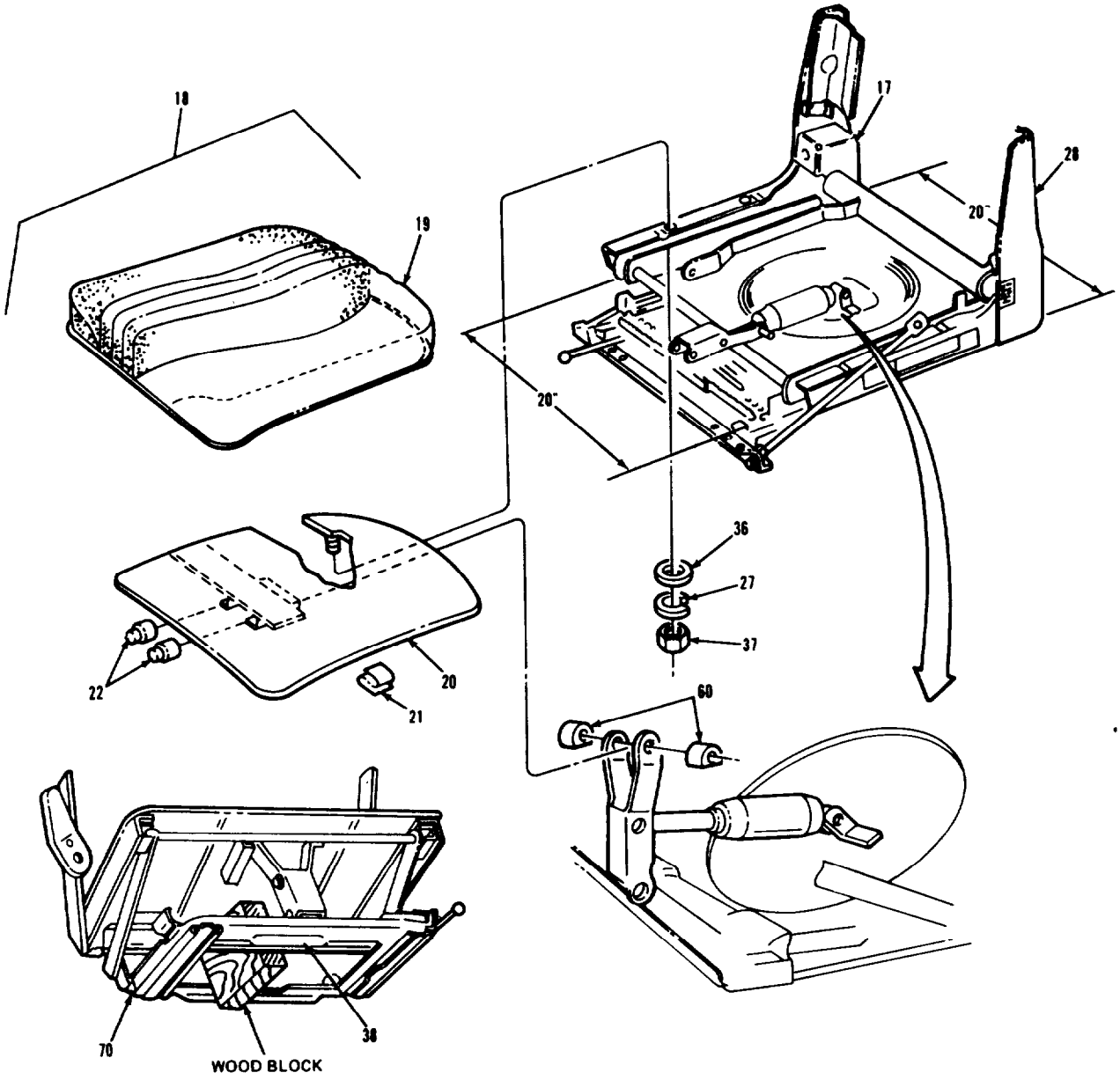
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
SEAT CUSHION ASSEMBLY		
104. Two inch-by-four inch wood block.	Place between torsion bar housing on item (70) and item (38) at rear of item (1).	Block should be no more than 3-inches high to allow item (1) to drop l-inch so that item (18) may be installed.
	NOTE If bumpers were removed; do step 105, otherwise go to step 106.	
105. Two bumpers (22).	Install in channel on item (20) if necessary.	
106. Six clips (21).	Install on item (20).	
107. Seat cushion cover assembly (19).	a. Install on item (20). b. Secure with six items (21).	
108. Seat cushion assembly (18).	a. Slide on two items (60). b. Lower studs in item (18) into holes in item (17) and (28).	
	c. Measure distance between item (17) and (28) at both front and rear ends. Distance between item (17) and (28) should be 20-inches. (See illustration).	Assistant helps adjust item (17) and (28) in order to maintain 20-inch measurement.
	d. Secure with four items (37), (27), and (36).	Assistant holds items (17) and (28) in order to maintain 20-inch measurement when securing item (18).

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

1. DRIVER'S SEAT ASSEMBLY
17. RIGHT-HAND SIDE PANEL ASSEMBLY
18. SEAT CUSHION ASSEMBLY
19. SEAT CUSHION COVER ASSEMBLY
20. SEAT CUSHION PAN
21. CUSHION FASTENER CLIP (12)
22. BOTTOM AND TOPPING BUMPER (4)
27. LOCKWASHER (12)
28. LEFT-HAND SIDE PANEL ASSEMBLY
36. WASHER (4)
37. HEXAGON HEAD NUT (8)
38. BASE ASSEMBLY
60. NYLON ROLLER (2)
70. CENTER SUPPORT ASSEMBLY

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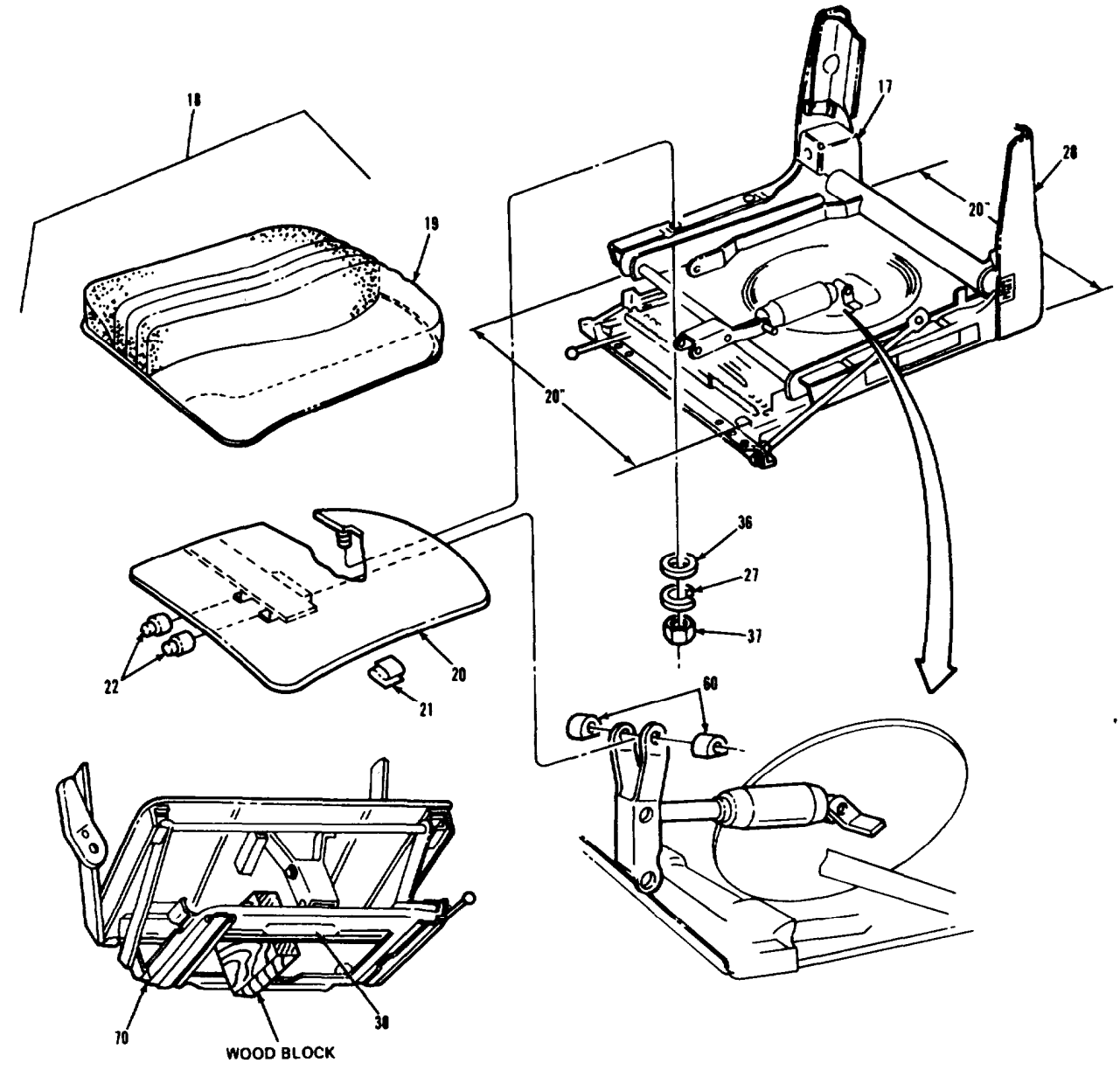
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
	NOTE If bearings were removed; do step 109, otherwise go to step 110.	
109. Two bearings (50).	Install in two items (52), if necessary.	
110. Two channels (52).	Install on two items (9).	
111. Two rods (51).	a. Install in two items (52). b. Secure with two items (49).	
BACK CUSHION ASSEMBLY		
112. Six clips (21).	Install on item (24).	
113. Back cushion cover assembly (25).	a. Install on item (24). b. Secure with six items (21).	
114. Back cushion assembly (23).	a. Line up holes in item (23) with holes in items (17) and (28). b. Secure with four items (26) and (27).	Be sure backrest angle brackets are in proper position.

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

1. DRIVER'S SEAT ASSEMBLY
17. RIGHT-HAND SIDE PANEL ASSEMBLY
18. SEAT CUSHION ASSEMBLY
19. SEAT CUSHION COVER ASSEMBLY
20. SEAT CUSHION PAN
21. CUSHION FASTENER CLIP (12)
22. BOTTOM AND TOPPING BUMPER (4)
27. LOCKWASHER (12)
28. LEFT-HAND SIDE PANEL ASSEMBLY
36. WASHER (4)
37. HEXAGON HEAD NUT (8)
38. BASE ASSEMBLY
60. NYLON ROLLER (2)
70. CENTER SUPPORT ASSEMBLY

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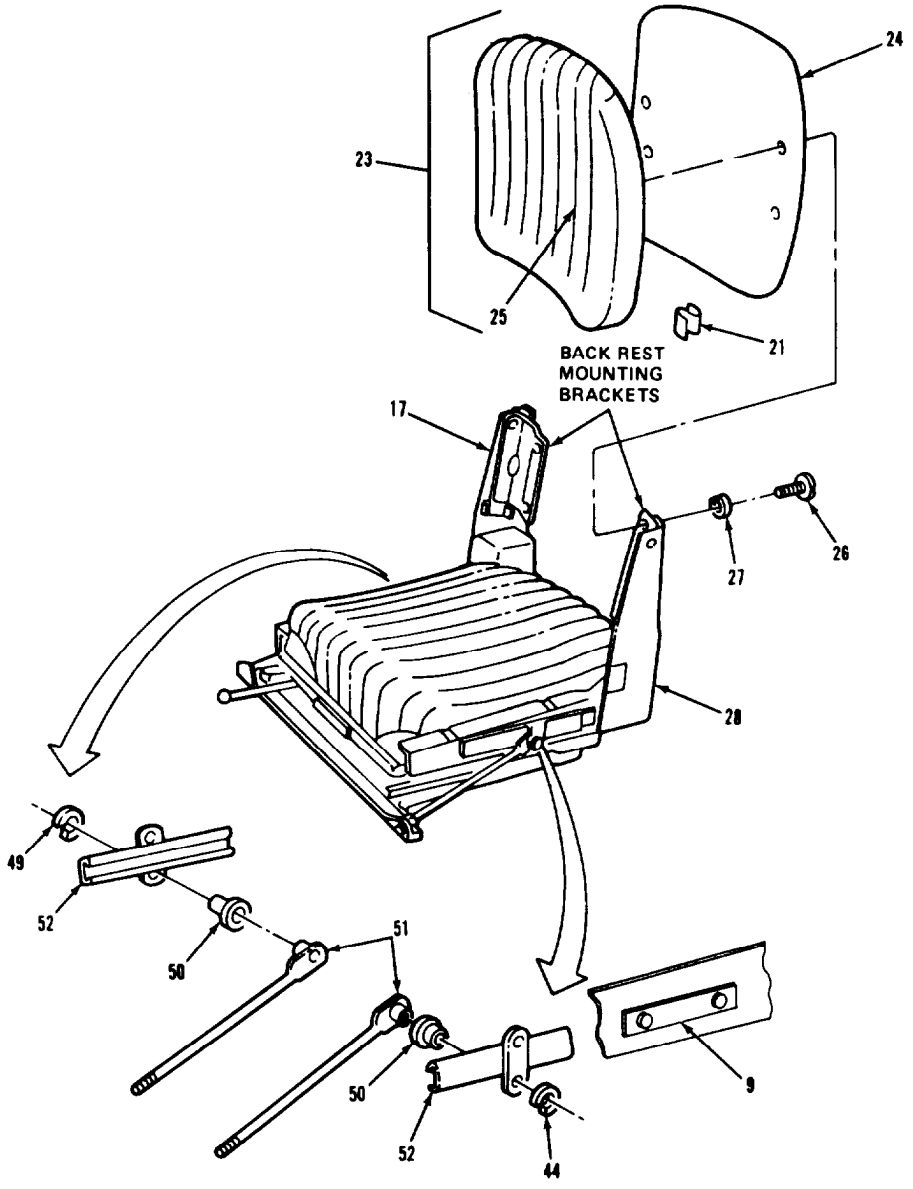
CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
	NOTE If bearings were removed; do step 109, otherwise go to step 110.	
109. Two bearings (50).	Install in two items (52), if necessary.	
110. Two channels (52).	Install on two items (9).	
111. Two rods (51).	a. Install in two items (52). b. Secure with two items (49).	
BACK CUSHION ASSEMBLY		
112. six clips (21).	Install on item (24).	
113. Back cushion cover assembly (25).	a. Install on item (24). b. Secure with six items (21).	
114. Back cushion assembly (23).	a. Line up holes in item (23) With holes in items (17) and (28). b. Secure with four items (26) and (27).	Be sure backrest angle brackets are in proper position.

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).



LEGEND:

9. SLIDE RAIL (2)
17. RIGHT-HAND SIDE PANEL ASSEMBLY
21. CUSHION FASTENER CLIP (12)
23. BACK CUSHION ASSEMBLY
24. BACK CUSHION PAN
25. BACK CUSHION COVER ASSEMBLY
26. FILLISTER-PHILLIPS HEAD SCREW (4)
27. LOCKWASHER (12)
28. LEFT-HAND SIDE PANEL ASSEMBLY
49. SNAPRING (2)
50. BRONZE OILITE BEARING (2)
51. SUPPORT ROD (2)
52. SLIDE CHANNEL (2)

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CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
PLACE PRELOAD TENSION ON TORSION BARS		
115. Spring (5).	Install on item (3).	
116. Bearing (11) and washer (12).	Install on item (3).	
117. Lever assembly (3) with attached parts.	Install in item (17).	
118. Washer (13).	Install on item (3).	
119. Pin (14).	a. Set in position in item (16).	Assistant helps install item (14).
	b. Rotate item (2) clockwise to thread item (14) onto item (3).	Thread item (14) onto item (3) far enough to install item (4).
	c. Secure with item (4).	
120. Wood block.	Remove.	
121. Eight fittings (15) and one fitting (64).	Lubricate, using grease gun.	Refer to LO 9-2320-283-12.

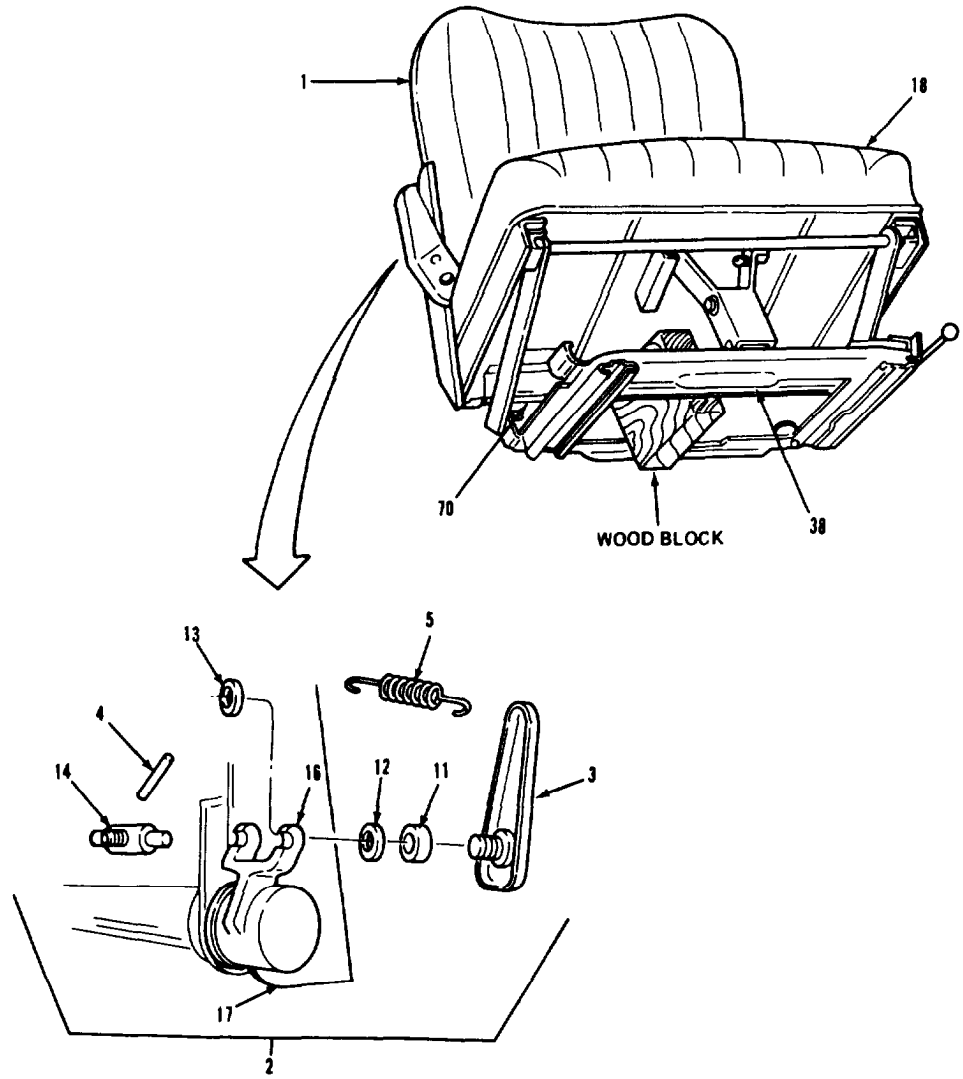
NOTE

Follow-on maintenance action required:

Install driver's seat (TM 9-2320-283-20).

CAB AND BODY.

3-117. DRIVER'S SEAT REPAIR (Continued),



LEGEND:

2. ADJUSTER SCREW AND LEVER ASSEMBLY
3. LEVER ASSEMBLY
4. DRIVE PIN
5. TENSION SPRING
11. THRUST BALL BEARING
12. FLAT WASHER
13. WASHER
14. ADJUSTER PIN
15. SHANK LUBRICATION FITTING (8)
16. ADJUSTER YOKE
17. RIGHT-HAND SIDE PANEL ASSEMBLY
64. SHANK LUBRICATION FITTING

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CAB AND BODY.

3-118. COMPANION SEAT REPAIR.

THIS TASK COVERS

a. Disassembly.
b. Cleaning and Inspection.
c. Assembly.

INITIAL SETUP

APPLICABLE CONFIGURATIONS	EQUIPMENT CONDITION PARAGRAPH	CONDITION DESCRIPTION
All.	TM 9-2320-283-20.	Seat removed from vehicle.

TEST EQUIPMENT
None.

SPECIAL TOOLS
None.

MATERIALS/PARTS (P/N)
Tape, pressure sensitive, adhesive
Item 34, Appendix B.
Rags, wiping
Item 26, Appendix B.
Solvent, drycleaning, SD-2
Item 31, Appendix B.

PERSONNEL REQUIRED
One (M0S-63W).

SPECIAL ENVIRONMENTAL CONDITIONS
None.

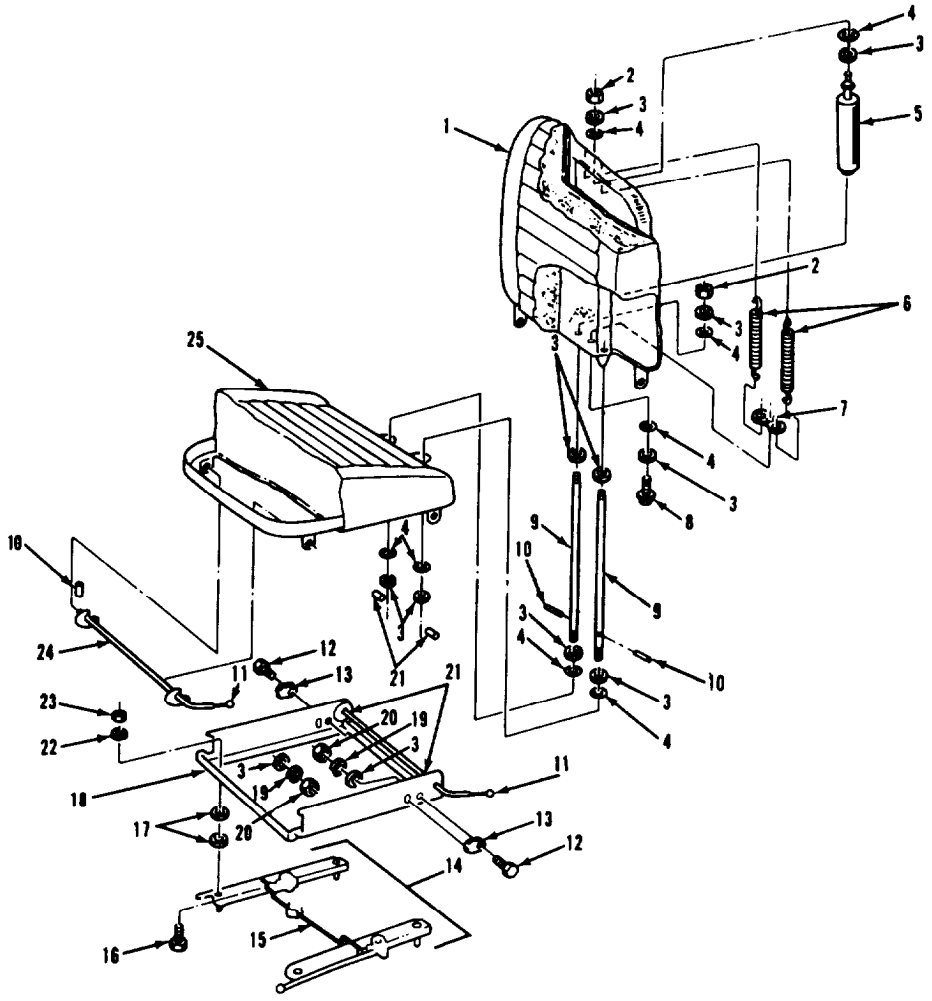
REFERENCES (TM)
TM 9-2320-283-20.

GENERAL SAFETY INSTRUCTIONS
None.

TROUBLESHOOTING REFERENCES
None.

CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).



LEGEND:

1. SEAT BACK ASSEMBLY
2. HEX NUT (2)
3. FLAT WASHER (12)
4. RUBBER WASHER (8)
5. SHOCK ABSORBER
6. SPRING (2)
7. SPRING ADJUSTER ASSEMBLY
8. HEX HEAD SCREW
9. PAN CONNECTING ROD (2)
10. DRIVE PIN (3)
11. PLASTIC KNOB (2)
12. HEX HEAD SCREW (2)
13. CLIP (2)
14. SLIDE RAIL ASSEMBLY
15. LATCH WIRE ASSEMBLY
16. HEX HEAD SCREW (4)
17. FLAT WASHER (8)
18. MOUNTING BASE ASSEMBLY
19. LOCKWASHER (2)
20. HEX NUT (2)
21. DRIVE PIN (4)
22. LOCKWASHER (4)
23. HEX NUT (4)
24. SEAT CUSHION ADJUSTER ASSEMBLY
25. SEAT BOTTOM ASSEMBLY

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CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).

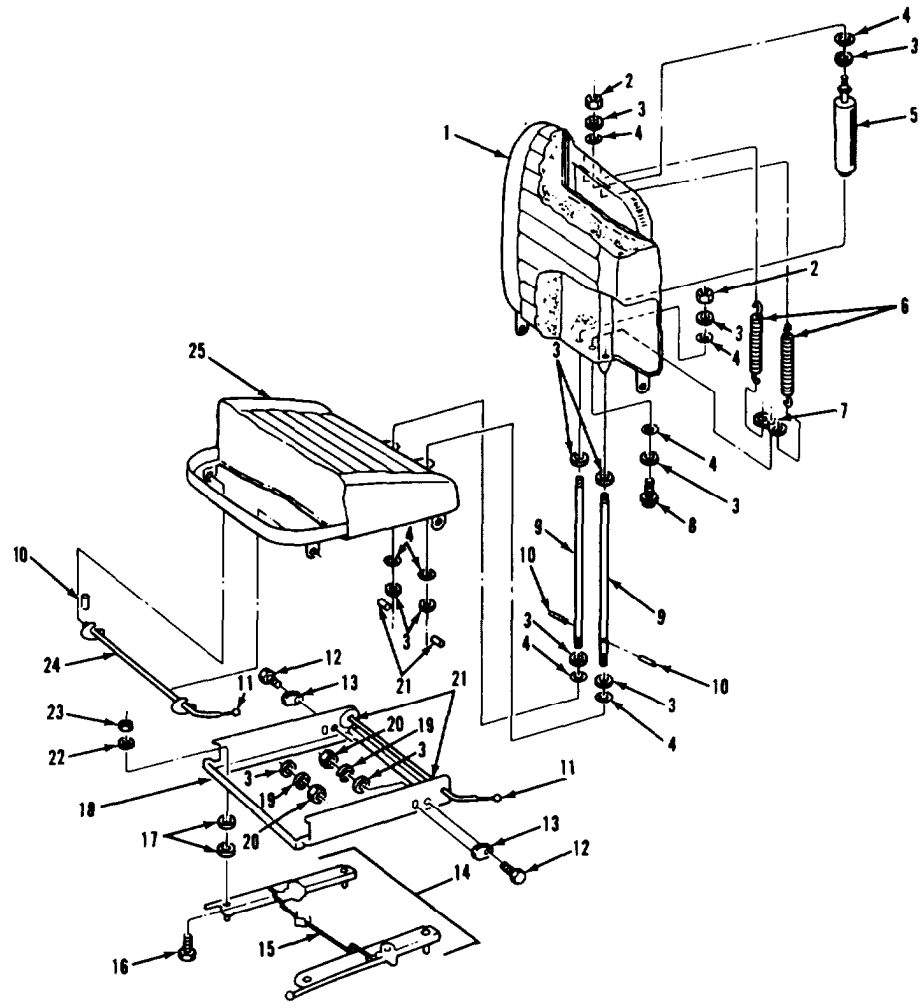
LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY.		
1. Two pins (21), washers (3), and washers (4).	Remove from two items (9).	
2. Two screws (12), clips (13), washers (3), lockwashers (19) and nuts (20).	Remove from items (1) and (18).	
3. Seat back assembly (1).	a. Lift from item (25).	Two items (3) and items (4) will fall off two items (9).
	b. Open zipper on back of item (1).	
4. Two springs (6).	Unhook from item (7) and item (1).	
5. Two nuts (2) and washers 3) washers [4).	Remove from item (5).	
6. Shock absorber (5).	a. Remove from item (1).	
	b. Remove item (4) and (3) from item (5).	
7. Two pins (10).	Remove from two items (9).	
8. Two rods (9) and two washers (3).	Remove from item (1).	
9. Screw (8), washer (3), and washer (4).	a. Remove from item (7).	
	b. Remove item (7) from item (1).	

NOTE

Do not attempt to disassemble seat back assembly. Seat back assembly should be sent to a qualified upholsterer for repair.

CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).



LEGEND:

1. SEAT BACK ASSEMBLY
2. HEX NUT (2)
3. FLAT WASHER (12)
4. RUBBER WASHER (8)
5. SHOCK ABSORBER
6. SPRING (2)
7. SPRING ADJUSTER ASSEMBLY
8. HEX HEAD SCREW
9. PAN CONNECTING ROD (2)
10. DRIVE PIN (3)
12. HEX HEAD SCREW (2)
13. CLIP (2)
18. MOUNTING BASE ASSEMBLY
19. LOCKWASHER (2)
20. HEX NUT (2)
21. DRIVE PIN (4)
25. SEAT BOTTOM ASSEMBLY

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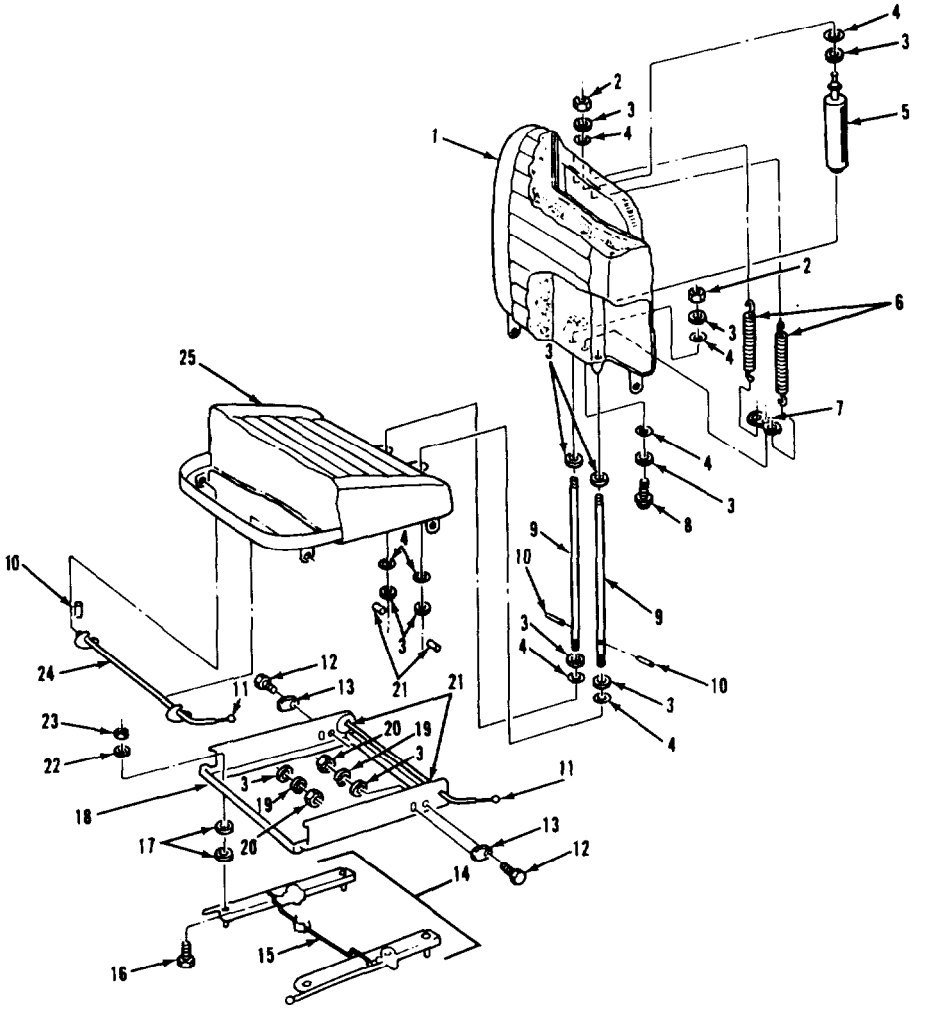
CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
A. DISASSEMBLY (Continued).		
10. Seat bottom assembly (25).	Lift off item (18).	
11. Knob (11).	Remove from item (24).	
12. Pin (10).	Remove from item (24).	
13. Seat cushion adjuster assembly (24).	Remove from item (25).	
	NOTE Do not attempt to disassemble seat bottom assembly. Seat bottom assembly should be sent to a qualified upholsterer for repair.	
14. Four screws (16), eight washers (17), four lockwashers (22), and four nuts (23).	Remove from item (18) and item (14).	
15. Mounting base assembly (18).	Lift from item (14).	
16. Knob (11).	Remove from item (18).	
17. Two pins (21).	Remove from item (18).	
B. CLEANING AND INSPECTION.		
18. All parts.	a. Clean with drycleaning solvent and rags.	Refer to paragraph 3-4.
	b. Inspect.	a. Replace all damaged parts. b. If item (1) or item (25) is bad, send to a qualified upholsterer for repair. c. Refer to paragraph 3-5.

CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).



LEGEND:

1. SEAT BACK ASSEMBLY
10. DRIVE PIN (3)
11. PLASTIC KNOB (2)
14. SLIDE RAIL ASSEMBLY
16. HEX HEAD SCREW (4)
17. FLAT WASHER (8)
18. MOUNTING BASE ASSEMBLY
21. DRIVE PIN (4)
22. LOCKWASHER (4)
23. HEX NUT (4)
24. SEAT CUSHION ADJUSTER ASSEMBLY
25. SEAT BOTTOM ASSEMBLY

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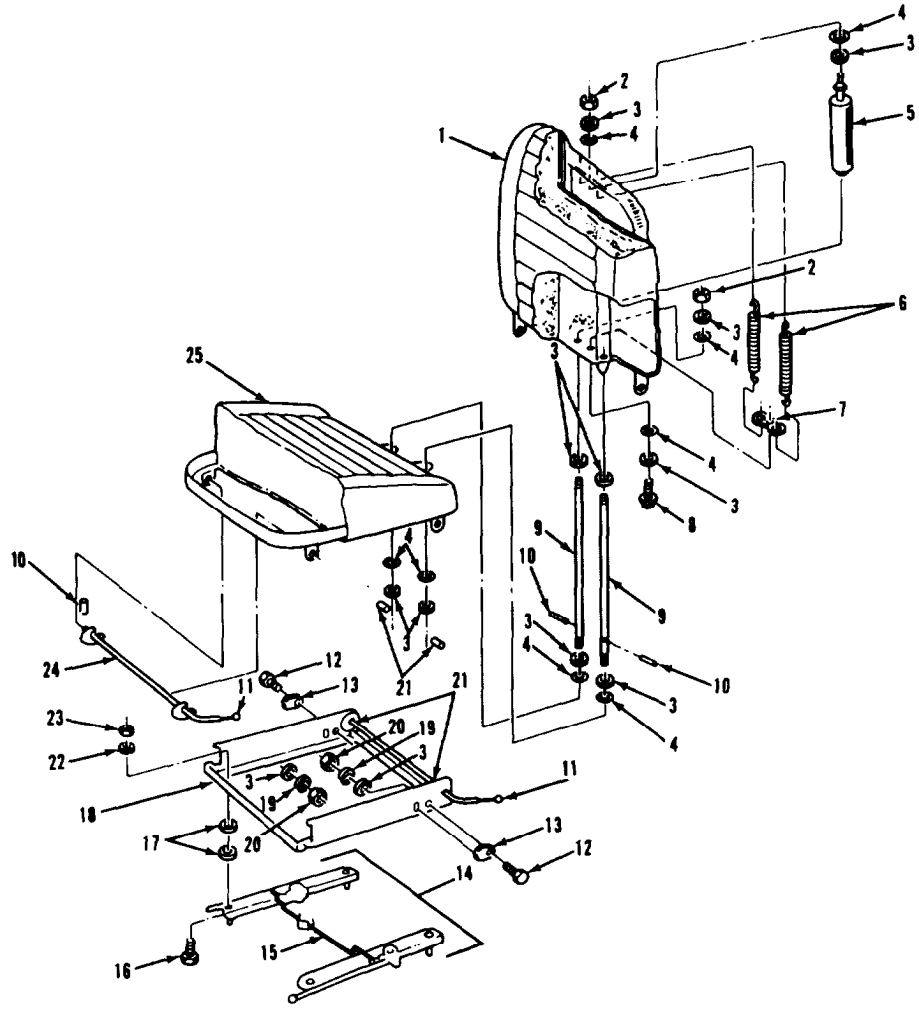
CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY.		
19. Two pins (21).	Install in item (18).	
20. Knob (11).	Slide on item (18).	
21. Base (18).	Position on item (14).	Be sure item (15) is in position.
22. Four screws (16), eight washers (17). four lock-washers (22), and four nuts (23).	Secure item (18) to item (14).	
23. Adjuster (24).	Slide in item (25).	
24. Pin (10).	Install in item (24).	
25. Knob (11).	Slide on item (24).	
26. Two clips (13).	Place in item (18).	
27. Seat bottom assembly (25).	Place on item (18).	
28. Adjuster (7).	Place in item (1).	
29. Screw (8) and washers (3) and (4).	Screw into item (7).	Screw in only part way. Do not tighten.
30. Two rods (9).	Slide in items (1) and (7).	
31. Two washers (3).	Slide on two items (9).	
32. Two pins (10).	Install in two items (9).	
33. Washers (3) and (4).	Slide on item (5).	
34. Shock absorber (5).	Place in items (1) and (7).	
35. Two washers (4) and (3), and nuts (2).	Secure item (5) to items (1) and (7).	

CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).



LEGEND:

1. SEAT BACK ASSEMBLY
2. HEX NUT (2)
3. FLAT WASHER (12)
4. RUBBER WASHER (8)
5. SHOCK ABSORBER
7. SPRING ADJUSTER ASSEMBLY
8. HEX HEAD SCREW
9. PAN CONNECTING ROD (2)
10. DRIVE PIN (3)
11. PLASTIC KNOB (2)
13. CLIP (2)
14. SLIDE RAIL ASSEMBLY
15. LATCH WIRE ASSEMBLY
16. HEX HEAD SCREW (4)
17. FLAT WASHER (8)
18. MOUNTING BASE ASSEMBLY
21. DRIVE PIN (4)
22. LOCKWASHER (4)
23. HEX NUT (4)
24. SEAT CUSHION ADJUSTER ASSEMBLY
25. SEAT BOTTOM ASSEMBLY

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CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).

LOCATION/ITEM	ACTION	REMARKS
C. ASSEMBLY (Continued).		
36. Two springs (6).	Hook to item (1) and item (7).	
37. Two washers (3) and washers (4).	Slide on two items (9).	Use tape to hold in place.
38. Seat back assembly (1).	a. Place on item (25) and item (18).	
	b. Close zipper on back of item (1).	
39. Two screws (12), washers (3), lockwashers (19), and nuts (20).	Secure item (1) to item (18).	
40. Two washers (4) and washers (3).	Slide on two items (9).	
41. Two pins (21).	Install in two items (9).	

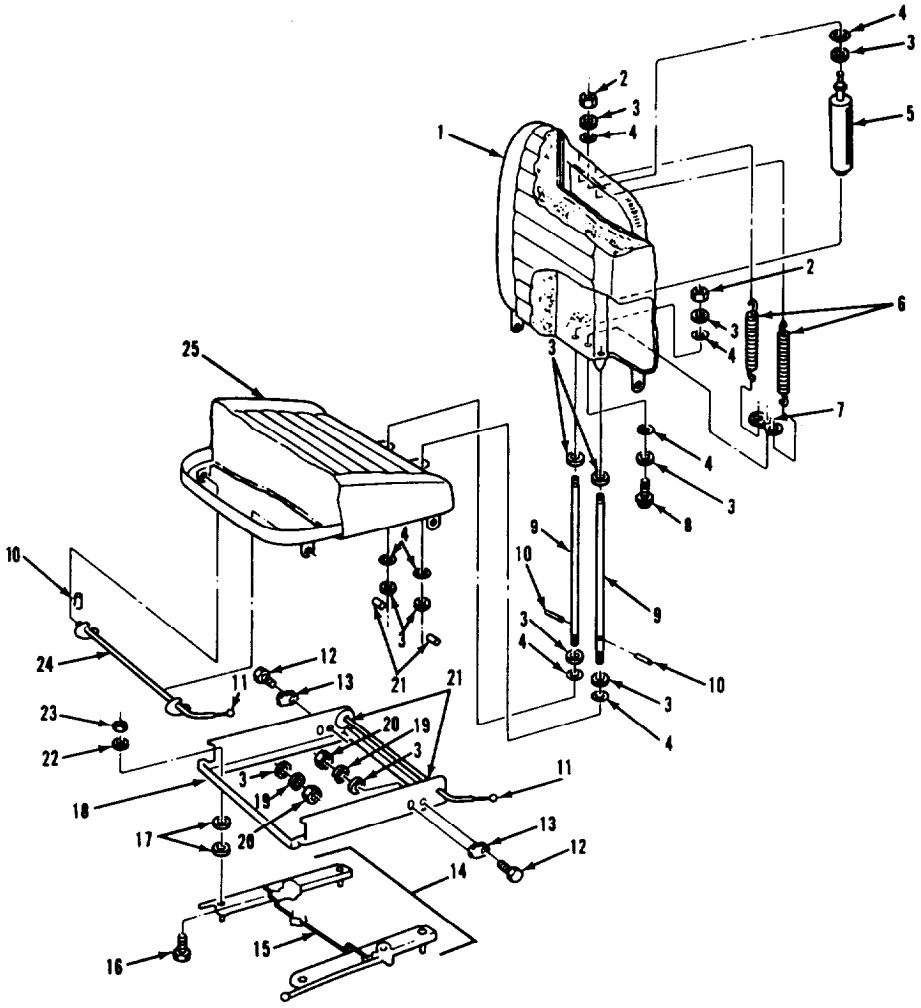
NOTE

Follow-on maintenance action required:

Install companion seat (TM 9-2320. 283-20).

CAB AND BODY.

3-118. COMPANION SEAT REPAIR (Continued).



LEGEND:

1. SEAT BACK ASSEMBLY
3. FLAT WASHER (12)
4. RUBBER WASHER (8)
6. SPRING (2)
7. SPRING ADJUSTER ASSEMBLY
9. PAN CONNECTING ROD (2)
18. MOUNTING BASE ASSEMBLY
21. DRIVE PIN (4)
25. SEAT BOTTOM ASSEMBLY

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APPENDIX A

REFERENCES

A-1. PUBLICATION INDEXES AND GENERAL REFERENCES.

Indexes should be consulted frequently for latest changes or revisions of references given in this appendix and for new publications relating to material covered in this publication.

a. Military Publication Indexes.

Consolidated Index of Army Publications and Blank Forms	DA PAM 310-1
Index of Army Motion Pictures and Related Audiovisual Aids	DA PAM 108-1
U S Army Equipment Index of Modification Work Orders	DA PAM 750-10

b. General References.

Catalog of Abbreviations and Brevity Codes	AR 310-50
How to Prepare and Conduct Military Training	FM 21-6
Military Symbols	FM 21-30

A-2. FORMS.

Refer to TM 38-750, The Army Maintenance Management System (TAMMS), for instructions on the use of maintenance forms pertaining to the materials.

A-3. OTHER PUBLICATIONS.

The following publications contain information pertinent to the major item material and associated equipment.

A-3. OTHER PUBLICATIONS (Continued).

a. Vehicle.

Lubrication Order, Truck Tractor, M915A1 . . . . . LO 9-2320-283-12

Operator's Manual, Truck Tractor, M915A1 . . . . . TM 9-2320-283-10

Hand Receipt Manual, Truck Trackor, M915A1 . . . . . TM 9-2320-283-10HR

Organizational Maintenance, Truck Tractor, M915A1 . . . . . TM 9-2320-283-20

Organizational Maintenance Repair Parts and Special Tools List, Truck Tractor, M915A1 . . . . . TM 9-2320-283-20P

Direct and General Support Repair Parts and Special Tools List, Truck Tractor, M915A1 . . . . . TM 9-2320-283-34P

Direct and General Support Maintenance (Including Repair Parts and Special Tools List), Engine, Diesel, NTC 400 . . . . . TM 9-2815-225-34&P

b. Camouflage.

Camouflage . . . . . FM 5-20

c. Decontamination.

Chemical, Biological, and Radiological (CBR) Decontamination . . . . . TM 3-220

NBC (Nuclear, Biological, and Chemical) Defense . . . . . FM 21-40

d. General.

Basic Cold Weather Manual . . . . . FM 31-70

Cooling System: Tactical Vehicles . . . . . TM 750-254

Manual for Wheeled Vehicle Driver . . . . . FM 21-305

Northern Operations . . . . . FM 31-71

Operation and Maintenance of Ordnance Material in Extreme Cold Weather (0° to -65°F) . . . . . TM 9-207

Principles of Automotive Vehicles . . . . . TM 9-8000

Prevention of Motor Vehicle Accidents . . . . . AR 385-55

Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use . . . . . TM 750-244-6

A-3. OTHER PUBLICATIONS (Continued).

e. Maintenance and Repair.

Organizational, Direct Support, and General Support Maintenance Manual Standards for Inspection and Classification of Tracks, Track Components and Solid Rubber Tires (FSC 2530)	TM 9-2530-200-24
Standards and Criteria for Technical Inspection and Classification of Tires (FSC 2610)	TM 9-2610-201-14
Description, Use, Bonding Techniques, and Properties of Adhesives	TB ORD 1032
Inspection, Care, and Maintenance of Antifriction Bearings	TM 9-214
Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materials including Chemicals	TM 9-247
Metal Body Repair and Related Operations	FM 43-2
Operator's, Organizational, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries, 4HN, 24V (NSN 6140-00-059-3528) MS 75047-1; 2HN, 12V (6140-00-057-2553) MS 35000-6TN, 12V (6140-00-057-2554) MS 35000-	TM 9-6140-200-14
Painting Instructions for Field Use	TM 43-0139
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling System	TB-750-651
Welding Theory and Application	TM 9-237

f. Administrative Storage.

Administrative Storage of Equipment	TM 740-90-1

APPENDIX B

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

B-1. Scope.

This appendix lists expendable supplies and material you will need to maintain the M915A1 Truck Tractor. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

B-2. EXPLANATION OF COLUMNS.

a. Column (1) - Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use antiseize compound, Item 5, Appendix B").

b. Column (2) - Level. This colunn identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew

O - Organizational Maintenance

F - Direct Support Maintenance

H - General Support Maintenance

c. Column (3) - National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column (4) - Description. Indicates the federal item name and, if required, a description to identify the item.

e. Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	F	5350-00-221-0872	CLOTH, CROCUS P-C-458	SH
2	F		CLOTH, EMERY', 80 GRIT	SH
3	F	5390-00-524-4654	CLOTH, EMERY, 290 GRIT A-A-1049	SH
4	F		CLOTH, LINT FREE	LB
5	F	8030-00-616-7694	COMPOUND, ANTISEIZE MIL-A-907	LB
6	F	9150-00-698-2382	FLUID, AUTOMATIC TRANSMISSION, TYPE A AQATF1562A1	QT
7	C		GREASE, AUTOMOTIVE AND ARTILLERY, GAA, MIL-G-10924C	
		9150-00-065-0029	2-1/2 OZ TUBE	OZ
		9150-00-935-1017	14-OZ CARTRIDGE	OZ
		9150-00-190-0904	1-LB CAN	LB
		9150-00-190-0905	5-LB CAN	LB
		9150-00-190-0907	35-LB CAN	LB
		9150-00-190-7369	120-LB DRUM	LB
8	F		GREASE, HIGH TEMPERATURE	LB
9	F		GREASE, OIL SOLUBLE	LB
10	F		GREASE, PNEUMATIC	LB
11	F		GREASE, WHITE (SUITABLE)	LB
12	F		LOCTITE, RC601	PT
13	F		LOCTITE, NO. 2214	PT
14	F		LUBRICANT, BW 655M	PT
15	F	8010-00-837-7969	MINERAL SPIRITS TT-T-291	GAL.

SECTION II. EXPENDABLE SUPPLIES AND MATERIALS LIST (Continued).

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
16	C		OIL, LUBRICATING: DE/HDO 10 MIL-L-2104C	
		9150-00-189-6727	1-QT CAN	QT
		9150-00-186-6618	5-GAL. DRUM	GAL.
		9150-00-265-9429	55-GAL. DRUM, 16-GAGE	GAL.
		9150-00-191-2772	55-GAL. DRUM, 18-GAGE	GAL.
		9150-00-183-7807	BULK	GAL.
17	C		OIL, LUBRICATING: OE/HDO 30 MIL-L-2104C	
		9150-00-186-6681	1-QT CAN	QT
		9150-00-188-9858	5-GAL. DRUM	GAL.
		9150-00-265-9436	55-GAL. DRUM, 16-GAGE	GAL.
		9150-00-189-6729	55-GAL. DRUM, 18-GAGE	GAL.
		9150-00-183-7808	BULK	GAL.
18	C		OIL, LUBRICATING: OE/HDO 50 MIL-L-2104C	
		9150-00-265-9440	1-QT CAN	QT
		9150-00-265-9442	5-GAL. DRUM	GAL.
		9150-00-265-9441	55-GAL. DRUM	GAL.
19	C		OIL, LUBRICATING: ICE SUBZERO OEA, MIL-L-46167	
		9150-00-402-4478	1-QT CAN	QT
		9150-00-402-2372	5-GAL. DRUM	GAL.
		9150-00-491-7197	55-GAL. DRUM	GAL.
20	O		OIL, LUBRICATING: GEAR GO-75 MIL-L-2105C	
		9150-01-035-5390	1-QT CAN	QT
		9150-01-035-5391	5-GAL. DRUM	GAL.
21	O		OIL, LUBRICATING: GEAR GO-80/90 MIL-L-2105C	
		9150-01-035-5392	1-QT CAN	QT
		9150-01-035-5393	5-GAL. DRUM	GAL.
		9150-01-035-5394	55-GAL. DRUM	GAL.
22	O		OIL, LUBRICATING: GEAR GO-80/140, MIL-L-2105C	
		9150-01-035-5395	1-QT CAN	QT
		9150-01-035-5396	5-GAL. DRUM	GAL.
		9150-01-035-5397	55-GAL. DRUM	GAL.

SECTION II. EXPENDABLE SUPPLIES AND MATERIALS LIST (Continued).

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(3) U/M
23	O		OIL, LUBRICATING: GEAR GO-85/140, MIL-L-2105C	
			1-QT CAN	QT
			5-GAL. DRUM	GAL.
			55-GAL. DRUM	GAL.
24	O		OIL, LUBRICATING: GEAR SUBZERO, GOS, MIL-L-10324	
		9150-00-261-7904	1-QT CAN	QT
		9150-00-257-5440	5-GAL. DRUM	GAL.
		9150-00-275-5443	55-GAL. DRUM	GAL.
25	F		PAINT	GAL.
26	O	7920-00-205-1711	RAGS, WIPING, 50-POUND BALE	LB
27	F		SEALANT, SILICONE RUBBER SILASTIC	
			3-OZ TUBE	OZ
			12-OZ TUBE	OZ
28	O		SEALER, NONHARDENING	OZ
29	F	8030-00-246-0933	SEALANT, PIPE, MIL-S-15204	OZ
30	C	N/A	SOLUTION, SOAP	N/A
31	O		SOLVENT, DRYCLEANING, SD-2, FED SPEC P-D-680 TYPE II	
		6850-00-664-5685	1-QT CAN	QT
		6850-00-281-1985	1-GAL. CAN	GAL.
			5-GAL. CAN	GAL.
			55-GAL. DRUM, 16-GAGE	GAL.
			55-GAL. DRUM, 18-GAGE	GAL.
32	O		TAGS, PART	N/A
33	F		TAPE, PRESSURE SENSITIVE ADHESIVE, MASKING, l-INCH WIDE, 60 YARD ROLL	YD
35	O		TAPE, THREAD SEALING	
			50-FT ROLL, 1/4-inch wide	FT
			50-FT ROLL, 1/2-inch wide	FT

SECTION II. EXPENDABLE SUPPLIES AND MATERIALS LIST (Continued).

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
36	O	8040-00-865-8991	SEALANT, LIQUID THREAD 1-PT CAN, MIL-A-46106 1-QT CAN	PT QT
37	C		TOWELS, PAPER	N/A
38	C	6850-00-926-2275	WINDSHIELD, CLEANING COMPOUND FOR	PT
39	F		WINDOW SEALER	OZ
40	F		VARNISH	PT

APPENDIX C

ILLUSTRATED LIST OF MANUFACTURED ITEMS

An illustrated list of manufactured item is not applicable to this technical manual.

APPENDIX D

TORQUE LIMITS

USAGE	MUCH USED	MUCH USED	USED AT TIMES	USED AT TIMES
CAPSCREW DIAMETER AND MINIMUM TENSILE STRENGTH (PSI)	To l/2-69,000 To 3/4-64,000 To 1-55,000	To 3/4-120,000 To 1-115,000	To 5/8-140,000 To 3/4-133,000	150,000
QUALITY OF MATERIAL	INDETERMINATE	MINUMUM COMMERCIAL	MEDIUM COMMERCIAL	BEST COMMERCIAL
SAE GRADE NUMBER	1 or 2	5	6 or 7	8
CAPSCREW HEAD MARKINGS: Manufacturer's marks may vary. These are all SAE Grade 5:				

CAPSCREW BODY SIZE (Inches)-(Thread)	TORQUE (1b-ft)	TORQUE (1b-ft)	TORQUE (1b-ft)	TORQUE (1b-ft)
1/4 - 20	6	8	10	12
- 28	8	10		14
5/16 -18	11	17	19	24
24	13	19		27
3/8 - 16	18	31	34	44
24	20	35		49
7/16 - 14	28	49	55	70
20	30	55		78
l/2 - 13	39	75	85	105
20	41	85		120
9/16 - 12	51	110	120	155
18	55	120		170
5/8 - 11	83	150	167	210
18	95	170		240
10	105	270	280	375
3/4 - 16	115	295		420
7/8 - 9	160	395	440	605
14	175	435		675
1-8	235	590	660	910
14	250	660		990

TORQUE LIMITS (Continued).

1. Always use the torque values listed on the preceding page when specific specifications are not available.

NOTE

Do not use these values in place of those specified in this manual; special attention should be observed in case of SAE Grade 6, 7, and 8 capscrew.

2. Torque limits are based on use of clean and dry threads.
3. Reduce torque by 10% when oil is used as a lubricant.
4. Reduce torque by 20% if new plated capscrews are used.

CAUTION

Capscrews threaded into aluminum may require reductions in torque of 30% or more, unless inserts are used.

GLOSSARY

Section I. LIST OF ABBREVIATIONS

Not applicable to this technical manual.
Refer to AR 310-50
(Authorized Abbreviations and Brevity Codes).

Section II. DEFINITION OF UNUSUAL TERMS

Not applicable to this technical manual.

ALPHABETICAL INDEX

ALPHABETICAL INDEX (Continued)

ALPHABETICAL INDEX (Continued)

ALPHABETICAL INDEX (Continued)

By Order of the Secretary of the Army:

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

Official :

JOHN A. WICKHAM, JR.
Brigadier General, United States Army
The Adjutant General

Official:

To be distributed in accordance with DA Form 12-38, Direct and General Support Maintenance requirements for Truck, Tractor, Line Haul, 6X4, M915A1.

*U.S.GOVERNMENT OFFICE : 1997 - 418-292 (71457)

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PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
3-16	3-12	—	—

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

The task set up page, and all others, would be more helpful to the mechanic in planning his time, if times were shown. For example, if the task covers Removal and Installation, it would be helpful to know the average R&R time for the component.

SAMPLE

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimetrs -0.01 Meters = 0.3937 Inches
1 Meter= 100 Centimetrs=1000 Millmeters-39.37 Inches
1 Kilometer=1000 Meters=0.621 Miles

WEIGHTS

1 Gram=0.001 Kilograma 1000 Milligrams =0.035 Ounces
1 KIlogrom=1000 Grams=2.2 Lb
1 Metric Ton =1000 KIlOgrams =1 Megagram =1.1 Short Tons

LIQUID MEASURE

1 Milliliter=0.OO1 Liters= 0.0338 FluId Ounces
1 Liter=1000 Milliliters=33.82 FluId Ounces

SQUARE MEASURE

1 Sq Centimeter=100 Sq Millimters= 0.155 Sq Inches
1 Sq Meter- 10,000 Sq Centimeters= 10.76 Sq Fed
1 Sq Kilometer= 1,000,000 sq Meters= 0.386 sq Miles

CUBIC MEASURE

1 Cu Centimeter=1000 Cu Millimeters=0.06 Cu Inches
1 Cu Meter =1,000,000 Cu Centimeters =35.31 Cu Feet

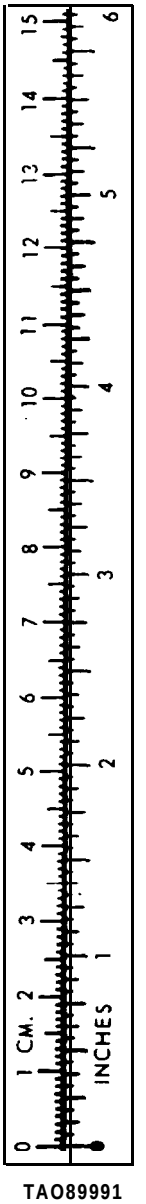
TEMPERATURE

5/9 (°F - 32) -°C
212° Fohrenheit, is equivalent to 100° Celsius
90° Fohrenheit is equivalent to 32.2° Celsius
32° Fohrenheit is equivalent to 0° Celsius
9 / 5 C ° + 3 2 = F °

APPROXIMATE CONVERSION FACTORS

TO CHANGE	To	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANCE	TO	MULTIPLY BY
Centimeters	Inches	0 . . . 3 9 4
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilorters per Hour	Miles per Hour	0.621



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