TM 9-2330-202-14&P
TO 36A11-5-4-64
This publication supersedes TM 9-2330-202-14&P dated 7 October 1993.

TECHNICAL MANUAL

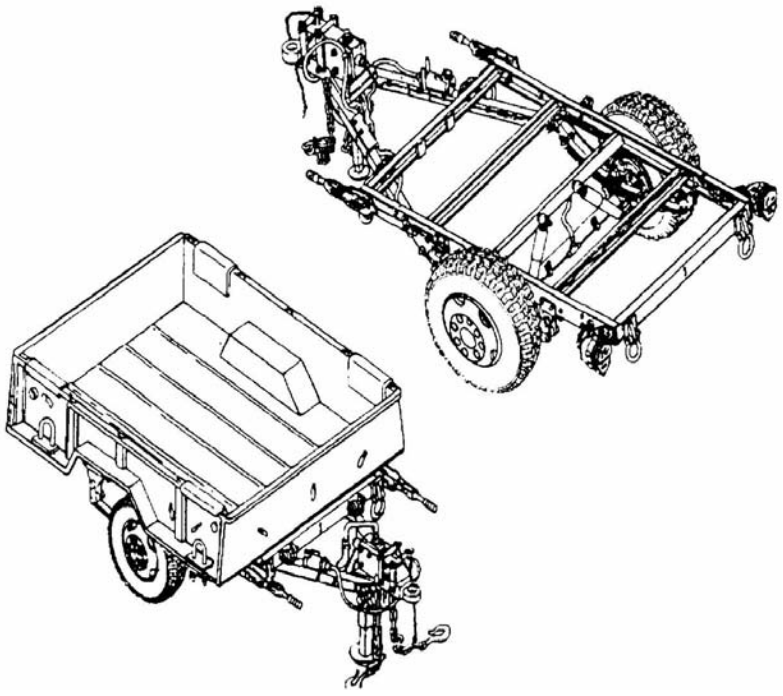
OPERATOR'S, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

FOR

TRAILER, CARGO, 3/4-TON, 2-WHEEL
M101A1 (2330-00-898-6779)
M101A2 (2330-01-102-4697)
M101A3 (2330-01-372-5641)

TRAILER, CHASSIS, 3/4-TON, 2-WHEEL
M116A1 (2330-00-898-6780)
M116A2 (2330-01-101-8434)
M116A2E1 (2330-01-333-9773)

TRAILER, CHASSIS, 1-TON, 2-WHEEL
M116A3 (2330-01-359-0080)



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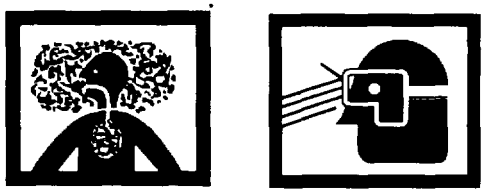
HEADQUARTERS, DEPARTMENTS OF THE ARMY AND AIR FORCE

MAY 1997

FOR INFORMATION ON FIRST AID, REFER TO FM 4-25.11.



WARNING

ASBESTOS

DO NOT handle brakeshoes, brakedrums, or other brake components unless the area has been properly cleaned. Asbestos dust, which can be dangerous if you touch it or breathe it, may be on these components. Wear an approved filter mask and gloves. NEVER use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

WARNING

BRAKE SYSTEM

- **Do not allow grease to contact brakeshoe linings. Wipe excess lubricant from the area of brakeshoe linings to prevent grease from soaking the linings. Brakeshoe linings can absorb grease and oil, causing early glazing of linings and very poor braking action. If brakeshoe linings become soaked, Unit maintenance must replace them. Failure to follow this warning may cause brakes to malfunction, resulting in serious injury or death to personnel or damage to equipment.**
- **If a brakeshoe lining is replaced, replace all brakeshoe linings on axle. A combination of old brakeshoes with new brakeshoes will cause uneven braking. Accidents causing serious injury or death to personnel or damage to equipment may result.**
- **When performing maintenance on brake system, make sure wheels are chocked securely. Failure to follow this warning may cause trailer to roll, resulting in serious injury or death to personnel or damage to equipment.**
- **Brake hub (grease cap)/wheel assembly areas may become hot during operations that require frequent or continuous braking. Use caution when performing hub and brake-drum PMCS checks. Serious burns may result from contact with hot metal.**

WARNING

COMPRESSED AIR

Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (e.g., goggles/shield, gloves) and use caution, to avoid injury to personnel.

WARNING

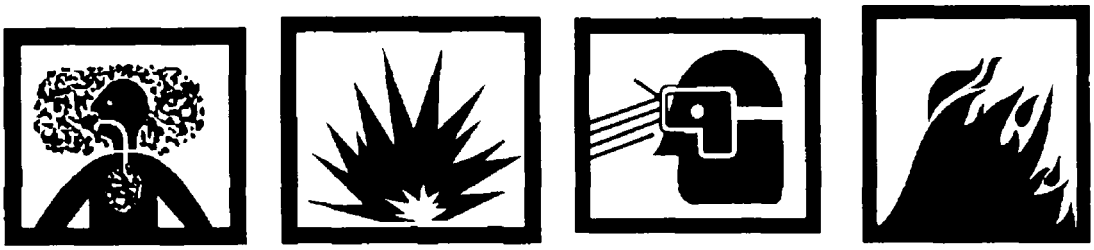
COUPLING AND UNCOUPLING

- **All personnel must stand clear of towing vehicle and trailer during coupling and uncoupling operations. Failure to follow this warning may result in serious injury or death to personnel.**
- **If trailer is not coupled to towing vehicle, make sure handbrakes are applied or wheels are securely chocked and rear stabilizer is down. Failure to follow this warning may cause trailer to roll, resulting in serious injury or death to personnel or damage to equipment.**
- **DO NOT move the trailer laterally (push/pull) using the landing leg/caster as a third wheel or trailer dolly. Mounting bracket or landing leg/caster failure may cause trailer damage or injury to personnel.**
- **Use ground guides and back prime mover to the trailer lunette, NOT vice versa. Failure to follow this warning may result in injury or death to personnel.**
- **DO NOT use landing leg/caster as a third wheel to pivot/turn trailer around to face the prime mover. Remove the load from the trailer if it must be turned around. Failure to follow this warning may result in serious injury to personnel or damage to equipment.**

WARNING

DRAWBAR AND LUNETTE RING

- **Drawbar is heavy - up to 280 lb (127 kg) loaded tongue weight. Use front support (landing) leg crank to raise and lower trailer drawbar. If support leg assembly is inoperative, use suitable lifting device to lift the drawbar. If a suitable lifting device is not available, remove load from trailer and use four or more persons to lift drawbar. Failure to follow this warning may result in serious injury to personnel or damage to equipment.**
- **Keep hands away from lunette ring during coupling/uncoupling operations. Use the landing leg crank to lower/raise lunette. Realign prime mover tow pintle with lunette as necessary. Failure to follow this warning may result in injury to personnel.**



WARNING

DRYCLEANING SOLVENT

- **Drycleaning solvent P-D-680 is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and DO NOT breathe vapors. Keep away from heat or flame. Never smoke when using drycleaning solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II it is 138°F (50°C). Failure to follow this warning may result in injury or death to personnel.**
- **If personnel become dizzy while using drycleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush them with water and get immediate medical attention.**
- **When drycleaning solvent is used, notify the local medical authority (preventive medicine) and environmental coordinator concerning medical surveillance, respiratory protection, and disposal requirements.**

WARNING

IMPROPER CLEANING AGENTS

Improper cleaning methods and the use of unauthorized cleaning agents can injure personnel and damage equipment. To prevent this, refer to TM 9-247 for instructions.

WARNING

STEAM

Avoid contact with steam. Steam can cause burns, blindness, and other serious injuries. Be sure to wear protective apron, gloves, and safety goggles when using live steam.

WARNING

RIVETS/DRIVE SCREWS

Wear eye protection when driving heads off rivets or drive screws. Failure to follow this warning may result in eye injury or loss of vision.

WARNING

HEAVY COMPONENTS

Use extreme caution when handling heavy parts. A lifting device is required when parts weigh over 50 pounds (23 kg) for a single-person lift, over 100 pounds (45 kg) for a two-person lift, and over 150 pounds (68 kg) for a three-person or more lift. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may cause serious injury or death to personnel.

WARNING

HOT COMPONENTS

When checking for improperly adjusted brakes or dry wheel bearings, cautiously feel each wheel hub and brakedrum. Serious burns will result from touching an overheated wheel hub and brakedrum.

WARNING

INTERVEHICULAR CABLE

Make sure intervehicular cable is disconnected from towing vehicle before performing maintenance on electrical system. Failure to follow this warning may result in electric shock or burns.

WARNING

REAR STABILIZER

- **Rear stabilizer must be used if trailer is carrying generator sets. Failure to follow this warning may cause trailer to tip, resulting in serious injury to personnel or damage to equipment.**
- **Rear stabilizer MUST be used during loading and unloading when trailer is not coupled to towing vehicle. Failure to follow this warning may cause trailer to tip, resulting in injury to personnel or damage to equipment.**
- **Make sure that weight of trailer is on front support (landing) leg or trailer is coupled to towing vehicle before raising rear stabilizer. Failure to follow this warning may cause trailer to tip, resulting in injury to personnel or damage to equipment.**

WARNING

TAILGATE (CARGO TRAILER)

Hold tailgate in place before removing straight-headed pins. If tailgate is not properly supported it may fall, resulting in injury to personnel.

WARNING

TIRES

- **DO NOT break tire bead and split lockring until certain that no air pressure remains in tire. Failure to follow this warning may cause lockring to fly off, resulting in serious injury or death to personnel.**

- **An improperly seated lockring may fly off, resulting in serious injury or death to any person in its path. A bent or twisted lockring may be difficult to install and, if used, is a safety hazard. Before applying any air pressure to tire, make sure lockring is seated against rim of wheel in its entirety. DO NOT inflate more than 3 psi (21 kPa). Tap lockring carefully with a mallet to check its seating.**

- **Inflate tire in an inflation safety cage using an extension hose of a least 10 feet (3 m) with an on/off pressure control valve and pressure gage. DO NOT stand on lockring side of wheel and tire assembly. Failure to follow this warning may result in severe injury or death to personnel.**

TECHNICAL MANUAL
NO. 9-2330-202-14&P

CH No. 2

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND AIR FORCE
Washington D.C., *10 November 2006*

OPERATOR'S, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

FOR

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M101A3 (2330-01-372-5641)

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M116A2E1 (2330-01-333-9773)

TRAILER, CHASSIS, 1-TON, 2-WHEEL
M116A3 (2330-01-359-0080)

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1. Remove old pages and insert new pages.
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Remove Pages	Insert Pages
a thru d	a thru e/(f Blank)
i thru vii/(viii blank)	i thru vii/(viii blank)
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2-1 thru 2-6	2-1 thru 2-6
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Appendix I	Appendix I
Index-1 thru Index-10	Index-1 thru Index-10
Front Cover	Front Cover

3. File this change sheet in front of the publication for reference purpose.

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Chief of Staff

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Administrative Assistant to the Secretary of the Army
0630507

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TECHNICAL MANUAL
NO. 9-2330-202-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *28 May 1999*

OPERATOR'S, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR

TRAILER, CARGO, 3/4-TON, 2-WHEEL
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4-101 and 4-102	4-101 and 4-102
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B-5 and B-6	B-5 and B-6
16-1 through Figure 18	16-1 through Figure 18
23-1 through BULK-1	23-1 through BULK-1
I-1 through I-10	I-1 through I-10

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Total number of pages for front and rear matter is 40 and total number of pages is 418 consisting of the following:

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TECHNICAL MANUAL
NO. 9-2330-202-14&P

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND AIR FORCE
Washington D.C., *12 May 1997*

OPERATOR'S, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

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HOW TO USE THIS MANUAL

SCOPE.

This technical manual provides you with the information you will need to operate and maintain the M101 Series and M116 Series trailers.

The information contained in this manual is presented in five chapters and nine appendixes, one of which is a repair parts and special tools list (RPSTL). Each chapter is divided into sections covering operating procedures and/or other information for specific systems or components.

Note that Appendix A of this manual gives the full title of every manual, form, pamphlet, or other document referenced in this manual.

INDEXING.

Four indexing procedures are used to help you locate information quickly:

- Cover index. Lists chapter titles and important parts of the manual, with corresponding page numbers. Each chapter or part listed is boxed in, with a black outer edge that is in line with the first page of that chapter or part.
- Table of contents. The table of contents, which follows the summary of warnings, lists all chapters and sections numerically, with corresponding page numbers.
- Section indexes. Each section starts with a numerical listing of all paragraphs in that section.
- Alphabetical index. The alphabetically arranged subject index starts on page Index-1.

WARNINGS, CAUTIONS, AND NOTES.

You must read and understand this manual BEFORE operating the M101 Series and M116 Series trailers.

Throughout this manual you will see WARNING, CAUTION, and NOTE headings. There are good reasons for every one of these notices.

WARNING

A WARNING is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in injury or death. WARNINGs must be strictly observed.

CAUTION

A CAUTION is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in damage to, or destruction of, equipment or mission effectiveness. Captions must be strictly observed.

WARNINGS, CAUTIONS, AND NOTES (CONTINUED).

NOTE

A NOTE highlights an essential operating or maintenance procedure, condition, or statement.

WARNINGs and CAUTIONs appear immediately preceding the step to which they pertain. It is important to read and thoroughly understand the WARNINGs and/or CAUTIONs before beginning maintenance.

NOTES may precede or follow the steps to which they pertain, depending on what makes the most sense.

CHAPTER 1
INTRODUCTION

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1-6	Reporting Equipment Improvement Recommendations (EIRs)	1-2
1-7	List of Abbreviations and Acronyms	1-2
1-8	Warranty Information	1-3
1-9	Safety, Care, and Handling	1-3
1-10	Corrosion Prevention and Control	1-3

1-1. SCOPE.

a. This manual describes Operator's, Unit, Direct Support, and General Support maintenance and contains the repair parts and special tools list for the following:

- Trailer, Cargo: 3/4-Ton, 2-Wheel, M101A1, M101A2 and M101A3;
- Trailer, Chassis: 3/4-Ton, 2-Wheel, M116A1, M116A2 and M116A2E1; and
- Trailer, Chassis: 1-Ton, 2-Wheel, M116A3.

b. All M101 Series cargo trailers use the M116 Series chassis.

c. Throughout this manual, the terms "curb side" and "road side" are used to describe views of the trailer. As viewed from the rear, curb side is the right side and road side is the left side.

d. The trailers are used to carry payloads over highway or cross-country.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 750-8, The Army Maintenance Management System (TAMMS).

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Refer to TM 750-244-6 for procedures on the destruction of military vehicles to prevent enemy use.

1-4. PREPARATION FOR STORAGE OR SHIPMENT.

For information on preparing the trailers for storage or shipment, refer to Chapter 4, Section XV.

1-5. QUALITY ASSURANCE.

a. No specific quality assurance manual pertains to the M101 or M116 Series of trailers.

b. Defective material received through the supply system should be reported on an SF Form 368 (Product Quality Deficiency Report). Instructions for preparing the reports are provided in AR 702-7, Reporting of Product Quality Deficiencies Across Component Lines. Mail your completed form directly to:

Commander
U.S. Army Tank-automotive and Armaments Command
ATTN: AMSTA-TR-E/MPA
Warren, MI 48397-5000

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S).

If your trailer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about the equipment. Let us know why you don't like the design or performance. Put it on an SF Form 368 and mail it to:

Commander
U.S. Army Tank-automotive and Armaments Command
ATTN: AMSTA-TR-E/MPA
Warren, MI 48397-5000

1-7. LIST OF ABBREVIATIONS AND ACRONYMS.

AAL . . . . . additional authorization list
BII . . . . . basic issue items
BOI . . . . . basis of issue
CAGEC . . . . commercial and government entity code
CARC . . . . . chemical agent resistant coating
COEI . . . . . components of end item
CPC . . . . . corrosion prevention and control
CTA . . . . . Common Table of Allowances
CUCV . . . . . commercial utility cargo vehicle
DA . . . . . Department of Army
DoD . . . . . Department of Defense
E . . . . . empty
EIR . . . . . equipment improvement recommendation
GAA . . . . . grease, automotive and artillery
HMMWV high-mobility multipurpose wheeled vehicle
hr . . . . . hour
IAW . . . . . in accordance with
JTA . . . . . Joint Table of Allowances
kph . . . . . kilometers per hour
L . . . . . liter
LED . . . . . light-emitting diode
MAC . . . . . maintenance allocation chart
MOS . . . . . military occupational specialty
MTOE Modified Table of Organization and Equipment
MWO . . . . . modification work order
Nm . . . . . newton meter
NBC . . . . . nuclear, biological and chemical
NIIN . . . . . national item identification number
NSN . . . . . national stock number
OC . . . . . on condition
p. . . . . Page
para . . . . . paragraph
PMCS . preventive maintenance checks and services
qty. . . . . quantity
Qty. Recm. . . . . quantity recommended
Qty. Rqr. . . . . quantity required
RPSTL . . . . . repair parts and special tools list
SMR . . . . . source, maintenance, and recoverability
SN . . . . . serial number
SOP . . . . . standard operating procedure
SRA . . . . . specialized repair activity
TAMMS The Army Maintenance Management System
TB . . . . . technical bulletin
TDA . . . . . Table of Distribution and Allowances
TM . . . . . technical manual
TMDE test, measurement, and diagnostic equipment
TOE . . . . . Table of Organization and Equipment
U/M . . . . . unit of measure
UOC . . . . . usable-on code
V dc . . . . . volts, direct current
W/ . . . . . with
W/O . . . . . without

1-8. WARRANTY INFORMATION.

The M101 and M116 Series trailers are not warranted.

1-9. SAFETY, CARE, AND HANDLING.

For information on general safety precautions and regulations, review the warning summary at the front of this manual preceding the table of contents. Observe all WARNINGs and CAUTIONs that appear in the maintenance procedures.

1-10. CORROSION PREVENTION AND CONTROL.

a. Corrosion prevention and control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problem with this item be reported so the problem can be corrected and improvements can be made to prevent the problem in future items.

b. While corrosion is typically associated with the rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

c. If a corrosion problem is identified, it can be reported using an SF Form 368. The use of key words, such as “corrosion,” “rust,” “deterioration,” and “cracking,” will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA Pam 750-8.

Section II. EQUIPMENT DESCRIPTION AND DATA

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
1-11	Equipment Characteristics, Capabilities, and Features	1-4
1-12	Location and Description of Major Components	1-5
1-13	Location and Contents of Data Plates	1-10
1-14	Differences Between Models	1-12
1-15	Equipment Data	1-14

1-11. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

a. **CHARACTERISTICS**

1. All trailers are designed to be towed by a towing vehicle without airbrake connections. A handbrake lever and cable assembly located on each side of the trailer activates a handbrake at each wheel. Control of each handbrake is independent.

2. In addition to handbrake lever-activated handbrakes, the trailers are equipped with an inertia-actuated hydraulic brake system. For principles of operation of this system, refer to Section III of this chapter.

3. All trailers have a single axle with two wheels.

4. The trailer suspension consists of two leaf spring assemblies and shock absorbers.

5. The M116A2E1 and M116A3 are equipped with a dropped axle, frame, and spring assemblies that allow for a greater payload than the other models. M101A1 is equipped with tube type, bias ply tires with 5 lug mounted wheels. A2 and A3 models are equipped with surge brakes. A2 models use the 8 lug CUCV style tubeless wheels and tires. A3 models use run flat tires.

6. The cargo body, which is a feature of M101 Series trailers, can be easily removed. The old-style cargo body is being phased out. The new-style cargo body adds reinforcements and U-bolt lift points to ensure that the cargo body can be lifted without danger and without using spreader bars.

7. A rear stabilizer may be added to provide greater stability when the trailer is carrying generator sets. Use of the stabilizer is optional for all other applications.

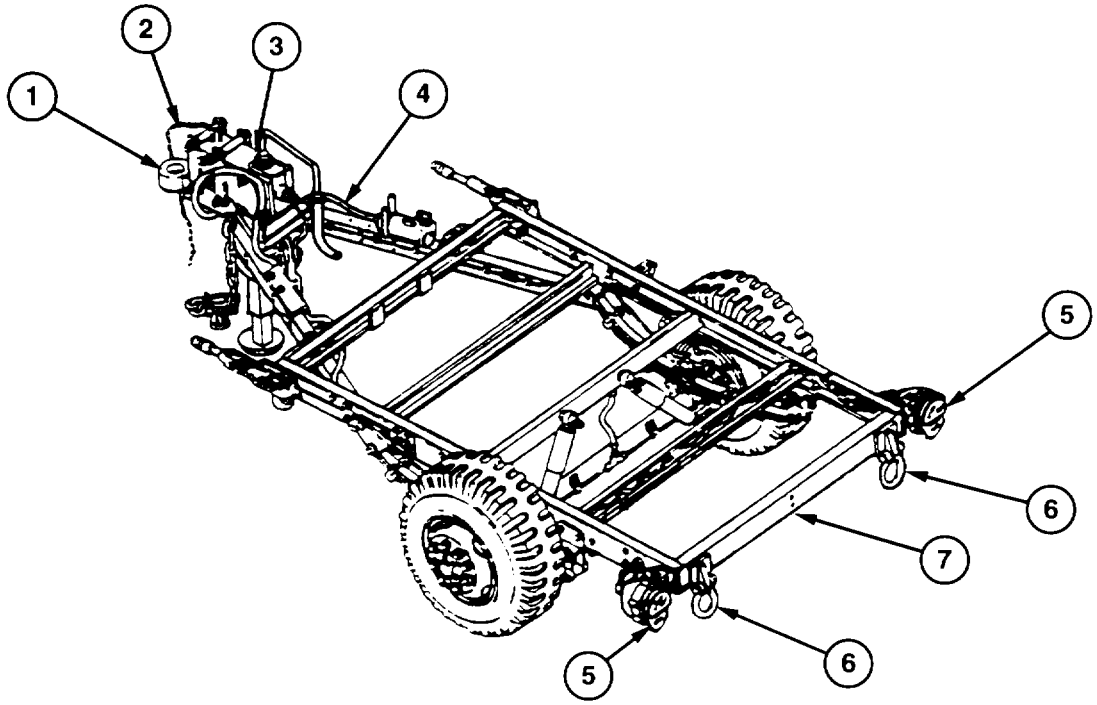
b. **CAPABILITIES AND FEATURES**

1. Maximum towing speeds with maximum payload evenly distributed are: highway, 50 miles per hour (80 kph); and cross-country, 6 miles per hour (10 kph).

2. Maximum payload varies with model designation. Refer to paragraph 1-15.

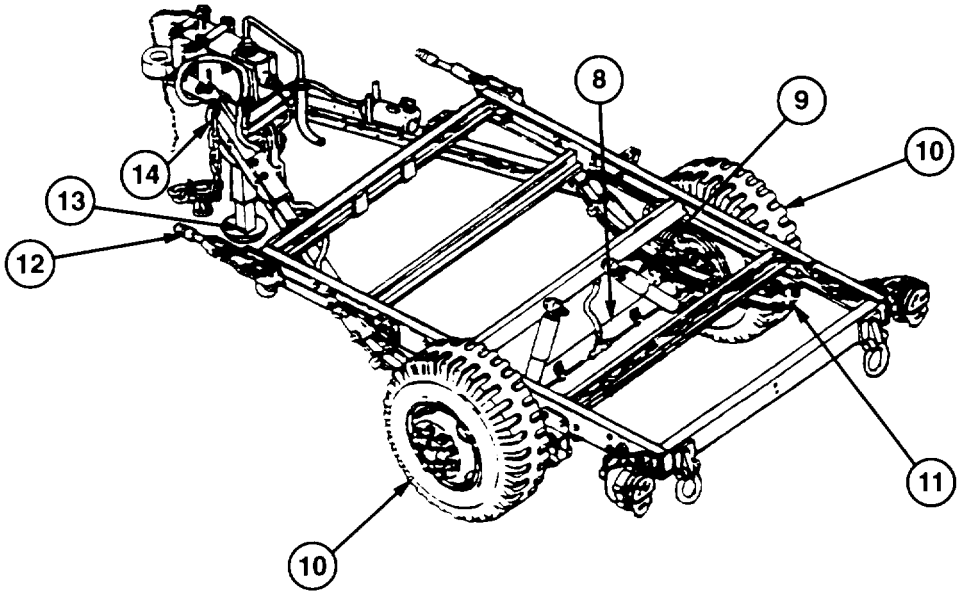
3. The cargo capacity of the M101 Series trailers may be increased by installing a rack and tailgate assembly. A canvas cover assembly may be used to protect cargo from the weather.

1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



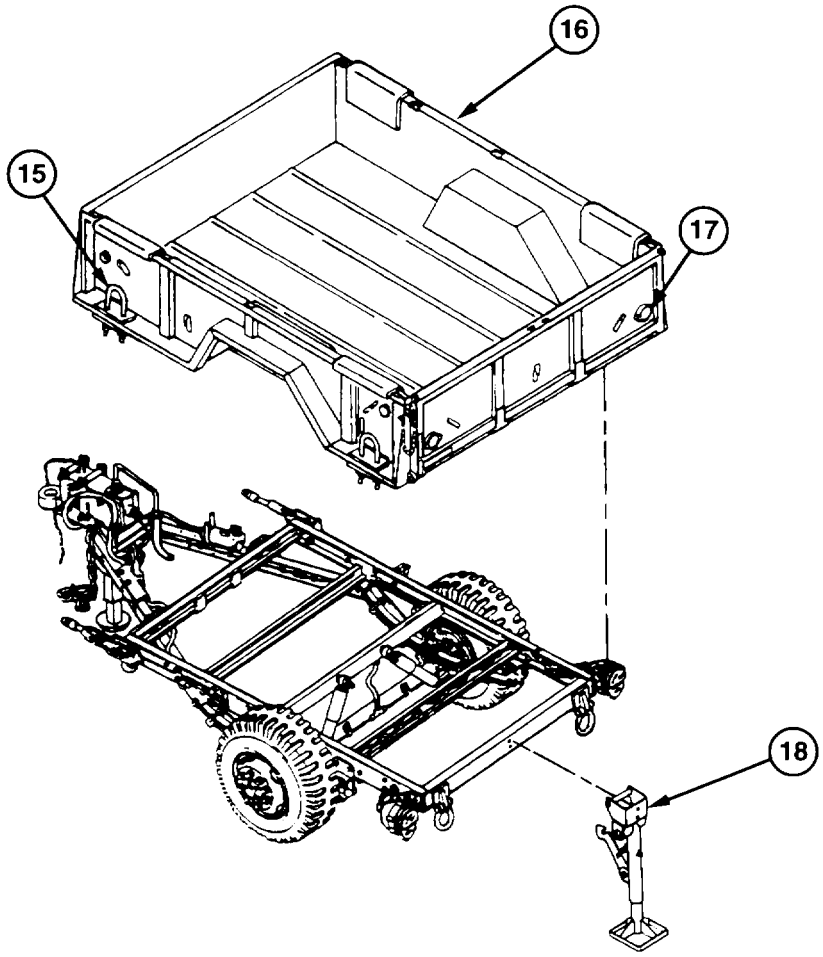
Key	Component	Description
1	Drawbar Coupler	Couples trailer to towing vehicle pintle.
2	Breakaway Chain	Provides for emergency braking of trailer. Attaches to towing vehicle and applies brakes in the event trailer breaks away from towing vehicle.
3	Hydraulic Brake Actuator Assembly	Transmits braking forces from towing vehicle to trailer and service brakes by means of a drawbar coupler, master cylinder, hydraulic brake tubes and hose, and wheel cylinders.
4	Intervehicular Cable	Provides electrical connection between trailer and towing vehicle.
5	Composite Light	Indicates trailer presence to vehicles traveling behind. Consists of blackout light, service light, turn signal, and stoplight. Located at each side of trailer rear.
6	Tiedown Shackles	Secures trailer during shipment. Located at each front and rear corner of chassis.
7	Chassis	Provides mounting for cargo body of M101 Series trailers. Frame assembly common to all models.

1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (continued).



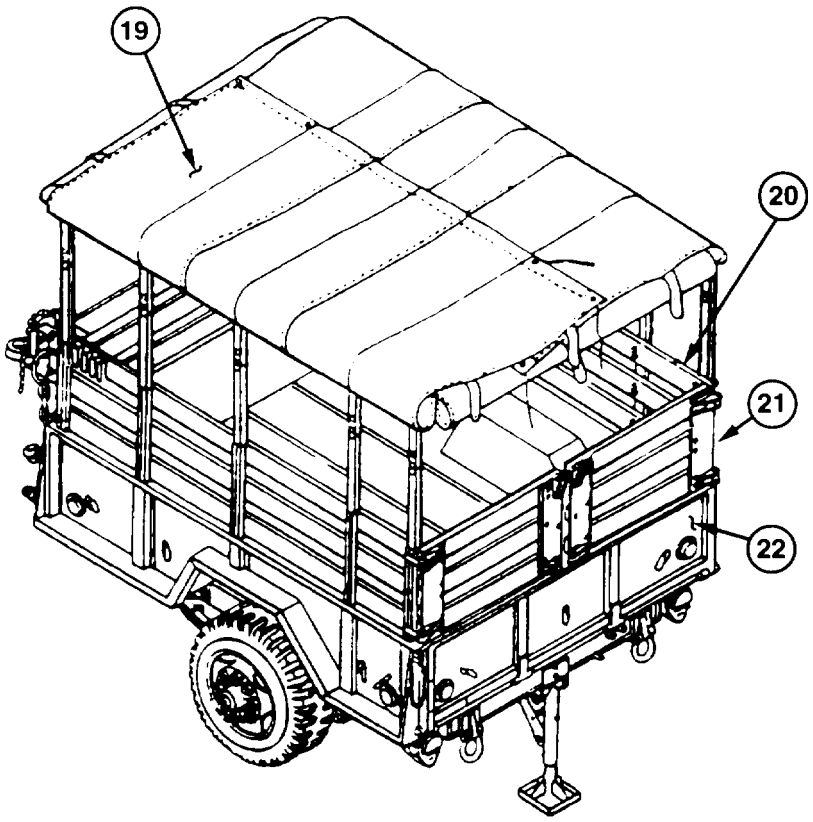
Key	Component	Description
8	Axle	Carries wheels and allows wheels to rotate. Tubular weldment on which trailer wheels and suspension components are mounted.
9	Shock Absorber	Dampens spring action. Located on each end of axle.
10	Wheel and Tire Assembly	Supports trailer load. Attached to each end of axle.
11	Spring Assembly	Supports trailer load and absorbs road shock. Located on each side of frame.
12	Handbrake Lever	Applies handbrake when trailer is stopped or parked. Located on each side of chassis.
13	Front Support Leg	Supports trailer when uncoupled from towing vehicle. All trailers have an adjustable front support leg.
14	Safety Chain	Prevents trailer from fully breaking away. Hooks to towing vehicle shackles. Located on each side of drawbar assembly.

1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (continued).



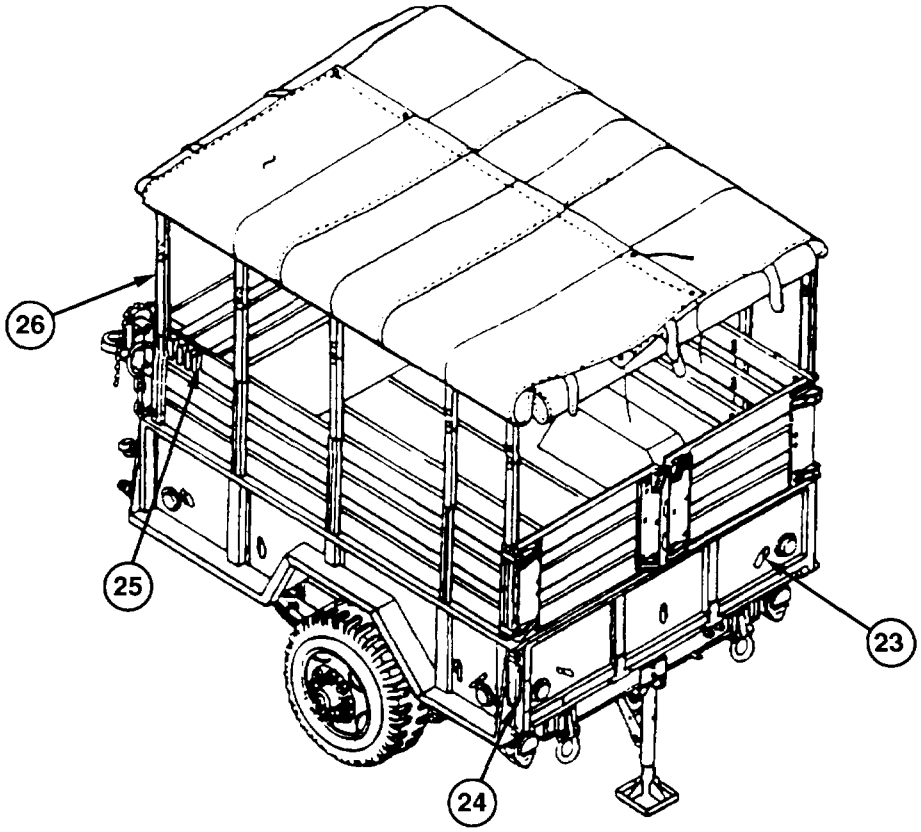
Key	Component	Description
15	U-bolt (M101 A2 and M 101A3)	Provides lift points for new-style cargo body. Located at each of four lower corners of cargo body.
16	Cargo Body (M101A2 and M101A3)	Carries cargo. A welded box assembly attached to frame.
17	Reflector (M101A2 and M101A3)	Indicates trailer presence to vehicles traveling behind. Located at lower corners of all sides of cargo body.
18	Rear Stabilizer	Prevents trailer from tipping over when loading and unloading cargo. Required when trailer is carrying generator sets.

1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (continued).



Key	Component	Description
19	Canvas Cover Assembly (M101A2 and M101A3)	Protects cargo from weather.
20	Rack Assembly (M101A2 and M101A3)	Increases cargo volume capacity. Consists of one front rack assembly, two side rack assemblies, and a two-section tailgate assembly. Earlier-model rack assemblies are wooden. Newer-model rack assemblies are made of composite material.
21	Tailgate Assembly (M101A2 and M101A3)	Opens outward from center for ease in loading and unloading cargo. This two-section hinged tailgate assembly is a component of the rack assembly. Earlier-model tailgate assemblies are wooden. Newer-model tailgate assemblies are made of composite material.
22	Tailgate (M101 A2 and M101 A3)	Swings down for ease in loading and unloading cargo. This one-piece tailgate is secured in position by two chain and pin assemblies.

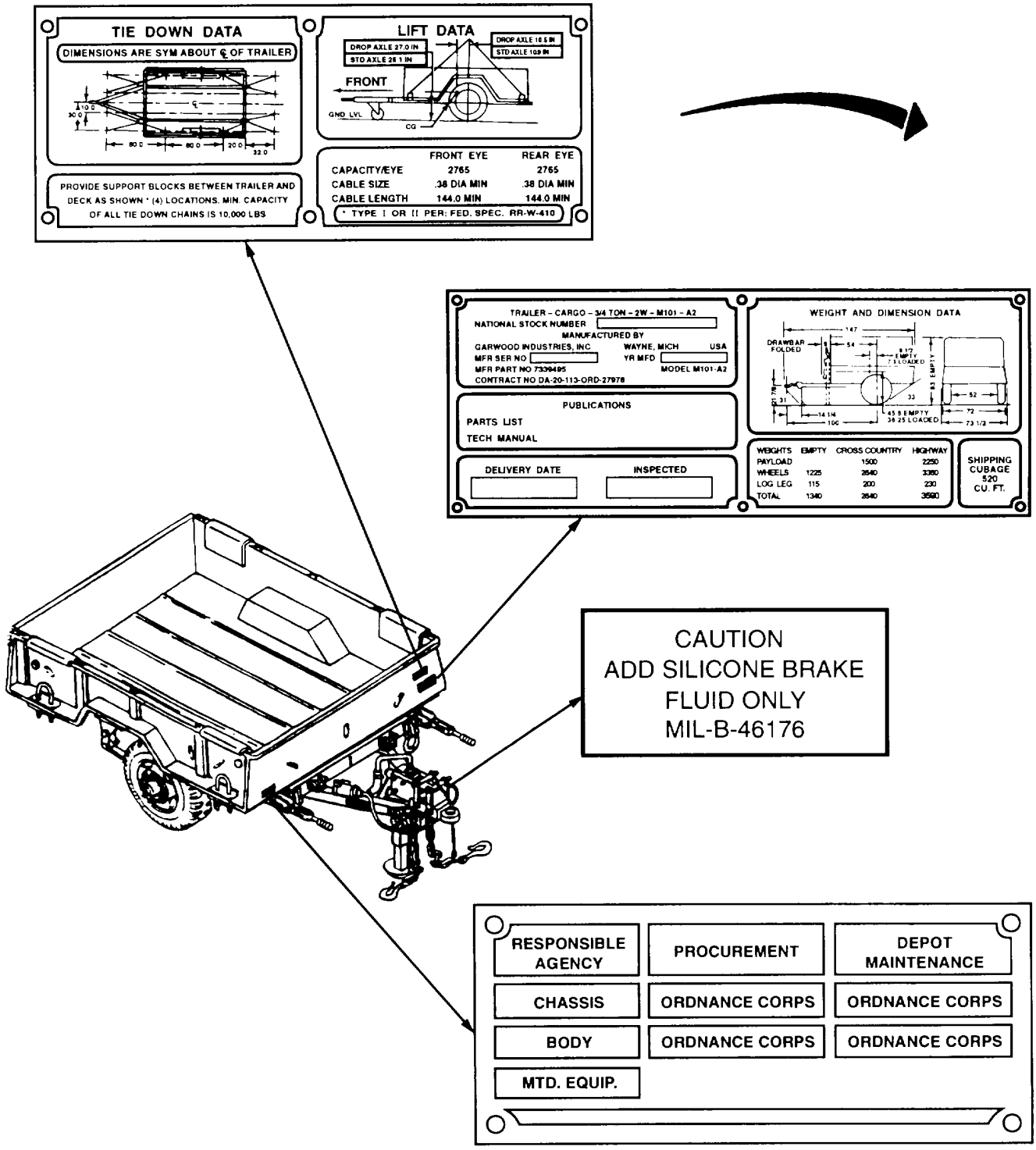
1-12. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (continued).



Key	Component	Description
23	Cargo Hook (M101A2 and M101A3)	Secures canvas cover assembly to the cargo body. Located on all four sides of cargo body (six on front and rear, eight on left and right sides).
24	Chain and Pin Assembly (M101A2 and M101A3)	Secures cargo body tailgate in position. Located at both upper rear corners of cargo body.
25	Bow Clip (M101A2 and M101A3)	Stows bow assemblies. Located on front corner of each side rack assembly.
26	Bow Assembly (M101A2 and Ml01A3)	Supports canvas cover assembly. Five bow assemblies fit across rack assembly. Earlier-model bow assemblies are wooden. Newer-model bow assemblies are made of steel.

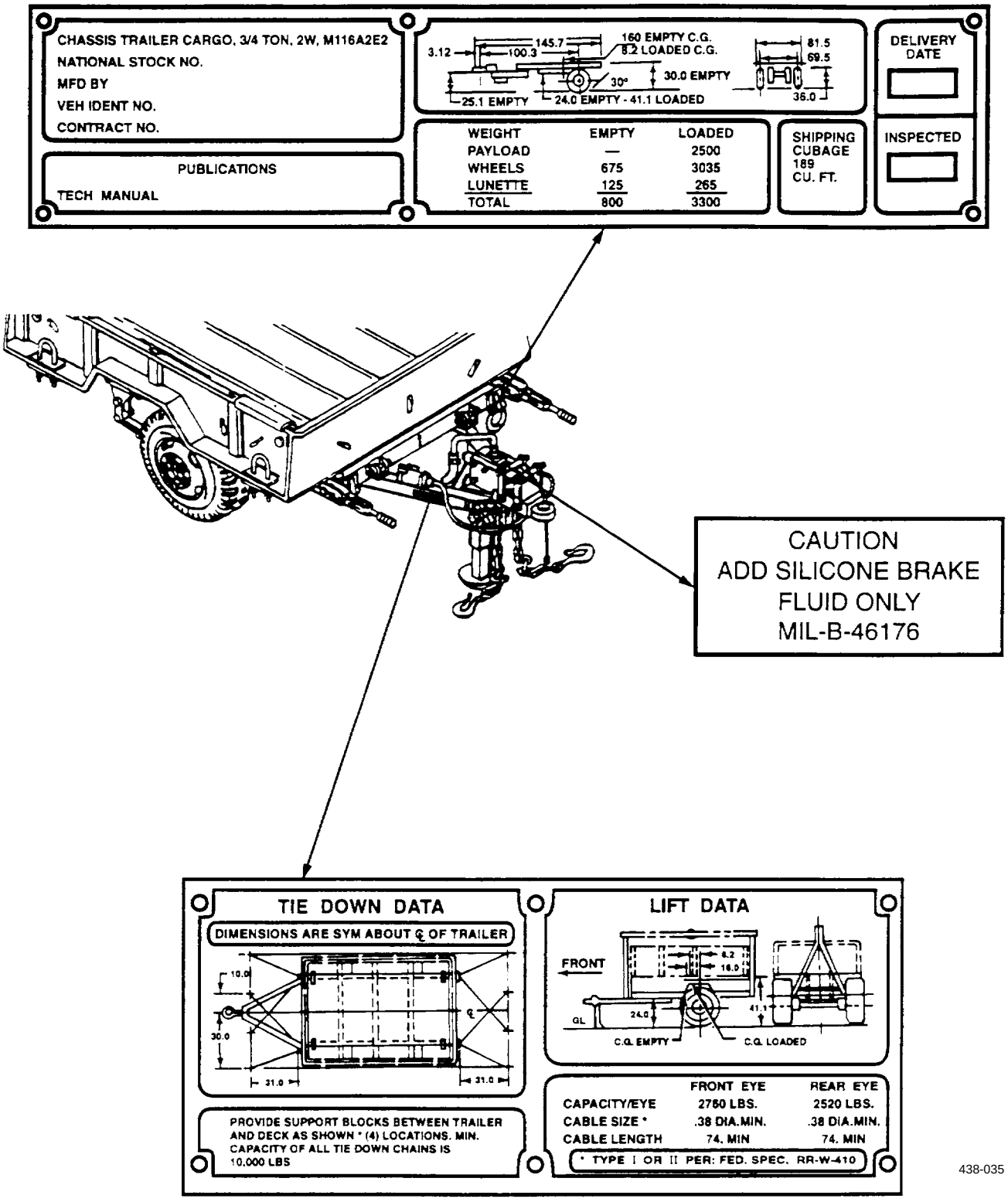
1-13. LOCATION AND CONTENTS OF DATA PLATES.

M101A2 and M101A3 Cargo Trailers



1-13. LOCATION AND CONTENTS OF DATA PLATES (CONTINUED).

M116A1, M116A2, M116A2E1, and M116A3 Chassis Trailers



1-14. DIFFERENCES BETWEEN MODELS.

a. **GENERAL**

1. Differences between trailers consist of configuration variations in the electrical system, axle, brakes, wheels, frame, and suspension.

2. The major trailer differences are summarized In Table 1-1.

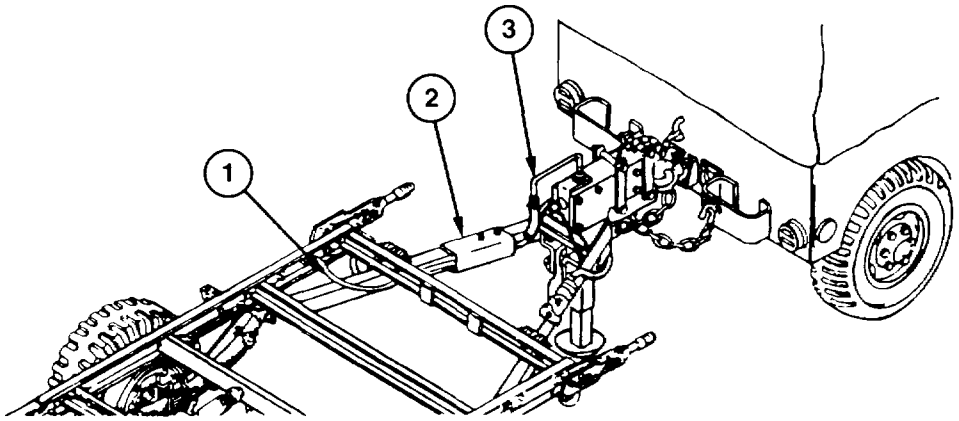
Table 1-1. Differences Between Models

Model	Axle	Inertia Brake System	Wheels/Tires	Frame	Spring Leaves
M101A1	Straight	No	Tubeless/Radial	3 in. (7.62 cm)	5
M101A2	Straight	Yes	Tubeless/Radial	3 in. (7.62 cm)	5
M101A3	Offset	Yes	Tubeless/Runflat/Radial	4 in. (10.16 cm)	6
M116A1	Straight	No	Tubeless/Radial	3 in. (7.62 cm)	5
M116A2	Straight	Yes	Tubeless/Radial	3 in. (7.62 cm)	5
M116A2E1	Straight	Yes	Tubeless	4 in. (10.16 cm)	6
M116A3	Offset	Yes	Tubeless/ Runflat/Radial	4 in. (10.16 cm)	6

b. **ELECTRICAL SYSTEM**

1. Trailers are equipped with a chassis wiring harness (1) that terminates at a covered junction box (2) on the roadside drawbar. The intervehicular cable (3) is fixed to the trailer.

2. Trailers are equipped with a two-light composite stoplight-taillight configuration that may have standard lamps or LEDs.

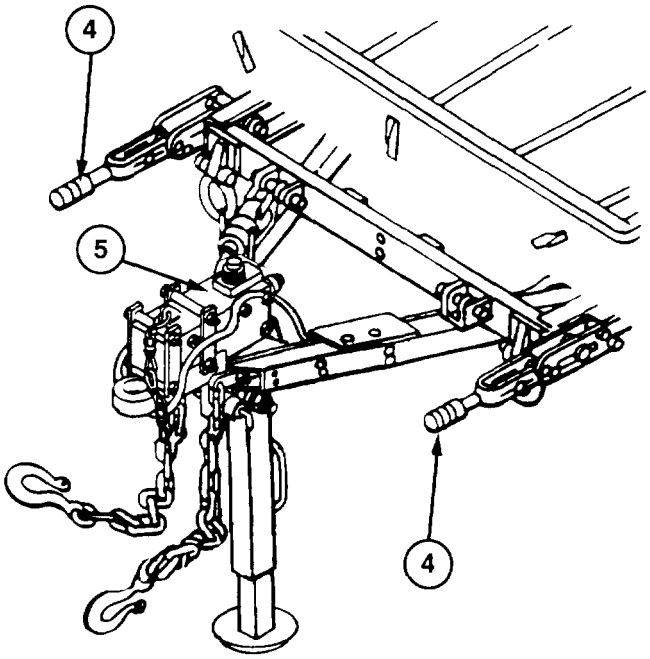


438-036

1-14. DIFFERENCES BETWEEN MODELS (CONTINUED).

c. **BRAKE SYSTEM**

1. The handbrake levers (4) are located at the front corners of the frame. Adjustment of one of these levers is made at the lever itself.
2. The trailers have both handbrakes and an inertia-actuated hydraulic brake system (5) (para 1-16).



d. **AXLE, FRAME, AND SUSPENSION**

The M116A2E1 and M116A3 are variants of the M116A2. Heavy-duty axles, four-inch frames, and spring assemblies allow for a greater payload than the M116A2 (para 1-15). In addition, the M116A3 uses the HMMWV radial runflat wheel and tire assemblies.

1-15. EQUIPMENT DATA.

Components Common to All Models

ELECTRICAL SYSTEM . . . . . 24 V dc
AXLE . . . . . Tubular Weldment

TIRES

Quantity 2
Ply 8
Size . . . . . 9 x 16 in. (23 x 41 cm)
Inflation Pressure Sand and Highway:
M101A1, M101A2, M116A1, M116A2 (Tubeless/Radial) . . . . . 30 psi (207 kPa)
M101A3, M116A3 (Runflat) . . . . . 35 psi (241 kPa)

WHEELS

Rim Size . . . . . 16 x 6.5 in. (43 x 16 cm)

SUSPENSION

Spring Assemblies . . . . . Semi-elliptical
Shock Absorbers . . . . . Hydraulic, Double-acting

HANDBRAKES

Actuation . . . . . Mechanical
Location . . . . . Front of Frame
Quantity 2

TOWING SPEEDS

Highway . . . . . 50 mph (80 kph)
Cross-country . . . . . 6 mph (10 kph)

M101A1, M101A2, M101A3, M116A1, AND M116A2

GENERAL

Angle of Departure . . . . . 30°
Center of Gravity (Measured from Center of Rear Axle):
Empty . . . . . 45 3/4 in. (116.21 cm)
Loaded . . . . . 36 1/4 in. (92.08 cm)
Shipping Volume of Chassis Trailer . . . . . 213 cu ft (5.96 cu m)
Shipping Volume of Cargo Trailer . . . . . 520 cu ft (14.56 cu m)

DIMENSIONS

Overall:
Length . . . . . 147 in. (373.38 cm)
Width . . . . . 73.5 in. (186.69 cm)
Height of Chassis . . . . . 35 in. (88.9 cm)
Height of Cargo Trailer (M101A1, M101A2 and M101A3):
Empty . . . . . 83 in. (210.82 cm)
Loaded . . . . . 79 in. (200.66 cm)

1-15. EQUIPMENT DATA (continued).

Cargo Body (Old Style):
- Length ..... 76 in. (193.04 cm)
- Width ..... 65.5 in. (166.37 cm)
- Height ..... 18 in. (45.72 cm)
- Tread ..... 72 in. (182.88 cm)

Cargo Body (New Style) (M101A2 and M101A3):
- Length ..... 100 in. (254 cm)
- Width ..... 73.5 in. (186.69 cm)
- Height ..... 19.84 in. (50.39 cm)

TOWING INFORMATION

Towing Attachment ..... Drawbar Coupler
Towing Vehicle ..... CUCV Series, HMMWV Series, 2-1/2 Ton series, 5 Ton series

WEIGHTS

Payload (Maximum):
- Cross-country ..... 1500 lb (681 kg)
- Highway ..... 2250 lb (1021.5 kg)

Empty:
- Wheels ..... 1225 lb (556.15 kg)
- Front Support Leg ..... 115 lb (52.21 kg)
- Total 1340 lb (608.36 kg)

With Payload:
- Wheels
  - Cross-country ..... 2640 lb (1198.56 kg)
  - Highway ..... 3360 lb (1525.44 kg)
- Front Support Leg
  - Cross-country ..... 200 lb (90.8 kg)
  - Highway ..... 230 lb (104.42 kg)
- Total
  - Cross-country ..... 2840 lb (1289.36 kg)
  - Highway ..... 3590 lb (1629.86 kg)

M116A2E1

GENERAL

Angle of Departure ..... 30°
Center of Gravity:
- Empty ..... 15.3 in. (38.86 cm)
- Loaded ..... 8.3 in. (21.08 cm)

Shipping Volume of Chassis Trailer ..... 189 cu ft (5.29 cu m)

DIMENSIONS

Length ..... 145.7 in. (370.08 cm)
Width ..... 71.3 in. (181.1 cm)
Height of Chassis ..... 30 in. (76.2 cm)
Tread ..... 71.3 in. (181.1 cm)

1-15. EQUIPMENT DATA (continued).

TOWING INFORMATION

Towing Attachment	Drawbar Coupler
Towing Vehicle	CUCV Series, HMMWV Series, 2-1/2 Ton series, 5 Ton series

WEIGHTS

Payload (Maximum)	2380 lb (1080.52 kg)
Empty:	
Wheels	661 lb (300.09 kg)
Lunette	119 lb (54.03 kg)
Total	780 lb (354.12 kg)
Loaded:	
Wheels	2899 lb (1316.15 kg)
Lunette	261 lb (118.49 kg)
Total	3160 lb (1434.64 kg)

M116A3

GENERAL

Angle of Departure	30
Center of Gravity:	
Empty	16 in. (40.64 cm)
Loaded	8.2 in. (20.83 cm)
Shipping Volume of Chassis Trailer	189 cu ft (5.29 cu m)

DIMENSIONS

Length	145.7 in. (370.08 cm)
Width	81.5 in. (207.01 cm)
Height of Chassis	36 in. (91.44 cm)
Tread	81.5 in. (207.01 cm)

TOWING INFORMATION

Towing Attachment	Drawbar Coupler
Towing Vehicle	CUCV Series, HMMWV Series, 2 1/2 ton series, 5 ton series

WEIGHTS

Payload (Maximum)	2360 lb (1071.44 kg)
Empty:	
Wheels	675 lb (306.45 kg)
Lunette	125 lb (56.75 kg)
Total	800 lb (363.2 kg)
Loaded:	
Wheels	2905 lb (1 318.87 kg)
Lunette	255 lb (115.77 kg)
Total	3160 lb (1434.64 kg)

Section III. PRINCIPLES OF OPERATION

NOTE

Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.

1-16. HYDRAULIC BRAKE SYSTEM (M101A2, M101A3, M116A2, M116A2E1, AND M116A3).

a. Brakes are applied automatically by the hydraulic brake system when the towing vehicle slows or stops, or when the trailer breaks away from the towing vehicle.

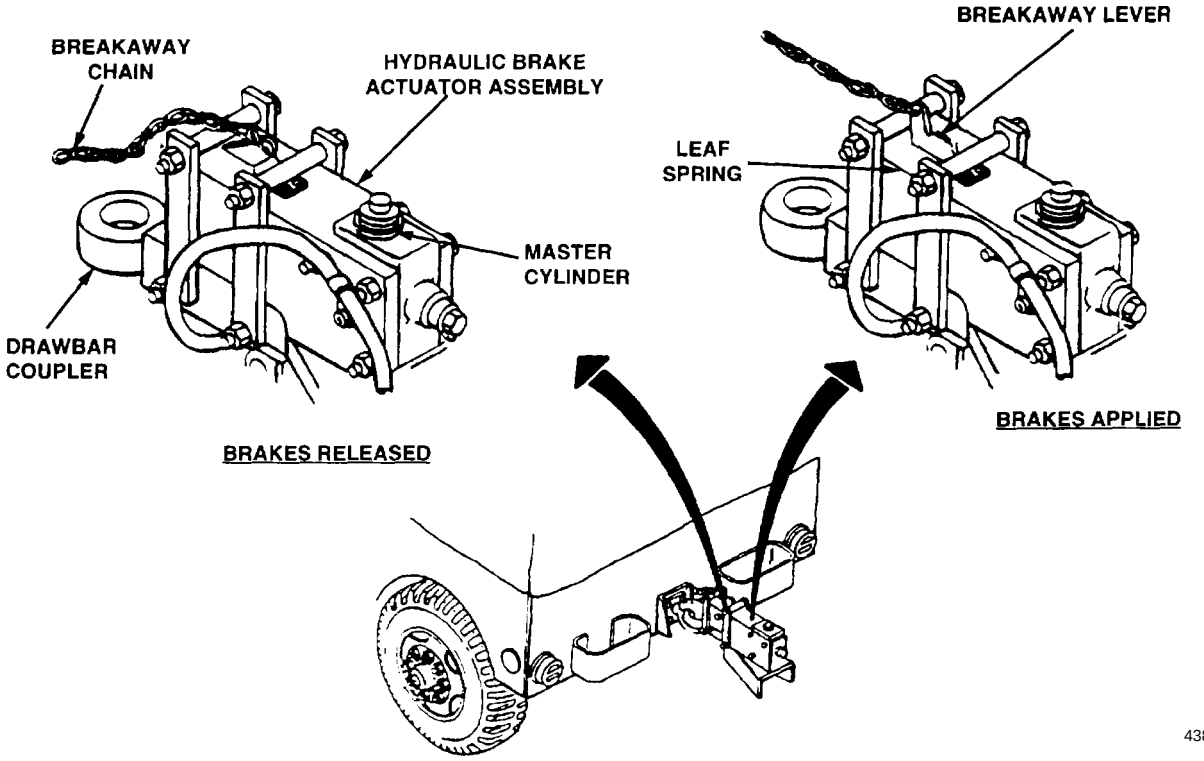
b. The major components of the hydraulic brake system and their functions are as follows:

1. Hydraulic Brake Actuator Assembly. This assembly transmits the braking forces of the towing vehicle to the trailer by inertia. It consists of a drawbar coupler, master cylinder, breakaway chain and lever, and leaf spring.

2. Drawbar Coupler. The drawbar coupler attaches to the towing vehicle and controls the master cylinder. When the towing vehicle goes forward, the drawbar coupler is pulled and the brakes are released. When the towing vehicle slows down, the trailer pushes the drawbar ring into the towing vehicle and applies the brakes.

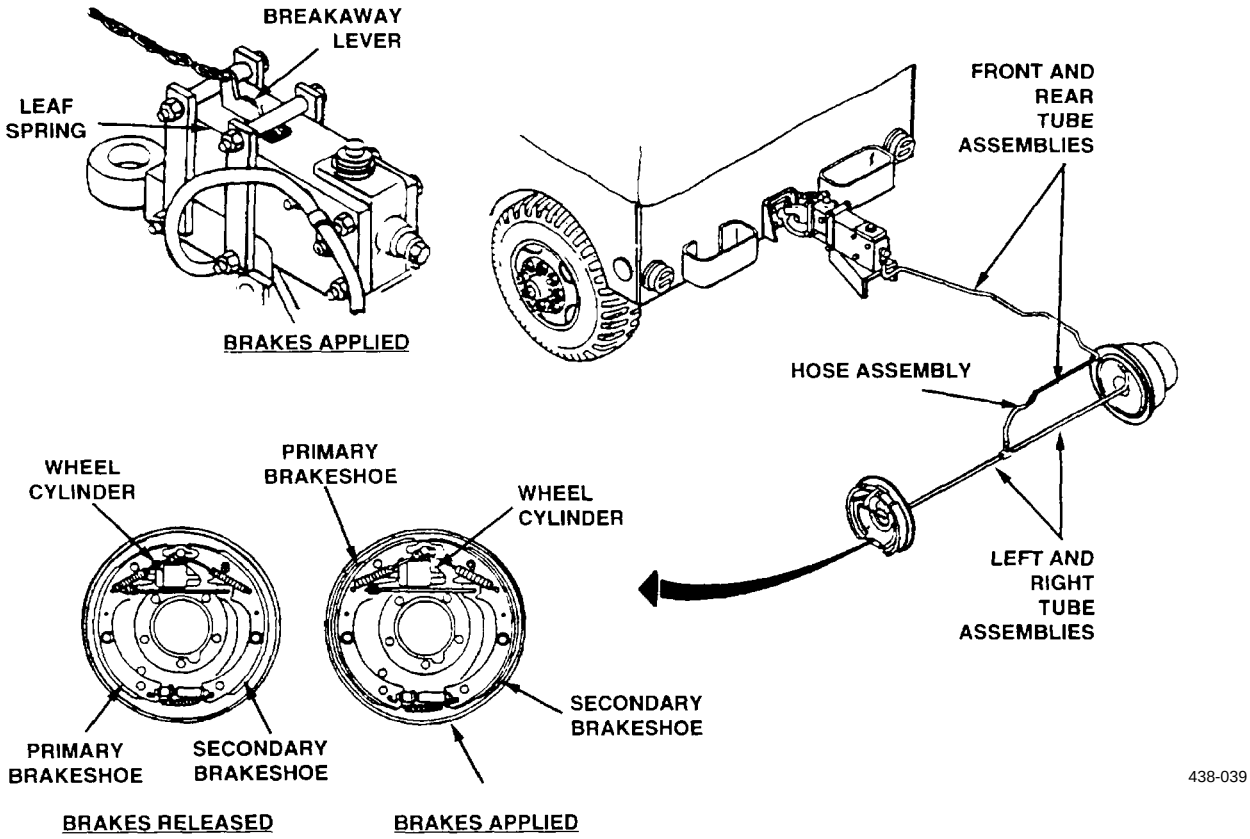
3. Master Cylinder. The master cylinder changes the mechanical motion of the drawbar coupler and breakaway lever into hydraulic pressure. It has a built-in shock absorber to prevent jerky drawbar coupler movement. The shock absorber prevents hydraulic pressure from building up when the towing vehicle backs up.

4. Breakaway Chain. The breakaway chain is attached to the towing vehicle. If the trailer breaks away from the towing vehicle, the breakaway chain will pull up on the breakaway lever and apply the brakes.



1-16. HYDRAULIC BRAKE SYSTEM (M101A2, M101A3, M116A2, M116A2E1, AND M116A3) (CONTINUED).

5. Breakaway Lever. The breakaway lever is activated by the breakaway chain and controls the master cylinder. When the breakaway lever is up, the brakes are applied. When the breakaway lever is down, the drawbar coupler movement controls the master cylinder.
6. Leaf Spring. The leaf spring holds the breakaway lever up The breakaway lever must be reset any time it has been pulled up.
7. Hydraulic Brake Tube Assemblies and Hose Assembly. These components transfer hydraulic pressure from the master cylinder to the wheel cylinders.
8. Wheel Cylinders. One wheel cylinder is located at each wheel. The wheel cylinder changes hydraulic pressure into mechanical motion. When the wheel cylinder is pressurized, it pushes the primary and secondary brakeshoes against the brakedrum.
9. Primary Brakeshoe. The primary brakeshoe is pushed against the brakedrum by the wheel cylinder. The brakedrum pushes the primary brakeshoe down and into the secondary brakeshoe.
10. Secondary Brakeshoe. The secondary brakeshoe provides braking action. It is pushed into the brakedrum by the primary brakeshoe.



CHAPTER 2
OPERATING INSTRUCTIONS

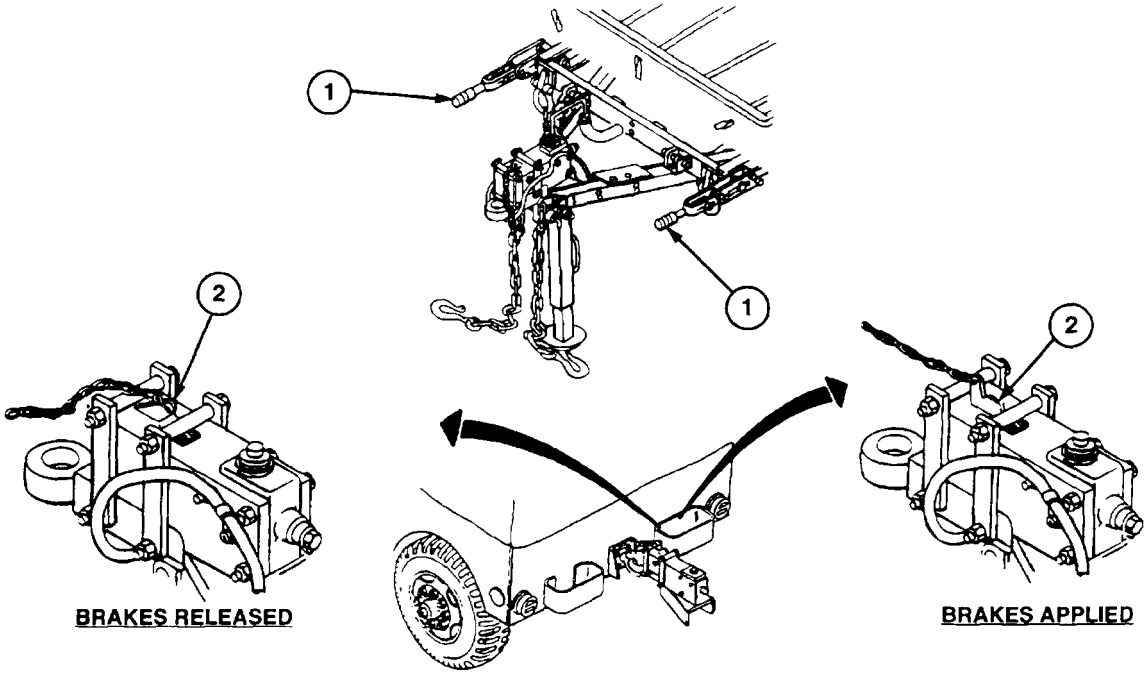
Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
2-1.	General.	2-1
2-2.	Controls and Indicators.	2-1

2-1. GENERAL.

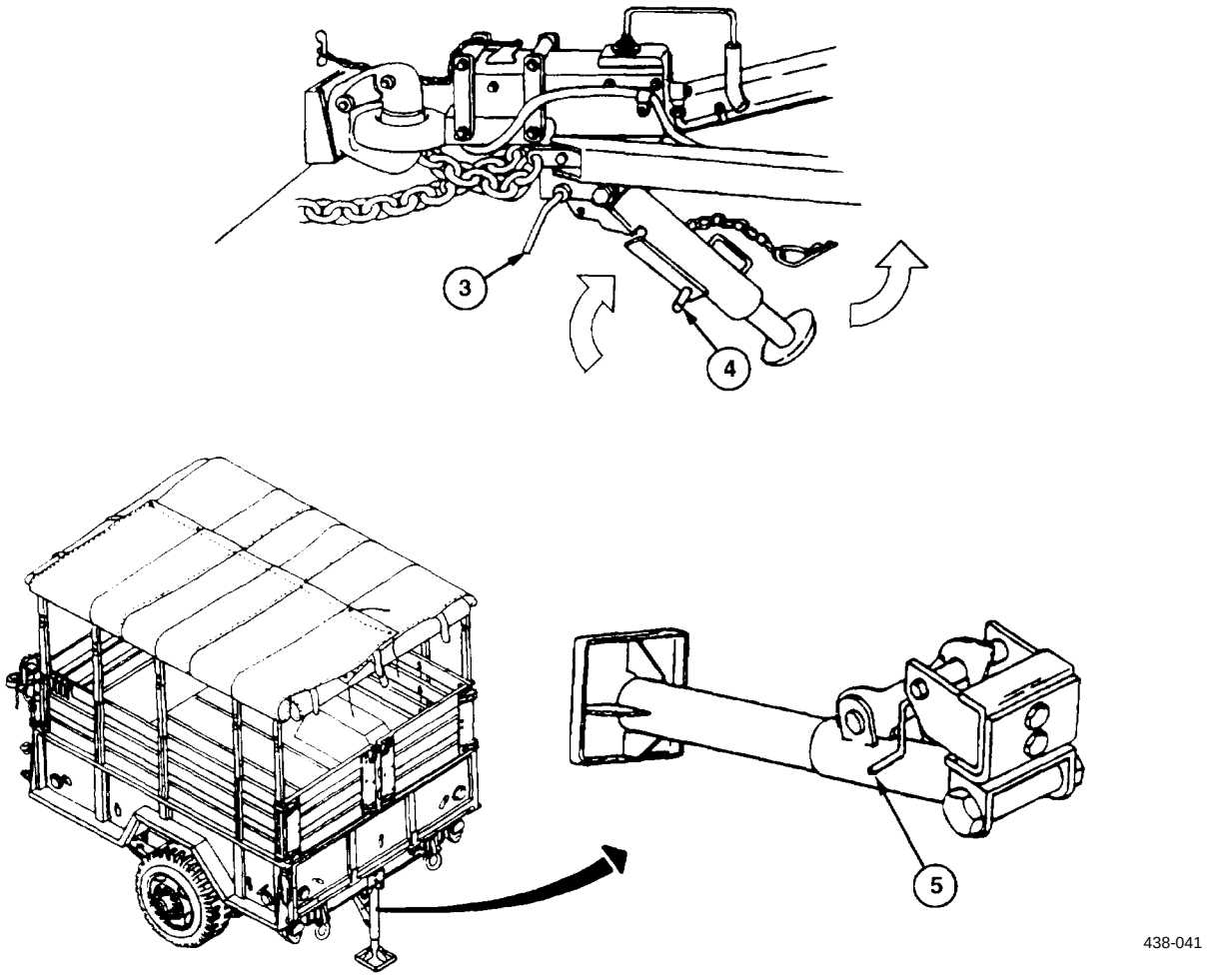
This section shows the location and describes the function of all controls and indicators. Review this section thoroughly before operating the trailer.

2-2. CONTROLS AND INDICATORS.



KEY	CONTROL OR INDICATOR	FUNCTION
1	Handbrake Levers	Apply and release handbrakes.
2	Breakaway Lever (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	Applies brakes in emergency situations. May be reset to release brakes.

2-2. CONTROLS AND INDICATORS (CONTINUED).



KEY	CONTROL OR INDICATOR	FUNCTION
3	Release Lever	Holds or locks adjustable front support leg in raised or lowered position.
4	Handcrank	Rotates to adjust height of adjustable front support leg.
5	Release Handle	Holds or locks rear stabilizer in raised or lowered position.

Section II. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
2-3.	General.	2-3
2-4.	Service Intervals.	2-3
2-5.	Reporting Repairs.	2-3
2-6.	General PMCS Procedures.	2-4
2-7.	Specific PMCS Procedures.	2-4
2-8.	Leakage Definitions.	2-5
Table 2-1.	Operator/Crew Preventive Maintenance Checks and Services (PMCS) for the M101 and M116 Series Trailers	2-6

2-3. GENERAL.

a. To ensure that the M101 and M116 Series trailers are ready for operation at all times, they must be inspected on a regular basis so that defects may be found before they result in serious damage, equipment failure, or injury to personnel. This section contains systematic instructions on inspections, adjustments, and corrections to be performed by the operator/crew.

b. While performing preventive maintenance checks and services (PMCS), read and follow all safety instructions found in the warning summary at the beginning of this manual. Keep in mind all WARNINGs and CAUTIONs.

2-4. SERVICE INTERVALS.

Perform the PMCS procedures listed in Table 2-1 at the following intervals:

- Perform *Before* PMCS just before operating the trailer.
- Perform *During* PMCS while operating the trailer.
- Perform *Weekly* PMCS once each week.
- Perform *Monthly* PMCS once each month.

2-5. REPORTING REPAIRS.

All defects that the operator cannot fix must be reported on a DA Form 2404, *Equipment Inspection and Maintenance Worksheet*, immediately after completing PMCS. If a serious problem is found, IMMEDIATELY report it to your supervisor.

2-6. GENERAL PMCS PROCEDURES.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

a. Keep equipment clean. Dirt, oil, and debris may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (Item 15, Appendix F) on all metal surfaces. Use detergent (Item 5, Appendix F) and water on rubber, plastic, and painted surfaces.

b. While performing specific PMCS procedures, inspect the following components:

Bolts, Nuts, and Screws. Make sure they are not loose, missing, bent, or broken. Report loose or missing bolts, nuts, and screws to Unit maintenance.

Welds. Inspect for gaps where parts are welded together. Check for loose or chipped paint, rust, and cracks. Report bad welds to Unit maintenance.

Wiring Harness, Wires, and Connectors. Inspect for cracked or broken wiring harness insulation, bare wires, and loose or broken connectors. Report loose connections and faulty wiring to Unit maintenance.

Hydraulic Brake Lines and Fittings. Inspect for wear, damage, and leaks. Make sure fittings are tight. Report any damage, leaks, or loose fittings to Unit maintenance.

c. Check to see that components are adequately lubricated in accordance with Appendix I.

2-7. SPECIFIC PMCS PROCEDURES.

a. Operator/Crew PMCS procedures are provided in Table 2-1. Always perform PMCS procedures in the order listed. Once the procedures become routine, problems can be easily recognized.

b. Before performing PMCS, read all the checks required for the applicable interval and prepare all the tools needed for the task. Have several clean rags (Item 13, Appendix F) ready for use. Perform ALL inspections at the applicable intervals.

c. If any problems are discovered through PMCS, perform the appropriate troubleshooting task as described in Chapter 3. If any component or system is not serviceable, or if a given service does not correct the problem, notify your supervisor.

d. Explanations of the column headings in Table 2-1 are as follows:

Item No. The item number column of your PMCS table is to be used for reference. When completing DA Form 2404, include the item number for the check/service indicating a fault. Item numbers also appear In the order that you must do checks and services for the interval listed.

Interval. This column of your PMCS table tells you when to do a certain check or service.

Item To Be Inspected. This column names the item to be checked or serviced.

2-7. SPECIFIC PMCS PROCEDURES (Continued).

Procedure. This column tells you how to do the required checks and services. Follow these instructions carefully. If tools are not available or if the procedure says to, have Unit maintenance do the work.

NOTE

The term "mission capable" refers to equipment being on hand and able to perform its combat mission (refer to AR 700-138).

Not Fully Mission Capable If: This column explains when and why your equipment cannot be used.

2-8. LEAKAGE DEFINITIONS.

a. It is important to know how fluid leakage affects the status of the trailer. The following are types/classes of leakage an operator must know to determine if the trailer is mission capable. Learn these leakage definitions. When in doubt, notify your supervisor.

Class I	Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
Class II	Leakage of fluid great enough to form drops, but not great enough to cause drops to drip from item being inspected.
Class III	Leakage of fluid great enough to form drops that fall from the item being inspected.

CAUTION

- **Equipment operation is allowable with minor leakages (Class I or II). Of course, you must consider the fluid capacity in the item/system being checked/ inspected. When in doubt, notify your supervisor. When operating with Class I or Class II leaks, continue to check fluid levels as required in your PMCS.**

- **Class III leaks should be reported immediately to your supervisor or Unit maintenance.**

b. Equipment operation is allowed with minor (Class I or II) leakage. Fluid levels in an item/system affected with such leakage must be checked more frequently than required in PMCS. When in doubt, notify your supervisor.

c. Report Class III leaks IMMEDIATELY to your supervisor or Unit maintenance.

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS) for the M101 and M116 Series Trailers

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
			NOTE **Perform *Weekly* as well as *Before* PMCS if you are the assigned operator but have not operated the trailer since the last *Weekly* PMCS, or if you are operating the trailer for the first time.**	
1	**Before**	**Wheel and Tire Assembly**	**NOTE** **Lug nuts are turned clockwise to tighten and counterclockwise to loosen.**	
			a. Check wheels for damage and loose or missing lug nuts.	a. One wheel is damaged. One lug nut is loose or missing.
			b. Check tires for cuts, foreign objects, or unusual tread wear. Remove any stones from between treads.	b. One tire is flat, missing, or unserviceable.
2	**Before**	**Drawbar Coupler, Intervehicular Cable, and Safety Chains**	a. Check drawbar coupler (1) for secure mounting, obvious damage, and proper torque of mounting bolts.	a. Drawbar coupler is loose or bent; missing nuts/bolts or mounting hardware.
			b. Check intervehicular cable (2) for cuts and breaks.	
			c. Check safety chains (3) for secure mounting and obvious damage.	c. Safety chains are missing or unsecured.

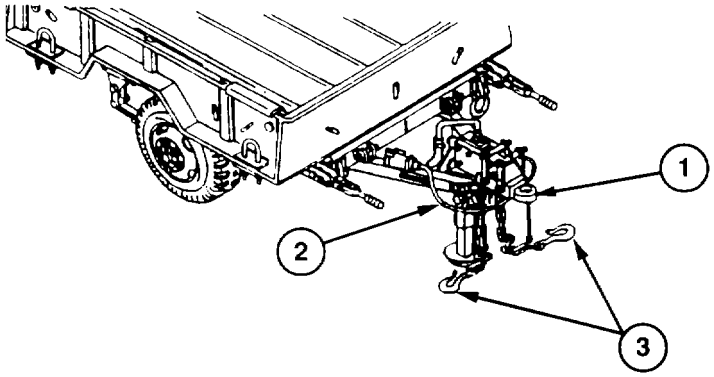


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Table 2-1. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE M101 AND M116 SERIES TRAILERS (continued)

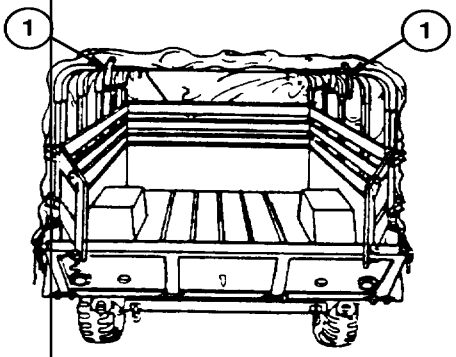
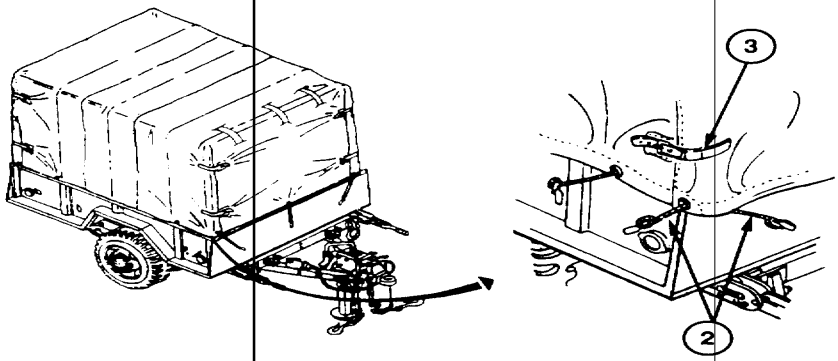
Item No.	Interval	Item to be inspected	Procedure	Not Fully Mission Capable If:
3	Before	Brake System	a. Test brake system by coupling trailer to towing vehicle (para 2-13). b. Check for brake fluid leakage from master cylinder, hydraulic brake tube assemblies, hydraulic brake hose, and fittings.	a. Service brakes fail to operate. b. Any leaks are found.
4	Before	Handbrakes	With trailer coupled to towing vehicle, apply handbrakes (para 2-10). Move trailer slightly to see if handbrakes hold the wheels.	
5	Before	Canvas Cover Assembly (M101A2 and M101A3)	a. Check for missing or unserviceable tiedown straps and snap fasteners (1).  b. Check for missing or unserviceable ropes (2). c. Check for missing or unserviceable straps and buckles (3). d. Check for ripped seams and tears.  	

Table 2-1. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE M101 AND M116 SERIES TRAILERS (continued)

Item No.	Interval	Item to be inspected	Procedure	Not Fully Mission Capable If:
6	Before	Tailgate Assemby (M101A2 and M101A3)	a. Check for unserviceable slats (1). b. Check for missing or unserviceable strap hinge assemblies (2). c. Check for missing or unserviceable strap latch assemblies (3).	
7	Before	Front Rack Assembly (M101A2 and M101A3)	a. Check for unserviceable slats (1). b. Check for missing or unserviceable strap hinge assemblies (2).	
8	Before	Bow Assembly (M101A2 and M101A3)	Inspect for unserviceable bow assemblies (4)	

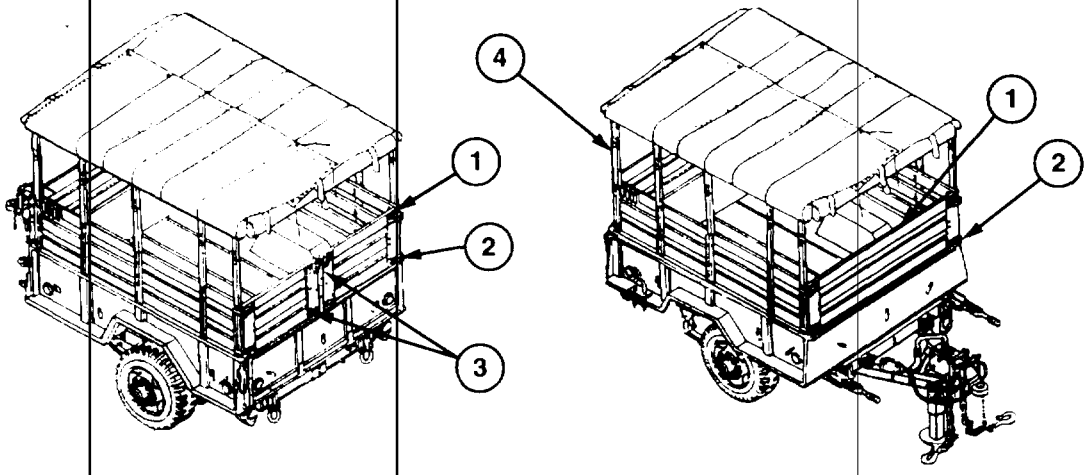


Table 2-1. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE M101 AND M116 SERIES TRAILERS (continued)

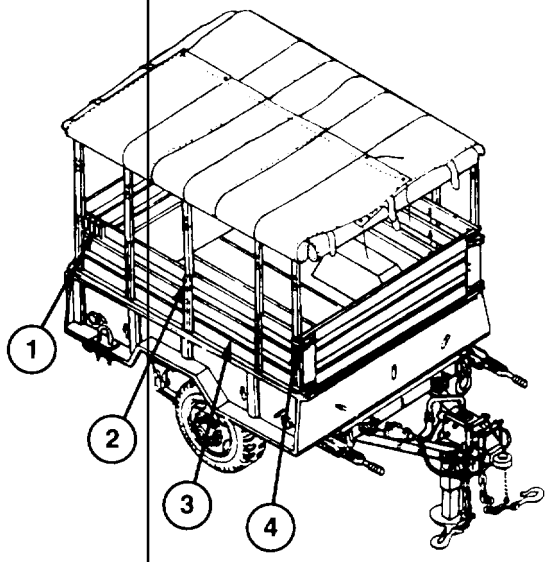
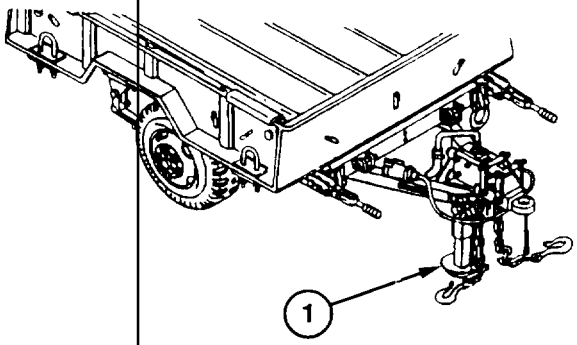
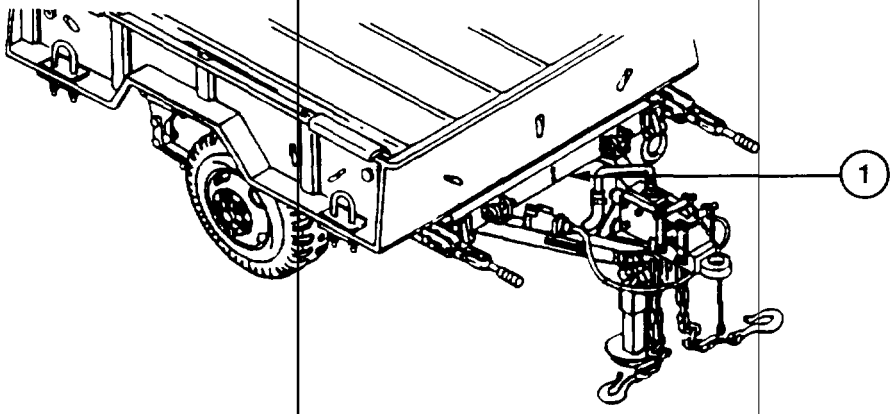
Item No.	Interval	Item to be inspected	Procedure	Not Fully Mission Capable If:
9	Before	Side Rack Assemby (M101A2 and M101A3)	a. Check for missing or unserviceable bow clips (1). b. Check for unserviceable stakes (2). c. Check for unserviceable slats (3). d. Check for missing or unserviceable strap hinge assemblies (4). 	
10	During Leg	Front Support	With trailer coupled to towing vehicle, check front support leg (1) for ease of operation. 	Front support leg will not secure in stowed position or will not support trailer.

Table 2-1. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE M101 AND M116 SERIES TRAILERS (continued)

Item No.	Interval	Item to be inspected	Procedure	Not Fully Mission Capable If:
11	During	Stoplight-Taillights	NOTE An assistant is required while checking stoplight-taillights. a. Connect intervehicular cable to towing vehicle (para 2-13). b. Operate towing vehicle light switch through all settings and check stoplight-taillights.	
12	During	Trailer Operation	a. Be alert for any unusual noise while towing trailer. Stop and investigate any unusual noises. b. Make sure trailer is tracking correctly behind towing vehicle, with no side pull.	
13	Weekly	Wheel and Tire Assembly	Check for proper tire pressure when tires are cool (para 1-15).	One tire is flat, missing, or unserviceable.
14	Weekly	Reflectors	On cargo trailers, check for damage and presence of reflectors.	
15	Monthly	Frame	When trailer is loaded, inspect entire Chassis frame (1) for damage, cracks, and broken welds.	Frame is broken or cracked.



Section III. OPERATION UNDER USUAL CONDITIONS

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
2-9.	General	2-11
2-10.	Operating Handbrakes	2-11
2-11.	Installing Rack, Tailgate, and Canvas Cover Assemblies (M101A1, M101A2 and M101A3)	2-12
2-12.	Loading the Trailer	2-15
2-13.	Coupling Trailer To Towing Vehicle	2-16
2-14.	Towing Instructions	2-20
2-15.	Uncoupling Trailer From Towing Vehicle	2-22
2-16.	Removing Canvas Cover, Tailgate, and Rack Assemblies (M101A1, M101A2, and M101A3)	2-25

2-9. GENERAL.

a. This section contains instructions for safely operating the M101 and M116 Series trailers under usual conditions. Unusual operating conditions are defined and described in Section IV of this chapter.

b. Before operating a trailer, make sure Unit maintenance services the vehicle.

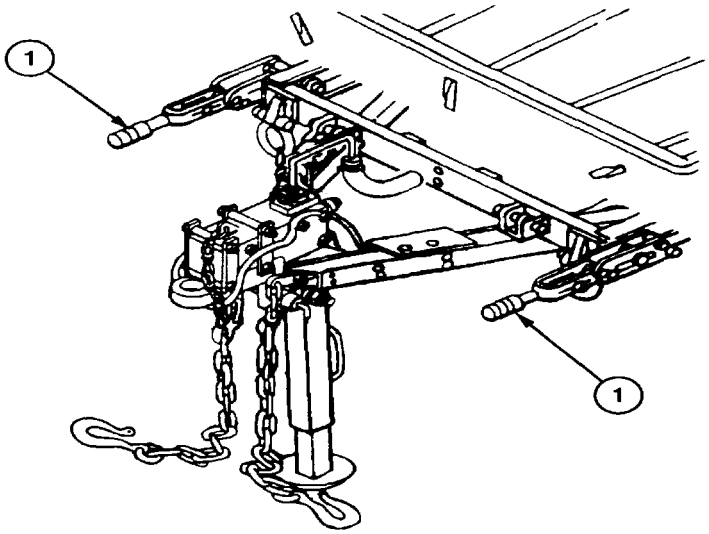
c. Perform all *Before* PMCS listed in Table 2-1 before operating the trailer.

d. Before coupling and uncoupling the trailer, review all towing instructions in the operator's manual for the towing vehicle.

2-10. OPERATING HANDBRAKES.

a. Pull handbrake levers (1) forward and down to apply handbrakes.

b. Push handbrake levers (1) to an upright position to release handbrakes.



438-046

2-11. INSTALLING RACK, TAILGATE, AND CANVAS COVER ASSEMBLIES (M101A2 AND M101A3).

WARNING

Side rack assembly is heavy and awkward to handle. To prevent injury to personnel, use extreme caution and get assistance when handling.

NOTE

Two persons are required when performing this task.

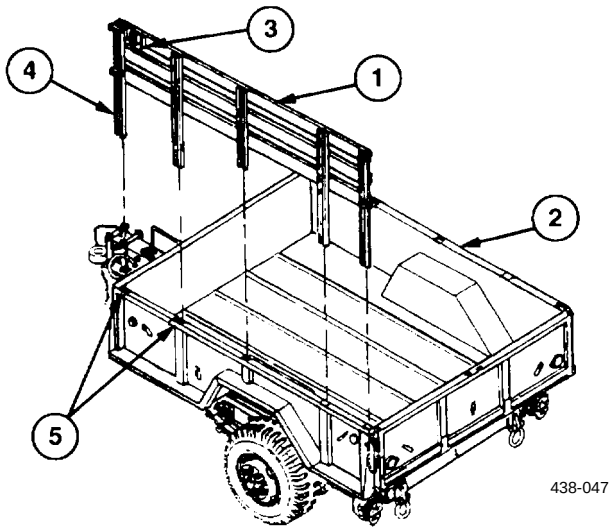
a. Apply handbrakes (para 2-10).

b. Lift road-side side rack assembly (1) into position above cargo body (2), with bow clips (3) toward front of trailer.

c. Align five stakes (4) with five stake pockets (5) in cargo body (2). Push stakes (4) evenly into stake pockets (5) until road-side side rack assembly (1) is fully installed in cargo body (2).

d. Repeat steps b and c to install curb-side side rack assembly (1).

e. Position front rack assembly (6) between road-side and curb-side side rack assemblies (1).

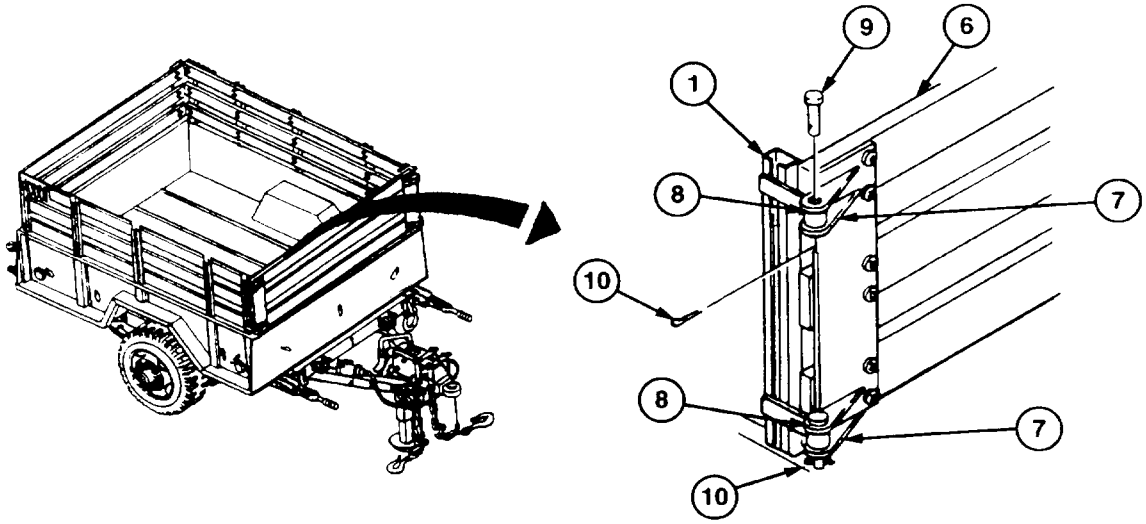


438-047

f. At road-side corner, align two strap hinge assemblies (7) on front rack assembly (6) with two hinges (8) on roadside side rack assembly (1).

g. Install two straight headed pins (9), with heads facing up, in two strap hinge assemblies (7) and hinges (8). Install two cotter pins (10) in straight headed pins (9).

h. At curb-side corner, repeat steps f and g to install front rack assembly (6) on curb-side side rack assembly (1).



438-119

2-11. INSTALLING RACK, TAILGATE, AND CANVAS COVER ASSEMBLIES (M101 A2 AND M101A3) (continued).

i. At rear of trailer, align two strap hinge assemblies (11) on tailgate assembly (12) with two hinges (13) on road- side side rack assembly (1).

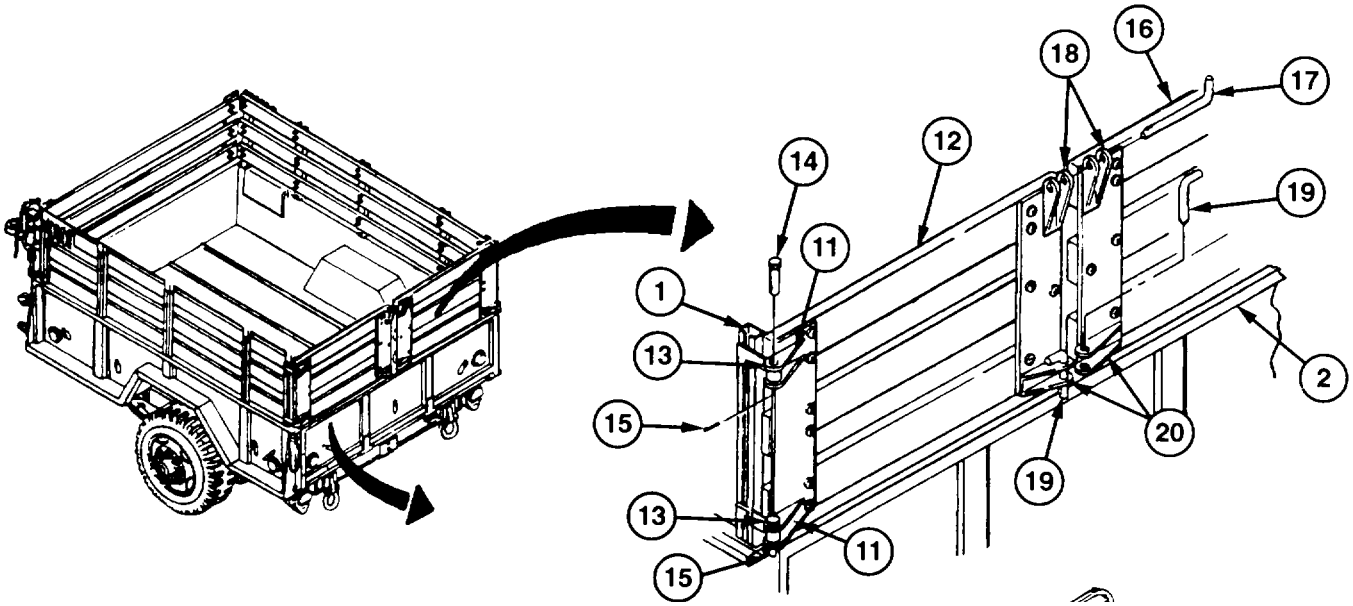
j. Install two straight headed pins (14), with heads facing up, in two strap hinge assemblies (11) and hinges (13). Install two cotter pins (15) in two straight-headed pins (14).

k. At curb side, repeat steps i and j to install curb-side tailgate assembly (16) on curb-side side rack assembly (1).

l. Close both tailgate assemblies (12 and 16).

m. Install connecting link (17) in two top strap latch assemblies (18) of both tailgate assemblies (12 and 16).

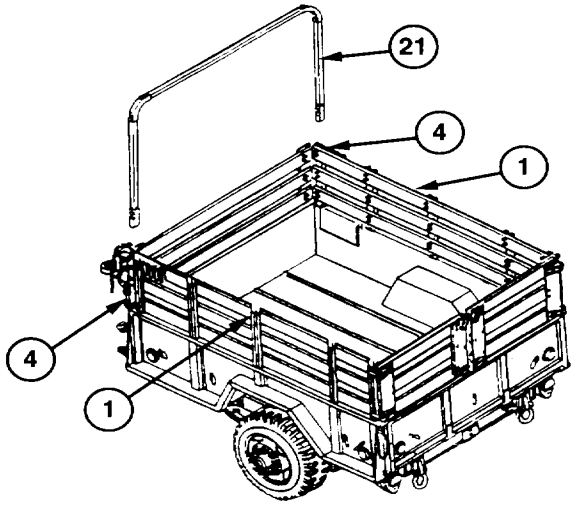
n. Install two connecting links (19) in two bottom strap latch assemblies (20) on both tailgate assemblies (12 and 16) and two holes in cargo body (2).



o Align one of five bow assemblies (21) with two stakes (4) in both side rack assemblies (1)

Push bow assembly (21) evenly into stakes (4) until fully installed in side rack assemblies (1).

p. Repeat step o to install remaining four bow assemblies (21).



2-11. INSTALLING RACK, TAILGATE, AND CANVAS COVER ASSEMBLIES (M101A2 AND M101A3) (continued).

NOTE

Canvas cover assembly should be positioned so that the side marked "FRONT" faces the front of the trailer.

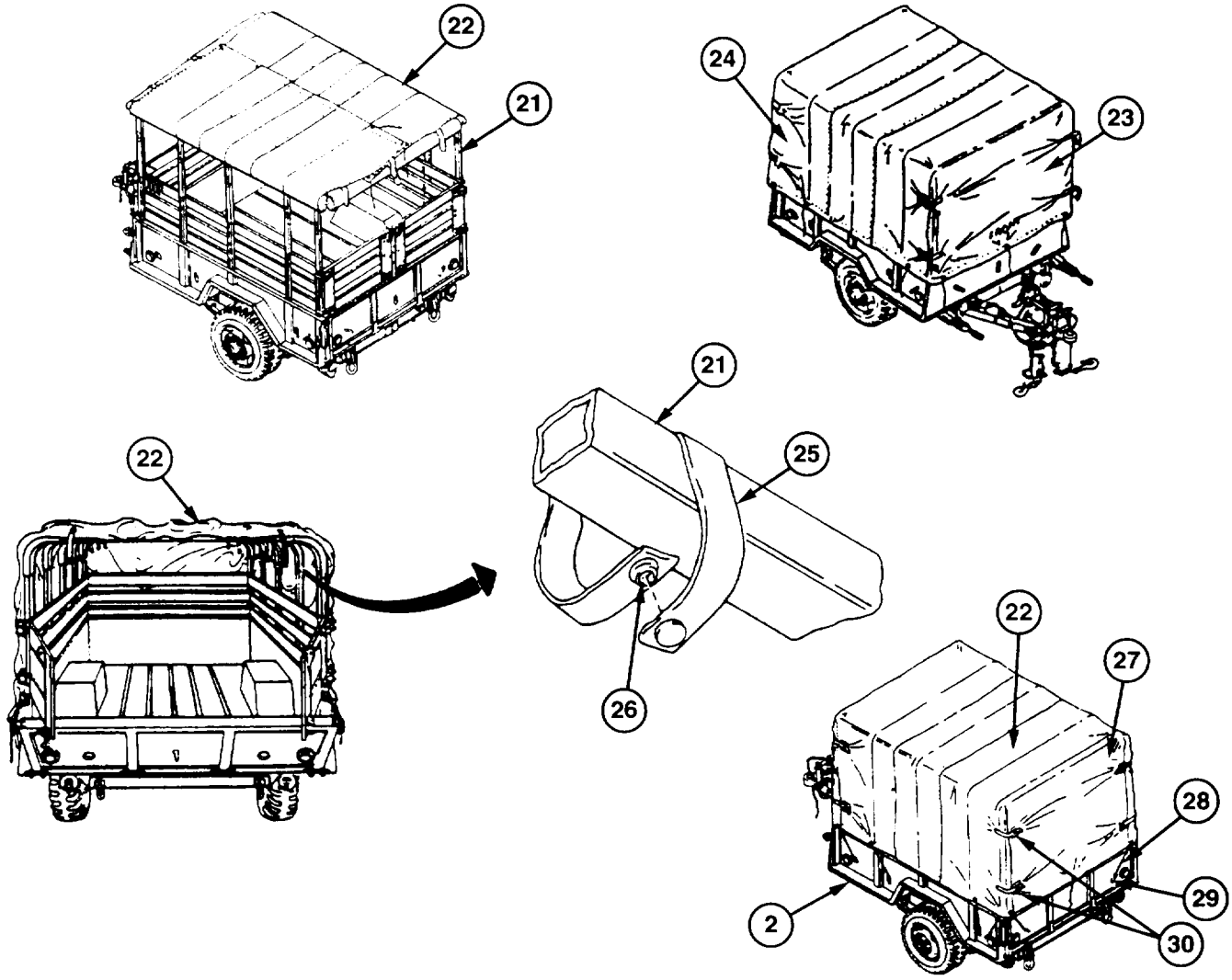
q. Spread canvas cover assembly (22) over five bow assemblies (21).

r. Unfold front curtain (23) and two side curtains (24).

s. From inside, attach top of canvas cover assembly (22) to five bow assemblies (21) by securing 10 tiedown straps (25) using 10 snap fasteners (26).

t. Unfold back curtain (27).

u. Attach 14 ropes (28) to 14 cargo hooks (29) on cargo body (2). Fasten eight straps (30) on canvas cover assembly (22).



2-12. LOADING THE TRAILER.

WARNING

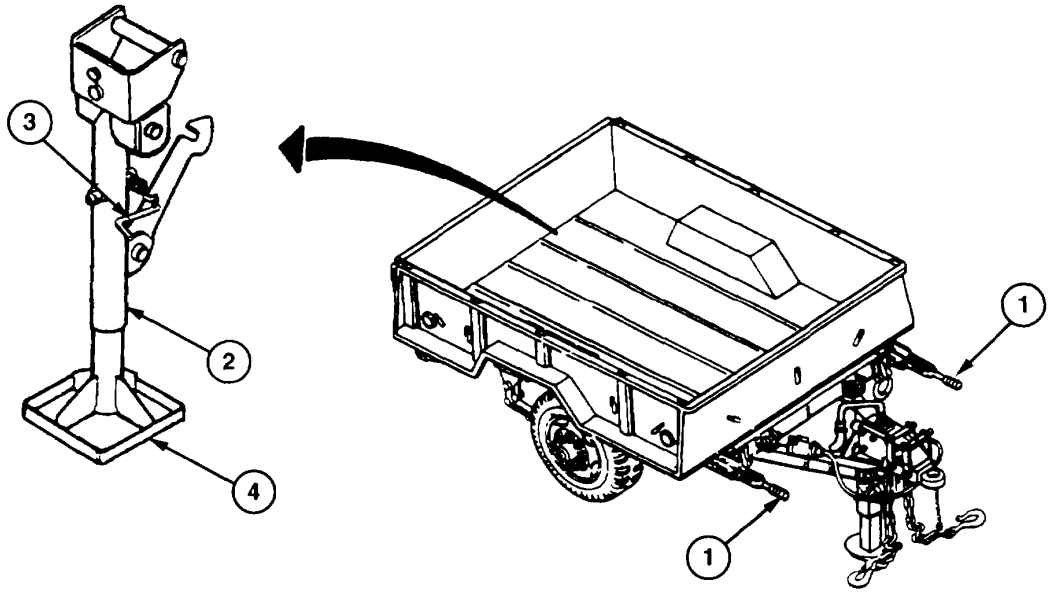
If trailer is not coupled to towing vehicle, make sure handbrakes are applied and wheels are chocked securely. Failure to follow this warning may cause trailer to roll, resulting in serious injury or death to personnel or damage to equipment.

a. Operate handbrake levers (1) to apply handbrakes (para 2-10).

WARNING

Rear stabilizer must be used if trailer is carrying generator sets. Failure to follow this warning may cause trailer to tip, resulting in serious injury to personnel or damage to equipment.

b. If equipped with rear stabilizer (2), pull out on release handle (3) and lower rear stabilizer (2). Turn foot assembly (4) until it firmly contacts ground.



WARNING

Make sure weight of load is evenly distributed. Too much weight at the front will make trailer difficult to lift. Too much weight at the rear will cause trailer to tip backward. Serious injury to personnel or damage to equipment may result.

c. Distribute load evenly over trailer. Do not exceed maximum allowable payload (para 1-15).

2-13. COUPLING TRAILER TO TOWING VEHICLE.

NOTE

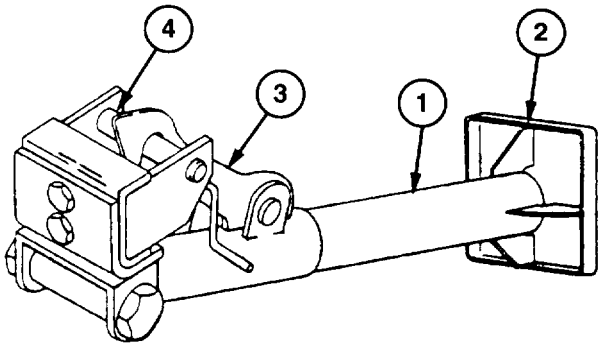
Make sure towing vehicle and trailer are on level ground before coupling.

a. Apply handbrakes (para 2-10).

WARNING

- **Rear stabilizer MUST be used during loading and unloading when trailer is not coupled to towing vehicle. Failure to follow this warning may cause trailer to tip, resulting in injury to personnel or damage to equipment.**
- **Make sure that weight of trailer is on front support (landing) leg or trailer is coupled to towing vehicle before raising rear stabilizer. Failure to follow this warning may cause trailer to tip, resulting in serious injury to personnel or damage to equipment.**

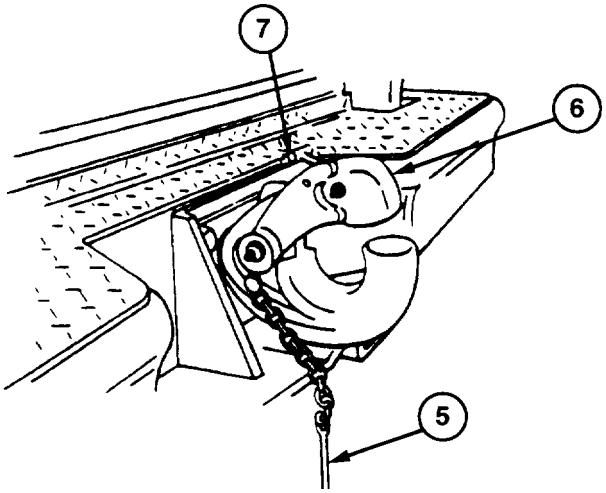
b. If equipped with rear stabilizer (1), turn foot assembly (2) as far as it will go into rear stabilizer (1). Swing rear stabilizer (1) up until latch hook (3) hooks onto up-latch pin (4).



438-050

c. Remove safety pin (5) from pintle hook (6) of towing vehicle.

d. Pull up on locking latch (7) to open pintle hook (6).



438-051

2-13. COUPLING TRAILER TO TOWING VEHICLE (CONTINUED).

WARNING

- **All personnel must stand clear of towing vehicle and trailer during coupling operation. Failure to follow this warning may result in serious injury or death to personnel.**
- **DO NOT move the trailer laterally (push/pull) using the landing leg/caster as a third wheel or trailer dolly. Mounting bracket or landing leg/cast or failure may cause trailer damage or injury to personnel.**
- **Use ground guides and back prime mover to the trailer lunette, NOT vice versa. Failure to follow this warning may result in injury or death to personnel.**
- **DO NOT use landing leg/caster as a third wheel to pivot/turn trailer around to face the prime mover. Remove the load from the trailer if it must be turned around. Failure to follow this warning may result in serious injury to personnel or damage to equipment.**

e. Back towing vehicle in front of drawbar coupler (8).

WARNING

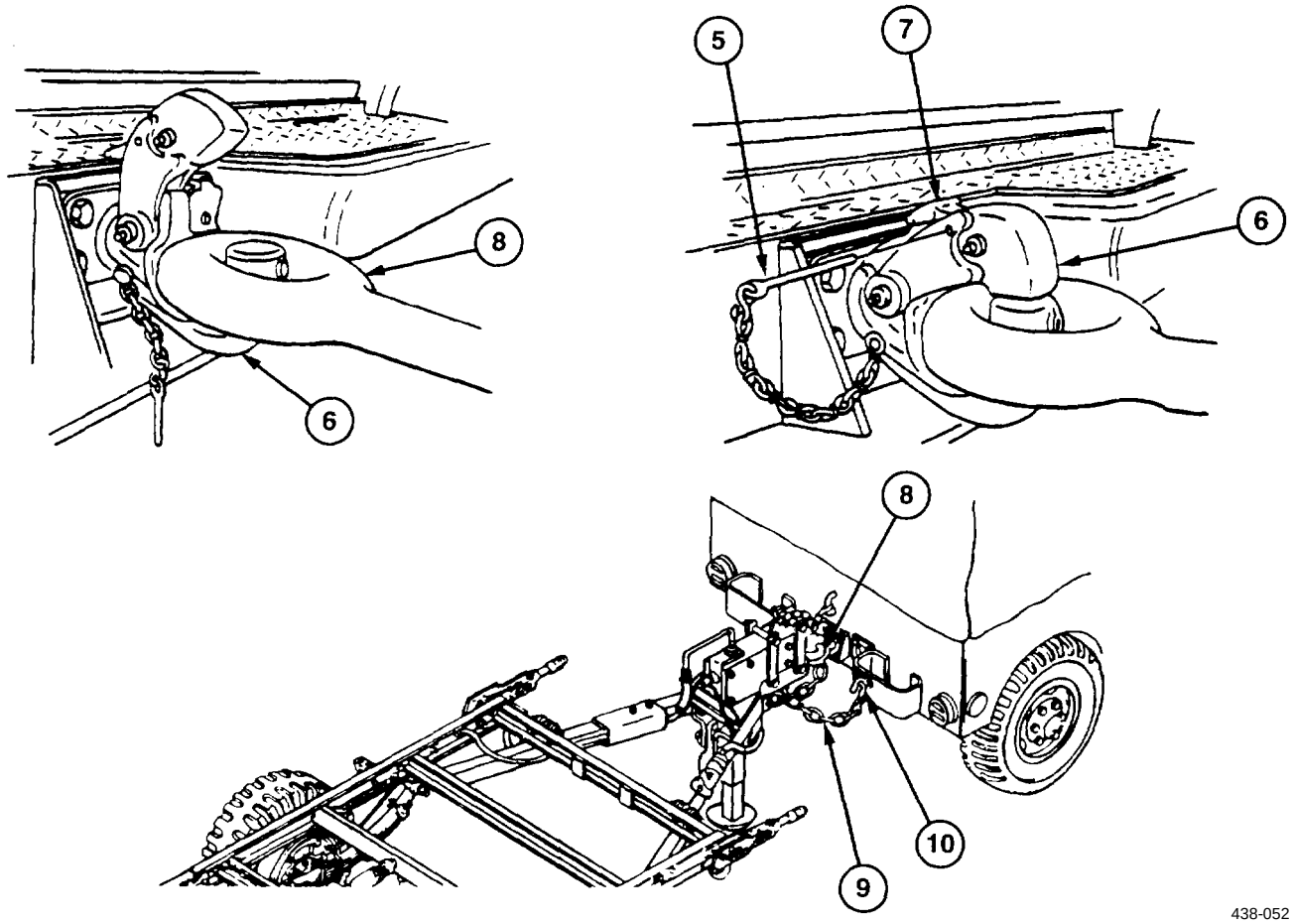
- **Drawbar is heavy - up to 280 lb (127 kg) loaded tongue weight. Use front support (landing) leg crank to raise and lower trailer drawbar. If support leg assembly is inoperative, use suitable lifting deice to lift the drawbar. If a suitable lifting device is not available, remove load from trailer and use four or more persons to lift drawbar. Failure to follow this warning may result in serious injury to personnel or damage to equipment.**
- **Keep hands away from lunette ring during coupling operations. Use the landing leg crank to lower or raise lunette. Realign prime mover tow pintle with lunette as necessary. Failure to follow this warning may result in injury to personnel.**

f. Use handcrank to adjust height of drawbar coupler (8). Place drawbar coupler (8) in pintle hook (6).

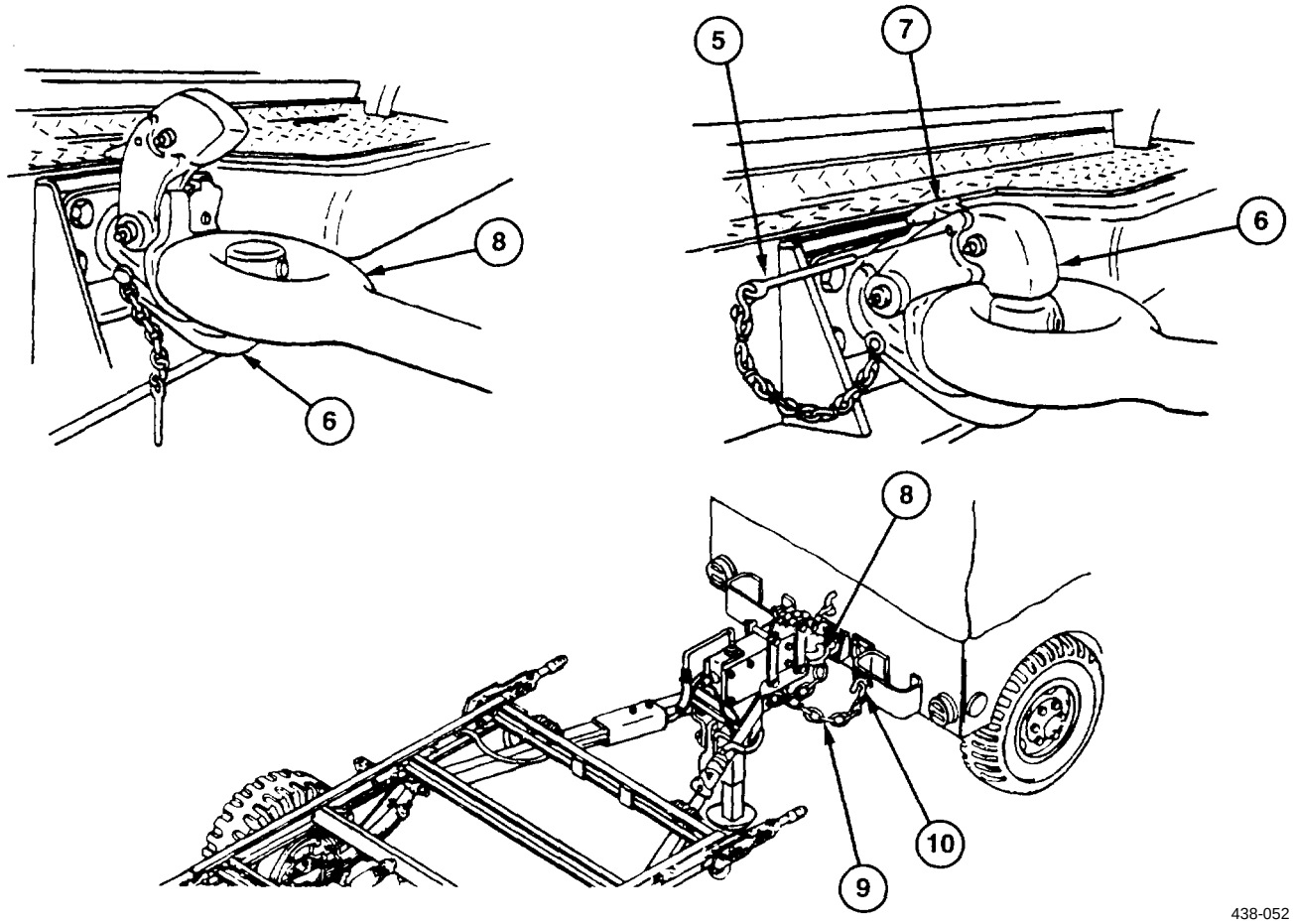
g. Close pintle hook (6). Check to see that locking latch (7) is locked by pulling up on pintle hook (6). Pintle hook (6) should not come up. Install safety pin (5) in pintle hook (6).

h. Cross two safety chains (9) under drawbar coupler (8) and hook to two towing vehicle eyebolts (10).

2-13. COUPLING TRAILER TO TOWING VEHICLE (CONTINUED).



2-13. COUPLING TRAILER TO TOWING VEHICLE (CONTINUED).



438-052

2-13. COUPLING TRAILER TO TOWING VEHICLE (CONTINUED).

NOTE

Step i. does not apply to Models M101A1 and M116A1.

i. Attach breakaway chain (11) to towing vehicle. Make sure there is enough slack in breakaway chain (11) to allow trailer to make full turns.

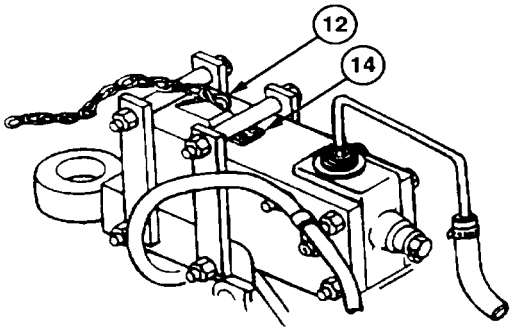
CAUTION

Make sure breakaway lever is fully released. If breakaway lever is not fully released trailer brakes will drag, heat up, and burn out.

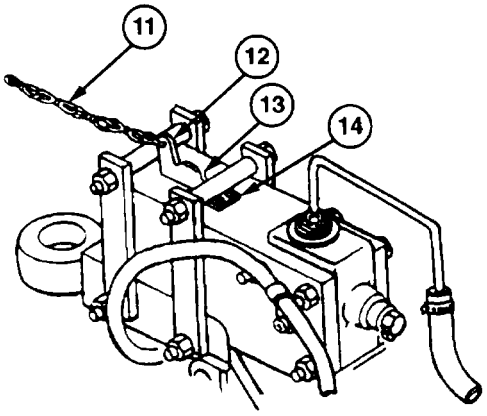
NOTE

Step j. does not apply to Models M101A1 and M116A1.

j. Make sure breakaway lever (12) is pushed all the way back toward trailer and that ratchet teeth (13) are not engaged in leaf spring (14). If ratchet teeth (13) are engaged in leaf spring (14), lift leaf spring (14) and push breakaway lever (12) all the way back toward trailer.



BRAKES RELEASED

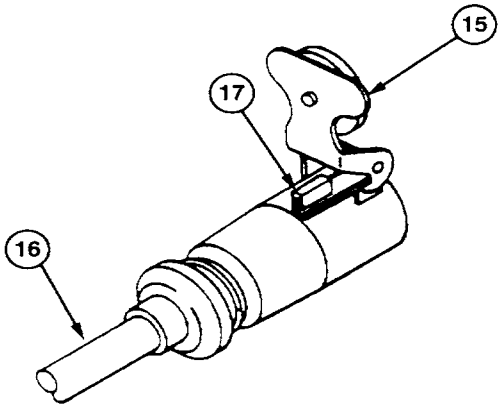


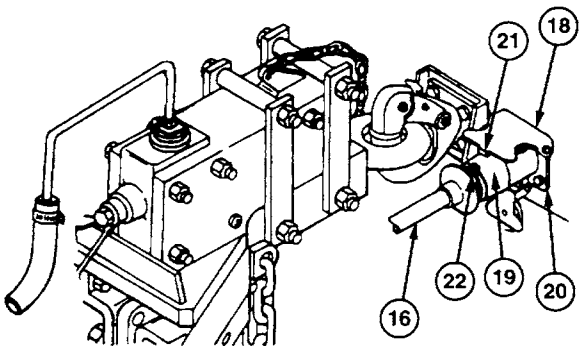
BRAKES APPLIED

438-053

k. Open latch cover (15) of intervehicular cable (16) and push latch (17) to hold latch cover (15) open.

l. Lift receptacle cover (18) of towing vehicle. Push plug (19) of intervehicular cable (16) all the way into towing vehicle receptacle (20). Release receptacle cover (18). Make sure tab (21) rests in slot (22).





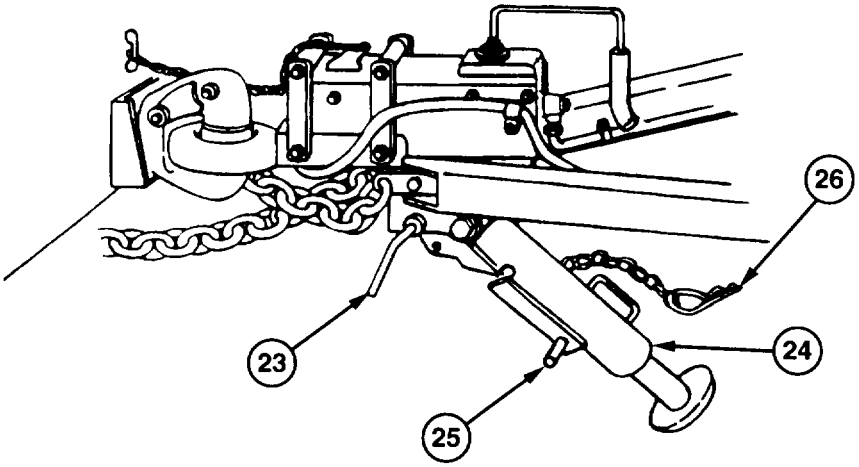
438-054

2-13. COUPLING TRAILER TO TOWING VEHICLE (CONTINUED).

m. Pull out on release lever (23) and raise front support leg (24). Lock front support leg (24) in raised position by pushing in release lever (23) all the way.

n. Stow handcrank (25) on front support leg (24) with chain and cotter pin (26).

o. Release handbrakes (para 2-10).



438-055

2-14. TOWING INSTRUCTIONS.

WARNING

Do not stand between towing vehicle and trailer when backing towing vehicle. Serious injury can result if personnel are caught between vehicles.

NOTE

Refer to FM 21-305 for further information on proper towing practices.

a. **DRIVING.**

CAUTION

Sudden stops may cause drawbar to bend or buckle and may cause damage to hydraulic brake actuator assembly.

1. When trailer is coupled, always start and stop towing vehicle slowly and gradually. Do this whether or not trailer is loaded.
2. Sudden and fast acceleration will cause hydraulic brakes to apply.
3. Never exceed maximum speed of 50 miles per hour (80 kph) highway and 6 miles per hour (10 kph) cross-country.

2-14. TOWING INSTRUCTIONS (CONTINUED).

4. When diving towing vehicle and trailer, overall length of unit must be kept in mind when turning and passing other vehicles. Because unit is hinged In the middle, turning and backing are also affected. Heavier payloads will increase stopping distance and decrease off-road maneuverability.

b. **TURNING**

CAUTION

Tight turns may cause damage to hydraulic brake actuator assembly.

1. When turning corners, allow for the fact that trailer wheels turn inside the turning radius of towing vehicle.

2. To make a right turn at an intersection, drive towing vehicle partway into intersection, then cut sharply to the night. This will allow for turning radius of trailer keep trailer wheels off the curb.

c. **BACKING**

CAUTION

Jackknifing when backing may cause damage to hydraulic brake actuator assembly.

1. Always back towing vehicle slowly and gradually.

2. Whenever possible, have an assistant driver or another person act as a ground guide.

3. Adjust all towing vehicle rearview mirrors before backing.

4. When backing, rear of trailer will move in opposite direction in which towing vehicle is turned. When towing vehicle Is turned to the right, rear of trailer will go left. When towing vehicle has turned and backing in a straight line is required, turn towing vehicle in direction trailer is moving. This will slowly bring towing vehicle and trailer Into a straight line.

CAUTION

Sudden stops may cause drawbar to bend or buckle and may cause damage to hydraulic brake actuator assembly.

d. **STOPPING**

Always stop towing vehicle by applying brakes gradually and smoothly. Do this whether or not trailer is loaded.

e. **PARKING**

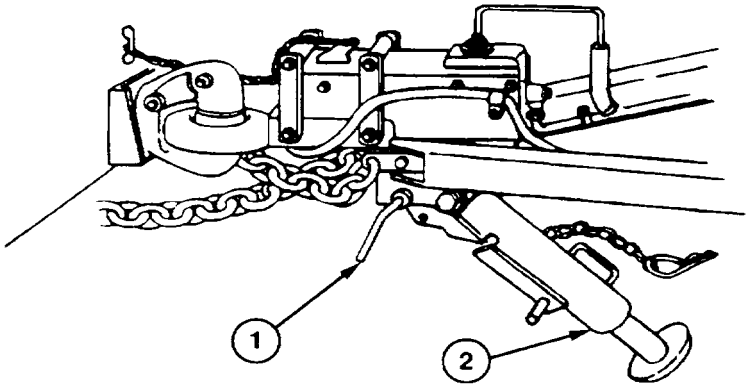
1. When towing vehicle and trailer are to be left unattended, set towing vehicle parking brakes, turn off engine, and set wheel chocks.

2. Apply handbrakes (para 2-10).

2-15. UNCOUPLING TRAILER FROM TOWING VEHICLE.

a. Apply handbrakes (para 2-10).

b. Pull out on release lever (1) and lower front support leg (2). Lock front support leg (2) in lowered position by pushing in release lever (1) all the way.



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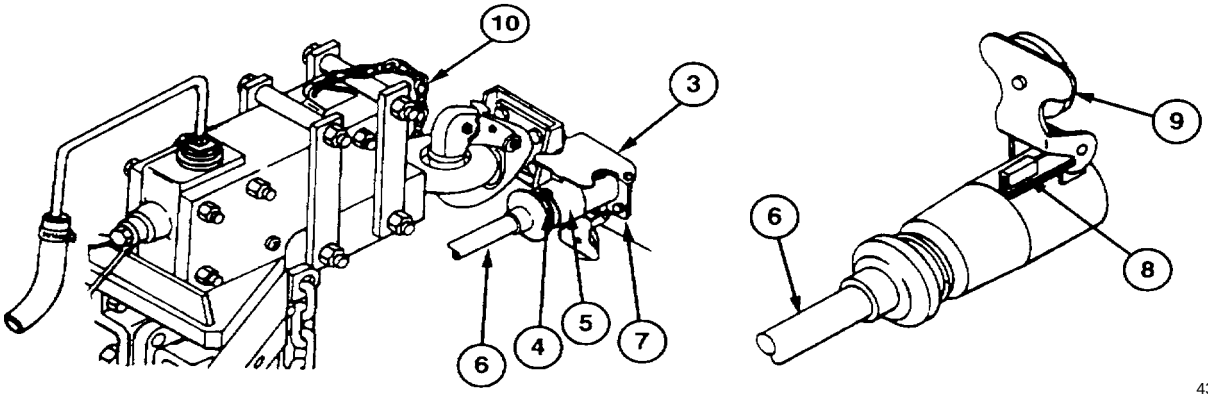
c. Lift receptacle cover (3) of towing vehicle from slot (4), and disconnect plug (5) of intervehicular cable (6) from towing vehicle receptacle (7).

NOTE

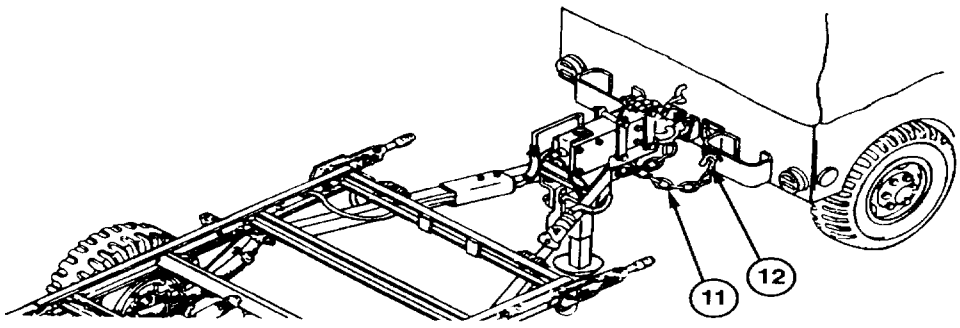
Models M101A1 and M116A1 do not have a breakaway chain.

d. Pull back latch (8). Latch cover (9) of intervehicular cable (6) is spring-loaded to close. Remove breakaway chain (10) from towing vehicle.



438-057

e. Remove two safety chains (11) from two towing vehicle eyebolts (12).



438-058

2-15. UNCOUPLING TRAILER FROM TOWING VEHICLE (CONTINUED).

WARNING

If load has shifted, make sure it is evenly distributed before removing drawbar coupler from pintle hook. Failure to follow this warning may cause trailer to tip, resulting in injury to personnel or damage to equipment.

f. Remove safety pin (13) from pintle hook (14).

g. Pull up on locking latch (15) and open pintle hook (14).

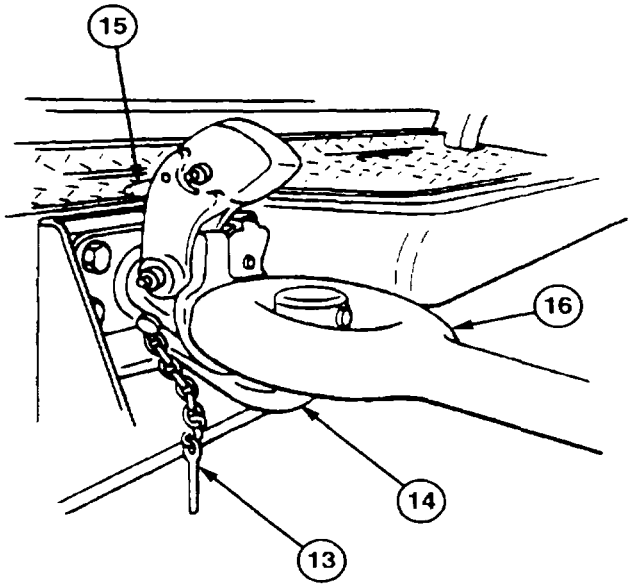
WARNING

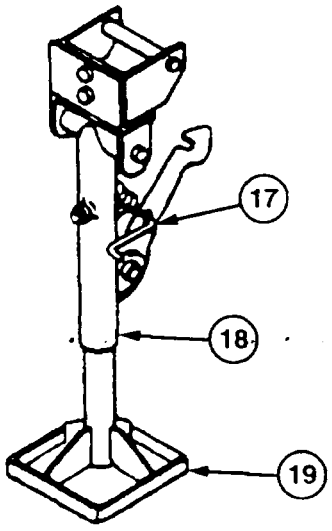
- **Drawbar is heavy - up to 280 lb (127 kg) loaded tongue weight. Use front support (landing) leg crank to raise and lower trailer drawbar. If support leg assembly is inoperative, use suitable lifting device to lift the drawbar. If a suitable lifting device is not available, remove load from trailer and use four or more persons to lift drawbar. Failure to follow this warning may result in serious injury to personnel or damage to equipment.**
- **Keep hands away from lunette ring during coupling operations. Use the landing leg crank to lower or raise lunette. Realign prime mover tow pintle with lunette as necessary. Failure to follow this warning may result in injury to personnel.**

h. Use handcrank to adjust height of drawbar coupler (16). Remove drawbar coupler (16) from pintle hook (14).

i. Close pintle hook (14). Pull up on pintle hook (14) to ensure that locking latch (15) is engaged. Install safety pin (13) in pintle hook (14).

j. Pull out on release handle (17), and lower rear stabilizer (18). Turn foot assembly (19) until it firmly contacts ground.





438-059

2-16. REMOVING CANVAS COVER, TAILGATE, AND RACK ASSEMBLIES (M101A2 AND M101A3).

NOTE

Assistance is required for performing this task.

a. Apply handbrakes (para 2-10).

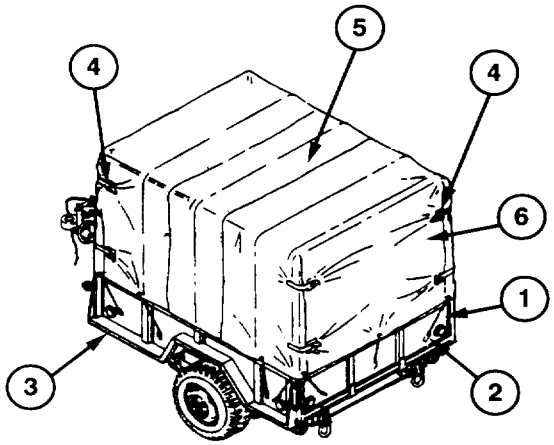
b. Remove 14 ropes (1) from 14 cargo hooks (2) on cargo body (3).

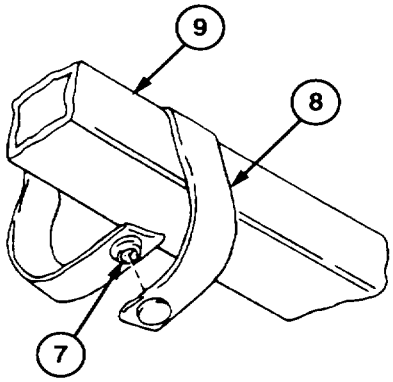
c. Unfasten eight straps (4) on canvas cover assembly (5).

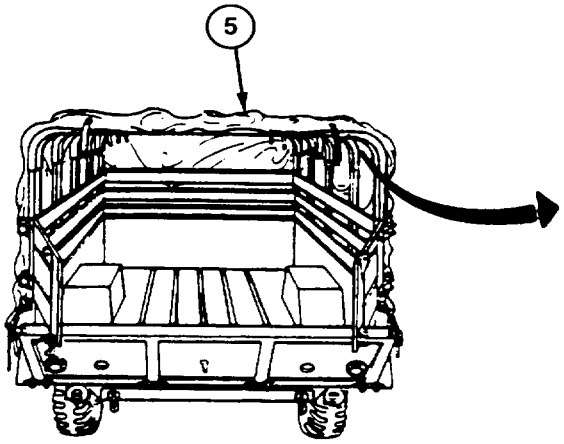
d. Fold back curtain (6) over top of canvas cover assembly (5).

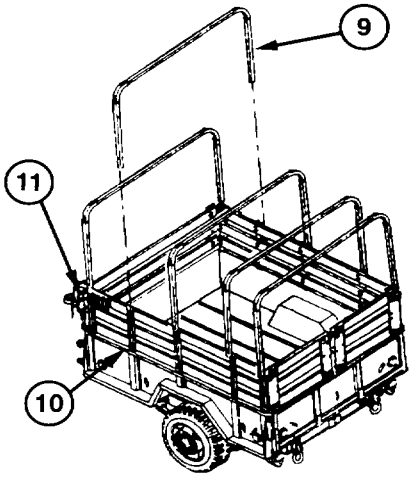
e. From Inside trailer, unsnap 10 snap fasteners (7) and remove 10 tiedown straps (8) from five bow assemblies (9).

f. Remove canvas cover assembly (5) from five bow assemblies (9). Fold canvas cover assembly (5) and stow.









9. Remove five bow assemblies (9) from 10 stakes (10).

NOTE

Skip step h if rack and tailgate assemblies are being removed. Bow assemblies are stowed in bow clips only if rack and tailgate assemblies are not removed.

h. Stow five bow assemblies (9) in 10 bow clips (11).

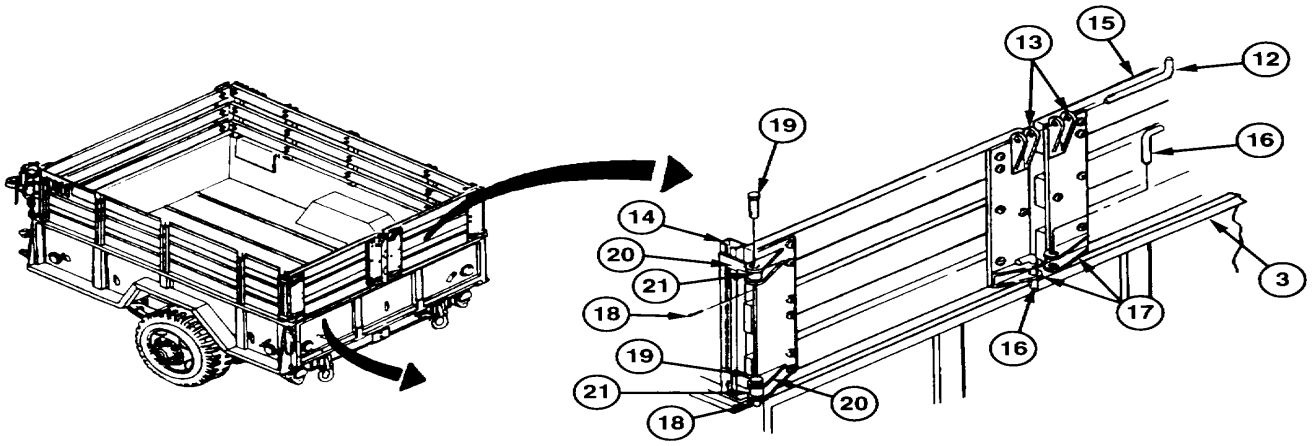
2-16. REMOVING CANVAS COVER, TAILGATE, AND RACK ASSEMBLIES (M101A2 AND M101A3) (continued).

i. Remove connecting link (12) from two top strap latch assemblies (13) of road-side and curb-side tailgate assemblies (14 and 15).

j. Remove two connecting links (16) from two bottom strap latch assemblies (17) and holes in cargo body (3).

k. At road-side tailgate assembly (14), remove two cotter pins (18) and headed straight pins (19) from two strap hinge assemblies (20) and hinges (21). Remove road-side tailgate assembly (14) from curb-side tailgate assembly (15).

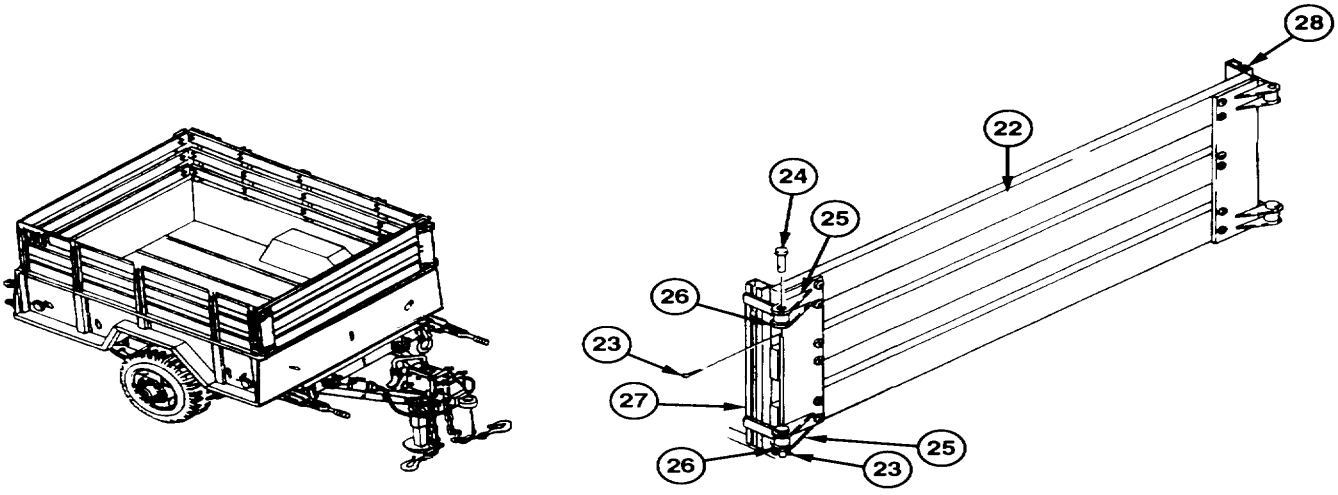
l. At curb side, repeat step k to remove curb-side tailgate assembly (15).



m. At road-side front rack assembly (22), remove two cotter pins (23) and headed straight pins (24) from two strap hinge assemblies (25) and hinges (26) on road-side side rack assembly (27).

n. Repeat step m at curb-side front rack assembly (22).

o. Remove front rack assembly (22) from road-side and curb-side rack assemblies (27 and 28).



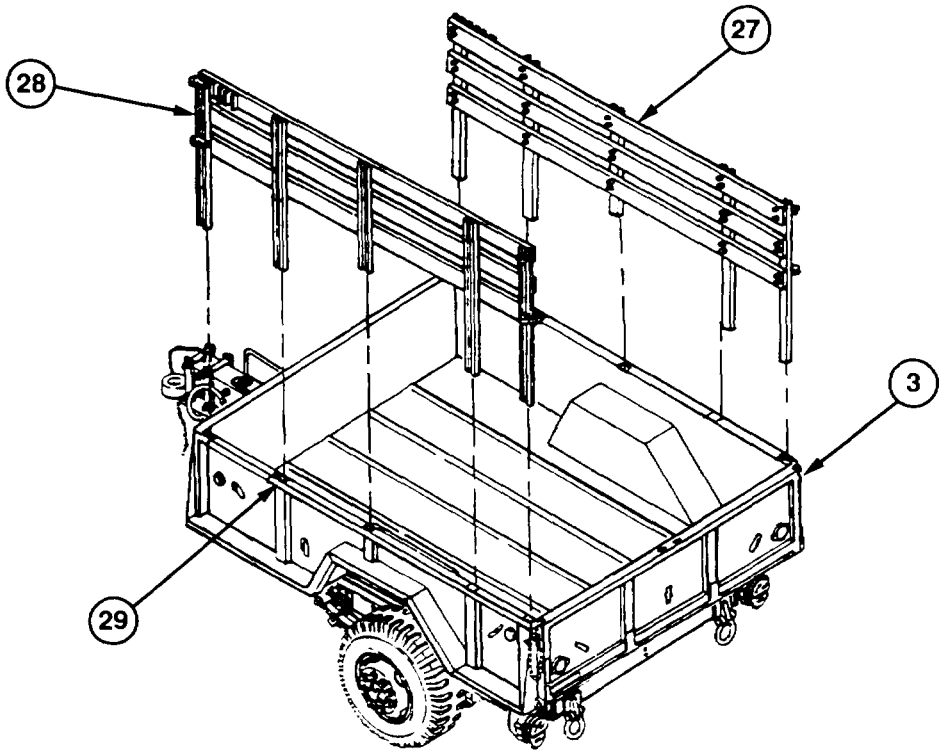
2-16. REMOVING CANVAS COVER, TAILGATE, AND RACK ASSEMBLIES (M101A2 AND M101A3) (continued).

WARNING

Side rack assembly is heavy and awkward to handle. To prevent injury to personnel, use extreme caution and get assistance when handling.

p. Lift road-side side rack assembly (27) from five stake pockets (29) in cargo body (3).

q. Repeat step p for curb-side side rack assembly (28).



Section IV. OPERATION UNDER UNUSUAL CONDITIONS

Paragraph Number	Paragraph Title	Page Number
2-17	General	2-26
2-18	Operation in Extreme Cold	2-26
2-19	Operation in Extreme Heat	2-26
2-20	Operation in High Humidity and Saltwater Areas	2-27
2-21	Operation in Mud and Snow	2-27
2-22	Operation in Dusty or Sandy Areas	2-27
2-23	Operation in Rocky Terrain	2-27
2-24	At Halt/Parking	2-28
2-25	Fording	2-28

2-17. GENERAL.

a. This section contains instructions for safely operating the M101 and M116 Series trailers under unusual conditions.

b. In addition to normal preventive maintenance, special care must be taken in regard to cleaning and lubrication to keep the trailers operational in extreme temperatures and humidity. Proper cleaning, lubrication, storage, and handling ensure proper operation and function and also guard against excessive wear.

c. Chronic failure of materiel resulting from exposure to extreme conditions must be reported in accordance with DA Pam 750-8.

2-18. OPERATION IN EXTREME COLD.

a. Refer to the lubrication instructions in Appendix I for proper lubricants to use in extreme cold weather conditions.

b. Refer to FM 9-207 and FM 21-305 for special instructions on driving hazards that may be encountered during extreme cold weather conditions.

c. Extreme cold can cause insulation material on electrical harnesses and wires to crack, causing short circuits. Other materials can become hard, brittle, and easily damaged or broken.

d. Make sure tires are properly inflated (para 1-15). Tires may freeze to the ground or have flat spots if underinflated.

e. Brakeshoes may freeze to the brakedrum and will require preheating to prevent damage (FM 9-207).

2-19. OPERATION IN EXTREME HEAT.

a. Refer to Appendix I for proper lubrication during extreme heat conditions. Adequate lubrication is essential. Extreme heat will cause oil films to evaporate, resulting in inadequate lubrication.

b. Keep tires covered from direct sunlight to prevent increases in air pressure and deterioration of rubber.

2-20. OPERATION IN HIGH HUMIDITY AND SALTWATER AREAS.

a. Moist and salty areas can destroy the rust preventative qualities of oils and greases. When equipment is active, exposed surfaces should be cleaned and lubricated daily. Refer to Appendix I for proper lubrication in high humidity and saltwater areas.

b. When equipment is inactive, unpainted parts should be coated with grease (Item 7, Appendix F). All covers and caps should be in place.

2-21. OPERATION IN MUD AND SNOW.

a. After operation in mud or snow, have Unit maintenance pack wheel bearings as required (refer to Appendix I).

b. Refer to FM 21-305 for special instructions on driving hazards in snow. For better traction, reduce air pressure to 25 psi (174 kPa).

c. If one or more tires sink into mud or snow, it may be necessary to raise the tire and insert planking or matting beneath it.

d. Immediately after operation in mud and snow, thoroughly clean, inspect, and lubricate if tactical situation permits. Refer to Appendix I for proper lubrication instructions.

2-22. OPERATION IN DUSTY OR SANDY AREAS.

a. Inspect, clean, and lubricate frequently when operating in sandy or dusty areas. Refer to Appendix I for proper lubrication instructions.

b. Make sure no dust or sand enters exposed mechanisms or lubrication fittings during inspections and repair operations. Cover exposed parts with tarpaulins or other suitable cover during disassembly and assembly.

c. When beginning operation in dusty or sandy areas, remove lubricants from exposed components, such as landing gear, if tactical situation permits. Grease and oil will cause dust and sand to accumulate and act as an abrasive, which will cause rapid wear.

d. Reduce tire pressure to 30 psi (207 kPa) for emergency use on beach or desert sand. Return tire pressure to normal after emergency operation (para 1-15).

2-23. OPERATION IN ROCKY TERRAIN.

Use extreme caution when operating in rocky terrain. Make sure tires are fully inflated to minimize damage to tires and tubes (para 1-15).

2-24. AT HALT/PARKING.

a. For short shutdown periods, park in a sheltered spot out of the wind. For long shutdown periods, prepare a footing of planks or brush if high, dry ground is not available.

b. Remove all buildup of ice and snow as soon as possible after shutdown.

c. Cover trailer with canvas cover assembly or tarpaulin, keeping the ends of the canvas off the ground to prevent freezing.

2-25. FORDING.

a. Refer to operating instructions in towing vehicle technical manual for information about fording operations.

b. Fording depth of the M101 and M116 Series trailers is limited to 30 inches (76.2 cm).

c. If tactical situation permits, perform the following services immediately after fording the trailer:

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

(1) Notify Unit maintenance to remove wheel and rim assemblies and clean them thoroughly with drycleaning solvent (Item 15, Appendix F). Dry all working components of handbrakes and wheel bearings. Lubricate handbrakes and underbody (Appendix I).

(2) Immersion in saltwater greatly increases rusting and corrosion, especially on unpainted surfaces. Remove all traces of saltwater and salt deposits from all areas of the trailer. Apply grease (Item 7, Appendix F) to exposed areas of trailer. Notify Unit maintenance that complete disassembly and assembly may be needed.

CHAPTER 3
OPERATOR/CREW MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. LUBRICATION INSTRUCTIONS.

Lubrication instructions are in Appendix I of this manual. All lubrication instructions are mandatory.

Section II. OPERATOR/CREW TROUBLESHOOTING PROCEDURES

Paragraph Number	Paragraph Title	Page Number
3-2	General	3-2
3-3	Electrical Troubleshooting	3-2
3-4	Quick Guide to Troubleshooting	3-3
3-5	Troubleshooting Chart	3-4

3-2. GENERAL.

a. This section provides information for identifying and correcting malfunctions that may develop while operating or maintaining your trailer.

b. The Quick Guide to Troubleshooting (para 3-4) lists common symptoms you may find during operation or maintenance of your trailer or its components, and refers you to the Troubleshooting Chart (para 3-5) for the appropriate troubleshooting procedures. You should perform the tests/inspections and corrective actions in the order listed.

c. If you are unsure of the location of an item mentioned in troubleshooting, refer to paragraph 1-12 or to the maintenance task where the item is replaced.

d. Before performing troubleshooting, read and follow all safety instructions found in the warning summary at the beginning of this manual.

e. This section cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by the corrective actions listed, notify your supervisor or Unit maintenance.

f. When troubleshooting a malfunction:

1. Locate the symptom(s) in the Quick Guide to Troubleshooting (para 3-4) that best describes the malfunction.

2. Turn to the page in the Troubleshooting Chart (para 3-5) where the troubleshooting procedures for the symptom(s) in question are described.

3. Perform each step in the order listed until the malfunction is corrected. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

3-3. ELECTRICAL TROUBLESHOOTING.

a. Paragraph 4-31 provides a wiring diagram for troubleshooting the chassis wiring harness.

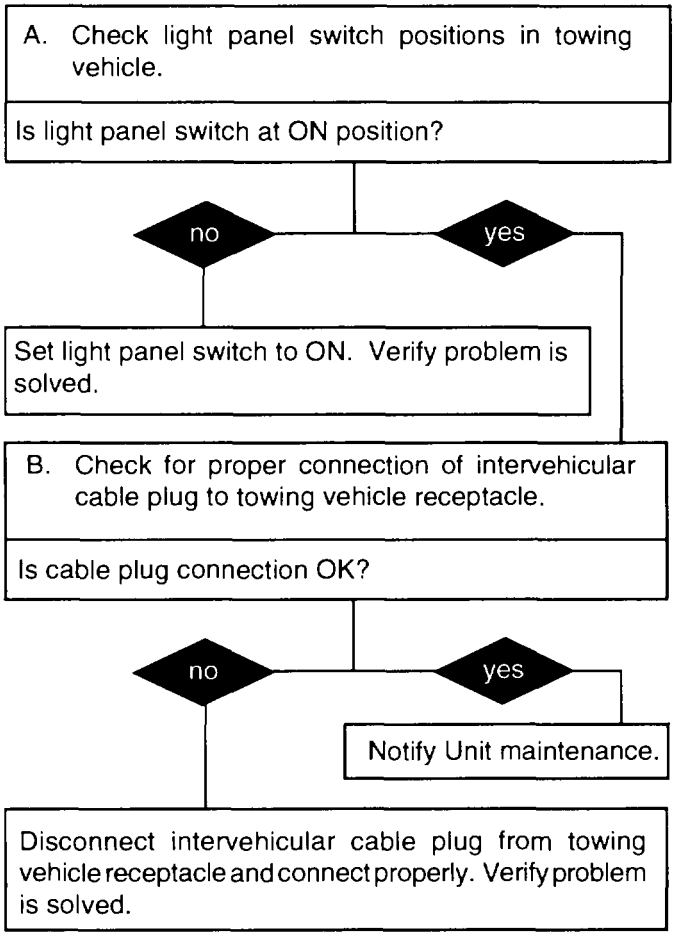
b. When troubleshooting any electrical system or component, exercise care in order to prevent electrical shock.

3-4. QUICK GUIDE TO TROUBLESHOOTING.

ITEM	SYMPTOM	PARAGRAPH
ELECTRICAL SYSTEM	ONE OR BOTH TAILLIGHTS DO NOT WORK.	para 3-5a(1)
BRAKES	BRAKES WILL NOT RELEASE.	para 3-5b(1)
WHEELS AND TIRES	TIRE WEAR IS ABNORMAL OR UNEVEN.	para 3-5c(1)
SUSPENSION	FRAME HITS SPRING ASSEMBLY OR RESTS ON SPRING BUMPER.	para 3-5d(1)
	TRAILER RIDES HARD OR SWAYS.	para 3-5d(2)

3-5. TROUBLESHOOTING CHART.

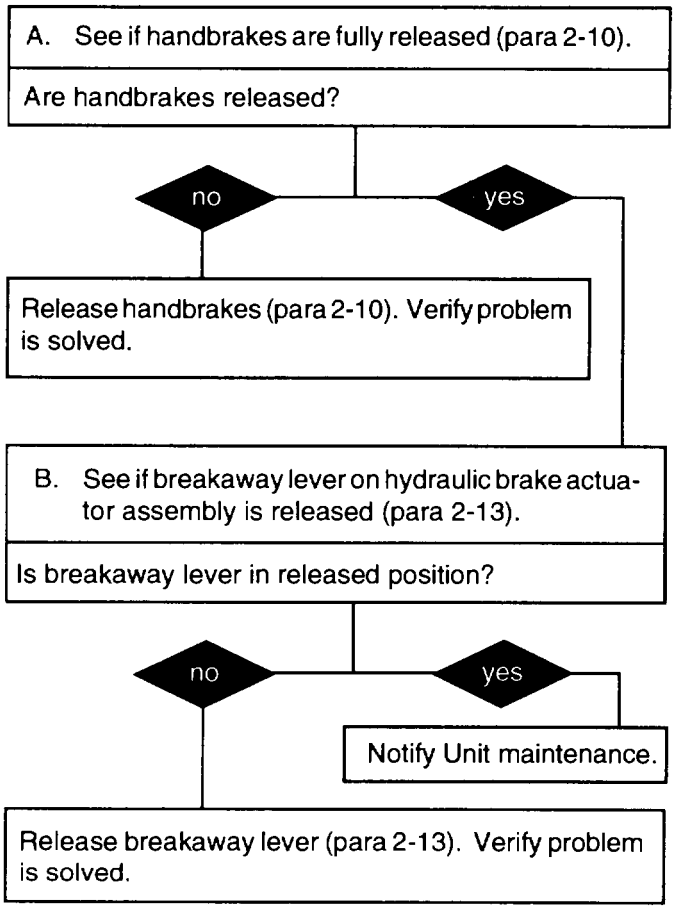
a. ELECTRICAL SYSTEM	(1) ONE OR BOTH TAILLIGHTS DO NOT WORK.



END OF TASK

3-5. TROUBLESHOOTING CHART (continued).

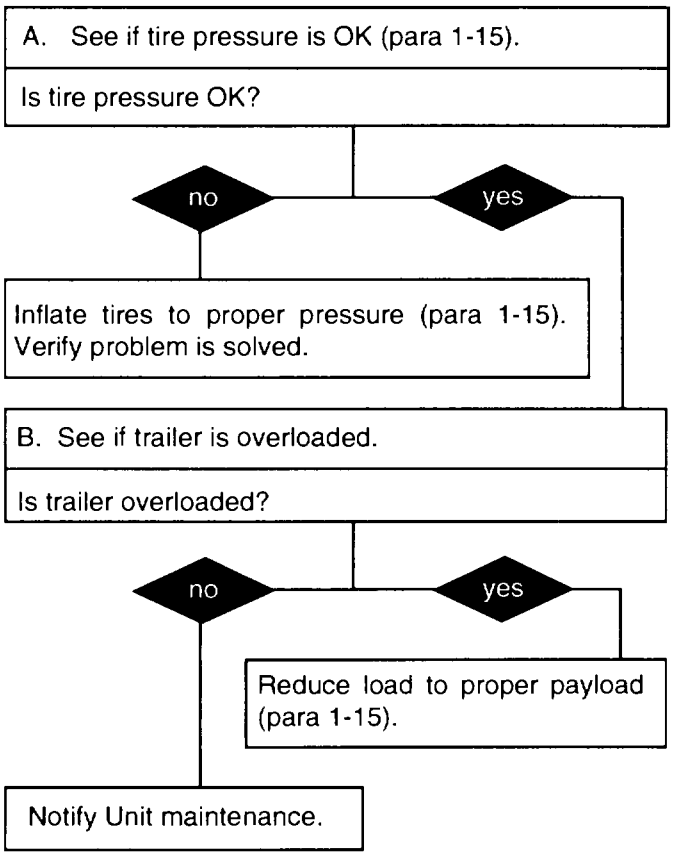
b. BRAKES	(1) BRAKES WILL NOT RELEASE.



END OF TASK

3-5. TROUBLESHOOTING CHART (continued).

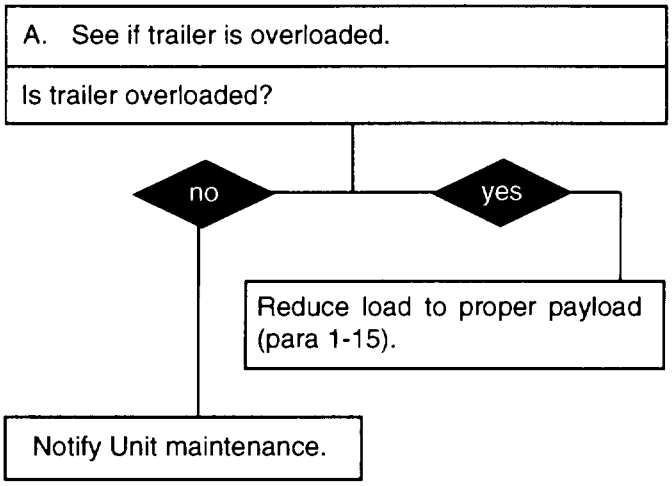
c. WHEELS AND TIRES	(1) TIRE WEAR IS ABNORMAL OR UNEVEN.



END OF TASK

3-5. TROUBLESHOOTING CHART (continued).

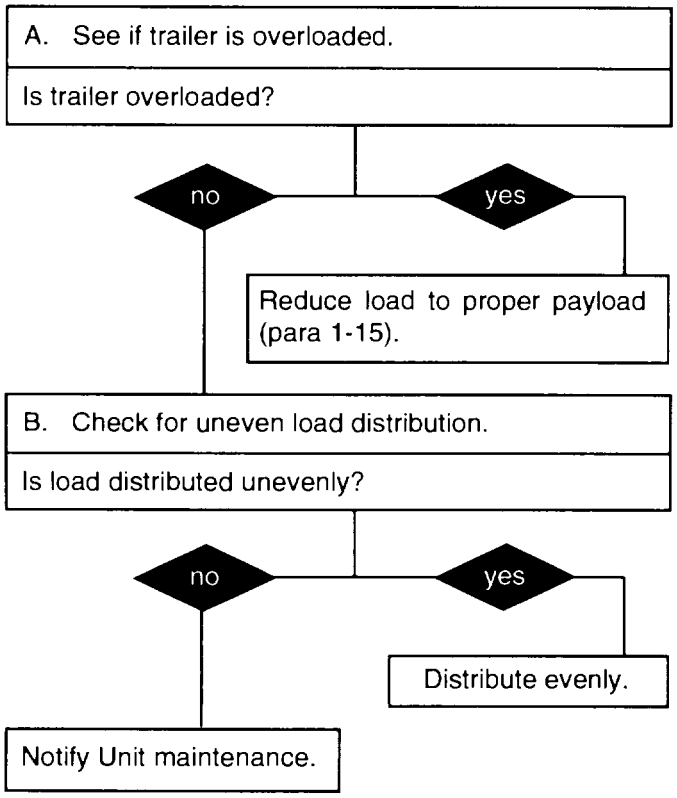
d. SUSPENSION	(1) FRAME HITS SPRING ASSEMBLY OR RESTS ON SPRING BUMPER.



END OF TASK

3-5. TROUBLESHOOTING CHART (continued).

d. SUSPENSION	(2) TRAILER RIDES HARD OR SWAYS.



END OF TASK

CHAPTER 4
UNIT MAINTENANCE

Section I. REPAIR PARTS; TOOLS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

Paragraph Number	Paragraph Title	Page Number
4-1	General	4-1
4-2	Common Tools and Equipment	4-1
4-3	Special Tools, TMDE, and Support Equipment	4-1
4-4	Repair Parts	4-1

4-1. GENERAL.

This chapter describes the Unit maintenance tasks to be performed on the M101 Series and M116 Series trailers.

4-2. COMMON TOOLS AND EQUIPMENT.

Common tools and equipment are issued to Unit maintenance personnel for maintaining the M101 Series and M116 Series trailers. Common tools and equipment should not be used for purposes other than those prescribed and should be properly stored when not in use. For authorized common tools and equipment applicable to your unit, refer to the Modified Table of Organization and Equipment (MTOE).

4-3. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

No special tools, TMDE, or support equipment is required to maintain the trailers.

4-4. REPAIR PARTS.

Repair parts are listed and illustrated in Appendix E of this manual.

Section II. SERVICE UPON RECEIPT

Paragraph Number	Paragraph Title	Page Number
4-5	General	4-2
4-6	Inspection Instructions	4-2
4-7	Servicing Instructions	4-2

4-5. GENERAL.

When a new, used, or reconditioned trailer is received, determine whether it has been properly prepared for service and is capable of performing Its mission by following the inspection instructions in paragraph 4-6 and the servicing instructions in paragraph 4-7.

4-6. INSPECTION INSTRUCTIONS.

a. Refer to DD Form 1397 for procedures on unpacking the trailer.

b. Remove all straps, plywood, tape, seals, and wrappings.

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

c. Remove rust preventive compound from coated exterior parts of the trailer using drycleaning solvent (Item 15, Appendix F) and a clean rag (Item 13, Appendix F).

d. Inspect the trailer for damage incurred during shipment. Check also to see if the equipment has been modified.

e. Check the equipment against the packing list to see if shipment is complete. Report any discrepancies in accordance with Instructions in DA Pam 750-8.

4-7. SERVICING INSTRUCTIONS.

a. Perform all Operator/Crew and Unit preventive maintenance checks and services (PMCS) listed in Tables 2-1 and 4-1. Schedule the next Unit PMCS on DD Form 314.

b. Lubricate all lubrication points as described in Appendix I, regardless of interval.

c. If any system of the trailer does not operate properly, refer to the troubleshooting instructions in Chapter 3, Section I (Operator/Crew), or Chapter 4, Section IV (Unit).

d. Perform a break-in road test of 25 miles (40 km) at a maximum speed of 50 miles per hour (80 kph).

e. Report all problems on DA Form 2407.

Section III. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
4-8	General	4-3
4-9	Service Intervals	4-3
4-10	Reporting Repairs	4-3
4-11	General PMCS Procedures	4-3
4-12	Specific PMCS Procedures	4-4
Table 4-1	Unit Preventive Maintenance Checks and Services (PMCS) for the M101 and M116 Series Trailers	4-5

4-8. GENERAL.

To ensure that the M101 Series and M116 Series trailers are ready for operation at all times, they must be inspected on a regular basis so that defects may be detected and corrected before they result in serious damage, equipment failure, or injury to personnel. Table 4-1 (p. 4-5) contains a tabulated listing of preventive maintenance checks and services (PMCS) to be performed by Unit maintenance personnel.

4-9. SERVICE INTERVALS.

Perform the PMCS procedures listed in Table 4-1 at the following intervals:

- Perform Semiannual PMCS procedures once every six months.
- Perform Annual PMCS procedures once each year.

4-10. REPORTING REPAIRS.

Report all defects and corrective actions on DA Form 2404. If a serious problem is found, report it to your supervisor immediately.

4-11. GENERAL PMCS PROCEDURES.

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

a. Keep equipment clean. Dirt, oil, and debris may cover up a serious problem. Clean as you work and as needed. Use drycleaning solvent (Item 15, Appendix F) on all metal surfaces. Use detergent (Item 5, Appendix F) and water on rubber, plastic, and painted surfaces.

b. While performing PMCS, inspect the following components:

4-11. GENERAL PMCS PROCEDURES (CONTINUED).

Bolts, Nuts, and Screws. Make sure they are not loose, missing, bent, or broken. Tighten any that are loose.

Welds. Inspect for gaps where parts are welded together. Report bad welds to your supervisor.

Wiring Harnesses, Wires, and Connectors. Inspect for cracked or broken insulation, bare wires, and loose or broken connectors. Repair or replace as necessary.

Hydraulic Brake Lines and Fittings. Inspect for wear, damage, and leaks. Make sure fittings are tight. If a leak originates from a loose fitting, tighten it. If a component is broken or worn, correct the problem if authorized by the Maintenance Allocation Chart (MAC) (Appendix B). If not authorized, report it to your supervisor.

4-12. SPECIFIC PMCS PROCEDURES.

a. Unit PMCS procedures are provided in Table 4-1. Always perform PMCS in the order listed. Once PMCS becomes a routine, problems can be spotted quickly. If anything wrong is discovered through PMCS, perform the appropriate troubleshooting task listed in Section IV of this chapter. If any component or system is not serviceable or if the service given does not correct the problem, notify your supervisor.

b. The PMCS procedures listed in Table 4-1 are to be performed at two intervals: semiannual and annual. Before performing PMCS, read all the checks required for the applicable interval and prepare the tools needed to make all checks. Have several clean rags (Item 13, Appendix F) handy. Perform ALL inspections at the applicable interval.

c. Explanations of the column headings in Table 4-1 are as follows:

Item No. The Item number column of the PMCS table is used for reference. When completing DA Form 2404, include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

Interval This column tells you when to do a specific check or service.

Item To Check/Service This column names the item to be checked or serviced.

Procedure This column tells you how to do the required checks and services. Carefully follow these instructions. If you do not have the tools, or if the procedure tells you to, have Unit maintenance do the work.

Not Fully Mission Capable If: Information in this column tells you what faults will keep the equipment from being capable of performing its mission. If PMCS reveals faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failures.

Table 4-1. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE M101 AND M116 SERIES TRAILERS

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
			NOTE **Perform Operator/Crew PMCS prior to or along with Unit PMCS.**	
1	**Semiannual**	**Composite Stop-light-Taillights**	Check for broken or cracked lenses or damaged composite stoplight-taillights and replace as required (para 4-28).	
2	**Semiannual**	**Intervehicular Cable**	Check for cuts, breaks, frayed wires, or damaged plug. Replace defective components as required.	
3	**Semiannual**	**Drawbar Coupler**	Check for security of mounting. Make sure drawbar coupler is not excessively worn at the end. Check for proper mounting hardware.	Loose or missing nuts and bolts.
4	**Semiannual**	**Safety Chains**	Check to make sure safety chains are there and have no broken links.	Loose or missing chains.
5	**Semiannual**	**Reflectors (M101A2 and M101A3)**	Check for cracked or broken reflectors and replace as required (para 4-62).	
6	**Semiannual**	**Front Support Leg**	Inspect brackets and front support leg for bent or broken parts.	
7	**Semiannual**	**Hydraulic Brake System**	Service master cylinder (Appendix I).	
8	**Annual**	**Data Plates**	Make sure data plates can be read and are firmly attached. Replace if damaged or disfigured (para 4-63).	
9	**Annual**	**Suspension Assemblies**	a. Inspect shackles, bushings, shackle pins, and spring eyes for damage or broken parts. b. Inspect spring assemblies for cracked or shifted leaves. c. Inspect spring hangers for obvious damage. d. Inspect shock absorbers for damage and security of mounting.	

Table 4-1. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE M101 AND M116 SERIES TRAILERS (Continued)

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
10	Annual	Axle	a. Check for damaged axle tube.	
			b. Check for loose or missing U-bolts or self-locking nuts.	
11	Annual	Wheel and Tire Assemblies	a. Inspect tires for wear and damage. Check tread depth (TM 9-2610-200-14).	
			b. Check tire pressure when tires are cool (para 1-15).	
			NOTE • **Turn lug nuts clockwise to tighten and counterclockwise to loosen.** • **If vehicle is equipped with runflat tires, torque lug nuts between 112 and 138 lb-ft (152 and 187 Nm). For other tire configurations, torque lug nuts between 110 and 120 lb-ft (149 and 163 Nm).**	
			c. Check wheels for damage and lug nuts for tightness and presence.	
12	Annual	Wheel Bearings	Clean, inspect, and pack wheel bearings (para 4-43).	
13	Annual	Service Brake system	a. Perform service brake maintenance (para 4-35).	
			b. Adjust service brakes (para 4-36).	
14	Annual	Hydraulic Brake System	a. Inspect wheel cylinders for leaks.	Any leaks are found.
			b. Check hydraulic brake actuator assembly for damage and security of mounting.	
			c. Check hydraulic brake lines and fittings for dents, cracks, loose connections, and leaks.	Any leaks are found.
15	Annual	Frame	Inspect frame for cracks, bent members, and broken welds.	
16	Annual	Road Test	Perform road test. Give special attention to items that were repaired or adjusted. Be alert for unusual or excessive noises that may indicate damage, looseness, defects, or deficient lubrication in attachments or wheels.	

Section IV. UNIT TROUBLESHOOTING PROCEDURES

Paragraph Number	Paragraph Title	Page Number
4-13	General	4-7
4-14	Electrical Troubleshooting	4-7
4-15	Quick Guide to Troubleshooting	4-9
4-16	Troubleshooting Chart	4-10

4-13. GENERAL.

a. This section provides information for identifying and correcting malfunctions that may develop while operating or maintaining the trailers.

b. The Quick Guide to Troubleshooting (para 4-15) lists common malfunctions of the trailer or its components and refers you to the Troubleshooting Chart (para 4-16) for the appropriate troubleshooting procedures. You should perform the tests/inspections and corrective actions in the order listed.

c. If you are unsure of the location of an item mentioned in troubleshooting, refer to paragraph 1-12 or to the maintenance task where the item is replaced.

d. Before performing troubleshooting, read and follow all safety instructions listed in the warning summary at the beginning of this manual.

e. This section cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by the corrective actions listed, notify your supervisor.

f. When troubleshooting a malfunction:

- Locate the symptom(s) in the Quick Guide to Troubleshooting (para 4-15) that best describes the malfunction.
- Turn to the page in the Troubleshooting Chart (para 4-16) where the troubleshooting procedures for the symptom(s) in question are described.
- Perform each step in the order listed until the malfunction is corrected. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

4-14. ELECTRICAL TROUBLESHOOTING.

a. Paragraph 4-31 provides a schematic diagram for troubleshooting the chassis wiring harness.

b. When troubleshooting any electrical system or component, exercise care in order to prevent electrical shock.

WARNING

When troubleshooting electrical system or electrical components, be certain MASTER switch is OFF between every step unless otherwise directed. To prevent injury due to electrical shock, remove all jewelry and metal objects when working on electrical system.

4-14. ELECTRICAL TROUBLESHOOTING (continued).

c. The multimeter is used throughout electrical troubleshooting. When using the multimeter, make sure it is used with a probe kit.

d. When performing a continuity test, make sure all connectors and/or leads are disconnected from their components. Probe the pins (or sockets) with a multimeter.

e. When probing has been completed, place the red lead on the second pin (or connector) and probe with the black lead in the same order. Do this until every pin has been probed with the red lead of the multimeter. Then place the black lead of the multimeter on the connector and place the red lead on each pin (or socket) on the connector.

f. If continuity is present between any two points, a short exists. Shorts must be repaired in order to continue any operation.

g. If instructed in a procedure to skip a pin (or socket) during a continuity test, it is because the pin (or socket) is not used or is shielded.

h. When a repair or replacement of a lead or wiring harness has been done, do the continuity test again to make sure the problem has been corrected.

I. When performing a continuity check, connect the meter probes to both terminals of the circuit you are testing. Read the meter. Interpret the results. If the needle swings over to near 0 on the top scale, the circuit has continuity. If the needle does not move, the circuit is open. If the needle jumps or flickers, there is a loose connection.

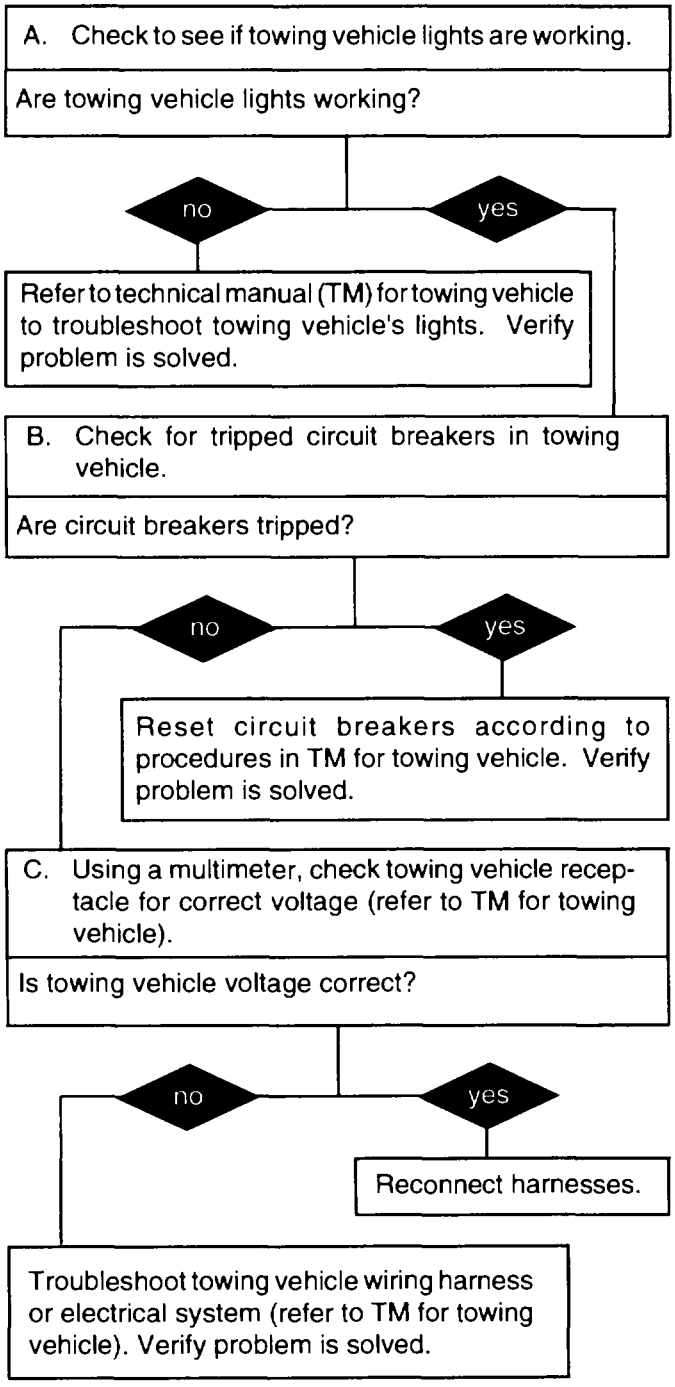
j. Check light bulbs for cracks or discoloration. Check the continuity of a light bulb by placing one probe of the meter to the metal button base connection of the bulb and one probe to the metal side of the base. If the meter needle swings over to 0 on the top scale, the circuit has continuity. If the meter needle does not move, the circuit is open, indicating a defect.

4-15. QUICK GUIDE TO TROUBLESHOOTING.

ITEM	SYMPTOM	PARAGRAPH
ELECTRICAL SYSTEM	NEITHER TAILLIGHT WORKS.	para 4-16a(1)
	ONE TAILLIGHT DOES NOT WORK.	para 4-16a(2)
	LAMPS/LED'S ARE DIM OR FLICKERING.	para 4-16a(3)
AXLE	AXLE IS LOOSE OR OUT OF ALIGNMENT.	para 4-16b(1)
BRAKES	HANDBRAKES WILL NOT OPERATE.	para 4-16c(1)
	BRAKES WILL NOT RELEASE.	para 4-16c(2)
	BRAKES DO NOT HOLD TRAILER AT HALT.	para 4-16c(3)
	HYDRAULIC BRAKE SYSTEM WILL NOT OPERATE.	para 4-16c(4)
WHEELS AND TIRES	TIRE WEAR IS ABNORMAL OR UNEVEN.	para 4-16d(1)
	WHEEL IS WOBBLY.	para 4-16d(2)
FRONT SUPPORT LEG	FRONT SUPPORT LEG WILL NOT SWING UP OR DOWN.	para 4-16e(1)
REAR STABILIZER	REAR STABILIZER WILL NOT OPERATE.	para 4-16f(1)
SUSPENSION	FRAME HITS SPRING ASSEMBLY OR RESTS ON SPRING BUMPER.	para 4-16g(1)
	TRAILER RIDES HARD OR SWAYS.	para 4-169(2)
	SPRING ASSEMBLY IS NOISY.	para 4-169(3)

4-16. TROUBLESHOOTING CHART.

a.	ELECTRICAL SYSTEM	(1) NEITHER TAILLIGHT WORKS.



4-16. TROUBLESHOOTING CHART (continued).

a.	ELECTRICAL SYSTEM (continued)	(1) NEITHER TAILLIGHT WORKS (continued).

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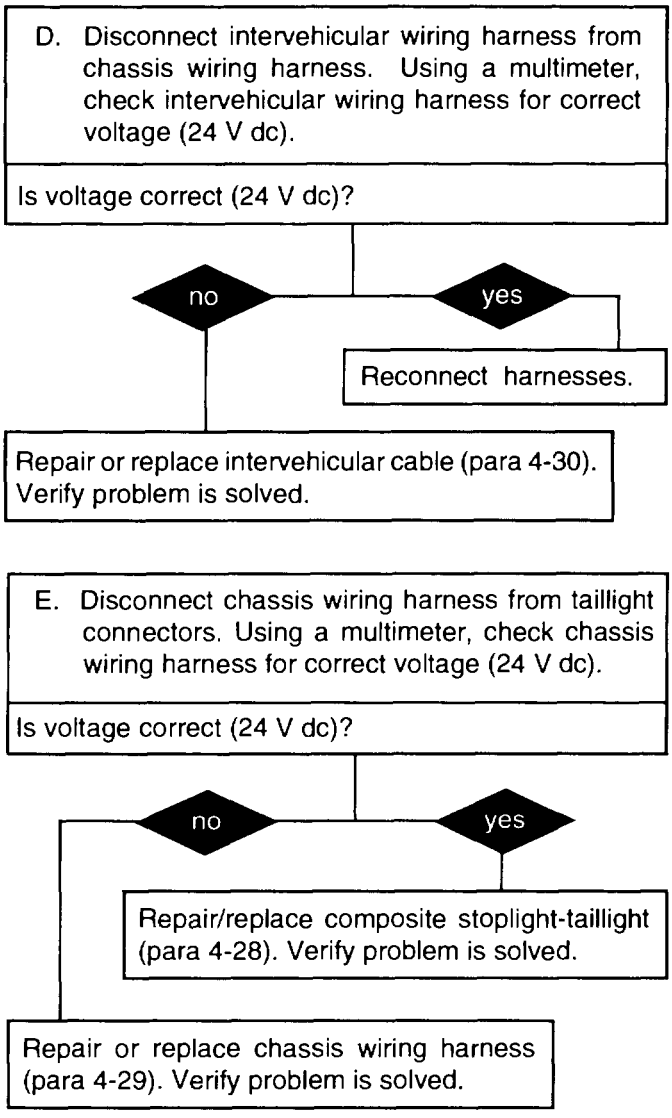
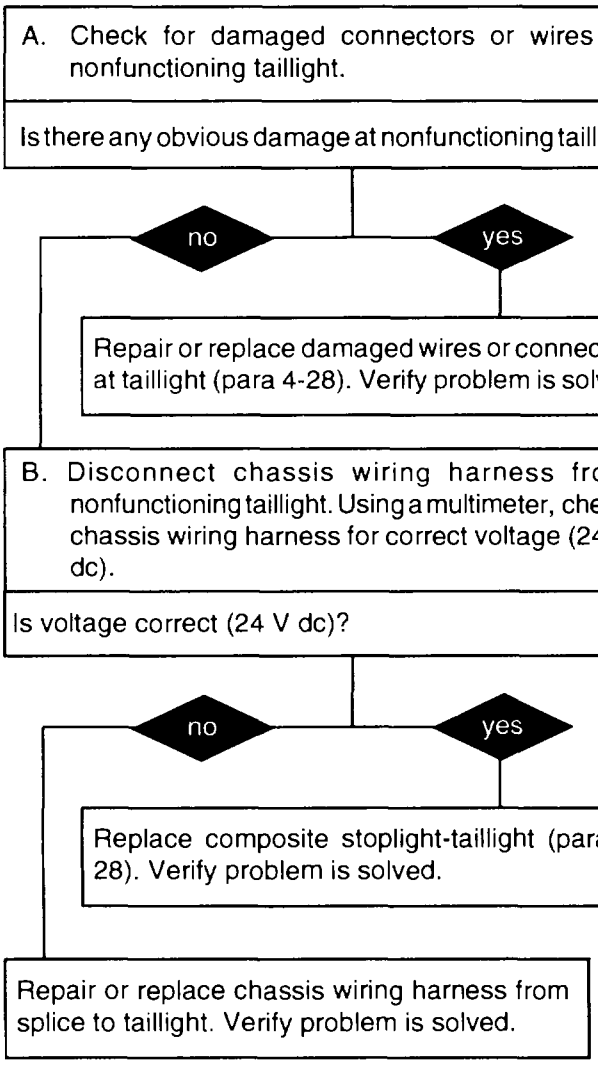


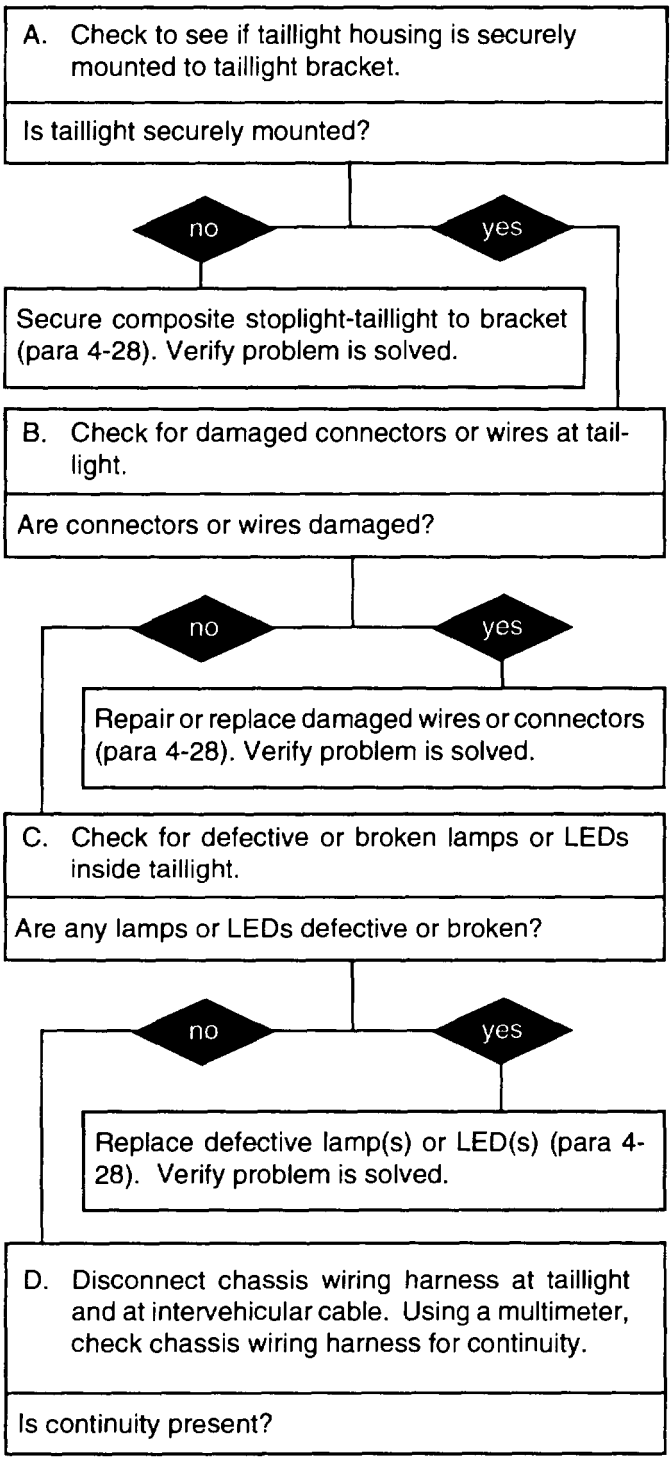
4-16. TROUBLESHOOTING CHART (continued).

a.	ELECTRICAL SYSTEM (continued)	(2) ONE TAILLIGHT DOES NOT WORK.



4-16. TROUBLESHOOTING CHART (continued).

a.	ELECTRICAL SYSTEM (continued)	(3) LAMPS/LED'S ARE DIM OR FLICKERING.



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4-16. TROUBLESHOOTING CHART (continued).

a.	ELECTRICAL SYSTEM (continued)	(3) LAMPS/LED'S ARE DIM OR FLICKERING (continued).

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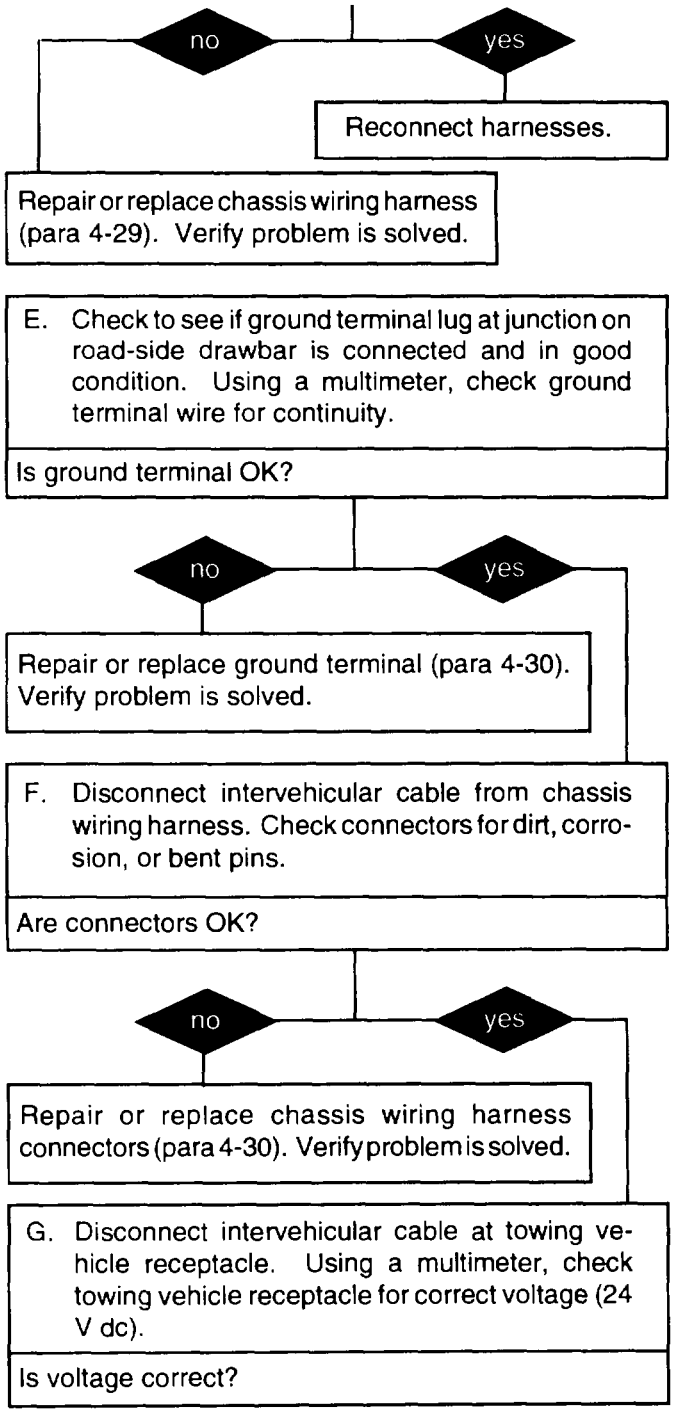

4-16. TROUBLESHOOTING CHART (continued).

a.	ELECTRICAL SYSTEM (continued)	(3) LAMPS/LED'S ARE DIM OR FLICKERING (continued).

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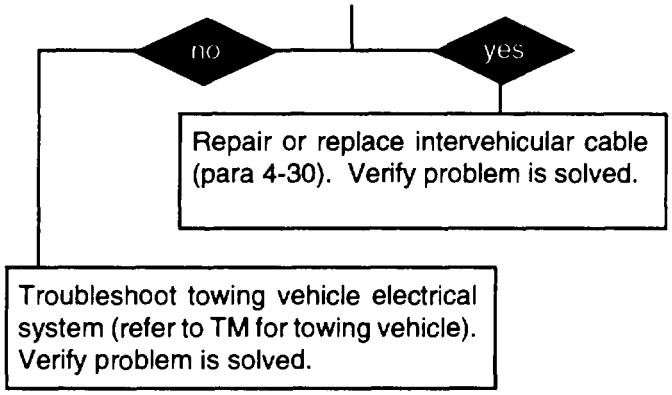
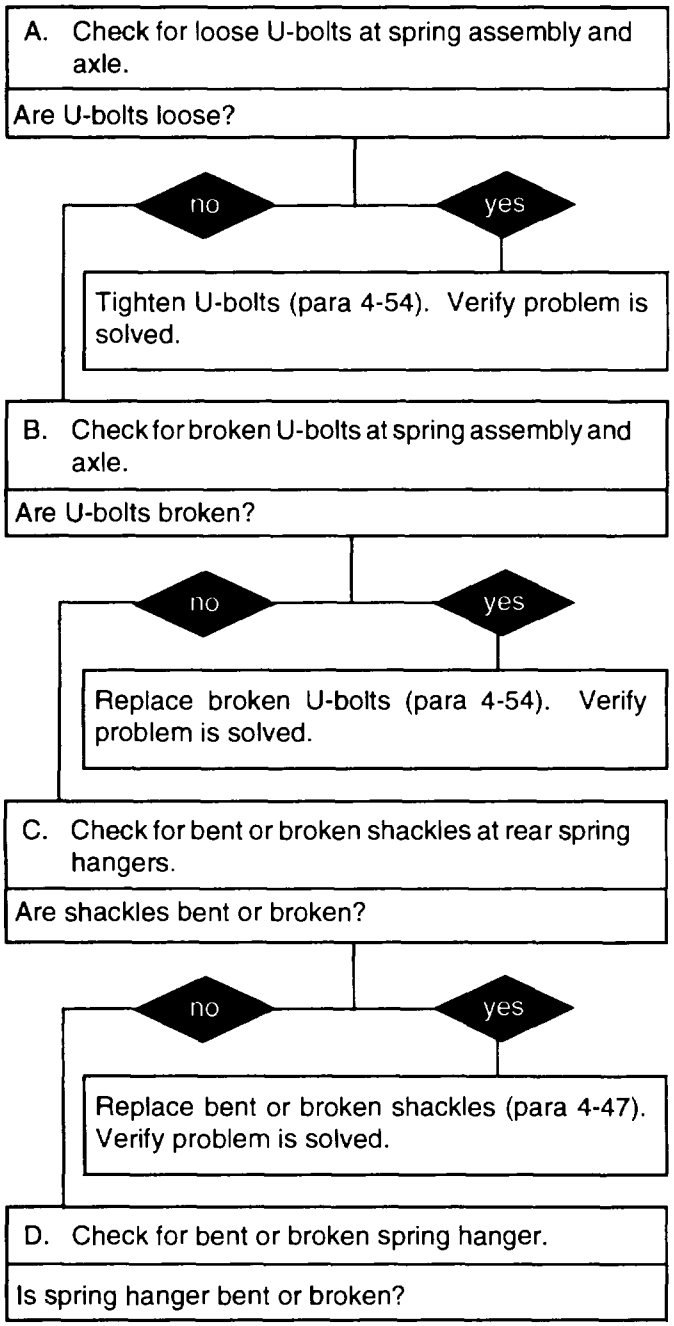


END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

b.	AXLE	(1) AXLE IS LOOSE OR OUT OF ALIGNMENT.



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4-16. TROUBLESHOOTING CHART (continued).

b.	AXLE (continued)	(1) AXLE IS LOOSE OR OUT OF ALIGNMENT (continued).

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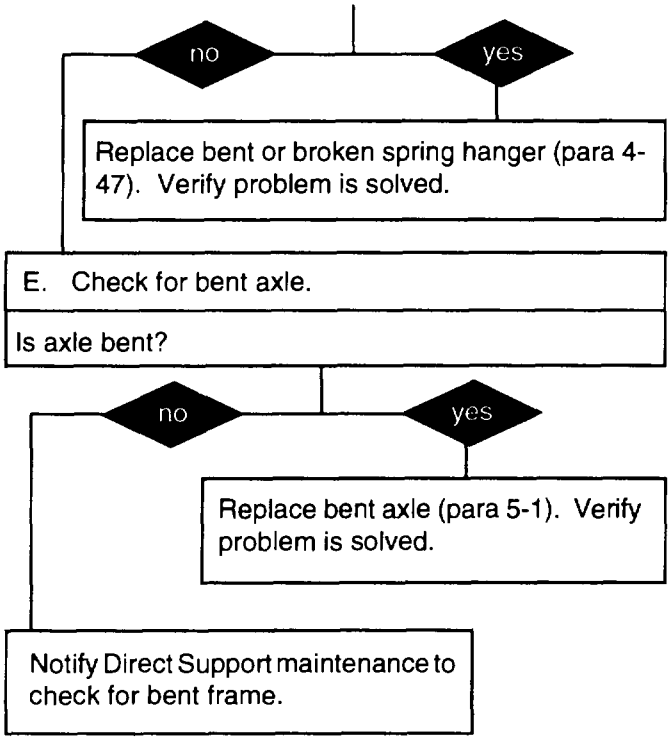
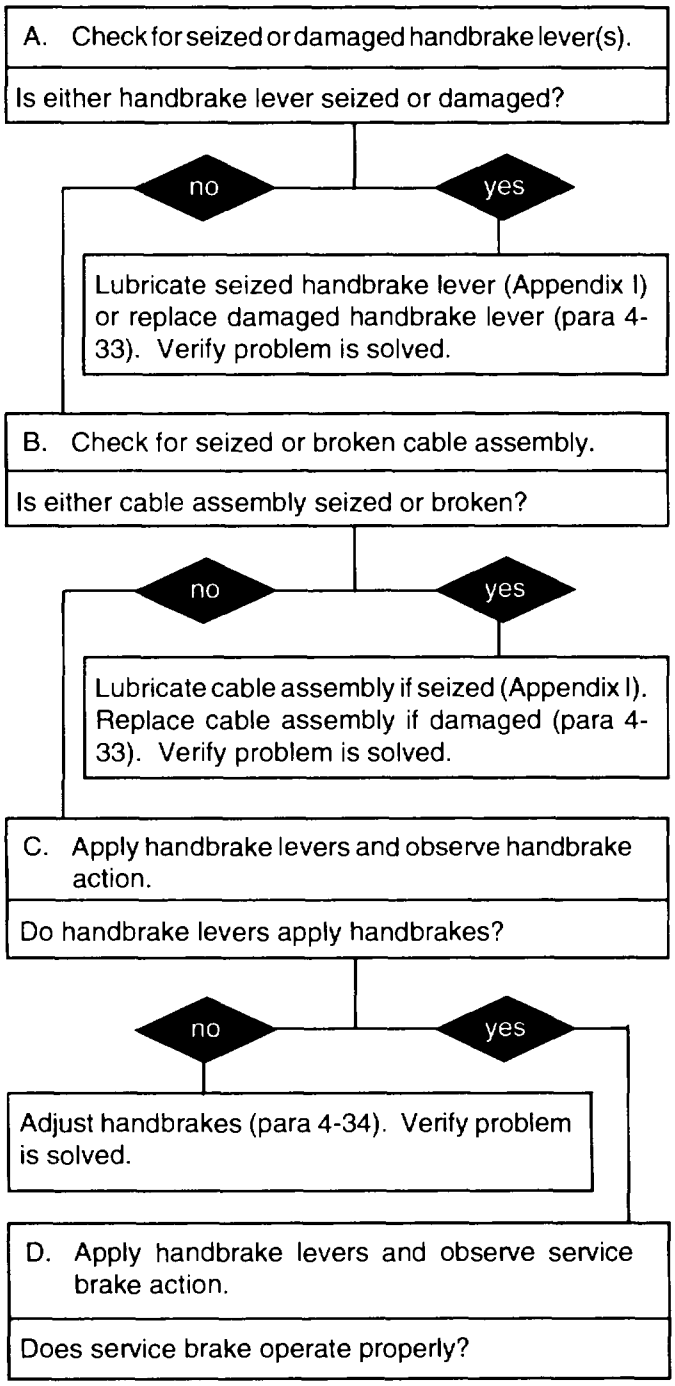


END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

c.	BRAKES	(1) HANDBRAKES WILL NOT OPERATE.



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4-16. TROUBLESHOOTING CHART (continued).

c. BRAKES (continued)	(1) HANDBRAKES WILL NOT OPERATE (continued).

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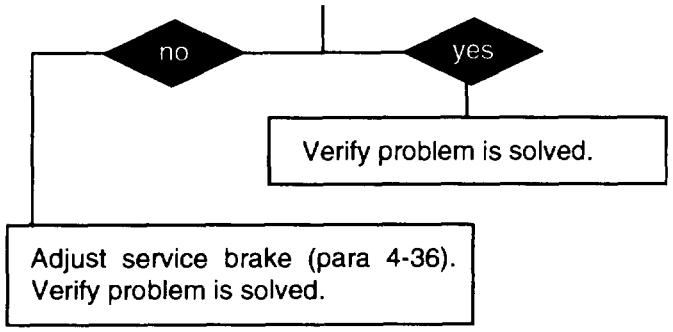
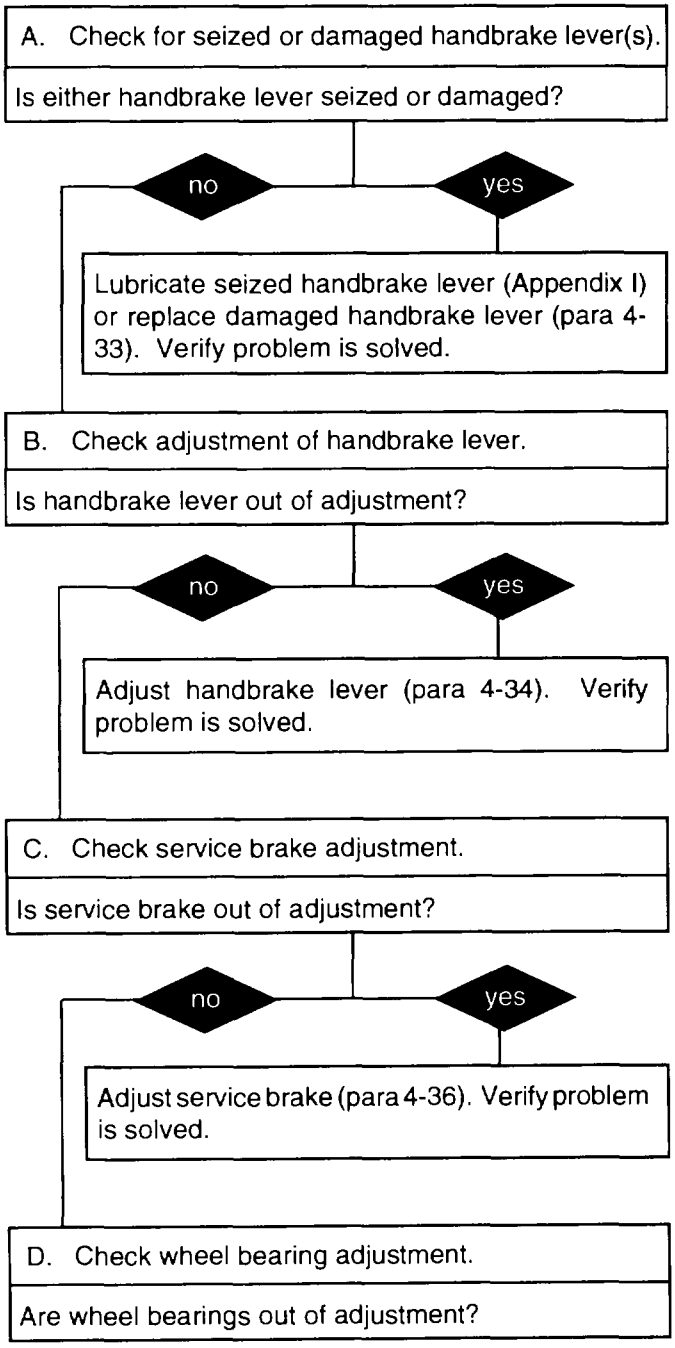


END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

c. BRAKES (continued) (2) BRAKES WILL NOT RELEASE.



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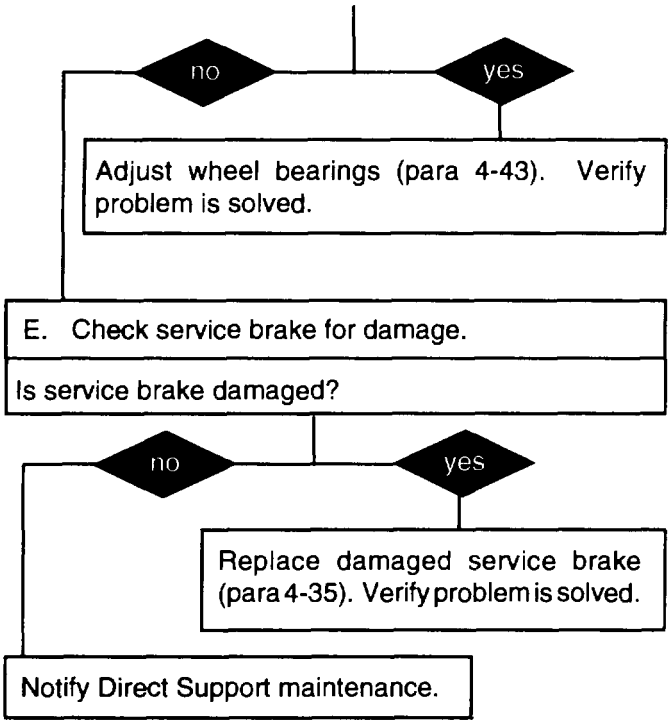
4-16. TROUBLESHOOTING CHART (continued).

c.	BRAKES (continued)	(2) BRAKES WILL NOT RELEASE.

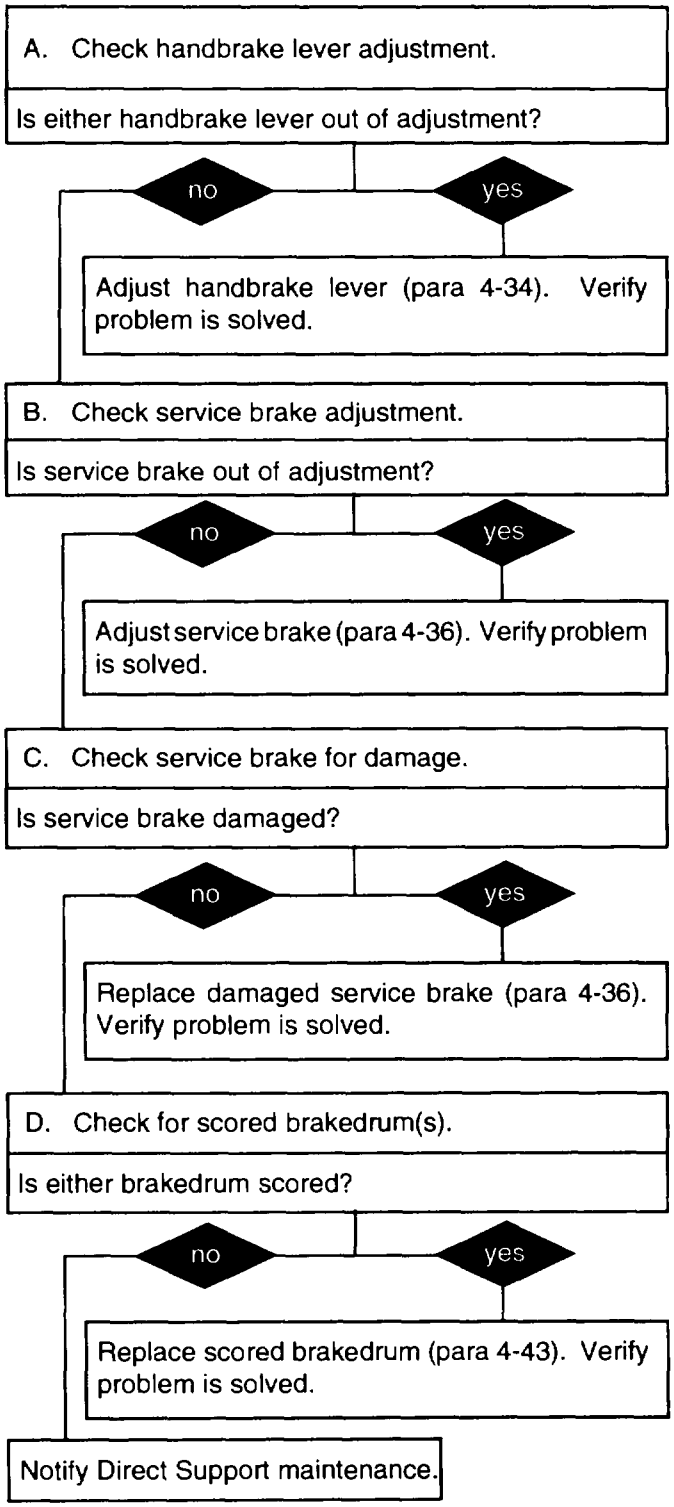
CONTINUED FROM D



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

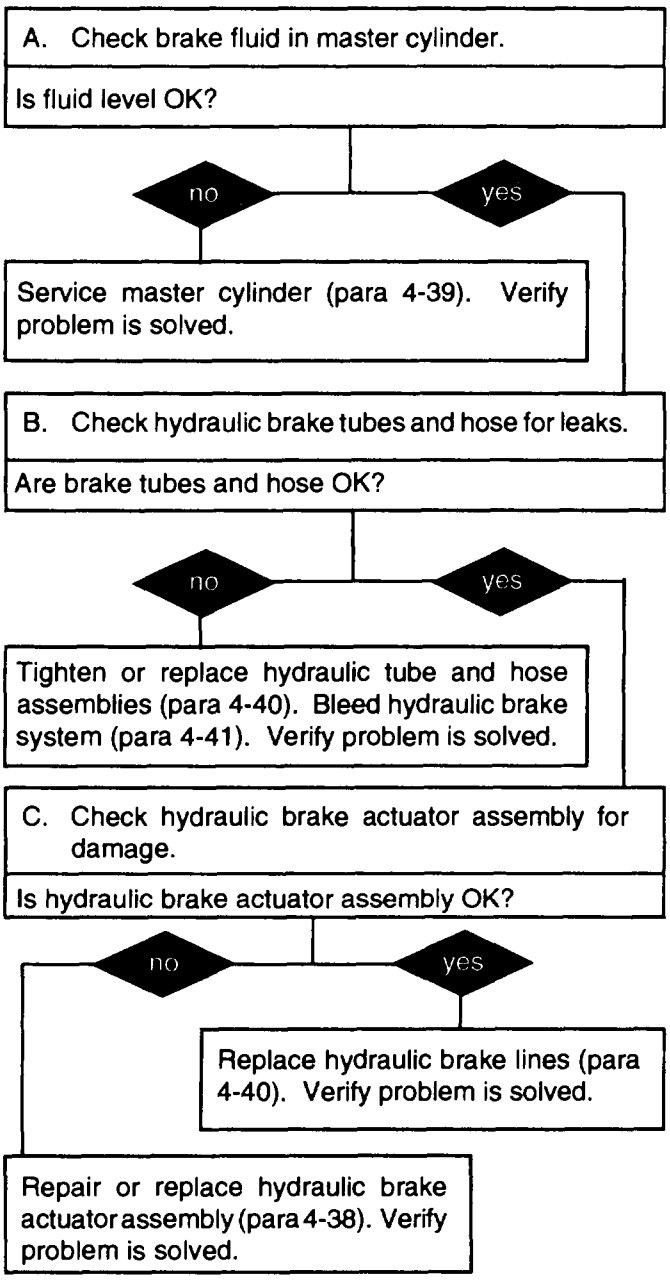
c. BRAKES (continued) (3) BRAKES DO NOT HOLD TRAILER AT HALT.



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

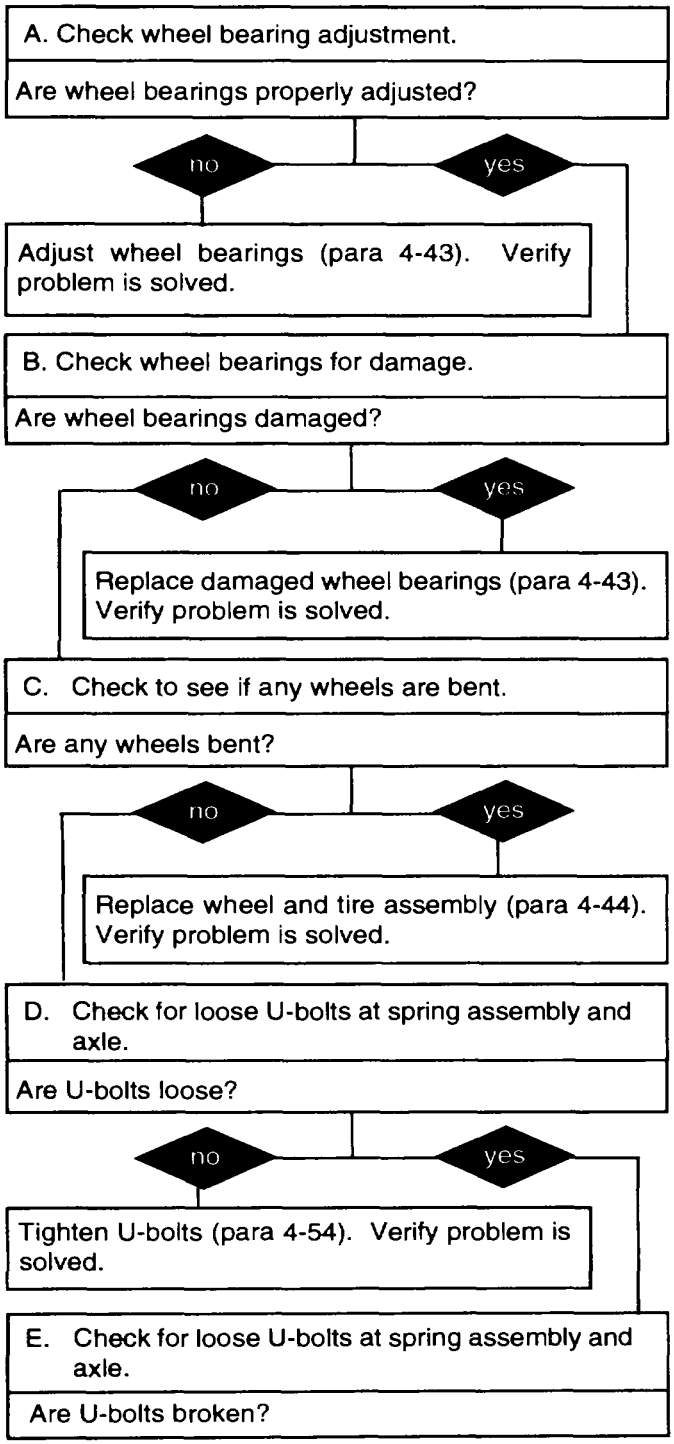
c. BRAKES (continued) (4) HYDRAULIC BRAKE SYSTEM WILL NOT OPERATE.



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

d. WHEELS AND TIRES	(1) TIRE WEAR IS ABNORMAL OR UNEVEN.



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4-16. TROUBLESHOOTING CHART (continued).

d. WHEELS AND TIRES (continued) (1) TIRE WEAR IS ABNORMAL OR UNEVEN (continued).

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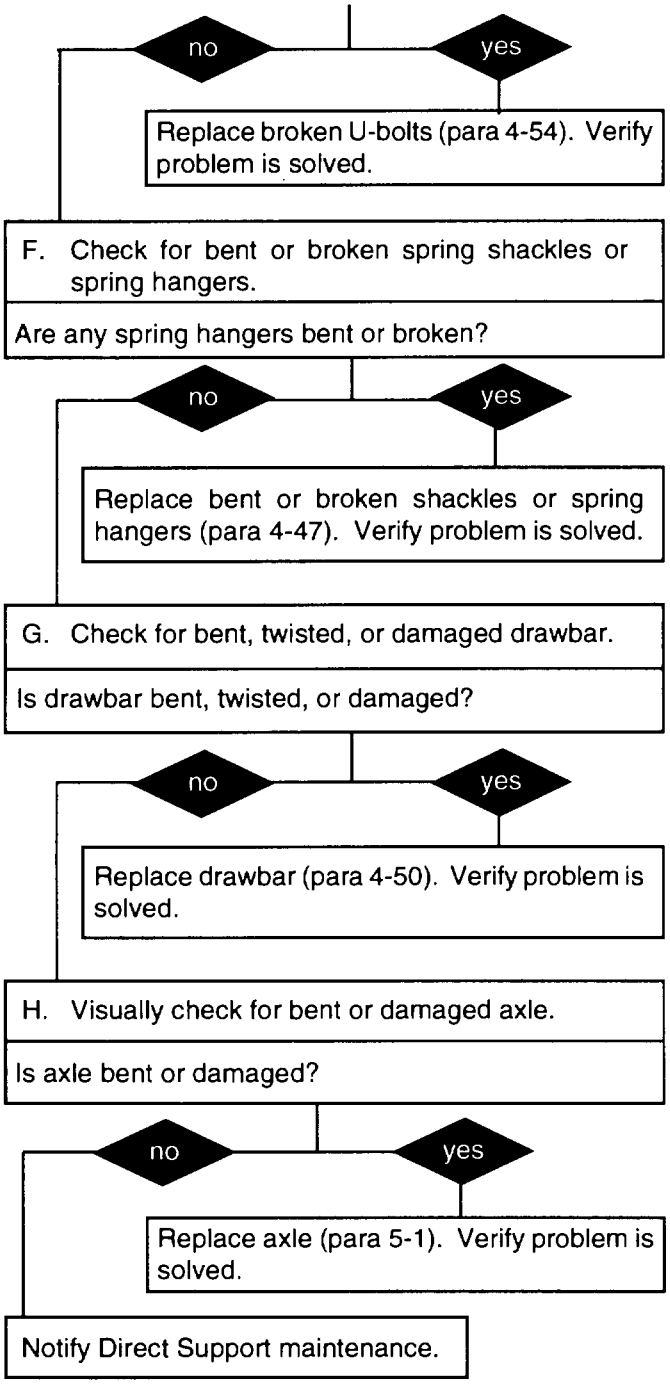
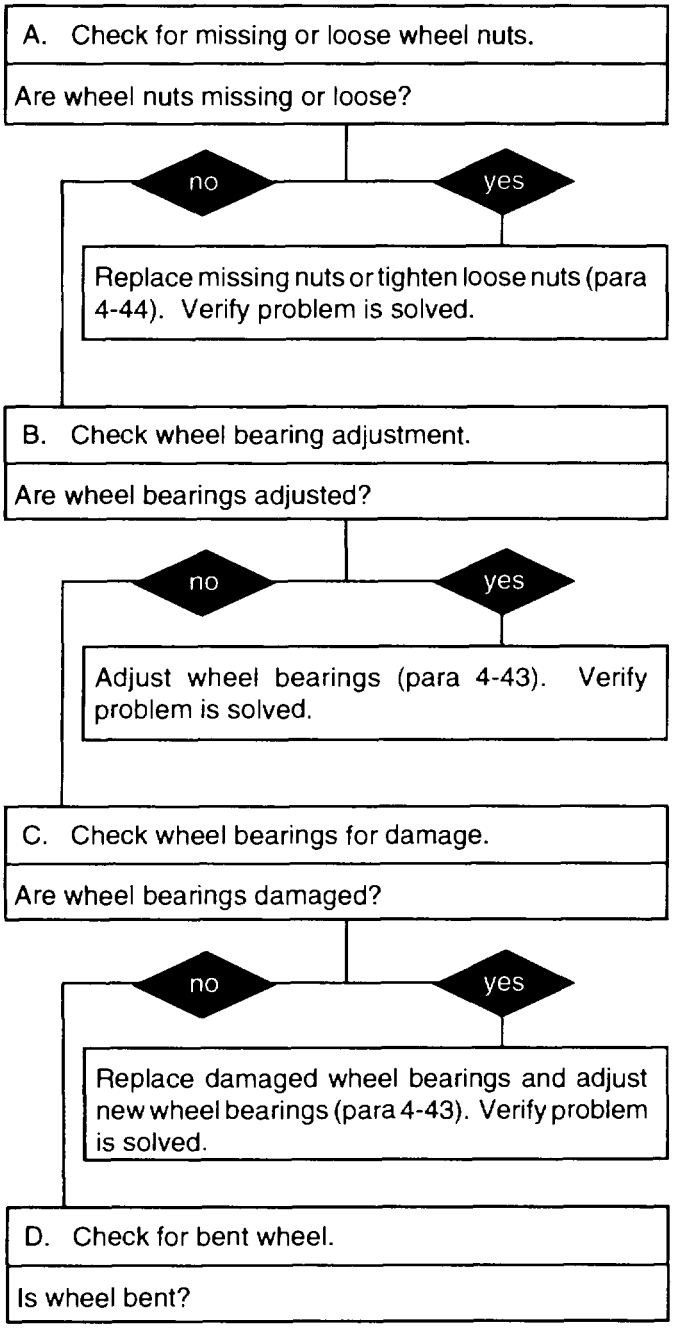


END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

d.	WHEELS AND TIRES (continued)	(1)	WHEEL IS WOBBLY.



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4-16. TROUBLESHOOTING CHART (continued).

d.	WHEELS AND TIRES (continued)	(2)	WHEEL IS WOBBLY (continued).

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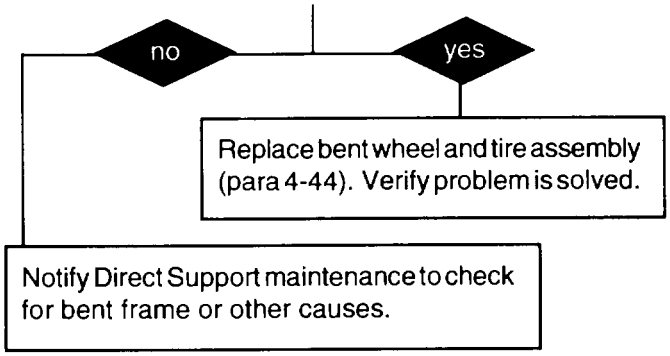
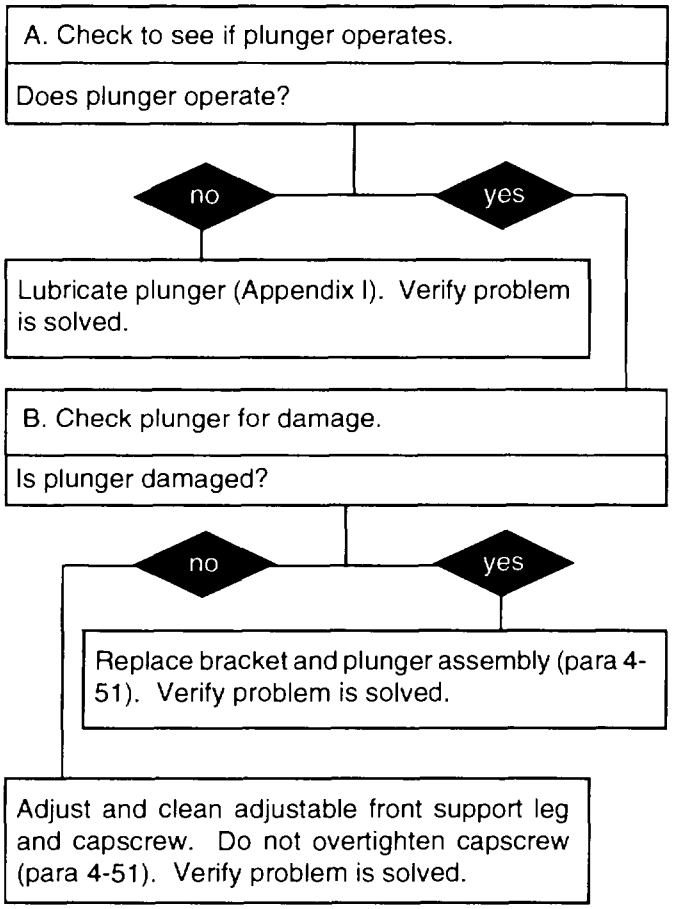


END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

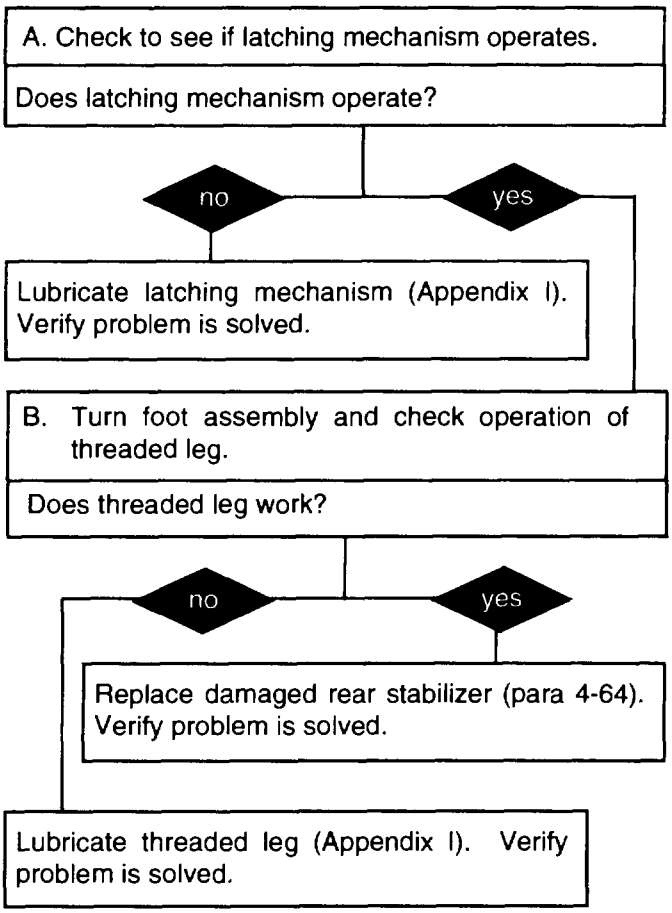
e.	FRONT SUPPORT LEG	(1)	FRONT SUPPORT LEG WILL NOT SWING UP OR DOWN.



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

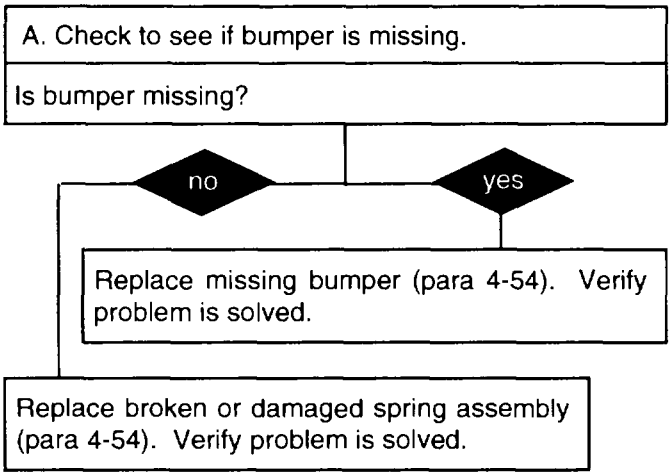
f. REAR STABILIZER	(1) REAR STABLILIZER WILL NOT OPERATE.



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

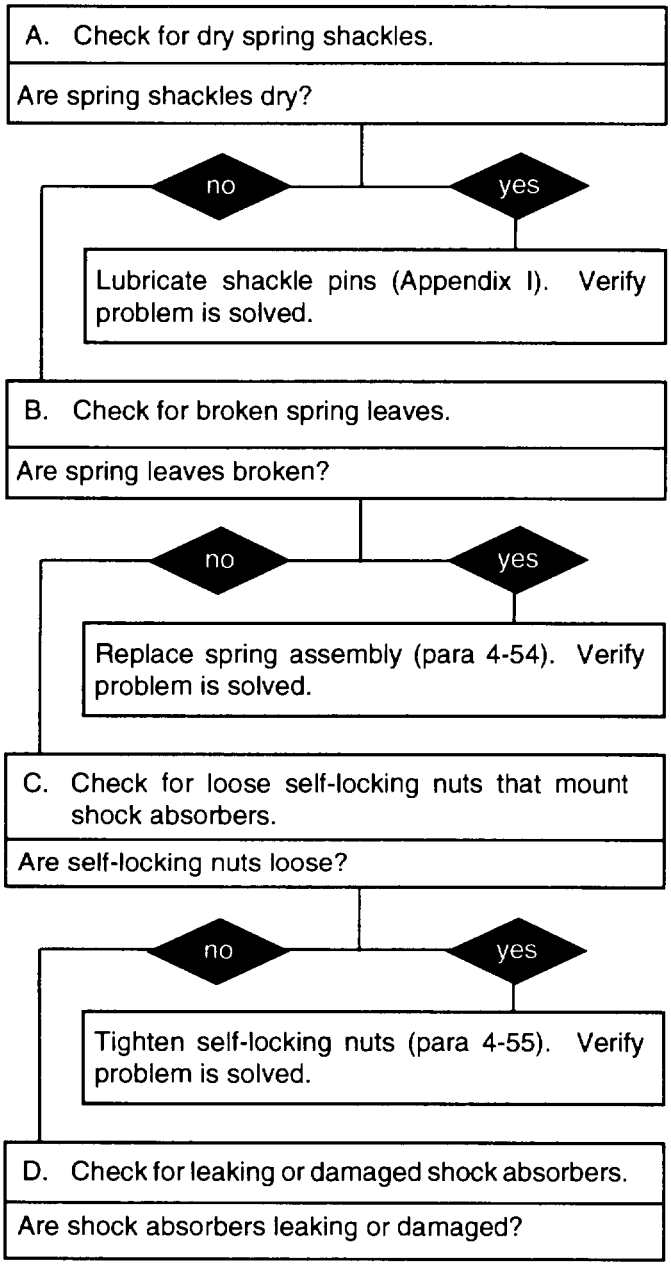
g.	SUSPENSION	(1)	FRAME HITS SPRING ASSEMBLY OR RESTS ON SPRING BUMPER



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

g.	SUSPENSION (continued)	(2)	TRAILER RIDES HARD OR SWAYS.



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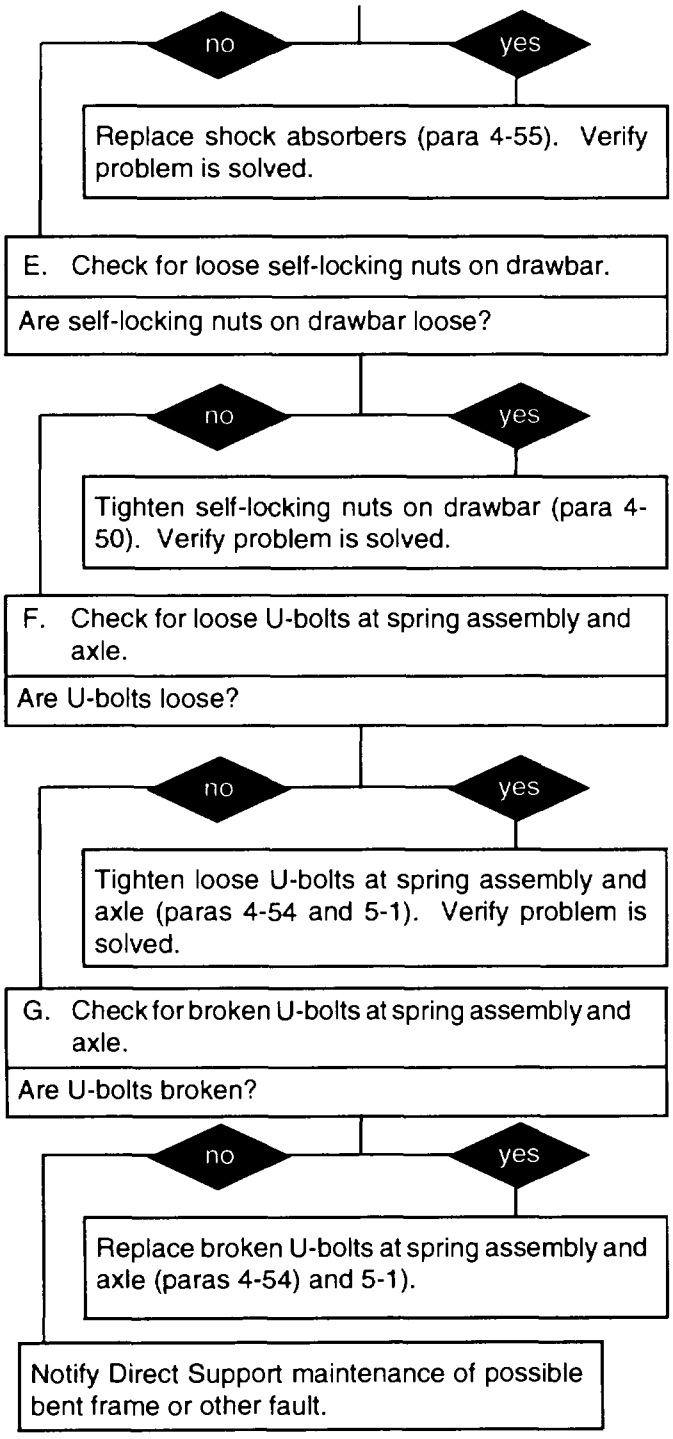
4-16. TROUBLESHOOTING CHART (continued).

g. SUSPENSION (continued)	(2) TRAILER RIDES HARD OR SWAYS (continued).

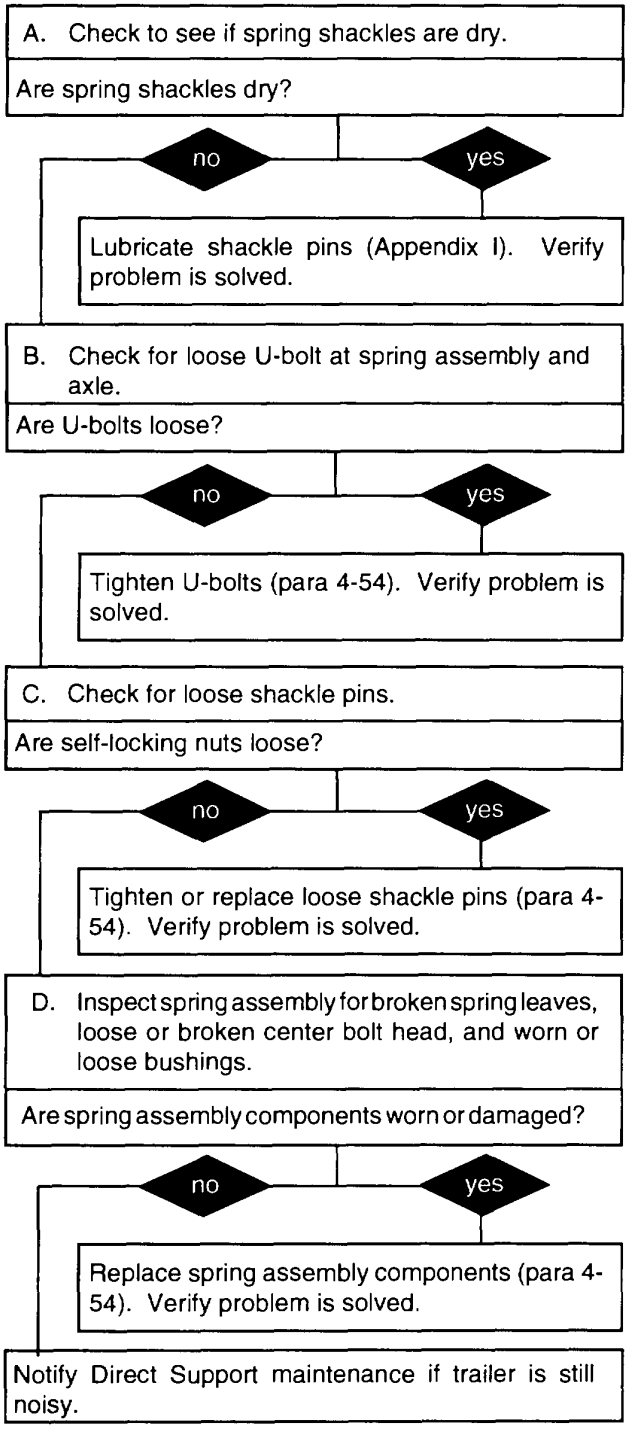
CONTINUED FROM D



END OF TASK

4-16. TROUBLESHOOTING CHART (continued).

g. SUSPENSION (continued)	(3) SPRING ASSEMBLY IS NOISY.



END OF TASK

Section V. GENERAL MAINTENANCE INSTRUCTIONS

Paragraph Number	Paragraph Title	Page Number
4-17	General	4-34
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4-19	Cleaning Instructions	4-35
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4-21	Tagging Parts	4-37
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4-17. GENERAL.

a. These general maintenance instructions contain general shop practices and specific procedures you must be familiar with to properly maintain your M101 and M116 Series trailers. You should read and understand these practices and procedures before performing any maintenance task.

b. Before beginning a task find out how much repair, modification, or replacement is needed to fix the equipment. Sometimes the reason for equipment failure can be seen right away and complete teardown is not necessary. Disassemble equipment only as far as necessary to repair or replace damaged parts.

c. The following "Initial Setup" information applies to all procedures:

1. Resources are not listed unless they apply to the procedure.

2. "Personnel Required" is listed only if more than one technician is required to complete the task.

d. All tags and forms attached to equipment must be checked to learn the reason for removal of equipment from service. Modification work orders and technical bulletins must also be checked for equipment changes and updates.

e. In some cases, a part may be damaged by removal. If the part appears to be good and other parts behind it are not defective, leave it on and continue with the procedure. Here are a few simple rules:

1. Do not remove dowel pins or studs unless loose, bent, broken, or otherwise damaged.

2. Do not remove bearings or bushings unless damaged. If you need to remove them to access parts, carefully pull out bearings and bushings.

3. Replace all gaskets, lockwashers, self-locking nuts, seals, cotter pins, preformed packings, and other locking hardware.

4-18. WORK SAFETY.

a. Before beginning a procedure, think about the safety risks and hazards to yourself and others. Wear protective gear, such as safety goggles or lenses, safety shoes, rubber apron, and gloves.

4-18. WORK SAFETY (CONTINUED).

b. Observe all WARNINGs and CAUTIONs.

c. Clean up spilled fluids immediately, to avoid slipping.

d. When lifting a heavy part, have someone help you. Make sure that lifting/jacking equipment is working properly, meets the weight requirement of the part being lifted, and is securely fastened to the part.

e. Always use power tools carefully.

f. All maintenance should be performed with

- Trailer parking brake engaged;
- Rear stabilizer extended as required;
- Towing vehicle in neutral with parking brake engaged, if attached; and
- Towing vehicle engine stopped, if attached.

4-19. CLEANING INSTRUCTIONS.

WARNING

Improper cleaning methods and the use of unauthorized cleaning agents can injure personnel and damage equipment. To prevent this, refer to TM 9247 for instructions.

a. **General**. Cleaning instructions will be the same for the majority of parts and components that make up the trailer. The following applies to all cleaning operations:

1. Clean all parts before inspection, after repair, and before assembly.
2. Keep hands free of grease, which can collect dust, dirt, and grit.
3. After cleaning, cover or wrap all parts to protect them from dust and dirt. Parts that are subject to rust should be lightly oiled.

b. **Steam Cleaning.**

WARNING

Avoid contact with live steam, which can burn skin, cause blindness, and cause other serious injury. Be sure to wear protective apron, gloves, and safety goggles around live steam.

1. Before steam cleaning trailer, protect all electrical components that could be damaged by steam or moisture.
2. Place disassembled parts in a suitable container to steam-clean. Parts that are subject to rust should be dried and lightly oiled after cleaning.

4-19. CLEANING INSTRUCTIONS (CONTINUED).

c. **Castings, Forgings, and Machined Metal Parts.**

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean inner and outer surfaces with drycleaning solvent (Item 15, Appendix F).
2. Remove grease and accumulated deposits with a scrub brush (Item 1, Appendix F).

WARNING

Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.) and use caution to avoid injury to personnel.

3. Clear out all threaded holes with compressed air to remove dirt and cleaning fluids.

CAUTION

DO NOT wash oil seals, electrical cables, and flexible hoses with drycleaning solvent or mineral spirits. Serious damage or destruction of material will result.

d. **Oil Seals, Electrical Cables, and Flexible Hoses**. Wash electrical cables and flexible hoses with a solution of detergent (Item 5, Appendix F) and water and wipe dry.

e. **Bearings.** Clean bearings in accordance with TM 9-214.

4-20. INSPECTION INSTRUCTIONS.

NOTE

All damaged areas should be marked for repair or replacement.

a. All components and parts must be carefully checked to determine if they are serviceable, can be repaired, or must be scrapped.

b. Inspect drilled and tapped (threaded) holes for the following:

1. In or around holes-wear, distortion (stretching), cracks, and any other damage.
2. Threaded areas-wear, distortion (stretching), and evidence of cross-threading.

4-20. INSPECTION INSTRUCTIONS (continued).

c. Inspect metal lines, flexible lines (hoses), and metal fittings and connectors for the following:

1. Metal lines-sharp kinks, cracks, bad bends, and dents.

2. Flexible lines-fraying, evidence of leakage, and loose metal fittings or connectors.

3. Metal fittings and connectors-thread damage and worn or rounded hex heads.

d. Inspect castings, forgings, and machined metal parts for the following:

1. Machined surfaces-nicks, burrs, raised metal, wear, and other damage.

2. Inner and outer surfaces-breaks and cracks.

e. Inspect fittings and connectors for leaks by coating fittings and connectors with solution of detergent (Item 5, Appendix F) and water. No leakage is permissible.

f. Inspect bearings in accordance with TM 9-214.

4-21. TAGGING PARTS.

a. Use marker tags (Item 16, Appendix F) to identify all electrical wires, hydraulic lines, and any other parts that may be hard to identify or replace later. Fasten a tag to the part during removal by wrapping a wire fastener around or through the part and twisting the ends together. Position tags to be out of the way during cleaning, inspection, and repair. Mark tags with a pencil, pen, or marker.

b. Whenever possible, identify each electrical wire with the number of the terminal or wire to which it connects. If no markings can be found, tag both wires or wire and terminal using the same identifying mark for both. If you cannot tag a wire because it must fit through a small hole or you cannot reach it, write down a description of the wire and the point at which it connects or draw a simple diagram on paper. Be sure to write down enough information so you will be able to properly connect wires (or wire and terminal) during assembly. If you need to identify a loose wire, look for identifying numbers near the end of the wire, stamped on a permanent metal tag. Compare this number to the wire numbers on the wiring diagram (para 4-31).

c. Identify and tag other parts as required by name and location.

d. Remove all tags when finished.

4-22. PRESERVATION OF PARTS.

Unpainted metal parts that will not be installed immediately after cleaning should be covered with a thin coat of lubricating oil (Item 12, Appendix F).

4-23. PAINTING.

On areas where paint has been removed, paint in accordance with the procedures outlined In TM 43-0139 and TB 43-0209. For camouflage painting instructions, refer to FM 20-3.

4-24. ELECTRICAL GROUND POINTS.

Many electrical problems are the result of poor ground connections. You can ensure that ground connections are good by performing the following steps:

a. Remove hardware connecting ground cable terminal lug to ground point.

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

b. Clean mounting hardware, mounting surfaces, ground terminal lug, and ground point with drycleaning solvent (Item 15, Appendix F) and scrub brush (Item 1, Appendix F).

c. Remove any rust with wire brush (Item 2, Appendix F) and abrasive cloth (Item 3, Appendix F).

d. Look for cracks, loose terminal lugs, and stripped threads. Replace any defective parts.

e. Install hardware connecting ground cable terminal lug to ground point. Make sure all hardware is tight.

4-25. HYDRAULIC BRAKE LINES AND PORTS.

To keep dirt from contaminating the hydraulic brake system when removing and installing hydraulic brake lines, perform the following steps:

a. Clean fittings and surrounding area before disconnecting lines.

b. Cover lines and ports after disconnecting lines. Use hand-carved wooden plugs, clean rags (Item 13, Appendix F), duct tape (Item 18, Appendix F), or other similar materials to prevent dirt from entering system.

c. Make sure new and used parts are clean before connecting.

d. Wait to uncover lines and ports until just before connecting lines.

4-26. FLUID DISPOSAL.

Dispose of contaminated drained fluids in accordance with the SOP of your Unit.

Section VI. ELECTRICAL SYSTEM MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
4-27	General	4-39
4-28	Composite Stoplight-Taillight Maintenance	4-39
4-28.1	Blackout Stoplight Maintenance (M101A1 and M116A1)	4-42.1
4-28.2	Stoplight Maintenance (M101A1 and M116A1)	4-42.6
4-29	Chassis Wiring Harness Replacement	4-43
4-30	Intervehicular Cable Replacement	4-46
4-31	Wiring Diagram	4-48

4-27. GENERAL.

This section describes and illustrates removal and installation procedures for the composite stoplight-taillight, chassis wiring harness, and Intervehicular cable.

4-28. COMPOSITE STOPLIGHT-TAILLIGHT MAINTENANCE.

This task covers:

a. Lamp/LED Removal
b. Lamp/LED Installation
c. Composite Stoplight-Taillight Removal
d. Composite Stoplight-Taillight Installation

Initial Setup:

Tools/Test Equipment:

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

Materials/Parts:

- Tag, marker (as needed) (Item 16, Appendix F)
- Lockwasher (2), MS35338-46
- Starwasher (2), MS45904-76

Equipment Conditions:

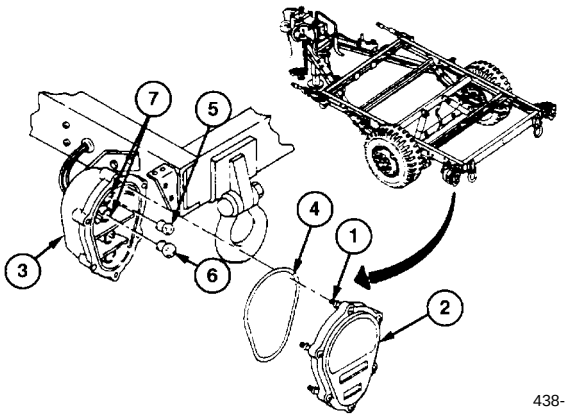
- Intervehicular cable disconnected from towing vehicle (para 2-15).

a. **LAMP/LED REMOVAL**

NOTE

Both 12 V dc and 24 V dc lamps are available. If towing vehicle is a CUCV, 12 V dc lamps should be used.

1. Loosen six captive screws (1), and remove lens (2) from body (3).
2. Inspect preformed packing (4) for damage. If damaged, remove preformed packing (4) and discard.
3. Remove two lamps (5 and 6) from sockets (7) by pushing in and turning counterclockwise.



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4-28. COMPOSITE STOPLIGHT-TAILLIGHT MAINTENANCE (CONTINUED).

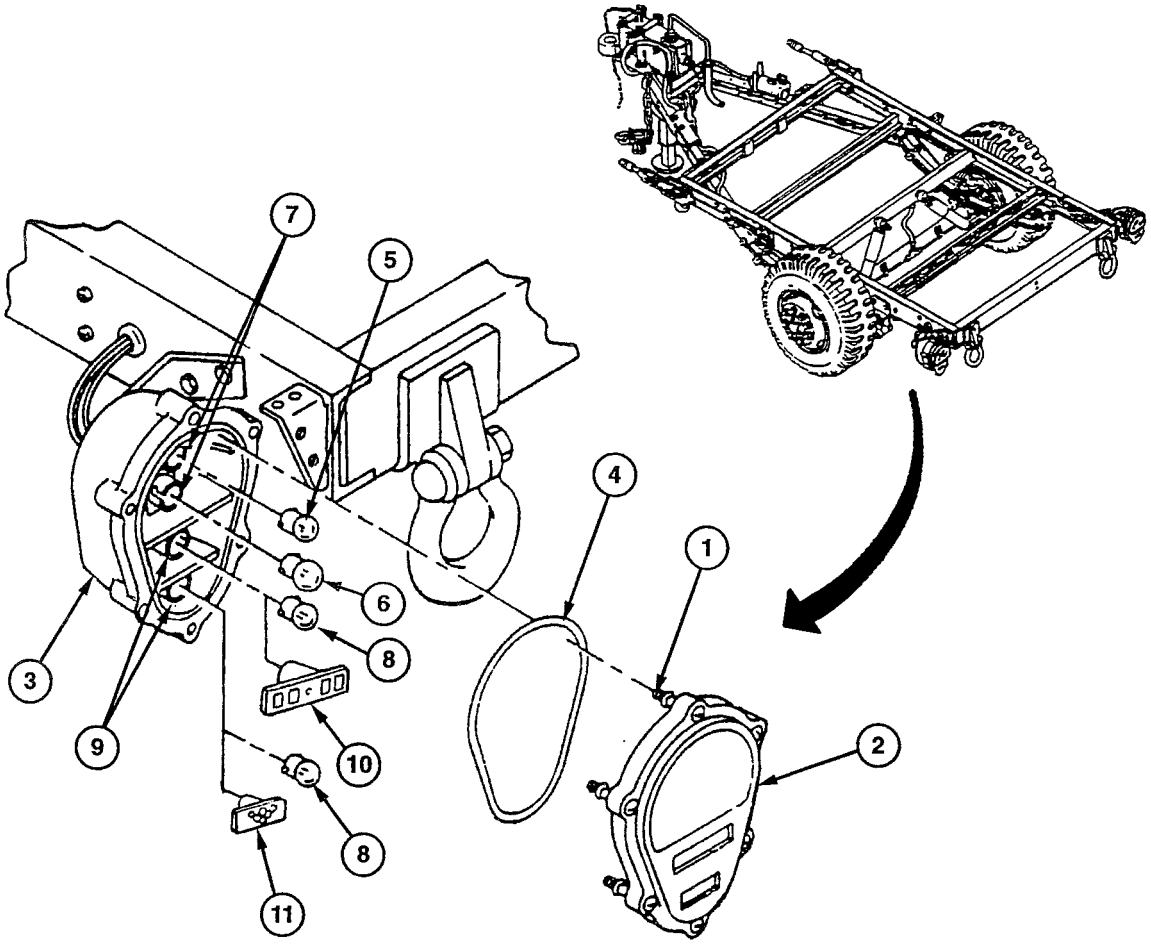
NOTE

- **If lamps are present, perform step 4.**
- **If LEDs are present, perform steps 5 and 6.**

4. Remove two lamps (8) from sockets (9) by pushing in and turning counterclockwise.
5. Insert small flat-tipped screwdriver into slot inside center hole in LED (10). Push in firmly, turn counterclockwise, and remove LED (10) from socket (9).
6. Insert small flat-tipped screwdriver into slot on left side of LED (11) and open LED cover, allowing access to inside slot in center hole. Push in firmly with screwdriver in center hole slot, turn counterclockwise slightly, and remove LED (11) from socket (9).

NOTE

- **LEDs can be used to replace lamps that were removed.**
- **To install LEDs, perform step 1.**
- **To install lamps, perform step 2.**



4-28. COMPOSITE STOPLIGHT-TAILLIGHT MAINTENANCE (continued).

b. LAMP/LED INSTALLATION

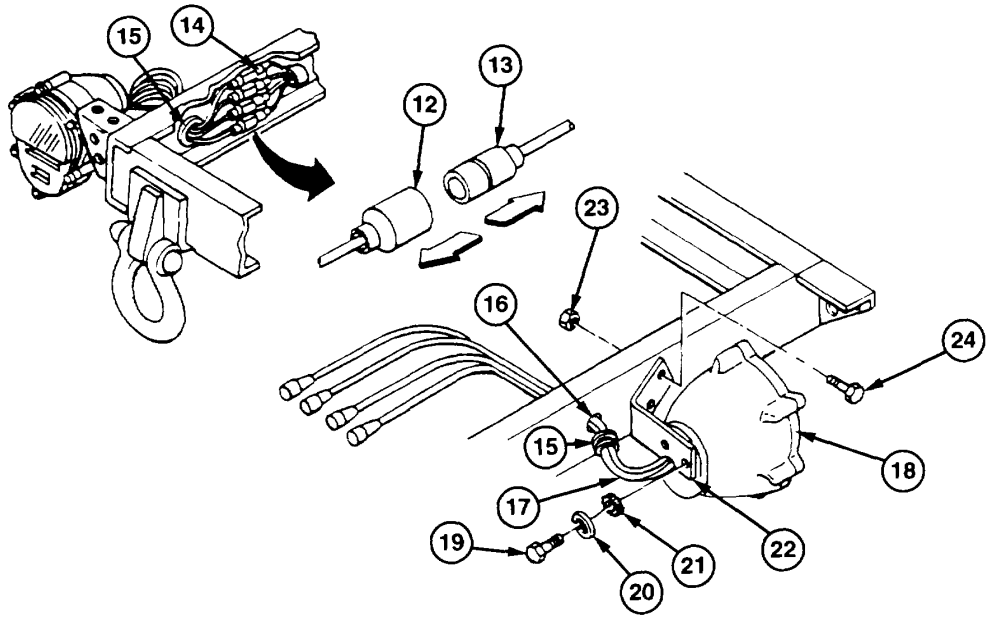
1. Install two LEDs (10 and 11) in sockets (9) by snapping into place by hand.
2. Install two lamps (8) in sockets (9) by pushing in and turning clockwise.
3. Install two lamps (5 and 6) in sockets (7) by pushing in and turning clockwise.
4. If removed, install new preformed packing (4) in lens (2).
5. Install lens (2) on body (3) and tighten six captive screws (1).

c. COMPOSITE STOPLIGHT-TAILLIGHT REMOVAL

NOTE

If marker bands are missing or illegible, tag wires for installation purposes (para 4-21).

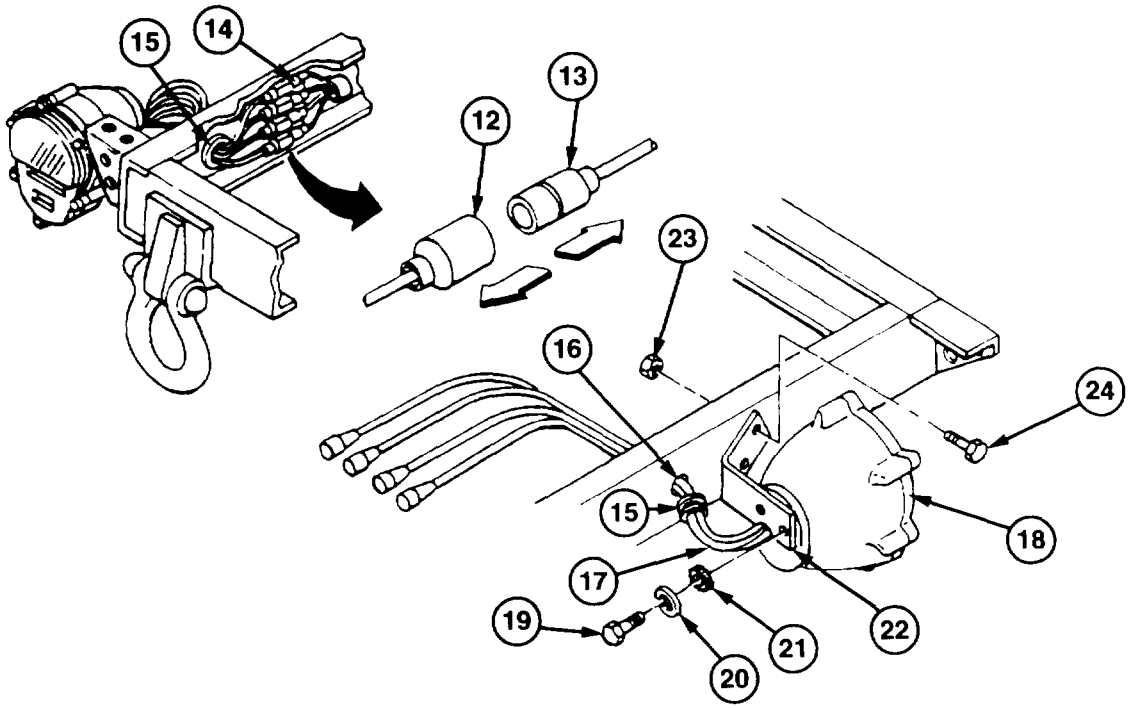
1. Remove four composite stoplight-taillight connectors (12) and chassis wiring harness connectors (13) from clip (14) and disconnect connectors (12 and 13).
2. Remove grommet (15) from hole (16) in frame.
3. Pull four wires (17) of composite stoplight-taillight (18) through hole (16) in frame.
4. Remove two capscrews (19), lockwashers (20), and washers (21) and composite stoplight-taillight (18) from bracket (22). Discard lockwashers and washers.
5. If bracket (22) is damaged, remove two self-locking nuts (23) and capscrews (24) and bracket (22) from frame. Discard self-locking nuts.



4-28. COMPOSITE STOPLIGHT-TAILLIGHT MAINTENANCE (continued).

d. COMPOSITE STOPLIGHT-TAILLIGHT INSTALLATION

1. If bracket (22) is removed, install bracket (22) on frame with two capscrews (24) and new self-locking nuts (23).
2. Install composite stoplight-taillight (18) on bracket (22) with two new washers (21), new lockwashers (20), and capscrews (19).
3. Feed four wires (17) of composite stoplight-taillight (18) through hole (16) in frame.
4. Position grommet (15) around four wires (17), and install grommet (15) through hole (16) in frame.
5. Connect four composite stoplight-taillight connectors (12) on four chassis wiring harness connectors (13). Place connectors (12 and 13) in clip (14).



FOLLOW-ON TASKS:

- Connect intervehicular cable to towing vehicle (para 2-13).

4-28.1 BLACKOUT STOPLIGHT MAINTENANCE (M101A1 AND M116A1)

This task covers:

a. Lamp Replacement
b. Blackout Stoplight Removal
c. Blackout Stoplight Disassembly
d. Cleaning and Inspection
e. Blackout Stoplight Assembly
f. Blackout Stoplight Installation

Initial Setup:

Tools/Test Equipment:

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

Materials/Parts:

- Cloth (Item 4, Appendix F)
- Detergent (Item 5, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Tag, marker (as needed) (Item 16, Appendix F)
- Gasket, 8694464
- Lockwasher, 7410217

Equipment Conditions:

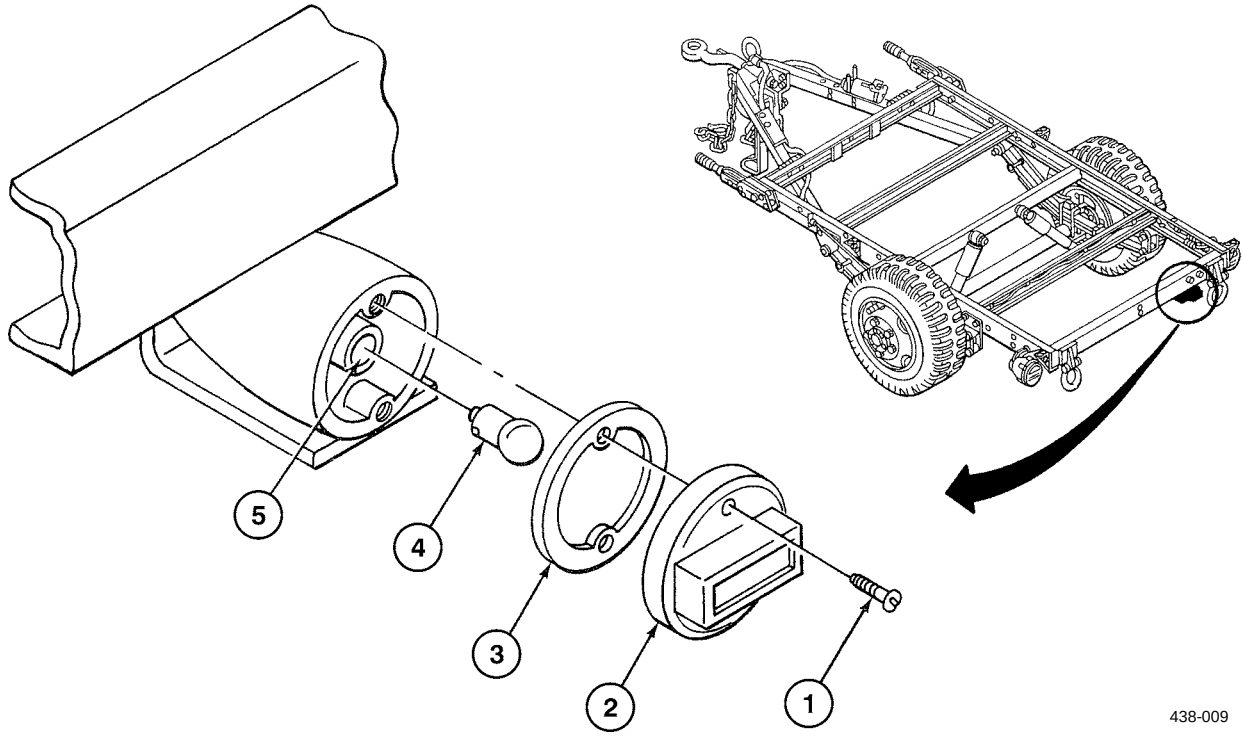
- Intervehicular cable disconnected from towing vehicle (para 2-15).

References:

- TM 43-0139

a. **LAMP REPLACEMENT**

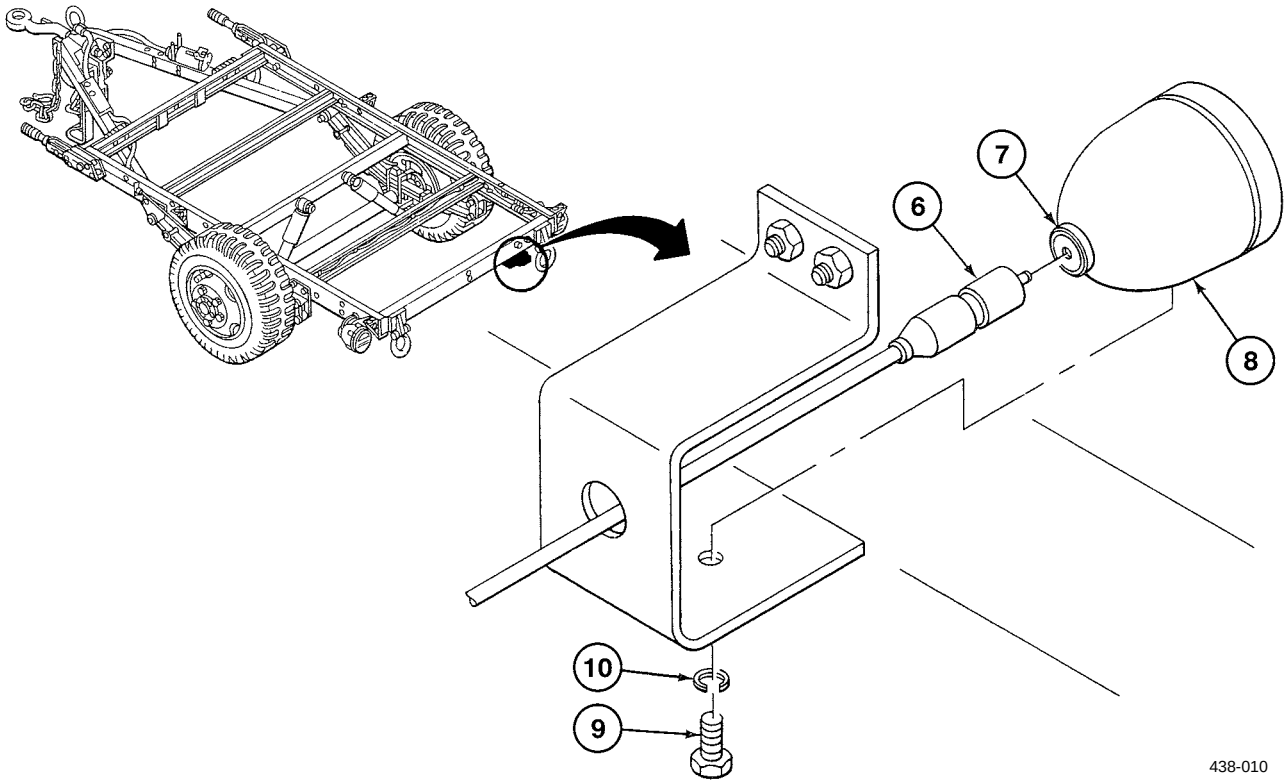
1. Remove two screws (1), lens retainer (2), and gasket (3). Discard gasket.
2. Remove lamp (4) from socket (5) by pushing in and turning counterclockwise.
3. Install lamp (4) in socket (5) by pushing in and turning clockwise.
4. Install new gasket (3), lens retainer (2), and two screws (1).



4-28.1. BLACKOUT STOPLIGHT MAINTENANCE (M101A1 and M116A1) (CONTINUED).

b. **BLACKOUT STOPLIGHT REMOVAL**

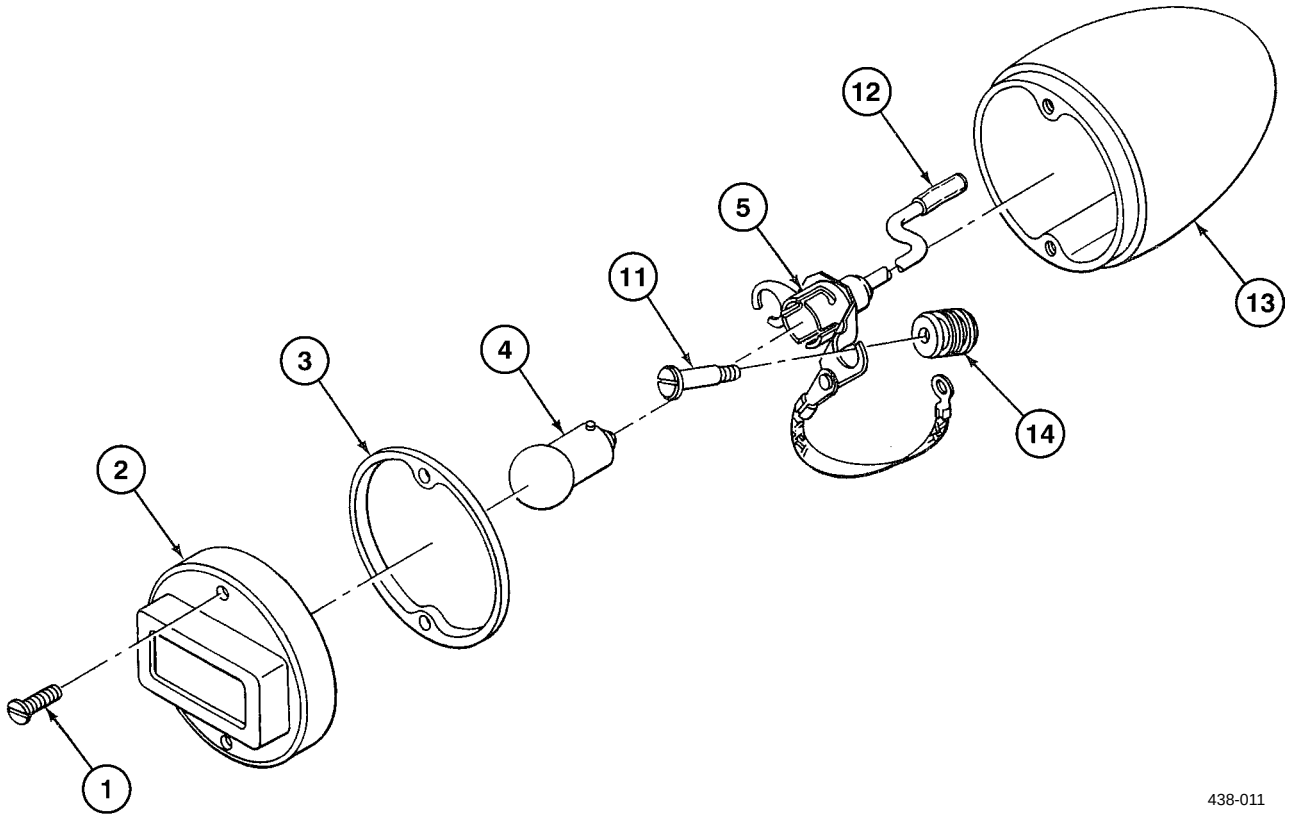
1. Disconnect connector (6) from connector (7) in blackout stoplight (8).
2. Remove bolt (9), lockwasher (10), and blackout stoplight (8). Discard lockwasher.



c. **BLACKOUT STOPLIGHT DISASSEMBLY**

1. Remove two screws (1), lens retainer (2), and gasket (3). Discard gasket.
2. Remove lamp (4) from socket (5) by pushing in and turning counterclockwise.
3. Remove two screws (11), disconnect terminal (12), and remove socket (5) from housing (13).
4. Remove two grommets (14) from housing (13).

4-28.1. BLACKOUT STOPLIGHT MAINTENANCE (M101A1 and M116A1) (CONTINUED).



d. **CLEANING AND INSPECTION**

WARNING

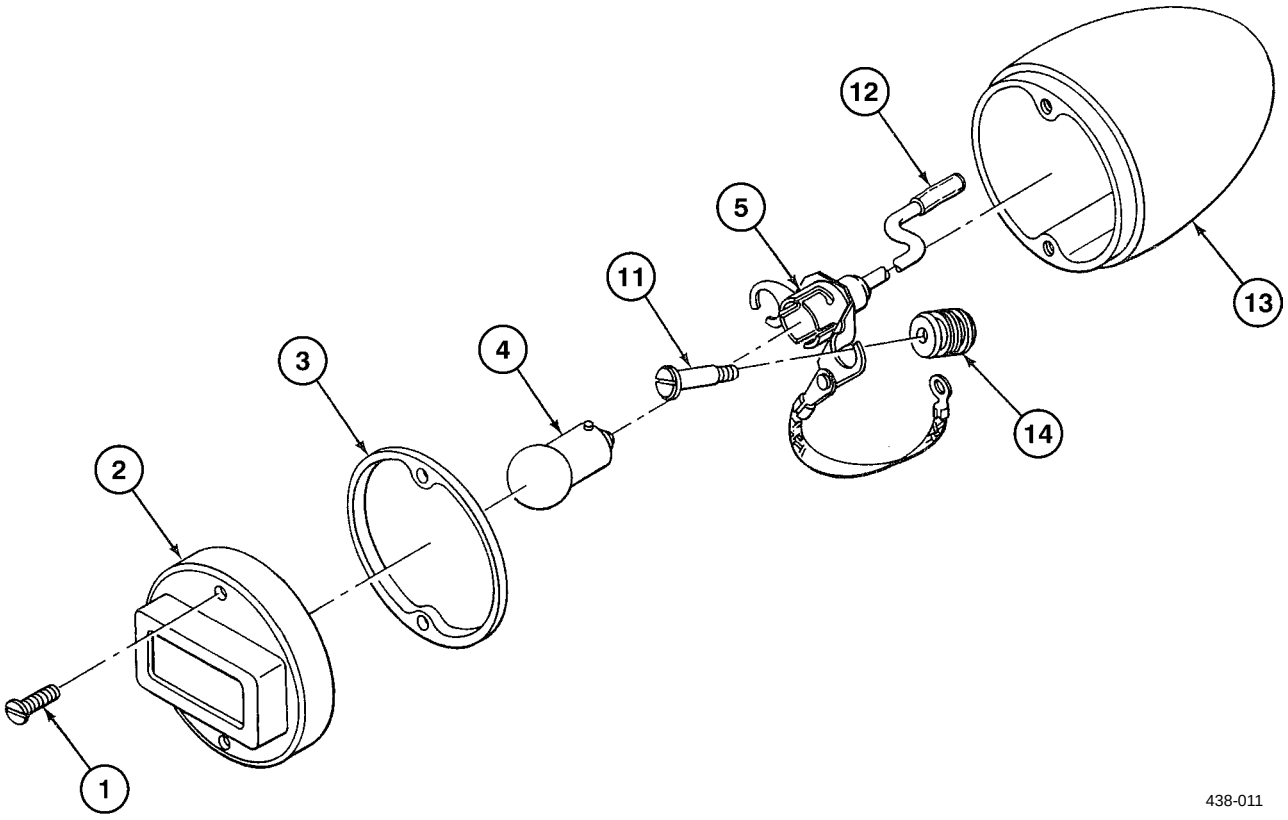
Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Use drycleaning solvent to clean lens, lens retainer, and outside of housing. Dry thoroughly.
2. Use detergent and water to clean inside of housing. Dry thoroughly.
3. Use abrasive cloth to remove corrosion.
4. Touch up paint (refer to TM 43-0139).
5. Inspect lens retainer for signs of moisture leakage, cracks, and warpage. Inspect lens for cracks or breaks. Replace lens retainer if lens retainer or lens is damaged.
6. Inspect housing for cracks and dents. Inspect connector for being electrically and mechanically good. Replace housing if damged.
7. Inspect grommets for damage and deterioration. Replace grommets if damaged.
8. Inspect socket assembly for good electrical and mechanical connections; cracked or deteriorated insulation; broken wires; and corroded lug, terminal, or socket. Replace socket assembly if damaged.

4-28.1. BLACKOUT STOPLIGHT MAINTENANCE (M101A1 and M116A1) (CONTINUED).

e. **BLACKOUT STOPLIGHT ASSEMBLY**

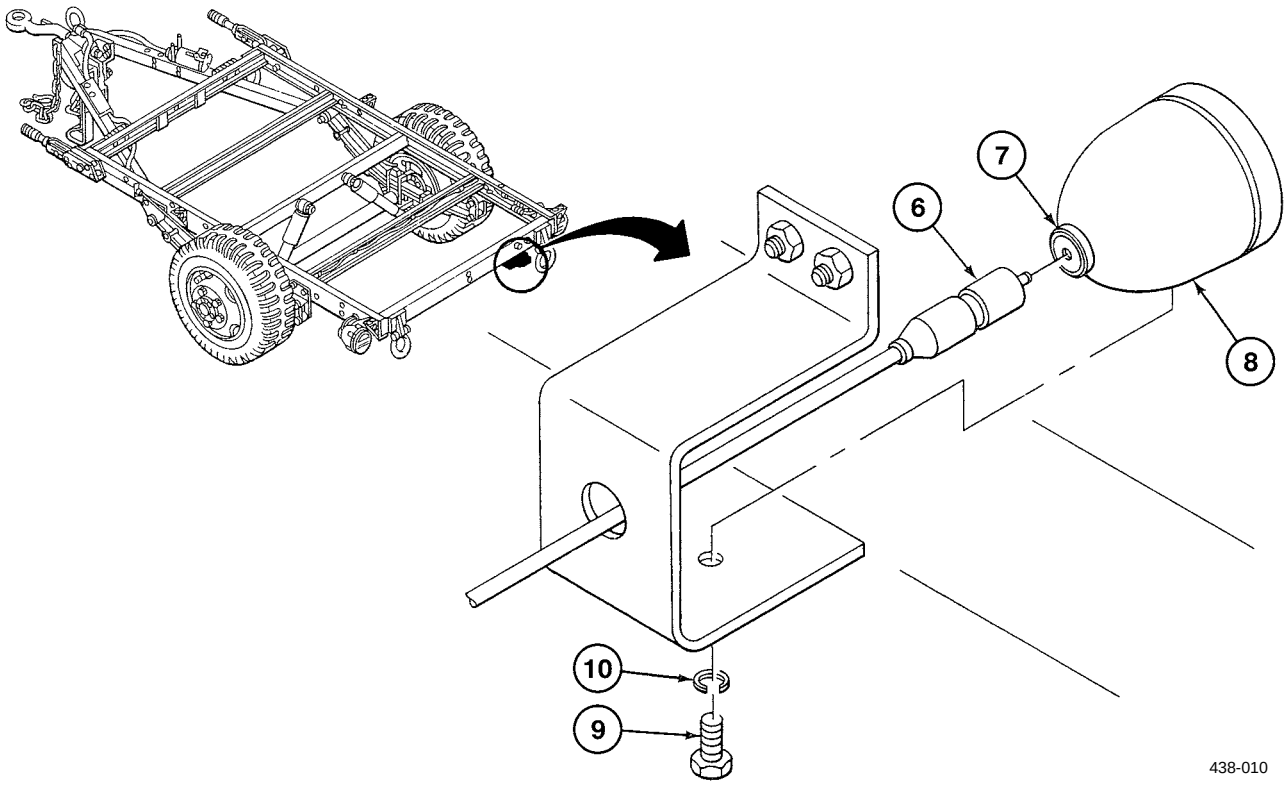
1. Install two grommets (14) in housing (13).
2. Install socket (5), connect terminal (12), and install two screws (11) in housing (13).
3. Install lamp (4) in socket (5) by pushing in and turning clockwise.
4. Install new gasket (3), lens retainer (2), and two screws (1).



f. **BLACKOUT STOPLIGHT INSTALLATION**

1. Install blackout stoplight (8), new lockwasher (10), and bolt (9).
2. Push connector (6) into connector (7) of blackout stoplight (8) until they lock.

4-28.1. BLACKOUT STOPLIGHT MAINTENANCE (M101A1 and M116A1) (CONTINUED).



FOLLOW-ON TASKS:

- Connect intervehicular cable to towing vehicle (para 2-13).

4-28.2 STOPLIGHT MAINTENANCE (M101A1 AND M116A1).

This task covers:

a. Lamp Replacement
b. Stoplight Removal
c. Stoplight Disassembly
d. Cleaning and Inspection
e. Stoplight Assembly
f. Stoplight Installation

Initial Setup:

Tools/Test Equipment:

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

Materials/Parts:

- Cloth (Item 4, Appendix F)
- Detergent (Item 5, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Tag, marker (as needed) (Item 16, Appendix F)
- Lockwasher (2), MS35338-42
- Packing, preformed, 7320658
- Starwasher (2), 23E06

Equipment Conditions:

- Intervehicular cable disconnected from towing vehicle (para 2-15).

References:

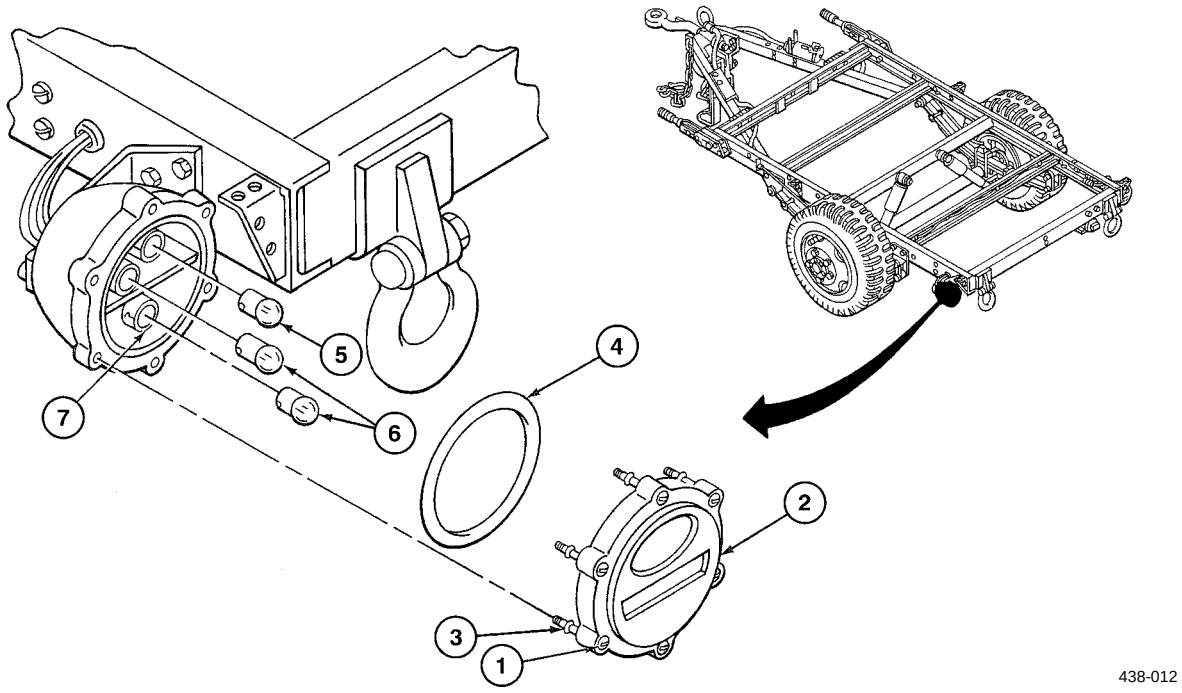
- TM 43-0139

a. **LAMP REPLACEMENT**

NOTE

Screws (1) are held in lens retainer (2) by retainers (3).

1. Loosen six screws (1) and remove lens retainer (2) and preformed packing (4). Discard preformed packing.
2. Remove lamp (5) and two lamps (6) from sockets (7) by pushing in and turning counterclockwise.
3. Install two lamps (6) and lamp (5) in sockets (7) by pushing in and turning clockwise.
4. Install new preformed packing (4) and lens retainer (2) and tighten six screws (1).



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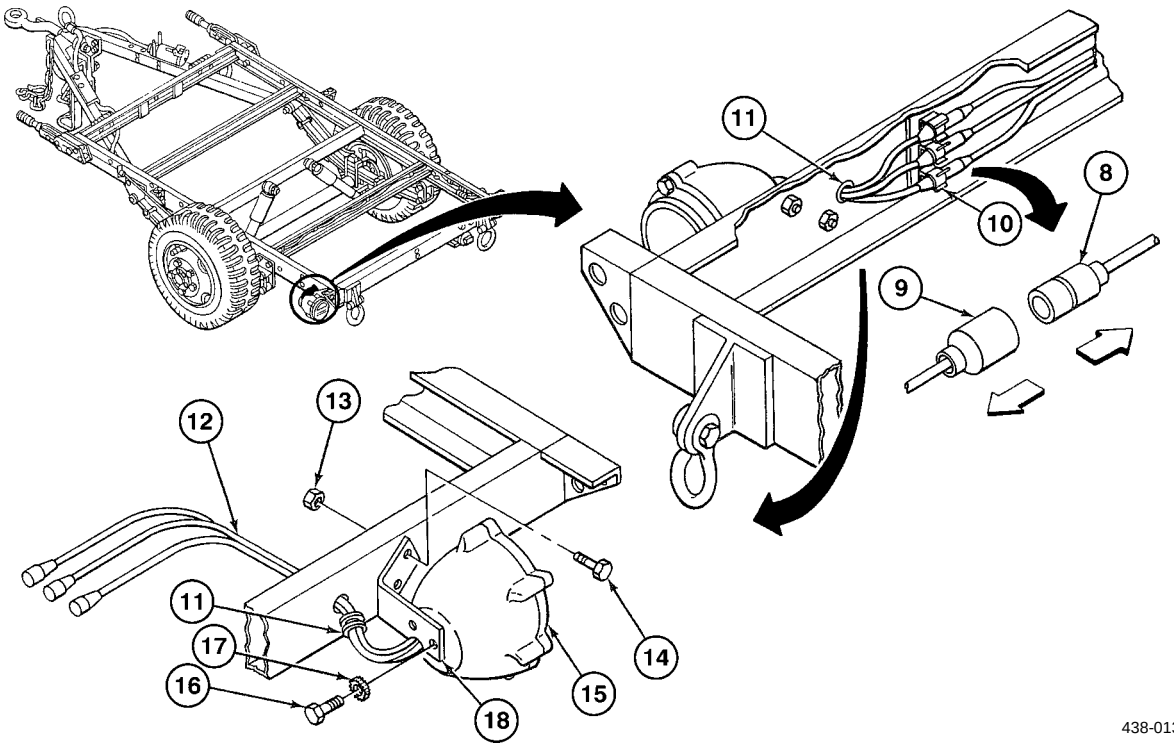
4-28.2. STOPLIGHT MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

b. **STOPLIGHT REMOVAL**

1. Pull connectors (8 and 9) from support clip (10).
2. Pull apart connectors (8 and 9).
3. Remove grommet (11) and pull cable (12) through hole in chassis.
4. Remove two nuts (13), capscrews (14), and stoplight (15).
5. Remove two capscrews (16), starwashers (17), and bracket (18). Discard starwashers.



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4-28.2. STOPLIGHT MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

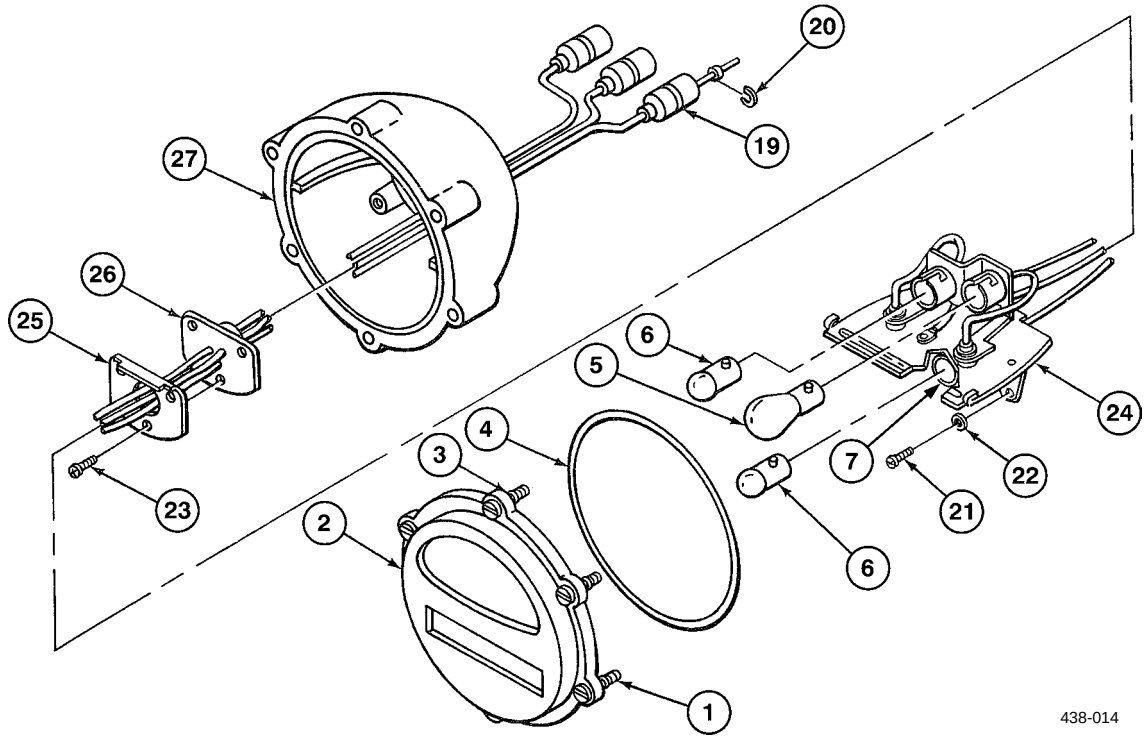
c. **STOPLIGHT DISASSEMBLY**

1. Push back three shells (19) and remove slotted washers (20) and shells off wire.

NOTE

Screws (1) are held in lens retainer (2) by retainers (3).

2. Loosen six screws (1), remove lens retainer (2), and preformed packing (4). Discard preformed packing.
3. Remove lamp (5) and two lamps (6) from sockets (7) by pushing in and turning counterclockwise.
4. Remove two screws (21) and lockwashers (22). Discard lockwashers.
5. Remove three screws (23) and pull socket and wiring assembly (24), retaining plate (25), and grommet (26) out of housing (27).



d. **CLEANING AND INSPECTION**

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Use drycleaning solvent to clean lens, lens retainer, and outside of housing. Dry thoroughly.
2. Use detergent and water to clean inside of housing. Dry thoroughly.
3. Use abrasive cloth to remove corrosion from lens retainer and housing.

4-28.2. STOPLIGHT MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

4. Touch up paint (refer to TM 43-0139).

5. Inspect lens retainer for signs of moisture leakage, cracks, warpage, and damaged screwdriver slots or threads on screws. Inspect lenses for cracks or breaks. Replace lens retainer if lens retainer or lenses are damaged.

6. Inspect housing for cracks and dents. Replace housing if damaged.

7. Inspect grommet for damage. Inspect retaining plate for cracks and distortion. Inspect socket and wiring assembly for good electrical and mechanical connections, cracked or bad insulation, broken wires, corroded sockets or terminals, and cracked isolators. Replace socket and wiring assembly, retaining plate, and grommet as an assembly if grommet, retaining plate, or socket and wiring assembly is damaged.

e. **STOPLIGHT ASSEMBLY**

1. Slip wires through hole in housing (27).

2. Position grommet (26), retaining plate (25), and socket and wiring assembly (24) inside housing (27) with double socket at top. Install three screws (23).

3. Install two new lockwashers (22) and screws (21).

4. Install lamp (6) in top-left socket (7) and lamp (6) in bottom socket (7) by pushing in and turning clockwise.

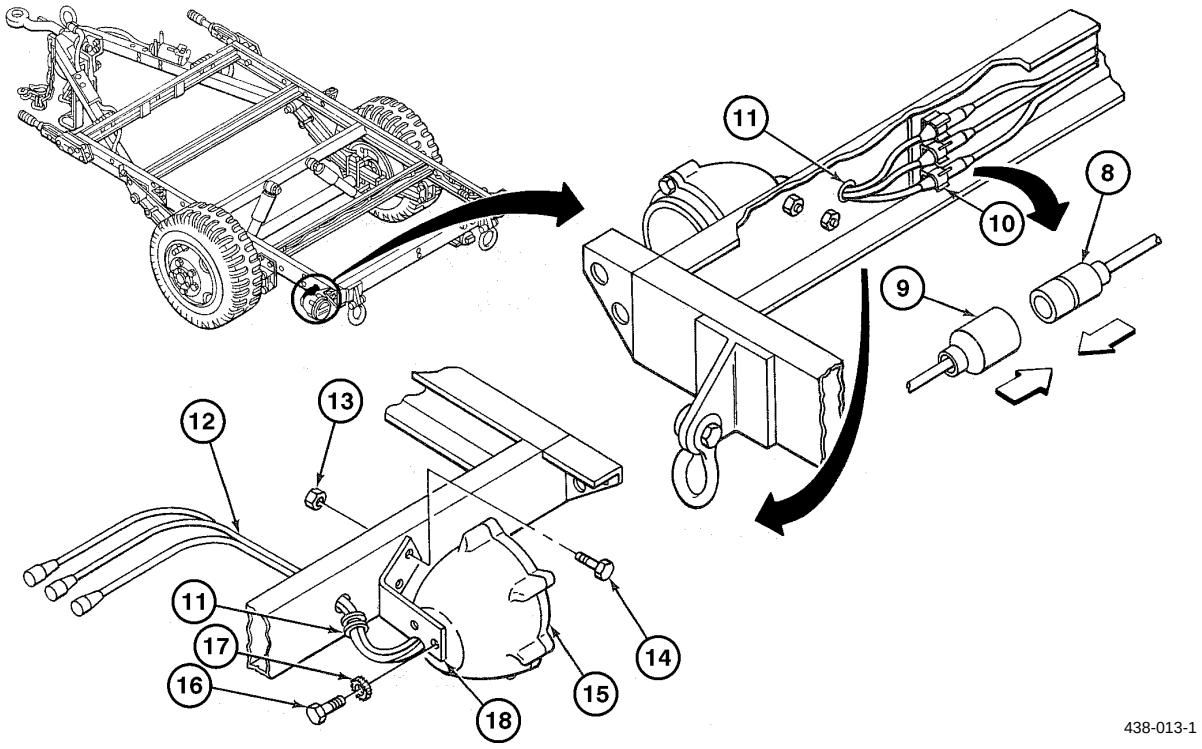
5. Install lamp (5) in top-right socket (7) by pushing in and turning clockwise.

6. Slip three shells (19) over electrical contacts and wires. Install three slotted washers (20) in back of electrical contacts and pull shells over slotted washers and electrical contacts.

4-28.2. STOPLIGHT MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

f. **STOPLIGHT INSTALLATION**

1. Install bracket (18), two new starwashers (17), and capscrews (16).
2. Install stoplight (15), two capscrews (14), and nuts (13).
3. Push cable (12) through hole in chassis and install grommet (11).
4. Push together connectors (9 and 8) until they lock.
5. Push connectors (9 and 8) into support clip (10).



438-013-1

FOLLOW-ON TASKS:

- Connect intervehicular cable to towing vehicle (para 2-13).

4-29. CHASSIS WIRING HARNESS REPLACEMENT.

This Task Covers:

a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)

Materials/Parts:
- Tag, marker (as needed) (Item 16, Appendix F)
- Lockwasher, MS35338-43
- Lockwasher (5), MS45904-64 (M116A2E1 and M 116A3)
- Lockwasher (15), MS45904-64 (M101A2, M101A3, and M116A2)
- Strap, tiedown, electrical (2), MS3367-1-9

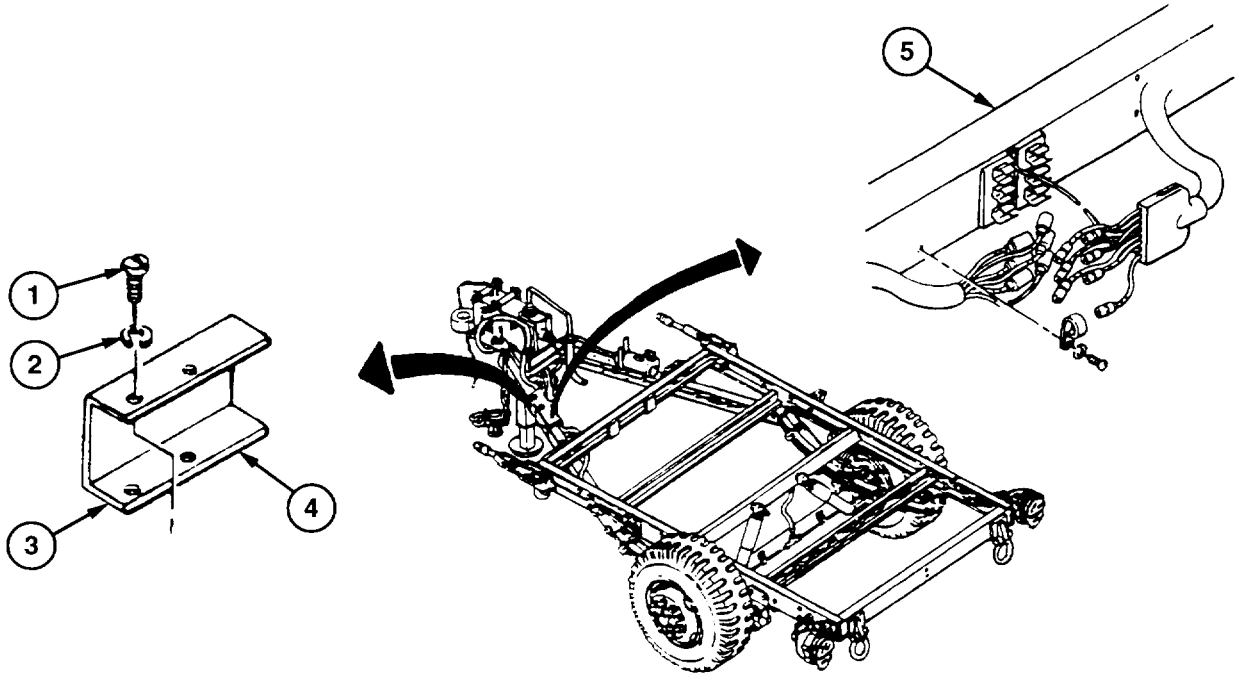
Equipment Conditions:
- Intervehicular cable disconnected from towing vehicle (para 2-15).

NOTE

Configuration of chassis wiring harness varies slightly with model. The M116A2 chassis trailer is shown.

a. REMOVAL

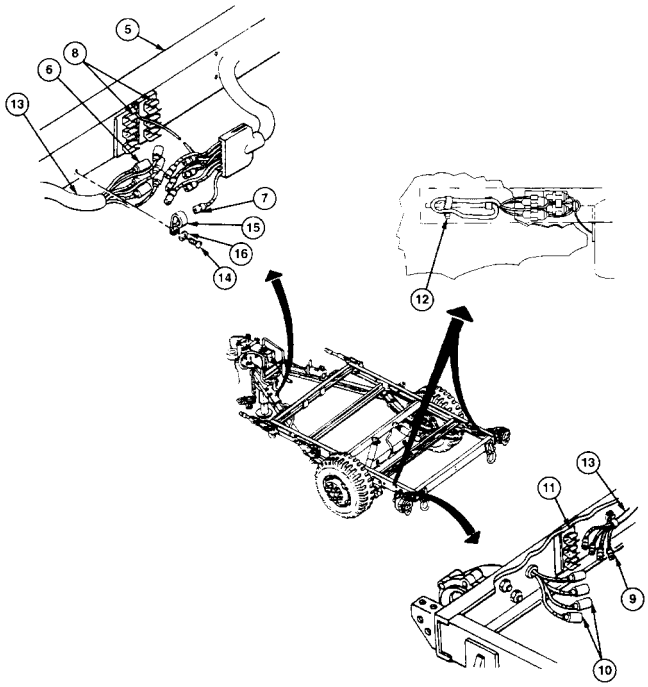
1. Remove four screws (1) and lockwashers (2) and cover (3) from junction box (4) at road-side drawbar (5). Discard lockwashers.



4-29. CHASSIS WIRING HARNESS REPLACEMENT (continued).

NOTE

If marker bands are missing or illegible, tag wires for installation purposes (para 4-21).



NOTE

The M116A2E1 and the M116A3 have no lockwashers at loop clamp mountings on rear crossmember and road- side frame. A lockwasher is used at loop clamp mounting on road-side drawbar.

5. Remove 11 screws (14) and lockwashers (15) from 11 loop clamps (16) securing chassis wiring harness (13) to rear crossmember, road-side frame, and road-side drawbar (5). Discard lockwashers.

2. At junction box at road-side drawbar (5), remove chassis wiring harness connectors (6) and intervehicular cable connectors (7) from clips (8) and disconnect connectors (6 and 7).

3. At curb-side and road-side rear of trailer, remove chassis wiring harness connectors (9) and light connectors (10) from clips (11) and disconnect connectors (9 and 10).

4. Remove electrical tiedown straps (12) from chassis wiring harness (13). Discard tiedown straps.

4-29. CHASSIS WIRING HARNESS REPLACEMENT (continued).

6. At front road-side corner of frame, remove nut (17), screw (18), and lockwasher (19) from loop clamp (20) and frame. Discard lockwasher.

7. Remove chassis wiring harness (13) from frame. Remove 11 loop clamps (16) and loop clamp (20) from chassis wiring harness (13).

b. INSTALLATION

1. Position chassis wiring harness (13) along rear crossmember, road-side frame, and road-side drawbar (5). Make sure chassis wiring harness connectors (6 and 9) reach their points of connection. 2.At front road-side corner of frame, install loop clamp (20) on frame with new lockwasher (19), screw (18), and nut (17).

NOTE

The M116A2E1 and the M116A3 have no lockwashers at loop clamp mountings on rear crossmember and road-side frame. A lockwasher is used at loop clamp mounting on road-side drawbar.

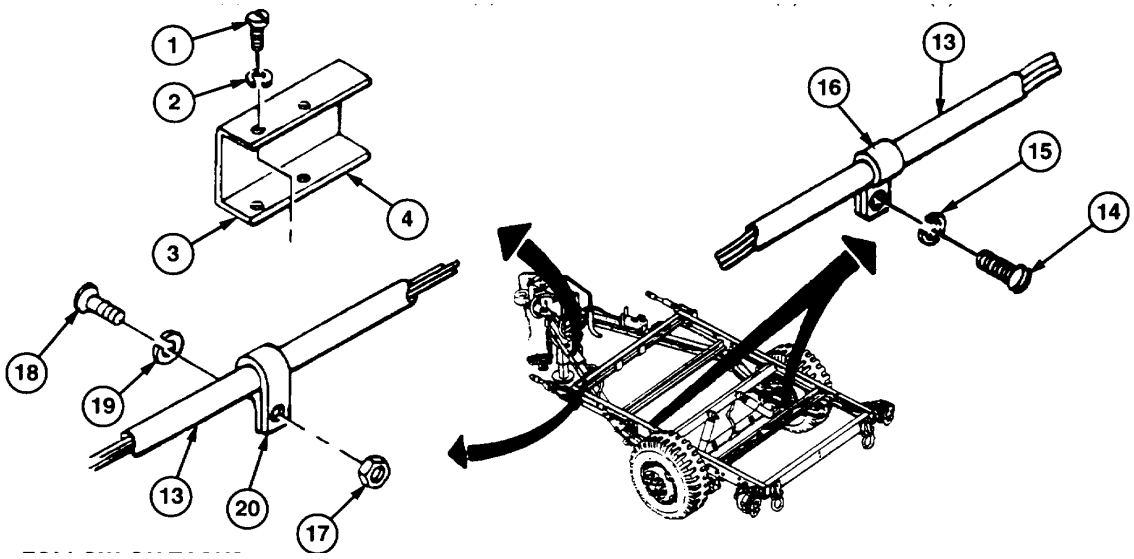
3. Install 11 loop clamps (16) securing chassis wiring harness (13) to rear crossmember, road-side frame, and road-side drawbar (5) with 11 new lockwashers (15) and screws (14).

4. Loop excess chassis wiring harness (13) and secure with new electrical tiedown straps (12).

5. At curb-side and road-side rear of trailer, connect chassis wiring harness connectors (9) to light connectors (10). Place connectors (9 and 10) in clips (11).

6. At junction box (4) at road-side drawbar (5), connect chassis wiring harness connectors (6) to intervehicular cable connectors (7). Place connectors (6 and 7) in clips (8).

7. Install cover (3) on road-side drawbar (5) with four new lockwashers (2) and screws (1).



FOLLOW-ON TASKS:

- Connect intervehicular cable to towing vehicle (para 2-13).

4-30. INTERVEHICULAR CABLE REPLACEMENT.

This Task Covers:

a. Removal
b. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)

Materials/Parts:
- Tag, marker (as needed) (Item 16, Appendix F)
- Lockwasher (7), MS45904-64
- Self-locking nut, MS51922-21

Equipment Conditions:
- Intervehicular cable disconnected from towing vehicle (para 2-15).

NOTE

Configuration of intervehicular cable and mounting varies slightly with model.

a. REMOVAL

1. Remove four screws (1) and lockwashers (2) and cover (3) from junction box (4) at road-side drawbar (5). Discard lockwashers.

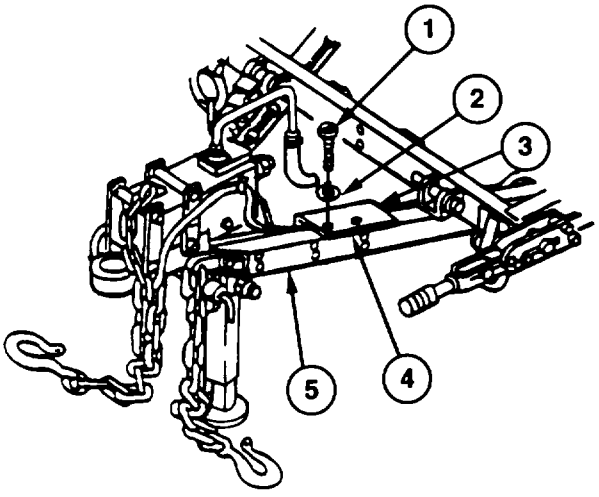
NOTE

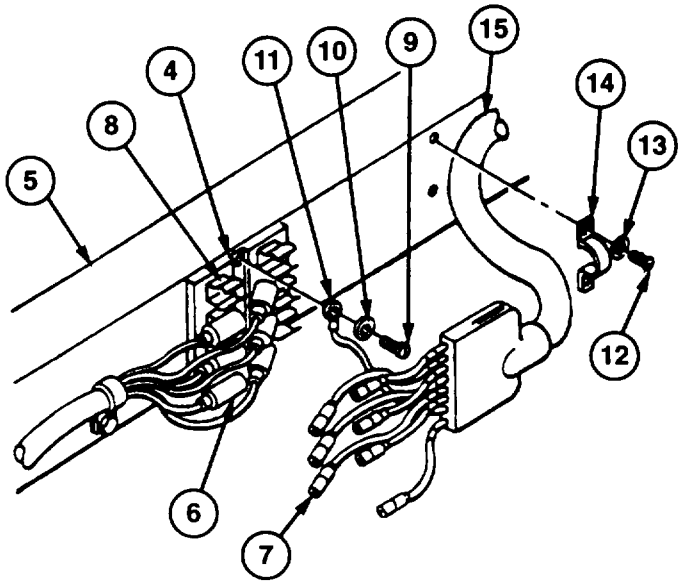
If marker bands are missing or illegible, tag wires for installation purposes (para 4-21).

2. At junction box (4) at road-side drawbar (5), remove chassis wiring harness connectors (6) and intervehicular cable connectors (7) from clips (8) and disconnect connectors (6 and 7).

3. Remove screw (9), lockwasher (10), and ground terminal (11) from road-side drawbar (5). Discard lockwasher.

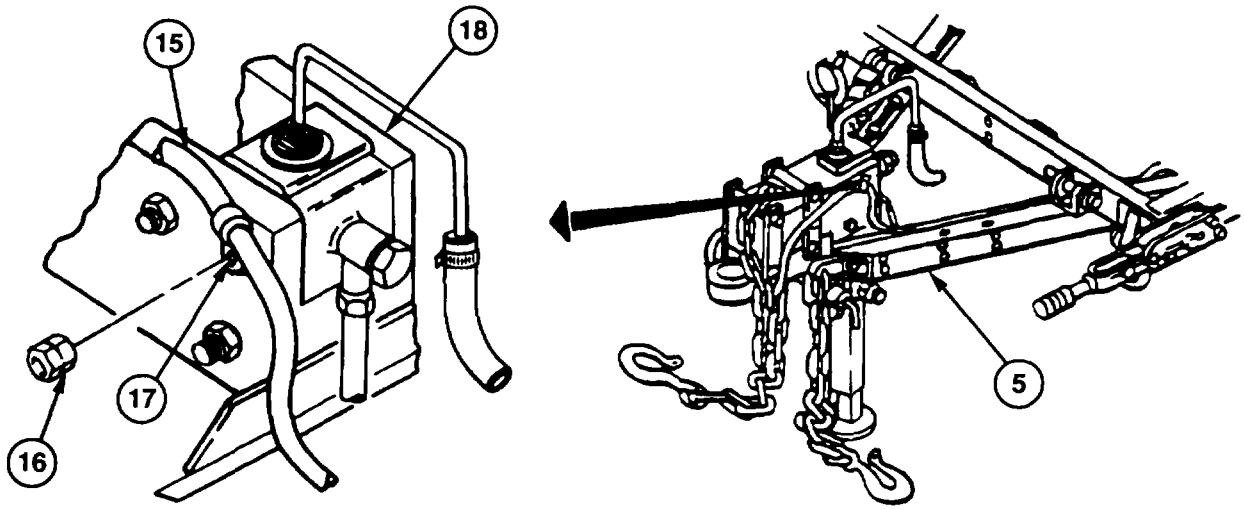
4. Remove two screws (12) and lockwashers (13) and retaining strap (14) from intervehicular cable (15) and road-side drawbar (5). Discard lockwashers.





4-30. INTERVEHICULAR CABLE REPLACEMENT (continued).

5. Remove self-locking nut (16) and loop clamp (17) from hydraulic brake actuator assembly (18). Remove loop clamp (17) from intervehicular cable (15). Discard self-locking nut.



b. INSTALLATION

1. Position intervehicular cable (15) along road-side drawbar (5).

2. Install ground terminal (11) on drawbar (5) with new lockwasher (10) and screw (9).

3. Connect chassis wiring harness connectors (6) to intervehicular cable connectors (7). Place connectors (6 and 7) in clips (8).

4. Install retaining strap (14) on intervehicular cable (15) and road-side drawbar (5) with two new lockwashers (13) and screws (12).

5. Install loop clamp (17) on intervehicular cable (15). Install loop clamp (17) on hydraulic brake actuator assembly (18) with new self-locking nut (16).

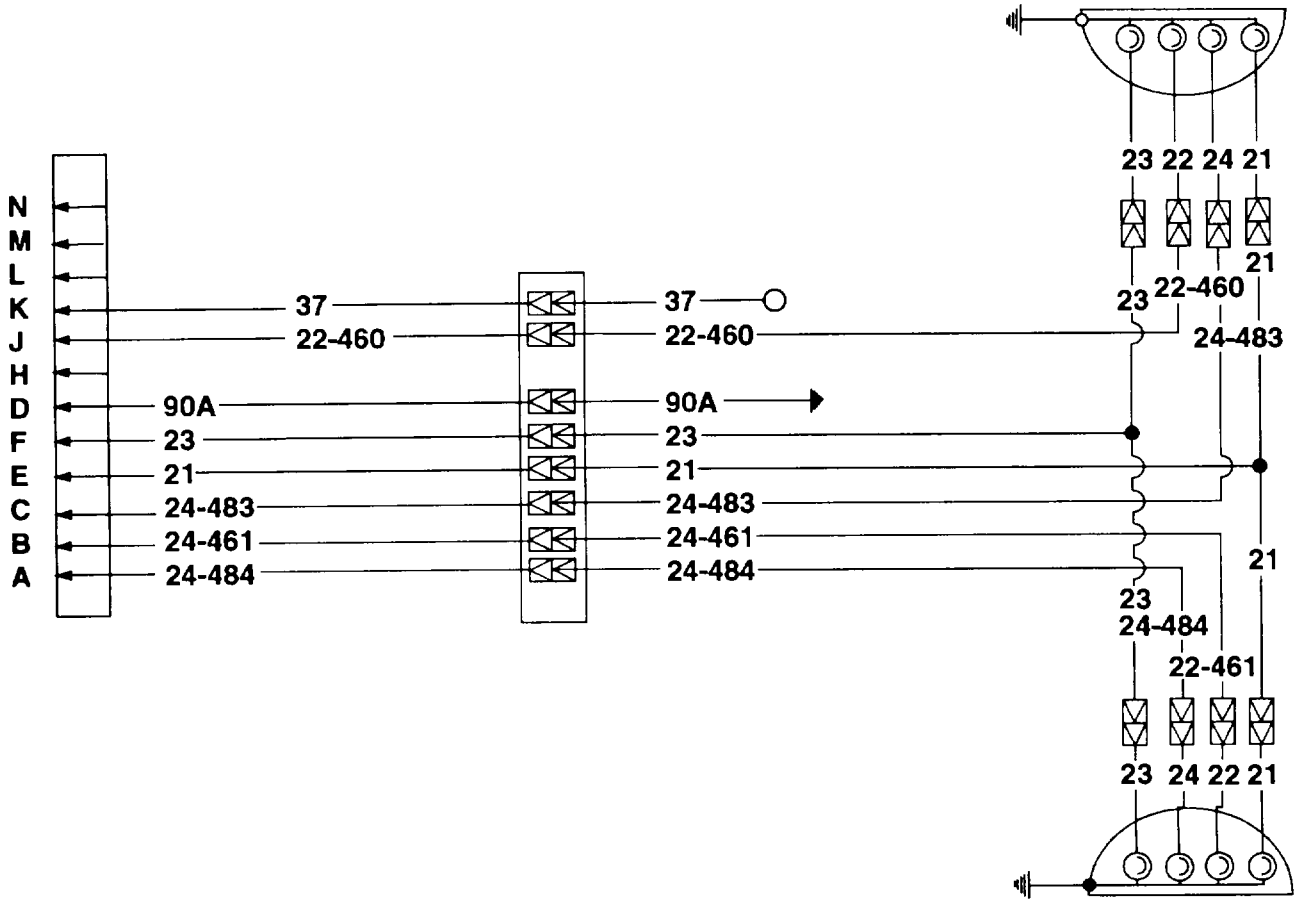
6. Install cover (3) on junction box (4) at road-side drawbar (5) with four new lockwashers (2) and screws (1).

FOLLOW-ON TASKS:

- Connect intervehicular cable to towing vehicle (para 2-13).

4-31. WIRING DIAGRAM.

This wiring diagram is for the chassis wiring harness. Refer to this wiring diagram when performing troubleshooting or maintenance on the electrical system of the M101 and M116 Series trailers.



Curb-Side Circuits		Road-Side Circuits	
22-460	Service Stoplight and Turn Signal	22-461	Service Stoplight and Turn Signal
23	Blackout Stoplight	23	Blackout Stoplight
24-483	Blackout Taillight and Turn Signal	24-484	Blackout Taillight and Turn Signal
21	Service Taillight	21	Service Taillight

Section VII. BRAKE SYSTEM MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
4-32	General	4-49
4-33	Handbrake Lever and Linkage Replacement	4-49
4-34	Handbrake Adjustment	4-54
4-35	Service Brake Maintenance (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-55
4-35.1	Service Brake Maintenance (M101A1 and M116A1)	4-60
4-36	Service Brake Adjustment (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-60.5
4-36.1	Service Brake Adjustment (M101A1 and M116A1)	4-60.6
4-37	Wheel Cylinder Replacement (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-61
4-38	Hydraulic Brake Actuator Assembly Replacement (M101A2, M101A3, M116A2 M116A2E1, and M116A3)	4-63
4-39	Master Cylinder Replacement (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-73
4-40	Hydraulic Brake Lines Replacement (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-76
4-41	Bleeding Hydraulic Brake System (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-81

4-32. GENERAL.

This section describes and illustrates replacement, adjustment, and maintenance of the handbrake and hydraulic brake system.

4-33. HANDBRAKE LEVER AND LINKAGE REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:

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

Materials/Parts:

- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Lockwasher (2), MS35338-45
- Self-locking nut (3), MS21042-5
- Self-locking nut, MS21042-6

Equipment Conditions:

- Handbrakes released (para 2-10).
- Hub and brakedrum removed (para 4-43).

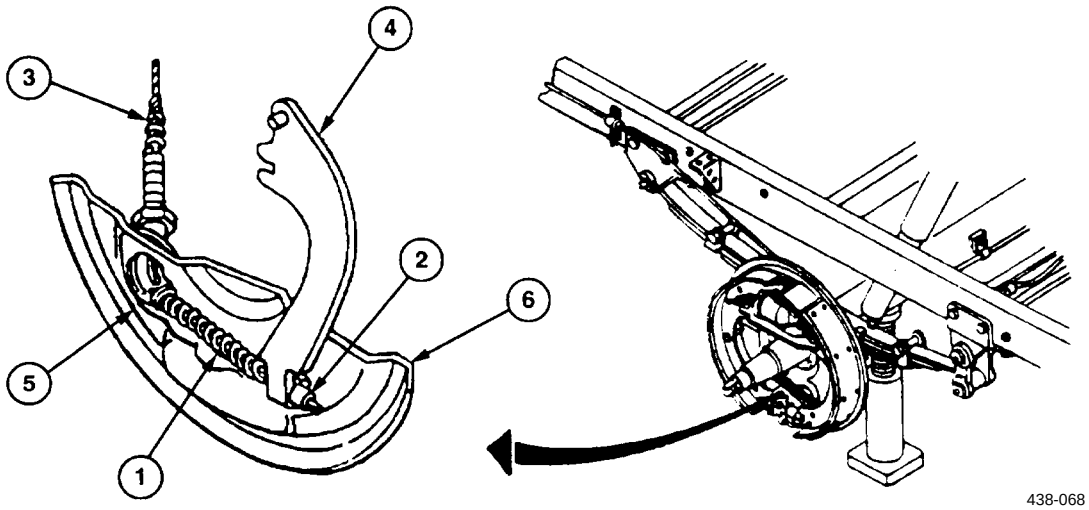
WARNING

When performing maintenance on brake system, make sure wheels are securely chocked. Failure to follow this warning may cause trailer to roll, resulting in serious injury or death to personnel or damage to equipment.

4-33. HANDBRAKE LEVER AND LINKAGE REPLACEMENT (CONTINUED).

a. **REMOVAL**

1. At wheel brake, pull spring (1) away from swaged sleeve (2) and unhook swaged sleeve (2) of cable assembly (3) from handbrake lever (4).



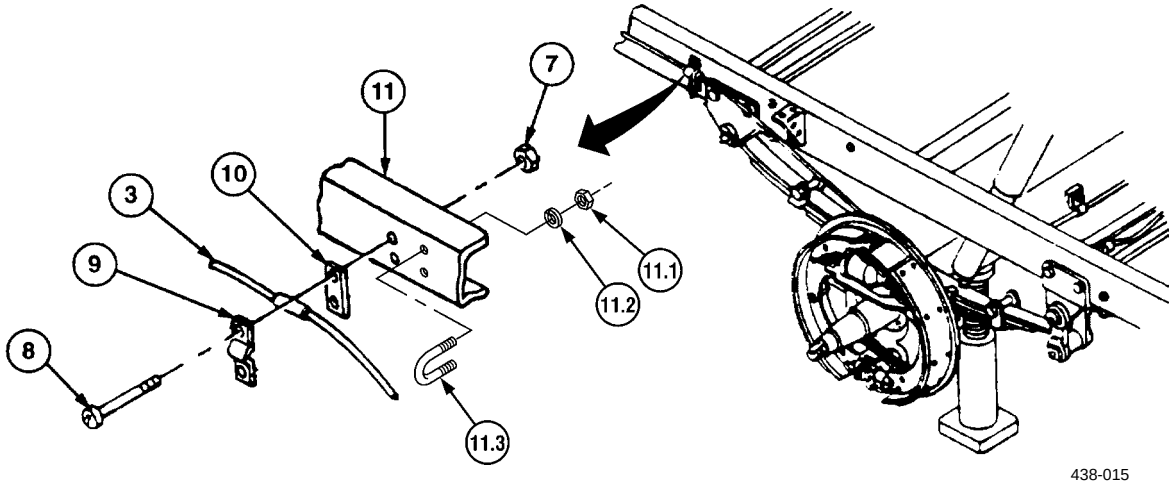
2. Compress lock tangs (5).
3. Remove cable assembly (3) from handbrake lever (4) through backing plate (6).

NOTE

Configuration varies. Perform step 4 or 4.1 as applicable.

4. Remove two self-locking nuts (7) and machine screws (8), retaining strap (9), cable assembly (3), and spacer plate (10) from frame (11). Discard self-locking nuts.

4.1. Remove two nuts (11.1), lockwashers (11.2), and U-bolt (11.3). Discard lockwashers.

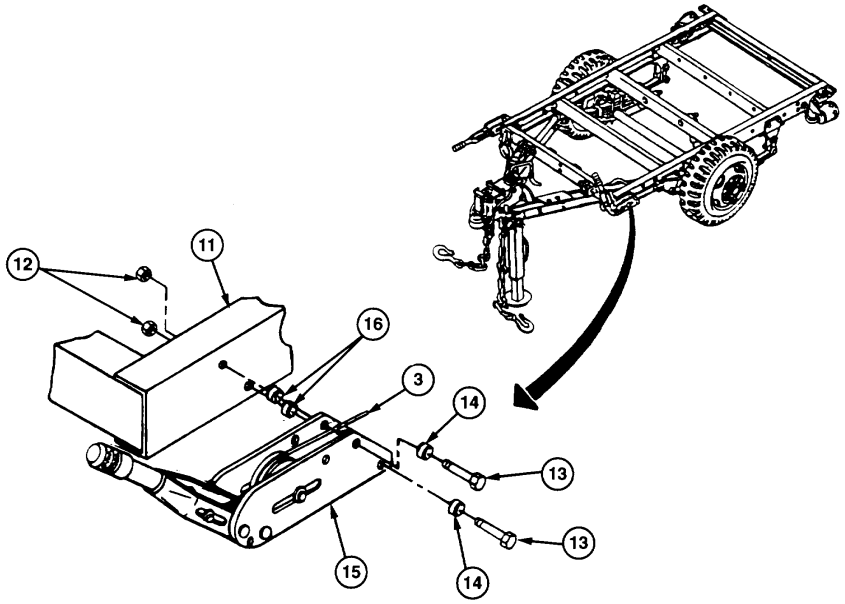


4-33. HANDBRAKE LEVER AND LINKAGE REPLACEMENT (continued).

5. Remove two self-locking nuts (12), capscrews (13), and spacers (14), handbrake lever (15), and two washers (16) from frame (11). Discard self-locking nuts.

6. Disconnect cable assembly (3) from handbrake lever (15).

7. Repeat steps 1 through 6 for removal of other handbrake lever and linkage.



b. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components with drycleaning solvent and rag and allow to dry.

2. Inspect handbrake lever for bends, breaks, corrosion, and freedom of action. Replace handbrake lever if damaged.

3. Inspect cable assembly for frays, cracks, distortion, corrosion, and freedom of movement in conduit. Replace cable assembly if damaged.

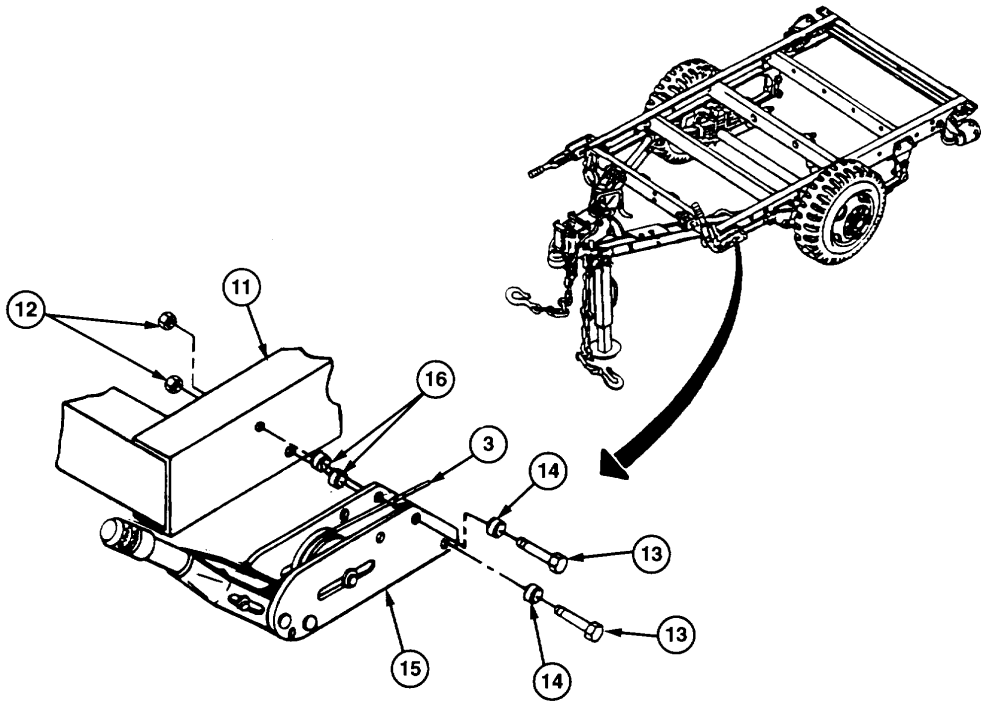
4. Inspect all mounting hardware for damage. Replace if damaged.

4-33. HANDBRAKE LEVER AND LINKAGE REPLACEMENT (continued).

c. INSTALLATION

1. Connect cable assembly (3) to handbrake lever (15).

2. Position two washers (16) at frame (11) and install handbrake lever (15) with two spacers (14), capscrews (13), and new self-locking nuts (12).



CAUTION

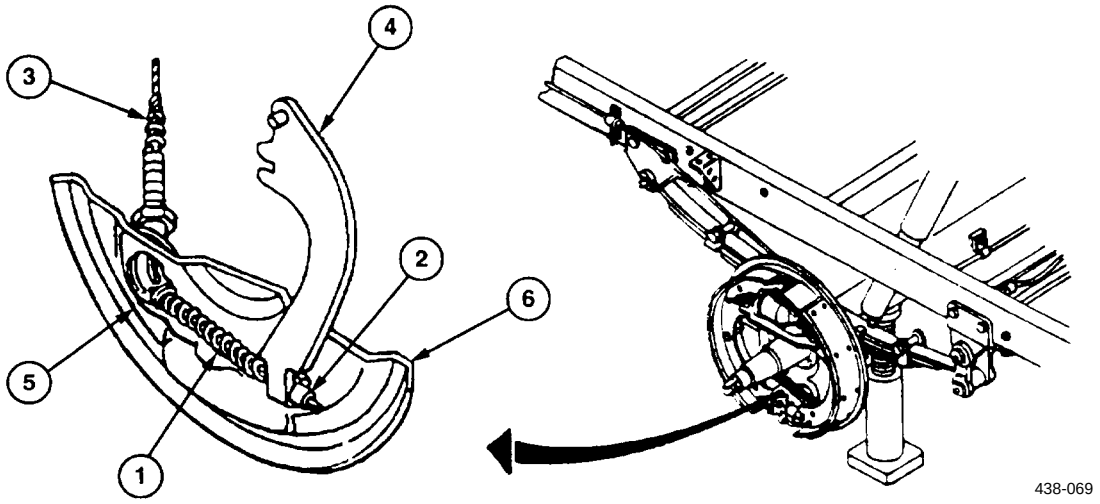
Cable must be positioned below top spacer. To do otherwise causes cable to jump off pulley, resulting in damage to cable.

3. Feed cable assembly (3) through backing plate (6) and position at handbrake lever (4).

4. Make sure lock tangs (5) are spread and hold cable assembly (3) in backing plate (6).

5. Pull spring (1) away from swaged sleeve (2), and hook swaged sleeve (2) to handbrake lever (4).

4-33. HANDBRAKE LEVER AND LINKAGE REPLACEMENT (CONTINUED).



NOTE

Configuration varies. If installing new cable and U-bolt, perform steps 5.1 and 5.2.

5.1. Drill two new 5/16 inch holes (11.4) 1 inch apart and 1 inch behind existing mounting holes in frame side.

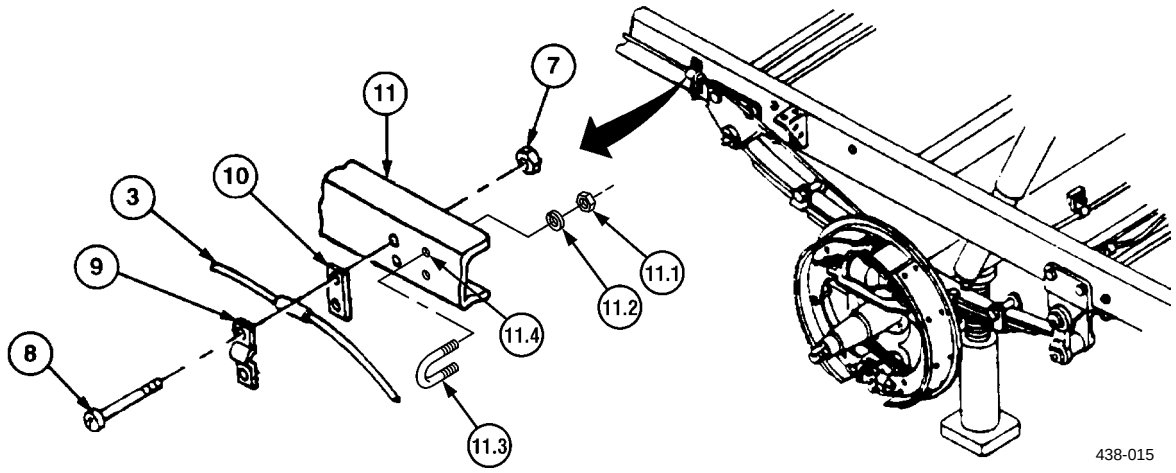
NOTE

Align U-bolt in groove of cable end.

5.2. Install U-bolt (11.3), two new lockwashers (11.2), and nuts (11.1).

6. Install spacer plate (10), cable assembly (3), and retaining strap (9) on frame (11) with two machine screws (8) and new self-locking nuts (7).

7. Repeat steps 1 through 6 for installation of other handbrake lever and linkage.



FOLLOW-ON TASKS:

- Install hub and brakedrum (para 4-43).
- Install wheel and tire assembly (para 4-44).
- Lubricate handbrake lever and linkage (Appendix I).
- Adjust handbrakes (para 4-34).

4-34. HANDBRAKE ADJUSTMENT.

This Task Covers:

Adjustment

Initial Setup:

Tools/Test Equipment:

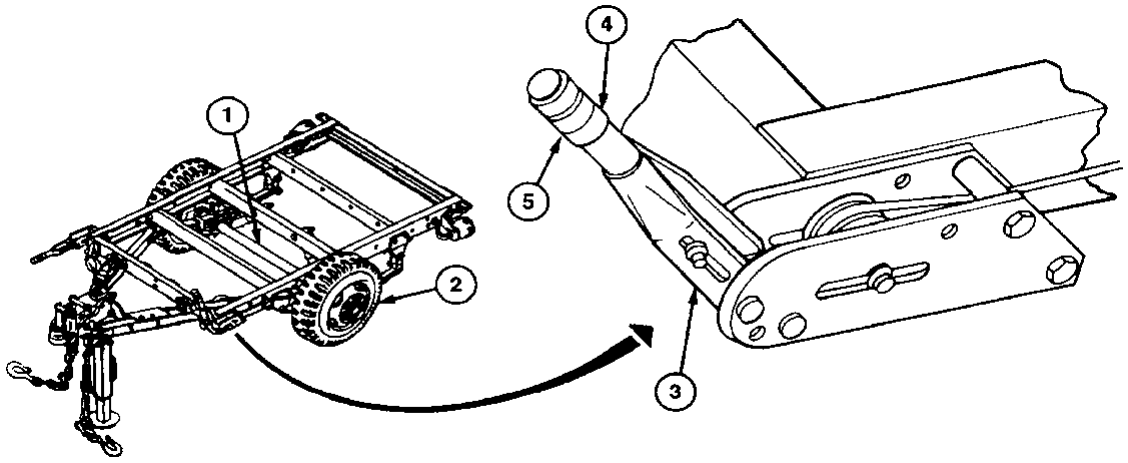
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

ADJUSTMENT

WARNING

When performing maintenance on brake system, make sure wheels are securely chocked. Failure to follow this warning may cause trailer to roll, resulting in serious injury or death to personnel or damage to equipment.

1. Chock wheels on side of trailer opposite side being adjusted.
2. Place floor jack under axle (1) on side where handbrake is to be adjusted. Raise axle (1) until wheel and tire assembly (2) is off the ground.
3. Release handbrake lever (3) on side to be adjusted.
4. Loosen lockscrew (4) at adjusting knob (5).
5. Turn adjusting knob (5) clockwise until wheel and tire assembly (2) locks when handbrake lever (3) is no more than two-thirds applied.
6. Release handbrake lever (3) and make sure wheel and tire assembly (2) turns freely.
7. Fully tighten lockscrew (4) at adjusting knob (5).
8. Lower axle (1).
9. Repeat steps 1 through 8 for other side.



FOLLOW-ON TASKS:

- None

4-35. SERVICE BRAKE MAINTENANCE.

This Task Covers:

a. Removal
b. Disassembly
c. Cleaning and Inspection
d. Assembly
e. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)
- Clamp, 11686281
- Lockwasher, MS35335-34
- Lockwasher (5), MS35338-46

Materials/Parts:
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)

Equipment Conditions:
- Hub and brakedrum removed (para 4-43).

a. **REMOVAL**

WARNING

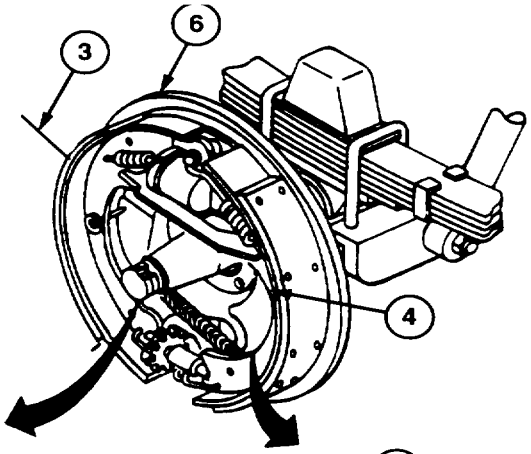
DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. Asbestos dust, which can be dangerous if you touch it or breathe it, may be on these components. Wear an approved filter mask and gloves. NEVER use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

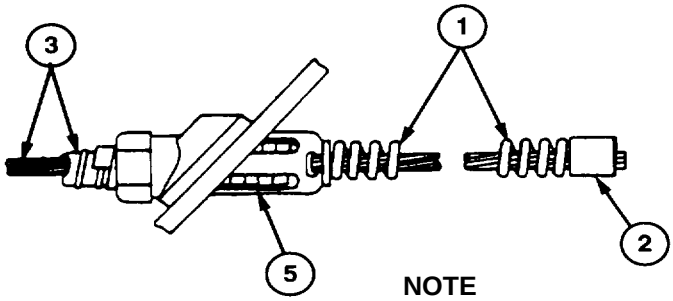
NOTE

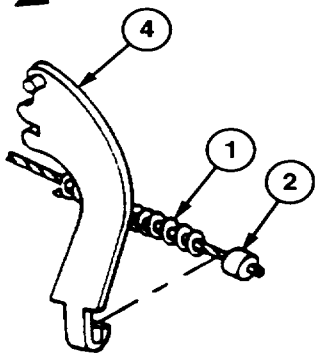
It is not necessary to remove backing plate and service brake assembly from axle in order to disassemble service brake assembly. Disassembly may be performed with service brake assembly on axle or on work bench.

4-35. SERVICE BRAKE MAINTENANCE (continued).

1. At wheel brake, pull spring (1) away from swaged sleeve (2) and unhook swaged sleeve (2) of handbrake cable assembly (3) from lever (4).
2. Compress lock tangs (5).
3. Remove handbrake cable assembly (3) from lever (4) through backing plate (6).



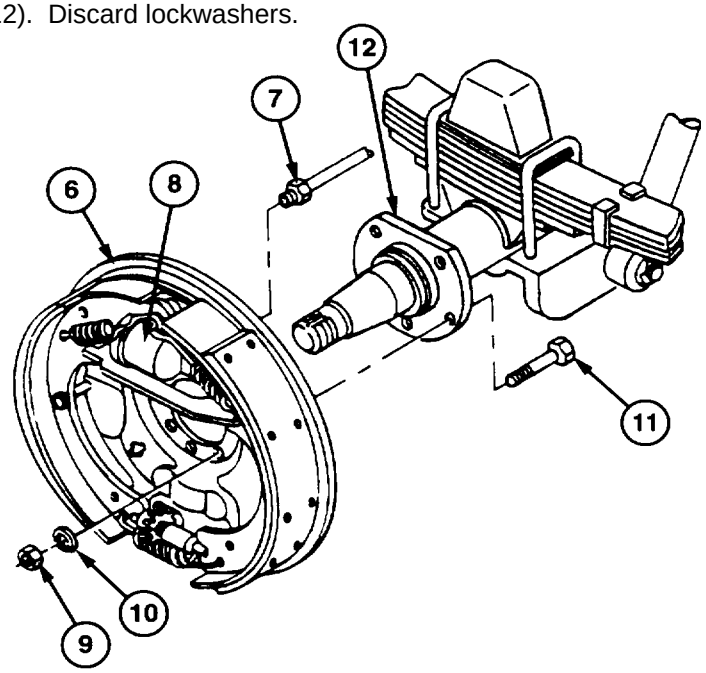




NOTE

Use a suitable container to catch any draining brake fluid. Make sure all spills are cleaned up.

4. Disconnect hydraulic tube assembly (7) from wheel cylinder (8) at backing plate (6).
5. Remove five nuts (9), lockwashers (10), and capscrews (11) and backing plate (6) from axle (12). Discard lockwashers.



4-35. SERVICE BRAKE MAINTENANCE (continued).

b. DISASSEMBLY

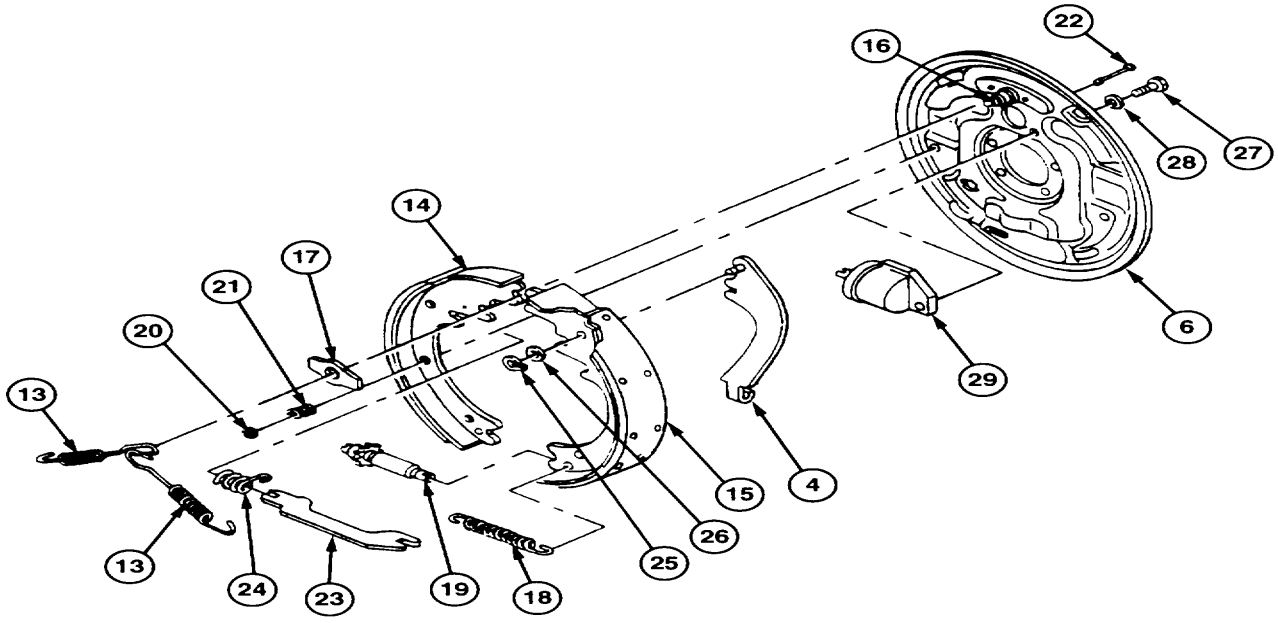
1. Remove two springs (13) from two brakeshoes (14 and 15) and anchor pin (16). Remove plate (17) from anchor pin (16).
2. Remove spring (18) and adjusting screw (19) from two brakeshoes (14 and 15).
3. Remove two retainers (20), springs (21), and pins (22) from two brakeshoes (14 and 15) and backing plate (6).
4. Remove two brakeshoes (14 and 15), strut (23), and spring (24) from backing plate (6).
5. Remove clamp (25), spring tension washer (26), and lever (4) from brakeshoe (15). Discard clamp.
6. Remove bolt (27), lockwasher (28), and wheel cylinder (29) from backing plate (6). Discard lockwasher.

c. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components with drycleaning solvent and rag and allow to dry.



4-35. SERVICE BRAKE MAINTENANCE (continued).

2. Inspect backing plate for cracks, breaks, corrosion, or other damage. Replace backing plate if damaged.

WARNING

If one brakeshoe is being replaced, replace all brakeshoes on axle. Combination of old brakeshoes with new brakeshoes will cause uneven braking. Accidents causing serious injury or death to personnel or damage to equipment may result.

3. Inspect brakeshoe linings for cracks or grease. Measure lining thickness. Lining thickness must be at least 1/8 inch (3.18 mm). Replace brakeshoes if damaged, grease soaked, or worn.

4. Inspect strut and lever for cracks and wear. Replace if damaged.

5. Inspect adjusting screw for corrosion or wear on teeth. Replace adjusting screw if corroded or worn.

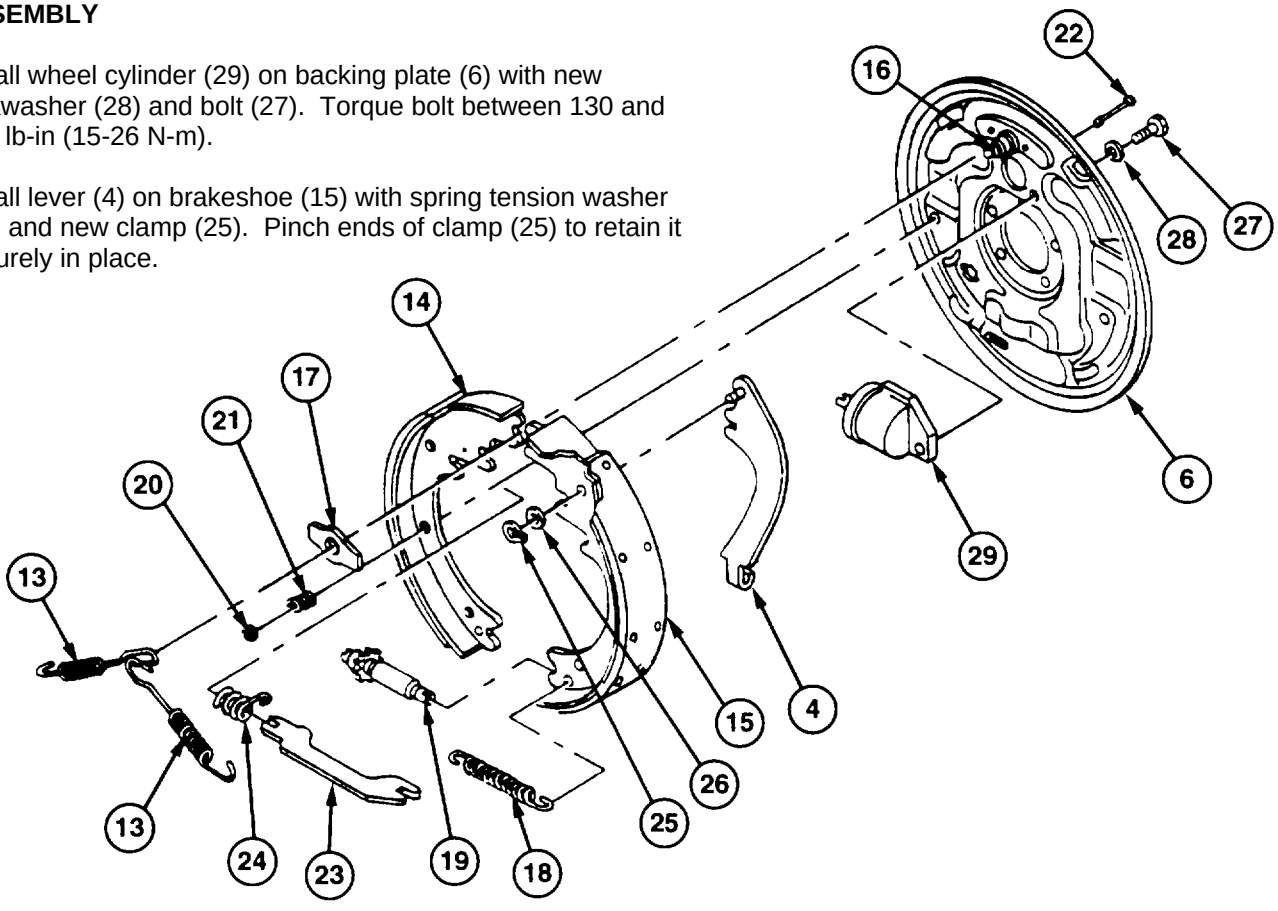
6. Inspect wheel cylinder for leakage and corrosion. Replace if damaged.

7. Inspect all other removed components for cracks, breaks, distortion, corrosion, or other damage. Replace any damaged components.

d. ASSEMBLY

1. Install wheel cylinder (29) on backing plate (6) with new lockwasher (28) and bolt (27). Torque bolt between 130 and 230 lb-in (15-26 N-m).

2. Install lever (4) on brakeshoe (15) with spring tension washer (26) and new clamp (25). Pinch ends of clamp (25) to retain it securely in place.

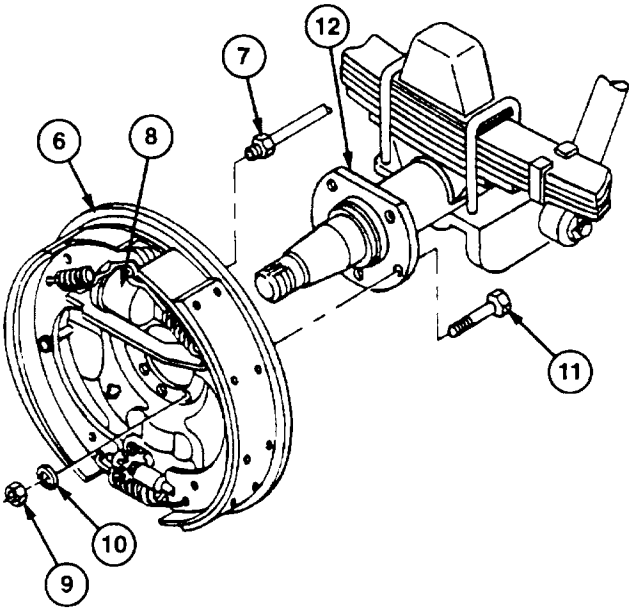


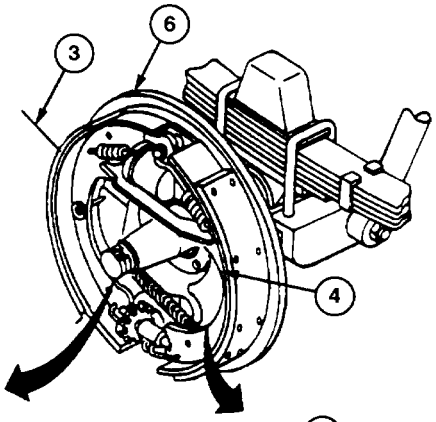
4-35. SERVICE BRAKE MAINTENANCE (CONTINUED).

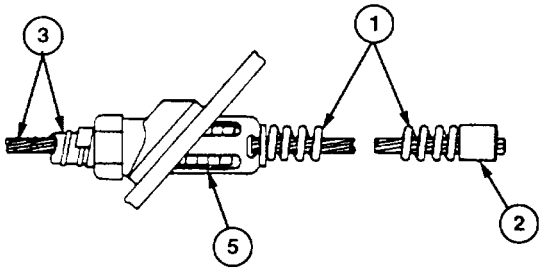
3. Install two brakeshoes (14 and 15), pins (22), and springs (21) on backing plate (6). Install two retainers (20), spring (24), and strut (23) on backing plate (6).
4. Turn in adjusting screw (19) fully. Install adjusting screw (19) and spring (18) between two brakeshoes (14 and 15).
5. Install plate (17) on anchor pin (16).
6. Install two springs (13) on anchor pin (16) and brakeshoes (14 and 15).

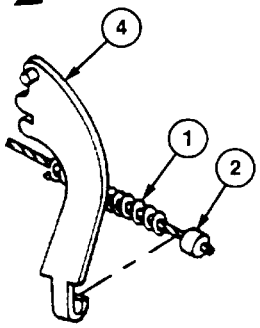
e. **INSTALLATION**

1. Install backing plate (6) and service brake assembly on axle (12) with five capscrews (11), new lockwashers (10), and nuts (9).
2. Connect hydraulic tube assembly (7) to wheel cylinder (8) at backing plate (6).
3. Feed handbrake cable assembly (3) through backing plate (6) and position at lever (4). Make sure lock tangs (5) are spread and hold handbrake cable assembly (3) securely in backing plate (6).
4. Pull spring (1) away from swaged sleeve (2), and hook swaged sleeve (1) to lever (4).









FOLLOW-ON TASKS:

- Install hub and brakedrum (para 4-43).
- Install wheel and tire assembly (para 4-44).
- Bleed hydraulic brake system (para 4-41).
- Adjust service brakes (para 4-36).
- Adjust handbrakes (para 4-34).

4-35.1 SERVICE BRAKE MAINTENANCE (M101A1 AND M116A1).

This Task Covers:

a. Removal
b. Disassembly
c. Cleaning and Inspection
d. Installation
e. Assembly

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Clip (3), 10911060

Equipment Conditions:

- Wheel and tire assembly removed (para 4-44)
- Hub and brakedrum removed (para 4-43.1)

a. **REMOVAL**

WARNING

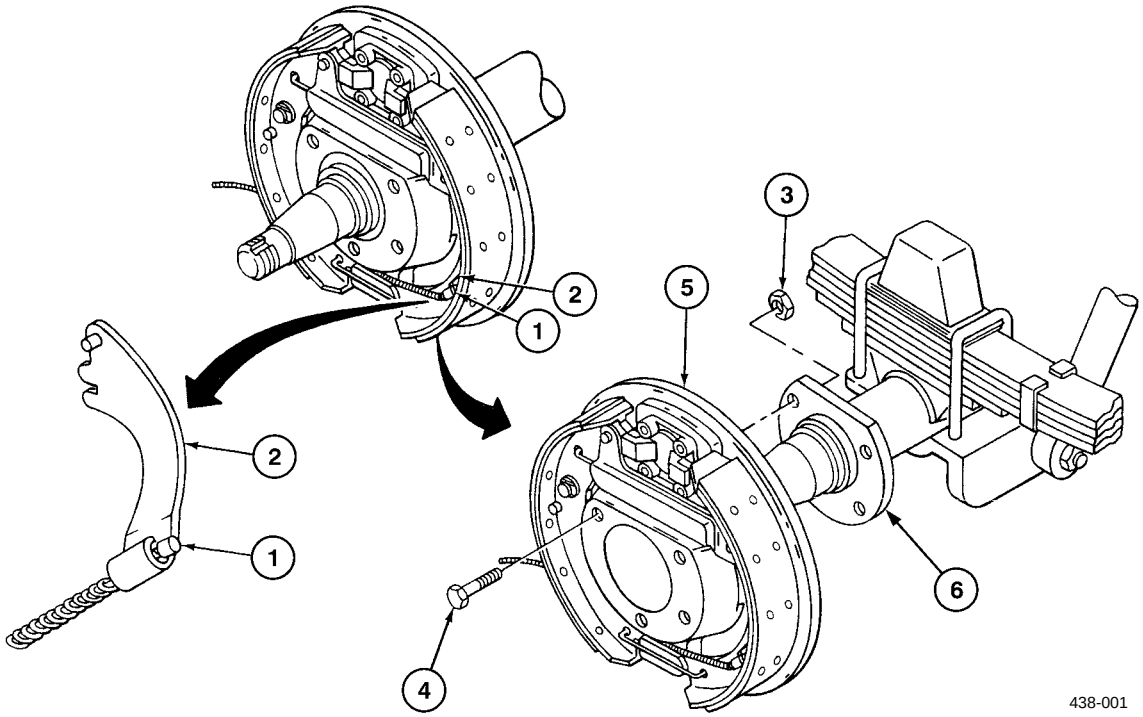
DO NOT handle brakeshoes, brakedrums, or other components unless area has been properly cleaned. Asbestos dust, which can be dangerous if you touch it or breathe it, may be on these components. Wear an approved filter mask and gloves. NEVER use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

NOTE

It is not necessary to remove backing plate and service brake assembly from axle in order to disassemble service brake assembly. Disassembly may be performed with service brake assembly on axle or on work bench.

1. Unhook swaged sleeve (1) from parking brake lever (2).
2. Remove five nuts (3), capscrews (4), and backing plate (5) from axle (6).

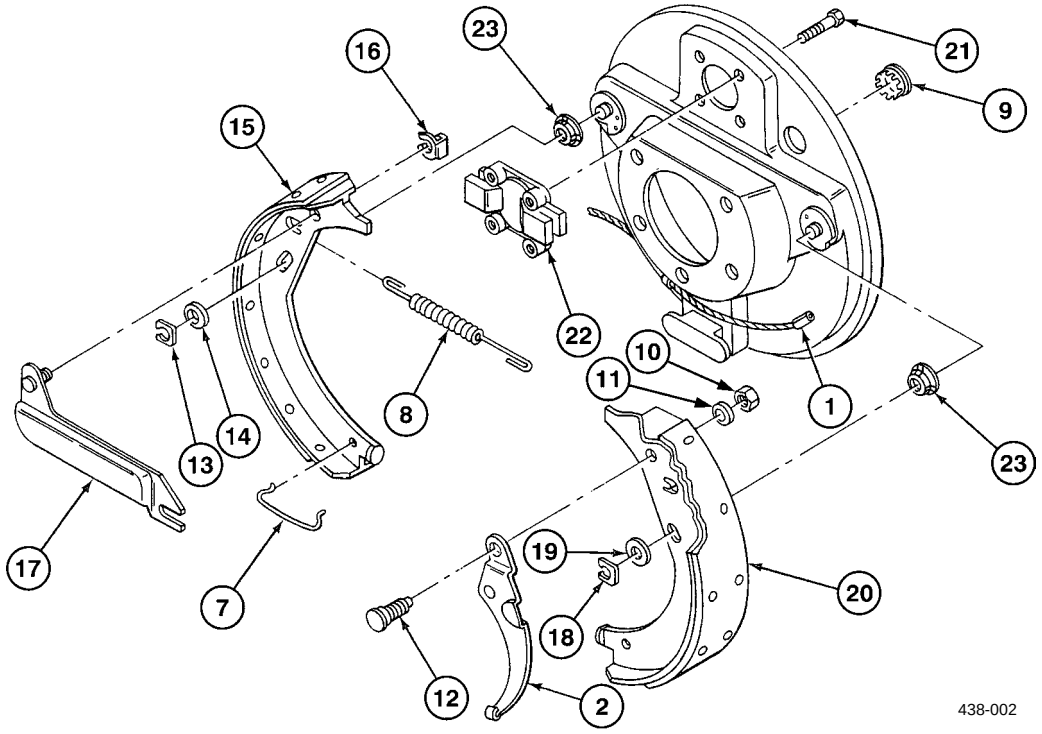
4-35.1. SERVICE BRAKE MAINTENANCE (M101A1 AND M116A1) (CONTINUED).



4-35.1. SERVICE BRAKE MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

b. **DISASSEMBLY**

1. Remove two spring clips (7) and springs (8).
2. Remove cap (9), nut (10), washer (11), pin (12), and brake lever (2).
3. Remove clip (13), washer (14), and brakeshoe (15). Discard clip.
4. Remove clip (16) and strut (17). Discard clip.
5. Remove clip (18), washer (19), and brakeshoe (20). Discard clip.
6. Remove four capscrews (21) and brake guide (22).
7. Remove two brake guide washers (23).



c. **CLEANING AND INSPECTION**

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components with drycleaning solvent and rag and allow to dry.
2. Inspect backing plate for cracks, breaks, corrosion, or other damage. Replace backing plate if damaged.

4-35.1. SERVICE BRAKE MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

WARNING

If one brakeshoe is being replaced, replace all brakeshoes on axle. Combination of old brakeshoes with new brakeshoes will cause uneven braking. Accidents causing serious injury or death to personnel or damage to equipment may result.

3. Inspect brakeshoe linings for cracks or grease. Measure lining thickness. Lining thickness must be at least 1/8 inch (3.18 mm). Replace brakeshoes if damaged, grease soaked, or worn.
4. Inspect parking brake lever, strut, and brake guide for cracks or wear.
5. Inspect all other removed components for cracks, breaks, distortion, corrosion, or other damage. Replace any damaged components.

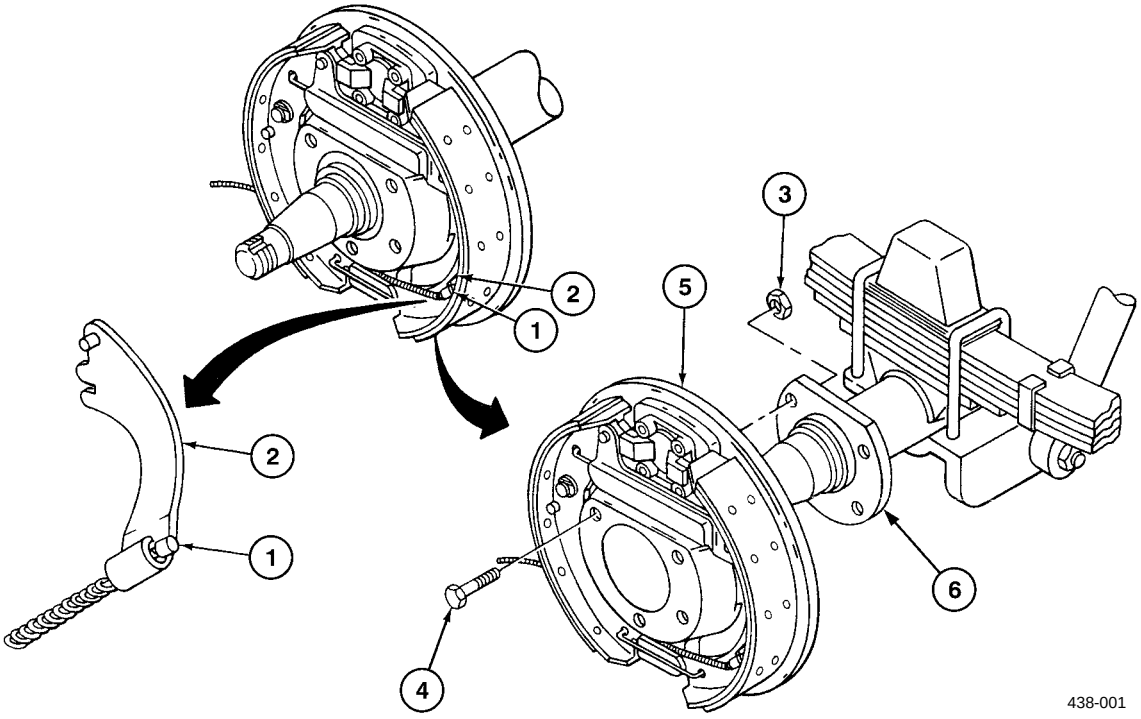
d. **ASSEMBLY**

1. Install two brake guide washers (23).
2. Install brake guide (22) and four capscrews (21).
3. Install brakeshoe (20), washer (19), and new clip (18).
4. Install strut (17) and new clip (16).
5. Install brakeshoe (15), washer (14), and new clip (13).
6. Install brake lever (2), pin (12), washer (11), nut (10), and cap (9).
7. Install two springs (8) and spring clips (7).

4-35.1. SERVICE BRAKE MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

e. **INSTALLATION**

1. Install backing plate (5), five capscrews (4), and nuts (3) on axle (6).
2. Route swaged sleeve (1) through backing plate (5).
3. Pull spring away from swaged sleeve (1) and hook swaged sleeve on parking brake lever (2).



FOLLOW-ON TASKS:

- Install hub and brakedrum (para 4-43.1).
- Install wheel and tire assembly (para 4-44).
- Adjust service brakes (para 4-36.1).
- Adjust handbrakes (para 4-34).

4-36. SERVICE BRAKE ADJUSTMENT.

This Task Covers:

Adjustment

Initial Setup:

Tools/Test Equipment:

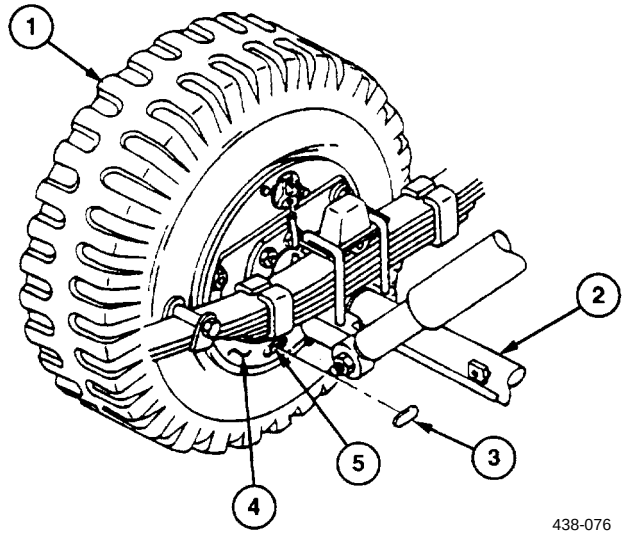
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

ADJUSTMENT

NOTE

The procedure for adjusting service brake is the same for left side and right side.

1. Apply handbrake (para 2-10). Chock wheel and tire assembly (1) opposite side of service brake being adjusted.
2. Raise axle (2) on side being adjusted until wheel and tire assembly (1) is off the ground.
3. Release handbrake on side being adjusted (para 2-10).
4. Remove cover (3) from backing plate (4).
5. While turning wheel and tire assembly (1), turn adjusting screw (5) until brakes drag lightly. Then turn adjusting screw (5) in opposite direction one click.
6. Install cover (3) in backing plate (4).
7. Lower axle (2). Apply handbrake on adjusted side (para 2-10).



438-076

FOLLOW-ON TASKS:

- Adjust handbrakes (para 4-34).

4-36.1 SERVICE BRAKE ADJUSTMENT (M101A1 AND M116A1).

This Task Covers:

Adjustment

Initial Setup:

Tools/Test Equipment:

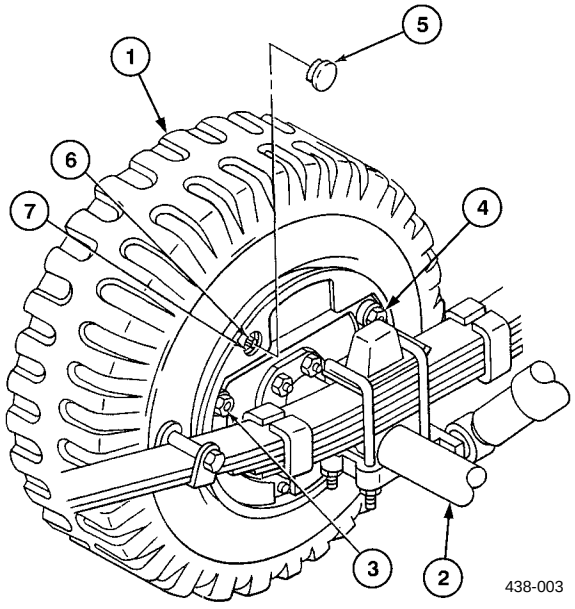
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

ADJUSTMENT

NOTE

The procedure for adjusting the service brake is the same for the left side and the right side.

1. Apply handbrakes (para 2-10). Chock wheel and tire assembly (1) opposite side of service brake being adjusted.
2. Raise axle (2) on side being adjusted until wheel and tire assembly (1) is off the ground.
3. Release handbrake on side being adjusted (para 2-10).
4. While turning wheel and tire assembly (1), turn cam stud (3) until brake drags. Turn cam stud in opposite direction just enough to remove drag.
5. Repeat step 4 for other cam stud (4).
6. Remove button plug (5).
7. Loosen nut (6) and turn eccentric pin (7) until it binds. Tighten nut.
8. Install button plug (5).
9. Lower axle (2). Apply handbrake on adjusted side (para 2-10).



FOLLOW-ON TASKS:

- Adjust handbrakes (para 4-34).

4-37. WHEEL CYLINDER REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Lockwasher, MS35335-34

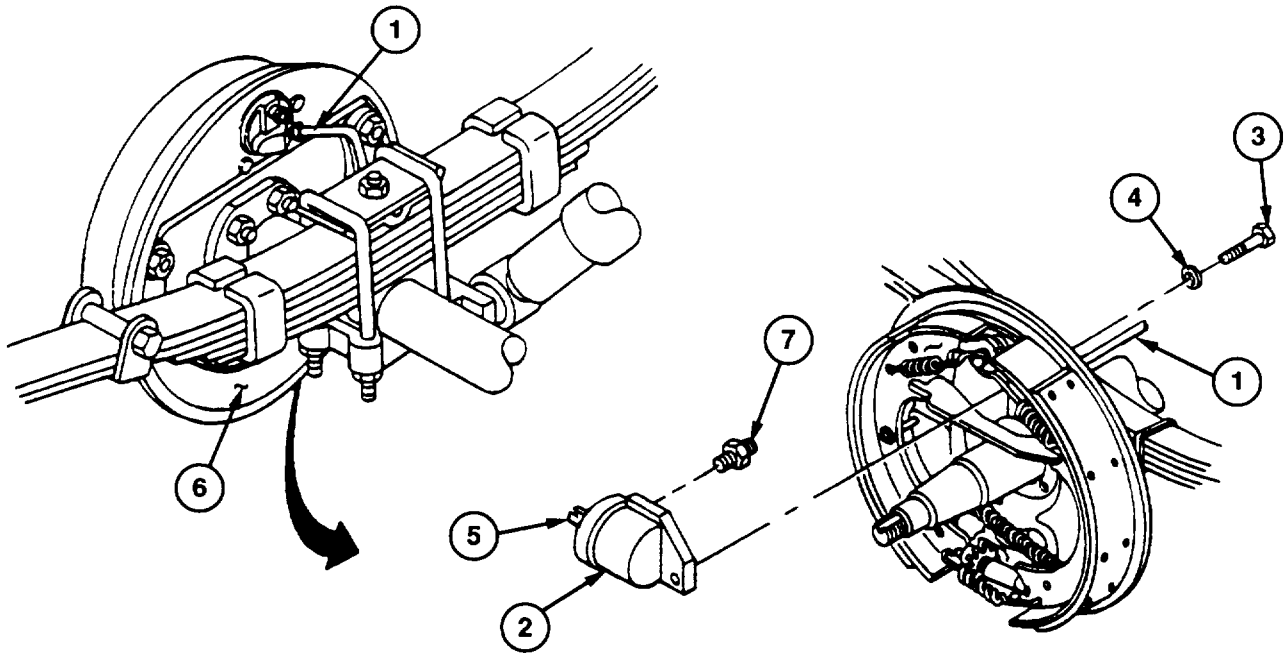
Equipment Conditions:
- Hub and brakedrum removed (para 4-43).

a. REMOVAL

NOTE

- Use a suitable container to catch any draining brake fluid. Make sure all spills are cleaned up.
- If removing or replacing wheel cylinder, do steps 1 and 2 only. If removing or replacing bleeder valve only, do step 3 only.

1. Disconnect hydraulic brake tube assembly (1) at inlet to wheel cylinder (2).
2. Remove bolt (3), lockwasher (4), wheel cylinder (2), and link (5) from backing plate (6). Discard lockwasher.
3. Remove bleeder valve (7) from wheel cylinder (2).



4-37. WHEEL CYLINDER REPLACEMENT (continued).

b. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components, except wheel cylinder, with drycleaning solvent and rag and allow to dry. Wipe wheel cylinder with a clean rag.

2. Inspect components for cracks, breaks, corrosion, or damaged threads. Replace if damaged.

c. INSTALLATION

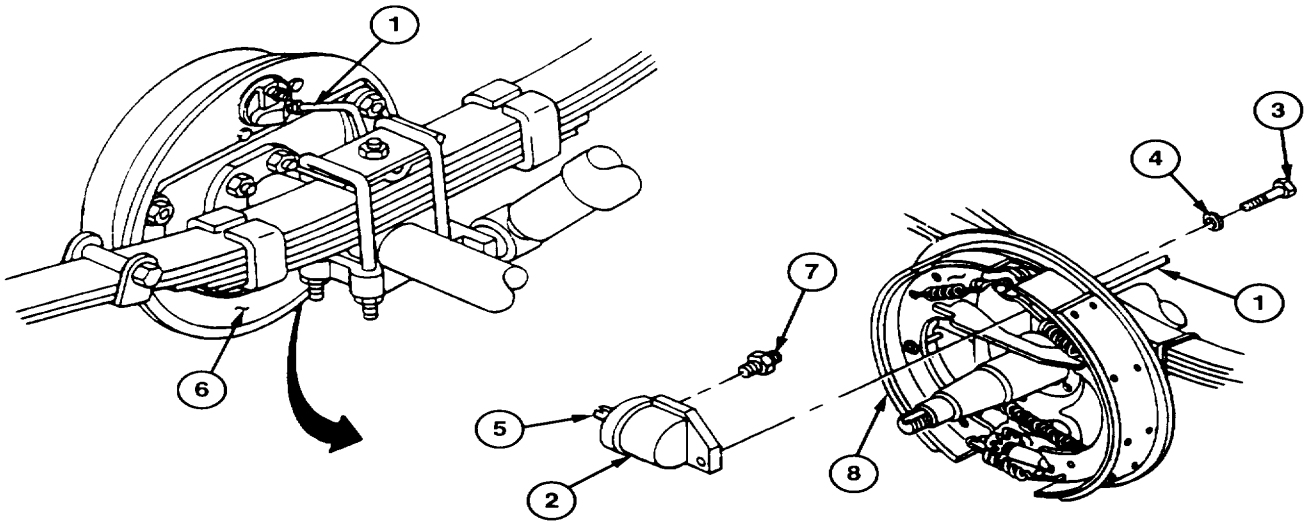
1. If removed, install bleeder valve (7) on wheel cylinder (2).

CAUTION

Make sure boot of wheel cylinder is dry before installing wheel cylinder. Failure to follow this caution may cause brake fluid to damage brakeshoe linings.

2. Assemble wheel cylinder (2) and link (5) at backing plate (6), with link engaged in primary brakeshoe (8). Install new lockwasher (4) and bolt (3) on wheel cylinder (2). Torque bolt between 130 and 280 lb-in (15-26 Nom).

3. Connect hydraulic brake tube assembly (1) to inlet of wheel cylinder (2).



FOLLOW-ON TASKS:
- Install hub and brakedrum (para 4-43).
- Install wheel and tire assembly (para 4-44).
- Bleed hydraulic brake system (para 4-41).
- Adjust service brake (para 4-36).
- Adjust handbrakes (para 4-34).

4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT.

This Task Covers:

a. Removal
b. Disassembly
c. Cleaning and Inspection
d. Assembly
e. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

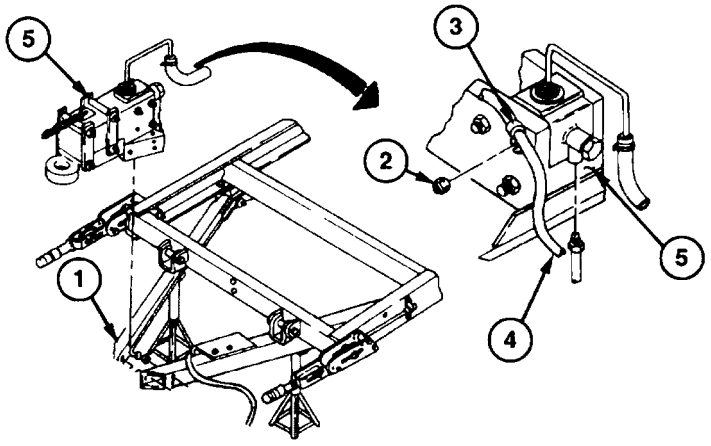
- Brush, wire (Item 2, Appendix F)
- Detergent (Item 5, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Lockwasher (4), 210104-8S
- Self-locking nut (8), MS21044N8
- Self-locking nut, MS21083-C7
- Self-locking nut (3), MS51922-21
- Self-locking nut (6), MS51922-29
- Self-locking nut (3), MS51922-61

a. **REMOVAL**

1. Place jackstand under drawbar (1) at each front corner of frame.
2. Remove self-locking nut (2) and loop clamp (3), with intervehicular cable (4) from hydraulic brake actuator assembly (5). Discard self-locking nut.

NOTE

Use a suitable container to catch any draining brake fluid. Make sure all spills are cleaned up.



438-079

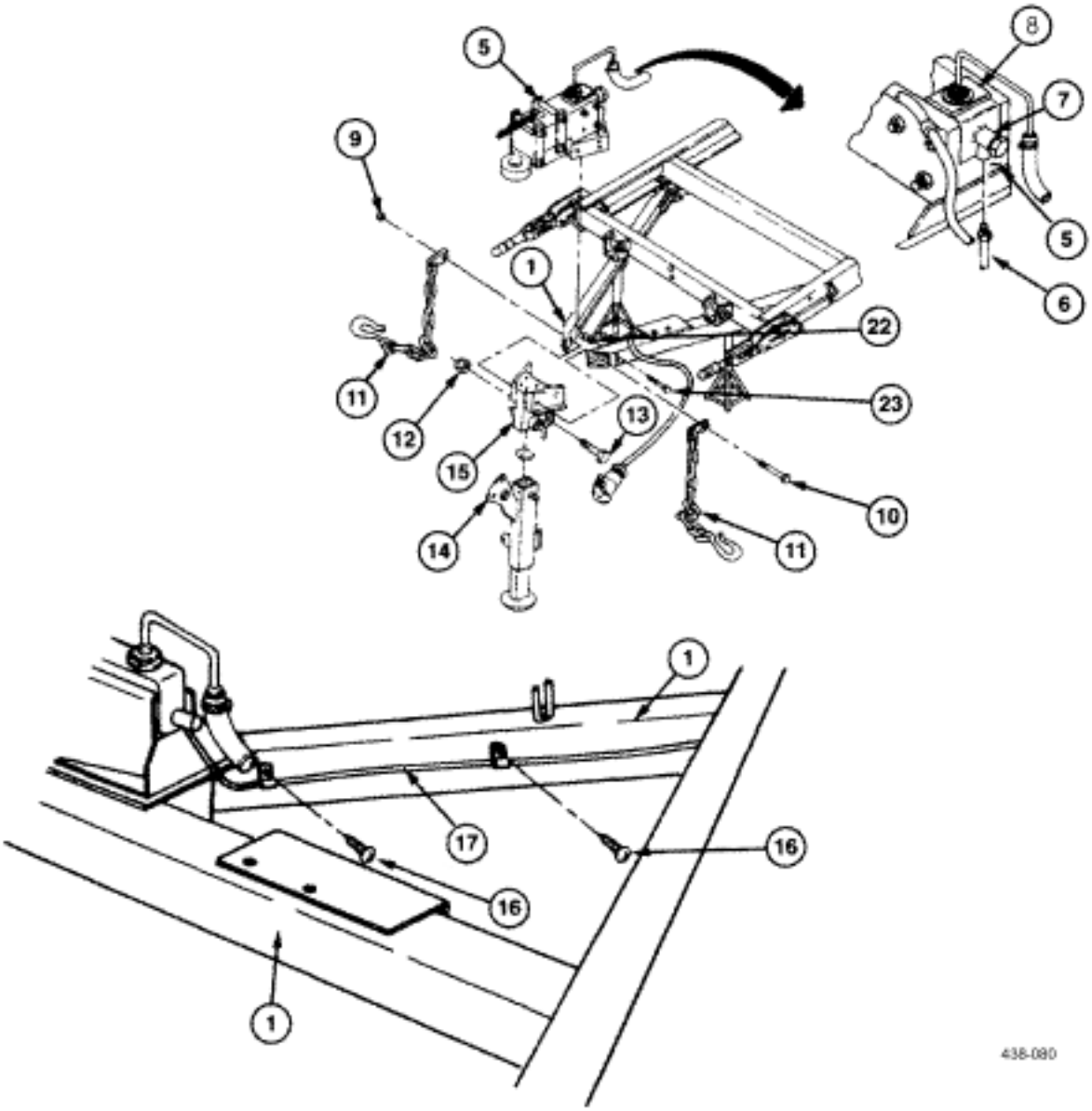
4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).

3. Disconnect hydraulic brake front tube assembly (6) from connector (7) at master cylinder (8).
4. Remove self-locking nut (9), capscrew (10), and safety chain (11) from each of two drawbars (1). Discard self-locking nuts.

NOTE

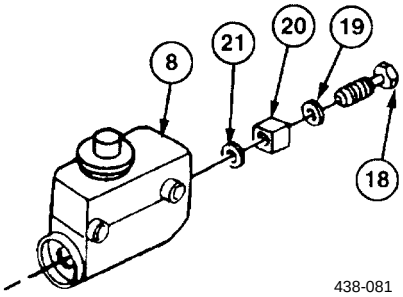
Bracket and adjustable front support leg is a one-piece welded assembly.

5. Remove self-locking nut (12), capscrew (13), and bracket with front support leg (14) from drawbar bracket assembly (15). Discard self-locking nut.
6. Remove two screws (16) and loosen hydraulic line (17) from curb-side drawbar (1).



4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).

7. Remove fluid passage bolt (18), washer (19), connector (20), and washer (21) from master cylinder (8).
8. Remove four self-locking nuts (22) and capscrews (23) from hydraulic brake actuator assembly (5), drawbar bracket assembly (15), and two drawbars (1). Discard self-locking nuts.
9. Remove drawbar bracket assembly (15), with hydraulic brake actuator assembly (5), from two drawbars (1).
10. Remove two nuts (24), lockwashers (25), and capscrews (26) from drawbar bracket assembly (15) and hydraulic brake actuator assembly (5). Discard lockwashers.



438-081

11. Remove two capscrews (27) and lockwashers (28) from drawbar bracket assembly (15), and separate hydraulic brake actuator assembly (5) from drawbar bracket assembly (15). Discard lockwashers.

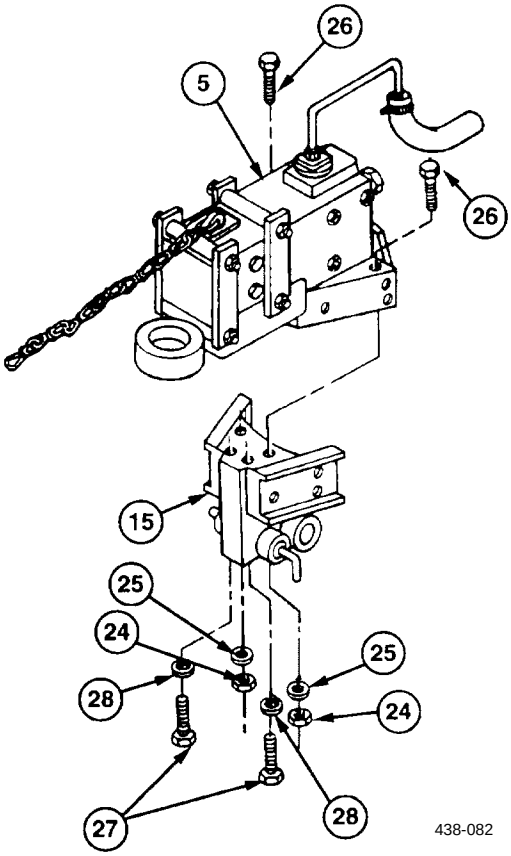
b. **DISASSEMBLY**

1. Remove self-locking nut (29) and capscrew (30) from channel (31). Discard self-locking nut.

NOTE

On newer-model trailers, spacers are welded to inside of channel.

2. Remove two self-locking nuts (32), capscrews (33), four spacers (34), and master cylinder (8) from channel (31). Discard self-locking nuts.



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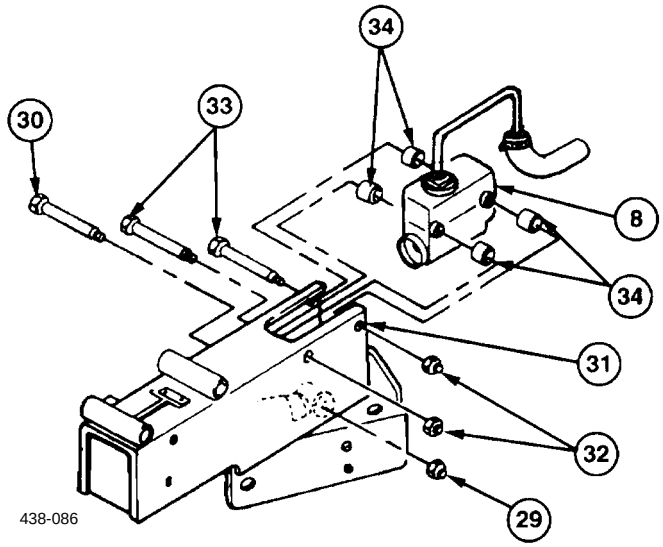


438-086

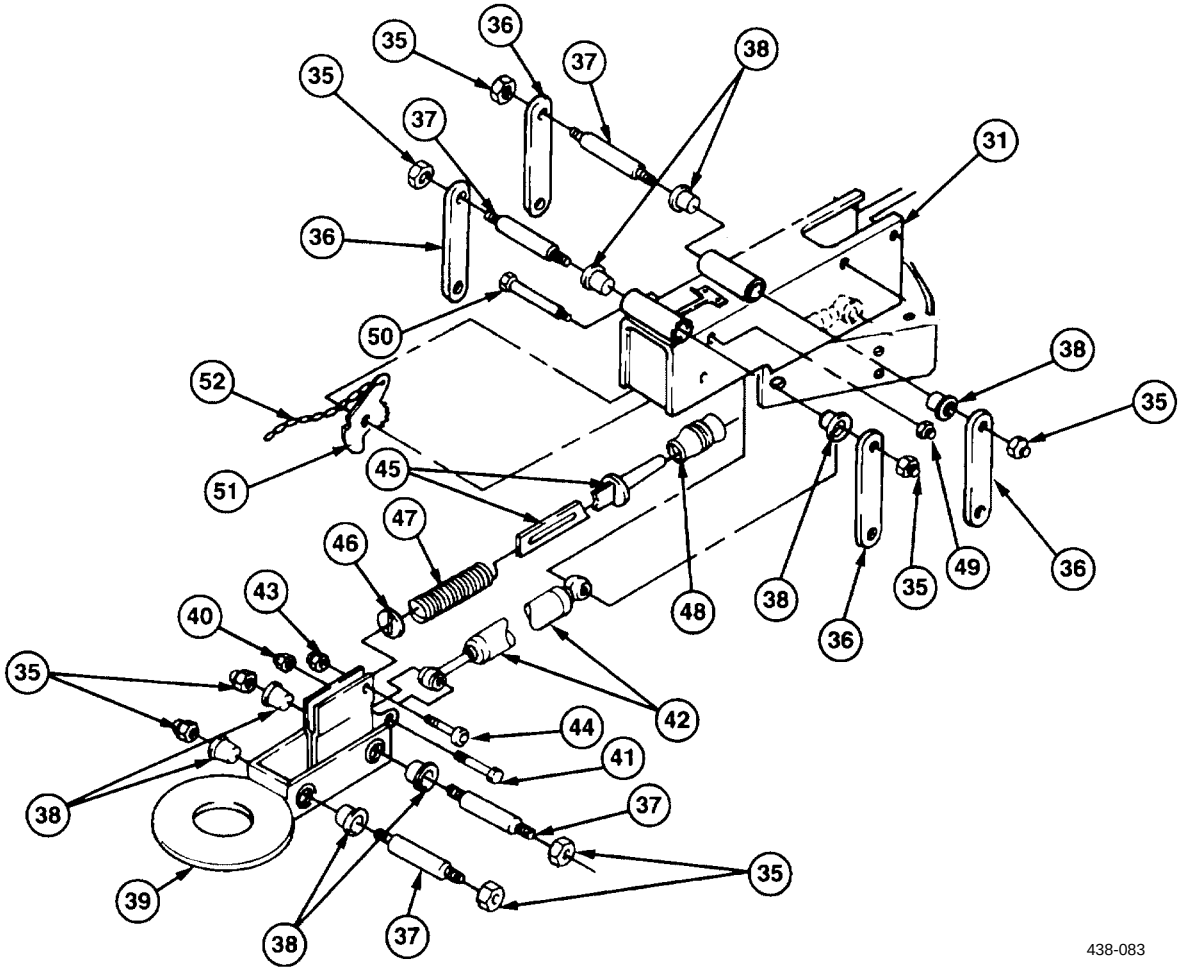
4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).

3. Remove eight self-locking nuts (35), four links (36) and shafts (37), eight bearings (38), and drawbar coupler (39) from channel (31). Discard self-locking nuts.
4. Remove self-locking nut (40), capscrew (41), and shock absorber (42) from drawbar coupler (39). Discard self-locking nut.

NOTE

Boot may be in master cylinder.

5. Remove self-locking nut (43) and socket head screw (44) from drawbar coupler (39) and pushrod (45). Remove washer (46), spring (47), pushrod (45), and boot (48) from drawbar coupler (39). Discard self-locking nut.
6. Remove self-locking nut (49), capscrew (50), and breakaway lever (51), with chain (52) from channel (31). Discard self-locking nut.
7. If damaged, remove chain (52) from breakaway lever (51).



4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (continued).

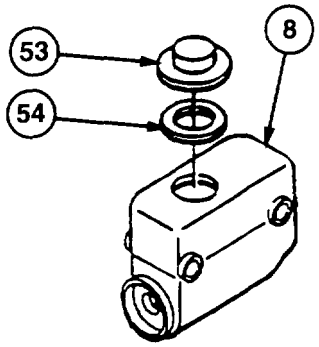
NOTE

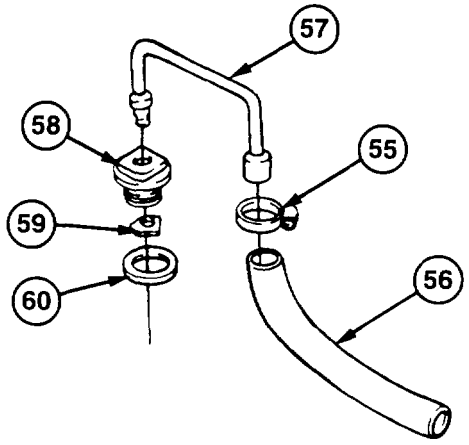
For trailers with master cylinder cap, do step 8. For trailers with drain hose, do steps 9 and 10.

8. Remove cap (53) and gasket (54) from master cylinder (8). Discard gasket if damaged.

9. Loosen clamp (55) and remove drain hose (56) from vent tube (57).

10. Remove vent tube (57), filler cap (58), baffle (59), and gasket (60) from master cylinder (8). Discard gasket if damaged.





c. CLEANING AND INSPECTION

WARNING

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1. Clean all removed components with drycleaning solvent and rag and allow to dry. Clean boot with detergent and water.

2. Inspect all removed components for wear, breaks, cracks, damaged welds, corrosion, or other damage. Replace if damaged.

3. Inspect breakaway lever for worn ratchet teeth. Replace if damaged.

4. Remove any corrosion with a wire brush.

5. Inspect for a worn slot in pushrod. Replace pushrod if slot is worn.

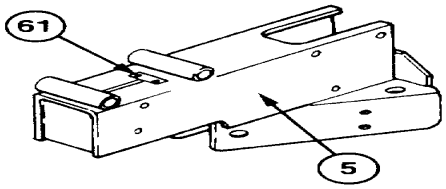
6. Inspect for a weak or broken spring. Replace if damaged.

7. Inspect shock absorber for leaks or bad rubber bushings. Replace if damaged.

8. Inspect master cylinder for leaks. Replace if damaged.

4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (continued).

9.Inspect channel for broken leaf spring (61). If leaf spring (61) is damaged, replace hydraulic brake actuator assembly (5).



d. ASSEMBLY

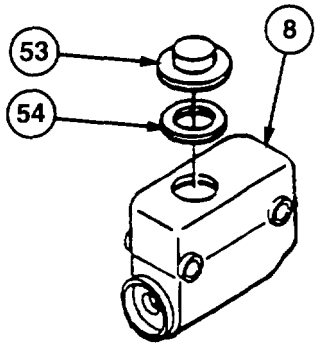
NOTE

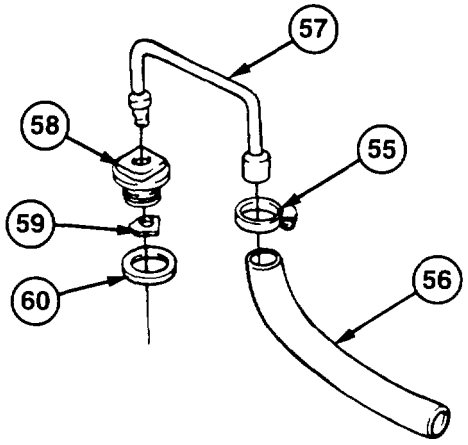
For trailers with master cylinder cap, do step 1.
For trailers with drain hose, do steps 2 and 3.

1. Install gasket (54) and cap (53) on master cylinder (8) and finger-tighten.

2. Install gasket (60), baffle (59), filler cap (58), and vent tube (57) on master cylinder (8).

3. Install drain hose (56) on vent tube (57) and tighten clamp (55).





4. If removed, install chain (52) on breakaway lever (51).

5. Position breakaway lever (51) in channel (31) with ratchet teeth facing leaf spring (61). Install capscrew (50) and new self-locking nut (49) on breakaway lever (51). Torque self-locking nut between 10 and 15 Ib-ft (14-20 N•m)

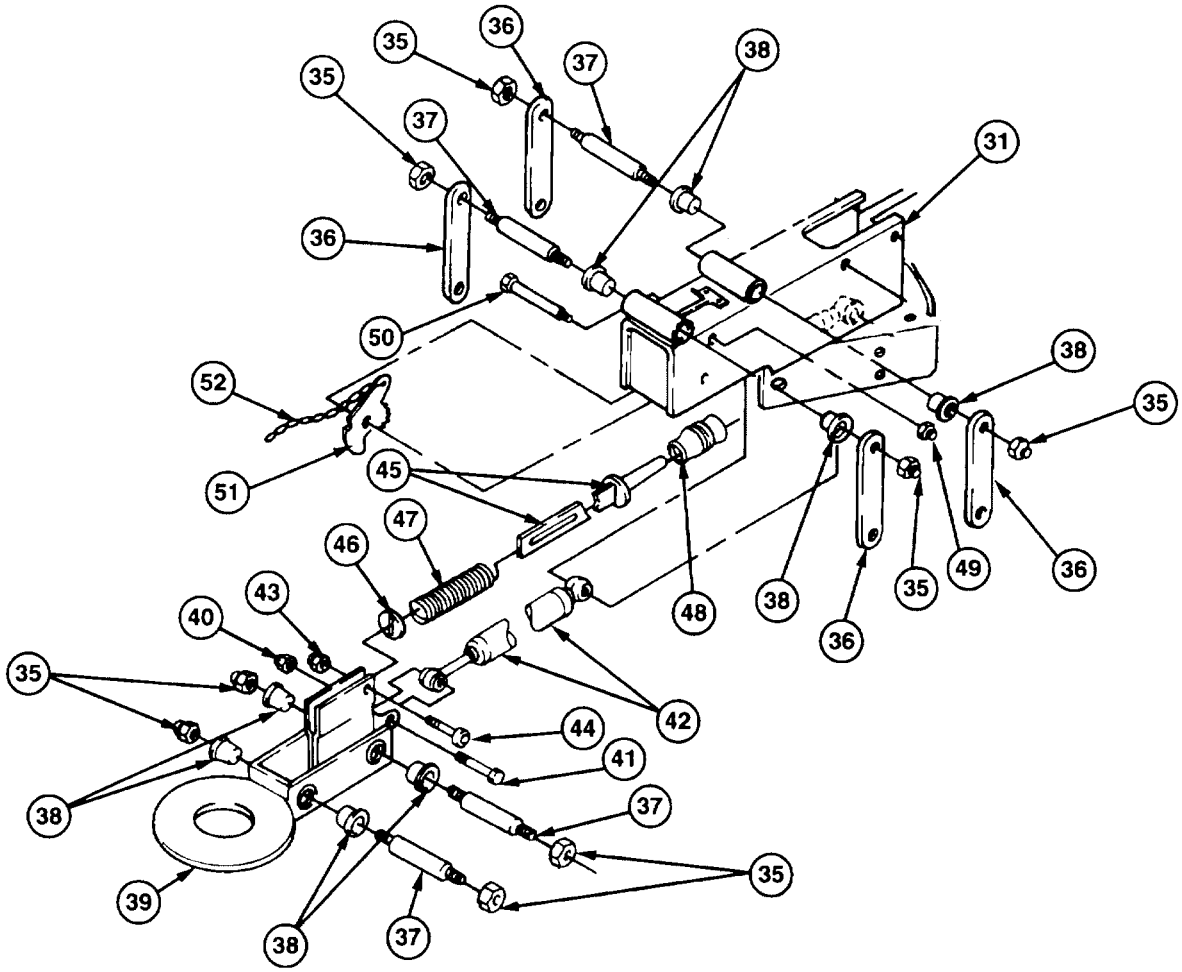
6. If removed. attach boot (48) to rod end of pushrod (45). Assemble spring (47) and washer (46) on slot end of pushrod (45). Install slot end of pushrod (45) on drawbar coupler (39) with socket head screw (44) and new self-locking nut (43). Torque self-locking nut between 20 and 25 Ib-ft (27-34 N•m).

7. Install piston rod end of shock absorber (42) on drawbar coupler (39) with capscrew (41) and new self-locking nut (40). Torque self-locking nut between 20 and 25 Ib-ft (27-34 N•m).

8. Install drawbar coupler (39) on channel (31) with eight bearings (38), four shafts (37) and links (36), and eight new self-locking nuts (35). Torque self-locking nuts between 35 and 40 Ib-ft (47-54 N•m).

9. Install other end of shock absorber (42) on channel (31) with capscrew (30) and new self-locking nut (29). Torque self-locking nut between 20 and 25 Ib-ft (27-34 N•m).

4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).



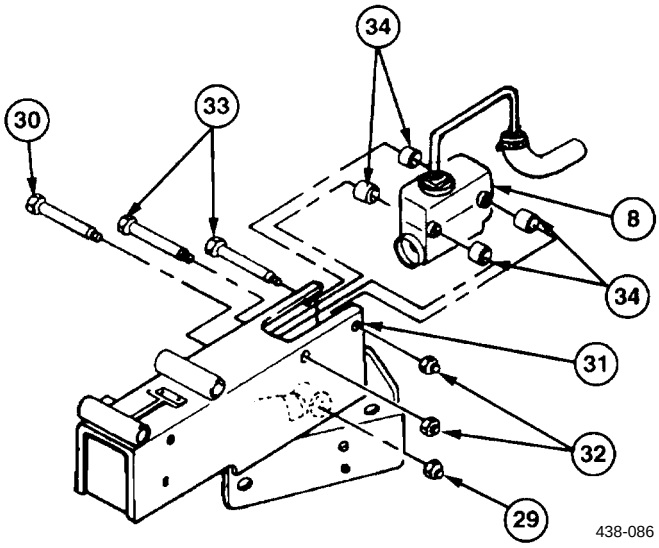
438-083

4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).

NOTE

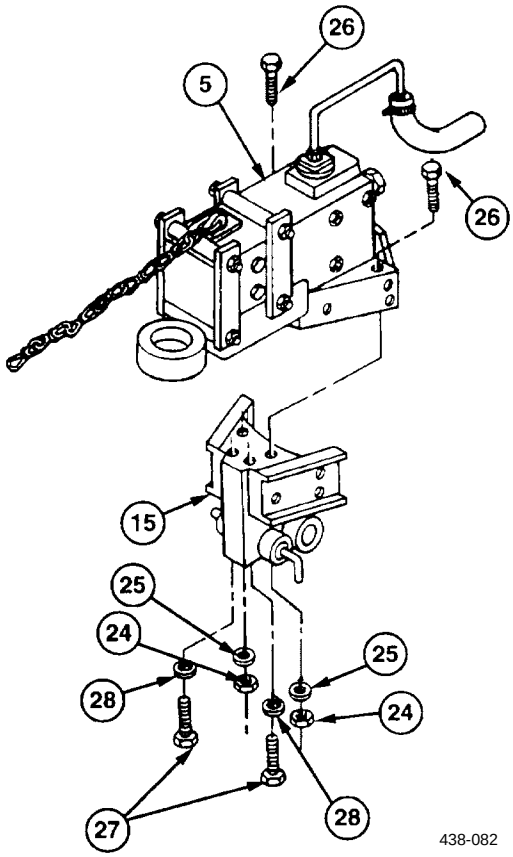
On newer-model trailers, spacers are welded to inside of channel.

10. Position master cylinder (8) and four spacers (34) in channel (31) with boot (48) engaged in pushrod (45). Install two capscrews (33) and new self-locking nuts (32) on master cylinder (8). Torque self-locking nuts between 10 and 15 lb-ft (14-20 Nm).



e. **INSTALLATION**

1. Install hydraulic brake actuator assembly (5) on drawbar bracket assembly (15) with two new lockwashers (28) and capscrews (27). Torque capscrews between 44 and 54 lb-ft (60-73 Nm). Install two capscrews (26), new lockwashers (25), and nuts (24) on drawbar bracket assembly (15). Torque nuts between 106 and 120 lb-ft (144-163 Nm).



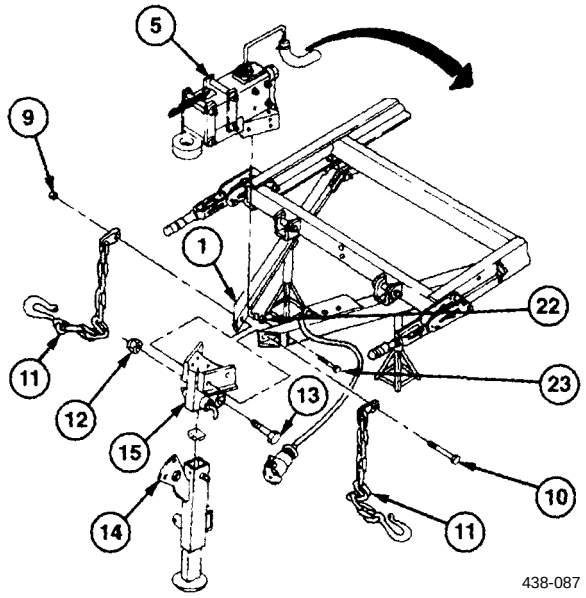
4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).

2. Position hydraulic brake actuator assembly (5) with drawbar bracket assembly (15) at two drawbars (1).
3. Install four capscrews (23) and new self-locking nuts (22) on hydraulic brake actuator assembly (5), drawbar bracket assembly (15), and two drawbars (1). Torque self-locking nuts between 44 and 54 lb-ft (60-73 Nm).
4. Install washer (21), connector (20), washer (19), and fluid passage bolt (18) on master cylinder (8). Torque fluid passage bolt between 35 and 40 lb-ft (47-54 Nm).
5. Install hydraulic line (17) on curb-side drawbar (1) with two screws (16).

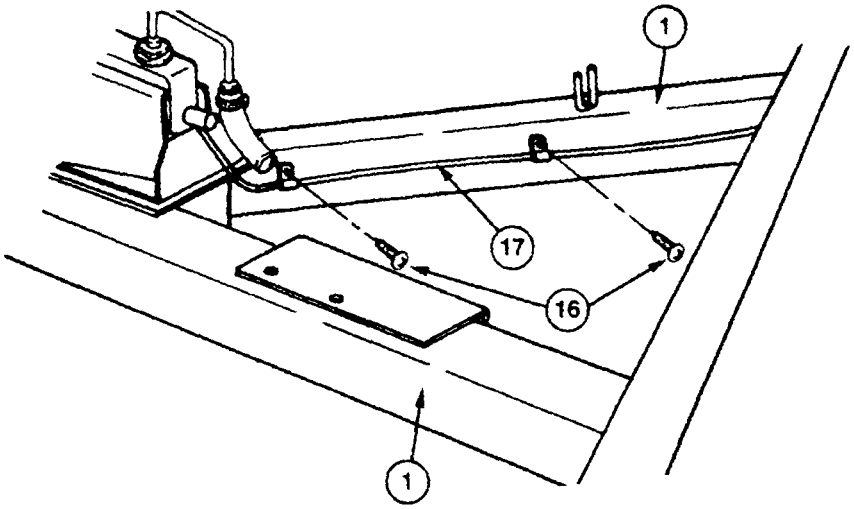
NOTE

Bracket and adjustable front support leg is a one-piece welded assembly.

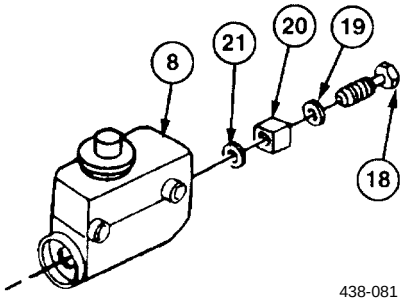
6. Install bracket with front support leg (14) on drawbar bracket assembly (15) with capscrew (13) and new self-locking nut (12).
7. Install two safety chains (11) on hydraulic brake actuator assembly (5), drawbar bracket assembly (15), and two drawbars (1) with two capscrews (10) and new self-locking nuts (9). Torque self-locking nut between 165 and 175 lb-ft (224-237 Nm).



438-087



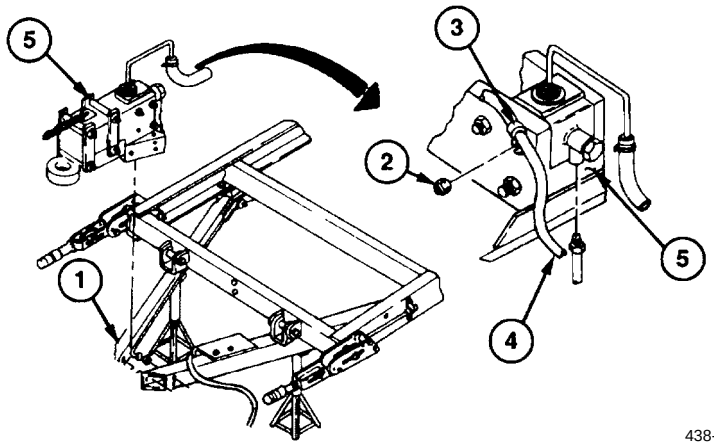
438-088



438-081

4-38. HYDRAULIC BRAKE ACTUATOR ASSEMBLY REPLACEMENT (CONTINUED).

8. Connect hydraulic brake front tube assembly (6) to connector (7) at master cylinder (8).
9. Install loop clamp (3), with intervehicular cable (4) on hydraulic brake actuator assembly (5) with new self-locking nut (2).
10. Make sure front support leg (14) is locked in lowered position. Remove jackstands from under two drawbars (1).
11. If a new hydraulic brake actuator assembly (5) was installed, install new brake fluid caution decal to hydraulic brake actuator assembly (5) (para 1-13).



438-079

FOLLOW-ON TASKS:

- Lubricate hydraulic brake actuator assembly and service master cylinder as required (Appendix I).
- Bleed hydraulic brake system (para 4-41).

4-39. MASTER CYLINDER REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Self-locking nut (2), MS51922-21

Materials/Parts:
- Detergent (Item 5, Appendix F)

a. REMOVAL

NOTE

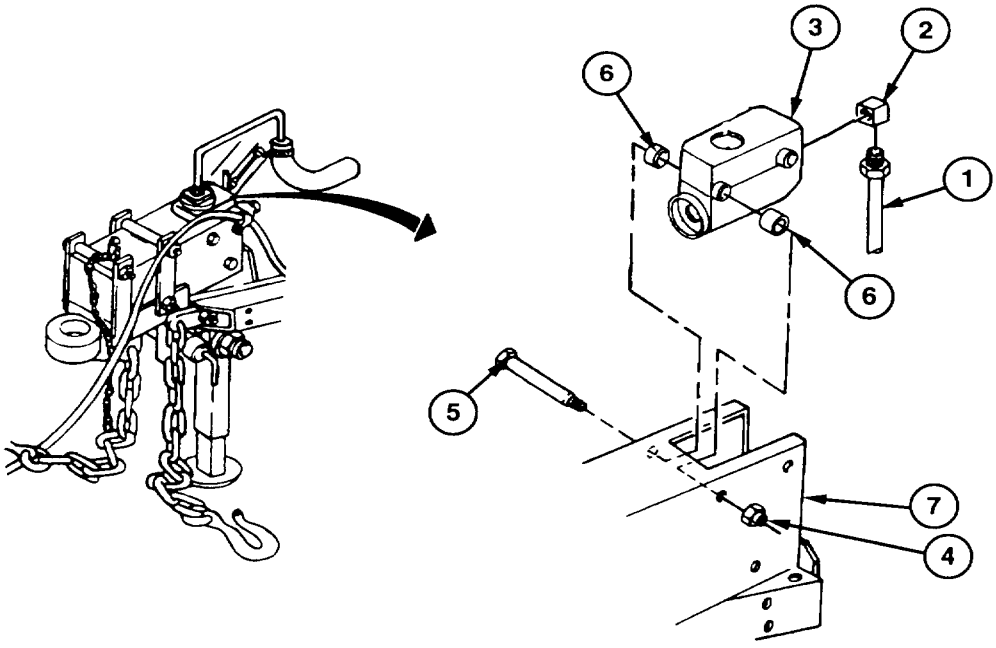
Use a suitable container to catch any draining brake fluid. Make sure all spills are cleaned up.

1. Disconnect hydraulic brake front tube assembly (1) from connector (2) at master cylinder (3).

NOTE

On newer-model trailers, spacers are welded to inside of channel.

2. Remove two self-locking nuts (4) and capscrews (5), four spacers (6), and master cylinder (3) from channel (7). Discard self-locking nuts.



4-39. MASTER CYLINDER REPLACEMENT (continued).

NOTE

The boot may be inside hydraulic brake acuator assembly.

3. Remove boot (8) from master cylinder (3) or from inside hydraulic brake actuator assembly (9).
4. Remove fluid passage bolt (10), washer (11), connector (2), and washer (12) from master cylinder (3).

NOTE

For trailers with master cylinder cap, do step 5. For trailers with drain hose, do step 6.

5. Remove cap (13) and gasket (14) from master cylinder (3). Discard gasket If damaged.

6. Loosen clamp (15) and remove drain hose (16) from vent tube (17).

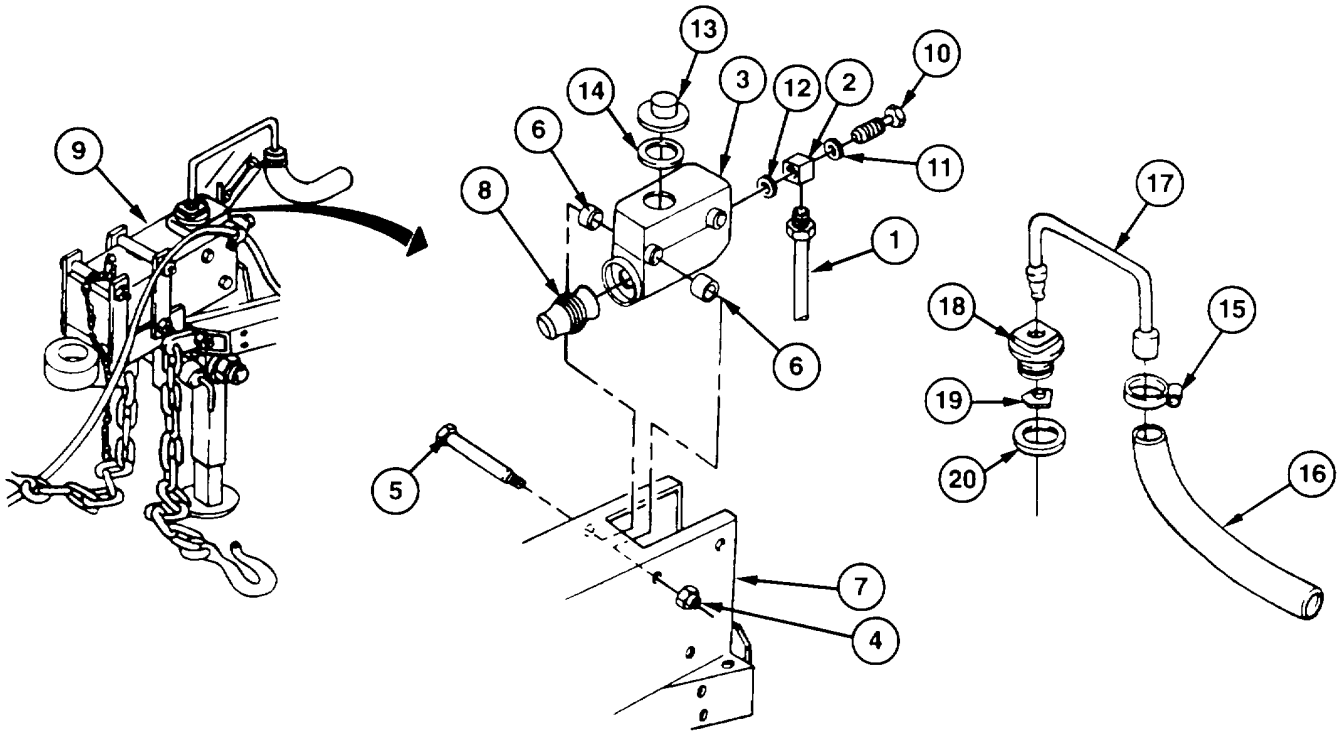
7. Remove vent tube (17), filler cap (18), baffle (19), and gasket (20) from master cylinder (3). Discard gasket if damaged.

b. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components except boot with drycleaning solvent and allow to dry. Clean boot with detergent and water.



4-39. MASTER CYLINDER REPLACEMENT (continued).

2. Inspect boot for tears. Replace if damaged.

3. Inspect master cylinder and mounting hardware for cracks, damaged threads, or other damage. Replace if damaged.

c. INSTALLATION

NOTE

For trailers with master cylinder cap, do steps 1 and 2. For trailers with drain hose, do steps 3 and 4.

1. Install gasket (14) and cap (13) on master cylinder (3).

2. Install fluid passage bolt (10), washer (11), connector (2), and washer (12) on master cylinder (3).

3. Install gasket (20), baffle (19), filler cap (18), and vent tube (17) on master cylinder (3).

4. Install drain hose (16) on vent tube (17) and tighten clamp (15).

NOTE

On newer-model trailers, spacers are welded to inside of channel.

5. Position boot (8), master cylinder (3), and four spacers (6) in channel (7) with boot (8) engaged inside hydraulic brake actuator assembly (9). Install two capscrews (5) and new self-locking nuts (4) on master cylinder (3). Torque self-locking nuts between 10 and 15 Ib-ft (14-20 Nom).

6.Connect hydraulic brake front tube assembly (1) to connector (2) at master cylinder (3).

FOLLOW-ON TASKS:
- Service master cylinder (Appendix I).
- Bleed hydraulic brake system (para 4-41).

4-40. HYDRAULIC BRAKE LINES REPLACEMENT.

This Task Covers:

a. Front Tube Assembly Removal
b. Front Tube Assembly Installation
c. Rear Tube Assembly Removal
d. Rear Tube Assembly Installation
e. Hose Assembly Removal
f. Hose Assembly Installation
g. Left and Right Tube Assemblies Removal
h. Left and Right Tube Assemblies Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

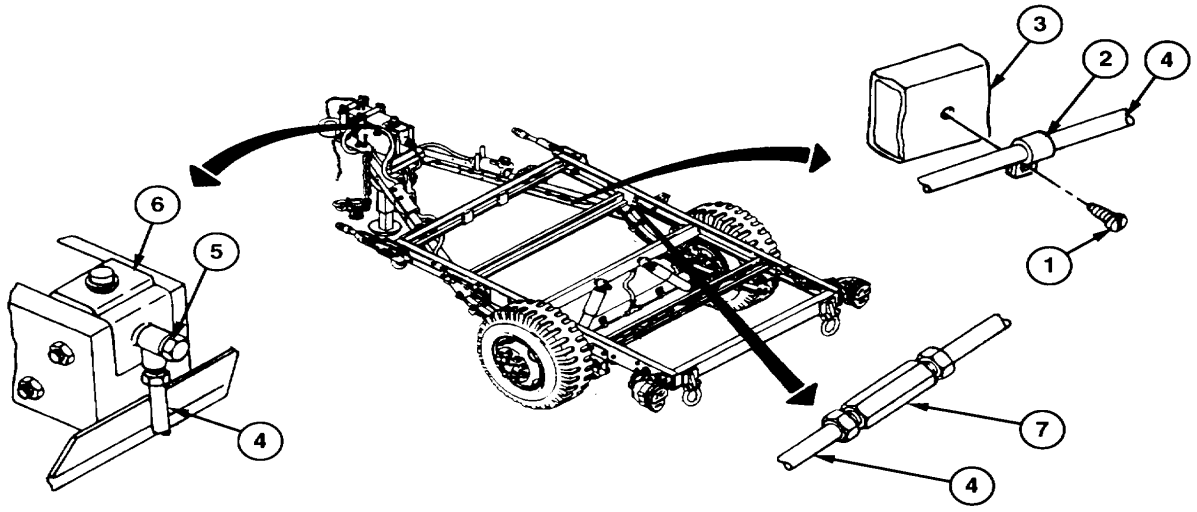
Materials/Parts:
- Rag (Item 13, Appendix F)
- Lockwasher, MS35338-44
- Self-locking nut, MS51922-6 (M101A2, M101A3, M116A2, and M116A3)

NOTE

- Use a suitable container to catch any draining brake fluid. Make sure all spills are cleaned up.
- Quantity of mounting hardware varies slightly with model. Quantities indicated in task are for the M101A3 and the M116A3.
- For information on manufacturing tube assemblies, refer to Appendix G.

a. FRONT TUBE ASSEMBLY REMOVAL

1. Remove five screws (1) from five loop clamps (2) along curb-side drawbar (3).
2. Disconnect front tube assembly (4) from connector (5) at master cylinder (6).
3. Disconnect front tube assembly (4) from coupling (70. Remove front tube assembly from curb-side drawbar.
4. Remove five loop clamps (2) from front tube assembly (4).



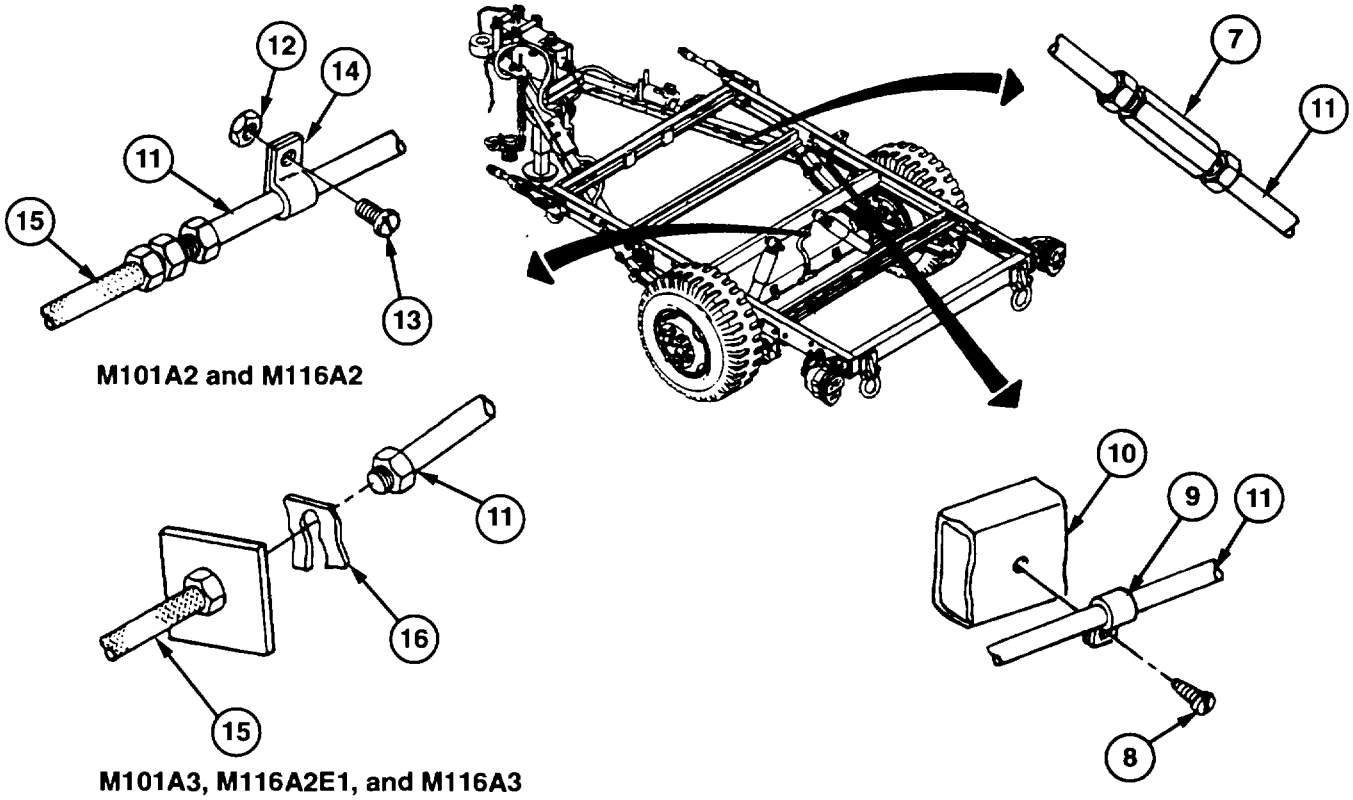
4-40. HYDRAULIC BRAKE LINES REPLACEMENT (continued).

b. FRONT TUBE ASSEMBLY INSTALLATION

1. Install five loop clamps (2) on front tube assembly (4).
2. Position front tube assembly (4) along curb-side drawbar (3) and connect to coupling (7).
3. Connect front tube assembly (4) to connector (5) at master cylinder (6).
4. Install five loop clamps (2) on curb-side drawbar (3) with five screws (1).

c. REAR TUBE ASSEMBLY REMOVAL

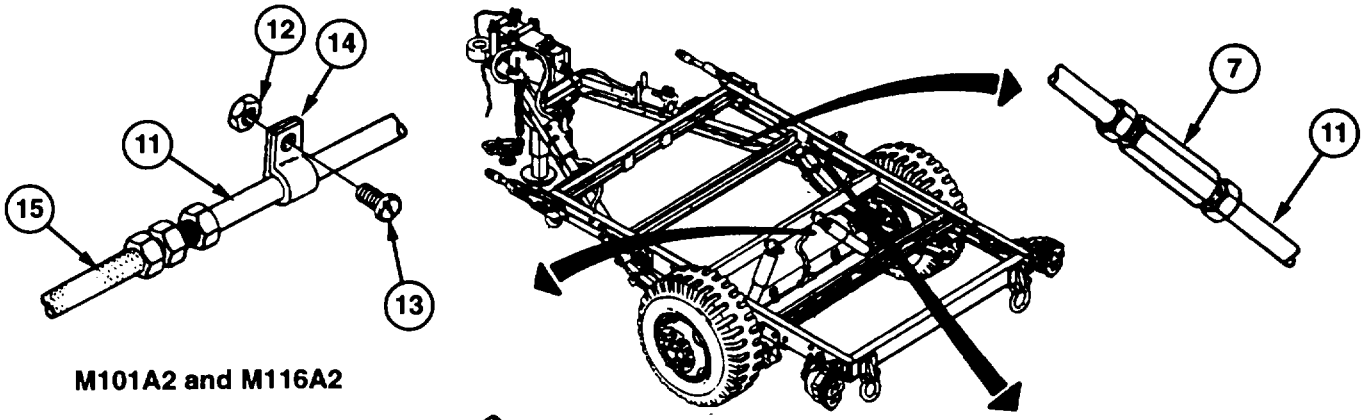
1. Remove two screws (8) from two loop clamps (9) along curb-side frame (10).
2. Disconnect rear tube assembly (11) from coupling (7).
3. On the M101A2 and M116A2, remove self-locking nut (12) and screw (13) from loop clamp (14) along crossmember. Disconnect rear tube assembly (11) from hose assembly (15) and remove. Discard self-locking nut.
4. On the M101A3, M116A2E1, and M116A3, remove rear tube assembly (11) from hose assembly (15) at retaining ring (16).
5. On the M101A2 and M 116A2, remove two loop clamps (9) and loop clamp (14) from rear tube assembly (11).



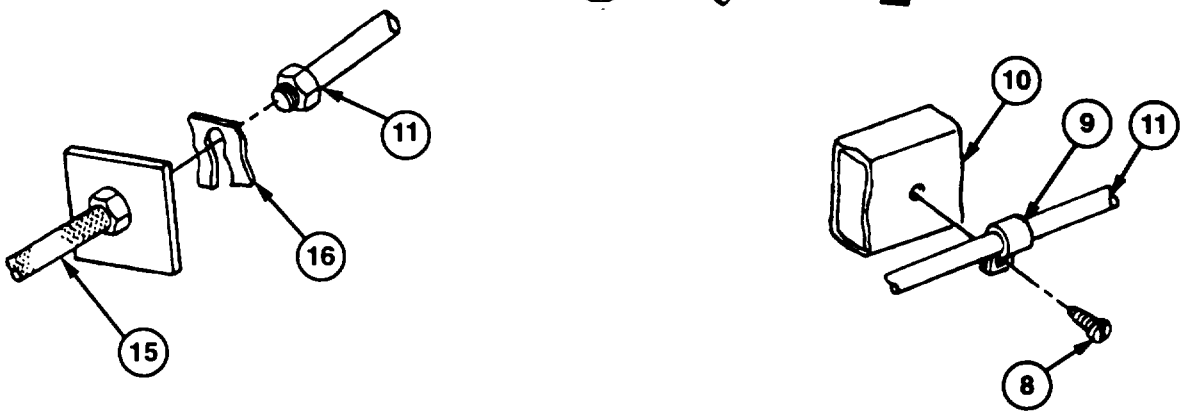
4-40. HYDRAULIC BRAKE LINES REPLACEMENT (continued).

d. REAR TUBE ASSEMBLY INSTALLATION

1. On the M101 A2 and M116A2, install two loop clamps (9) and loop clamp (14) on rear tube assembly (11).
2. Position rear tube assembly (11) along curb-side frame (10) and crossmember.
3. On the M101 A3, Ml 16A2E1, and Ml 16A3, connect rear tube assembly (11) to hose assembly (15) at retaining ring (16).
4. On the M101 A2 and Ml 16A2, connect rear tube assembly (11) to hose assembly (15). Secure loop clamp (14) to crossmember with screw (13) and new self-locking nut (12).
5. Connect rear tube assembly (11) to coupling (7).
6. Install two loop clamps (9) on curb-side frame (10) with two screws (8).



M101A2 and M116A2



M101A3, M116A2E1, and M116A3

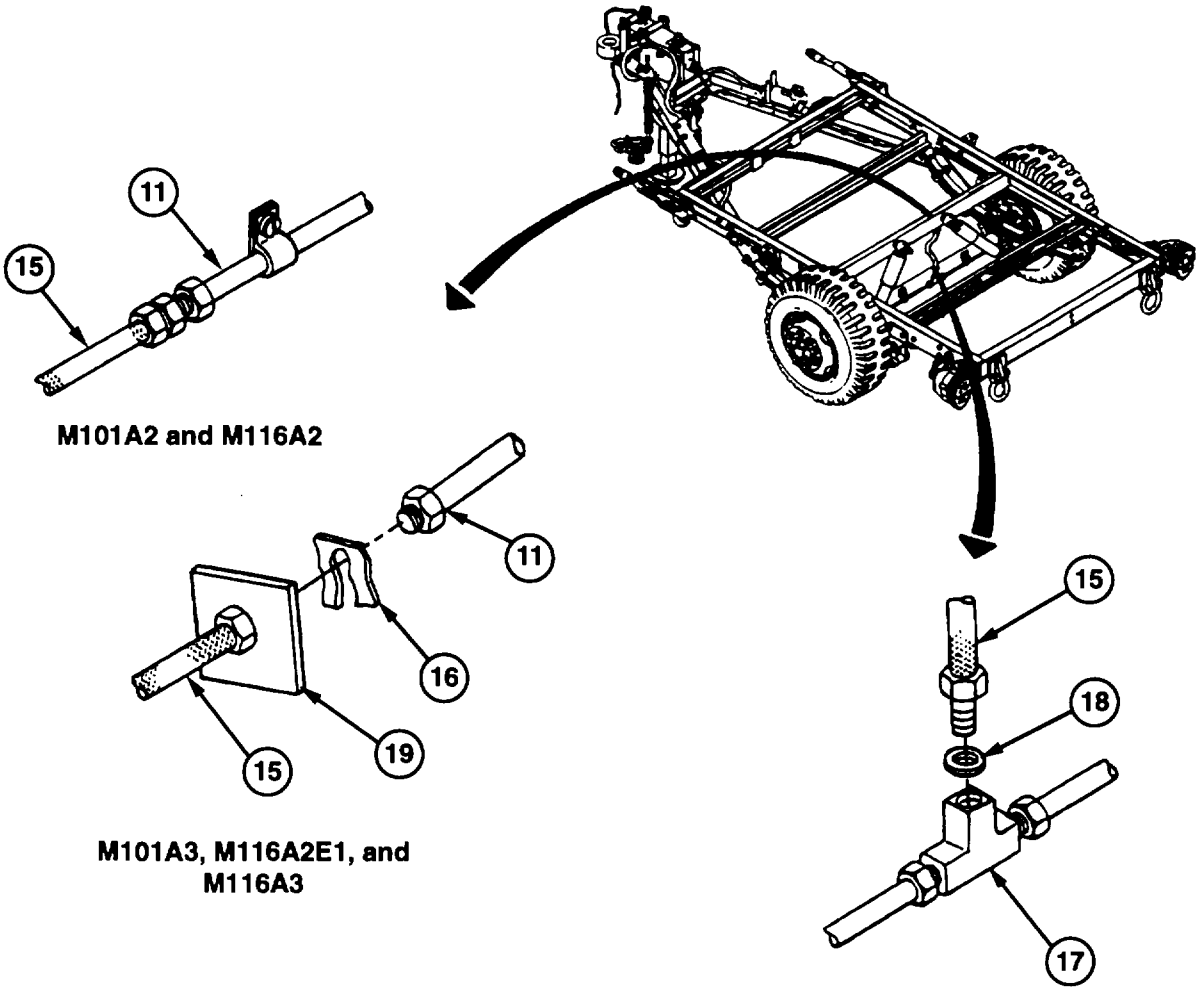
4-40. HYDRAULIC BRAKE LINES REPLACEMENT (continued).

e. HOSE ASSEMBLY REMOVAL

1. Disconnect hose assembly (15) from tee (17) at axle.
2. Remove copper gasket (18), if present, from hose assembly (15).
3. On the M101A3, M116A2E1, and M116A3, remove retaining ring (16) from hose assembly (15) and release hose assembly (15) from bracket (19) on crossmember.
4. Remove hose assembly (15) from rear tube assembly (11).

f. HOSE ASSEMBLY INSTALLATION

1. Connect hose assembly (15) to rear tube assembly (11).
2. On the M101A3, M116A2E1, and M116A3, secure hose assembly (15) to bracket (19) on crossmember with retaining ring (16).
3. Install copper gasket (18), if present, on hose assembly (15).
4. Connect hose assembly (15) to tee (17) at axle.



4-40. HYDRAULIC BRAKE LINES REPLACEMENT (continued).

g. LEFT AND RIGHT TUBE ASSEMBLIES REMOVAL

1. Disconnect tube assembly (20) from wheel cylinder (21).
2. Disconnect tube assembly (20) from tee (17) and remove from axle.

NOTE

Do steps 3 and 4 to remove tee from axle.

3. Disconnect hose assembly (15) from tee (17). Remove copper gasket (18), if present, from hose assembly (15).

4. Remove capscrew (22), washer (23), tee (17), and lockwasher (24) from axle. Discard lockwasher.

h. LEFT AND RIGHT TUBE ASSEMBLIES INSTALLATION

NOTE

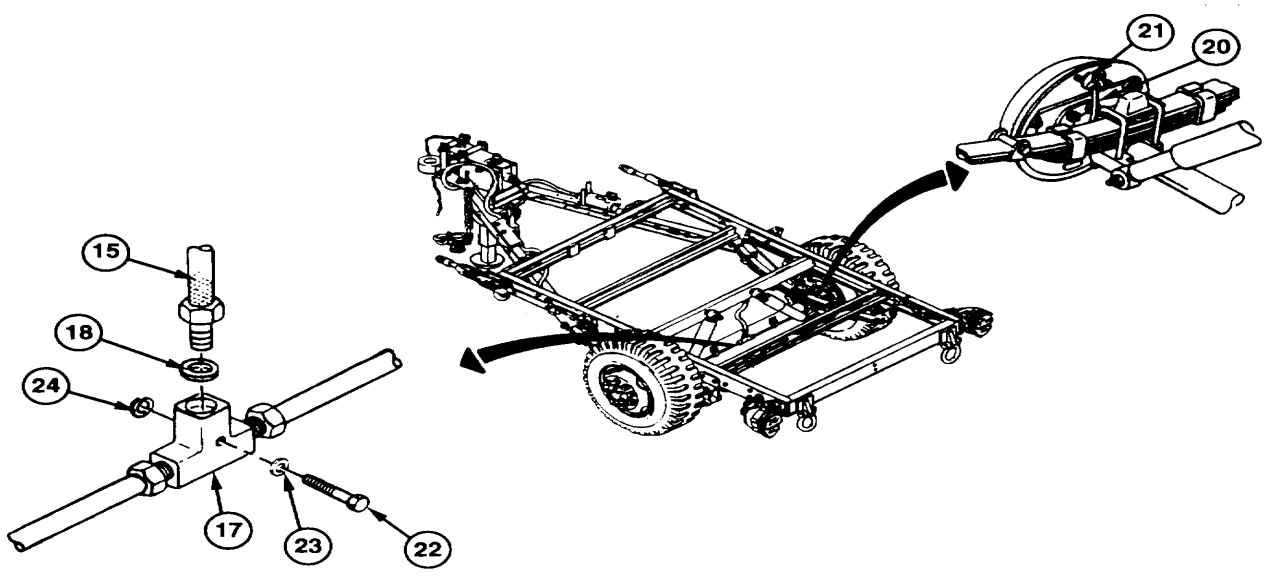
- Do steps 1 and 2 to install tee on axle.
- The procedure for installing assemblies is the same for left side and right side.

1. Install new lockwasher (24), tee (17), washer (23), and capscrew (22) on axle.

2. Install copper gasket (18), if present, on hose assembly (15). Connect hose assembly (15) to tee (17).

3. Position tube assembly (20) along axle and connect to tee (17).

4. Connect tube assembly (20) to wheel cylinder (21).



FOLLOW-ON TASKS:
- Bleed hydraulic brake system (para 4-41).

4-41. BLEEDING HYDRAULIC BRAKE SYSTEM.

This Task Covers: Bleeding

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Rag (Item 13, Appendix F)
- Tubing, plastic (Item 20, Appendix F)

Materials/Parts:
- Fluid, brake (Item 6, Appendix F)
- Jar (Item 8, Appendix F)

Equipment Conditions:
- Handbrakes applied (para 2-10).

WARNING

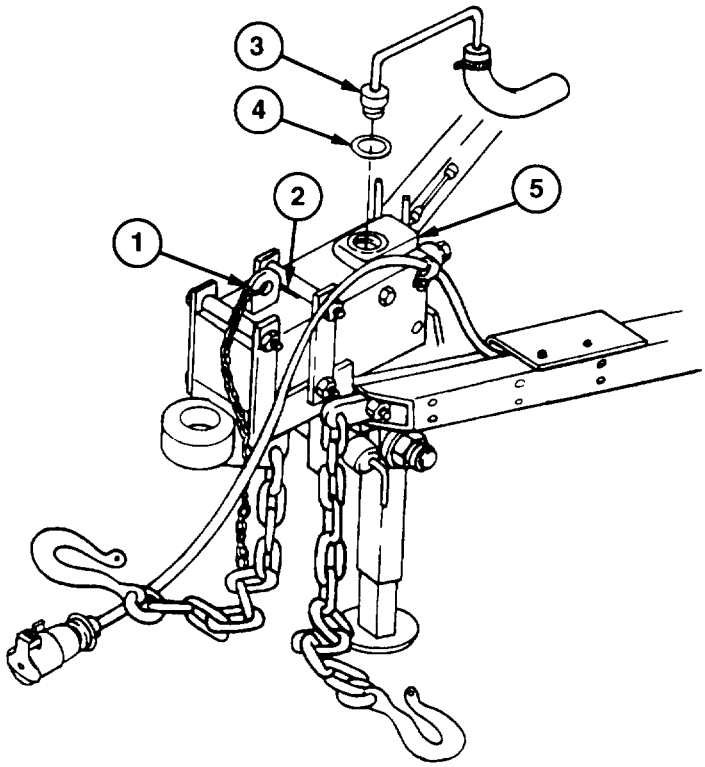
When performing maintenance on brake system, make sure wheels are securely chocked. Failure to follow this warning may cause trailer to roll, resulting in serious injury or death to personnel or damage to equipment.

BLEEDING

1. Release breakaway lever (1) by pulling up on leaf spring (2) and pushing down on breakaway lever (1). Release leaf spring (2).

2. Remove cap (3) and gasket (4) from master cylinder (5).

3. Fill master cylinder (5) with brake fluid to within 1/4 inch (6.35 mm) of top. Install gasket (4) and cap (3) on master cylinder (5) and finger-tighten.



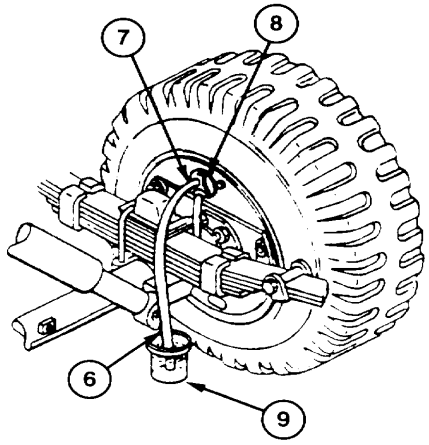
4-41. BLEEDING HYDRAULIC BRAKE SYSTEM (continued).

4. Install one end of hose (6) over bleeder valve (7) at wheel cylinder (8). Place free end of hose (6) in clean jar (9).

5. Fill jar (9) half full with brake fluid. Make sure free end of hose (6) is below the level of brake fluid.

NOTE

Make sure master cylinder is kept full of brake fluid at all times during bleeding or air will enter the system, making it necessary to bleed the system again.



6. Apply and release breakaway lever (1) four to five times, to apply pressure to brake system.

7. Leave breakaway lever (1) in applied position.

8. Open bleeder valve (7) to release air from brake system. Air is being released if there are air bubbles in jar (9).

9. Close bleeder valve (7). Remove hose (6) from bleeder valve (7)

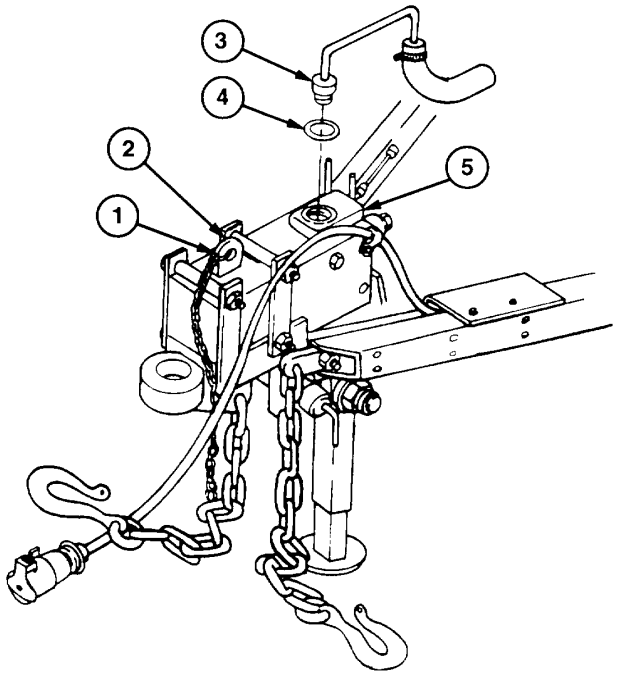
10. Repeat steps 6 through 9 until fluid in jar (9) is free of air bubbles.

11. Release breakaway lever (1).

12. Remove cap (3) and gasket (4) from master cylinder (5). Discard gasket if damaged.

13. Fill master cylinder (5) with brake fluid.

14. Install gasket (4) and cap (3) on master cylinder (5).



FOLLOW-ON TASKS:

- None

Section VIII. WHEELS, HUBS, AND BRAKEDRUMS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
4-42	General	4-83
4-43	Hub, Brakedrum, and Wheel Bearings Maintenance (M101A2, M101A3, M116A2, M116A2E1, and M116A3)	4-83
4-43.1	Hub, Brakedrum, and Wheel Bearings Maintenance (M101A1 and M116A1)	4-90
4-44	Wheel and Tire Assembly Replacement	4-90.6
4-45	Tire and Tube Maintenance	4-91

4-42. GENERAL.

This section describes and illustrates maintenance procedures for hubs, brakedrums, wheel bearings, wheel and tire assembly, tires, and tubes.

4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A2, M101A3, M116A2, M116A2E1, AND M116A3).

This Task Covers:

a. Removal
b. Disassembly
c. Cleaning and Inspection
d. Assembly
e. Installation
f. Wheel Bearing Adjustment

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

- Cloth, abrasive (Item 3, Appendix F)
- Grease (Item 7, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Cotter pin, MS24665-425
- Seal, 12313027

Equipment Conditions:

- Wheel and tire assembly removed (para 4-44).
- Handbrakes released (para 2-10).

References:

- TM 9-214

WARNING

DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. Asbestos dust, which can be dangerous if you touch it or breathe it, may be on these components. Failure to follow this warning may result in serious illness or death to personnel.

a. REMOVAL

1. Support vehicle with suitable jackstands at front and rear corners on side being maintained.

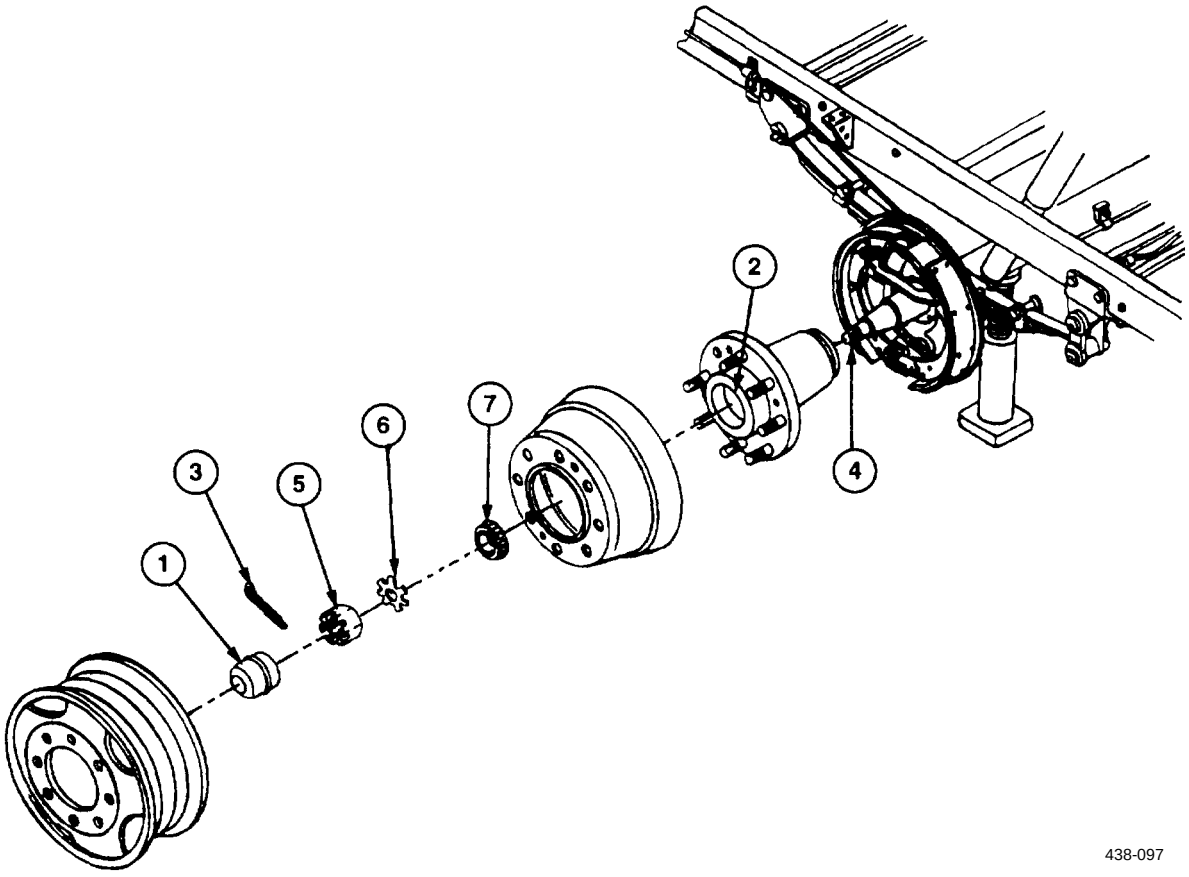
4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A2, M101A3, M116A2, M116A2E1, AND M116A3) (CONTINUED).

2. Remove grease cap (1) from hub (2).
3. Remove cotter pin (3) from spindle (4). Discard cotter pin.

NOTE

Configurations may vary. If trailer has key washers, do step 4. If trailer is equipped with retainers and washers, do step 5.

4. Remove nut (5), key washer (6), and outer bearing (7) from spindle (4).



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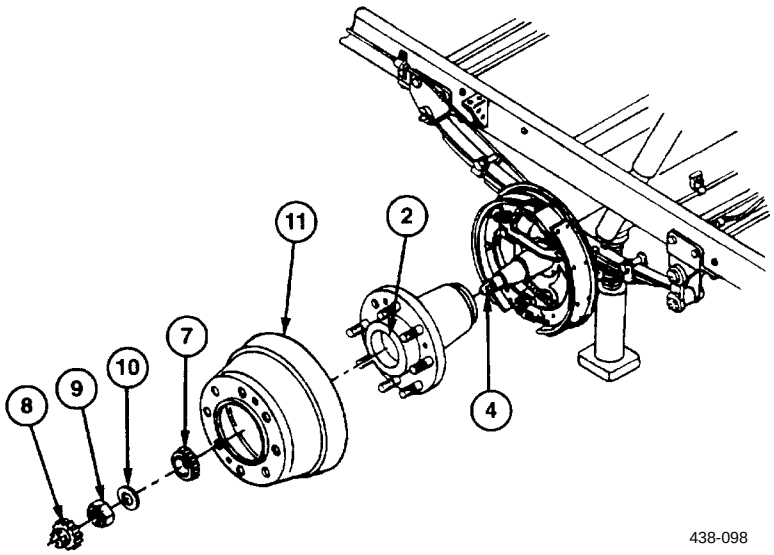
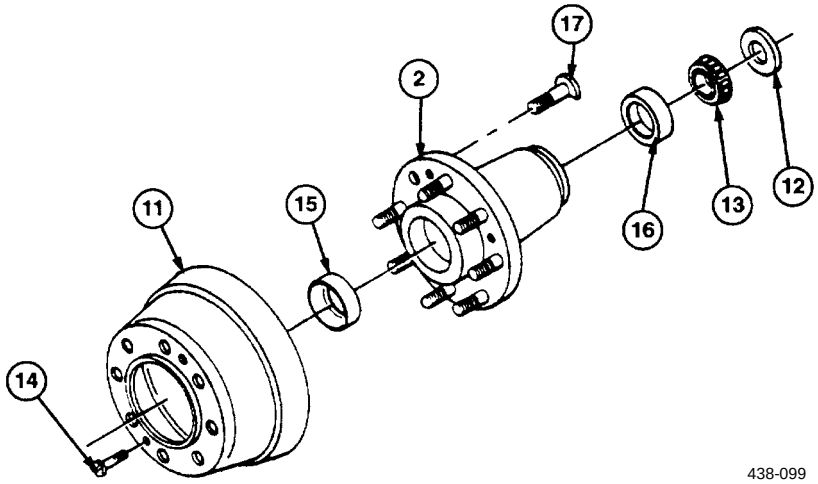
4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A2, M101A3, M116A2, M116A2E1, AND M116A3) (CONTINUED).

5. Remove retainer (8), nut (9), washer (10), and outer bearing (7) from spindle (4).
6. Remove hub (2) and brakedrum (11), as an assembly, from spindle (4).



b. **DISASSEMBLY**

1. Remove seal (12) and inner bearing (13) from hub (2). Discard seal.
2. Remove two machine screws (14) from hub (2) and brakedrum (1). Separate hub (2) and brakedrum (11).
3. Remove outer and inner cups (15 and 16) from hub (2).
4. If damaged, drive out eight shoulder bolts (17) from hub (2) and discard.



4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A2, M101A3, M116A2, M116A2E1, AND M116A3) (CONTINUED).

c. **CLEANING AND INSPECTION**

WARNING

- **Wear an approved filter mask and gloves. NEVER use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth.**
- **Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.**

1. Clean and inspect inner and outer bearings and cups in accordance with TM 9-214. If any bearing or cup needs replacing, all bearings and cups must be replaced.
2. Clean all other removed components with drycleaning solvent and rag and allow to dry.
3. Wipe spindle clean with drycleaning solvent and rag. Inspect spindle for cracks, bends, and scored or discolored bearing surfaces. If threads are damaged, restore. Notify Direct Support maintenance if spindle is damaged beyond repair.
4. Inspect hub for cracks, breaks, and burrs. Remove burrs with abrasive cloth. Replace hub if damaged.
5. Inspect stud holes of brakedrum for cracks. Discard brakedrum if stud holes are cracked.

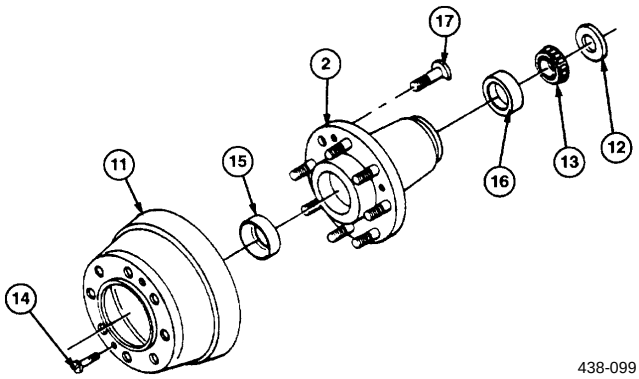
WARNING

DO NOT use a brakedrum that exceeds maximum wear specifications. Failure to follow this warning may result in brake failure and injury or death to personnel

6. Measure inside diameter of brakedrum. Discard and replace brakedrum if inside diameter exceeds 12.065 inches (30.65 cm).
7. Inspect braking surface of brakedrum for cracks, hot spots, and scoring. Discard and replace brakedrum if damaged.
8. Inspect braking surface for out-of-round at 45-degree intervals. Out-of-round should not exceed 0.015 inch (0.38 mm). If runout exceeds 0.015 inch (0.38 mm), replace brakedrum.
9. Inspect all remaining components for damage. Replace if damaged.

d. **ASSEMBLY**

1. If removed, drive eight new shoulder bolts (17) into hub (2).
2. Install outer and inner cups (15 and 16) in hub (2).
3. Align holes in brakedrum (11) with holes in hub (2). Loosely install two machine screws (14) in brakedrum (11).
4. Tap brakedrum (11) against hub (2) with soft-faced hammer. Fully tighten two machine screws (14).
5. Pack inner bearing (13) with grease and install in hub (2).
6. Install new seal (12) in hub (2).



438-099

4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (CONTINUED).

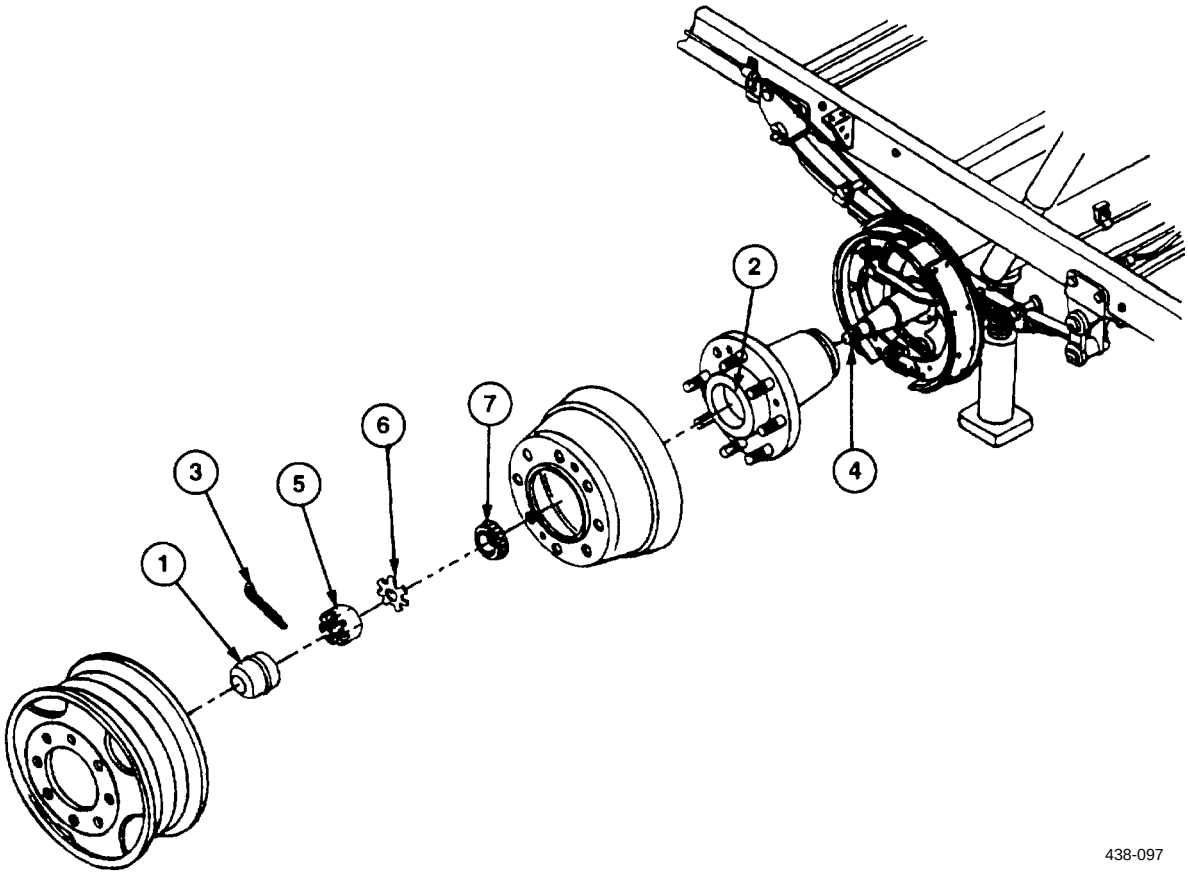
e. **INSTALLATION**

1. Lightly coat spindle (4) with grease.
2. Install hub (2) and brakedrum (11), as an assembly, on spindle (4).
3. Pack outer bearing (7) with grease and install on spindle (4).

NOTE

Configurations may vary. If trailer has key washer, do step 4. If trailer is equipped with retainers and washers, do step 5.

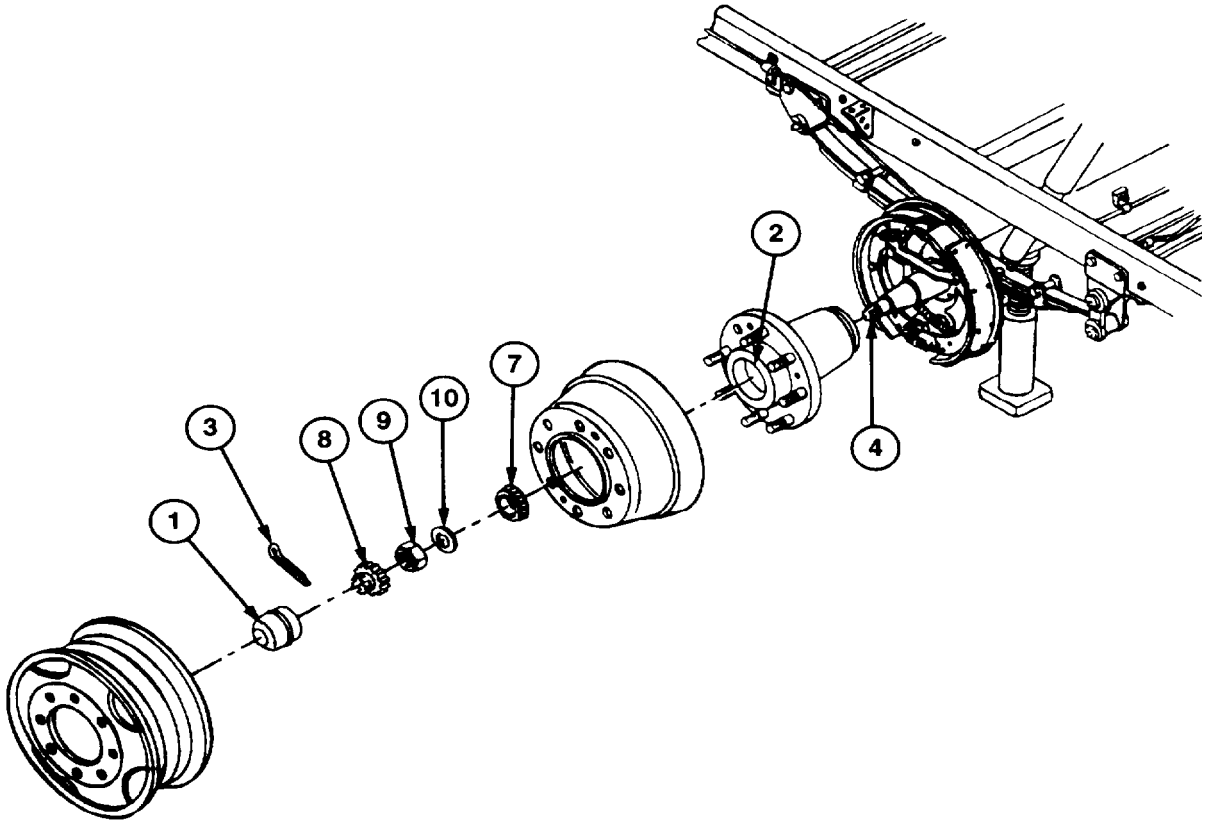
4. Install key washer (6) and nut (5) on spindle (4).



438-097

4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (CONTINUED).

5. Install washer (10), nut (9), and retainer (8) on spindle (4).
6. Perform wheel bearing adjustment (subpara f).



f. **WHEEL BEARING ADJUSTMENT**

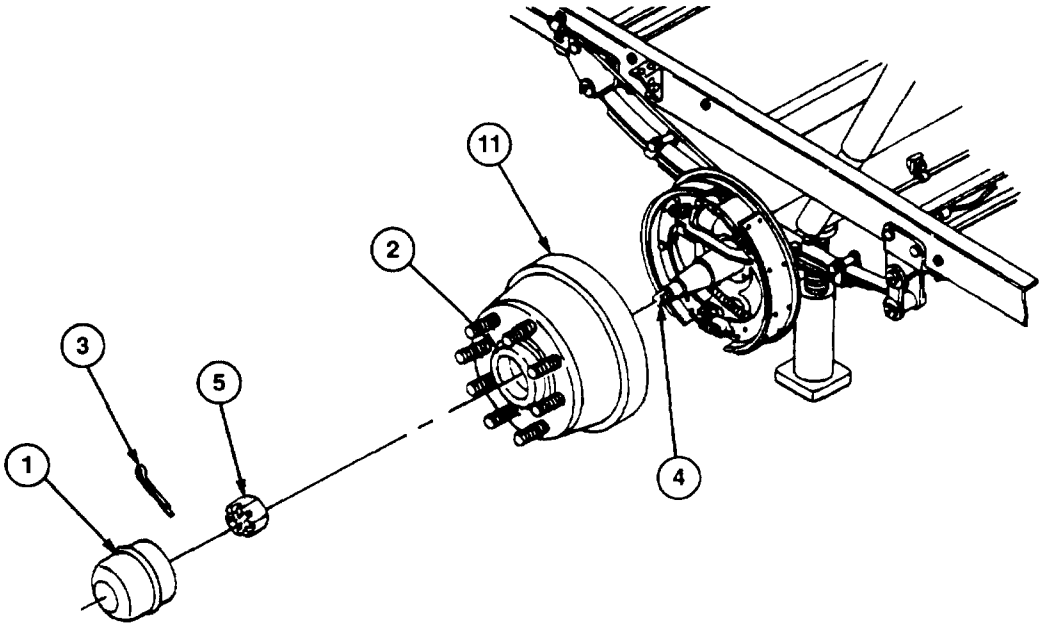
NOTE

- **If performing wheel bearing adjustment as part of troubleshooting when wheel and tire assembly has not been removed, perform steps 1 through 12.**
- **If performing wheel bearing adjustment as a follow-on to hub, brakedrum, and wheel bearings maintenance, perform steps 5 through 12 only.**

1. Apply handbrakes (para 2-10). Chock wheel and tire assembly opposite the side being adjusted. Raise vehicle at front and rear corners of side being maintained until wheel and tire assembly is clear of ground. Support vehicle with suitable jackstand.
2. Release handbrake on side being adjusted (para 2-10).
3. Remove grease cap (1) from hub (2).
4. Remove cotter pin (3) from spindle (4). Discard cotter pin.

4-43. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (CONTINUED).

5. Loosen nut (5) on spindle (4) until hub (2) and brakedrum (11) turn freely.
6. Torque nut (5) to 30 lb-ft (41 Nm) while turning hub (2) and brakedrum (11), to seat bearings.
7. Back off nut (5) 1/16 turn. Finger-tighten nut.
8. Install new cotter pin (3) in spindle (4) and bend back ends. Make sure hub (2) and brakedrum (11) turn freely.
9. Install grease cup (1) on hub (2).
10. Apply handbrakes (para 2-10).
11. If removed, install wheel and tire assembly (para 4-44).
12. Remove jackstands and lower vehicle.



FOLLOW-ON TASKS:

- None

4-43.1. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A1 AND M116A1).

This Task Covers:

a. Removal
b. Disassembly
c. Cleaning and Inspection
d. Installation
e. Assembly
f. Wheel Bearing Adjustment

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

- Cloth, abrasive (Item 3, Appendix F)
- Grease (Item 7, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Gasket, 7339403
- Lockwasher (6), MS35338-47
- Seal, 2310

Equipment Conditions:

- Wheel and tire assembly removed (para 4-44)
- Handbrakes released (para 2-10)

References:

- TM 9-214

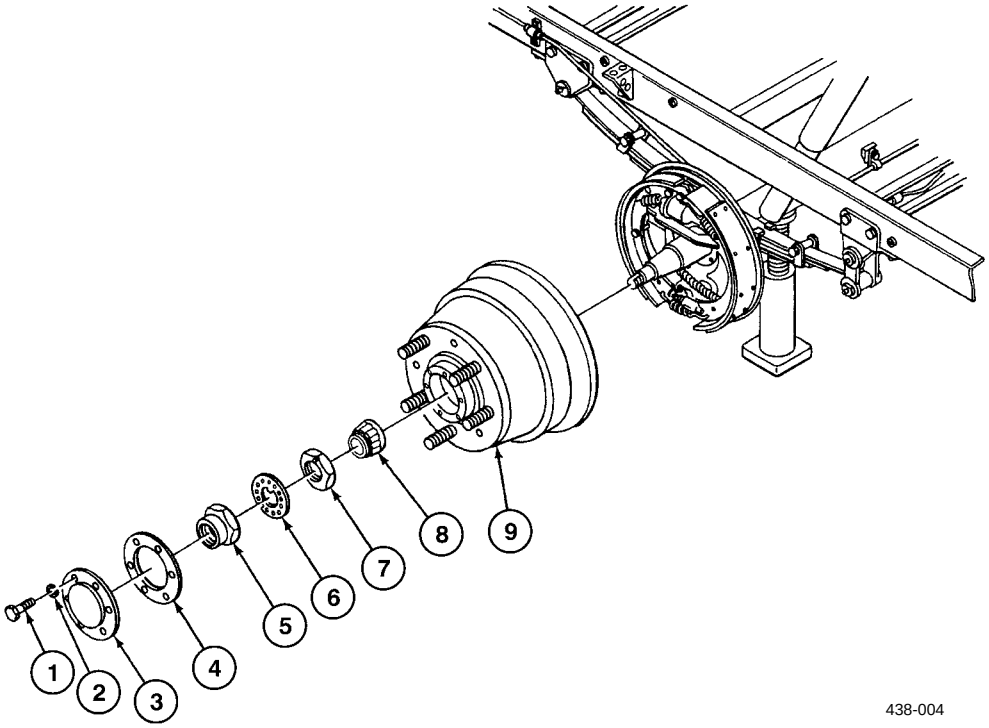
a. **REMOVAL**

WARNING

DO NOT handle brakeshoes, brakedrums, or other components unless area has been properly cleaned. Asbestos dust, which can be dangerous if you touch it or breathe it, may be on these components. Failure to follow this warning may result in serious illness or death to personnel.

1. Raise trailer with jack. Position a suitable jackstand under axle. Lower and remove jack.
2. Remove six cap screws (1), lockwashers (2), access cover (3), and paper gasket (4). Discard lockwashers and paper gasket.
3. Remove outer bearing sleeve nut (5), key washer (6), adjusting nut (7), outer bearing hub cone and roller (8), and wheel hub and brakedrum assembly (9).

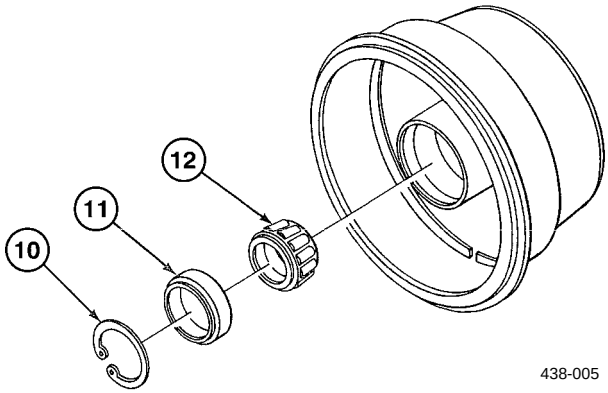
4-43.1. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A1 AND M116A1) (CONTINUED).



438-004

b. **DISASSEMBLY**

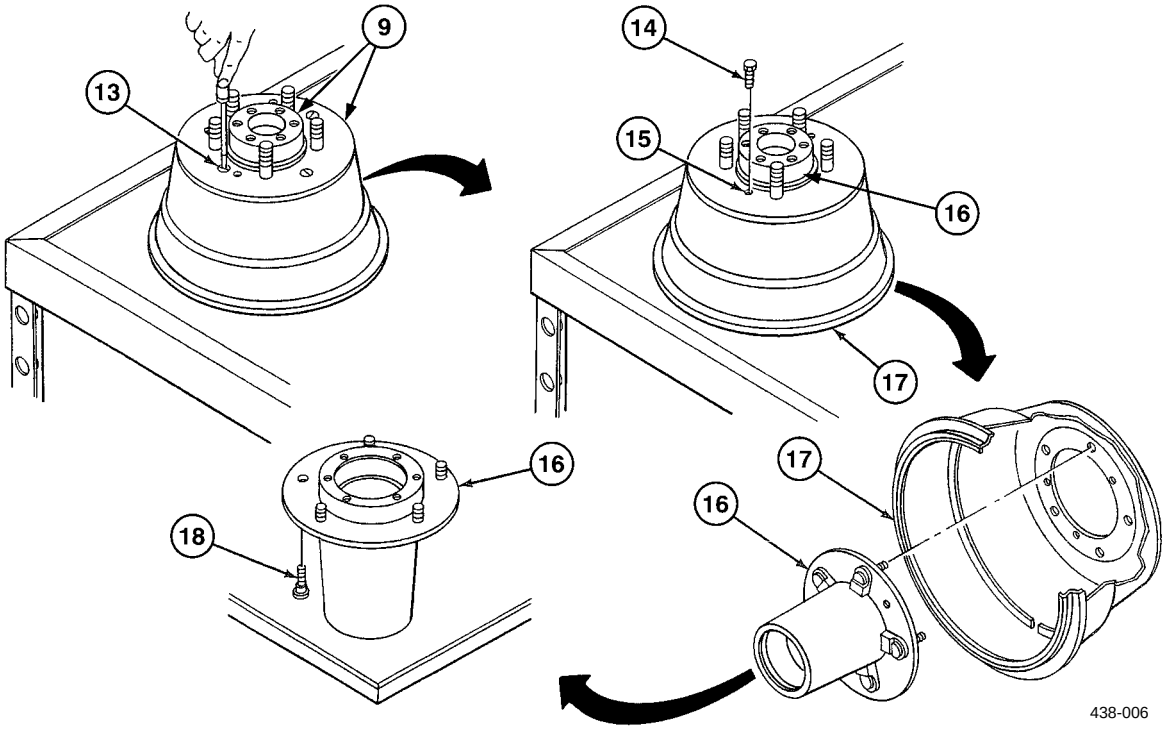
1. Remove retaining ring (10), seal (11), and inner bearing hub cone and roller (12). Discard seal.



438-005

4-43.1. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

2. Place wheel hub and brakedrum assembly (9) on work bench.
3. Remove three screws (13).
4. Screw three retaining cap screws (14) evenly into tapped holes (15) to drive out wheel hub (16) from brakedrum (17).
5. Place wheel hub (16) on work bench. If damaged, drive out five shoulder bolts (18) and discard.



c. **CLEANING AND INSPECTION**

WARNING

- **Wear an approved filter mask and gloves. NEVER use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.**
- **Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.**

1. Clean and inspect inner and outer bearing hub cones and rollers in accordance with TM 9-214. If any cone or roller needs replacing, all cones and rollers must be replaced.
2. Clean all other removed components with drycleaning solvent and rag and allow to dry.

4-43.1. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

3. Wipe spindle clean with drycleaning solvent and rag. Inspect spindle for cracks, bends, and scored or discolored bearing surfaces. If threads are damaged, restore. Notify Direct Support maintenance if spindle is damaged beyond repair.
4. Inspect wheel hub for cracks, breaks, and burrs. Remove burrs with abrasive cloth. Replace wheel hub if damaged.
5. Inspect brakedrum for cracks, scoring, pitting, and grooves. Notify Direct Support maintenance if brakedrum is damaged.
6. Inspect all remaining components for damage. Replace if damaged.

d. **ASSEMBLY**

NOTE

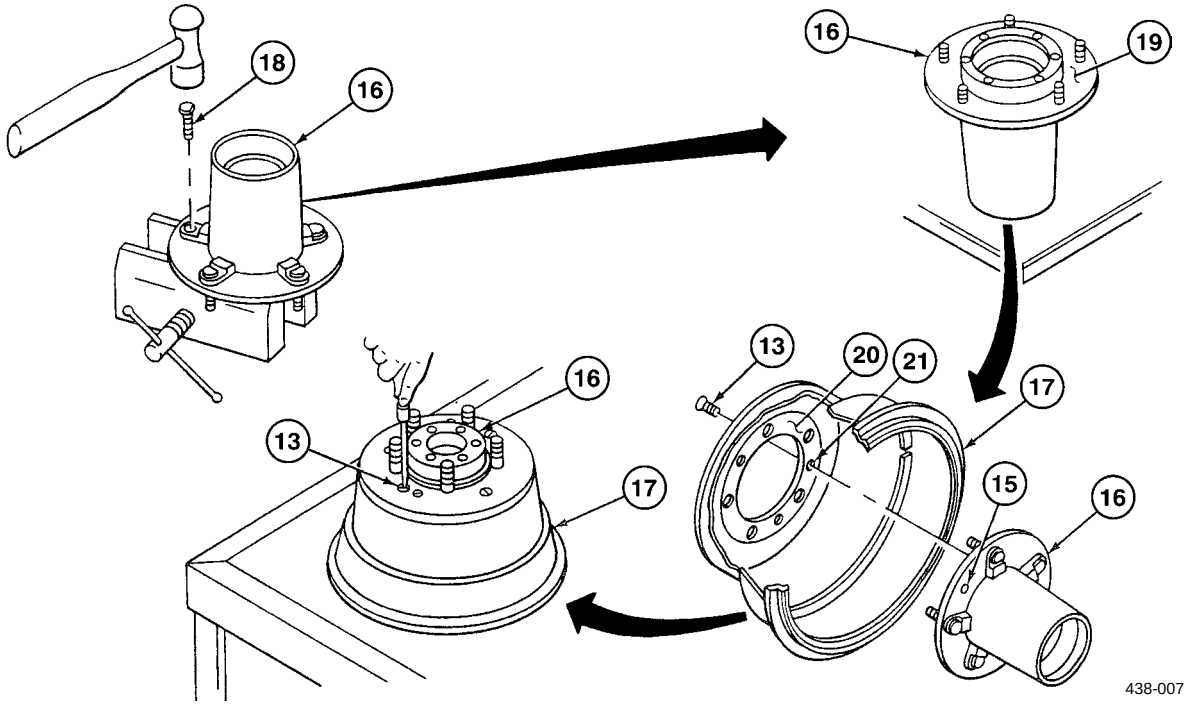
- **Use left shoulder bolts on left wheel hub and right shoulder bolts on right wheel hub.**
- **Align flat on shoulder bolt with flat on wheel hub flange.**

1. If removed, drive five shoulder bolts (18) into wheel hub (16).
2. Coat mating surface (19) of wheel hub (16) and mating surface (20) of brakedrum (17) with clean oil.
3. Align countersunk holes (21) in brakedrum (17) with tapped holes (15) in wheel hub (16).

NOTE

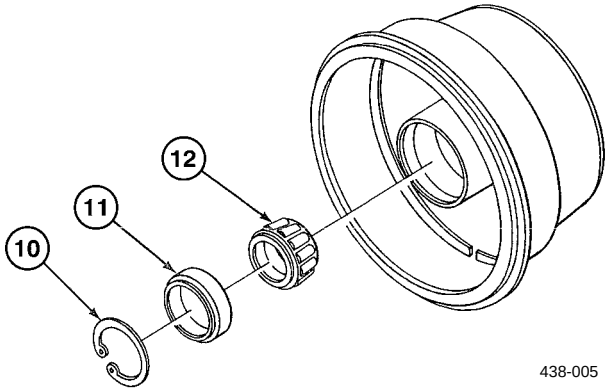
Do not tighten screws at this time.

4. Install three screws (13) loosely.
5. Using soft-face mallet, tap brakedrum (17) against wheel hub (16).
6. Tighten three screws (13).



4-43.1. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

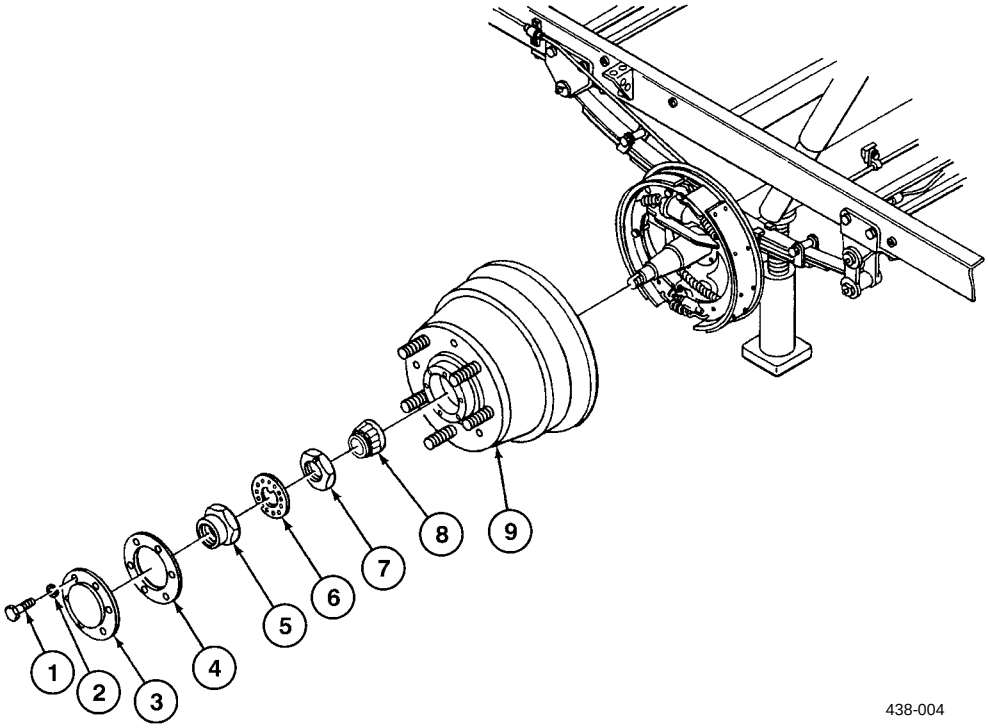
7. Pack inner bearing hub cone and roller (12) with grease and install.
8. Install new seal (11) and retaining ring (10).



438-005

e. **INSTALLATION**

1. Lightly coat spindle with grease and install wheel hub and brakedrum assembly (9).
2. Pack outer bearing hub cone and roller (8) with grease and install on spindle.
3. Install adjusting nut (7), key washer (6), and outer bearing sleeve nut (5) on wheel hub and brakedrum assembly (9).
4. Install new paper gasket (4), access cover (3), six new lockwashers (2), and cap screws (1) on wheel hub and brakedrum assembly (9).



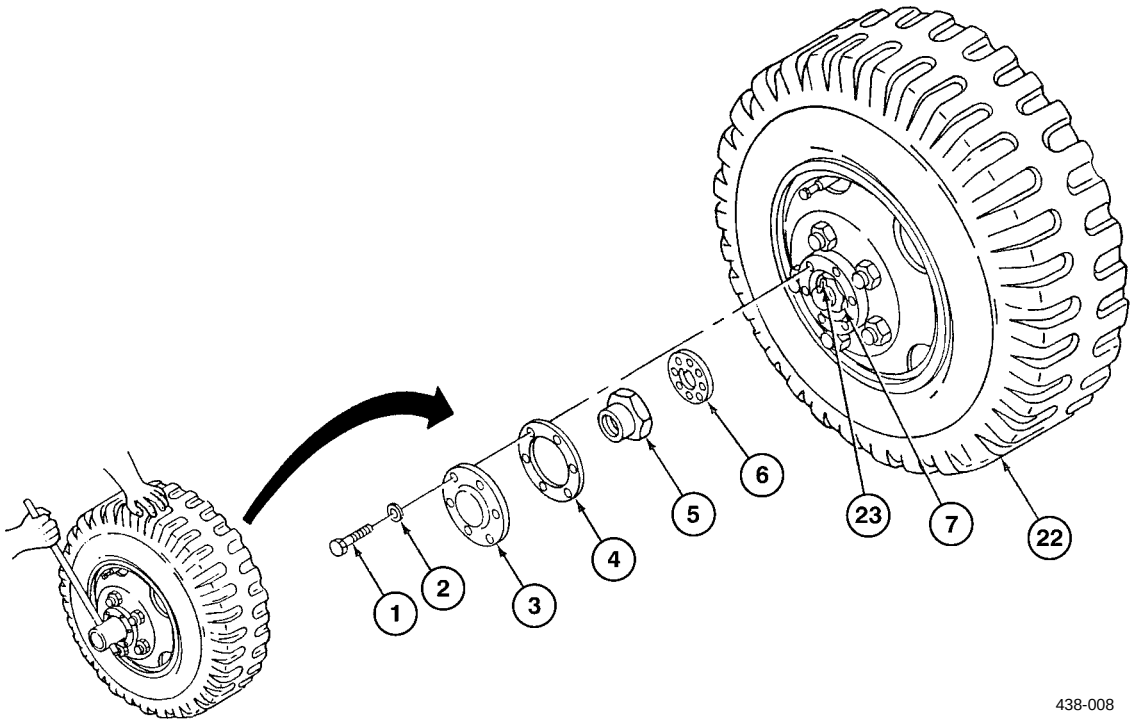
438-004

438-086

4-43.1. HUB, BRAKEDRUM, AND WHEEL BEARINGS MAINTENANCE (M101A1 AND M116A1) (CONTINUED).

f. **WHEEL BEARING ADJUSTMENT**

1. Install wheel and tire assembly (para 4-44) but leave jackstand under axle.
2. Remove six capscrews (1), lockwashers (2), access cover (3), and paper gasket (4). Discard lockwashers and paper gasket.
3. Remove outer bearing sleeve nut (5) and key washer (6).
4. Loosen adjusting nut (7). Turn wheel and tire assembly (22) until wheel and tire assembly binds. Loosen adjusting nut 1/6 turn or until wheel and tire assembly does not bind.
5. Try to move wheel and tire assembly (22) by rocking. Wheel and tire assembly should not move. If it does move, repeat step 4 above.
6. Mate key washer (9) and spindle. Slide key washer against adjusting nut (7). Dowel pin (23) should enter one of the holes in key washer. If dowel pin does not enter hole in key washer, perform step 7 below.
7. Remove key washer (9). Turn it over and reinstall. If dowel pin (23) does not enter hole in key washer, perform step 8 below.
8. Loosen adjusting nut (7) and repeat steps 4 thru 7 above.
9. Install outer bearing sleeve nut (5), new paper gasket (4), access cover (3), six new lockwashers (2), and cap screws (1).
10. Raise trailer with jack and remove jackstand. Lower trailer to ground.



438-008

FOLLOW-ON TASKS:

- None.

4-44. WHEEL AND TIRE ASSEMBLY REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Equipment Conditions:

- Handbrakes applied (para 2-10).

NOTE

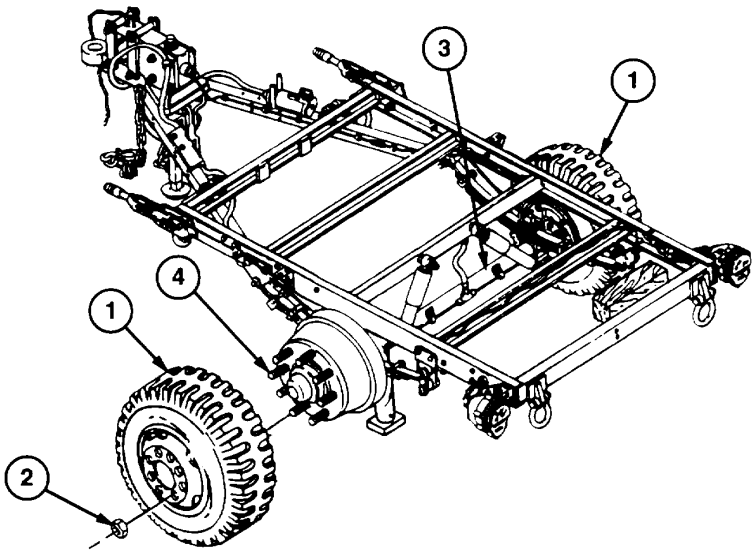
This procedure shows replacement of the M116A2 or M116A2E1 wheel and tire assembly.

a. **REMOVAL**

1. Chock wheel and tire assembly (1) opposite side being removed.
2. Loosen eight nuts (2) on wheel and tire assembly (1).
3. Raise and support axle (3) on side where wheel and tire assembly (1) is being removed.
4. Remove eight nuts (2) from wheel and tire assembly (1). Remove wheel and tire assembly (1) from shoulder bolts (4).

b. **INSTALLATION**

1. Install wheel and tire assembly (1) on shoulder bolts (4).
2. Install eight nuts (2) on wheel and tire assembly (1) and tighten alternately and evenly.
3. Remove support from axle (3) and lower wheel and tire assembly (1) to the ground.
4. Torque eight nuts (2) alternately and evenly between 110 and 120 lb-ft (149-163 Nm).



FOLLOW-ON TASKS:

- None

4-45. TIRE AND TUBE MAINTENANCE.

To remove tire from wheel, to repair tire, or to repair wheel and run flat assembly (M101A3 and M116A3), refer to TM 9-2610-200-14.

Section IX. FRAME AND TOWING ATTACHMENTS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
	NOTE	
	Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.	
4-46	General	4-92
4-47	Spring Hanger Replacement	4-92
4-48	Lift Shackle Replacement	4-97
4-49	Eyebolt Replacement	4-98
4-50	Drawbar Replacement	4-99
4-51	Adjustable Front Support Leg Replacement	4-101
4-52	Safety Chains Replacement	4-103

4-46. GENERAL.

This section describes and illustrates removal and installation procedures for spring hangers, lift shackles, eyebolts, drawbars, the adjustable front support leg, and safety chains.

4-47. SPRING HANGER REPLACEMENT.

This Task Covers:

a. Front Spring Hanger Removal
b. Rear Spring Hanger Removal
c. Cleaning and Inspection
d. Rear Spring Hanger Installation
e. Front Spring Hanger Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

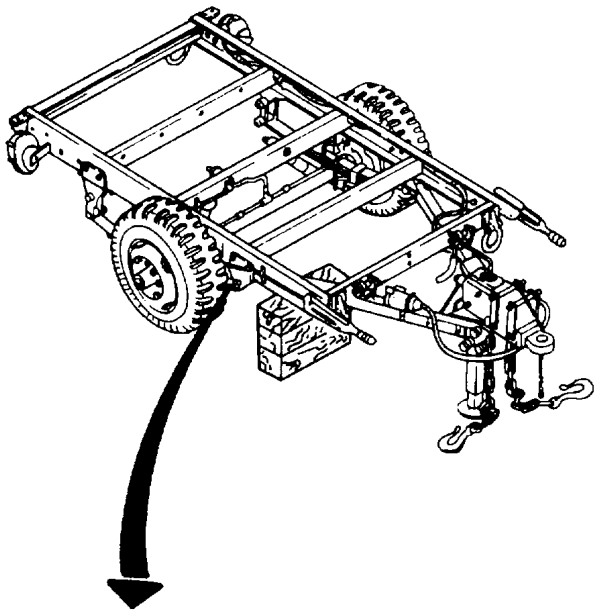
Materials/Parts:

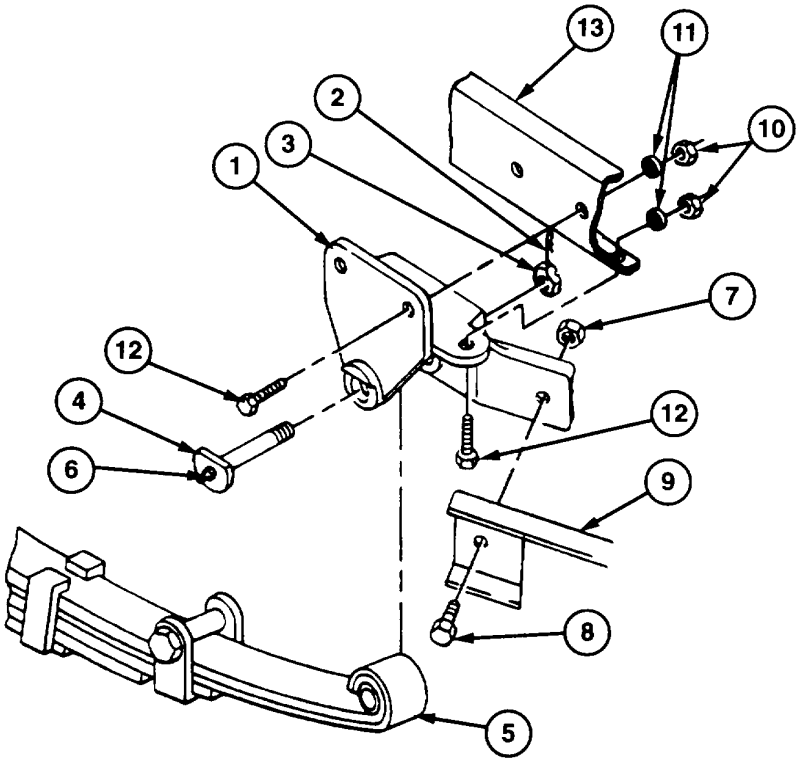
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Cotter pin (2), MS24665-633 (M101A1, M101A3, M116A1, M116A2)
- Cotter pin (2), MS24665-357 (M116A2E1 and M116A3)
- Lubrication fitting (2), MS15001-1
- Self-locking nut (8), MS17829-6F (4 for rear spring hanger, 4 for front spring hanger)
- Self-locking nut, MS51922-49 (front spring hanger)

4-47. SPRING HANGER REPLACEMENT (continued).

a. FRONT SPRING HANGER REMOVAL

1. Place floor jack under vehicle on side where front spring hanger (1) is being removed. Use floor jack to raise trailer. Place suitable support under front corner of vehicle.
2. Lower vehicle until weight of trailer rests on support at the front corner. Some weight will be on floor jack.
3. Remove cotter pin (2), slotted nut (3), and shackle pin (4) from spring (5) and front spring hanger (1). Remove lubrication fitting (6) from shackle pin (4). Discard cotter pin and lubrication fitting.
4. Lower floor jack until spring (5) is clear of front spring hanger (1).
5. Remove self-locking nut (7) and capscrew (8) from drawbar (9) and front spring hanger (1). Discard self-locking nut.
6. Remove four self-locking nuts (10), washers (11), and capscrews (12) and front spring hanger (1) from frame (13). Discard self-locking nuts.

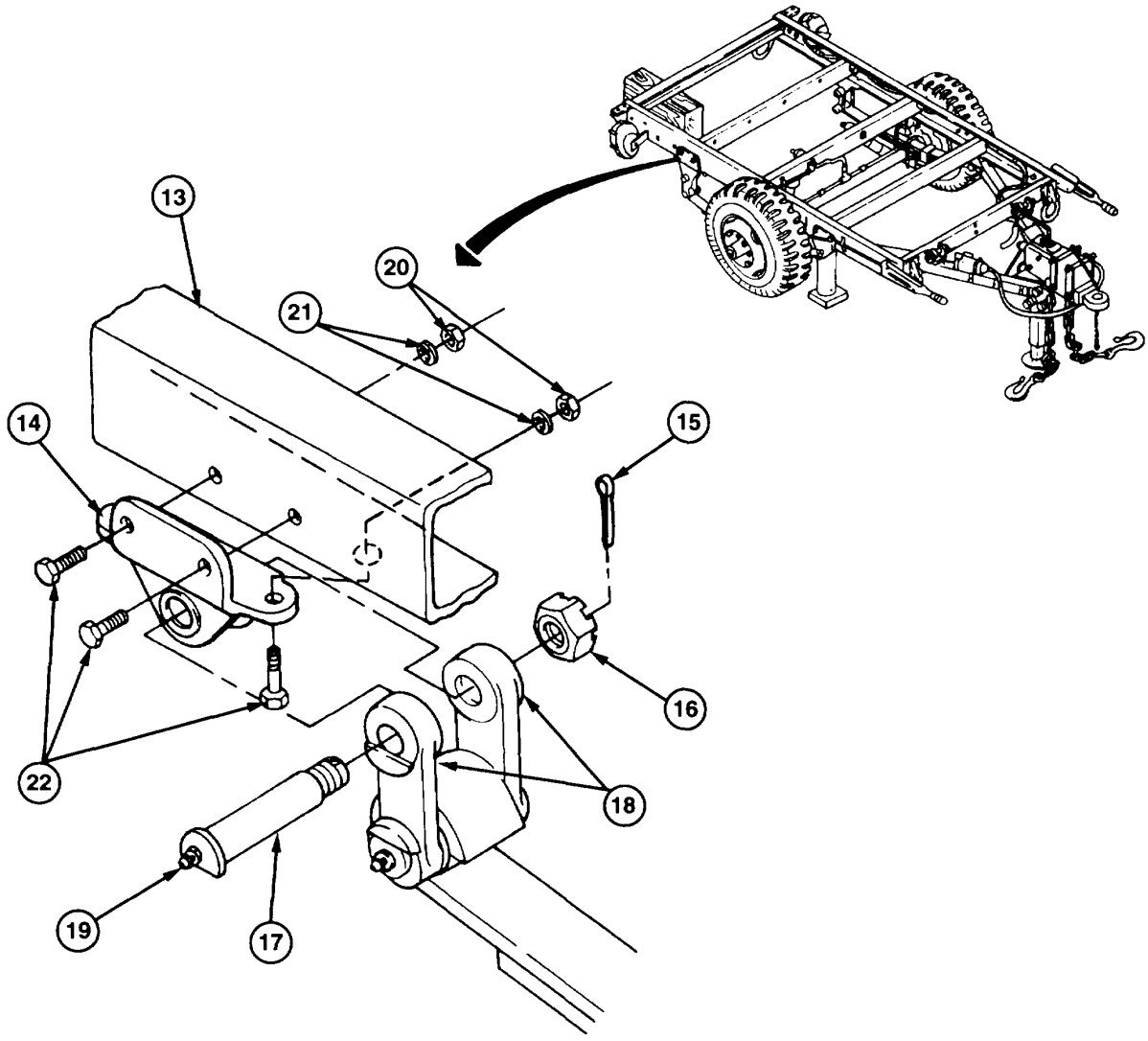




4-47. SPRING HANGER REPLACEMENT (continued).

b. REAR SPRING HANGER REMOVAL

1. Place floor jack under vehicle on side where rear spring hanger (14) is being removed. Use floor jack to raise trailer. Place suitable support under rear corner of vehicle.
2. Lower vehicle until weight of trailer rests on support at the rear corner. Some weight will be on floor jack.
3. Remove cotter pin (15), slotted nut (16), and shackle pin (17) from shackle (18) and rear spring hanger (14). Remove lubrication fitting (19) from shackle pin (17). Discard cotter pin and lubrication fitting.
4. Lower floor jack until shackle (18) is clear of rear spring hanger (14).
5. Remove four self-locking nuts (20), washers (21), and capscrews (22) and rear spring hanger (14) from frame



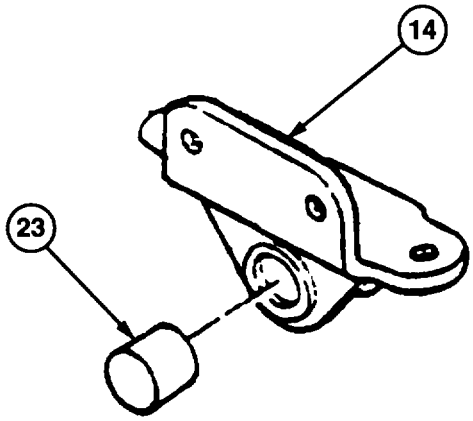
447. SPRING HANGER REPLACEMENT (continued).

NOTE

Remove bushing only if damaged.

6. Remove bushing (23) from rear spring hanger (14).

c. CLEANING AND INSPECTION



c. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components with drycleaning solvent and rag and allow to dry. Make sure lubrication passages in shackle pins are free of grease.
2. Inspect all removed components for cracks, breaks, corrosion, and damaged threads. Replace if damaged.

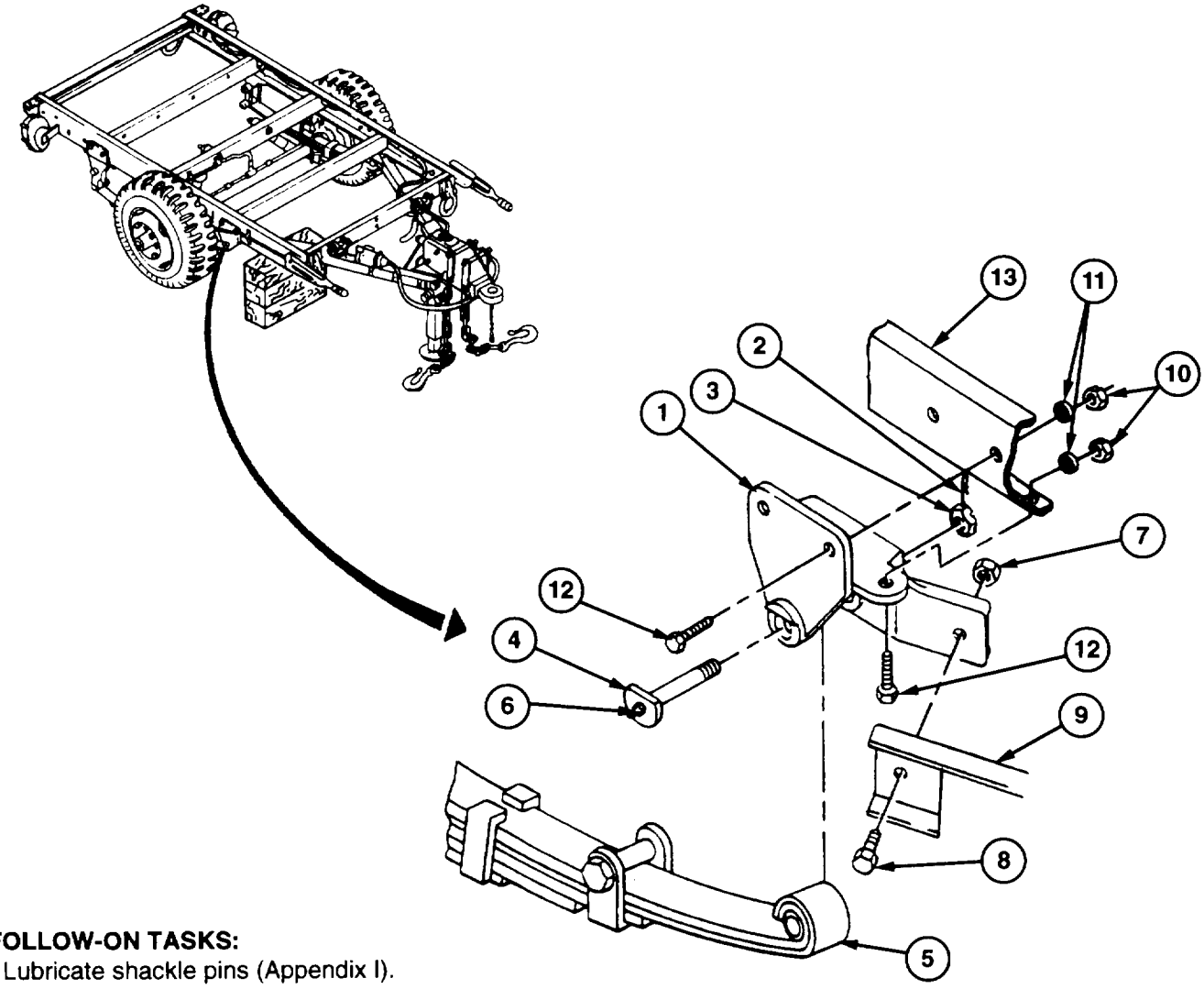
d. REAR SPRING HANGER INSTALLATION

1. If removed, install bushing (23) in rear spring hanger (14).
2. Install rear spring hanger (14) on frame (13) with four capscrews (22), washers (21), and new self-locking nuts (20). Torque self-locking nuts to 30 lb-ft (41 N•m).
3. Use floor jack to raise vehicle until shackle (18) is aligned with rear spring hanger (14).
4. Install shackle pin (17) through shackle (18) and rear spring hanger (14).
5. Install slotted nut (16) on shackle (18) and tighten. Install new cotter pin (15) on shackle (18).
6. Install new lubrication fitting (19) in shackle pin (17).
7. Remove support from rear comer of vehicle. Remove floor jack from under vehicle.

4-47. SPRING HANGER REPLACEMENT (continued).

e. FRONT SPRING HANGER INSTALLATION

1. Install front spring hanger (1) on frame (13) with four capscrews (12), washers (11), and new self-locking nuts (10). Torque self-locking nuts to 30 lb-ft (41 N•m).
2. Install drawbar (9) on front spring hanger (1) with capscrew (8) and new self-locking nut (7). Torque self-locking nut between 140 and 150 lb-ft (190-203 Nom).
3. Use floor jack to raise vehicle until spring (5) is aligned with front spring hanger (1).
4. Install shackle pin (4) through spring (5) and front spring hanger (1).
5. Install slotted nut (3) on shackle pin (4) and tighten. Install new cotter pin (2) on shackle pin (4).
6. Install new lubrication fitting (6) in shackle pin (4).
7. Remove support from front corner of vehicle. Remove floor jack from under vehicle.



FOLLOW-ON TASKS:
- Lubricate shackle pins (Appendix I).

4-48. LIFT SHACKLE REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:
General mechanic's tool kit (Item 1, Appendix B)

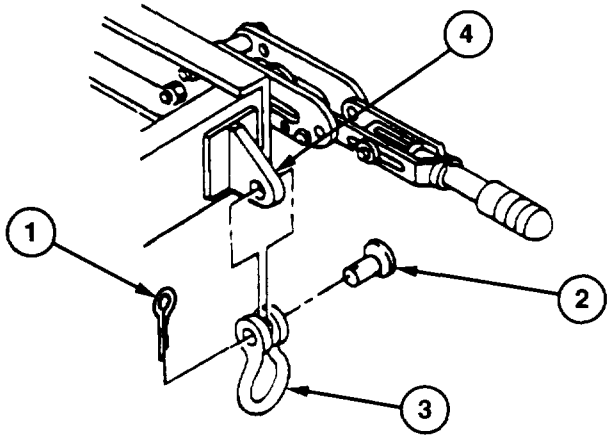
Materials/Parts:
- Cotter pin, MS24665-355
- Self-locking nut, MS51922-57

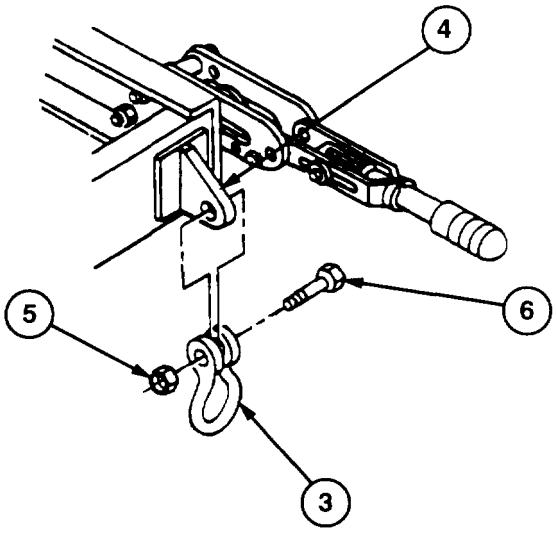
a. REMOVAL

1. On the M101A2 and M116A2, remove cotter pin (1), straight headed pin (2), and lift shackle (3) from bracket (4). Discard cotter pin.
2. On the M101A3, M116A2E1, and M1 16A3, remove self-locking nut (5), capscrew (6), and lift shackle (3) from bracket (4). Discard self-locking nut.

b. INSTALLATION

1. On the M101A2 and M116A2, install lift shackle (3) on bracket (4) with straight headed pin (2) and new cotter pin (1).
2. On the M101A3, M116A2E1, and M116A3, install lift shackle (3) on bracket (4) with capscrew (6) and new self-locking nut (5).





4-49. EYEBOLT REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

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

Materials/Parts:

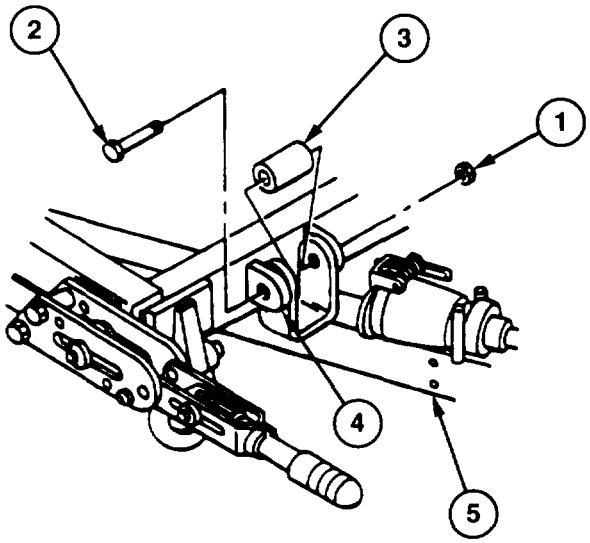
- Self-locking nut (2), MS21044-N8

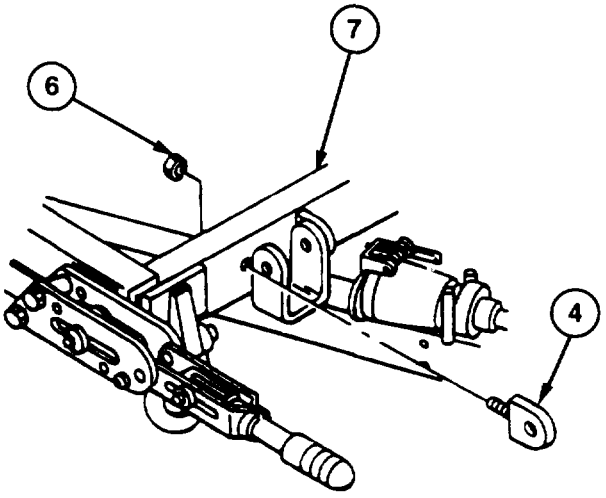
a. REMOVAL

1. Remove self-locking nut (1), capscrew (2), and spacer (3) from eyebolt (4) and drawbar (5). Discard self-locking nut.
2. Remove self-locking nut (6) and eyebolt (4) from frame (7). Discard self-locking nut.

b. INSTALLATION

1. Install eyebolt (4) on frame (7) with new self-locking nut (6).
2. Install spacer (3), capscrew (2), and new self-locking nut (1) on eyebolt (4) and drawbar (5).





FOLLOW-ON TASKS:

- None

4-50. DRAWBAR REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

- Self-locking nut, MS21044-N8
- Self-locking nut, MS51922-49

Equipment Conditions:

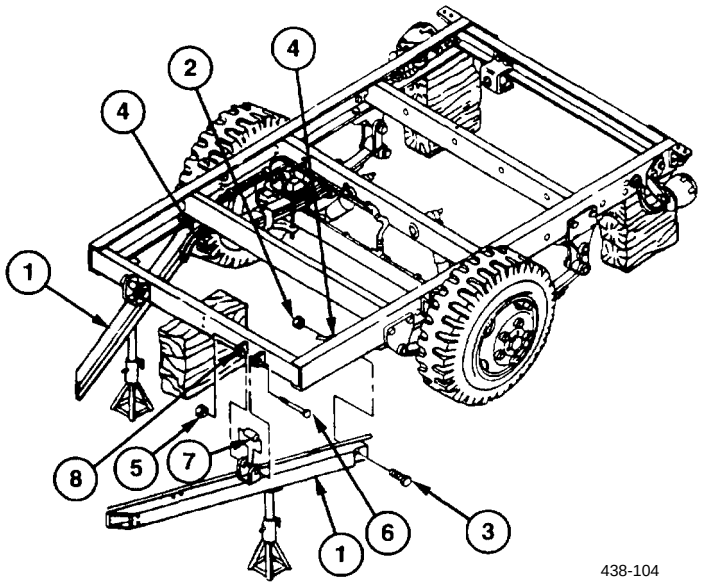
- Hydraulic brake actuator assembly removed (as applicable) (para 4-38).
- Fixed front support leg removed (as applicable) (para 4-51.1).
- Intervehicular cable removed from road-side drawbar (para 4-30).
- Chassis wiring harness removed from road-side drawbar, if removing road-side drawbar (para 4-29).
- Hydraulic brake lines removed from curb-side drawbar, if removing curb-side drawbar (para 4-40).

NOTE

The procedure for removing and installing drawbars is the same for left side and right side.

a. **REMOVAL**

1. Raise trailer and place suitable support at rear corners and at midpoint of vehicle.
2. Place jackstand under drawbar (1) being removed.
3. Remove self-locking nut (2) and capscrew (3) from drawbar (1) and front spring hanger (4). Discard self-locking nut.
4. Remove self-locking nut (5), capscrew (6), and spacer (7) from drawbar (1) and two eyebolts (8). Discard self-locking nut.



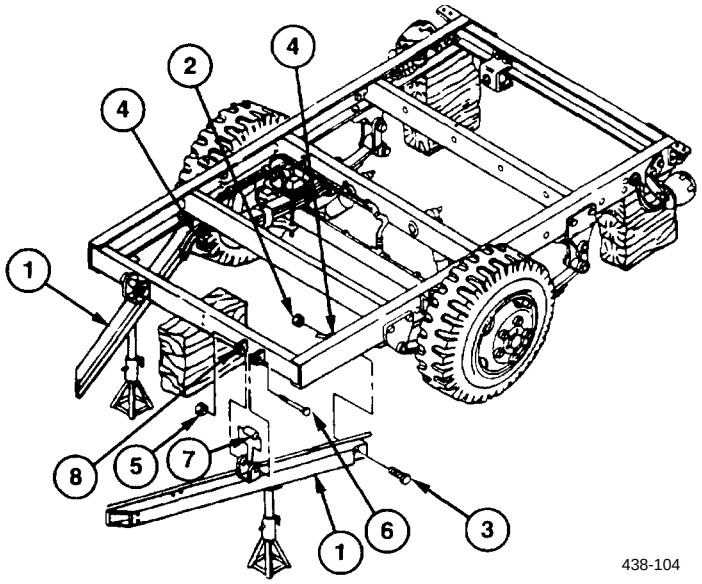
438-104

4-50. DRAWBAR REPLACEMENT (CONTINUED).

5. Pull drawbar (1) forward, away from vehicle, and remove.
6. If replacing drawbar (1), remove data plate (para 4-63).

b. **INSTALLATION**

1. If removed, install data plate (para 4-63).
2. Position drawbar (1) under frame and support with jackstand.
3. Loosely install drawbar (1) on two eyebolts (8) with spacer (7), capscrew (6), and new self-locking nut (5). Torque self-locking nut (5) between 35 and 40 lb-ft (47-54 Nm).
4. Loosely install drawbar (1) on front spring hanger (4) with capscrew (3) and new self-locking nut (2). Torque self-locking nut (2) between 140 and 150 lb-ft (190-203 Nm).
5. Remove supports from rear of vehicle.



438-104

FOLLOW-ON TASKS:

- Install hydraulic brake lines on curb-side drawbar, if installing curb-side drawbar (para 4-40).
- Install chassis wiring harness on road-side drawbar, if installing road-side drawbar (para 4-29).
- Install intervehicular cable on road-side drawbar (para 4-30).
- Install hydraulic brake actuator assembly if removed (para 4-38).
- Install fixed front support leg if removed (para 4-51.1).

4-51. ADJUSTABLE FRONT SUPPORT LEG REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:

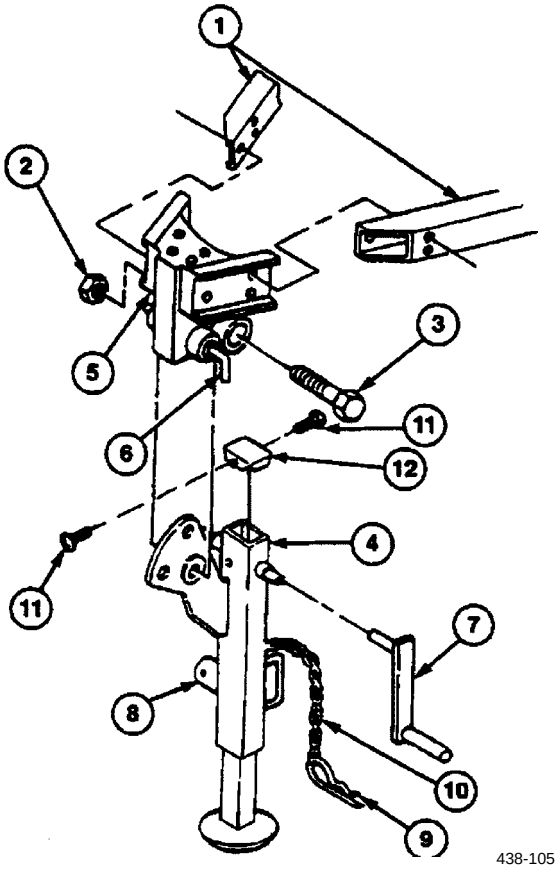
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

- Grease (Item 7, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Self-locking nut, MS51922-61

a. **REMOVAL**

1. Place jackstand under both drawbars (1) to support front of trailer.
2. Remove self-locking nut (2) and capscrew (3) from adjustable front support leg (4) and drawbar bracket assembly (5). Discard self-locking nut.
3. Pull out release lever (6) and remove adjustable front support leg (4) from drawbar bracket assembly (5).
4. Remove handcrank (7) from stowage bracket (8) by removing cotter pin (9) from stowage bracket (8).
5. If damaged, remove cotter pin (9) from chain (10). Discard cotter pin.
6. Remove two screws (11) and cap (12) from adjustable front support leg (4).



438-105

4-51. ADJUSTABLE FRONT SUPPPORT LEG REPLACEMENT (CONTINUED).

b. **CLEANING AND INSPECTION**

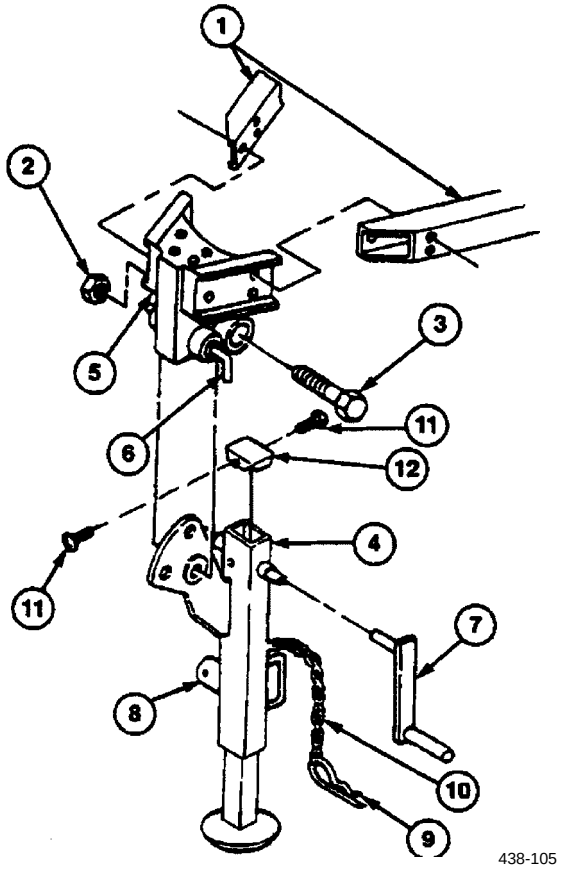
WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components with drycleaning solvent and rag and allow to dry.
2. Inspect all components for wear, cracks, broken welds, or corrosion. Replace if damaged.

c. **INSTALLATION**

1. Fill cavity of adjustable front support leg (4) with grease. Install cap (12) on adjustable front support leg (4) with two screws (11).
2. If removed, install new cotter pin (9) on chain (10).
3. Pull out release lever (6) and position adjustable front support leg (4) at drawbar bracket assembly (5). Push in release lever to hold leg.
4. Install capscrew (3) and new self-locking nut (2) on adjustable front support leg (4) and drawbar bracket assembly (5).
5. Use handcrank (7) to make sure adjustable front support leg (4) is in fully lowered position. Push in release lever (6) to lock it in position.
6. Stow handcrank (7) on stowage bracket (8) with cotter pin (9).
7. Remove jackstands from both drawbars (1).



438-105

FOLLOW-ON TASKS:

- None

4-51.1 FIXED FRONT SUPPORT LEG REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

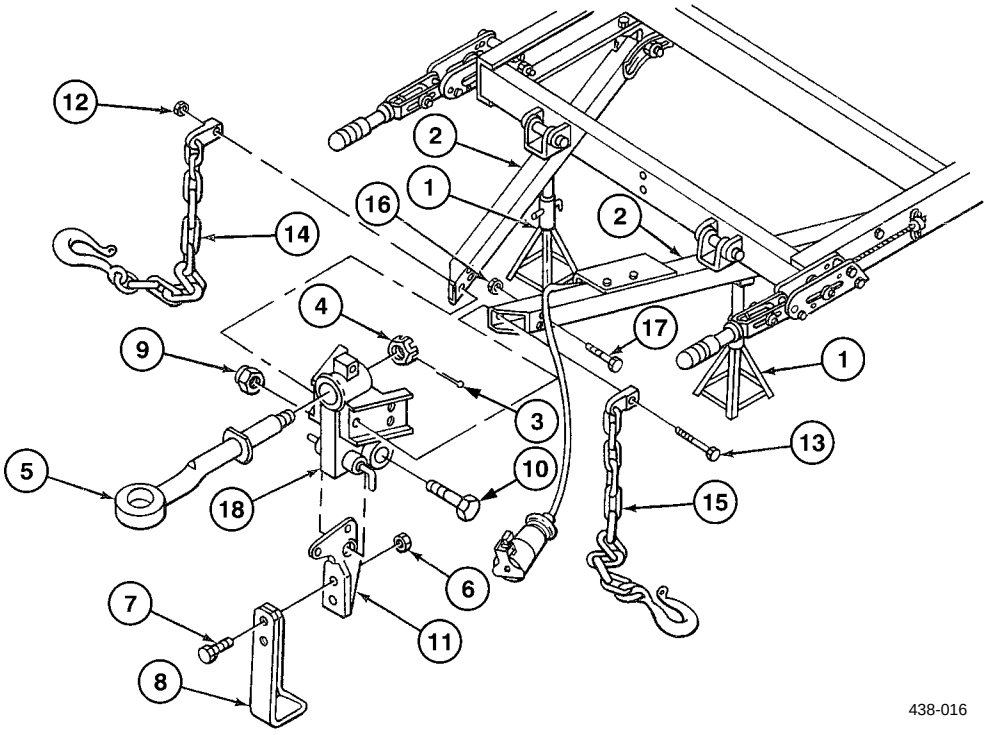
- Brush, wire (Item 2, Appendix F)
- Oil, lubricating (Item 12, Appendix F)
- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Nut, self-locking (2), MS21044N8
- Nut, self-locking (4), MS51922-25
- Nut, self-locking, MS51922-61
- Pin, cotter, MS24665-497

References:

- TM 43-0139

a. **REMOVAL**

1. Raise trailer with jack. Position jackstands (1) under both drawbars (2). Lower and remove jack.
2. Remove cotter pin (3), nut (4), and drawbar ring (5). Discard cotter pin.
3. Remove two self-locking nuts (6), capscrews (7), and support leg (8). Discard self-locking nuts.
4. Remove self-locking nut (9), bolt (10), and bracket (11). Discard self-locking nut.
5. Remove self-locking nut (12), capscrew (13), and safety chains (14 and 15). Discard self-locking nut.
6. Remove four self-locking nuts (16), capscrews (17), and drawbar bracket assembly (18). Discard self-locking nuts.



4-51.1 FIXED FRONT SUPPORT LEG REPLACEMENT (CONTINUED).

b. **CLEANING AND INSPECTION**

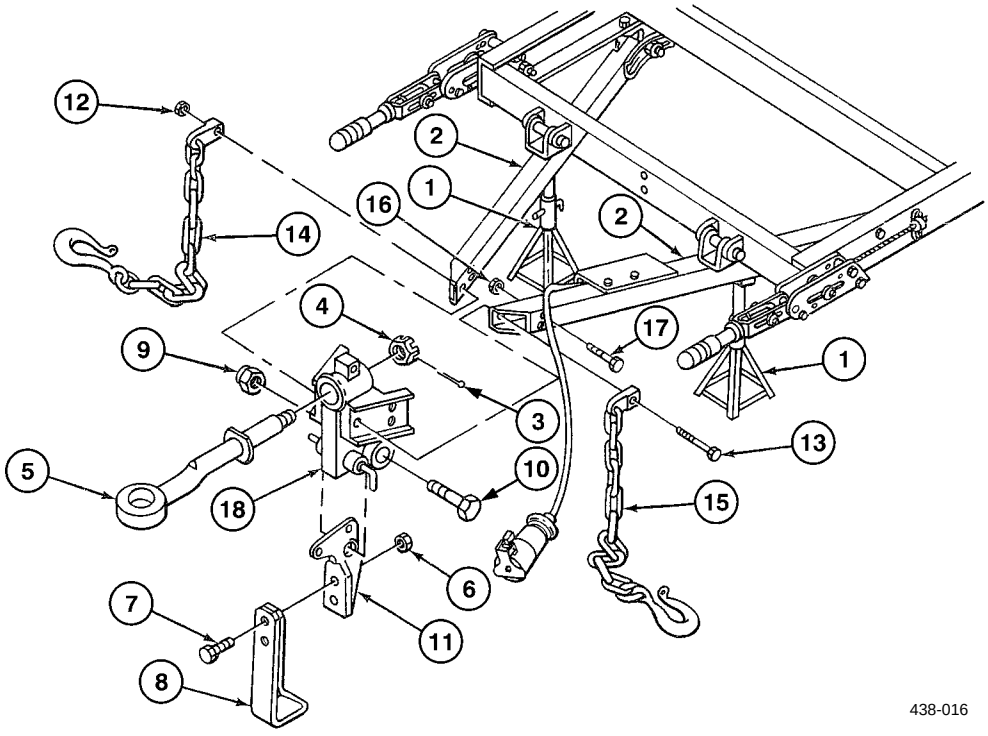
WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Use wire brush to remove all corrosion.
2. Clean all components with drycleaning solvent and rag and allow to dry.
3. Touch up paint (refer to TM 43-0139).
4. Use lubricating oil to coat mating surfaces of drawbars, drawbar ring, and drawbar bracket assembly.
5. Inspect all components for wear, cracks, broken welds, and other damage. Replace if damaged.

c. **INSTALLATION**

1. Install drawbar bracket assembly (18), four capscrews (17), and new self-locking nuts (16).
2. Install safety chains (15 and 14), capscrew (13), and new self-locking nut (12).
3. Install bracket (11), bolt (10), and new self-locking nut (9).
4. Install support leg (8), two capscrews (7), and new self-locking nuts (6).
5. Install drawbar ring (5), nut (4), and new cotter pin (3).
6. Raise trailer with jack and remove jackstands (1) from drawbars (2). Lower trailer to ground.



FOLLOW-ON TASKS:

- None.

4-52. SAFETY CHAINS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:
- Self-locking nut, MS51922-61

NOTE

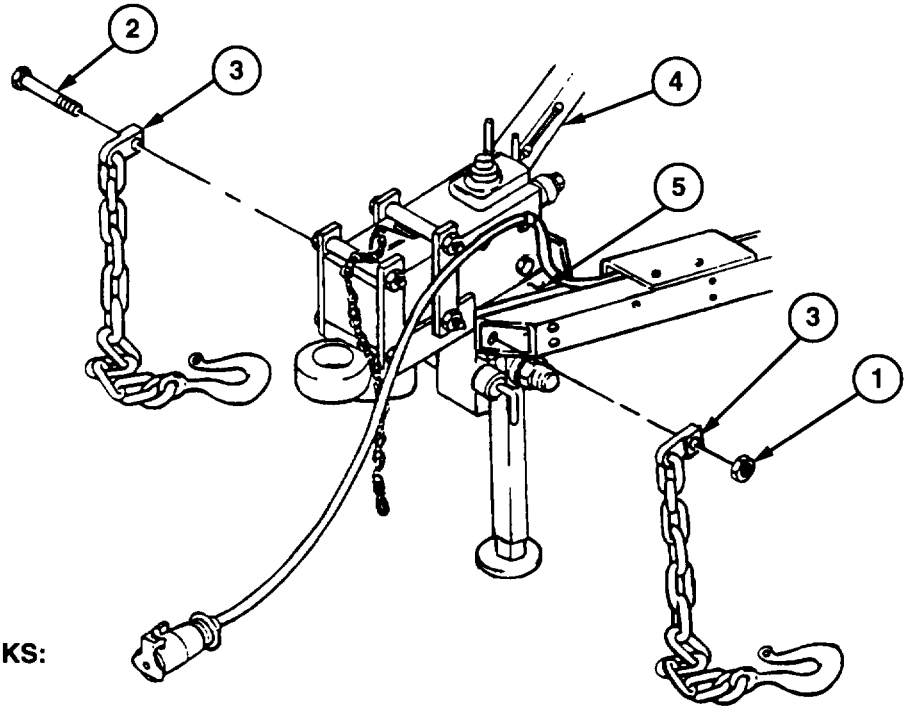
Mounting capscrew for safety chains passes through hydraulic brake actuator assembly components.

a. REMOVAL

Remove self-locking nut (1), capscrew (2), and two safety chains (3) from two drawbars (4) and drawbar bracket assembly (5). Discard self-locking nut.

b. INSTALLATION

Install two safety chains (3) on two drawbars (4) and drawbar bracket assembly (5) with capscrew (2) and new self-locking nut (1). Torque self-locking nut between 165 and 175 lb-ft (224-237 N•m).



FOLLOW-ON TASKS:
- None

Section X. SPRINGS AND SHOCK ABSORBERS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
4-53	General	4-104
4-54	Spring Assembly Replacement	4-104
4-55	Shock Absorbers Replacement	4-108

4-53. GENERAL.

This section describes and illustrates removal and installation procedures for the spring assemblies and shock absorbers.

4-54. SPRING ASSEMBLY REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:

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

Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:

•
removed (para 4-44).

•

•

Rag (Item 13, Appendix F)

Solvent, drycleaning (Item 15, Appendix F)

Cotter pin (3), MS24665-357 (M101A3, M116A2E1, and M116A3)

• Cotter pin (3), MS24665-633 (M101A2 and M116A2)
• Lubrication fitting (3), MS15001-1
• Self-locking nut (4), MS21044-N8

Equipment Conditions:

• Wheel and tire assembly
• Personnel Required: Two

WARNING

Use extreme caution when handling heavy parts. Lifting device is required when parts weigh over 50 pounds (23 kg) for a single-person lift, over 100 pounds (45 kg) for a two-person lift, and over 150 pounds (68 kg) for a three-person or more lift. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may cause serious injury or death to personnel.

a. REMOVAL

1. Place floor jack under axle (1), raise trailer, and place suitable support at rear of trailer.
2. Lower axle (1) until weight of trailer rests on support at rear of trailer. Some weight will be on floor jack.
3. Remove four self-locking nuts (2) and washers (3), two U-bolts (4), and bumper (5) from axle (1) and spring assembly (6). Discard self-locking nuts.
4. Remove screw (7) from handbrake cable clip (8) on frame (9).

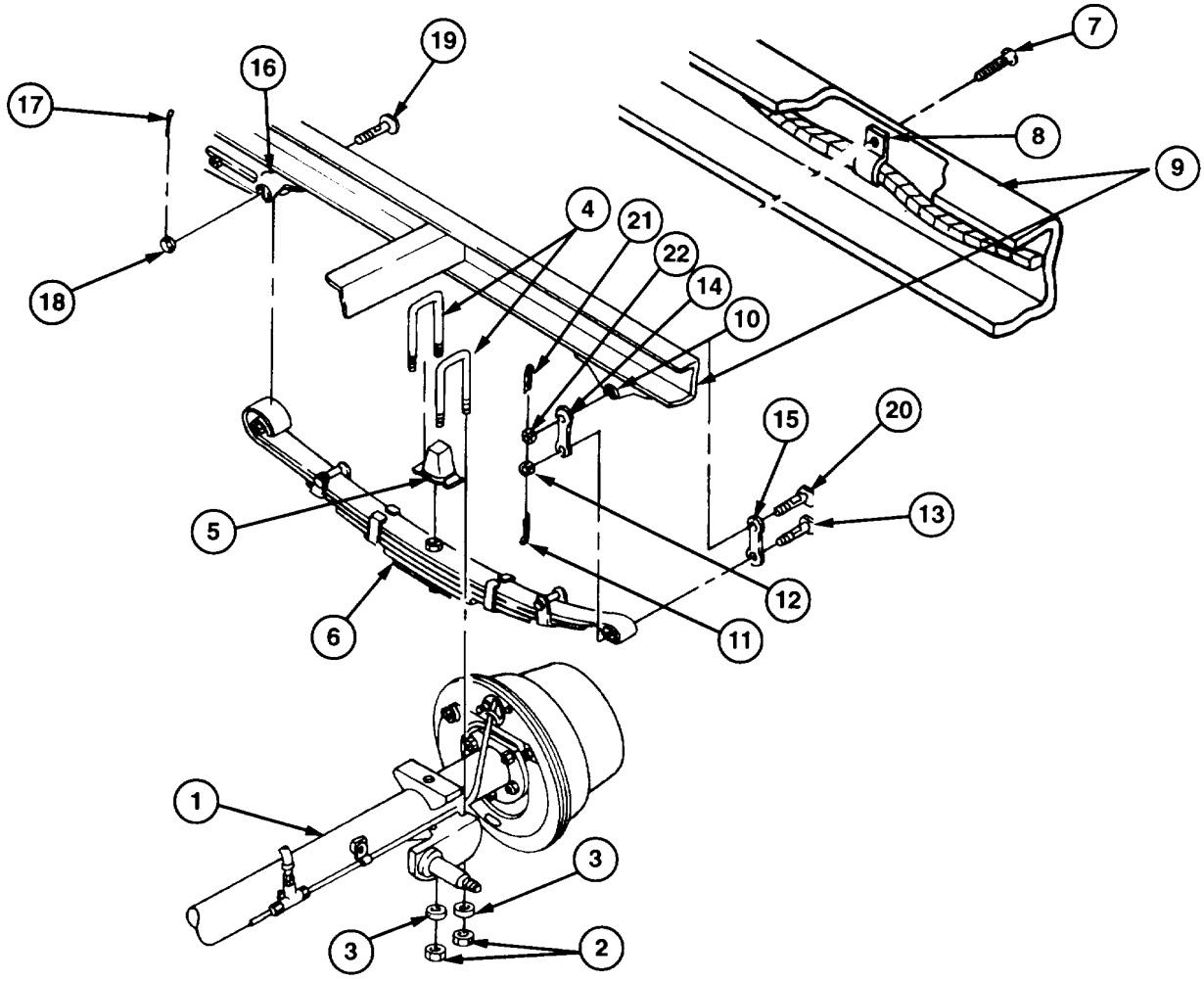
4-54. SPRING ASSEMBLY REPLACEMENT (continued).

5. Lower axle (1) approximately 4 inches (10 cm) to take weight off spring assembly (6).
6. At rear spring hanger (10), remove cotter pin (11), slotted nut (12), and shackle pin (13) from two shackles (14 and 15) and, with the aid of an assistant, remove spring assembly (6). Discard cotter pin.
7. At front spring hanger (16), remove cotter pin (17), slotted nut (18), and shackle pin (19) from front spring hanger (16) and spring assembly (6). Discard cotter pin.
8. Remove spring assembly (6) from frame (9).

NOTE

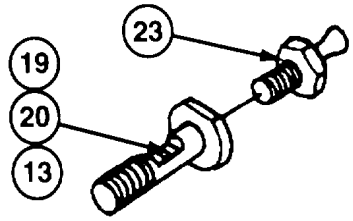
Shackle pin should fit in rear spring hanger with slight resistance.

9. At rear spring hanger (10), check play between shackle pin (20) and rear spring hanger (10). Looseness indicates a damaged shackle pin (20) inside rear spring hanger (step 11).
10. Remove cotter pin (21), slotted nut (22), shackle pin (20), and two shackles (14 and 15) from rearspring hanger (10). Discard cotter pin.



4-54. SPRING ASSEMBLY REPLACEMENT (continued).

11. Remove lubrication fitting (23) from each of three shackle pins (19, 20, and 13) and discard.



b. CLEANING AND INSPECTION

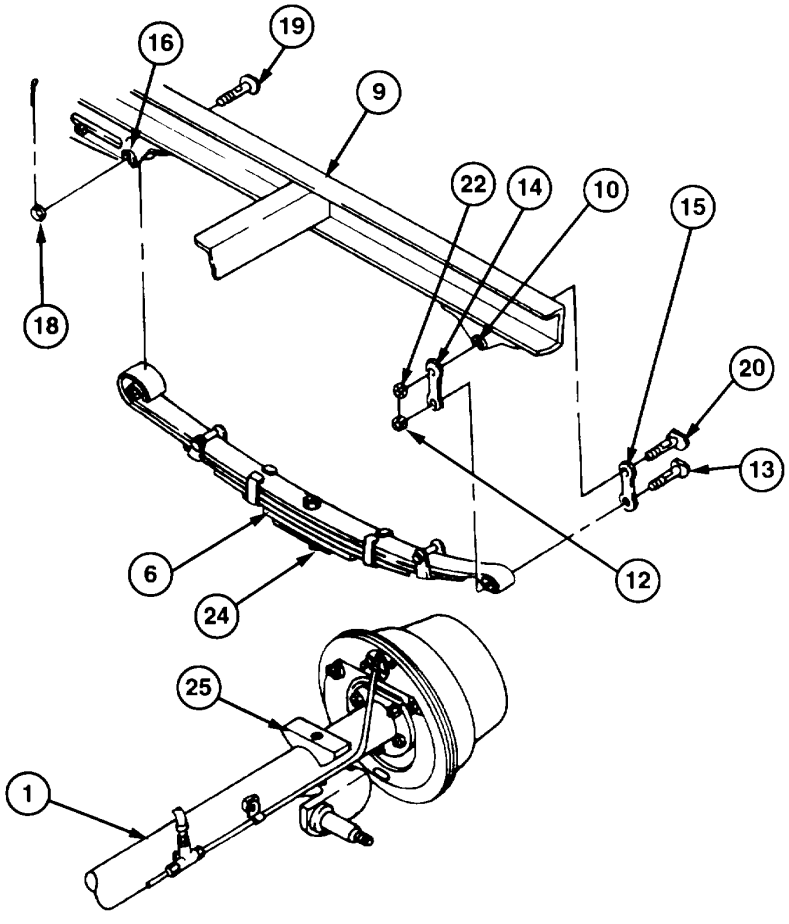
WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protec and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all removed components with drycleaning solvent and rag and allow to dry. Make sure lubrication passages in shackle pins are clear.
2. Inspect all removed components for cracks, breaks, corrosion, or damaged threads. Replace if damaged.

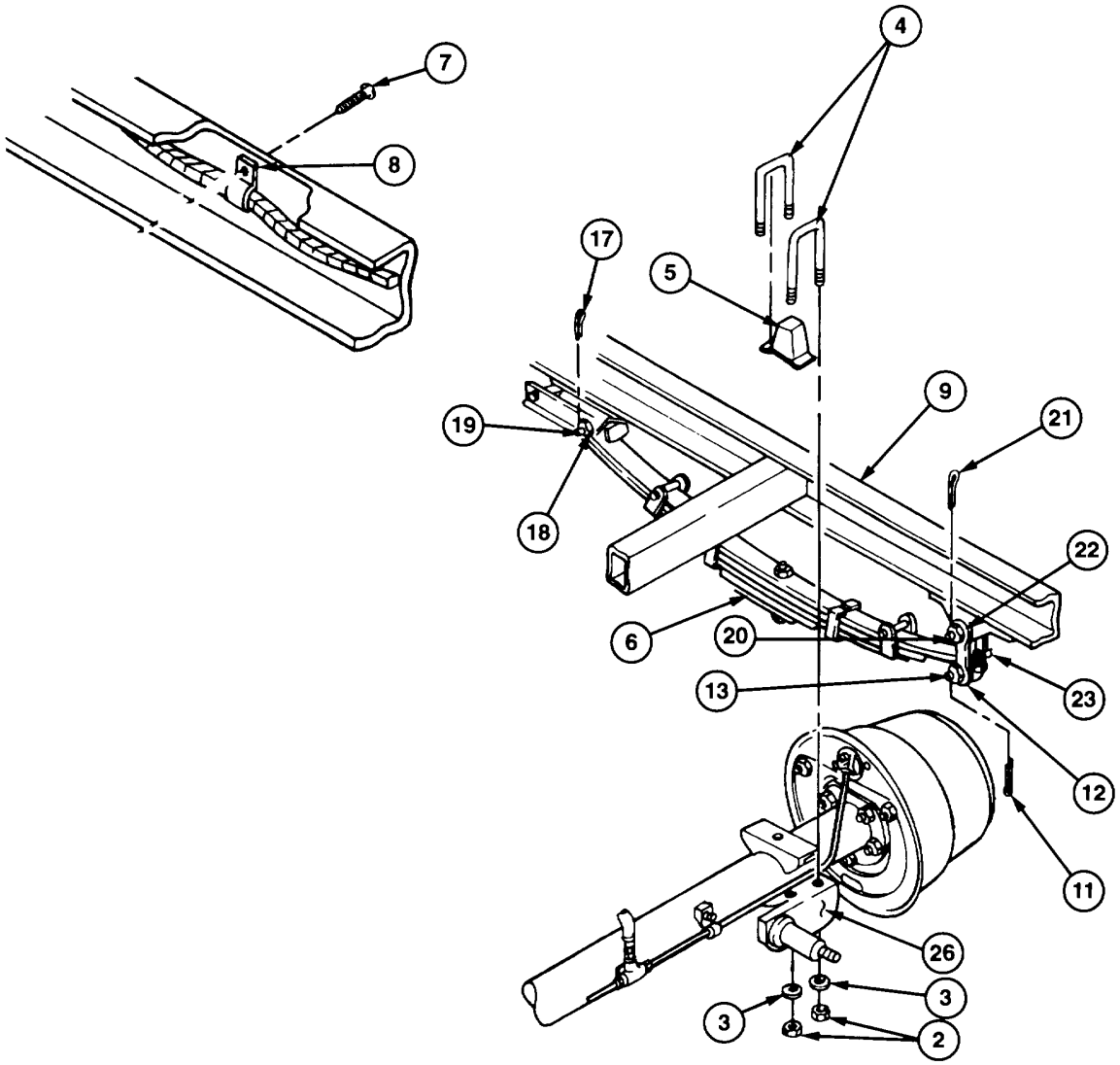
c. INSTALLATION

1. Loosely install two shackles (14 and 15) on rear spring hanger (10) with shackle pin (20) and slotted nut (22).
2. Position spring assembly (6) above axle (1).
3. At front spring hanger (16), loosely install spring assembly (6) on frame (9) with shackle pin (19) and slotted nut (18).
4. At rear spring hanger (10), loosely install spring assembly (6) on two shackles (14 and 15) with shackle pin (13) and slotted nut (12).
5. Use floor jack to raise axle (1) until it contacts underside of spring assembly 6). Engage spring assembly center bolt head (24) with hole in spring mounting pad (25).



4-54. SPRING ASSEMBLY REPLACEMENT (continued).

6. Install bumper (5) on spring assembly (6). Install two U-bolts (4) into grooves of bumper (5) and through holes in spring plate (26).
7. Install four washers (3) and new self-locking nuts (2) on two U-bolts (4).
8. Tighten slotted nuts (22, 12, and 18).
9. Align holes for three cotter pins (17, 21, and 11) with slots in slotted nuts (22, 12, and 18) and install three new cotter pins (17, 21, and 11).
10. Install new lubrication fitting (23) in each of three shackle pins (19, 20, and 13).
11. Install screw (7) into handbrake cable clip (8) on frame (9) and tighten.



FOLLOW-ON TASKS:

- Lubricate shackle pins (Appendix I).
- Install wheel and tire assembly (para 4-44).

4-55. SHOCK ABSORBERS REPLACEMENT.

This Task Covers:

a. Removal
b. Cleaning and Inspection
c. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B) and M116A2)

Materials/Parts:

Detergent (Item 5, Appendix F)

- Rag (Item 13, Appendix F)
- Solvent, drycleaning (Item 15, Appendix F)
- Self-locking nut (2), MS21044N10 (M101A2, M101A3,
- Self-locking nut (2), MS51922-53 (M116A2E1 and M116A3)

a. REMOVAL

1. Remove two self-locking nuts (1) from upper and lower mounting studs (2 and 3). Discard self-locking nuts.
2. Remove two recessed washers (4) and bushings (5), shock absorber (6), and two bushings (7) from upper and lower mounting studs (2 and 3).

b. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

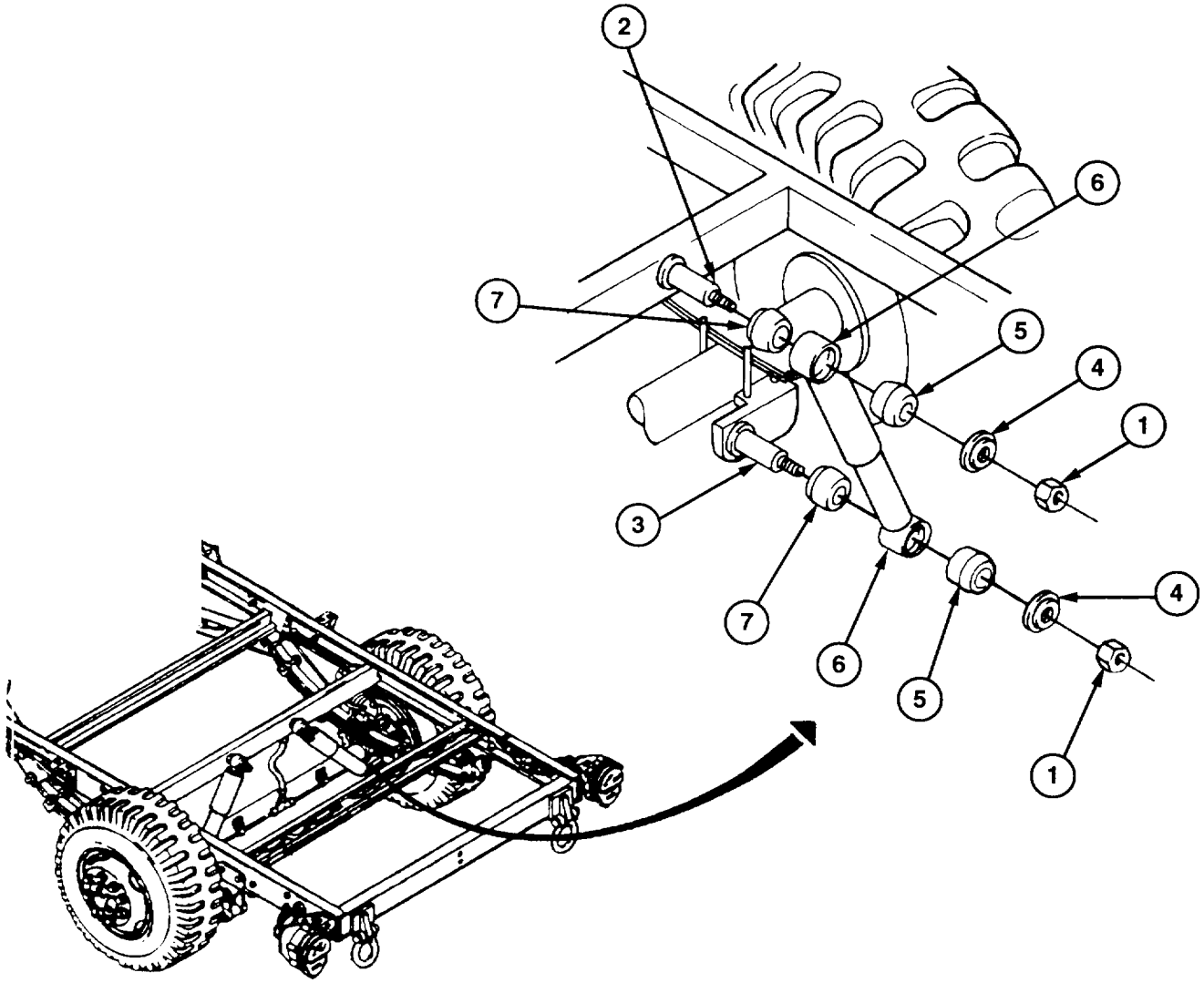
1. Clean upper and lower mounting studs and all mounting hardware except bushings with drycleaning solvent and rag and allow to dry.
2. Clean bushings with detergent and water solution.

4-55. SHOCK ABSORBERS REPLACEMENT (continued).

3. Inspect upper and lower mounting studs for cracks, bends, or bad threads. Notify Direct Support maintenance if damaged.
4. Replace all damaged components.

c. INSTALLATION

1. Install two bushings (7), shock absorber (6) with thicker dust shield end at top, and two bushings (5) on upper and lower mounting studs (2 and 3).
2. Install two recessed washers (4) and new self-locking nuts (1) on upper and lower mounting studs (2 and 3). Torque self-locking nuts between 20 and 25 Ib-ft (27-34 N•m).



FOLLOW-ON TASKS:

• None

Section XI. BODY MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
4-56	General	4-110
4-57	Cargo Body Replacement (M101A2 and M101A3)	4-110
4-58	Tailgate Replacement (M101A2 and M101A3)	4-113
4-59	U-Bolt Replacement (M101A2 and M101A3)	4-115

4-56. GENERAL.

This section describes and illustrates removal and installation procedures for the cargo body, tailgate, and U-bolts.

4-57. CARGO BODY REPLACEMENT (M101A2 AND M101A3).

This Task Covers:

a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Common No. 1 tool set (Item 2, Appendix B)

Personnel Required: Two

Materials/Parts:
- Self-locking nut (18), MS51922-17

WARNING

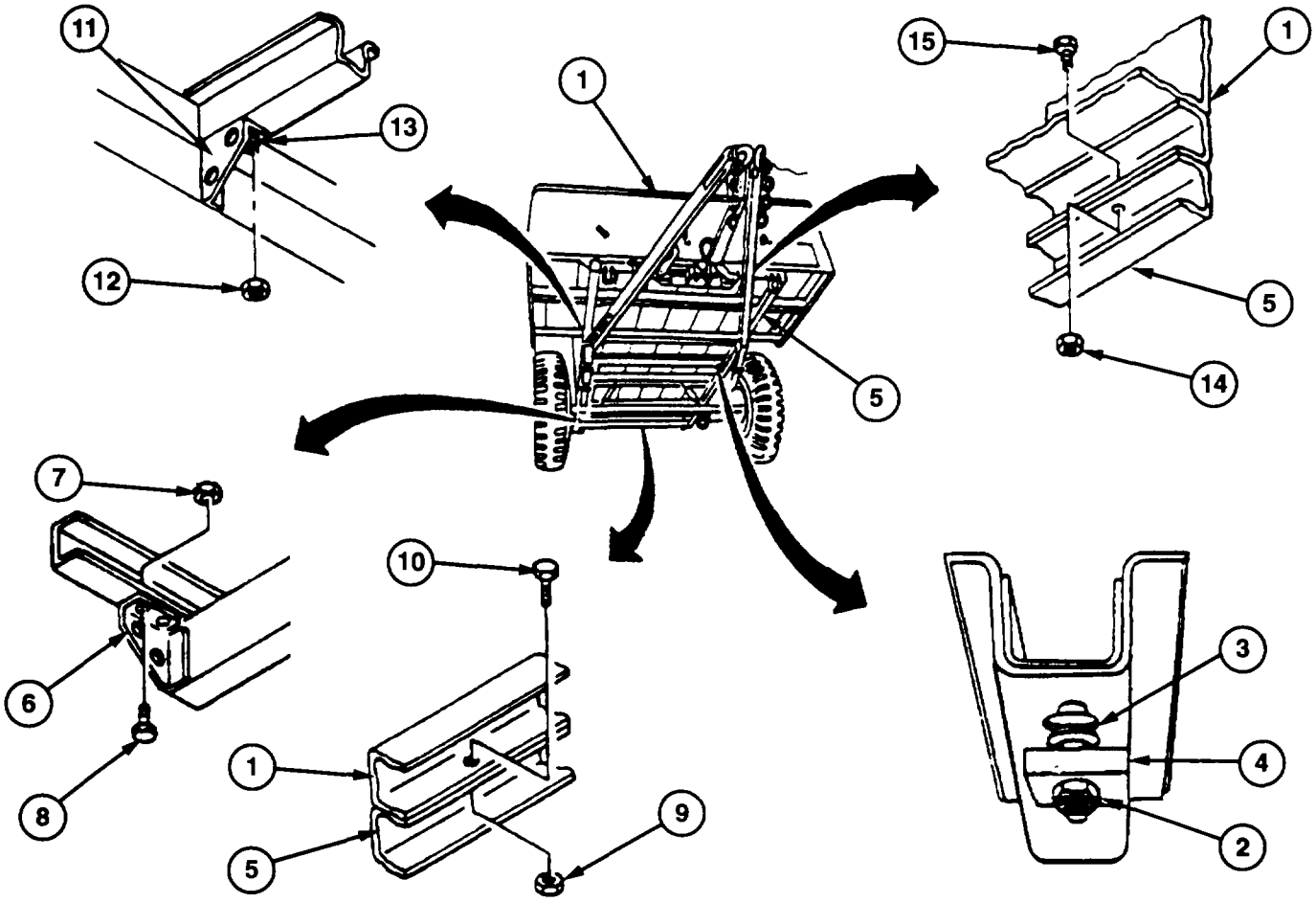
Use extreme caution when handling heavy parts. Lifting device is required when parts weigh over 50 pounds (23 kg) for a single-person lift, over 1 00 pounds (45 kg) for a two-person lift, and over 150 pounds (68 kg) for a three-person or more lift. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may cause serious injury or death to personnel.

a. REMOVAL

1. Attach a suitable lifting device to cargo body (1).

4-57. CARGO BODY REPLACEMENT (M101A2 AND M101A3) (continued).

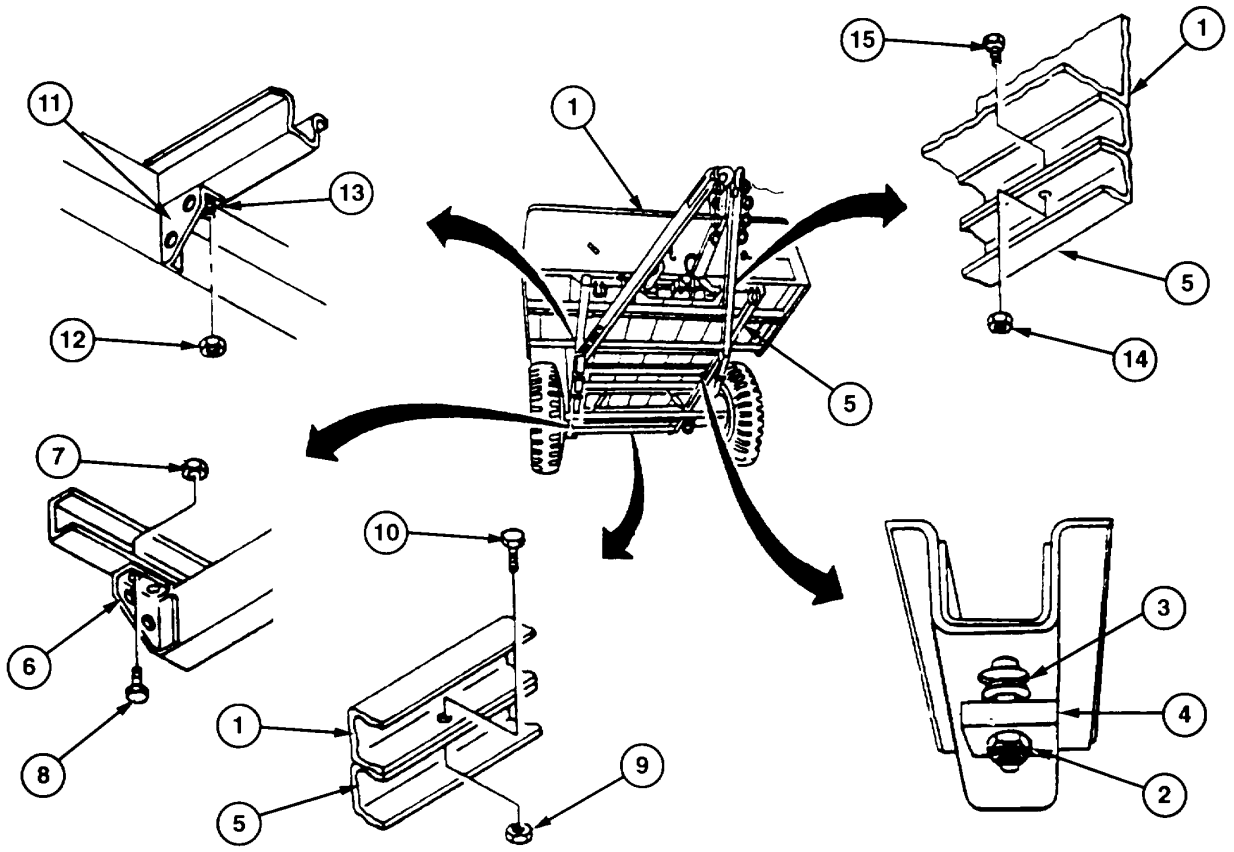
2. Remove eight self-locking nuts (2), square neck bolts (3), and clamps (4) securing cargo body (1) to frame (5). Discard self-locking nuts.
3. At each of two rear corner mounting brackets (6), remove two self-locking nuts (7) and capscrews (8) from mounting bracket (6). Discard self-locking nuts.
4. At rear chassis sill, remove self-locking nut (9) and capscrew (10) from cargo body (1) and frame (5). Discard self-locking nut.
5. At each of two midchassis mounting brackets (11), remove self-locking nut (12) and capscrew (13) from mounting brackets (11). Discard self-locking nuts.
6. At front chassis sill, remove three self-locking nuts (14) and capscrews (15) from cargo body (1) and frame (5). Discard self-locking nuts.
7. With the aid of an assistant, lift cargo body (1) from frame (5). Remove lifting device from cargo body (1).



4-57. CARGO BODY REPLACEMENT (M101A2 AND M101A3) (continued).

b. INSTALLATION

1. Attach a suitable lifting device to cargo body (1).
2. With the aid of an assistant, lift cargo body (1) onto frame (5) and align mounting holes.
3. At front chassis sill, loosely install three capscrews (15) and new self-locking nuts (14) on cargo body (1) and frame (5).
4. At each of two midchassis mounting brackets (11), loosely install capscrew (13) and new self-locking nut (12) on mounting brackets (11).
5. At rear chassis sill, loosely install capscrew (10) and new self-locking nut (9) on cargo body (1) and frame (5).
6. At each of two rear corner mounting brackets (6), loosely Install two capscrews (8) and new self-locking nuts (7) on mounting brackets (6).
7. Insert eight square neck bolts (3), clamps (4), and new self-locking nuts (2) into cargo body (1).
8. Torque 18 self-locking nuts (14, 2, 9, 7, and 12) between 26 and 31 lb-ft (35-42 N•m).
9. Remove lifting device from cargo body (1).



FOLLOW-ON TASKS:

• None

4-58. TAILGATE REPLACEMENT (M101A2 AND M101A3).

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

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

Personnel Required: Two

Materials/Parts:

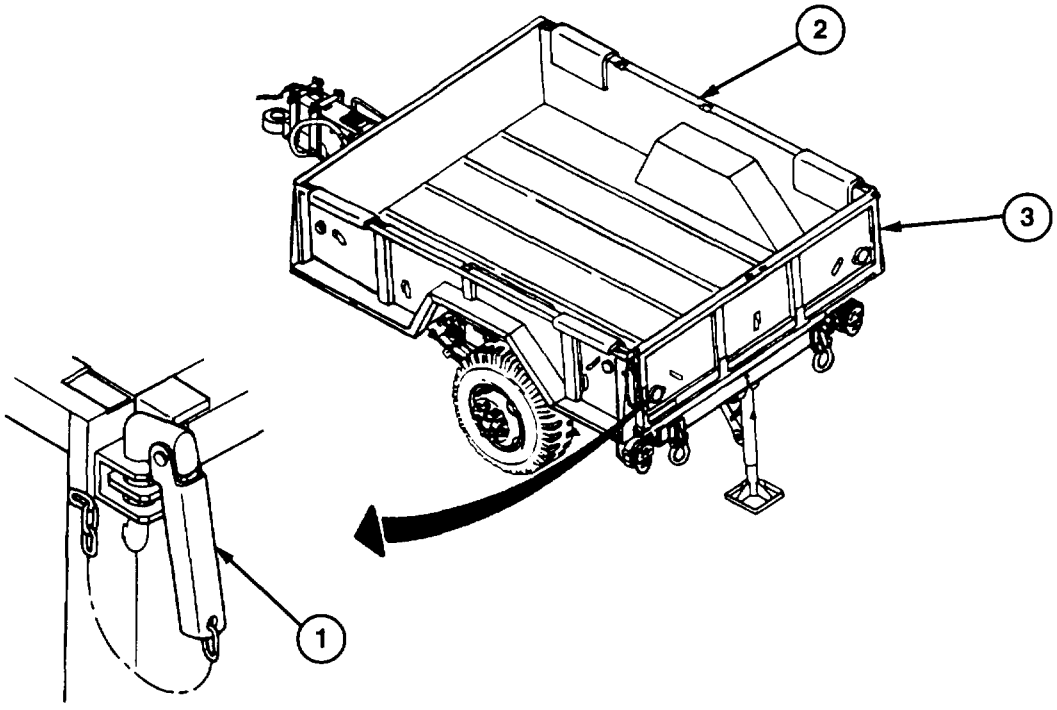
- Cotter pin (4), MS24665-353

WARNING

Use extreme caution when handling heavy parts. Lifting device is required when parts weigh over 50 pounds (23 kg) for a single-person lift, over 100 pounds (45 kg) for a two-person lift, and over 150 pounds (68 kg) for a three-person or more lift. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may cause serious injury or death to personnel.

a. REMOVAL

1. Remove two latch pins (1) from cargo body (2) and release top corners of tailgate (3) from cargo body (2).
2. Open and lower tailgate (3) and support it with wood blocks.



4-58. TAILGATE REPLACEMENT (M101A2 AND M101A3) (continued).

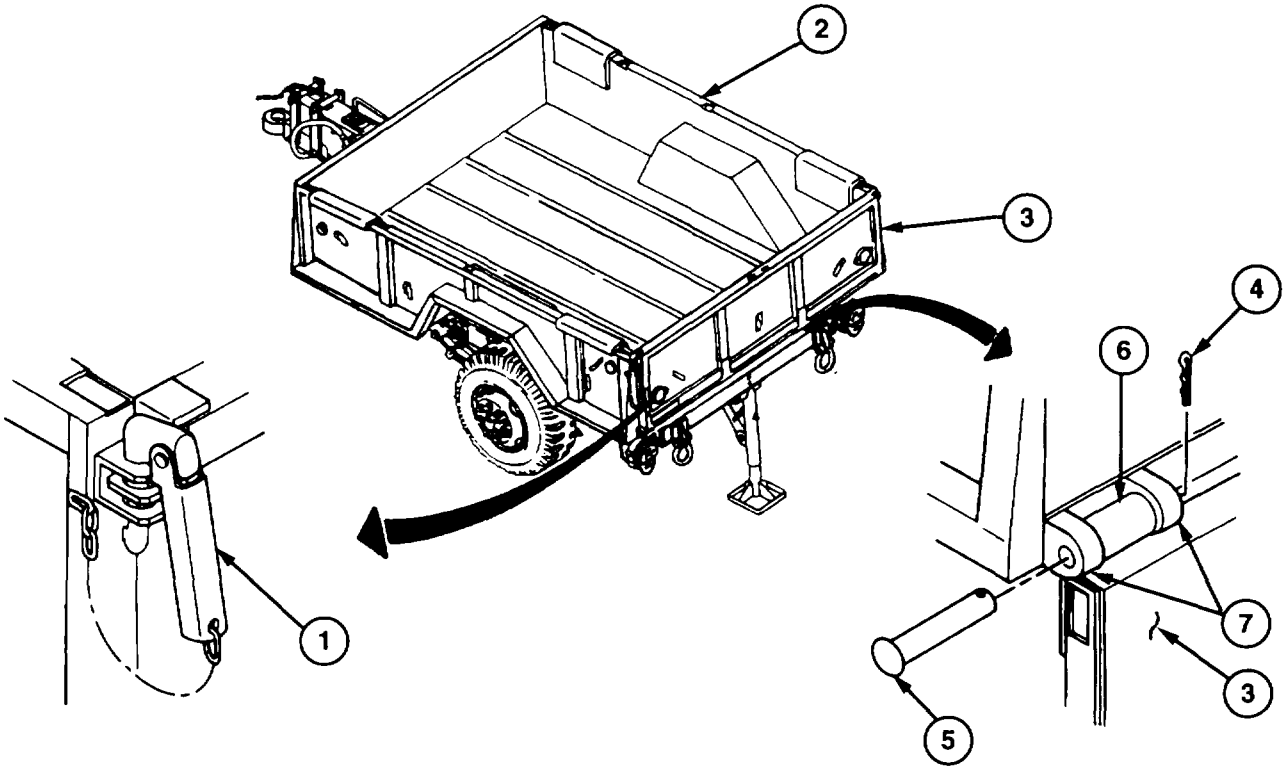
WARNING

Hold tailgate in place before removing straight headed pins. If tailgate is not properly supported it may fall, causing injury to personnel.

3. With the aid of an assistant, remove four cotter pins (4) and straight headed pins (5) from four hinges (6) and eyebolts (7). Discard cotter pins.
4. With the aid of an assistant, remove tailgate (3) from cargo body (2).

b. INSTALLATION

1. With the aid of an assistant, position tailgate (3) at cargo body (2) and support tailgate (3) with wood blocks.
2. With the aid of an assistant, align four hinges (6) with eyebolts (7) and install four straight headed pins (5) through hinges (6) with heads facing away from center of tailgate (3).
3. With the aid of an assistant, install four new cotter pins (4) in four straight headed pins (5).
4. Raise tailgate (3) and secure to top corners of cargo body (2) with two latch pins (1).



4-59. U-BOLT REPLACEMENT (M101A2 AND M101A3).

This Task Covers:

a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:
• General mechanic's tool kit (Item 1, Appendix B)

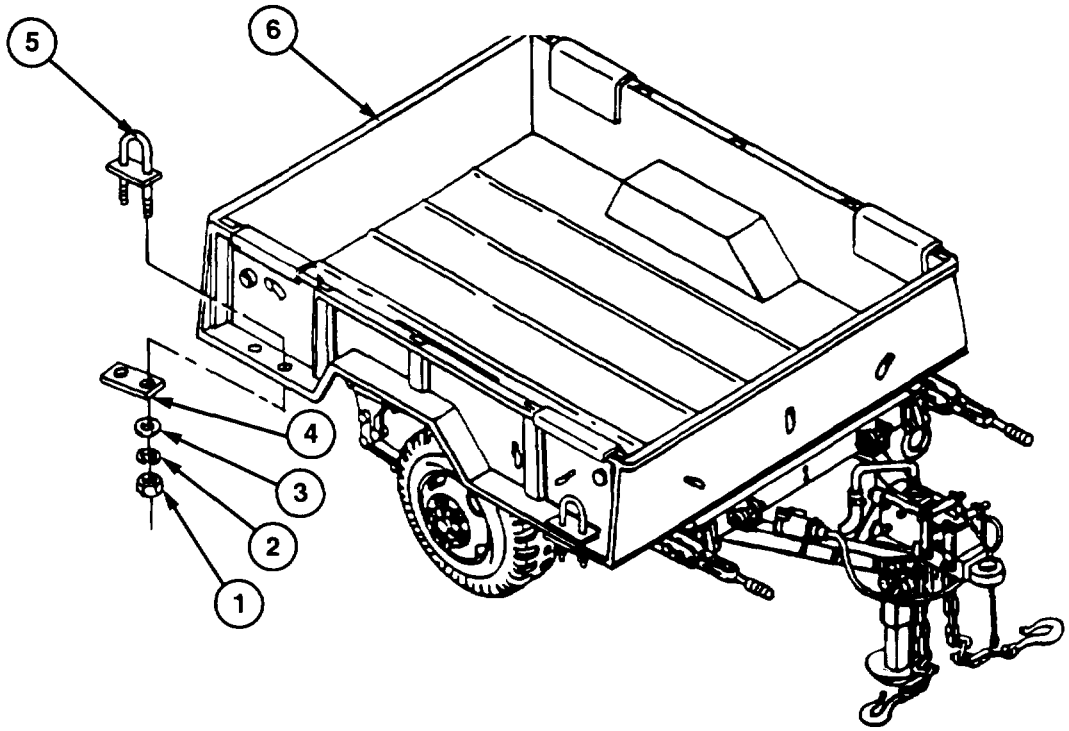
Materials/Parts:
• Lockwasher (2), MS35338-48

a. REMOVAL

Remove two nuts (1), lockwashers (2), and washers (3), plate (4), and U-bolt (5) from cargo body (6). Discard lockwashers.

b. INSTALLATION

Install U-bolt (5) on cargo body (6) with plate (4) and two washers (3), new lockwashers (2), and nuts (1).



FOLLOW-ON TASKS:
• None

Section XII. ACCESSORY ITEMS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
4-60	General	4-116
4-61	Canvas Cover Assembly Grommet and Rope Replacement (M101A2 and M101A3)	4-116
4-62	Reflector Replacement (M101A2 and M101A3)	4-117
4-63	Data Plate Replacement	4-118

4-60. GENERAL.

This section describes and illustrates removal and installation procedures for the canvas cover assembly grommet and rope, reflectors, and data plates.

4-61. CANVAS COVER ASSEMBLY GROMMET AND ROPE REPLACEMENT (M101A2 AND M101A3).

This Task Covers:

a. Removal
b. Installation

Initial Setup:

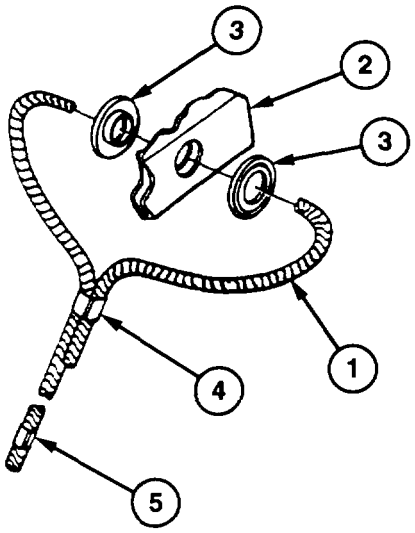
Tools/Test Equipment:
• General mechanic's tool kit (Item 1, Appendix B)

a. REMOVAL

1. Cut rope (1) from canvas cover assembly (2). Discard rope.
2. Remove two grommets (3) from canvas cover assembly (2).

b. INSTALLATION

1. Install two grommets (3) on canvas cover assembly (2).
2. Feed new rope (1) through two grommets (3) and loop securely around grommets (3). Install clip (4) on rope (1) and crimp.
3. Install end clip (5) on end of rope (1) and crimp.



FOLLOW-ON TASKS:
• None

4-62. REFLECTOR REPLACEMENT (M101A2 AND M101A3).

This Task Covers:

a. Removal b. installation

Initial Setup:

Tools/Test Equipment:
• General mechanic's tool kit (Item 1, Appendix B)

Materials/Parts:
• Lockwasher (2), MS35338-44

a. REMOVAL

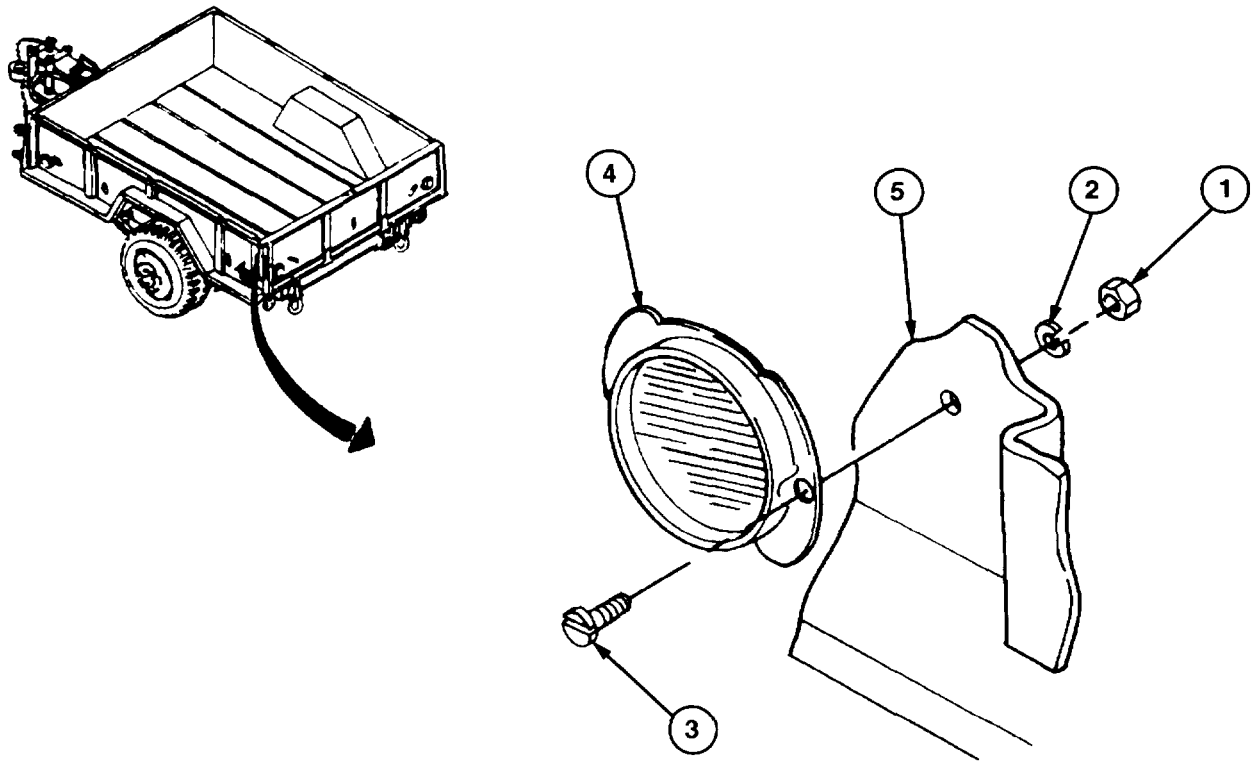
Remove two nuts (1), lockwashers (2), and screws (3) and reflector (4) from cargo body (5). Discard lockwashers.

b. INSTALLATION

NOTE

Reflector should be installed on cargo body with heads of screws on inside of cargo body.

Install reflector (4) on cargo body (5) with two screws (3), new lockwashers (2), and nuts (1).



FOLLOW-ON TASKS:
• None

4-63. DATA PLATE REPLACEMENT.

This Task Covers:

a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:
• General mechanic's tool kit (Item 1, Appendix B)
• Common No. 1 tool set (Item 2, Appendix B)

Materials/Parts:
• Drive screw (6), MS21318-35

a. REMOVAL

WARNING

Wear eye protection when driving heads off drive screws or rivets. Failure to follow this warning may result in eye injury or loss of vision.

NOTE

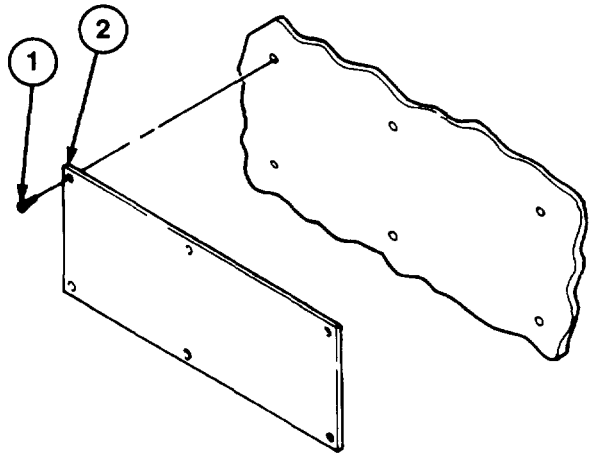
Newer-model trailers may use rivets instead of drive screws.

Drive heads off six drive screws (1) or rivets. Remove drive screws (1) or rivets and data plate (2) from cargo body or frame. Discard drive screws or rivets.

b. INSTALLATION

1. If serial number is missing, add to data plate (2).

2. Install data plate (2) on cargo body or frame with six new drive screws (1).



FOLLOW-ON TASLS"
• None

Section XIII. SPECIAL PURPOSE KITS MAINTENANCE

4-64. REAR STABILIZER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

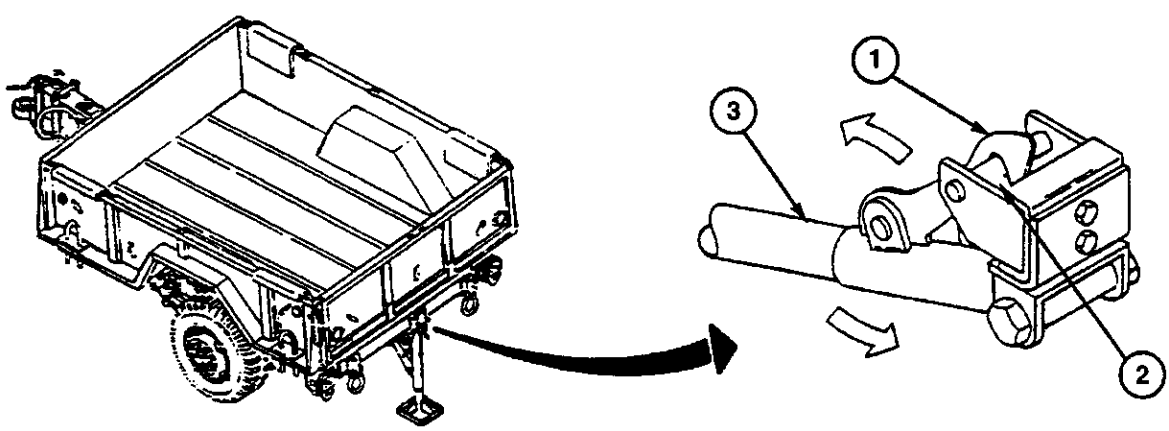
Initial Setup:

Tools/Test Equipment:
General mechanic's tool kit (Item 1, Appendix B)

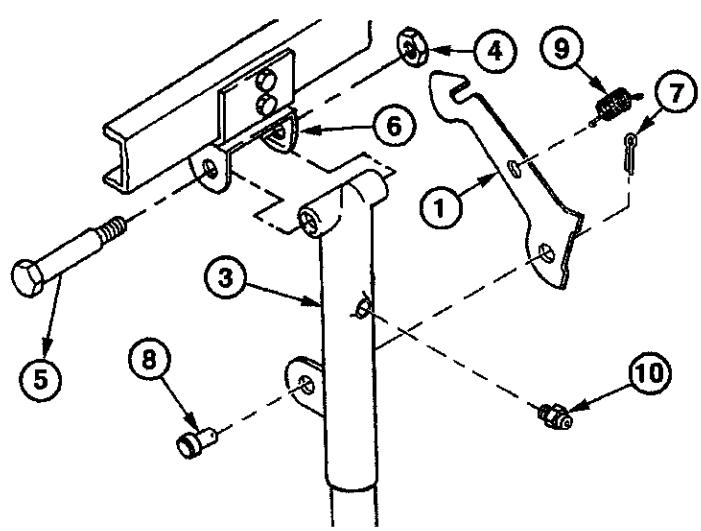
Materials/Parts:
- Lockwasher (4), 20-14-5
- Self-locking nut, MS51922-53
- Cotter pin, MS24665-353

a. REMOVAL

1. Release latch hook (1) from up-latch pin (2). Lower rear stabilizer (3) to the ground.



2. Remove self-locking nut (4), shoulder bolt (5), and rear stabilizer (3) from bracket (6). Discard self-locking nut.
3. Remove cotter pin (7), straight pin (8), and latch hook (1) from rear stabilizer (3). Discard cotter pin.
4. Remove spring (9) and latch hook (1) from rear stabilizer (3).
5. Remove lubrication fitting (10) from rear stabilizer (3).

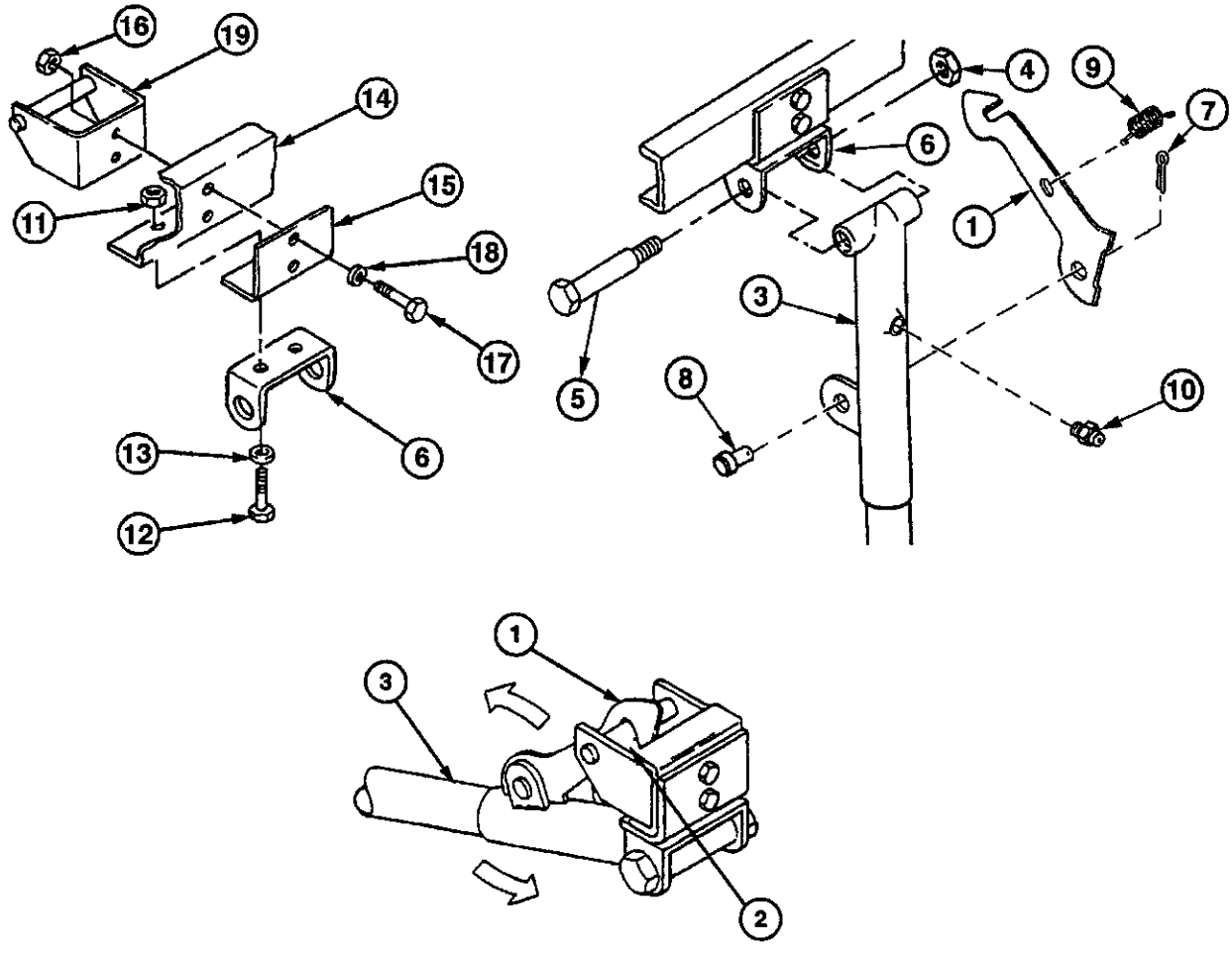


4-64. REAR STABILIZER REPLACEMENT (continued).

6. Remove two nuts (11), capscrews (12), lockwashers (13), and bracket (6) from frame (14) and bracket (15). Discard lockwashers.
7. Remove two nuts (16), capscrews (17), lockwashers (18), and brackets (15) and (19) from frame (14). Discard lockwashers.

b. INSTALLATION

1. Install brackets (15) and (19) on frame (14) with two capscrews (17), new lockwashers (18), and nuts (16).
2. Install bracket (6) on frame (14) and bracket (15) with two capscrews (12), new lockwashers (13), and nuts (11).
3. Install lubrication fitting (10) on rear stabilizer (3).
4. Install spring (9) and latch hook (1) on rear stabilizer (3).
5. Install latch hook (1) on rear stabilizer (3) with straight pin (8) and new cotter pin (7).
6. Install rear stabilizer (3) on bracket (6) with shoulder bolt (5) and new self-locking nut (4).
7. Swing rear stabilizer (3) up until latch hook (1) hooks onto up-latch pin (2).



FOLLOW-ON TASK:
Lubricate rear stabilizer (Appendix I).

Section XIV. PAINTING AND IDENTIFICATION MARKING

Paragraph Number	Paragraph Title	Page Number
4-65	General	4-121
4-66	Painting	4-121
4-67	Stenciling	4-121

4-65. GENERAL.

This section gives instruction references for painting and stenciling the M101 and M116 Series trailers.

4-66. PAINTING.

a. Instructions for the preparation of materiel for painting, methods of painting, and materials to be used are contained in TM 43-0139.

b. Instructions for camouflage painting are contained in FM 20-3 and TB 43-0209.

4-67. STENCILING.

Refer to TB 43-0209 for instructions on the application of stencils.

Section XV. PREPARATION FOR STORAGE AND SHIPMENT

Paragraph Number	Paragraph Title	Page Number
4-68	General	4-122
4-69	Definition of Administrative Storage	4-122
4-70	Preparation of Equipment for Administrative Storage	4-123
4-71	Care of Equipment in Administrative Storage	4-124
Table 4-2	Exercise Schedule	4-125
4-72	Procedures for Common Components and Miscellaneous Items	4-125
4-73	Removal of Equipment from Administrative Storage	4-126
4-74	Preparation of Equipment for Shipment	4-126

4-68. GENERAL.

a. This section contains requirements and procedures for the administrative storage of equipment that is issued to and in use by Army activities worldwide.

b. The requirements specified herein are necessary to maintain equipment in administrative storage in such a way as to achieve maximum readiness condition.

c. Equipment that is placed in administrative storage should be capable of being readied to perform its mission within a 24-hour period, or as otherwise prescribed by the approving authority. Before equipment is placed in administrative storage, current PMCS procedures should be completed and deficiencies corrected.

d. Report equipment in administrative storage as prescribed for all reportable equipment (refer to AR 200-1).

e. Perform inspections, maintenance services, and lubrication as specified herein.

f. Records and reports to be maintained for equipment in administrative storage are those prescribed by DA Pam 750-8 for equipment in use.

g. A 10 percent variance is acceptable on time, running hours, or mileage used to determine the required maintenance actions.

h. Accomplishment of applicable PMCS, as mentioned throughout this section, will be on a semiannual basis.

4-69. DEFINITION OF ADMINISTRATIVE STORAGE.

The placement of equipment in administrative storage can be for short periods of time when a shortage of maintenance effort exists. Items should be ready for use within the time factors determined by the directing authority. During the storage period, appropriate maintenance records will be kept.

4-70. PREPARATION OF EQUIPMENT FOR ADMINISTRATIVE STORAGE.

Storage Site

a. Select the best available site for administrative storage. Separate stored equipment from equipment in use. Conspicuously mark the area "Administrative Storage."

b. Covered space is preferred.

c. Open sites should be improved hardstand, if available. Unimproved sites should be firm, well drained, and free of excessive vegetation.

Storage Plan

a. Store equipment so as to provide maximum protection from the elements and access for inspection, maintenance, and exercising. Anticipate removal or deployment problems and take suitable precautions.

b. Take into consideration environmental conditions, such as extreme heat and cold; high humidity; blowing sand, dust, or loose debris; soft ground; mud; heavy snows; or any combination thereof. Take adequate precautions in regard to environmental conditions.

c. Establish a fire plan and provide for adequate fire-fighting equipment and personnel.

NOTE

Steps d and e apply to the M101A2 and M101A3 trailers.

d. Remove, fold, and stow the canvas cover assembly (para 2-16).

e. Remove and stow the rack and tailgate assembly (para 2-16).

Maintenance Services and Inspection

a. Prior to storage, perform the next scheduled Unit PMCS.

b. Inspect and approve the equipment prior to storage. Do not place in storage equipment that is not mission capable.

Auxiliary Equipment and Basic Issue Items

a. Process auxiliary equipment and basic issue items (Bll) simultaneously with the major item to which they are assigned.

b. If possible, store auxiliary equipment and BII with the major item.

c. If stored apart from the major item, mark auxiliary equipment and BII with tags indicating the major item and its registration or serial number and location, and store in protective-type enclosures. In addition, place a tag or list indicating the location of the removed items in a conspicuous place on the major item.

Correction of Shortcomings and Deficiencies

Correct all shortcomings and deficiencies prior to storage, or obtain a deferment from the approving authority.

4-70. PREPARATION OF EQUIPMENT FOR ADMINISTRATIVE STORAGE.

Lubrication

Lubricate equipment in accordance with instructions in Appendix I.

General Cleaning, Painting, and Preservation

CAUTION

Do not direct water or steam, under pressure, against unsealed electrical systems or any exterior opening. Failure to follow this caution may result in damage to equipment.

a. Clean dirt, grease, and other contaminants from the equipment, but do not use vapor degreasing.

b. Remove rust and damaged paint by scraping, wire brushing, sanding, or buffing. Sand to a smooth finish and spot-paint as necessary (refer to TB 43-0209).

c. After cleaning and drying, immediately coat unpainted metal surfaces with oil or grease, as appropriate (Appendix I). For information on the proper preservation of M101A2 and M101A3 trailers, refer to SB 740-98-1.

4-71. CARE OF EQUIPMENT IN ADMINISTRATIVE STORAGE.

Maintenance Services

After equipment has been placed in administrative storage, inspect, service, and exercise as specified in this paragraph.

Inspection

Inspection will usually be visual and must consist of at least a walk-around examination of all equipment to detect any deficiencies. Inspect equipment in open storage weekly, and inspect equipment in covered storage monthly. Inspect all equipment immediately after any severe storm or environmental change. The following are examples of things to look for during a visual inspection:

a. Low or flat tires.

b. Condition of preservatives, seals, and wraps.

c. Corrosion or other deterioration.

d. Missing or damaged parts.

e. Water in compartments.

f. Any other readily recognizable shortcomings or deficiencies.

Repair During Administrative Storage

Keep equipment in an optimum state of readiness. Accomplish the required services and repairs as quickly as possible. Whenever possible, perform all maintenance on-site.

4-71. CARE OF EQUIPMENT IN ADMINISTRATIVE STORAGE (continued).

Exercising

Exercise equipment in accordance with Table 4-2 and the following instructions:

a. Depreserve equipment by removing only that material restricting exercise. Remove blocks and perform all before-operation checks. Couple trailer to towing vehicle and drive for at least 25 miles (40 km). Make several right and left 90-degree turns. Make several hard braking stops without skidding. During exercise when it is convenient and safe, operate all other functional components and perform all during- and after-operation checks.

b. Scheduled services will include inspection per the "Inspection" paragraph (p. 4-124) and will be conducted in accordance with Table 4-2. Lubricate in accordance with the instructions in Appendix I.

c. Immediately take action to correct shortcomings and deficiencies noted. Record inspection and exercise results on DA Form 2404. Record and report all maintenance actions on DA Form 2407. After exercising, restore the preservation to the original condition. Replenish lubricants used during exercising and note the amount on DA Form 2408.

Table 4-2. Exercise Schedule

Weeks	2	4	6	8	10	12	14	16	18	20	22	24
PMCS						X						X
Scheduled Services		X		X		X		X		X		
Major Exercises												X

Rotation

Rotate items in accordance with any rotational plan that will keep the equipment in operational condition and reduce the maintenance effort.

4-72. PROCEDURES FOR COMMON COMPONENTS AND MISCELLANEOUS ITEMS.

Tires

Visually inspect tires during each walk-around inspection. This inspection includes checking tires with a tire gage. Inflate, repair, or replace as necessary those tires found to be low, damaged, or excessively worn. Mark inflated and repaired tires with a crayon for checking at the next inspection.

Seals

Seals may develop leaks during storage or shortly thereafter. If leaking persists, refer to the applicable maintenance section in this manual for corrective maintenance procedures.

4-73. REMOVAL OF EQUIPMENT FROM ADMINISTRATIVE STORAGE.

Activation

Restore equipment to normal operating condition in accordance with the instructions contained in Chapter 4, Section II.

Servicing

Resume the maintenance service schedule in effect at the commencement of storage, or service the equipment before the scheduled dates in order to produce a staggered workload.

4-74. PREPARATION OF EQUIPMENT FOR SHIPMENT.

a. Refer to FM 55-21, TM 55-601, and TM 743-200-1 for additional instructions on processing, storage, and shipment of materiel.

b. Trailers shipped on flatcars require wheel blocking in accordance with the Association of American Railroads' rules governing the loading of commodities on "open top" cars.

c. Trailers that have been removed from storage for shipment do not have to be reprocessed if they will reach their destination within the administrative storage period. Reprocess only if inspection reveals any corrosion or if in-transit weather conditions make it necessary.

d. When a trailer is received and has already been processed for domestic shipment, as indicated on DD Form 1397, the trailer does not have to be reprocessed for storage unless corrosion and deterioration are found during the inspection upon receipt. List, on SF Form 364, all discrepancies found because of poor preservation, packaging, packing, marking, handling, loading, storage, or excessive preservation. Repairs that cannot be handled by the receiving unit must have tags attached listing needed repairs. A report of these conditions will be submitted by the Unit commander for action by an ordnance maintenance Unit.

CHAPTER 5
DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE

Section I. AXLE MAINTENANCE

5-1. AXLE REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:
- General mechanic's tool kit (Item 1, Appendix B)
- Field maintenance tool set (Item 5, Appendix B)

Materials/Parts:
- Self-locking nut (8), MS21044-N8

Equipment Conditions:
- Shock absorbers removed (para 4-54).
- Hydraulic brake lines removed from axle (para 4-39).
- Service brakes removed (para 4-34).

Personnel Required: Two

WARNING

Use extreme caution when handling heavy parts. Lifting device is required when parts weigh over 50 pounds (23 kg) for a single-person lift, over 100 pounds (45 kg) for a two-person lift, and over 150 pounds (68 kg) for a three-person or more lift. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in serious injury or death to personnel.

NOTE

Replacement of axle is the same for all models. This procedure shows replacement of the M116A2 axle.

a. REMOVAL

1. Block and support frame securely, front and rear.

5-1. AXLE REPLACEMENT (continued).

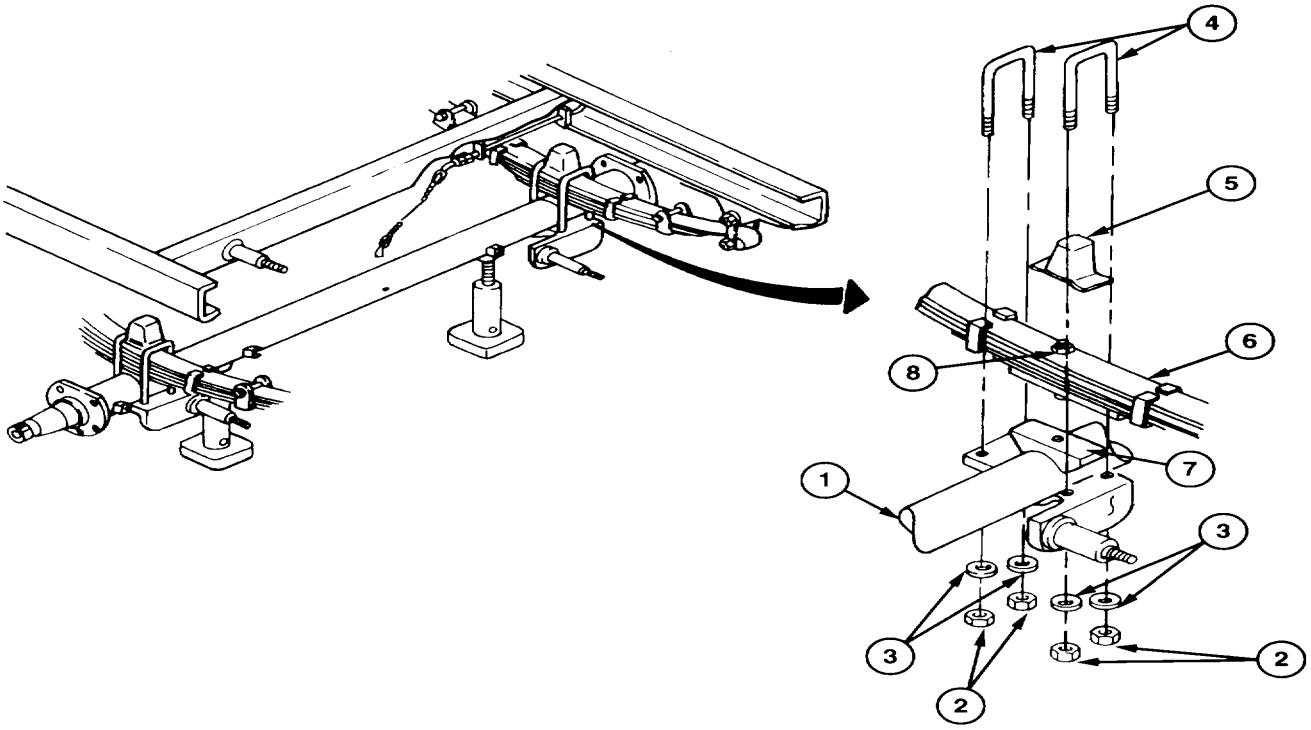
2. Place floor jack under midpoint of axle (1) to provide a balanced support.

3. At each end of axle (1), remove four self-locking nuts (2) and washers (3), two U-bolts (4), and bumper (5) from spring assembly (6) and spring plate (7). Discard self-locking nuts.

4. Remove axle (1) from under trailer and from floor jack.

b. INSTALLATION

1. Place midpoint of axle (1) on floor jack and position axle (1) under trailer.



2. Raise axle (1) until it contacts underside of spring assembly (6). At each end of axle (1), engage spring assembly center bolt head (8) with hole in pad on bumper (5).

3. Install bumper (5) on each spring assembly (6).

4. At each end of axle (1), install two U-bolts (4) into grooves of bumper (5) and through holes in spring plate (7).

5. At each end of axle (1), install four washers (3) and new self-locking nuts (2) on two U-bolts (4).

6. Remove floor jack from under axle (1).

FOLLOW-ON TASKS:
- Install service brakes (para 4-34).
- Install hydraulic brake lines on axle (para 4-39).
- Install shock absorbers (para 4-54).

Section III. FRAME ASSEMBLY MAINTENANCE

5-5. FRAME ASSEMBLY REPAIR.

Refer to TB 9-2300-247-40 for instructions on frame assembly repair.

 All data on pages 5-3 through 5-5 has been deleted.

Section IV. ACCESSORY ITEMS MAINTENANCE

5-6. CANVAS COVER ASSEMBLY REPAIR (M101A2 AND M101A3).

Refer to FM 10-16 for instructions on canvas cover assembly repair.

APPENDIX A
REFERENCES

Paragraph Number	Paragraph Title	Page Number
A-1	General	A-1
A-2	Forms	A-1
A-3	Field Manuals	A-1
A-4	Technical Manuals	A-2
A-5	Pamphlets and Bulletins	A-2
A-6	Other Publications	A-3

A-1. GENERAL.

This appendix lists all forms, manuals, pamphlets, bulletins, and other publications that are referenced in this manual and/or apply to the operation and maintenance of the M101 and M116 Series trailers. DA Pam 25-30, *Consolidated Index of Army Publications and Blank Forms*, should be consulted frequently for the latest changes or revisions and for new publications relevant to material covered in this technical manual.

A-2. FORMS.

Refer to DA Pam 750-8, *The Army Maintenance Management System (TAMMS)* for instructions on the use of maintenance forms.

Recommended Changes to Publications and Blank Forms ..... DA Form 2028
Recommended Changes to Equipment Technical Publications ..... DA Form 2028-2
Organization Control Record for Equipment ..... DA Form 2401
Equipment Inspection and Maintenance Worksheet ..... DA Form 2404
Maintenance Request ..... DA Form 2407
Equipment Log Assembly (Records) ..... DA Form 2408
Equipment Control Record ..... DA Form 2408-9
Serial/Registration Number Record ..... DA Form 3328-1
Preventive Maintenance Schedule and Record ..... DD Form 314
Processing and Deprocessing Record for Shipment, Storage and Issue of Vehicles and Spare Engines ..... DD Form 1397
Report of Discrepancy (ROD) ..... SF Form 364
Product Quality Deficiency Report ..... SF Form 368

A-3. FIELD MANUALS.

NBC Contamination Avoidance ..... FM 3-3
NBC Protection ..... FM 3-4
NBC Decontamination ..... FM 3-5
Operation and Maintenance of Ordnance Materiel in Cold Weather (O Degrees F to Minus 65 Degrees F) ..... FM 9-207

A-3. FIELD MANUALS (continued).

General Fabric Repair ..... FM 10-16
Camouflage ..... FM 20-3
First Aid for Soldiers ..... FM 4-25.11
Manual for the Wheeled Vehicle Driver ..... FM 21-305
Basic Cold Weather Manual ..... FM 31-70
Northern Operations ..... FM 31-71
Railway Operating and Safety Rules ..... FM 55-21
Army Motor Transport Units and Operations ..... FM 55-30
Desert Operations (How To Fight) ..... FM 90-3
Mountain Operations ..... FM 90-6

A-4. TECHNICAL MANUALS.

Inspection, Care and Maintenance of Antifriction Bearings ..... TM 9-214
Operator's Manual for Welding Theory and Application ..... TM 9-237
Deepwater Fording of Ordnance Materiel ..... TM 9-238
Materials Used for Cleaning, Preserving, Abrading and Cementing
Ordnance Materiel and Related Materials, Including Chemicals ..... TM 9-247
Operator's, Unit, Direct Support and General Support Maintenance Manual
for Care, Maintenance Repair and Inspection of Pneumatic
Tires and Inner Tubes ..... TM 9-2610-200-14
Painting Instructions for Army Materiel ..... TM 43-0139
Railcar Loading Procedures ..... TM 55-601
Storage and Materials Handling ..... TM 743-200-1
Procedures for Destruction of Tank-Automotive Equipment
to Prevent Enemy Use ..... TM 750-244-6

A-5. PAMPHLETS AND BULLETINS.

Consolidated Index of Army Publications and Blank Forms ..... DA Pam 25-30
Using Unit Supply System (Manual Procedures) ..... DA Pam 710-2-1
The Army Maintenance Management System (TAMMS) ..... DA Pam 750-8
Storage and Serviceability Standard: Tracked Vehicles, Wheeled
Vehicles, and Component Parts ..... SB 740-98-1
Description, Use, Bonding Techniques, and Properties of Adhesive ..... TB ORD 1032
Tactical Wheeled Vehicles: Repair of Frames ..... TB 9-2300-247-40
Equipment Improvement Report and Maintenance Digest
(U.S. Army Tank-automotive and Armaments Command).
Tank and Automotive Equipment ..... TB 43-0001-39 Series
Color, Marking, and Camouflage Painting of Military Vehicles,
Construction Equipment and Materials Handling Equipment ..... TB 43-0209
Maintenance in the Desert ..... TB 43-0239

A-6. OTHER PUBLICATIONS.

Environmental Protection and Enhancement ..... AR 200-1
Army Logistics Readiness and Sustainability ..... AR 700-138
Reporting of Product Quality Deficiencies Across Component Lines . ..... AR 702-7
Army Medical Department Expendable/Durable Items ..... CTA 8-100
Expendable/Durable Items (Except Medical, Class V,
Repair Parts and Heraldic Items) ..... CTA 50-970
Abbreviations for Use on Drawings, Specifications, Standards, and
in Technical Documents MIL-STD-12

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

Paragraph Number	Paragraph Title	Page Number
B-1	General	B-1
B-2	Maintenance Functions	B-1
B-3	Explanation of Columns in Section II, Maintenance Allocation Chart for M101 and M116 Series Trailers	B-2
B-4	Explanation of Columns in Section III, Tool and Test Equipment Requirements	B-3
B-5	Explanation of Columns in Section IV, Remarks	B-3

B-1. GENERAL.

Appendix B consists of four sections:

a. Section I provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

b. Section II, the maintenance allocation chart (MAC), designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for some maintenance functions.

B-2. MAINTENANCE FUNCTIONS.

Maintenance functions are limited to and defined as follows:

a. **Inspect.** To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

b. **Test**. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. **Service.** To keep an item in proper operating condition by periodically cleaning (including decontaminating, when required), preserving, draining, painting, or replenishing fuel, lubricants, chemical fluids, or gases.

d. **Adjust.** To maintain or regulate, within prescribed limits, by bringing into proper or exact position or by setting the operating characteristics to specified parameters.

e. **Align**. To adjust specified variable elements of an item to bring about optimum or desired performance.

B-2. MAINTENANCE FUNCTIONS (CONTINUED).

f. **Calibrate.** To determine the accuracy of and cause corrections or adjustments to be made on instruments or test, measuring, and diagnostic equipment (TMDE) used in precision measurement. Calibration consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. **Remove/Install**. To remove and install the same item when required to perform service or other maintenance functions “Install”’ may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. “Replace” is authorized by the MAC and is shown as the third position of the source, maintenance, and recoverability (SMR) code.

i. **Repair.** To apply maintenance services--including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures--and maintenance actions to identify troubles and restore serviceability to an item by correcting any specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. **Overhaul.** To perform that maintenance effort (service/action) required to restore an item to a completely serviceable/operational condition as required by maintenance standards in an appropriate technical publication (e.g., depot maintenance work requirement). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

k. **Rebuild.** To perform those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN SECTION II, MAINTENANCE ALLOCATION CHART FOR M101 AND M116 SERIES TRAILERS.

a. **(1) Group Number**. Column 1 lists functional group code numbers, whose purpose is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. The end item group number is “00.”

b. **(2) Component/Assembly.** Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. **(3) Maintenance Function.** Column 3 lists the functions to be performed on the item listed in Column 2. (For a detailed explanation of these functions, refer to para B-2.)

d. **(4) Maintenance Level.** Column 4 specifies, by the listing of a work-time figure in the appropriate subcolumn(s), the level of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work-time figures will be shown for each level. The work-time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including

B-3. EXPLANATION OF COLUMNS IN SECTION II, MAINTENANCE ALLOCATION CHART FOR M101 AND M116 SERIES TRAILERS (CONTINUED).

any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/ quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

C . . . . . Operator/Crew

O . . . . . Unit

F. . . . . Direct Support

Sustainment:

H . . . . . General Support

D . . . . . Depot

e. **(5) Tools and Equipment Reference Code.** Column 5 specifies, by code, those common tool sets (not individual tools), common TMDE, special tools, special TMDE, and special support equipment required to perform the designated maintenance function. Codes are keyed to tools and test equipment listed in Section Ill.

f. **(6) Remarks.** When applicable, this column contains a letter code, in alphabetical order, which is keyed to remarks contained in Section IV. If there is nothing in the Remarks column, there is no Section IV.

B-4. EXPLANATION OF COLUMNS IN SECTION III, TOOL AND TEST EQUIPMENT REQUIREMENTS.

a. **Column 1, Tool or Test Equipment Reference Code.** This code correlates with the code used in Section II, Column 5.

b. **Column 2, Maintenance Level.** The symbol designation shown indicates the lowest level of maintenance authorized to use the tool or test equipment.

c. **Column 3, Nomenclature.** This is the name or identification of the tool or test equipment.

d. **Column 4, National Stock Number**. This is the national stock number of the tool or test equipment.

e. **Column 5, Tool Number.** This is the manufacturer’s part number.

B-5. EXPLANATION OF COLUMNS IN SECTION IV, REMARKS.

a. **Column 1, Remarks Code.** This column contains the code letter recorded in Column 6 of Section II, the MAC.

b. **Column 2, Remarks.** This column provides information pertinent to the maintenance function being performed as indicated in Section II, the MAC.

Section II. MAINTENANCE ALLOCATION CHART FOR M101 AND M116 SERIES TRAILERS

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			FIELD			SUSTAINMENT			
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIPMENT	
GROUP NUMBER	COMPONENT/ ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D	REF CODE	REMARKS CODE
06	**ELECTRICAL SYSTEM**								
0609	Lights	Replace		0.5				1	
		Repair		0.5				1	A
	Lamps	Replace		0.5				1	
0613	Hull or Chassis Wiring Harness								
	Wiring Harness, Branched	Replace		0.5				1	
	Cable, Intervehicular	Replace		0.3				1	
11	**REAR AXLE**								
1100	Rear Axle Assembly	Inspect		1.0					
		Replace			5.5			1,5	
12	**BRAKES**								
1201	Handbrakes								
1202	Handbrake Levers and Linkage	Adjust		0.1				1,2	
		Replace		2.0				1	
	Service Brakes								
1204	Brake Assemblies	Adjust		0.5				1,2	
		Replace		2.0				1,2	
		Repair			1.5			5	
	Hydraulic Brake System								
	Cylinder Assembly, Wheel	Replace		1.5				1,2	
	Actuator Assembly, Brake	Replace		2.0				1,2	
		Repair		2.0				1,2	
	Cylinder Assembly, Master	Service		0.1					
		Replace		1.0				1,2	
	Brake Lines, Hydraulic	Inspect		0.1					
		Replace		1.0				1,2	

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD			SUSTAINMENT			
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
13	**WHEEL AND TRACK**								
1311	Wheel Assembly								
	Brakedrum	Inspect		0.5					
		Replace		1.0				1,2	
	Hub Bearings, Wheel	Service		1.0				1,2	
		Adjust		0.2				1,2	
		Replace		1.0				1,2	
	Wheel	Inspect	0.1						
		Replace		2.0				1,2	
1313	Tires, Tubes, Tire Chains								
	Tire	Inspect	0.1						
		Replace		1.0				1,2	
		Repair		2.0				1,5	B
	Tube, Inner	Replace		1.0				1,2	
15	**FRAME, TOWING, AND ATTACHMENTS**								
1501	Frame Assembly	Repair		1.0	4.0			1,2,5,6,7	C
1503	Pintles and Towing Attachments								
	Drawbar	Replace		2.0				1,2	
	Bracket Assembly, Drawbar	Replace		2.0				1,2	
	Chains, Safety	Replace		0.5				1,2	
1507	Landing Gear, Leveling Jacks								
	Leg, Support, Front, (Adjustable)	Replace		2.0				1,2	
		Service		0.5				1,2	
16	**SPRINGS AND SHOCK ABSORBERS**								
1601	Springs	Replace		2.0				1,2	
1604	Shock Absorber Equipment								
	Absorber, Shock	Replace		1.0				1,2	

(1)	(2)	(3)	(4) MAINTENANCE LEVEL					(5)	(6)
			FIELD			SUSTAINMENT			
			UNIT		DS	GS	DEPOT	TOOLS AND EQUIPMENT REF CODE	REMARKS CODE
GROUP NUMBER	COMPONENT/ ASSEMBLY	MAINTENANCE FUNCTION	C	O	F	H	D		
18	**BODY, CAB, HOOD, AND HULL**								
1810	Cargo Body	Replace		4.0				1,2	
22	**BODY, CHASSIS, AND HULL ACCESSORY ITEMS**								
2201	Canvas, Rubber, or Plastic Items								
	Cover Assembly, Canvas	Replace Repair		0.5	 1.0			 1,5	
2202	Accessory Items								
	Reflector	Replace		0.5				1	
2210	Data Plates and Instruction Holders								
	Plate, Identification	Replace		1.0				1,2,3,4	
33	**SPECIAL PURPOSE KIT**								
3307	Special Purpose Kit								
	Stabilizer Kit, Rear	Replace Repair		1.0 0.5				1 1	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) TOOL OR TEST EQUIPMENT REF CODE	(2) MAINTENANCE LEVEL	(3) NOMENCLATURE	(4) NATIONAL STOCK NUMBER	(5) TOOL NUMBER
1	0	Tool Kit, General Mechanic's: Automotive	5180-00-177-7033	
2	0	Shop Equipment, Automotive Maintenance and Repair: Organizational Maintenance, Common No. 1, Less Power	4910-00-754-0654	
3	0	Die Set, Metal Stamping, Hand: With 1/4-In. Numbers	5110-00-289-0003	
4	0	Die Set, Metal Stamping, Hand: With 1/4-In. Upper Case Letters, Ampersand, and Period	5110-00-289-0007	
5	F	Shop Equipment, Automotive Maintenance and Repair: Field Maintenance, Basic, Less Power	4910-00-754-0705	
6	F	Shop Equipment, Welding, Field Maintenance	3470-00-357-7268	
7	F	Tool Kit, Welder's	5810-00-754-0661	

Section IV. REMARKS

(1) Remarks Code	(2) Remarks
A	Stoplight-taillight and composite stoplight-taillight repair is limited to lens, preformed packing, and lamp or LED replacement.
B	Refer to TM 9-2610-200-14 for information on tire and tube repair.
C	Refer to TB 9-2300-247-40 for information on frame repair.

APPENDIX C
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

The M101 and M1 16 Series trailers currently do not have any assigned components of end item or basic issue items.

APPENDIX D
ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

Paragraph Number	Paragraph Title	Page Number
D-1	Scope	D-1
D-2	General	D-1
D-3	Explanation of Columns	D-1

D-1. SCOPE

This appendix lists additional items you are authorized for support of the M101 and M116 Series trailers.

D-2. GENERAL.

This list identifies items that do not have to accompany the trailers and do not have to be turned in with them. These items are all authorized to you by CTA or MTOE.

D-3. EXPLANATION OF COLUMNS.

a. In Section II (Additional Authorization List), the national stock number, description, Commercial and Government Entity Code (CAGEC) and part number, unit of measure (U/M), and quantity recommended (Qty. Recm.) are provided for each item to help you identify and request the items you need to support this equipment.

b. The items are listed in alphabetical sequence by item name under the type of document (CTA or MTOE) that authorizes the item(s) to you.

c. If the item required differs for different models of this equipment, see the “Used-On Code” entries for the applicable model. These codes are as follows:

Used-On Code	Model
257	M101A1
263	M101A2
TC1	M101A3
646	M116A1
258	M116A2
SPR	M116A2E1
CT1	M116A3

Section II. ADDITIONAL AUTHORIZATION LIST (AAL)

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION CAGEC AND PART NUMBER	USABLE ON CODE	(3) U/M	(4) QTY AUTH
2590-01-279-7918	Blackout Lights (LED Kit) (19207) 57K0556	263, CT1	EA	1
	MTOE Authorized Items			
5120-00-243-2419	Bar, Socket Wrench Handle: 3/4-Inch Diameter, 30 Inches Long (19207) 6196147		EA	1
5120-00-293-2452	Wrench, Double Socket, Hexagon: 1 1/2 and 1 1/16-Inch Openings, 10 Inches Long (19207) 7083293	263	EA	1
5120-01-156-7296	Wrench, Wheel Lug: CUCV (11862)14009303	263	EA	1

APPENDIX E
REPAIR PARTS AND SPECIAL TOOLS LISTS (RPSTL)

Section I. INTRODUCTION

Paragraph Number	Paragraph Title	Page Number
E-1.	Scope.	E-1
E-2.	General.	E-1
E-3.	Explanation of Columns (Sections II and III).	E-2
E-4.	Explanation of Columns (Section IV).	E-5
E-5.	Special Information.	E-6
E-6.	How to Locate Repair Parts.	E-7
E-7.	Abbreviations.	E-7

E-1. SCOPE.

This Repair Parts and Special Tools Lists (RPSTL) lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of Unit, Direct Support, and General Support Maintenance of the M101 and M116 series trailers. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance and Recoverability (SMR) codes.

E-2. GENERAL.

In addition to Section I, Introduction, this RPSTL is divided into the following sections:

a. **Section II, Repair Parts List.** A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts that must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed by item name sequence at the end of the section. Repair part kits are listed separately in their own functional group within Section II. Repair parts for reparable special tools are also listed in this section. Items listed are shown on the associated illustration(s)/figure(s).

b. **Section III, Special Tools List.** A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL [as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) column] for the performance of maintenance.

c. **Section IV, Cross-Reference Indexes.** A list, in National Item Identification Number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National Stock Numbers (NSN) and part numbers are cross-referenced to each illustration/figure and item number appearance.

E-3. EXPLANATION OF COLUMNS (SECTIONS II AND III).

a. **ITEM NO - Column (1).** Indicates the number used to identify items called out in the illustration.

b. **SMR CODE - Column (2).** The SMR code is a five-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:

Source Code	Maintenance Code		Recoverability Code
XXxxx	xxXXx		xxxxX
1st two positions	3rd position	4th position	5th position
How you get an item.	Who can install, replace or use the item.	Who can do complete repair* on the item.	Who determines disposition action on an unserviceable item.

* *Complete Repair:* Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the *"Repair"* function in a use/user environment in order to restore serviceability to a failed item.

(1) **Source Code.** The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

Code		Application/Explanation
PA PB PC** PD PE PF PG		Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the maintenance category indicated by the code entered in the third position of the SMR code. ***Items coded PC are subject to deterioration.* . . . . .
KD KF KB		Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the third position of the SMR code. The complete kit must be requisitioned and applied. . . . . .
MO- MF- MH- ML- MD-	Made at UM/AVUM Level Made at DS/AVUM Level Made at GS Level Made at Specialized Repair Activity (SRA) Made at Depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk materiel which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk materiel group of the repair parts list in this RPSTL. If the item is authorized to you by the third position of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance. . . . . .
AO- AF- AH- AL AD	Assembled by UM/AVUM Level Assembled by DS/AVUM Level Assembled by GS Level Assembled by SRA Assembled at Depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position code of the SMR code authorizes you to replace the items, but the source code indicates that the item is assembled at a higher level, order the item from the higher level of maintenance.

E-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (CONTINUED).

NOTE

Cannibalization of controlled exchange, when authorized, may be used as a source of supply for items with the following source codes, except for those source coded "XA".

Code	Application/Explanation
XA	DO NOT requisition an "XA"-coded item. Order its next higher assembly.
XB	If an "XB" item is not available from salvage, order it using the CAGEC and part number given.
XC	Installation drawing, diagram, instruction sheet or field service drawing that is identified by manufacturer's part number.
XD	Item is not stocked. Order an "XD"-coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.

(2) **Maintenance Code.** Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following levels of maintenance:

Code	Application/Explanation
C	Operator or Crew Maintenance done within Unit Maintenance or aviation unit maintenance.
O	Unit Maintenance or aviation unit can remove, replace, and use the item.
F	Direct Support Maintenance or aviation intermediate maintenance can remove, replace, and use the item.
H	General Support Maintenance can remove, replace, and use the item.
L	Specialized Repair Activity (SRA) can remove, replace, and use the item.
D	Depot Maintenance can remove, replace, and use the item.

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e., perform all authorized *"Repair"* functions). The maintenance code in the fourth position will indicate authorization to one of the following levels of maintenance:

Code	Application/Explanation
O	Unit Maintenance or aviation unit maintenance is the lowest level that can do complete repair of the item.
F	Direct Support Maintenance or aviation intermediate maintenance is the lowest level that can do complete repair of the item.

E-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (CONTINUED).

Code	Application/Explanation
H	General Support Maintenance is the lowest level that can do complete repair of the item.
L	Specialized Repair Activity (SRA) is the lowest level that can do complete repair of the item.
D	Depot Maintenance is the lowest level that can do complete repair of the item.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

(3) **Recoverability Code.** Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR code as follows:

Code	Application/Explanation
Z	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
O	Reparable item. When uneconomically reparable, condemn and dispose of the item at Unit Maintenance or aviation unit maintenance.
F	Reparable item. When uneconomically reparable, condemn and dispose of the item at Direct Support Maintenance or aviation intermediate maintenance.
H	Reparable item. When uneconomically reparable, condemn and dispose of the item at General Support Maintenance.
D	Reparable item. When beyond lower level repair capability, return to Depot Maintenance. Condemnation and disposal of item not authorized below Depot Maintenance.
L	Reparable item. Condemnation and disposal of item not authorized below Specialized Repair Activity (SRA).
A	Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. **NSN - Column (3).** Lists the National Stock Number assigned to the item. Use the NSN for requests/requisitions.

d. **CAGEC - Column (4).** The Commercial and Government Entity (CAGE) Code (C) is a five-digit alphanumeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

E-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (CONTINUED).

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered.

e. **PART NUMBER - Column (5).** Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

f. **DESCRIPTION AND USABLE ON CODE (UOC) - Column (6).** This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Physical security classification. Not applicable.

(3) Items that are included in kits and sets are listed below the name of the kit or set.

(4) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(5) Part numbers for bulk materiels are referenced in this column in the line item entry for the item to be manufactured/fabricated.

(6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC). Not Applicable.

(7) The Usable On Code, when applicable (see paragraph 5, Special Information).

(8) In the Special Tools List section, the BOI appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipment supported exceeds density spread indicated in the BOI, the total authorization is increased proportionately.

(9) The statement "END OF FIGURE" appears just below the last item description in Column 6 for a given figure in both Section II and Section III.

g. **QTY - Column (7).** The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, group or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

E-4. EXPLANATION OF COLUMNS (SECTION IV).

a. **National Stock Number (NSN) Index.**

(1) **STOCK NUMBER Column.** This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN (i.e., NSN 5305-01-674-1467). When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

(2) **FIG. Column.** This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and Section III.

(3) **ITEM Column.** The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. **Part Number Index.** Part numbers in this index are listed by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

E-4. EXPLANATION OF COLUMNS (SECTION IV) (CONTINUED).

(1) **CAGEC Column.** The Commercial and Government Entity (CAGE) Code (C) is a five-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(2) **PART NUMBER Column.** Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

(3) **STOCK NUMBER Column.** This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGEC columns to the left.

(4) **FIG. Column.** This column lists the number of the figure where the item is identified/located in Section II and Section III.

(5) **ITEM Column.** The item number assigned to the item as it appears in the figure referenced in the FIG. column.

E-5. SPECIAL INFORMATION.

a. **Usable On Code.** The Usable On Code appears in the lower left corner of the DESCRIPTION column heading. Usable on codes are:

257	M101A1
263	M101A2
TC1	M101A3
646	M116A1
258	M116A2
SPR	M116A2E1
CT1	M116A3

b. **Fabrication Instructions.** Bulk materiels required to manufacture items are listed in the bulk materiel functional group of this RPSTL. Part numbers for bulk materiels are also referenced in the Description column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in Appendix G.

c. **Assembly Instructions.** Detailed assembly instructions for items source coded to be assembled from component spare/repair parts are found in Chapters 4 and 5. Items that make up the assembly are listed immediately following the assembly item entry or reference is made to an applicable figure.

d. **Kits.** Line item entries for repair kits appear in Group 9401 in Section II.

e. **Index Numbers.** Items which have the word BULK in the FIG. column will have an index number shown in the item column. This index number is a cross-reference between the National Stock Number Index, the Part Number Index, and the bulk materiel list in Section II.

f. **Associated Publications.** N/A

E-6. HOW TO LOCATE REPAIR PARTS.

a. **When National Stock Number or Part Number is Not Known:**

(1) **First.** Using the Table of Contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) **Second.** Find the figure covering the assembly group or subassembly group to which the item belongs.

b. **When National Stock Number or Part Number is Known:**

(1) **First.** Using the National Stock Number Index or Part Number Index, find the pertinent NSN or part number. The NSN Index is in National Item Identification Number (NIIN) sequence [paragraph E-4.a.(1)]. The part numbers in the Part Number Index are listed in ascending alphanumeric sequence (paragraph E-4.b.). Both indexes cross-reference you to the illustration/figure and item number of the item you are looking for.

(2) **Second.** Turn to the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

E-7. ABBREVIATIONS.

For standard abbreviations see MIL-STD-12D, *Military Standard Abbreviations for Use on Drawings, Specifications, Standards, and in Technical Documents*.

Abbreviations	Explanation
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN)
RPSTL	Repair Parts and Special Tools Lists

1
2-11

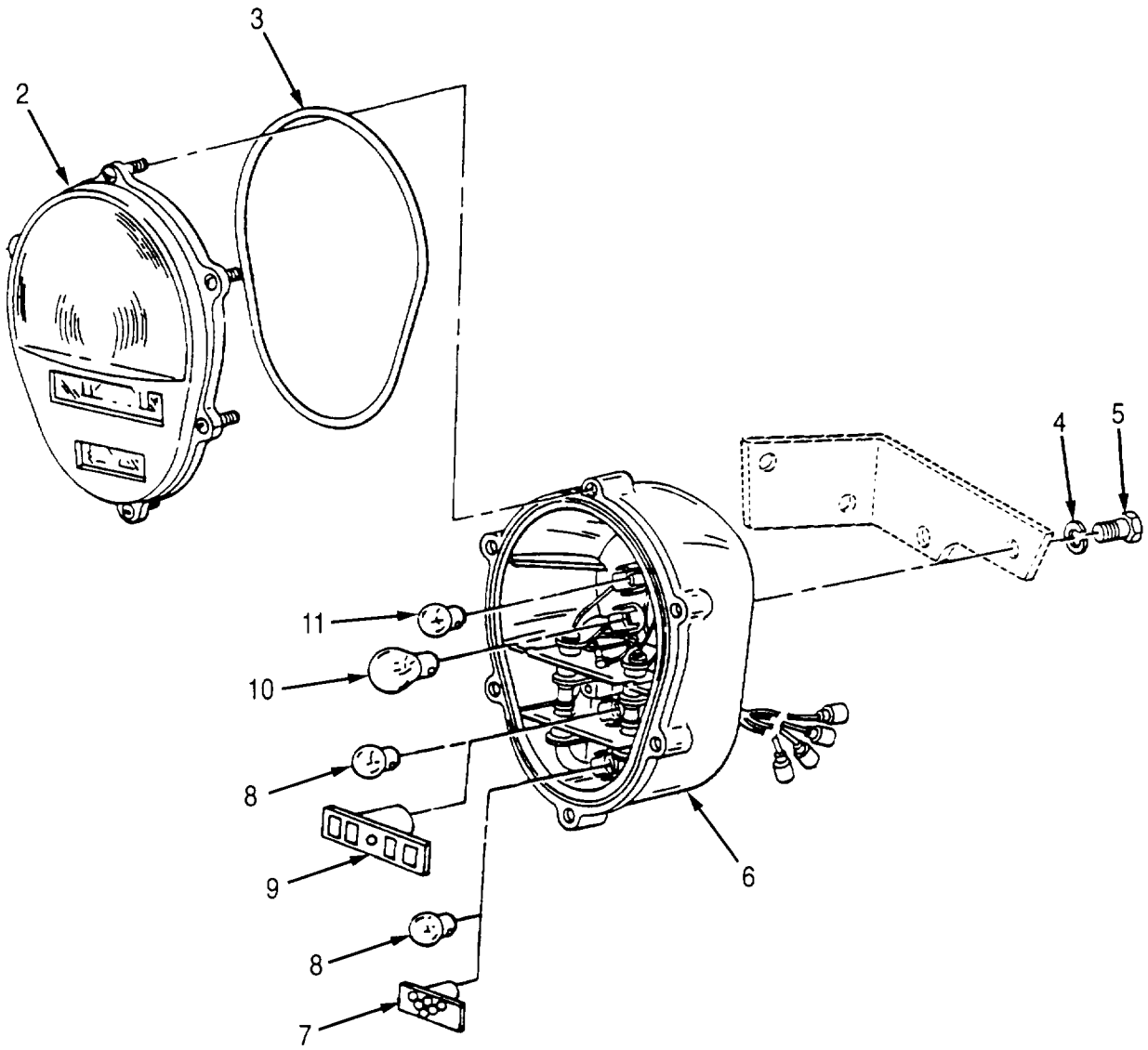


Figure 1. Composite Stoplight - Taillight (Sheet 1 of 3)

12
13-23

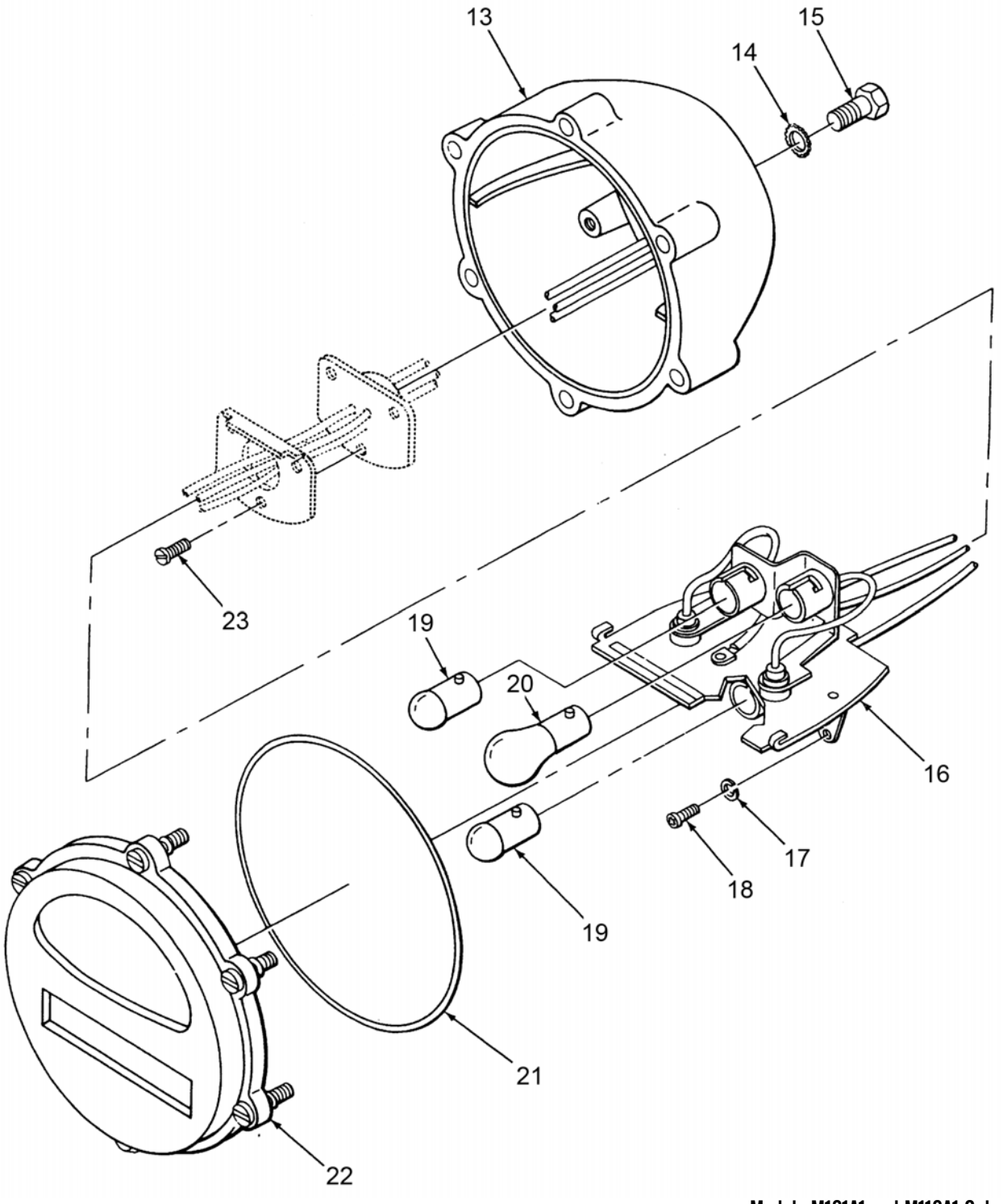
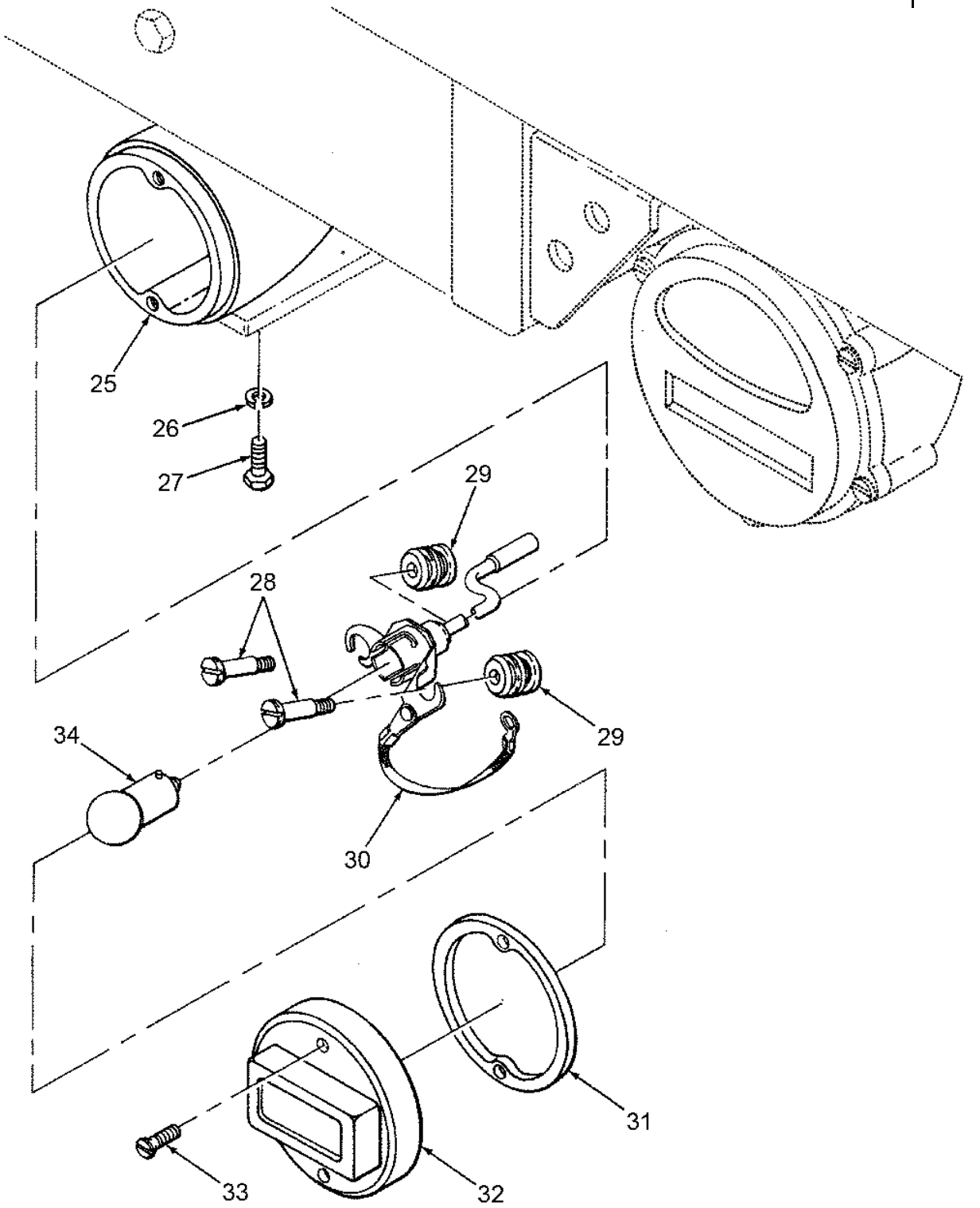


Figure 1. Composite Stoplight - Taillight (Sheet 2 of 3)

24
25-34



Model M101A1 and M116A1 Only

Figure 1. Composite Stoplight - Taillight (Sheet 3 of 3)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 06 ELECTRICAL SYSTEM	
					GROUP 0609 LIGHTS	
					FIG. 1 COMPOSITE STOPLIGHT-TAILLIGHT	
1	PAOOO	6220013723883	19207	12375837	TAILLIGHT,VEHICULAR COMPOSITE MARKER..... UOC:CT1,SPR,TC1,258,263	1
2	PAOZZ	6220013592870	19207	12375841	.LENS,LIGHT..... UOC:CT1,SPR,TC1,258,263	1
3	PAOZZ	5331004620907	19207	11639519-2	.O-RING..... UOC:CT1,SPR,TC1,258,263	1
4	PAOZZ	5310006379541	96906	MS35338-46	.WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	2
5	PAOZZ	5305011409118	80204	B1821BH038C088N	.SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	2
6	XAOZZ		19207	12375838	.BODY ASSEMBLY..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	6220012932627	19207	12360870-1	.STOP LIGHT,VEHICULA 12V..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	6220012973217	19207	12360870-2	.STOP LIGHT,VEHICULA 24V..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	6240000190877	58536	A52463-1-08	.LAMP,INCANDESCENT 24V..... UOC:CT1,SPR,TC1,258,263	2
8	PAOZZ	6240001558717	81348	W-L-00111/60	.LAMP,INCANDESCENT 12V..... UOC:CT1,258,263	2
9	PAOZZ	6220012842709	19207	12360850-1	.LIGHT,MARKER,CLEARA 24V..... UOC:CT1,SPR,TC1,258,263	1
10	PAOZZ	6240000446914	96906	MS35478-1683	.LAMP,INCANDESCENT 24V..... UOC:CT1,SPR,TC1,258,263	1
10	PAOZZ	6240006170991	58536	A52463-2-13	.LAMP,INCANDESCENT 12V..... UOC:CT1,SPR,258,263	1
11	PAOZZ	6240000193093	58536	A52463-1-09	.LAMP,INCANDESCENT 24V..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	6240001433159	96906	MS15570-89	.LAMP,INCANDESCENT 12V..... UOC:CT1,SPR,258,263	1
12	PAOZZ	6220006695623	19207	8378785	STOP LIGHT-TAILLIGH LEFT HAND..... UOC:257,646	1
12	PAOZZ	6220003376471	96906	MS51330-1	STOP LIGHT-TAILLIGH RIGHT HAND..... UOC:257,646	1
13	PAOZZ	6220005000437	96906	MS53047-1	.LIGHT,PARKING..... UOC:257,646	1
14	PAOZZ	5310006379541	12603	23E06	.WASHER,LOCK..... UOC:257,646	4
15	PAOZZ	5305009847350	96906	MS35191-308	.SCREW,MACHINE..... UOC:257,646	2
16	PAOZZ	6150006933452	5A910	8378661	.WIRING HARNESS..... UOC:257,646	1
17	PAOZZ	5310000453299	80205	MS35338-42	.WASHER,LOCK..... UOC:257,646	1
18	PAOZZ	5305008893002	96906	MS35206-242	.SCREW,MACHINE.....	1

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					UOC:257,646	
19	PAOZZ	6240000190877	58536	AA52463-A08	.LAMP,INCANDESCENT 24V.....	2
					UOC:257,646	
19	PAOZZ	6240001558717	58536	AA52463-A04	.LAMP,INCANDESCENT 12V.....	2
					UOC:257,646	
20	PAOZZ	6240000446914	80204	1683	.LAMP,INCANDESCENT 24V.....	1
					UOC:257,646	
20	PAOZZ	6240006170991	58536	A52463-2-13	.LAMP, INCANDESCENT 12V.....	1
					UOC:257,646	
21	PAOZZ	5331002977106	19207	7320658	.O-RING.....	1
					UOC:257,258,263,646	
22	PAOZZ	6220007526020	19207	7526020	.RETAINER,LENS LEFT.....	1
					UOC:257,646	
22	PAOZZ	6220007526018	19207	7526018	.RETAINER,LENS RIGHT.....	1
					UOC:257,646	
23	PAOZZ	5305009846191	80205	MS35206-243	.SCREW,MACHINE.....	1
					UOC:257,646	
24	PAOOZ	6220008469745	96906	MS51302-1	STOP LIGHT,VEHICULA BLACKOUT.....	1
					UOC:257,646	
25	PAOZZ	6220004335966	19207	8741650	.HOUSING,LIGHT.....	1
					UOC:257,646	
26	PAOZZ	5310004079566	19207	7410218	.WASHER,LOCK.....	1
					UOC:257,646	
27	PAOZZ	5306002259084	80205	MS90726-29	.BOLT, MACHINE.....	1
					UOC:257,646	
28	PAOZZ	5305006330785	19207	8335233	.SCREW,SHOULDER.....	2
					UOC:257,646	
29	PAOZZ	5325006230928	56161	10511558	.GROMMET,NONMETALLIC.....	2
					UOC:257,646	
30	PAOZZ	6250007415451	19207	8741651	.LAMPHOLDER.....	1
					UOC:257,646	
31	PAOZZ	5330006789047	73331	5942528	.GASKET.....	1
					UOC:257,646	
32	PAOZZ	6220007752384	19207	8741646	.RETAINER,LENS.....	1
					UOC:257,646	
33	PAOZZ	5305007640070	80205	MS51959-46	.SCREW,MACHINE.....	2
					UOC:257,646	
34	PAOZZ	6240000190877	58536	AA52463-A08	.LAMP,INCANDESCENT 24V.....	1
					UOC:257,646	
34	PAOZZ	6240001558717	58536	AA52463-A04	.LAMP,INCANDESCENT 12V.....	1
					UOC:257,646	

END OF FIGURE

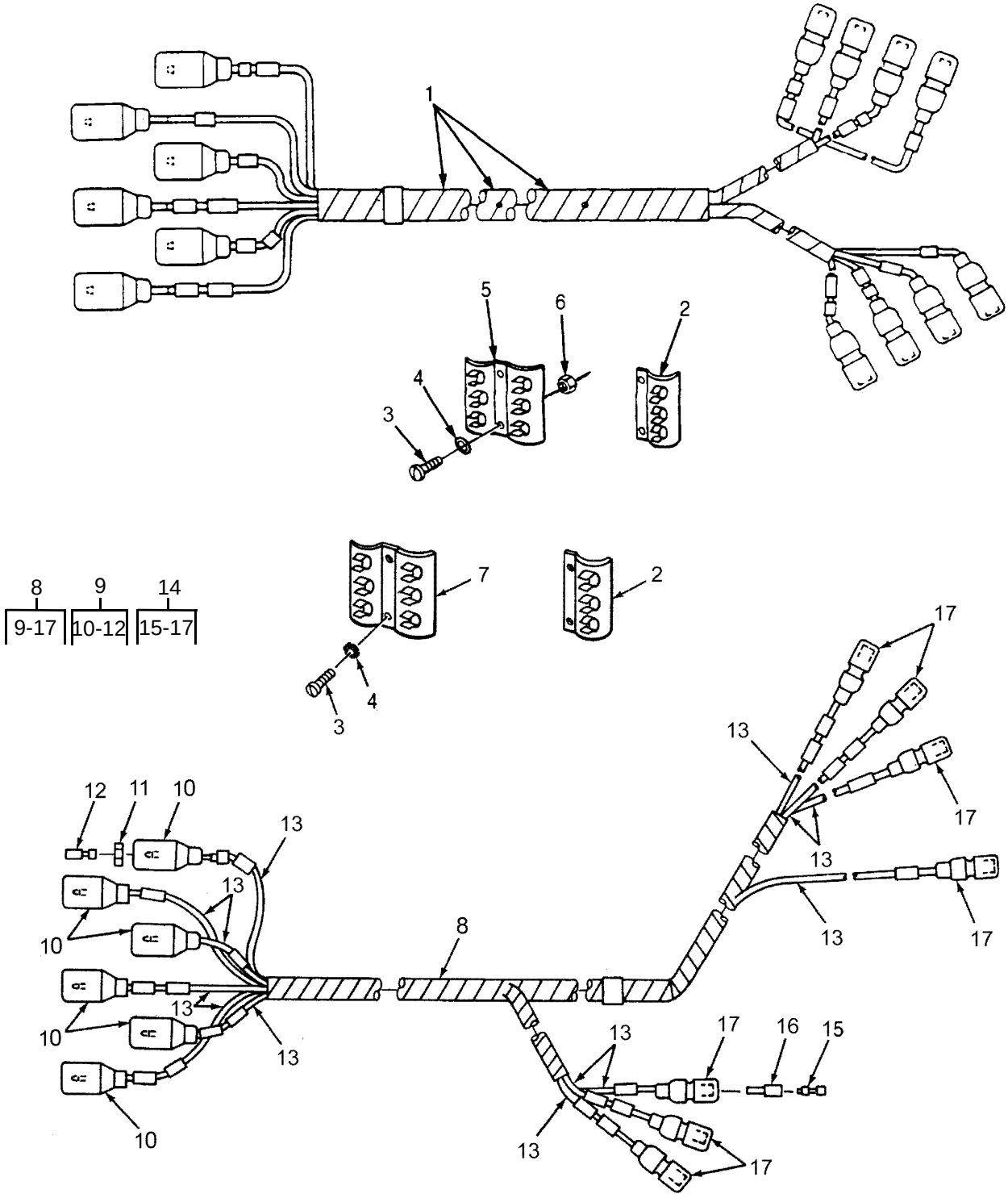


Figure 2. Chassis Wiring Harness (Composite Stoplight - Taillight)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 0613 HULL OR CHASSIS WIRING HARNESS	
					FIG.2 CHASSIS WIRING HARNESS (COMPOSITE STOPLIGHT-TAILLIGHT)	
1	PAOOO		19207	11652180-2	WIRING HARNESS USED ON VEHICLES W/ COMPOSIT STOPLIGHT-TAILLIGHT, 94"... UOC:CT1,SPR,TC1	1
1	PAOOO	6150011671827	19207	11652180	WIRING HARNESS USED ON VEHICLES W/ COMPOSITE STOPLIGHT-TAILLIGHT, 118 INCHES LONG..... UOC:258,263	1
2	PAOZZ	5342000402364	19207	8347212	CLIP ASSEMBLY..... UOC:258,263	1
2	PAOZZ	2590008329976	19207	8722943	CLIP ASSEMBLY,CONNE..... UOC:CT1,SPR,TC1	2
2	PAOZZ	5340008600555	19207	8722870	CLIP,SPRING TENSION..... UOC:CT1,SPR,TC1	2
2	PAOZZ	5342000402364	19207	8347212	CLIP ASSEMBLY..... UOC:257,646	1
3	PAOZZ	5305008813824	19207	171591	SCREW,TAPPING..... UOC:258,263	4
3	PAOZZ	5305009846210	96906	MS35206-263	SCREW,MACHINE..... UOC:CT1,SPR,TC1	4
3	PAOZZ	5305008813824	19207	171591	SCREW,TAPPING..... UOC:257	4
4	PAOZZ	5310002857037	96906	MS122031	WASHER,LOCK..... UOC:258,263	4
4	PAOZZ	5310000453296	96906	MS35338-43	WASHER,LOCK..... UOC:CT1,SPR,TC1	4
4	PAOZZ	5310002857037	96906	MS122031	WASHER,LOCK..... UOC:257,646	4
5	PAOZZ	5340000402365	19207	8347213	CLIP,SPRING TENSION..... UOC:258,263	1
6	PAOZZ	5310009349758	96906	MS35649-202	NUT,PLAIN,HEXAGON..... UOC:CT1,SPR,TC1	4
7	PAOZZ	5340000402365	19207	8347213	CLIP,SPRING TENSION..... UOC:257,646	1
8	PAOOO	2590008306673	19207	8722819	WIRING HARNESS,BRAN USE ON VEHICLES W/BLACKOUT STOPLIGHT NSN 6220008469745..... UOC:257,646	1
9	PAOOO	5935004626603	96906	MS27142-2	.CONNECTOR,PLUG,ELEC..... UOC:257,646	6
10	PAOZZ	5935005729180	19207	8338566	..SHELL,ELECTRICAL CO..... UOC:257,646	1
11	PAOZZ	5310008338567	19207	8338567	..WASHER,SLOTTED..... UOC:257,646	1
12	PAOZZ	5999000572929	19204	572929	..CONTACT,ELECTRICAL..... UOC:257,646	1
13	MOOZZ		19207	7720853-1	..WIRE,ELECTRICAL MAKE FROM WIRE...	7

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					P/N MILC13488/1-5..... UOC:257,646	
14	PAOOO	5935001677775	96906	MS27144-1	.CONNECTOR,PLUG,ELEC..... UOC:257,646	7
15	PAOZZ	5940003996676	19207	8338564	..TERMINAL SET,QUICK..... UOC:257,646	1
16	PAOZZ	5970008338562	19207	8338562	..INSULATOR,BUSHING..... UOC:257,646	1
17	PAOZZ	5935008338561	19207	8338561	..SHELL,ELECTRICAL CO..... UOC:257,646	1

END OF FIGURE

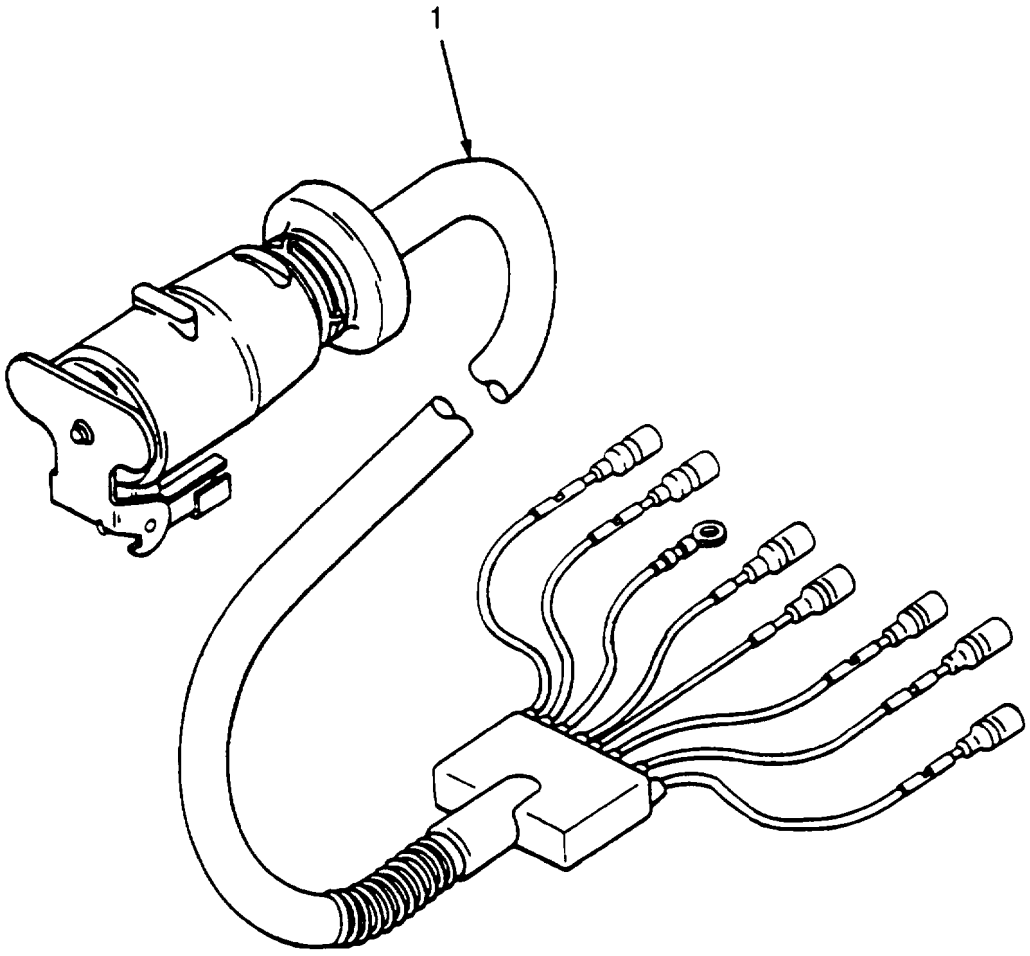


Figure 3. Intervehicular Cable

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 0613 HULL OR CHASSIS WIRING HARNESS	
					FIG. 3 INTERVEHICULAR CABLE	
1	PAOZZ	6150008306672	19207	8722865	CABLE ASSEMBLY,SPEC INTERVEHICULAR.	1
					END OF FIGURE	

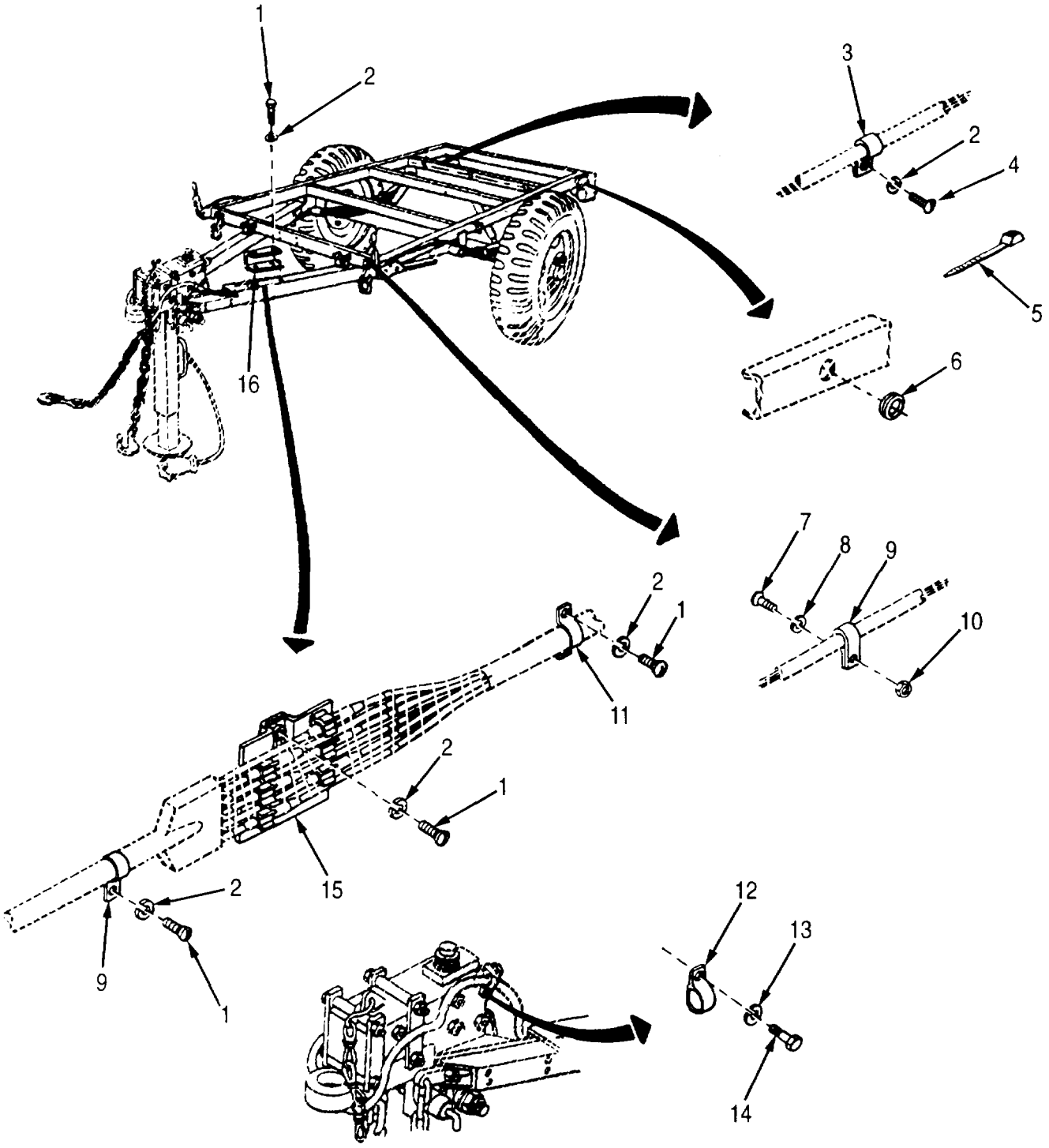


Figure 4. Wiring Harness and Intervehicular Cable Attachments (Sheet 1 of 2)

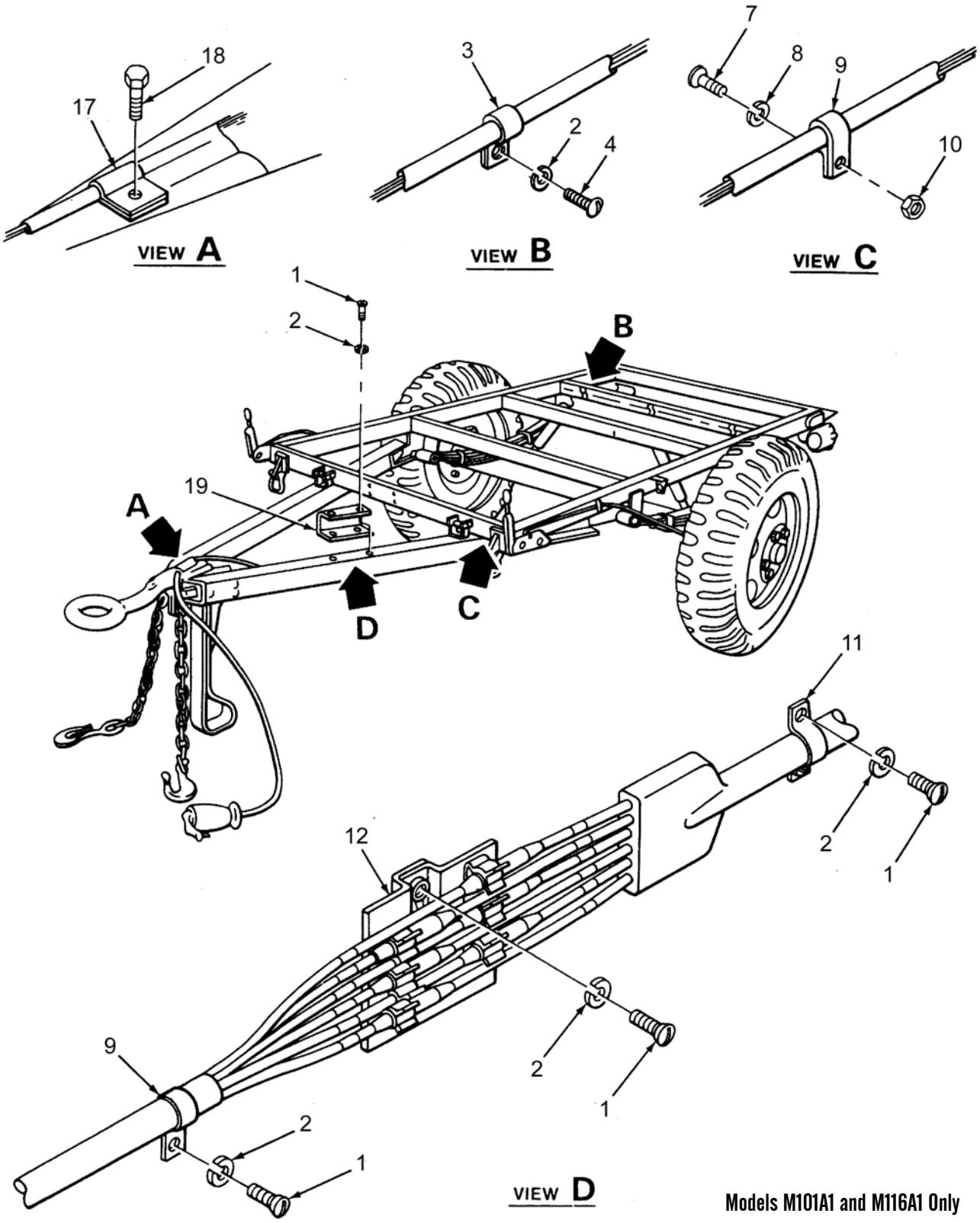


Figure 4. Wiring Harness and Intervehicular Cable Attachments (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 0613 HULL OR CHASSIS WIRING HARNESS	
					FIG. 4 WIRING HARNESS AND INTERVEHICULAR CABLE ATTACHMENTS	
1	PAOZZ	5305008550957	96906	MS24629-46	SCREW,TAPPING..... UOC:CT1,SPR,TC1,258,263	11
1	PAOZZ	5305008550957	45152	2477HX	SCREW,TAPPING..... UOC:257	11
2	PAOZZ	5310003952948	96906	MS45904-64	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	9
2	PAOZZ	5310003952948	96906	MS45904-64	WASHER,LOCK..... UOC:257,646	11
3	PAOZZ	5340003853288	19207	7979250	CLAMP,LOOP.....	10
4	PAOZZ	5305004324203	96906	MS51861-47	SCREW,TAPPING..... UOC:CT1,SPR,TC1,258,263	10
4	PAOZZ	5305004324203	96906	MS51861-47	SCREW,TAPPING..... UOC:257,646	10
5	PAOZZ	5975000742072	96906	MS3367-1-9	STRAP,TIEDOWN,ELECT..... UOC:CT1,SPR,TC1	2
6	PAOZZ	5325001850001	96906	MS35489-46	GROMMET,NONMETALLIC..... UOC:CT1,SPR,TC1,258,263	2
7	PAOZZ	5305009846210	96906	MS35206-263	SCREW,MACHINE..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	5305009846210	96906	MS35206-263	SCREW,MACHINE..... UOC:257,646	1
8	PAOZZ	5310000453296	96906	MS35338-43	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	5310000453296	80205	MS35338-43	WASHER,LOCK..... UOC:257,646	1
9	PAOZZ	5340002827515	96906	MS21333-37	CLAMP,LOOP..... UOC:CT1,SPR,TC1,258,263	2
9	PAOZZ	5340002827515	80205	MS21333-37	CLAMP,LOOP..... UOC:257,646	2
10	PAOZZ	5310009349758	96906	MS35649-202	NUT,PLAIN,HEXAGON..... UOC:CT1,SPR,TC1,258,263	1
10	PAOZZ	5310009349758	80205	MS35649-202	NUT,PLAIN,HEXAGON..... UOC:257,646	1
11	PAOZZ	5340001777832	19207	8382973	STRAP,RETAINING..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	5340001777832	19207	8382973	STRAP,RETAINING..... UOC:257,646	1
12	PAOZZ	5340011321175	19207	7336030	CLAMP,LOOP..... UOC:CT1,SPR,TC1,258,263	1
13	PAOZZ	5310006379541	96906	MS35338-46	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	1
14	PAOZZ	5305002693234	80204	B1821BH038F075N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
15	PAOZZ	5340008600555	19207	8722870	CLIP,SPRING TENSION..... UOC:CT1,SPR,TC1,258,263	2
15	PAOZZ	5340008600555	19207	8722870	CLIP,SPRING TENSION..... UOC:257,646	2

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
16	PAOZZ	5975011703480	19207	10924576	COVER,JUNCTION BOX..... UOC:CT1,SPR,TC1,258,263	1
17	PAOZZ	5340009128871	96906	MS21333-43	CLAMP,LOOP..... UOC:257,646	1
18	PAOZZ	5305000680500	51436	95053070	SCREW,CAP,HEXAGON H..... UOC:257,646	1
19	PAOZZ	5975000402363	19207	8330140	COVER,WIRING JUNCTI..... UOC:257,646	1

END OF FIGURE

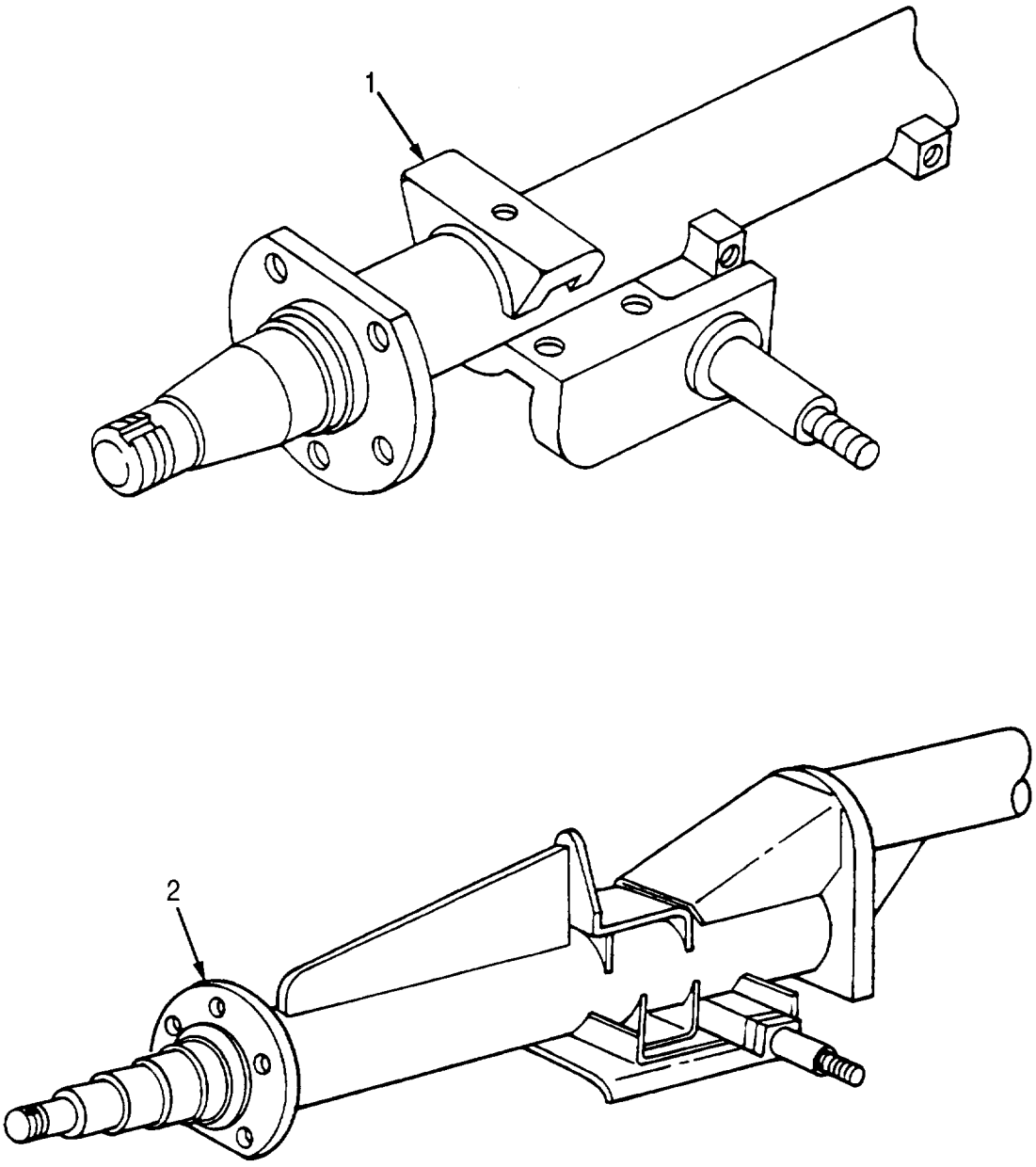
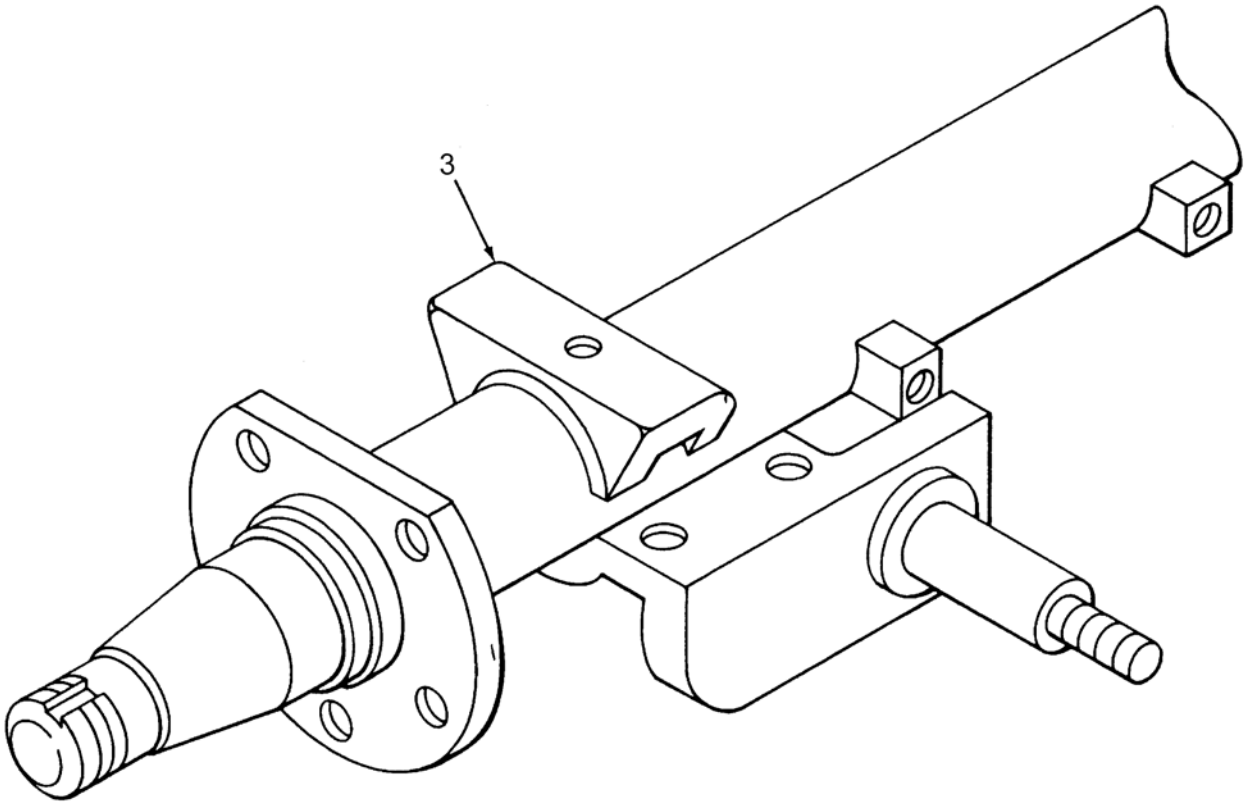


Figure 5. Rear Axle Assembly (Sheet 1 of 2)



Models M101A1 and M116A1 Only

Figure 5. Rear Axle Assembly (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 11 REAR AXLE	
					GROUP 1100 REAR AXLE ASSEMBLY	
					FIG.5 REAR AXLE ASSEMBLY	
1	PAFZZ	2530011389385	19207	12313006	AXLE,VEHICULAR,NOND W/FLANGE AND SPRING SEAT ASSEMBLY..... UOC:SPR,258,263	1
2	PAFZZ	2530013904684	19207	12362791	AXLE,VEHICULAR,NOND OFFSET..... UOC:CT1,TC1	1
3	PAFZZ	2530000648102	19207	10919707	AXLE,VEHICULAR,NOND W/FLANGE AND SPRING SEAT ASSEMBLY..... UOC:257,646	1
					END OF FIGURE	

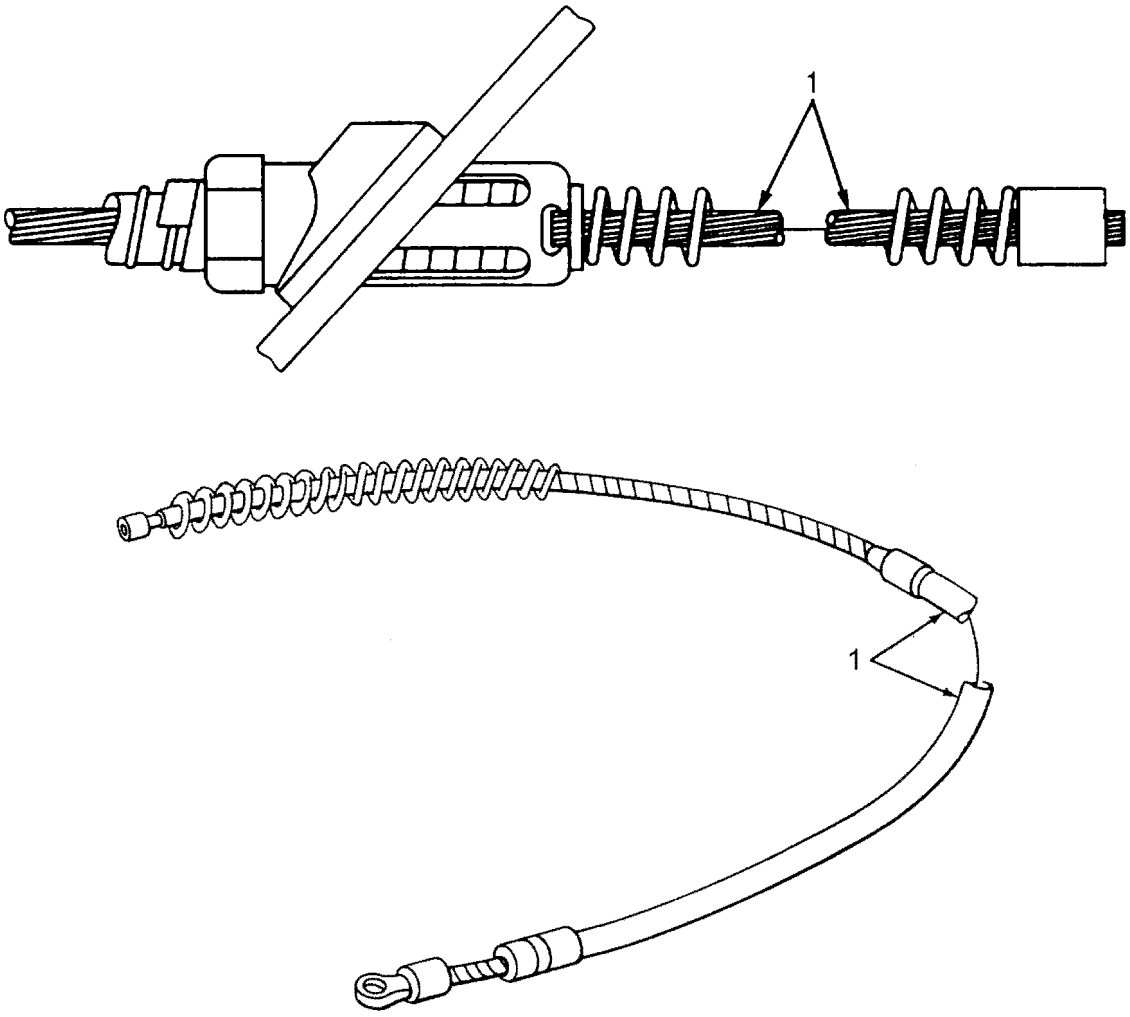


Figure 6. Cable and Conduit Assembly

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 12 BRAKES	
					GROUP 1201 HANDBRAKES	
					FIG.6 CABLE AND CONDUIT ASSEMBLY	
1	PAOZZ	2530011687906	19207	11686101	CABLE AND CONDUIT A 69 INCHES LONG. UOC:CT1,SPR,TC1,258,263	1
1	PAOZZ	2530014298346	92867	15641501	CABLE AND CONDUIT A 74 INCHES LONG. UOC:CT1,TC1	1
1	PAOZZ	2530009676278	92867	15785800	CONTROL ASSEMBLY,PU HAND BRAKE..... UOC:257,646	2
					END OF FIGURE	

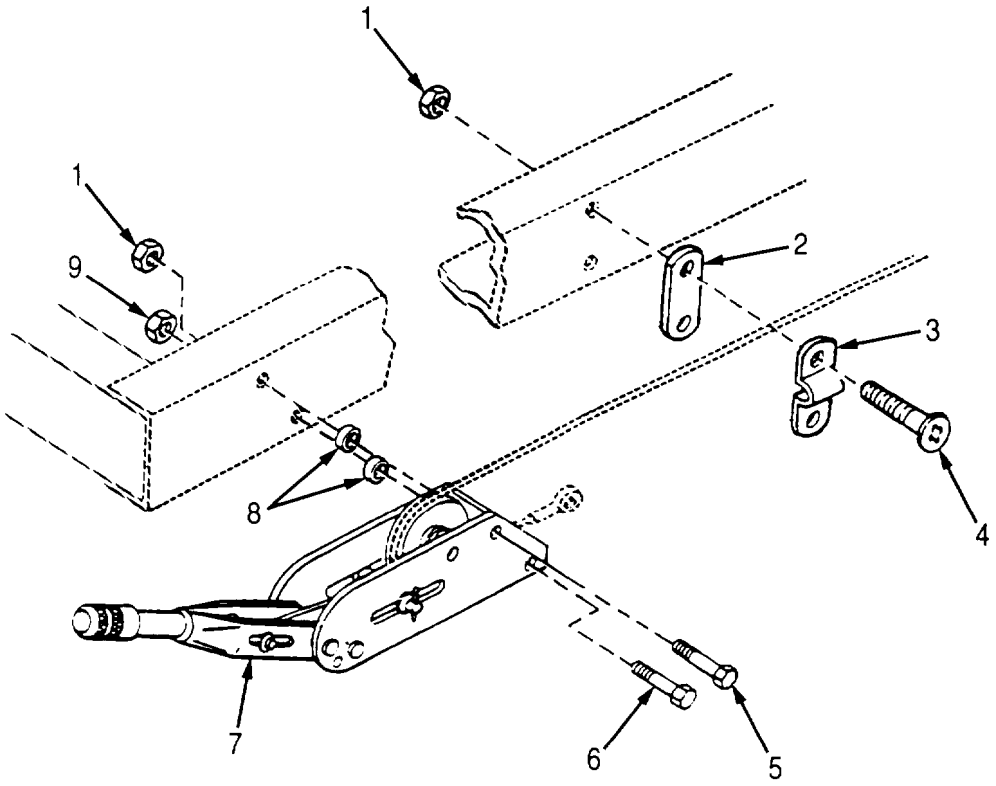
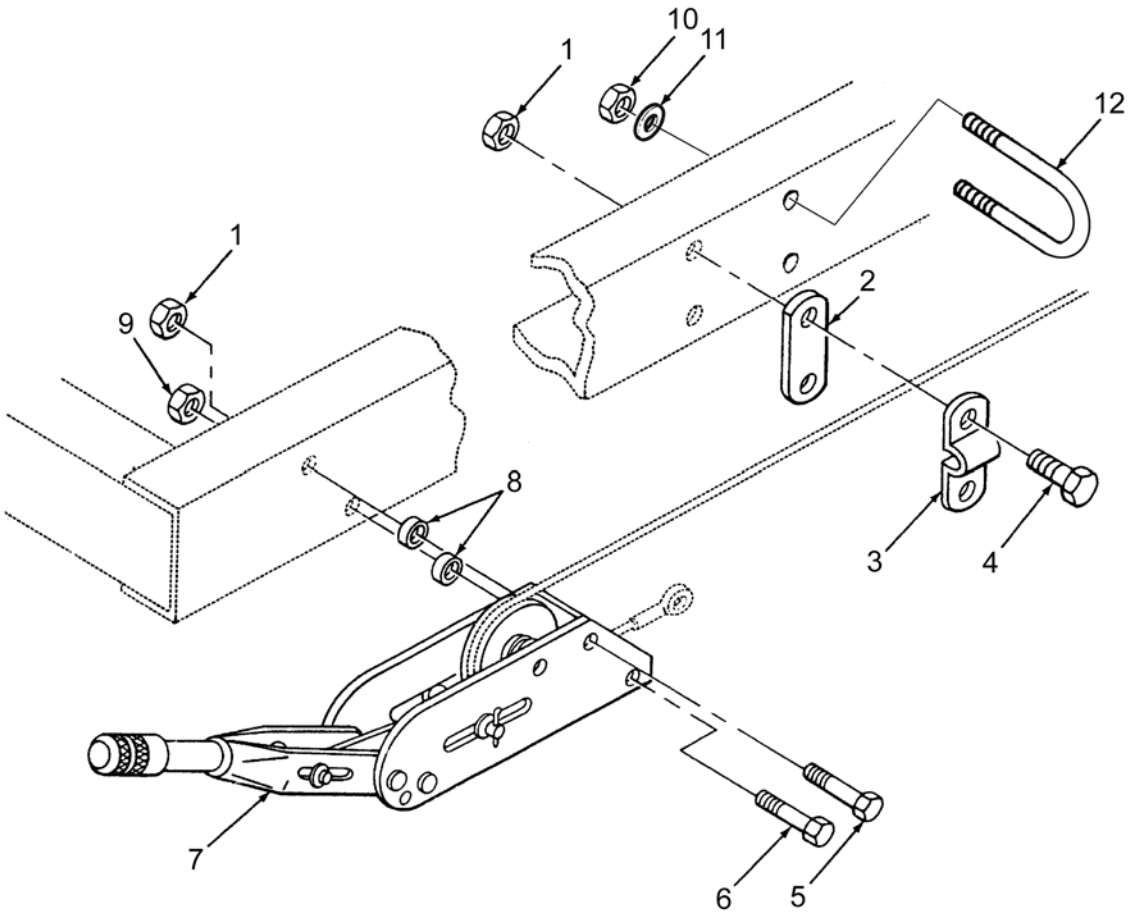


Figure 7. Handbrake Lever (Sheet 1 of 2)



Models M101A1 and M116A1 Only

Figure 7. Handbrake Lever (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1201 HANDBRAKES	
					FIG.7 HANDBRAKE LEVER	
1	PAOZZ	5310008071469	96906	MS21042-5	NUT,SELF-LOCKING,EX..... UOC:CT1,SPR,TC1,258,263	5
1	PAOZZ	5310008071469	80205	MS21042-5	NUT,SELF-LOCKING,EX..... UOC:257,646	6
2	PAOZZ	5365004758291	19207	10926075	SPACER,PLATE BRAKE CABLE..... UOC:CT1,SPR,TC1,258,263	1
2	PAOZZ	5365004758291	19207	10926075	SPACER,PLATE BRAKE CABLE..... UOC:257,646	2
3	PAOZZ	5340010704475	19207	10926074	STRAP,RETAINING BRAKE CABLE..... UOC:CT1,SPR,TC1,258,263	1
3	PAOZZ	5340010704475	92867	81-000108	STRAP,RETAINING BRAKE CABLE..... UOC:257,646	2
4	PAOZZ	5305009580605	96906	MS35207-298	SCREW,MACHINE..... UOC:CT1,SPR,TC1,258,263	2
4	PAOZZ	5305009580605	80205	MS35207-298	SCREW,MACHINE..... UOC:257,646	4
5	PAOZZ	5306002259096	96906	MS90726-41	BOLT,MACHINE..... UOC:CT1,SPR,TC1,258,263	1
5	PAOZZ	5305002692811	80205	MS90726-67	SCREW,CAP,HEXAGON H..... UOC:257,646	2
6	PAOZZ	5305002692811	96906	MS90726-67	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
6	PAOZZ	5306002259096	80205	MS90726-41	BOLT,MACHINE..... UOC:257,646	2
7	PAOZZ	5340009365284	19207	10926073	LEVER,MANUAL CONTRO..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	5340009365284	19207	10926073	LEVER,MANUAL CONTRO..... UOC:257,646	2
8	PAOZZ	5310011392070	19207	10926094	WASHER,FLAT..... UOC:CT1,SPR,TC1,258,263	2
8	PAOZZ	5310011392070	19207	10926094	WASHER,FLAT..... UOC:257,646	4
9	PAOZZ	5310008101786	96906	MS21042-6	NUT,SELF-LOCKING,EX..... UOC:CT1,SPR,TC1,258,263	1
9	PAOZZ	5310008101786	80205	MS21042-6	NUT,SELF-LOCKING,EX..... UOC:257,646	2
10	PAOZZ	5310007616882	96906	MS51967-2	NUT,PLAIN,HEXAGON..... UOC:TC1,257,263,646	2
11	PAOZZ	5306003081392	96906	MS35338-45	WASHER,LOCK..... UOC:257,646	2
12	PAOZZ	5306003081392	39428	3043T11	BOLT,U.....	4

END OF FIGURE

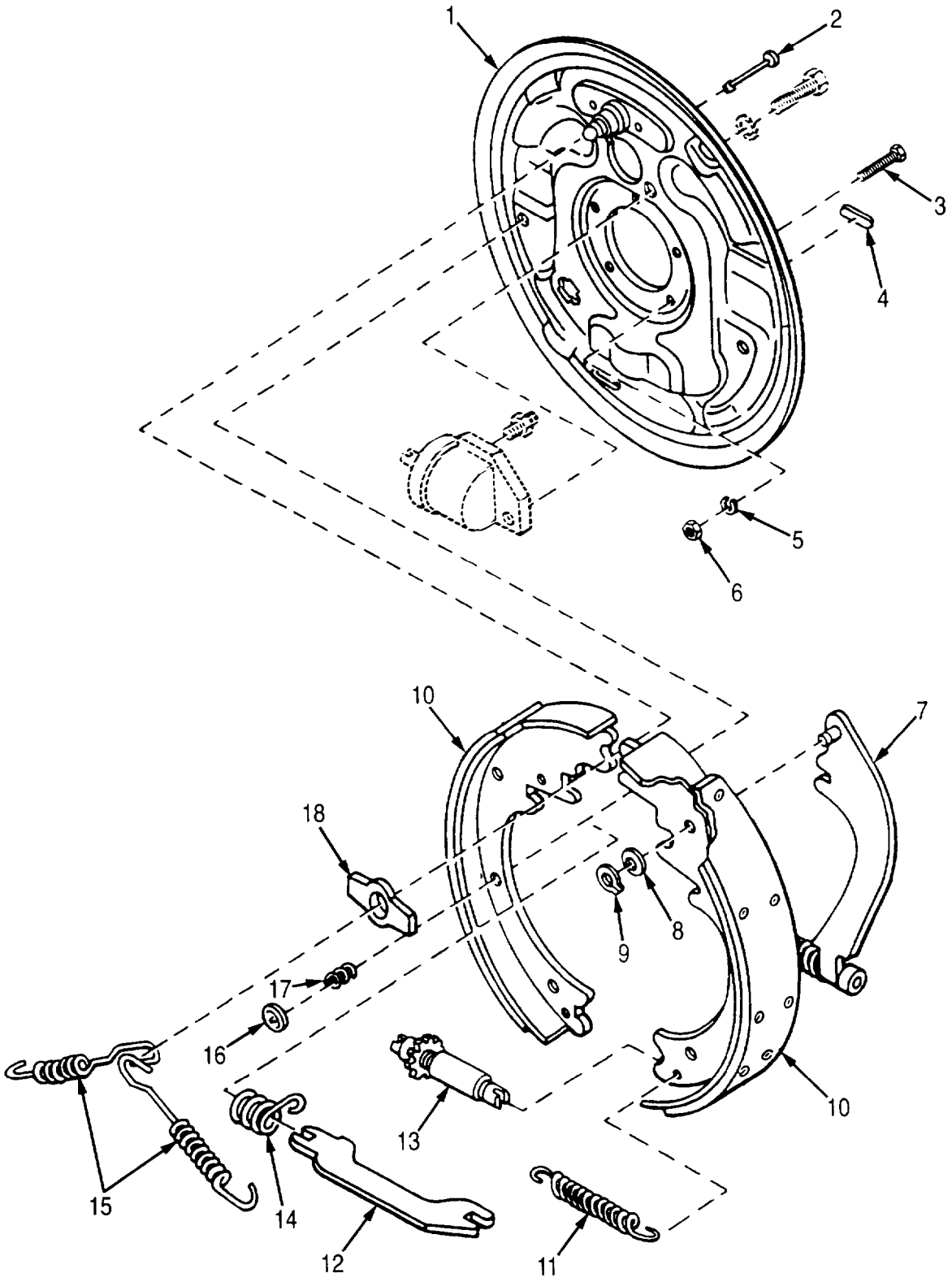
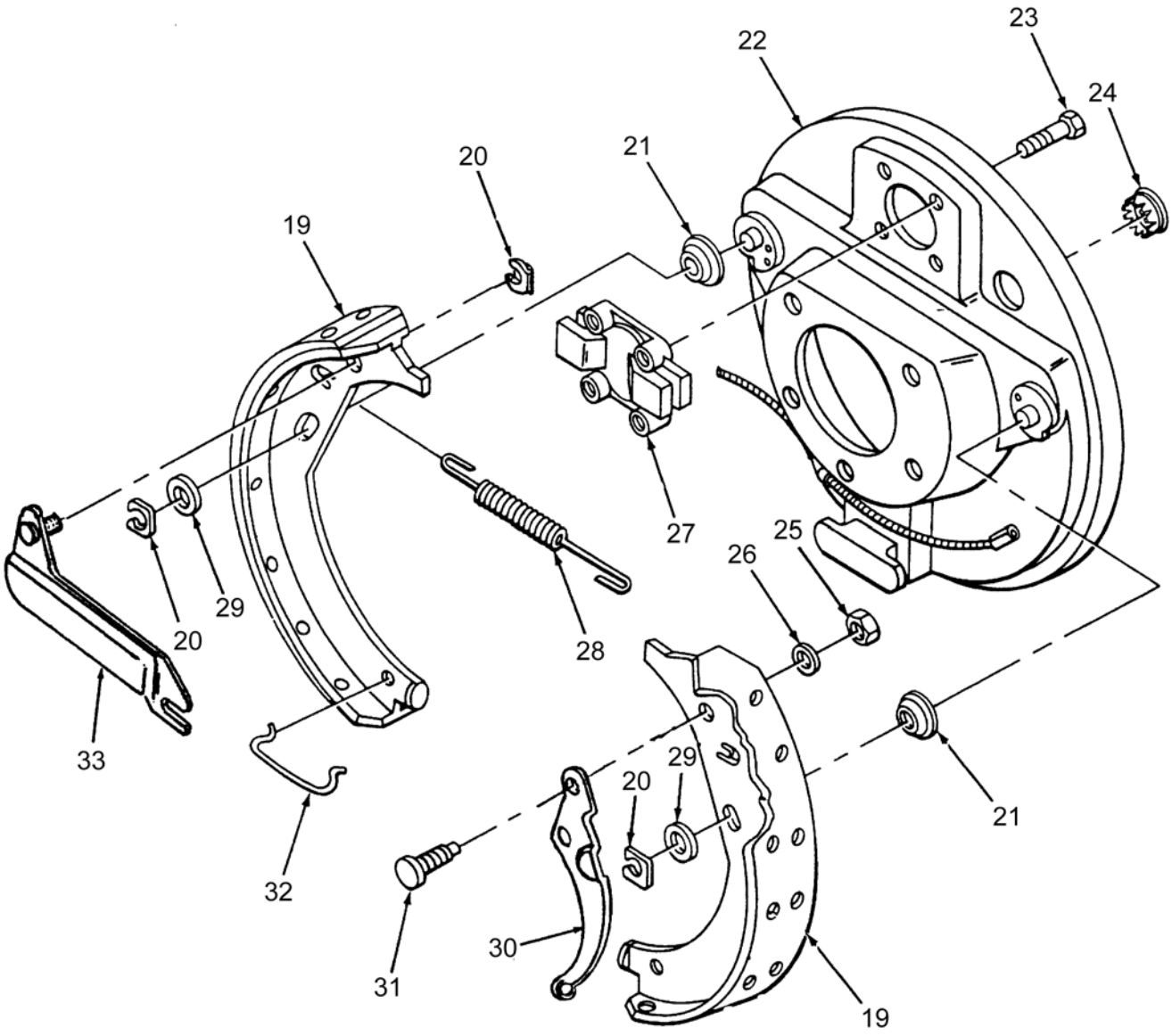


Figure 8. Brake Assembly (Sheet 1 of 2)



Models M101A1 and M116A1 Only

Figure 8. Brake Assembly (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1202 SERVICE BRAKES	
					FIG.8 BRAKE ASSEMBLY	
1	PAOZZ	2530012876869	94189	18496	PLATE,BACKING,BRAKE..... UOC:CT1,SPR,TC1,258,263	2
2	PAOZZ	5315010791494	19207	11686273	PIN,TOGGLE,HEADED..... UOC:CT1,SPR,TC1,258,263	2
3	PAOZZ	5305002693236	80204	B1821BH038F100N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	5
4	PAOZZ	5340010712098	19207	11686276	COVER,ACCESS..... UOC:CT1,SPR,TC1,258,263	1
5	PAOZZ	5310006379541	96906	MS35338-46	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	5
6	PAOZZ	5310007320559	96906	MS51968-8	NUT,PLAIN,HEXAGON..... UOC:CT1,SPR,TC1,258,263	5
7	PAOZZ	5340010696705	19207	11686262-1	LEVER,LOCK-RELEASE..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	3040008728567	19207	11686262-2	LEVER,MANUAL CONTRO..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	5310008742922	19207	11686280	WASHER,SPRING TENSI..... UOC:CT1,SPR,TC1,258,263	1
9	PAOZZ	5310010749323	19207	11686281	CLAMP,BRAKE LINING..... UOC:CT1,SPR,TC1,258,263	1
10	PAOZZ	2530012169259	19204	11838714	BRAKE SHOE SET SET CONTAINS 2 BRAKE SHOES..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	5360003840025	19207	11686270	SPRING,HELICAL,EXTE..... UOC:CT1,SPR,TC1,258,263	1
12	PAOZZ	2530010747001	19207	12448035	STRUT,PARKING BRAKE LH..... UOC:CT1,SPR,258,263	1
12	PAOZZ	2530014307250	19207	12448059	STRUT,PARKING BRAKE RH..... UOC:CT1,SPR,258,263	1
13	PAOZZ	2530010709494	19207	11686257	SCREW,ADJUSTING..... UOC:CT1,SPR,TC1,258,263	1
14	PAOZZ	5360008772964	19207	11686279	SPRING,HELICAL,COMP..... UOC:CT1,SPR,TC1,258,263	1
15	PAOZZ	5360003840004	19207	11686272	SPRING,HELICAL,EXTE..... UOC:CT1,SPR,TC1,258,263	2
16	PAOZZ	5340010686693	19207	11686275	RETAINER,HELICAL CO..... UOC:CT1,SPR,TC1,258,263	2
17	PAOZZ	5360010880552	19207	11686274	SPRING,HELICAL,COMP..... UOC:CT1,SPR,TC1,258,263	2
18	PAOZZ	1005010839297	19207	11686271	PLATE,SHOE GUIDE..... UOC:CT1,SPR,TC1,258,263	1
19	PAOZZ		1JUW8	BSE10918081	PARTS KIT,BRAKE SHO INCLUDES 4 SHOES FOR TWO WHEELS..... UOC:257,646	1
20	PAOZZ	5340003591046	83299	016128600	CLIP,SPRING TENSION..... UOC:257,646	6
21	PAOZZ	5310003354735	18876	8017164	WASHER,GUIDE BRAKE..... UOC:257,646	4

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
22	XDOZZ		19207	10911074	PLATE,BACKING,BRAKE RIGHT..... UOC:257,646	1
22	XDOZZ		19207	10911075	PLATE,BACKI NG,BRAK LEFT..... UOC:257,646	1
23	PAOZZ	5306000425335	24617	425335	BOLT..... UOC:257,646	8
24	PAOZZ	5340002055246	24617	426711	BUTTON,PLUG..... UOC:257,646	2
25	PAOZZ	5310007320559	96906	MS51968-8	NUT,PLAIN,HEXAGON..... UOC:257,646	2
26	PAOZZ	5310005957237	80205	MS35333-42	WASHER,LOCK..... UOC:257,646	2
27	PAOZZ	2530001797119	19207	10911050	BLOCK,GUIDE,BRAKE S..... UOC:257,646	2
28	PAOZZ	5360008529790	19207	10911066	SPRING,HELICAL,EXTE..... UOC:257,646	2
29	PAOZZ	5310003684954	19207	7411019	WASHER,FLAT..... UOC:257,646	4
30	PBOZZ	3040002276091	63477	LH-FC-11393-A	LEVER PIN ASSEMBLY LEFT HAND..... UOC:257,646	1
30	PBOZZ	2530012546538	19207	10911062	LI NK,ANCHOR/BRAKE RIGHT HAND..... UOC:257,646	1
31	PAOZZ	5306008844819	19207	10911051	PIN, LEVER..... UOC:257,646	2
32	PAOZZ	5340003121148	19207	10911113	CLIP,RETAINING..... UOC:257,646	2
33	PBOZZ	2530012276262	19207	10911059	LINK,ANCHOR,BRAKE S LEFT HAND..... UOC:257,646	1
33	PBOZZ	2530012546539	19207	10911060	LINK,ANCHOR,BRAKE S RIGHT HAND..... UOC:257,646	1

END OF FIGURE

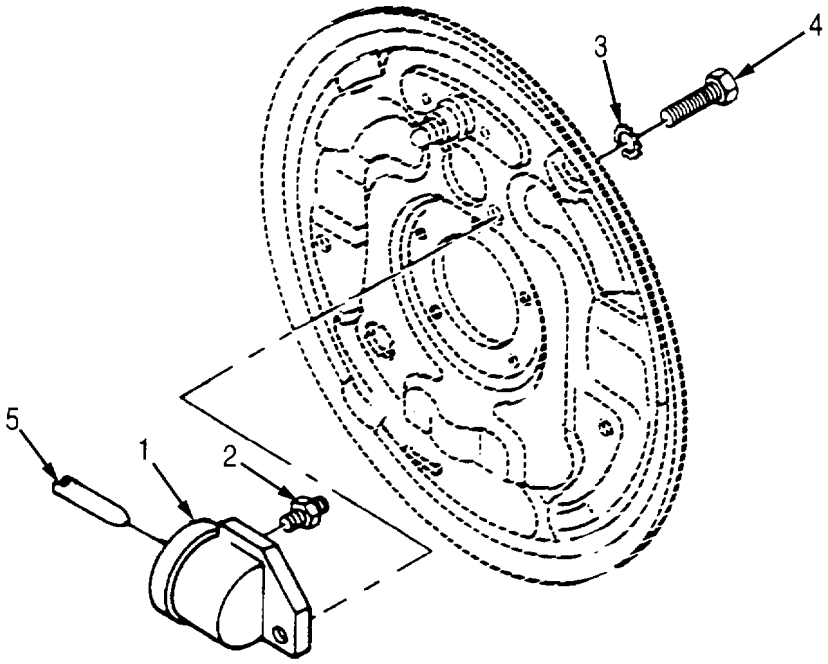


Figure 9. Wheel Cylinder

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1204 HYDRAULIC BRAKE SYSTEM	
					FIG.9 WHEEL CYLINDER	
1	PAOZZ	2530001617576	19207	11686267-1	CYLINDER ASSEMBLY,H LEFT..... UOC:CT1,SPR,TC1,258,263	1
1	PAOZZ	2530001617575	19207	11686267-2	CYLINDER ASSEMBLY,H RIGHT..... UOC:CT1,SPR,TC1,258,263	1
2	PAOZZ	2530011600850	14892	049206	BLEEDER VALVE,HYDR..... UOC:CT1,SPR,TC1,258,263	1
3	PAOZZ	5310005146674	96906	MS35335-34	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	1
4	PAOZZ	5306002264822	80204	B1821BH031C050N	BOLT,MACHINE..... UOC:CT1,SPR,TC1,258,263	2
5	PAOZZ	2530005856079	19207	11686277	LINK,WHEEL CYLINDER..... UOC:CT1,SPR,TC1,258,263	1

END OF FIGURE

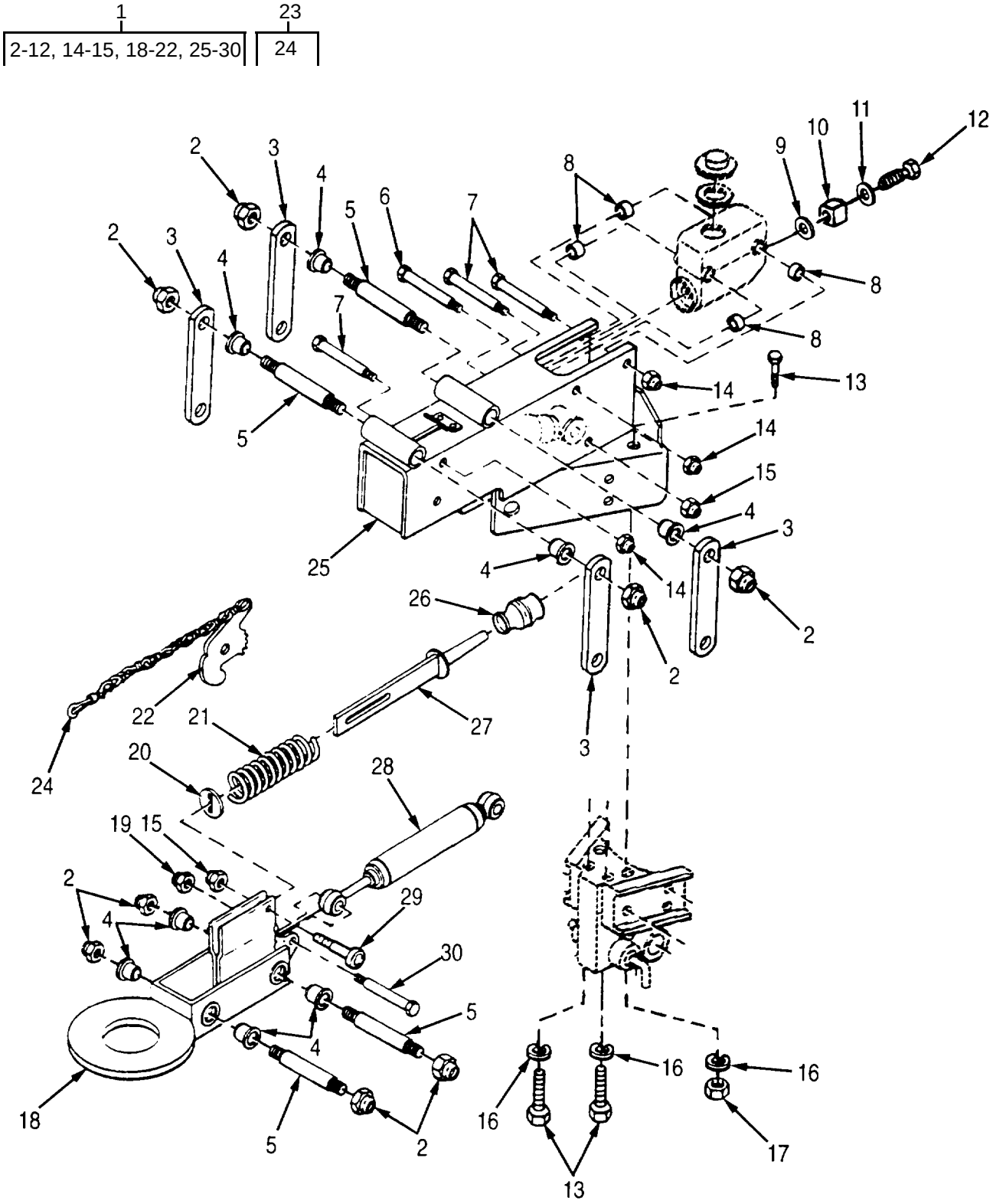


Figure 10. Hydraulic Brake Actuator Assembly, Surge (Sheet 1 of 2)

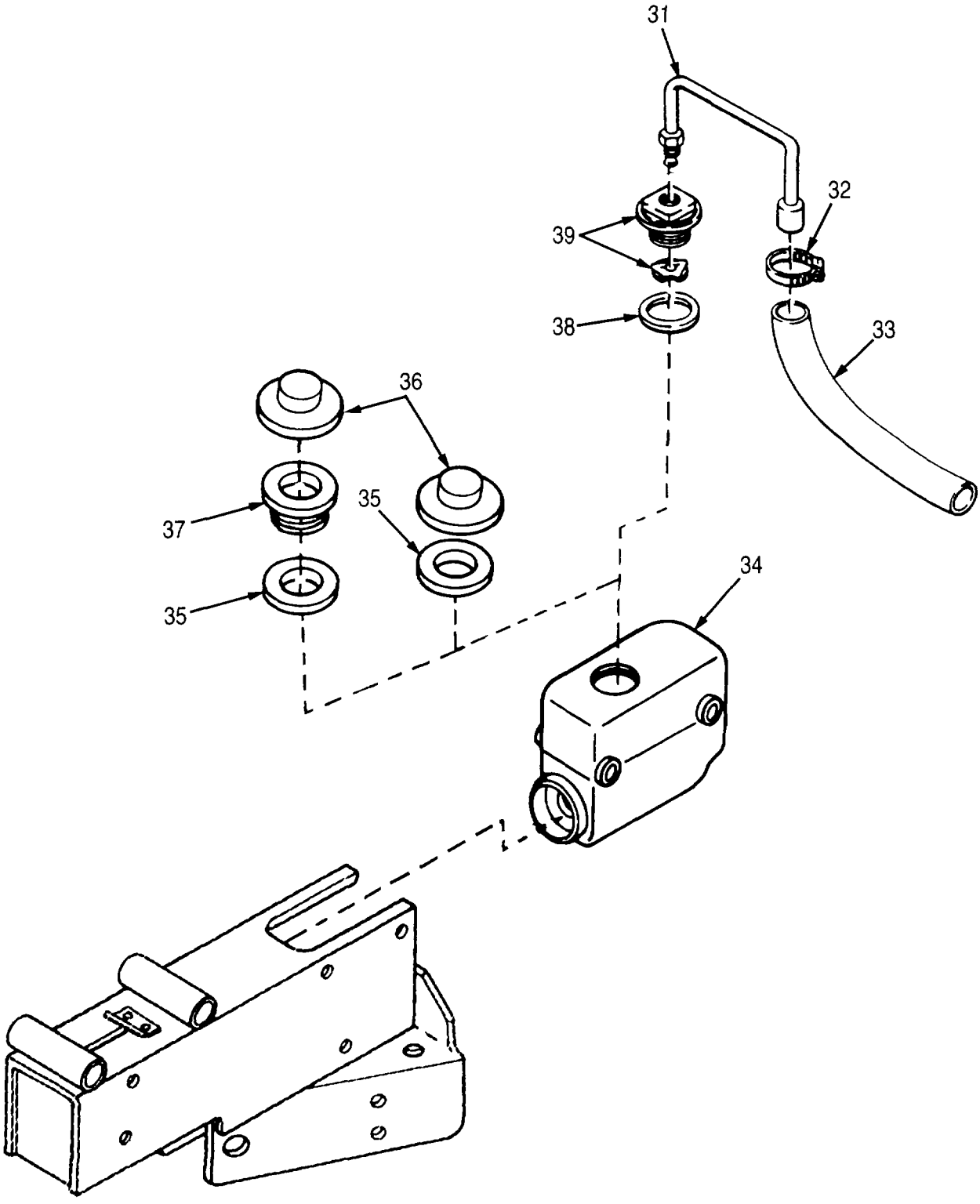


Figure 10. Hydraulic Brake Actuator Assembly, Surge (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1204 HYDRAULIC BRAKE SYSTEM	
					FIG.10 HYDRAULIC BRAKE ACTUATOR ASSEMBLY (SUGRE)	
1	PAOOO	2530013482989	19207	11675013	CATCH,CLAMPING HYDRAULIC BRAKE..... UOC:CT1,SPR,TC1,258,263	1
2	PAOZZ	5310008775795	96906	MS21044N8	.NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	8
3	PAOZZ	2540010516355	93072	1808-1	.LINK,CHAIN..... UOC:CT1,SPR,TC1,258,263	4
4	PAOZZ	3120010521151	93072	1745	.BEARING,SLEEVE..... UOC:CT1,SPR,TC1,258,263	8
5	PAOZZ	2540010516354	93072	1829	.SHAFT,CHAIN..... UOC:CT1,SPR,TC1,258,263	4
6	PAOZZ	5305007104205	96906	MS90726-99	.SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	5305007098423	96906	MS90727-97	.SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	3
8	PAOZZ	5365010536898	93072	1841	.SPACER,SLEEVE..... UOC:258,263	4
9	PAOZZ	5310002756635	19207	5214539	.WASHER,FLAT..... UOC:CT1,SPR,TC1,258,263	1
10	XBOZZ		19207	12362746	.CONNECTOR..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	5310002091761	19207	5160323	.WASHER,FLAT..... UOC:CT1,SPR,TC1,258,263	1
12	PFOZZ	4730010538468	19207	8762000	.BOLT,FLUID PASSAGE..... UOC:CT1,SPR,TC1,258,263	1
13	PAOZZ	5305007195209	96906	MS90727-110	SCREW,CAP,HEXAGON H 3/4 HEX, 1/2-UNF 20, 2A R/H, 1 1/8 INCHES LONG... UOC:CT1,SPR,TC1,258,263	2
14	PAOZZ	5310009591488	96906	MS51922-21	.NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	3
15	PAOZZ	5310000577080	96906	MS51922-29	.NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	2
16	PAOZZ	5310000034094	01276	210104-8S	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	1
17	PAOZZ	5310007320560	96906	MS51968-14	NUT,PLAIN,HEXAGON..... UOC:CT1,SPR,TC1,258,263	1
18	PAOZZ	2540010607031	93072	10632	.COUPLER,DRAWBAR,RIN..... UOC:CT1,SPR,TC1,258,263	1
19	PAOZZ	5310000742328	96906	MS21083-C7	.NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	1
20	PAOZZ	5310010508832	93072	1840	.WASHER,PUSH ROD..... UOC:CT1,SPR,TC1,258,263	1
21	PAOZZ	5360010542281	93072	1828	.SPRING..... UOC:CT1,SPR,TC1,258,263	1
22	PAOZZ	2530010507698	93072	1804	.LEVER BREAKAWAY..... UOC:CT1,SPR,TC1,258,263	1
23	PAOZZ	4010011586795	19207	12296386	CHAIN ASSEMBLY,SING..... UOC:CT1,SPR,TC1,258,263	1

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
24	PAOZZ	5340013859852	19207	12331722	.SNAP HOOK..... UOC:CT1,SPR,TC1,258,263	1
25	XAOZZ		19207	12314088	.CHANNEL,STRUCTURAL..... UOC:CT1,SPR,TC1,258,263	1
26	PAOZA	2530007157260	63477	F12300	.BOOT,VEHICULAR COMP..... UOC:CT1,SPR,TC1,258,263	1
27	PAOZZ	2530011671999	93072	10703	.PUSH ROD,HYDRAULIC..... UOC:CT1,SPR,TC1,258,263	1
28	PAOZZ	2510010507136	93072	1844-2	.SHOCK ABSORBER,DIRE..... UOC:CT1,SPR,TC1,258,263	1
29	PAOZZ	5305009496184	96906	MS51975-2	.SCREW,SHOULDER..... UOC:CT1,SPR,TC1,258,263	1
30	PAOZZ	5305007098542	80204	B1821BH044F200N	.SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
31	PFOZZ	4710005111692	19207	8365426	TUBE ASSEMBLY,METAL..... UOC:CT1,TC1	1
32	PAOZZ	4730009083194	12387	AEA9630A	CLAMP,HOSE..... UOC:CT1,TC1	1
33	PAOZZ	4720004895350	96906	MS521301A204R	HOSE,NONMETALLIC..... UOC:CT1,TC1	1
34	PAOZZ	2530010508929	93072	10614	CYLINDER ASSEMBLY,H..... UOC:CT1,SPR,TC1,258,263	1
35	PAOZZ	5330002916658	63477	F6019	GASKET..... UOC:CT1,SPR,TC1,258,263	1
36	PAOZZ	2590013882416	19207	12331725-2	CAP,FILLER OPENING..... UOC:CT1,SPR,TC1,258,263	1
37	PAOZZ	5340014189889	02686	126945	ADAPTER..... UOC:SPR,258,263	1
38	PAOZZ	5330007373354	19207	7373354	GASKET..... UOC:CT1,TC1	1
39	PAOZZ	4730007732163	63477	7979691	CAP,FILLER OPENING..... UOC:CT1,TC1	1

END OF FIGURE

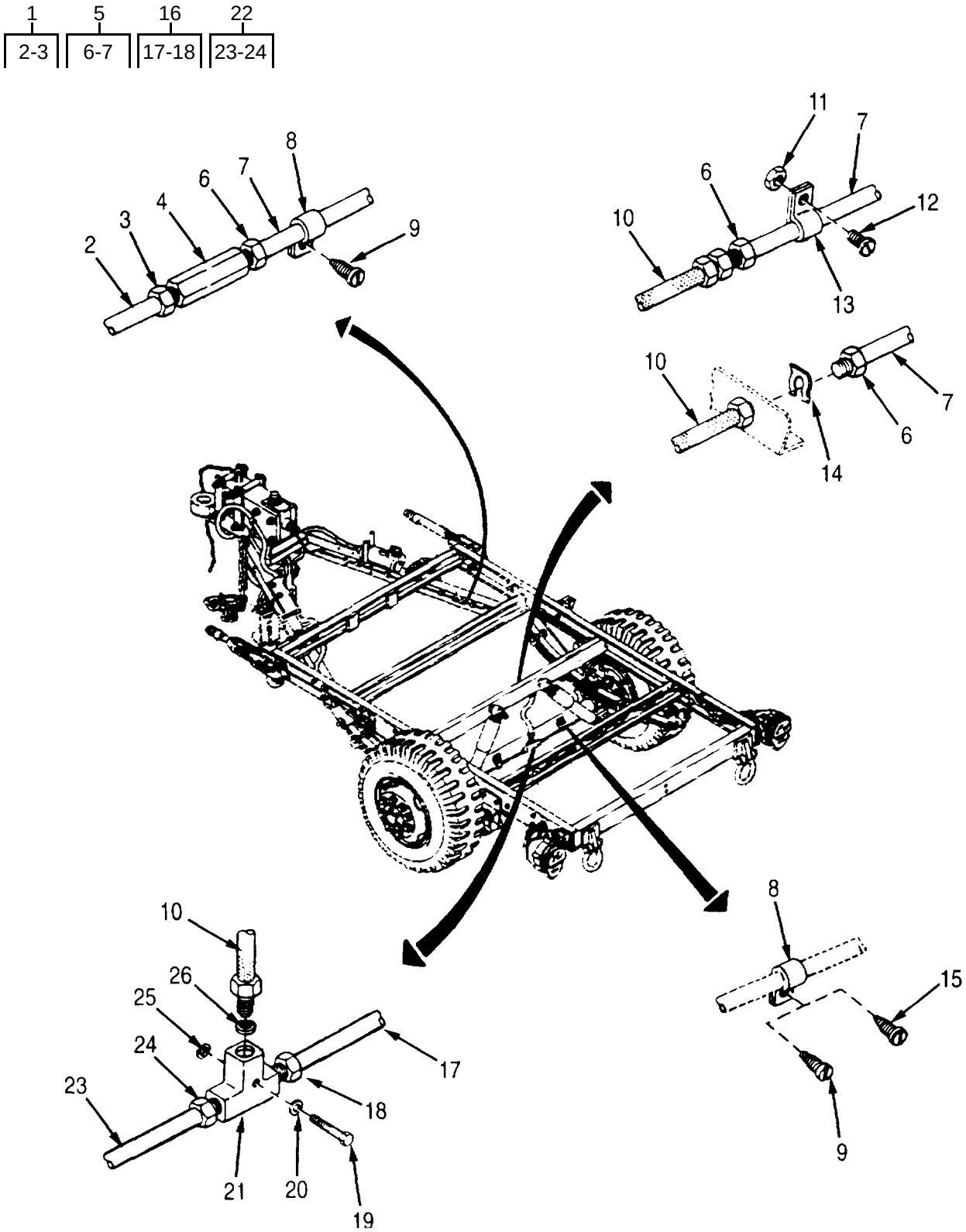


Figure 11. Hydraulic Brake Lines

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1204 HYDRAULIC BRAKE SYSTEM	
					FIG.11 HYDRUALIC BRAKE LINES	
1	AOOOO		19207	11686100	TUBE ASSEMBLY FRONT, SEE APPENDIX G UOC:258,263	1
1	AOOOO		19207	12354224	TUBE ASSEMBLY FRONT, SEE APPENDIX G UOC:CT1,SPR,TC1	1
2	MOOZZ		19207	11686100-56.5	.TUBE,BENT METALLIC FRONT, MAKE FROM TUBE,METALLIC,BENT, P/N 10943231, 56 1/2 INCHES LONG, SEE APPENDIX G..... UOC:258,263	1
2	MOOZZ		19207	12354224-1	.TUBE,BENT METALLIC FRONT, MAKE FROM TUBE,METALLIC, P/N M3520-B80B01G, 61 INCHES LONG,SEE APPENDIX G..... UOC:CT1,SPR,TC1	1
3	PAOZZ	5310001344141	21450	110357	.NUT,SPECIAL..... UOC:CT1,SPR,TC1,258,263	2
4	PAOZZ	4730002788853	21450	143449	COUPLING,TUBE..... UOC:CT1,SPR,TC1,258,263	1
5	AOOZZ		19207	11686102	TUBE ASSEMBLY REAR, SEE APPENDIX G. UOC:258,263	1
5	AOOZZ		19207	12354225	TUBE ASSEMBLY REAR, SEE APPENDIX G. UOC:CT1,SPR,TC1	1
6	PAOZZ	5310001344141	21450	110357	.NUT,SPECIAL..... UOC:CT1,SPR,TC1,258,263	2
7	MOOZZ		19207	11686102-1X	.TUBE,BENT METALLIC REAR, MAKE FROM TUBE,BENT,METALLIC, P/N M3520-B80B01G, 50 INCHES,LONG, SEE APPENDIX G..... UOC:258,263	1
7	MOOZZ		19207	12354225-1	.TUBE,BENT, METALLIC REAR, MAKE FROM TUBE,BENT,METALLIC, P/N 3520-B80B01G, 50 INCHES LONG, SEE APPENDIX G..... UOC:CT1,SPR,TC1	1
8	PAOZZ	5340007782738	96906	MS21333-2	CLAMP,LOOP..... UOC:CT1,SPR,TC1,258,263	13
9	PAOZZ	5305008550958	96906	MS24629-45	SCREW,TAPPING..... UOC:258,263	13
9	PAOZZ	5305008550958	96906	MS24629-45	SCREW,TAPPING..... UOC:CT1,SPR,TC1	11
10	PAOZZ	4720013066294	19207	12354199	HOSE ASSEMBLY,NONME..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	5310001436102	96906	MS51922-6	NUT,SELF-LOCKING,HE..... UOC:258,263	1
12	PAOZZ	5305002678953	80204	B1821BH025F063N	SCREW,CAP,HEXAGON H..... UOC:258,263	1
13	PAOZZ	5340009936207	96906	MS21333-99	CLAMP,LOOP..... UOC:258,263	1

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
14	PAOZZ	5325008642993	19207	7735289	RING,RETAINING..... UOC:CT1,SPR,TC1	1
15	PAOZZ	5305008550964	96906	MS24629-48	SCREW,TAPPING..... UOC:CT1,SPR,TC1	2
16	AOOOO		19207	11686103-2	TUBE ASSEMBLY RIGHT, SEE APPENDIX G UOC:SPR,258,263	1
16	AOOOO		19207	12362795	TUBE ASSEMBLY RIGHT,MAKE FROM TUBE, BENT,METALLIC, P/N M3520-B80B01G,41 INCH LONG, SEE APPENDIX G..... UOC:CT1,TC1	1
17	MOOZZ		19207	11686103-2-1X	.TUBE,BENT,METALLIC RIGHT, MAKE FROM TUBE,BENT,METALLIC, P/N B3520-B80B01G, 32 INCHES LONG, SEE APPENDIX G..... UOC:SPR,258,263	1
17	MOOZZ		19207	12362795-1	.TUBE,BENT,METALLIC RIGHT, MAKE FROM TUBE,BENT,METALLIC, P/N M3520-B80A00G, 41 INCHES LONG, SEE APPENDIX G..... UOC:CT1,TC1	1
18	PAOZZ	5310001344141	21450	110357	.NUT,SPECIAL..... UOC:CT1,SPR,TC1,258,263	2
19	PAOZZ	5305002253843	80204	B1821BH025C100N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
20	PAOZZ	5310008094058	96906	MS27183-10	WASHER,FLAT..... UOC:CT1,SPR,TC1,258,263	1
21	PAOZZ	4730010433055	19207	11625496	TEE,TUBE..... UOC:CT1,SPR,TC1,258,263	1
22	AOOOO		19207	11686103-1	TUBE ASSEMBLY LEFT, SEE APPENDIX G. UOC:SPR,258,263	1
22	AOOOO		19207	12362796	TUBE ASSEMBLY LEFT, SEE APPENDIX G. UOC:CT1,TC1	1
23	MOOZZ		19207	11686103-1-1X	.TUBE,BENT,METALLIC LEFT, MAKE FROM TUBE,BENT,METALLIC, P/N B3520-B80B01G, 40 INCHES LONG, SEE APPENDIX G..... UOC:SPR,258,263	1
23	MOOZZ		19207	12362796-1	.TUBE,BENT,METALLIC LEFT, MAKE FROM TUBE,BENT,METALLIC, P/N B3520-B80B01G, 40 INCHES LONG, SEE APPENDIX G..... UOC:CT1,TC1	1
24	PAOZZ	5310001344141	21450	110357	.NUT,SPECIAL..... UOC:CT1,SPR,TC1,258,263	2
25	PAOZZ	5310005825965	96906	MS35338-44	WASHER,LOCK..... UOC:CT1,SPR,TC1,258,263	1
26	PAOZZ	5330010441941	19207	11625497	GASKET..... UOC:CT1,SPR,TC1,258,263	1

END OF FIGURE

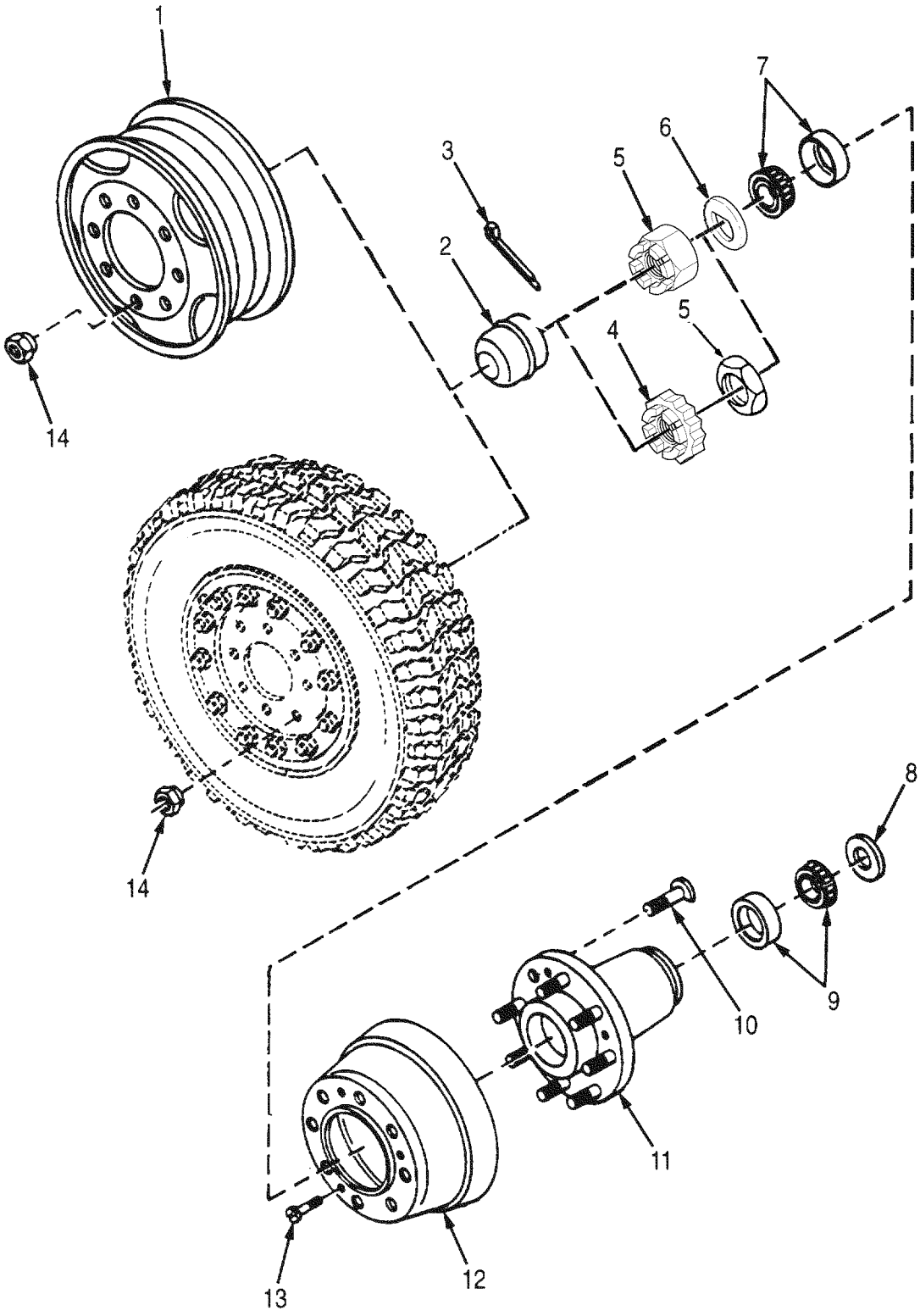


Figure 12. Wheel and Hub Assembly (Sheet 1 of 2)

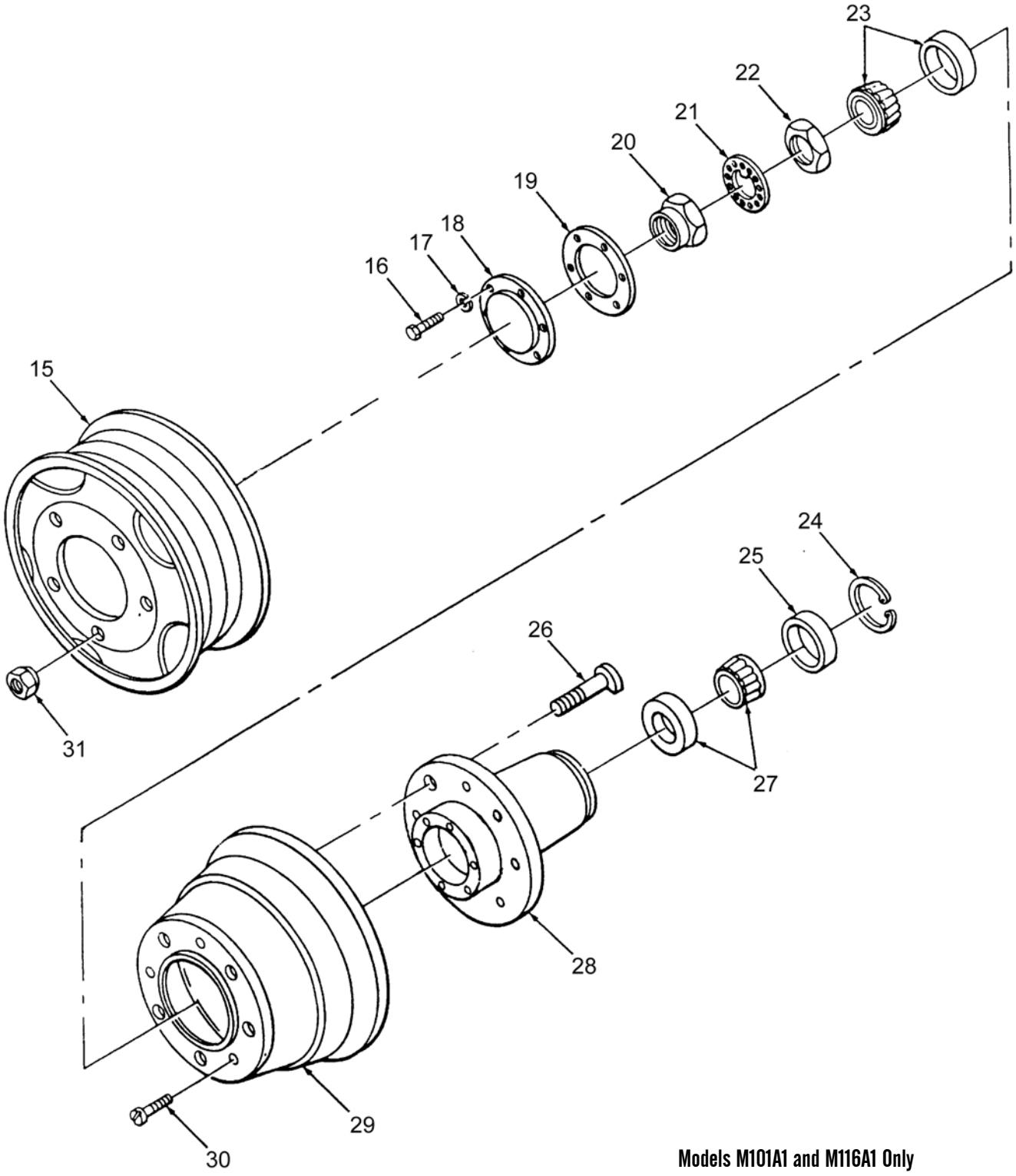


Figure 12. Wheel and Hub Assembly (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 13 WHEELS AND TRACK	
					GROUP 1311 WHEEL ASSEMBLY	
					FIG.12 WHEEL AND HUB ASSEMBLY	
1	PAOZZ	2530011546952	11862	14035374	WHEEL,PNEUMATIC TIR..... UOC:SPR,258,263	1
2	PAOZZ	3040011495061	19207	12313048	CAP,GREASE..... UOC:CT1,SPR,TC1,258,263	1
3	PAOZZ	5315000137238	96906	MS24665-425	PIN,COTTER 1.75 INCHES LONG..... UOC:CT1,TC1,257,646	1
3	PAOZZ	5315002368368	96906	MS24665-436	PIN,COTTER 0.75 INCHES LONG..... UOC:SPR,258,263	1
4	PAOZZ	5340011514202	19207	12313042	RETAINER,NUT AND BO..... UOC:CT1,SPR,TC1,258,263	2
5	PAOZZ	5310014980322	19207	12441093	NUT,PLAIN,CASTELLAT..... UOC:CT1,TC1	1
5	PAOZZ	5310001671313	80205	AN316-16R	NUT,PLAIN,HEX..... OLDER MODELS WITH LARGER HEX NUT	1
6	PAOZZ	5310011469635	19207	12313024	WASHER,FLAT..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	3110011654860	19207	12313045	BEARING,ROLLER,TAPE..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	5330011408231	19207	12313027	SEAL,PLAIN ENCASED..... UOC:CT1,SPR,TC1,258,263	1
9	PAOZZ	3110001005303	1TUY2	10229 AND 10228	BEARING,ROLLER,TAPE..... UOC:CT1,SPR,TC1,258,263	1
10	PAOZZ	5306012376844	19207	12354223	BOLT,RIBBED SHOULDE..... UOC:CT1,SPR,TC1,258,263	8
11	PAOZZ	3040011399900	19207	12313010	HUB,BODY..... UOC:CT1,SPR,TC1,258,263	1
12	PAOZZ	2530011487074	19207	12313012	BRAKE DRUM..... UOC:CT1,SPR,TC1,258,263	1
13	PAOZZ	5305009585258	96906	MS35190-317	SCREW,MACHINE..... UOC:CT1,SPR,TC1,258,263	2
14	PAOZZ	5310011490868	19207	12313047	NUT,PLAIN,HEXAGON..... UOC:CT1,SPR,TC1,258,263	8
15	PAOZZ	2530015341110	1JUW8	BMS7388452-2	WHEEL,PNEUMATIC TIR..... UOC:257,646	2
16	PAOZZ	5305000711788	80204	B1821BH044C125N	SCREW,CAP,HEXAGON H..... UOC:257,646	12
17	PAOZZ	5310002090965	80205	MS35338-47	WASHER,LOCK..... UOC:257,646	12
18	PAOZZ	5340000402367	19207	7339402	COVER,ACCESS..... UOC:257,646	2
19	PAOZZ	5330006294961	19207	7339403	GASKET..... UOC:257,646	2
20	PAOZZ	5310007348982	19207	7348982	NUT,SLEEVE..... UOC:257,646	2
21	PAOZZ	5310007349223	19207	7349223	WASHER,KEY..... UOC:257,646	2
22	PAOZZ	5310007414702	19207	7414702	NUT,PLAIN,OCTAGON..... UOC:257,646	2

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
23	PAOZZ	3110001004484	58536	AA59649-304	BEARING,ROLLER,TAPE CONE AND CUP OUTER..... UOC:257,646	2
24	PAOZZ	5325002604882	96906	MS16625-1387	RING,RETAINING OIL SEAL..... UOC:257,646	2
25	PAOZZ	5330001548353	14153	00044	SEAL,PLAIN ENCASED HUB BEARING..... UOC:257,646	2
26	PAOZZ	5306011304240	96906	MS51949-2	BOLT,SHOULDER RIGHT..... UOC:257,646	5
26	PAOZZ	5306010097117	96906	MS51949-1	BOLT,SHOULDER LEFT..... UOC:257,646	5
27	PAOZZ	3110001005329	89346	105502H	BEARING,ROLLER,TAPE..... UOC:257,646	1
28	PBOZZ	3040011450382	19207	5599887	HUB,BODY..... UOC:257,646	1
29	PAOZZ	2530007860195	19207	12354239	BRAKE DRUM..... UOC:257,646	1
30	PAOZZ	5305009585259	80205	MS35190-318	SCREW,MACHINE..... UOC:257,646	3
31	PAOZZ	5310010453709	58536	A52427-R-0.750	NUT,PLAIN,SINGLE BA RIGHT..... UOC:257,646	5
31	PAOZZ	5310005185566	58536	A52427-L-0.750	NUT,PLAIN,SINGLE BA LEFT..... UOC:257,646	5

END OF FIGURE

1	2
2-14	3

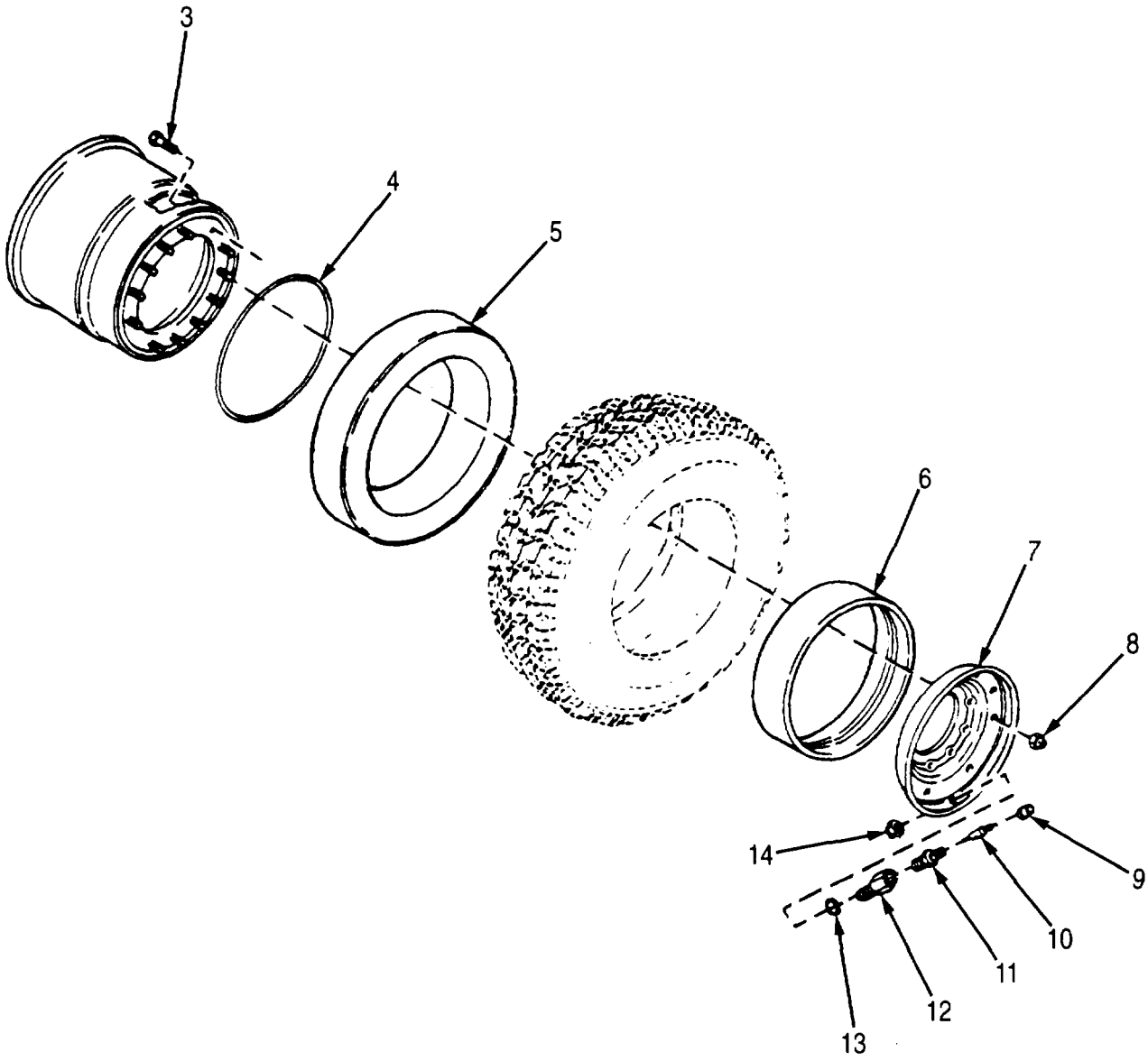


Figure 13. Wheel and Runflat Assembly (M101A3 and M116A3)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1311 WHEEL ASSEMBLY	
					FIG.13 WHEEL AND RUNFLAT ASSEMBLY (M101A3 AND M116A3)	
1	AOOOO		19207	12342641	WHEEL AND RUN FLAT ASSEMBLY RADIAL TIRE..... UOC:CT1,TC1	1
2	XDOOO		19207	12342642	.RIM,WHEEL,PNEUMATIC..... UOC:CT1,TC1	1
3	PAOZZ	5306013367175	19207	12342758	..BOLT,RIBBED NECK..... UOC:CT1,TC1	12
4	PAOZZ	5331013358878	19207	12342633	.O-RING..... UOC:CT1,TC1	1
5	PAOZZ	2640013349453	19207	12342638	.RUNFLAT,INSERT..... UOC:CT1,TC1	1
6	PAOZZ	2530013382730	34623	12342639	.BEADLOCK,TIRE RIM..... UOC:CT1,TC1	1
7	XDOZZ		19207	12342640	.RIM,WHEEL,PNEUMATIC..... UOC:CT1,TC1	1
8	PAOZZ	5310011987585	19207	12339501	.NUT,SELF-LOCKING,HE..... UOC:CT1,TC1	12
9	PAOZZ	2640010982029	81348	TYIV/CL1/TRVC8	.CAP,PNEUMATIC VALVE..... UOC:CT1,TC1	1
10	PAOZZ	2640000501229	81348	TYV/CL2/TR C1	.VALVE CORE..... UOC:CT1,TC1	1
11	PAOZZ	2640013354583	19207	12342634	.VALVE,PNEUMATIC TIR..... UOC:CT1,TC1	1
12	PAOZZ	4730013461063	19207	12342793	.ADAPTER,STRAIGHT,PI..... UOC:CT1,TC1	1
13	PAOZZ	5331013463806	19207	12342794	.O-RING..... UOC:CT1,TC1	1
14	PAOZZ	5310004492376	96906	MS21245-8	.NUT,SELF-LOCKING,HE..... UOC:CT1,TC1	1

END OF FIGURE

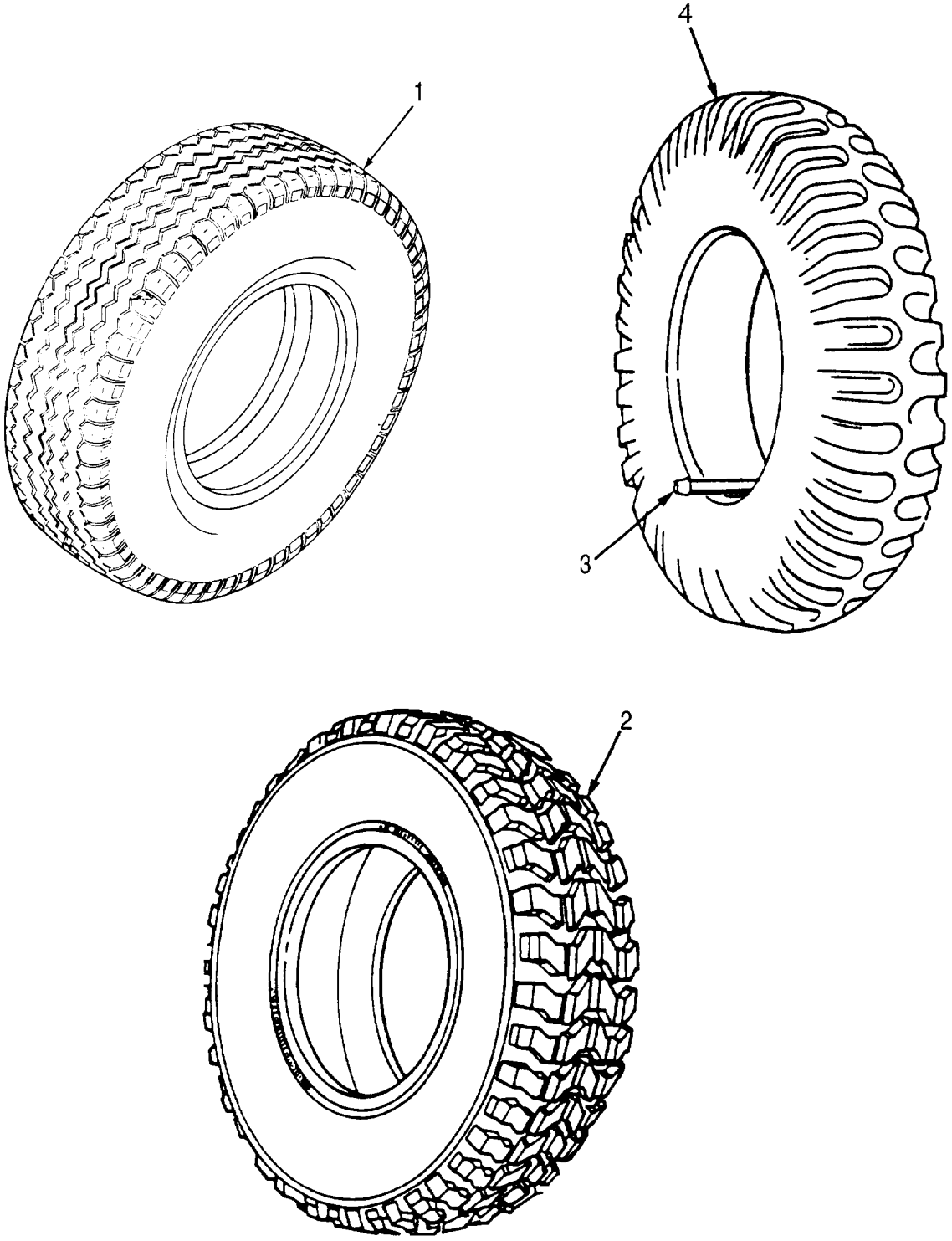
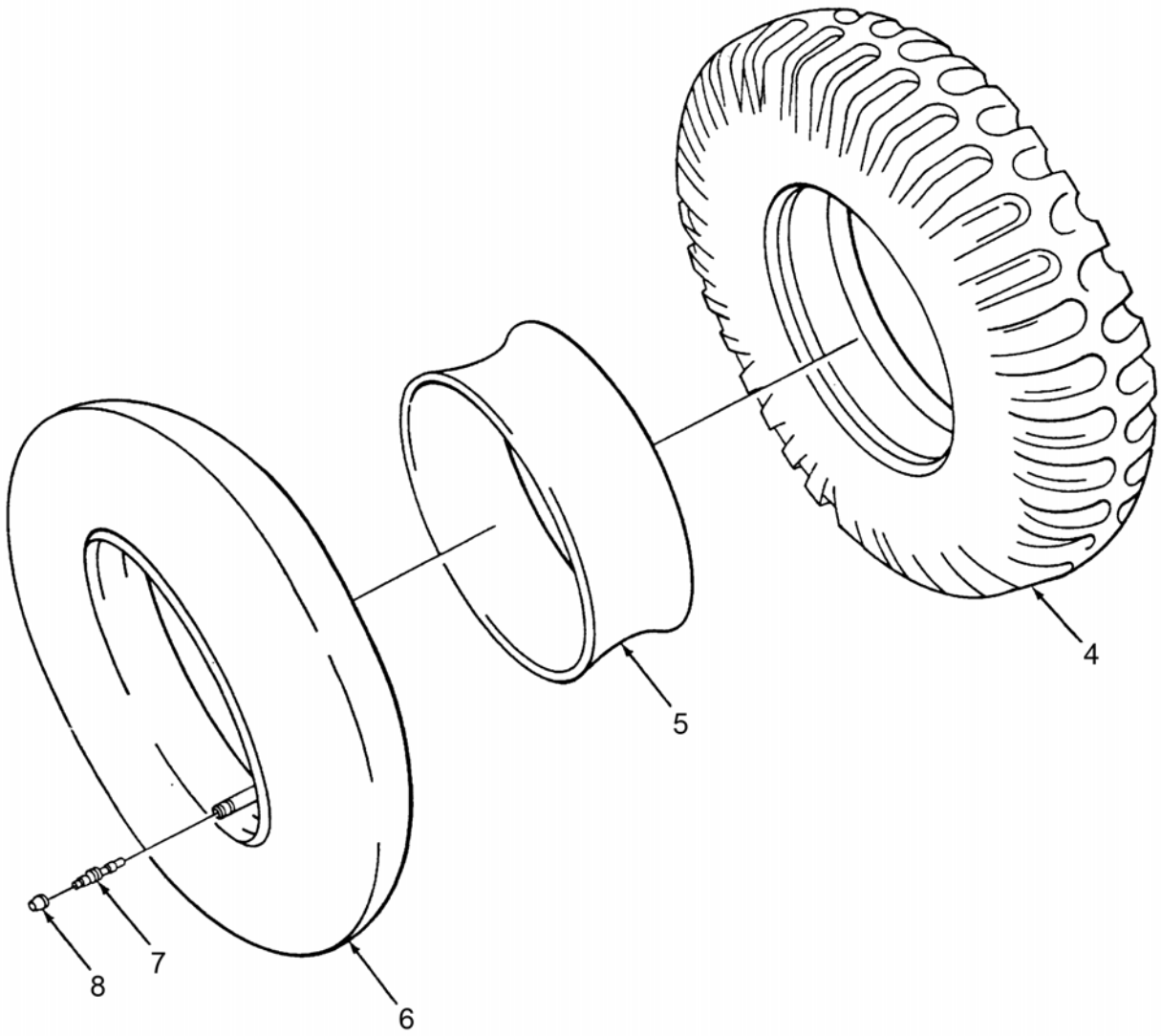


Figure 14. Tire and Valve (sheet 1 of 2)



Models M101A1 and M116A1 Only

Figure 14. Tire and Valve (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1313 TIRES, TUBES, TIRE CHAINS	
					FIG.14 TIRE AND VALVE	
1	PCOHH	2610011481635	12195	03612460	TIRE,PNEUMATIC,VEHI RADIAL..... UOC:SPR,257,258,263	1
2	PCOFH	2610013337632	04NP3	743-123-154	TIRE,PNEUMATIC,VEHI..... UOC:CT1,TC1	1
3	PAOZZ	2640005552829	96906	MS51368-2	VALVE,PNEUMATIC TIR OLD..... UOC:SPR,258,263	1
3	PAOZZ	2640013021388	6V625	30-600	VALVE,PNEUMATIC TIR NEW, 0.453 HOLE UOC:SPR,258,263	1
4	PCOFF	2610005404719	81349	MIL-T-12459/CLMS /SB/9.00-16/D/MS	TIRE ,PNELMATIC..... UOC:257,646	2
5	PAOZZ	2640002087541	9Y199	6167100.1	FLAP,INNER TUBE,PNE..... UOC:257,646	2
6	PAOZZ	2610000519266	81348	ZZ-I-550/G2/9.00 -16/TR177A/ONCEN	INNER TUBE..... UOC:257,646	2
7	PAOZZ	2640000501229	73842	TRC1	VALVE CORE..... UOC:257,646	2
8	PAOZZ	2640000603550	58536	TY-IV/CL1/TR-VC2	CAP,PNEUMATIC VALVE..... UOC:257,646	2

END OF FIGURE

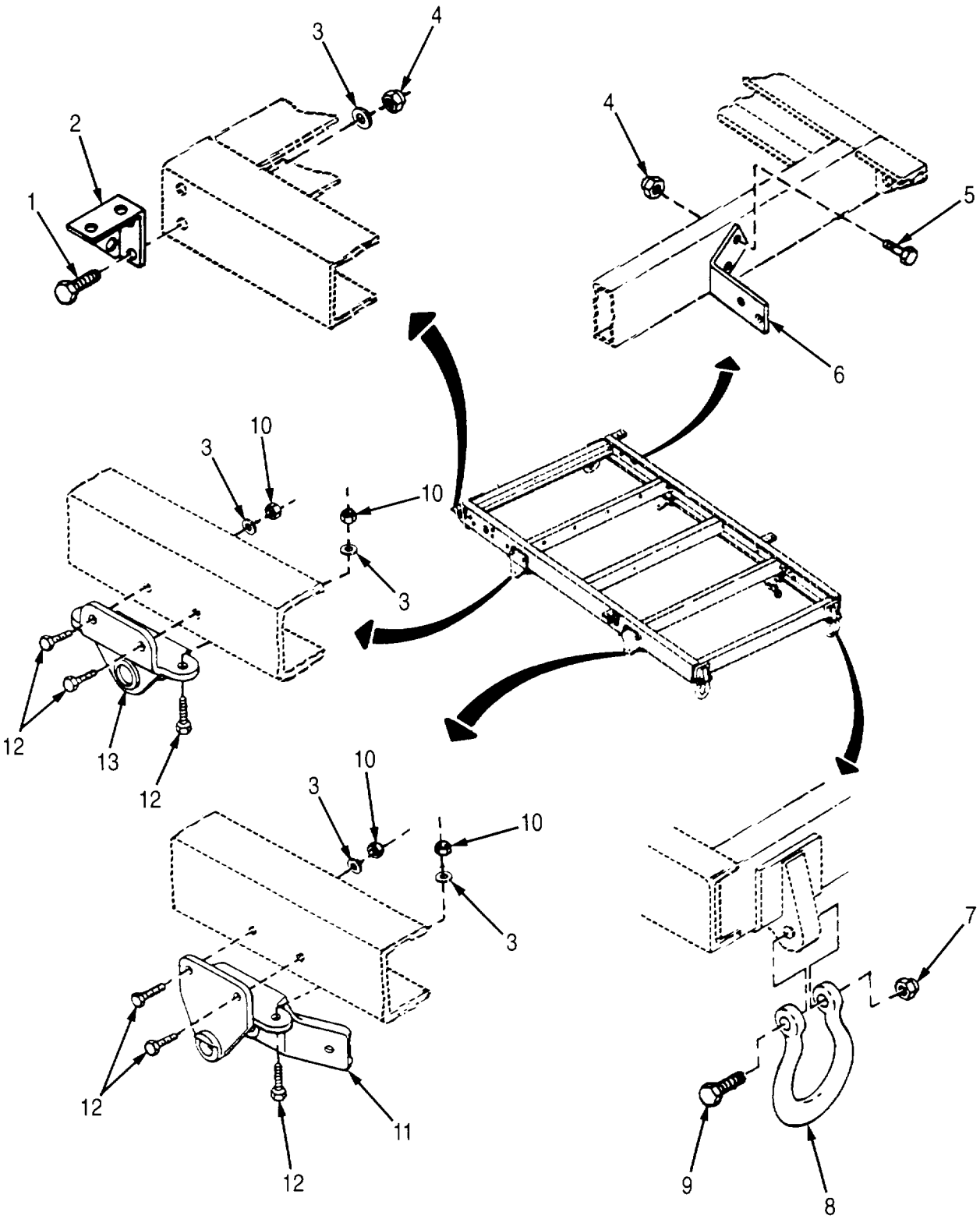


Figure 15. Chassis Frame Assembly (Sheet 1 of 2)

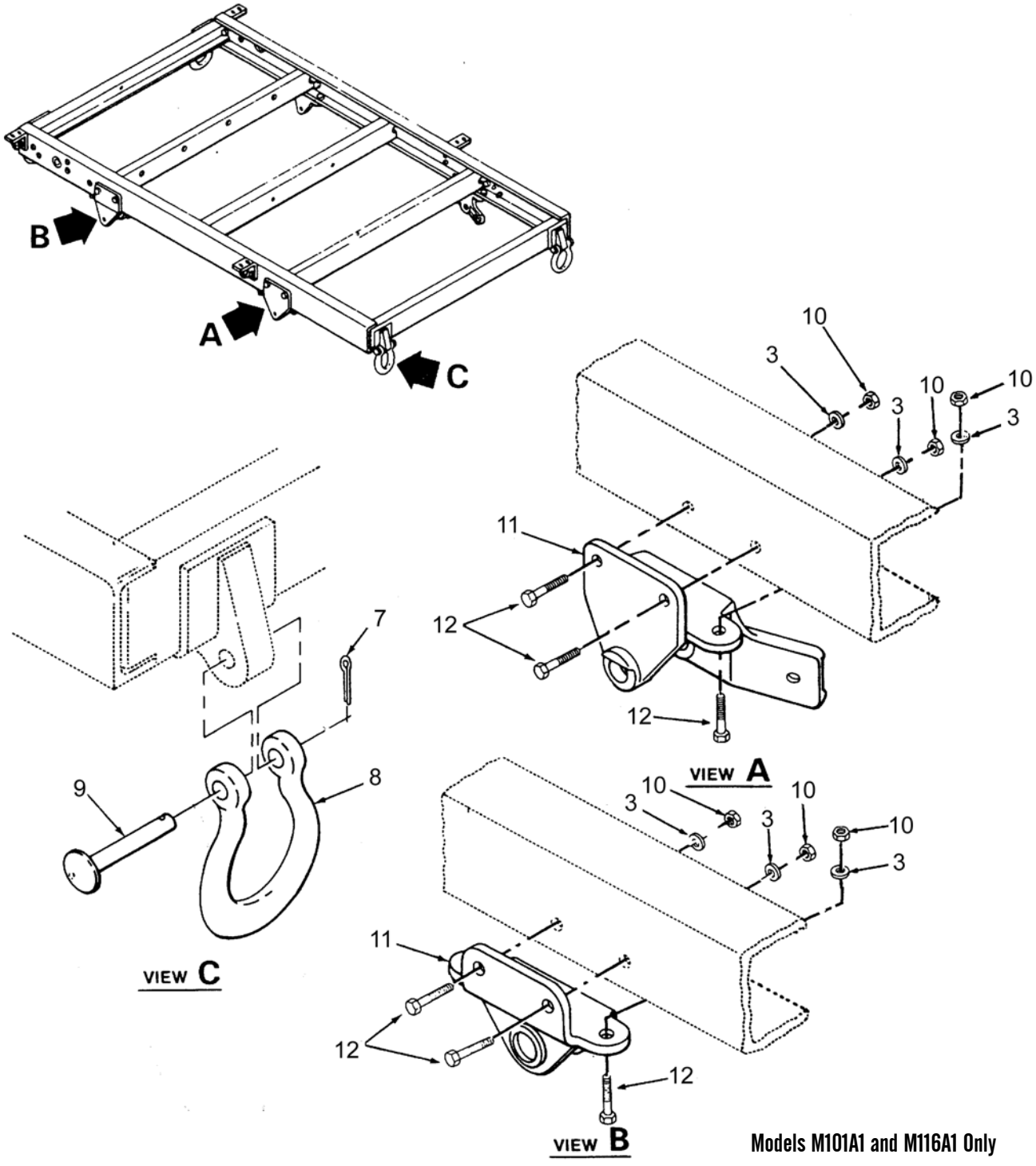


Figure 15. Chassis Frame Assembly (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 15 FRAME,TOWING ATTACHMENTS, DRAWBARS, AND ARTICULATION SYSTEMS	
					GROUP 1501 FRAME ASSEMBLY	
					FIG.15 CHASSIS FRAME ASSEMBLY	
1	PAOZZ	5305000680511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	2
2	PAOZZ	5340007339365	19207	7339365	BRACKET,ANGLE..... UOC:CT1,SPR,TC1,258,263	1
3	PAOZZ	5310008775972	19200	10910174-3	WASHER,FLAT..... UOC:CT1,SPR,TC1,258,263	10
3	PAOZZ	5310000806004	96906	MS27183-14	WASHER,FLAT..... UOC:257,646	16
4	PAOZZ	5310000874652	96906	MS51922-17	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	4
5	PAOZZ	5305011409118	80204	B1821BH038C088N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	2
6	PAOZZ	5340000402372	19207	7339489	BRACKET,ANGLE RIGHT..... UOC:CT1,SPR,TC1,258,263	1
6	PAOZZ	5340007339367	19207	7339367	BRACKET,ANGLE LEFT..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	5310000676356	96906	MS51922-57	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1	1
7	PAOZZ	5315000120123	80205	MS24665-355	PIN,COTTER..... UOC:257,646	4
8	PAOZZ	4030013719331	19207	12355838	SHACKLE..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	4030010446040	19207	7339368	SHACKLE..... UOC:257,646	4
9	PAOZZ	5305009474356	80204	B1821BH075C350N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1	4
9	PAOZZ	5315011128102	19207	7339369	PIN,STRAIGHT,HEADED..... UOC:257,646	4
10	PAOZZ	5310004838789	96906	MS17829-6F	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1	8
10	PAOZZ	5310004838789	80205	MS17829-6F	NUT,SELF-LOCKING,HE..... UOC:257,646	16
11	PAOZZ	2510007339406	19207	7339406	HANGER,SPRING,VEHIC LEFT..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	2510007058969	19207	7339405	BRACKET,MOUNTING RIGHT..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	2510007339406	19207	7339406	HANGER,SPRING,VEHIC LEFT..... UOC:257,646	1
11	PAOZZ	2510007058969	19207	7339405	HANGER,SPRING,VEHIC RIGHT..... UOC:257,646	1
12	PAOZZ	5305002693239	80204	B1821BH038F138N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	8
12	PAOZZ	5305002693238	80204	B1821BH038F125N	SCREW,CAP,HEXAGON H..... UOC:257,646	16
13	PAOZZ	2510007339407	19207	7339407	SHACKLE,LEAF SPRING REAR.....	2

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
13	PAOZZ	2510007339407	19207	7339407	UOC:CT1,SPR,TC1,258,263 SHACKLE,LEAF SPRING REAR..... UOC:257,646	2

END OF FIGURE

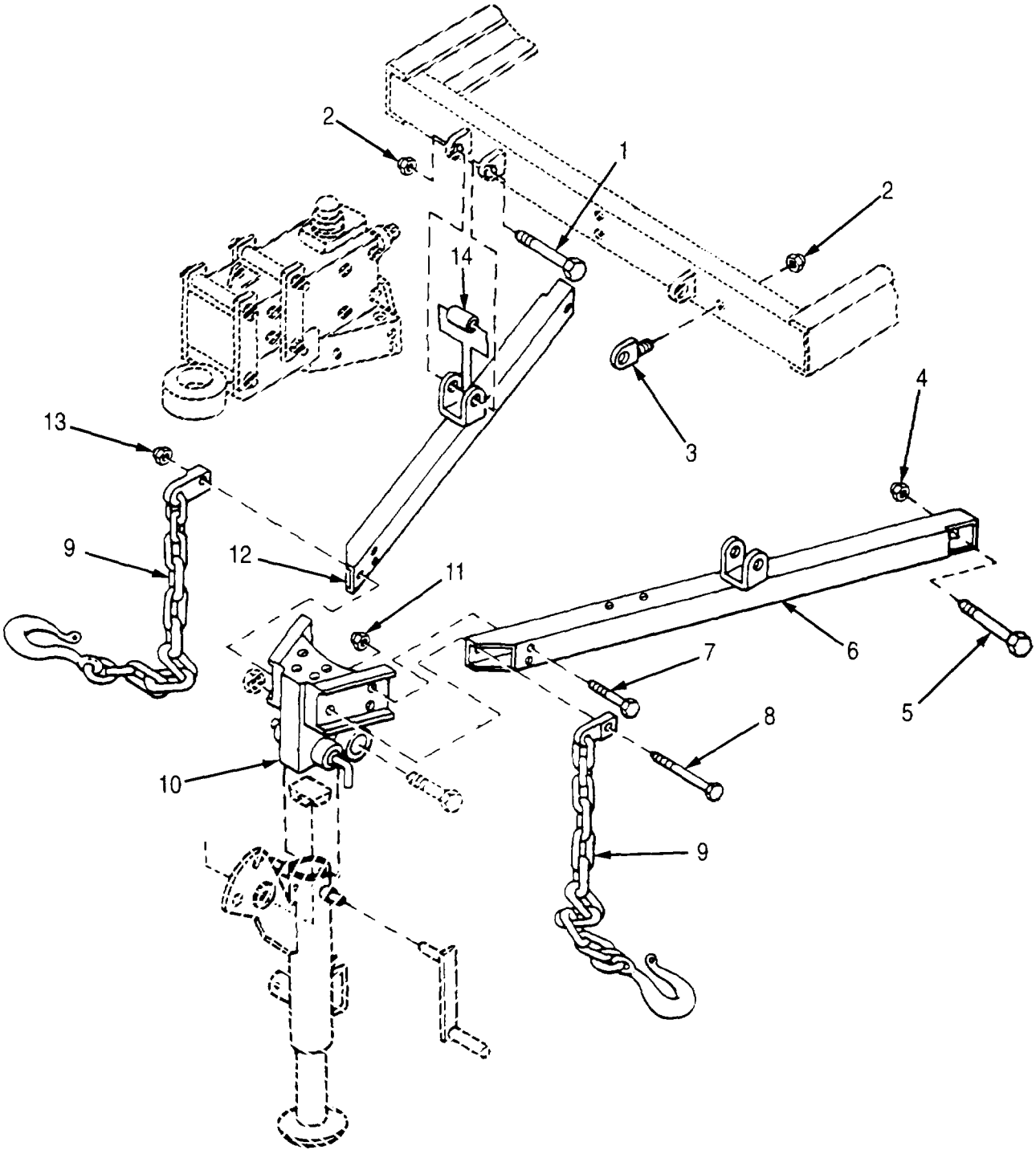
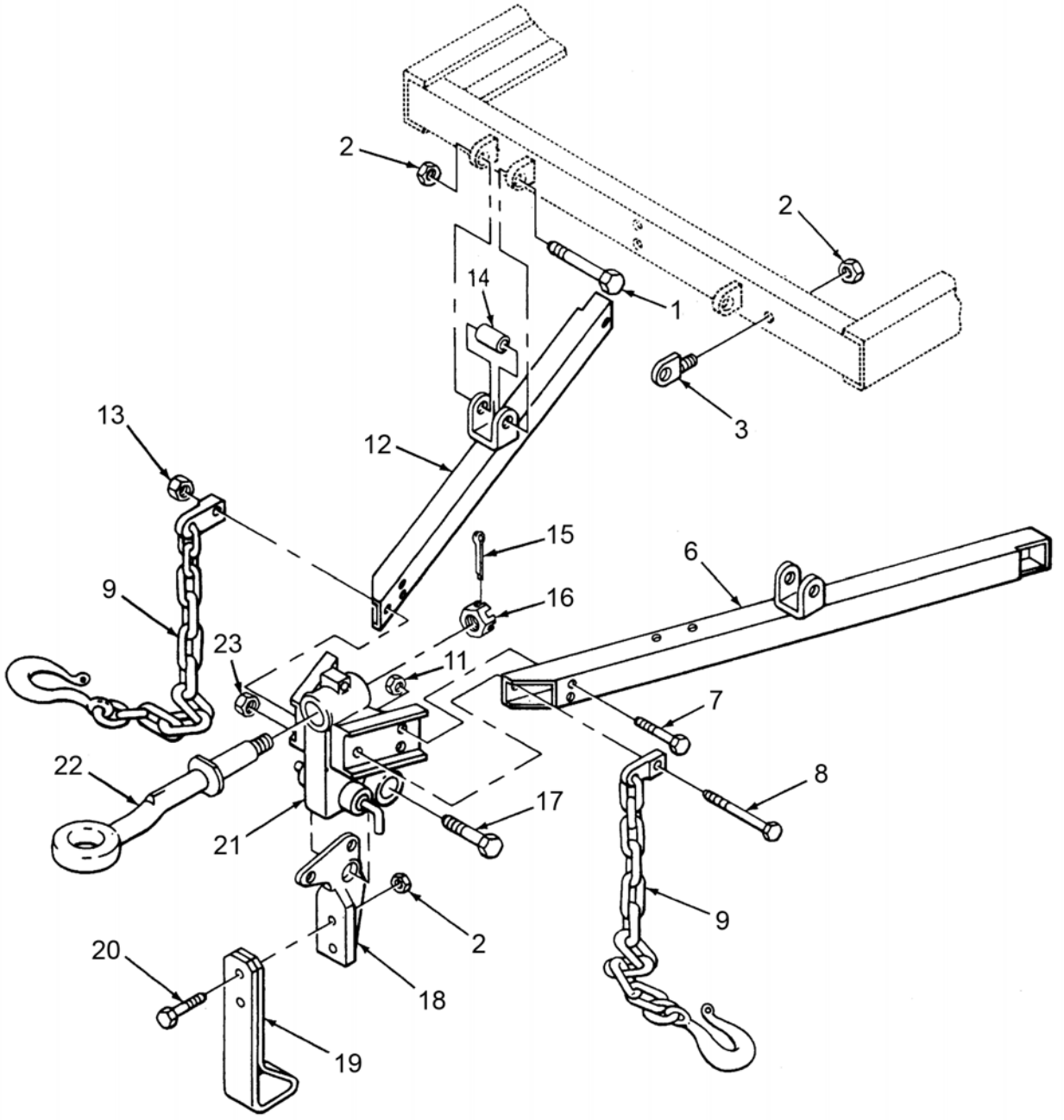


Figure 16. Drawbar Assembly and Safety Chains (Sheet 1 of 2)



Models M101A1 and M116A1 Only

Figure 16. Drawbar Assembly and Safety Chains (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1503 PINTLES AND TOWING ATTACHMENTS	
					FIG.16 DRAWBAR ASSEMBLY AND SAFTEY CHAINS	
1	PAOZZ	5305009456412	96906	MS90727-127	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	2
1	PAOZZ	5305009456412	96906	MS90727-127	SCREW,CAP,HEXAGON H..... UOC:257,646	2
2	PAOZZ	5310008775795	96906	MS21044-N8	NUT,SELF-LOCKING,HE.....	8
3	PAOZZ	5306007337360	19207	7339360	BOLT,EYE..... UOC:CT1,SPR,TC1,258,263	4
3	PAOZZ	5306007337360	19207	7339360	BOLT,EYE..... UOC:257,646	4
4	PAOZZ	5310002694040	96906	MS51922-49	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	2
5	PAOZZ	5305007245910	96906	MS90725-162	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	2
6	PAOZZ	2510000402369	19207	7339474	BAR ASSEMBLY,DRAWBA LEFT HAND..... UOC:257,258,263,646	1
6	PAOZZ	2540013697471	19207	10910697	TOWBAR,MOTOR VEHICL DRAWBAR, LEFT HAND..... UOC:CT1,SPR,TC1	1
7	PAOZZ	5305007098515	96906	MS90727-88	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	4
7	PAOZZ	5305000711789	80204	B1821BH044C138N	SCREW,CAP,HEXAGON H..... UOC:257,646	4
8	PAOZZ	5305009589428	96906	MS90727-201	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	5305009589428	80204	B1821BH075F600N	SCREW,CAP,HEXAGON H..... UOC:257,646	1
9	PAOZZ	4010007339458	19207	7339458	CHAIN ASSEMBLY,SING..... UOC:CT1,SPR,TC1,258,263	2
9	PAOZZ	4010007339458	19207	7339458	CHAIN ASSEMBLY,SING..... UOC:257,646	2
10	PAOZZ	2540011543892	19207	11675105	BRACKET AND PLUNGER..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	5310000577080	96906	MS51922-29	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	4
11	PAOZZ	5310005755329	81349	M45913/1-7CG5C	NUT,SELF-LOCKING,HE..... UOC:257,646	4
12	PAOZZ	2510000402370	19207	7339475	BAR ASSEMBLY,DRAWBA RIGHT HAND..... UOC:257,258,263,646	1
12	PAOZZ	2510014807319	19207	10910698	BRACKET,MOUNTING DRAWBAR, RIGHT HAND..... UOC:CT1,SPR,TC1	1
13	PAOZZ	5310008329719	96906	MS51922-61	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	1
14	PAOZZ	5365007339359	02386	7339359	SPACER,SLEEVE..... UOC:CT1,SPR,TC1,258,263	2

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
14	PAOZZ	5365007339359	19207	7339359	SPACER,SLEEVE..... UOC:257,646	2
15	PAOZZ	5315000137258	80205	MS24665-497	PIN,COTTER..... UOC:257,646	1
16	PAOZZ	5310007411028	19207	7411028	NUT,PLAIN,SLOTTED,H..... UOC:257,646	1
17	PAOZZ	5305009472309	80204	B1821BH075F375N	SCREW,CAP,HEXAGON H..... UOC:257,646	2
18	PAOZZ	5340007328315	71770	10383	BRACKET,MOUNTING..... UOC:257,646	1
19	PAOZZ	2530007339354	19207	7339354	LEG..... UOC:257,646	1
20	PAOZZ	5305007195235	80204	B1821BH050F175N	SCREW,CAP,HEXAGON H..... UOC:257,646	2
21	PAOZZ	2540000402373	19207	7339497	BRACKET ASSEMBLY,DR..... UOC:257,646	1
22	PAOZZ	2540007735482	34623	A14047	COUPLER,DRAWBAR,RIN..... UOC:257,646	1
23	PAOZZ	5310008329719	81349	M45913/2-12FG5C	NUT,SELF-LOCKING,HE..... UOC:257,646	2

END OF FIGURE

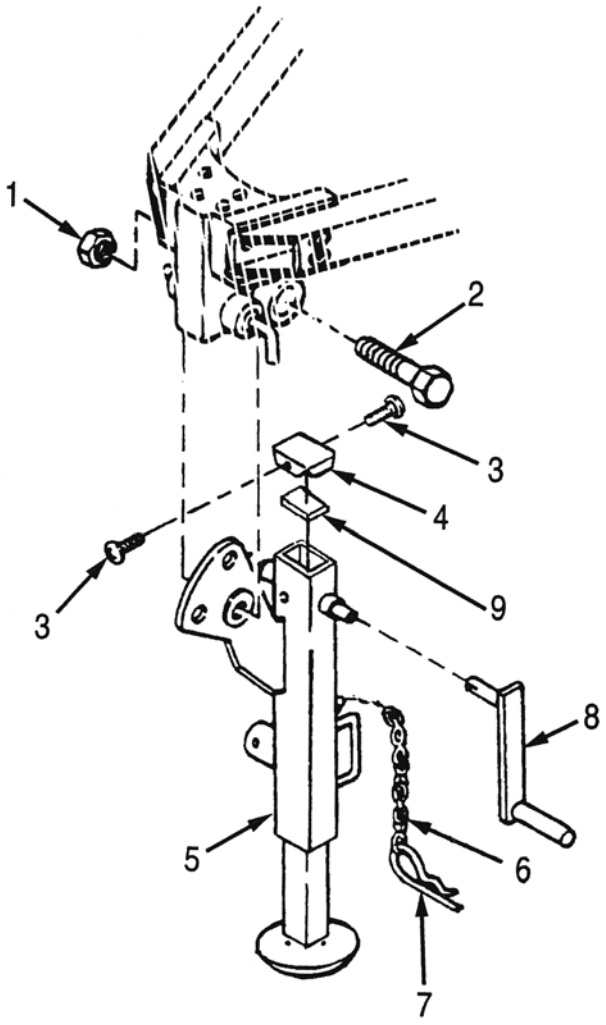


Figure 17. Front Support Leg

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1507 LANDING GEAR, LEVELING JACKS	
					FIG.17 FRONT SUPPORT LEG	
1	PAOZZ	5310008329719	96906	MS51922-61	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	1
2	PAOZZ	5305009472309	80204	B1821BH075F375N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,TC1,258,263	1
3	PAOZZ	5305007195235	80204	B1821BH050F175N	SCREW,CAP,HEXAGON H..... UOC:CT1,SPR,258,263	2
4	XDOZZ		02686	126861	CAP,LANDING JACK..... UOC:CT1,SPR,TC1	1
5	PAOZZ	2590013880958	19207	12436705	JACK,LEVELING-SUPPO..... UOC:CT1,SPR,TC1,258,263	1
6	MOOZZ		81348	RRC271-8	CHAIN,WELDLESS MAKE FROM CHAIN P/N RRC271..... UOC:CT1,SPR,TC1,258,263	1
7	PAOZZ	5315011470855	19207	11602356-2	PIN,LOCK..... UOC:CT1,SPR,TC1,258,263	1
8	PAOZZ	5340013863974	19207	12441073	HANDLE,BOW..... UOC:CT1,SPR,TC1,258,263	1
9	MOOZZ		02686	126853	GASKET,CAP MAKE FROM CORK P/N ASTM F104..... UOC:CT1,SPR,TC1,258,263	1

END OF FIGURE

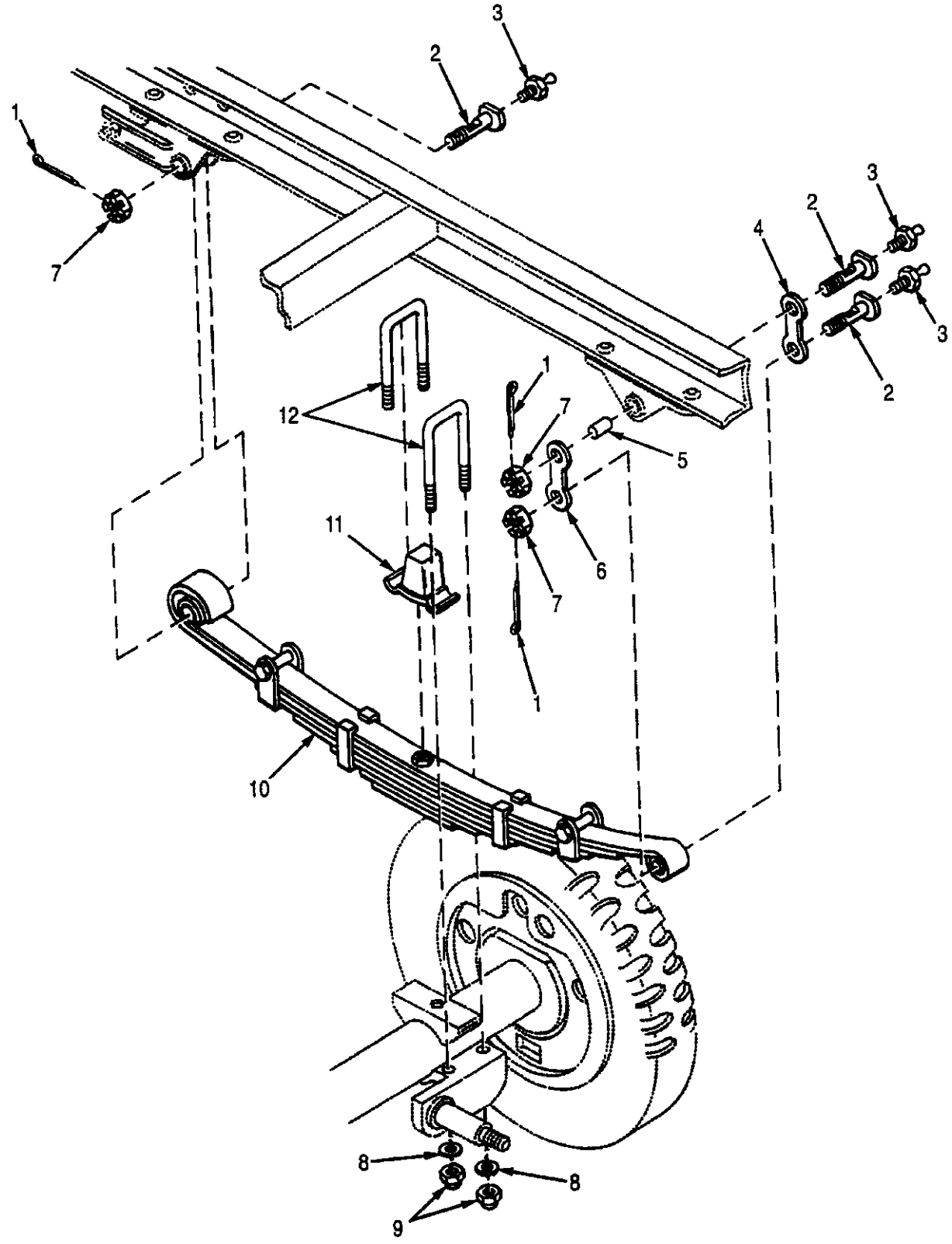


Figure 18. Spring Assembly (Sheet 1 of 2)

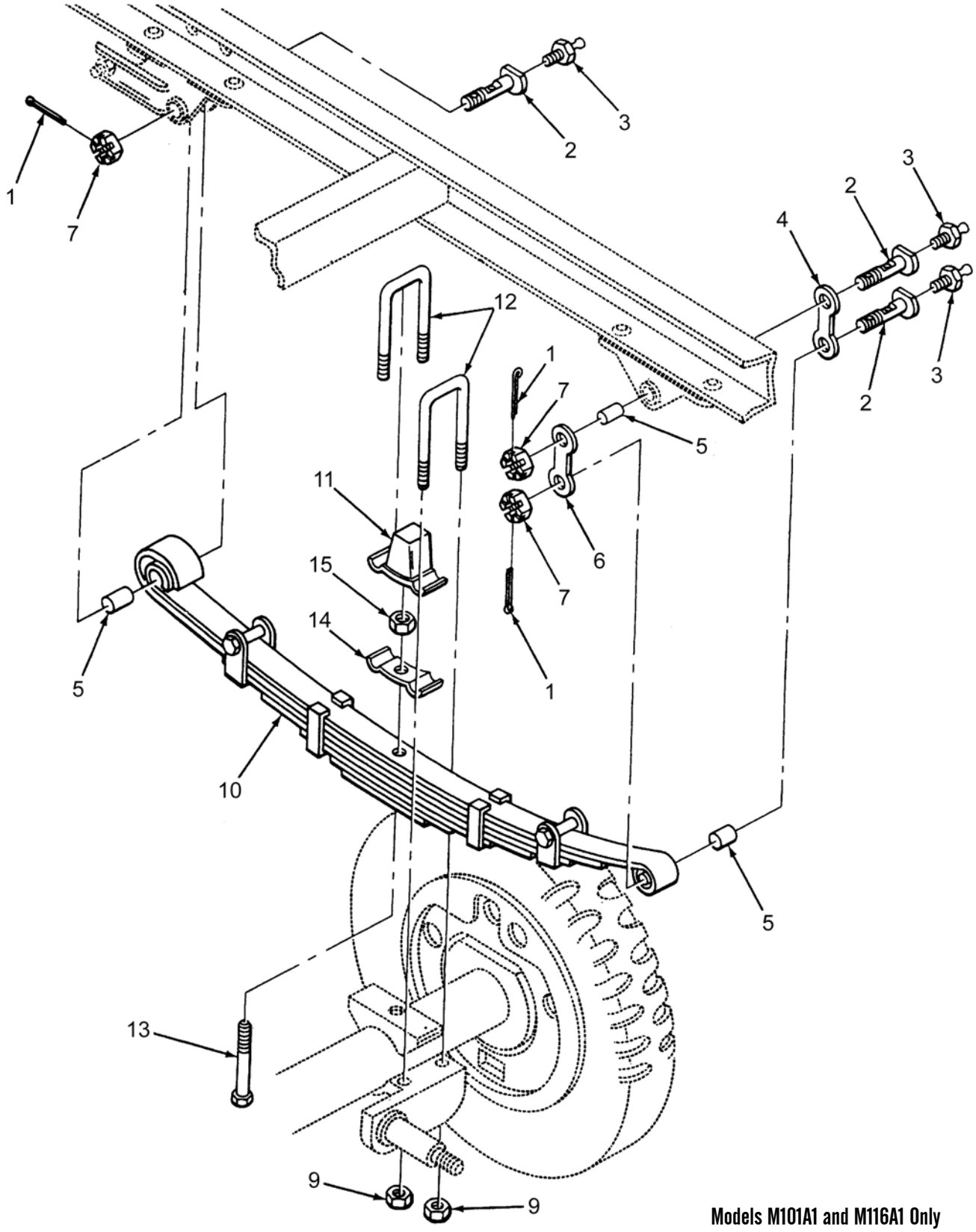


Figure 18. Spring Assembly (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 16 SPRINGS AND SHOCK ABSORBERS	
					GROUP 1601 SPRINGS	
					FIG.18 SPRING ASSEMBLY	
1	PAOZZ	5315002341671	96906	MS24665-633	PIN,COTTER..... UOC:257,258,263,646	3
1	PAOZZ	5315002981481	96906	MS24665-357	PIN,COTTER..... UOC:CT1,SPR,TC1	3
2	PAOZZ	2510007410199	19207	7410199	PIN,VEHICULAR LEAF.....	3
3	PAOZZ	4730000504203	96906	MS15001-1	FITTING,LUBRICATION.....	3
4	PAOZZ	2510007339408	19207	7339408	PLATE SHACKLE INNER.....	1
5	PAOZZ	3120008107609	96906	MS35771-91	BEARING,SLEEVE.....	1
6	PAOZZ	2510007058968	19207	7339409	LINK,SPRING SHACKLE.....	1
7	PAOZZ	5310009980608	96906	MS35692-61	NUT,PLAIN,SLOTTED,H.....	3
8	PAOZZ	5310008095998	96906	MS27183-18	WASHER,FLAT..... UOC:CT1,SPR,TC1	4
9	PAOZZ	5310008775795	96906	MS21044N8	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,TC1,258,263	4
9	PAOZZ	5310000624954	96906	MS21045-8	NUT,SELF-LOCKING,HE..... UOC:257,646	8
10	PAOZZ	2510011448847	19207	12313029	SPRING ASSEMBLY,LEA 5 LEAVES..... UOC:258,263	1
10	PAOZZ	2510013533116	19207	12354240	SPRING ASSEMBLY,LEA 6 LEAVES..... UOC:CT1,SPR,TC1	1
10	PAOZZ	2510007339463	19207	7339463	SPRING ASSEMBLY,LEA..... UOC:257,646	2
11	PAOZZ	5340011478290	19207	12313016	BUMPER,NONMETALLIC..... UOC:CT1,SPR,TC1,258,263	1
11	PAOZZ	5340006930681	19207	8382975	BUMPER,NONMETALLIC..... UOC:257,646	2
12	PAOZZ	5306011478225	19207	12313028	BOLT,U..... UOC:CT1,SPR,TC1,258,263	2
12	PAOZZ	5306007339404	19207	7339404	BOLT,U..... UOC:257,646	4
13	PAOZZ	5305002693244	80204	B1821BH038F250N	SCREW,CAP,HEXAGON H..... UOC:257,646	1
14	PAOZZ	5340007339401	19207	7339401	STRAP,RETAINING..... UOC:257,646	1
15	PAOZZ	5310008539335	96906	MS35691-13	NUT,PLAIN,HEXAGON..... UOC:257,646	1

END OF FIGURE

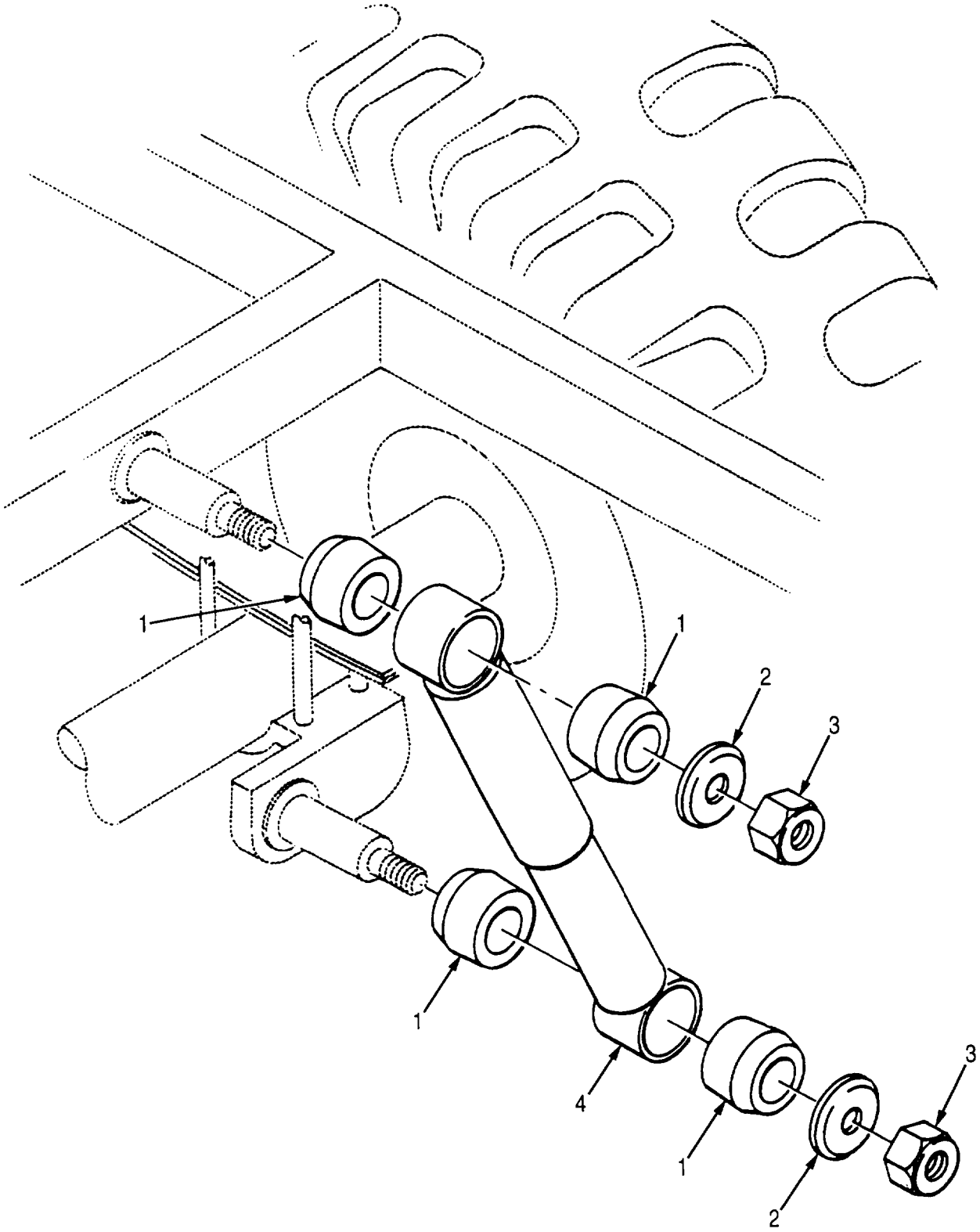


Figure 19. Shock Absorber

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 1604 SHOCK ABSORBER EQUIPMENT	
					FIG.19 SHOCK ABSORBER	
1	PAOZZ	5365002754519	19207	7339466	BUSHING,NONMETALLIC.....	4
2	PAOZZ	5310007339465	19207	7339465	WASHER,RECESSED.....	2
3	PAOZZ	5310002256408	96906	MS51922-53	NUT,SELF-LOCKING,HE..... UOC:CT1,SPR,263	2
3	PAOZZ	5310009826809	80205	MS21044N10	NUT,SELF-LOCKING,HE..... UOC:257,646	4
4	PAOZZ	2510007339464	19207	7339464	SHOCK ABSORBER,DIRE.....	1

END OF FIGURE

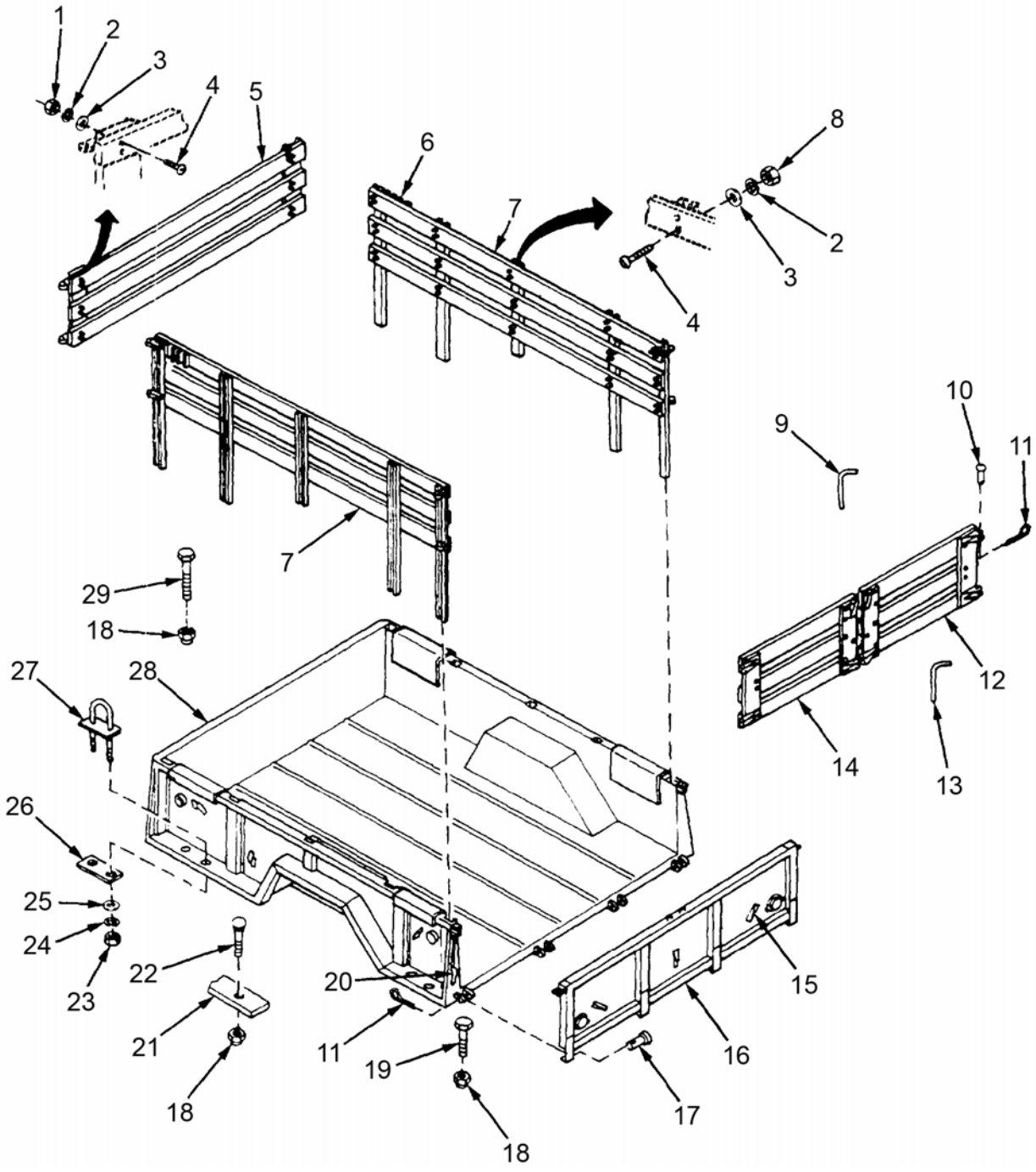
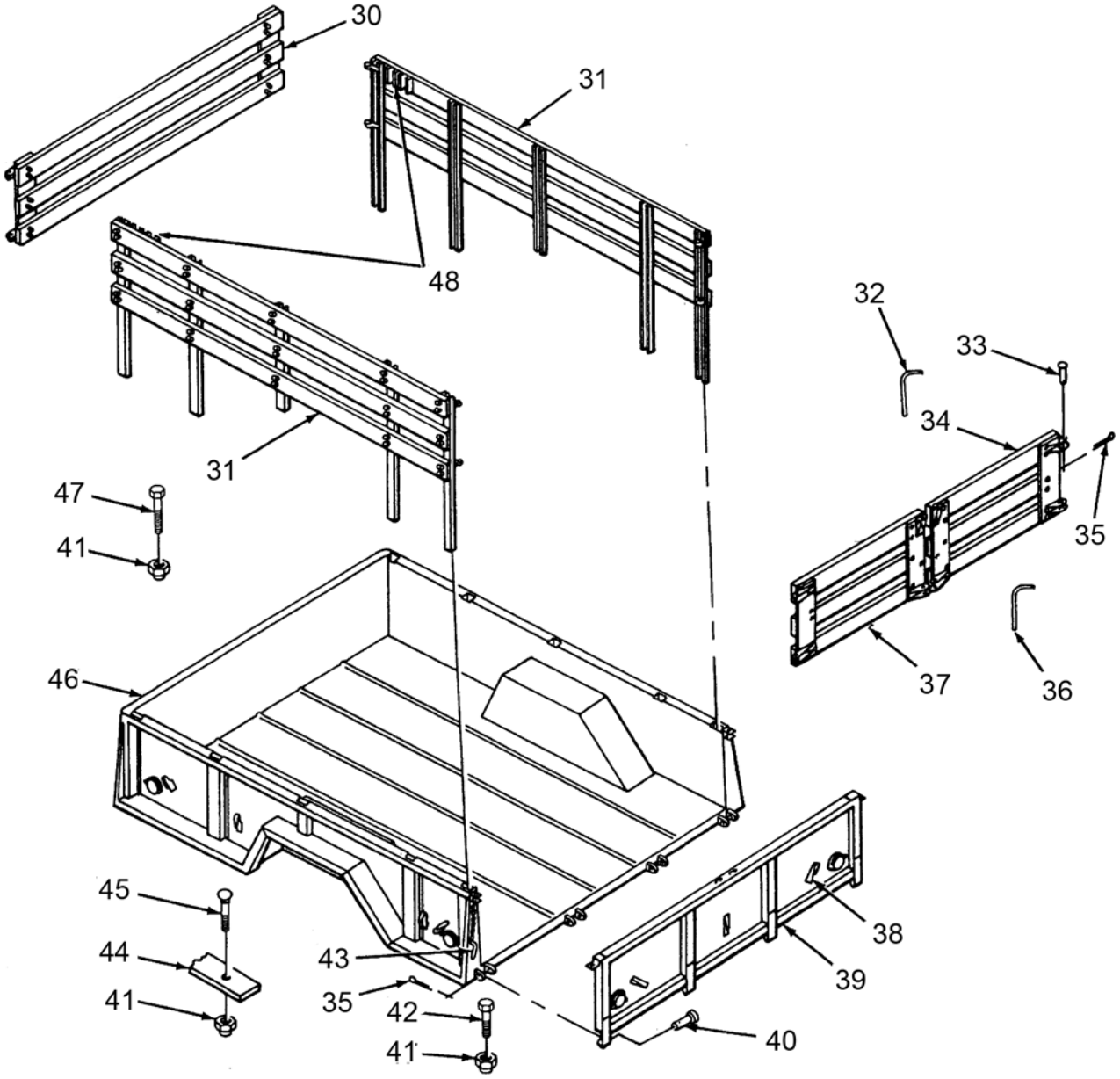


Figure 20. Cargo Body, Rack, and Tailgate Assembly (Sheet 1 of 2)



Models M101A1 and M116A1 Only

Figure 20. Cargo Body, Rack, and Tailgate Assembly (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 18 BODY, CAB, HOOD, AND HULL	
					GROUP 1810 CARGO BODY	
					FIG.20 CARGO BODY,RACK, AND TAILGATE ASSEMBLY (M101A2 AND M101A3)	
1	PAOZZ	5310009296417	96906	MS24679-65	NUT,PLAIN,CAP..... UOC:TC1,263	34
2	PAOZZ	5310005825965	96906	MS35338-44	WASHER,LOCK..... UOC:TC1,263	74
3	PAOZZ	5310008094058	96906	MS27183-10	WASHER,FLAT..... UOC:TC1,263	74
4	PAOZZ	5306001821368	88044	AN525-416R20	SCREW,MACHINE..... UOC:TC1,263	74
5	PAOZZ	2510013890410	19207	12436772	STAKE,VEHICLE BODY FRONT COMPOSITE. UOC:TC1,263	1
6	PAOZZ	5340013889098	19207	12441016	POCKET,STAKE USE WITH COMPOSITE SIDE RACKS..... UOC:TC1,263	8
7	PAOZZ	2510013890414	19207	12436773	SIDE RACK,VEHICLE B COMPOSITE, REVERSE TOP BOARD FOR L AND R SIDE.. UOC:TC1,263	1
8	PAOZZ	5310000430520	96906	MS35650-3252	NUT,PLAIN,HEXAGON USE WITH COMPOSITE RACKS..... UOC:TC1,263	40
9	PBOZZ	3040013171579	19207	7339434	CONNECTING LINK,RIG..... UOC:263	1
10	PAOZZ	5315007339438	19207	7339438	PIN,STRAIGHT,HEADED..... UOC:TC1,263	8
11	PAOZZ	5315008395822	96906	MS24665-353	PIN,COTTER..... UOC:TC1,263	12
12	PAOZZ	2510014920298	19207	12440463	STAKE,VEHICLE BODY ENGATE RIGHT HAND, COMPOSITE..... UOC:TC1,263	1
13	PBOZZ	3040013171580	19207	7339435	CONNECTING LINK,RIG..... UOC:TC1,263	2
14	PAOZZ	2510007339504	19207	12440462	SIDE RACK,VEHICLE B ENDGATE LEFT HAND, COMPOSITE..... UOC:TC1,263	1
15	PAOZZ	4030011718254	19207	7328241	HOOK,CARGO..... UOC:TC1,263	11
16	PAOZZ	2510011221405	19207	7339510	TAILGATE,VEHICLE BO..... UOC:TC1,263	1
17	PAOZZ	5315007339395	19207	7339395	PIN,STRAIGHT,HEADED USE WITH OLD STYLE CARGO BODY..... UOC:TC1,263	4
17	PAOZZ	5315010566023	96906	MS20392-7C125	PIN,STRAIGHT,HEADED USE WITH NEW STYLE CARGO BODY..... UOC:TC1,263	4
18	PAOZZ	5310000874652	96906	MS51922-17	NUT,SELF-LOCKING,HE..... UOC:TC1,263	18

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
19	PAOZZ	5305011409118	80204	B1821BH038C088N	SCREW,CAP,HEXAGON H..... UOC:TC1,263	5
20	PAOZZ	2540011267870	19207	8382970	CHAIN AND PIN ASSEM..... UOC:TC1,263	2
21	PAOZZ	5340007339366	19207	7339366	CLAMP,SYNCHRO..... UOC:TC1,263	8
22	PAOZZ	5306000885742	96906	MS35751-70	BOLT,SQUARE NECK..... UOC:TC1,263	10
23	PAOZZ	5310007320560	96906	MS51968-14	NUT,PLAIN,HEXAGON..... UOC:263	1
24	PAOZZ	5310005845272	96906	MS35338-48	WASHER,LOCK..... UOC:TC1,263	8
25	PAOZZ	5310008095998	96906	MS27183-18	WASHER,FLAT..... UOC:TC1,263	8
26	PAOZZ	5340014671461	19207	12406440-1	PLATE,MOUNTING USE WITH NEW STYLE CARGO BODY..... UOC:TC1,263	1
27	PAOZZ	5306014950788	19207	12436703	BOLT,U USE WITH NEW STYLE CARGO BOX..... UOC:TC1,263	4
28	PBOZZ	2510013886424	19207	12436764	BODY,CARGO TRAILER NEW STYLE,WITH TAILGATE..... UOC:TC1,263	1
28	PBOZZ	2510014646923	19207	12436764-1	BODY,CARGO TRAILER..... UOC:TC1	1
29	PAOZZ	5305000680511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H..... UOC:TC1,263	3
30	PAOZZ	2510013890410	19207	12436772	STAKE,VEHICLE BODY FRONT..... UOC:257	1
31	PAOZZ	2510006500998	19207	12440461	SIDE RACK,VEHICLE B RH..... UOC:257	1
31	PAOZZ	2510013890414	19207	12436773	STAKE,RACK,VEHICLE LH..... UOC:257	1
32	PBOZZ	3040013171579	19207	7339434	CONNECTING LINK,RIG..... UOC:257	1
33	PAOZZ	5315007339438	19207	7339438	PIN,STRAIGHT,HEADED..... UOC:257	8
34	PAOZZ	2510014920298	19207	12440463	STAKE,VEHICLE BODY ENGATE RIGHT HAND, COMPOSITE..... UOC:257	1
35	PAOZZ	5315008395822	80205	MS24665-353	PIN,COTTER..... UOC:257	12
36	PBOZZ	3040013171580	19207	7339435	CONNECTING LINK,RIG..... UOC:257	2
37	PAOZZ	2510007339504	19207	12440462	SIDE RACK,VEHICLE B LEFT HAND..... UOC:257	1
38	PAOZZ	4030011718254	19207	7328241	HOOK,CARGO..... UOC:257	11
39	PAOZZ	2510011221405	19207	7339510	TAILGATE,VEHICLE BO..... UOC:257	1
40	PAOZZ	5315007339395	19207	7339395	PIN,STRAIGHT,HEADED..... UOC:257	4

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
41	PAOZZ	5310000874652	81349	M45913/1-6CG5C	NUT,SELF-LOCKING,HE..... UOC:257	18
42	PAOZZ	5305001159526	80204	B1821BH038C075D	SCREW,CAP,HEXAGON H..... UOC:257	5
43	PAOZZ	2540011267870	19207	8382970	CHAIN AND PIN ASSEM..... UOC:257	2
44	PAOZZ	5340007339366	19207	7339366	CLAMP,SYNCHRO..... UOC:257	8
45	PAOZZ	5306000885742	80205	MS35751-70	BOLT,SQUARE NECK..... UOC:257	10
46	PBOZZ	2510013886424	19207	12436764	BODY,CARGO TRAILER..... UOC:257	1
47	PAOZZ	5305000680511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H..... UOC:257	3
48	PAOZZ	5340013889098	19207	12441016	POCKET,STAKE USE WITH COMPOSITE SIDE RACKS..... UOC:257	8

END OF FIGURE

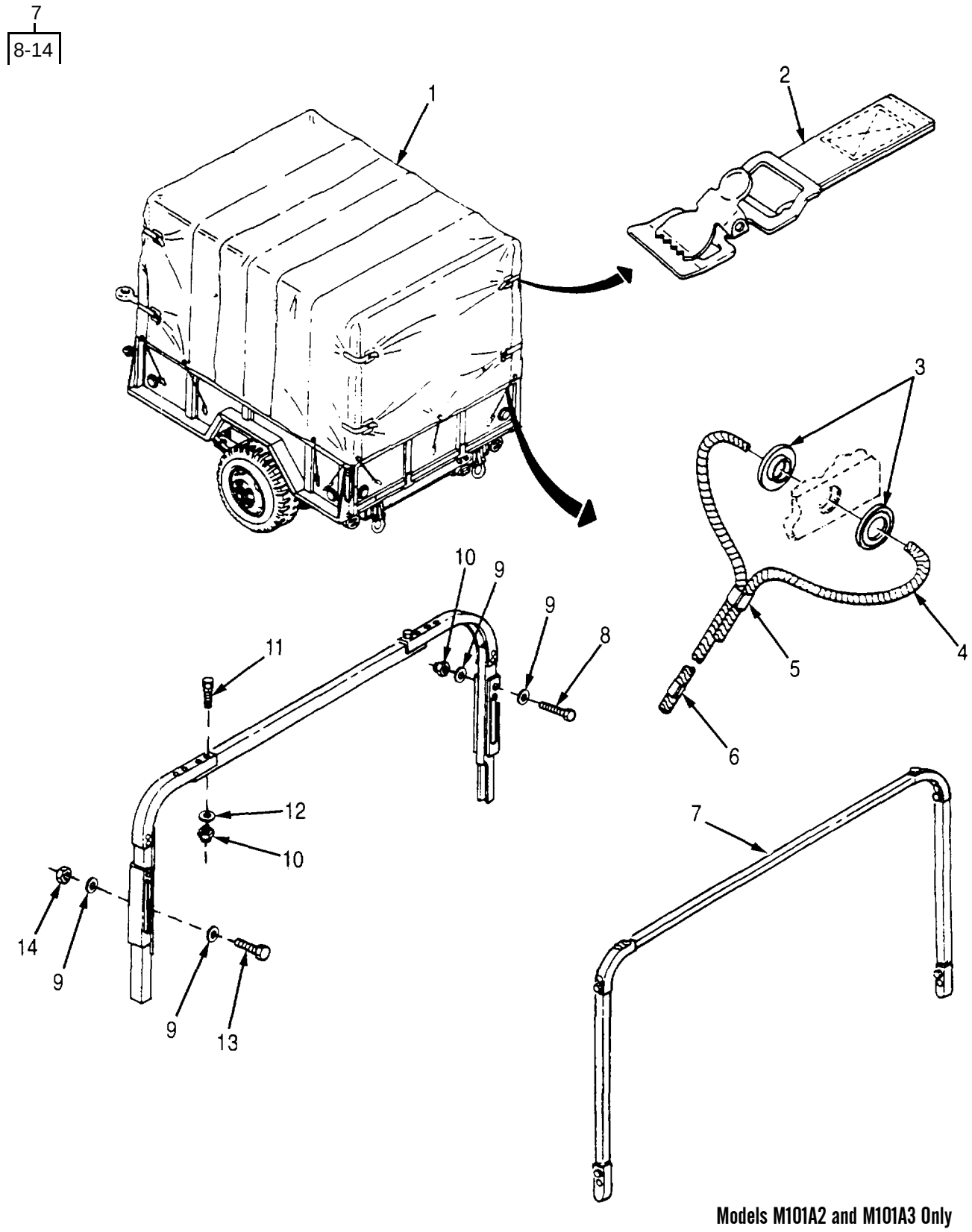


Figure 21. Canvas Cover Assembly and Bows (Sheet 1 of 2)

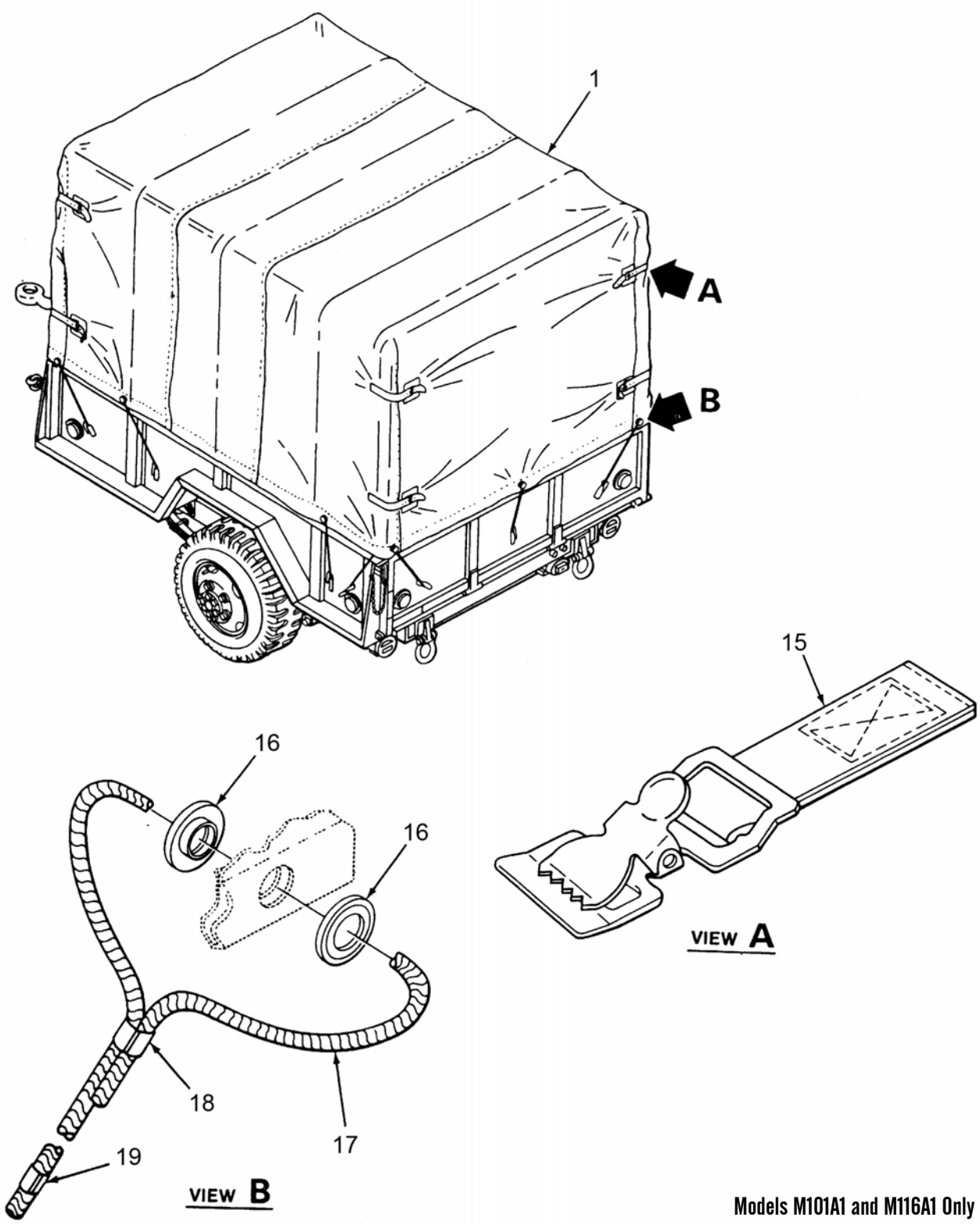


Figure 21. Canvas Cover Assembly and Bows (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 22 BODY, CHASSIS, AND HULL ACCESSORY ITEMS	
					GROUP 2201 CANVAS, RUBBER,OR PLASTIC ITEMS	
					FIG.21 CANVAS COVER ASSEMBLY AND BOWS	
1	PAOFF	2540013257719	19207	8382966-1	COVER,FITTED,VEHICU COLOR: TAN.....	1
1	PAOFF	2540014639193	19207	8382966-2	COVER,FITTED,VEHICU COLOR: CAMOFLAGE.....	1
2	PAOZZ	5340011681534	19207	8710494	STRAP,WEBBING..... UOC:TC1,263	1
3	PAOZZ	5325006411612	21450	501437	GROMMET,METALLIC..... UOC:TC1,263	1
4	XBOZZ		81348	21-R-162	ROPE (SEE EXPENDABLES)..... UOC:TC1,263	1
5	PAOZZ	5340010316310	19207	7979453	CLIP,SPRING TENSION..... UOC:TC1,263	1
6	PAOZZ	5340010316268	19207	7979452	CLIP,END,STRAP..... UOC:TC1,263	1
7	PAOZZ	2540006930744	19207	12441082-1	BOW,VEHICULAR TOP..... UOC:263	1
8	PAOZZ	5305000712512	80204	B1821BH025C225N	.SCREW,CAP,HEXAGON H..... UOC:TC1,263	2
9	PAOZZ	5310000446477	96906	MS51412-25	.WASHER,FLAT..... UOC:263	4
10	PAOZZ	5310000881251	96906	MS51922-1	.NUT,SELF-LOCKING,HE..... UOC:TC1,263	6
11	PAOZZ	5305002678959	80204	B1821BH025F225N	.SCREW,CAP,HEXAGON H..... UOC:TC1,263	2
12	PAOZZ	5310000446477	96906	MS51412-25	.WASHER,FLAT..... UOC:263	8
13	PAOZZ	5306007026344	96906	MS35751-15	.BOLT,SQUARE NECK..... UOC:TC1,263	4
14	PAOZZ	5310013884494	96906	MS51473-01	.NUT,PLAIN,HEXAGON..... UOC:TC1,263	2
15	PAOZZ	5340011681534	19207	8710494	STRAP,WEBBING..... UOC:257	8
16	PAOZZ	5325006411612	21450	501437	GROMMET,METALLIC..... UOC:257	14
17	XDOZZ		81348	21-R-162	ROPE (SEE EXPENDABLES)..... UOC:257	1
18	PAOZZ	5340010316310	19207	7979453	CLIP,SPRING TENSION..... UOC:257	14
19	PAOZZ	5340010316268	19207	7979452	CLIP,END,STRAP..... UOC:257	14

END OF FIGURE

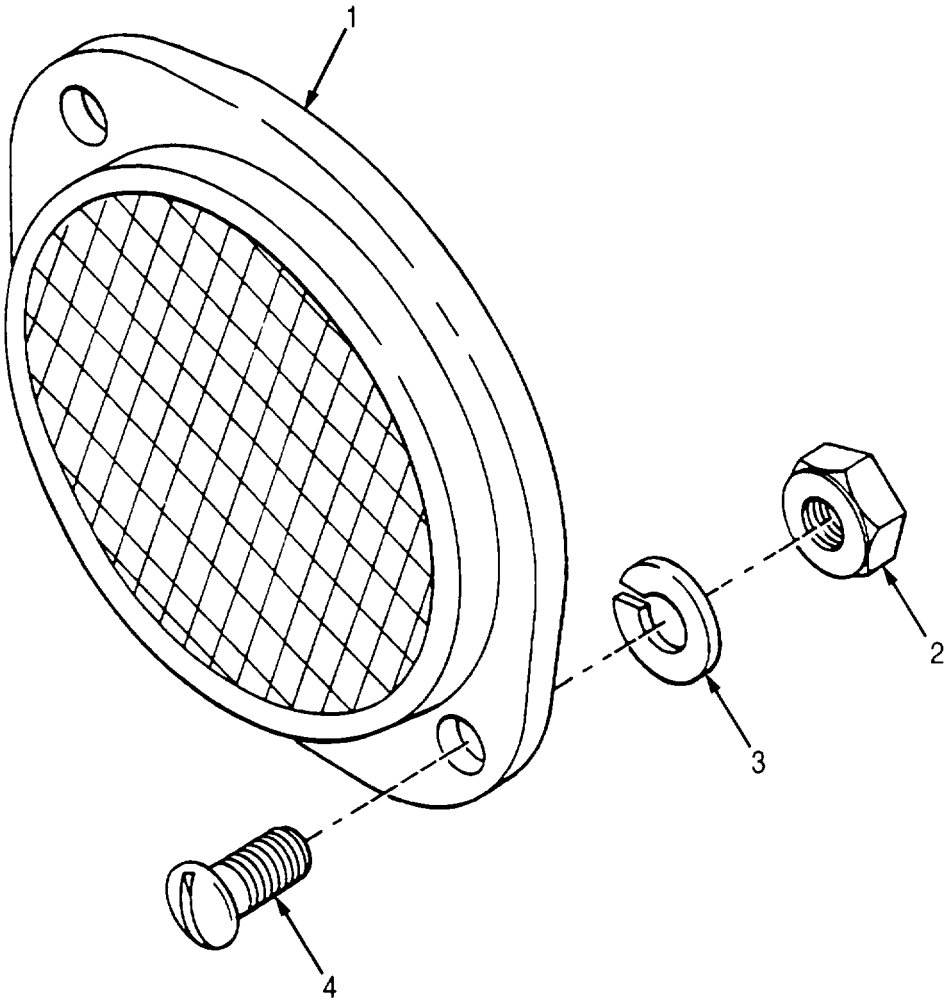


Figure 22. Reflector (M101A1, M101A2, M101A3, and M116A1)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 22 ACCESSORY ITEMS	
					FIG.22 REFLECTOR	
1	PAOZZ	9905002023639	96906	MS35387-2	REFLECTOR,INDICATIN AMBER.....	1
1	PAOZZ	9905002052795	96906	MS35387-1	REFLECTOR,INDICATIN RED.....	1
2	PAOZZ	5310007234458	96906	MS35690-404	NUT,PLAIN,HEXAGON USE WITH OLD STYLE CARGO BODY.....	2
2	PAOZZ	5310007616882	96906	MS51967-2	NUT,PLAIN,HEXAGON USE WITH NEW CARGO BODY..... UOC:TC1,257,263,646	2
3	PAOZZ	5310005825965	96906	MS35338-44	WASHER,LOCK.....	2
4	PAOZZ	5305009881728	96906	MS35206-287	SCREW,MACHINE USE WITH OLD STYLE CARGO BODY.....	2
4	PAOZZ	5305009881723	96906	MS35206-279	SCREW,MACHINE USE WITH NEW STYLE CARGO BODY..... UOC:TC1,263	2

END OF FIGURE

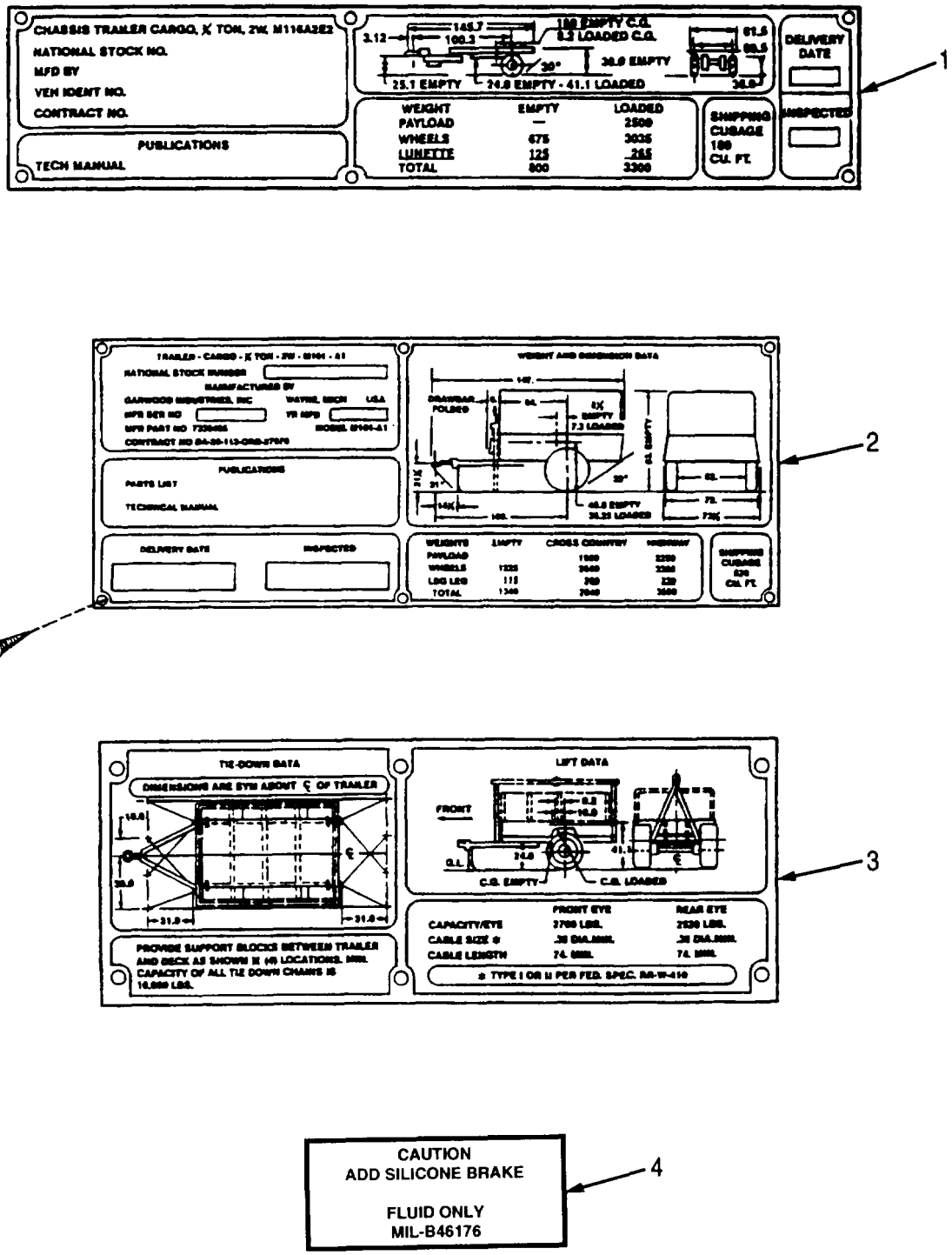


Figure 23. Data Plates (Sheet 1 of 2)

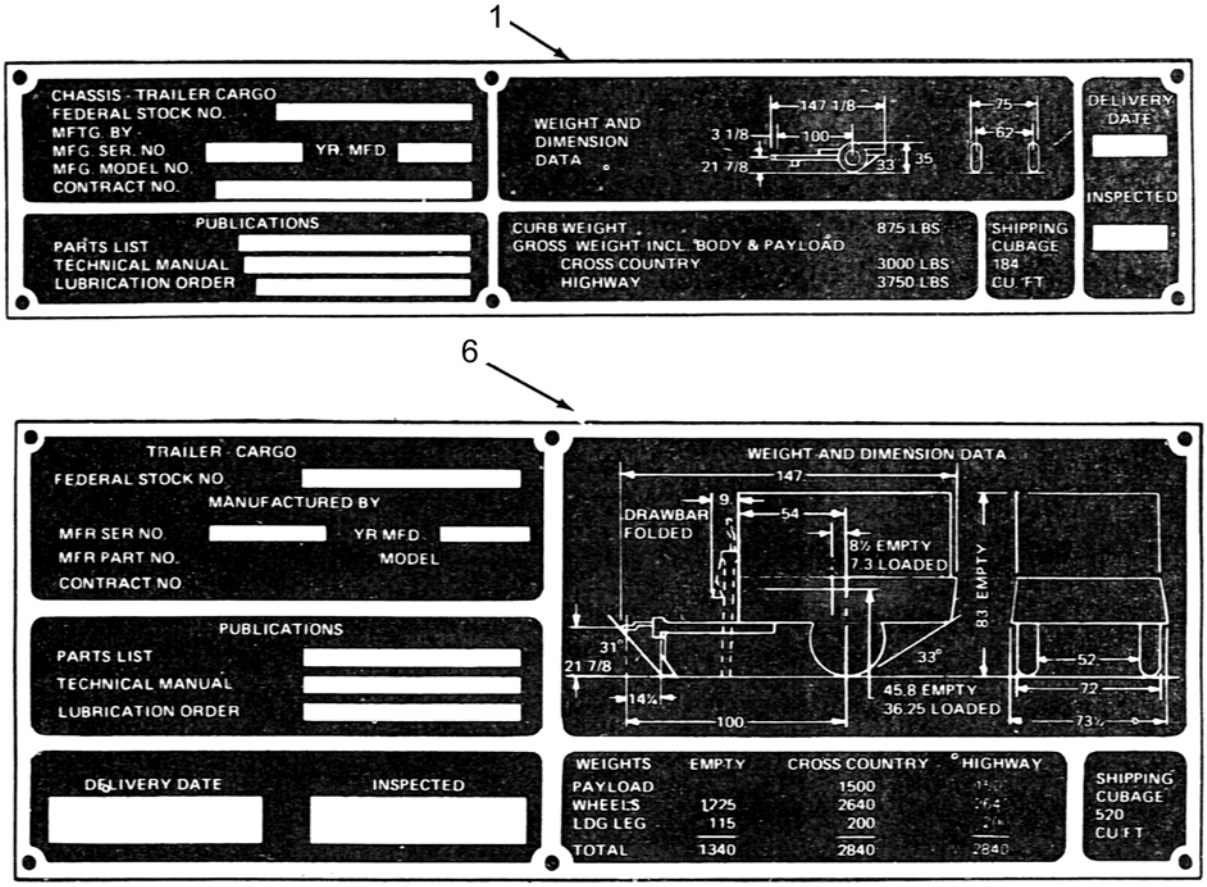


Figure 23. Data Plates (Sheet 2 of 2)

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 2210 DATA PLATES AND INSTRUCTION HOLDERS	
					FIG.23 DATA PLATES	
1	PFOZZ	9905011475836	19207	12296614	PLATE,IDENTIFICATIO DATA..... UOC:257,258,263,646	1
1	PAOZZ	9905014951373	19207	12362799	PLATE,IDENTIFICATIO DATA..... UOC:CT1	1
1	PFOZZ	9905013603614	19207	12355895	PLATE,IDENTIFICATIO DATA..... UOC:SPR	1
1	PFOZZ	9905008784191	19207	10910692	PLATE,IDENTIFICATIO..... UOC:646	1
2	PFOZZ	9905011475837	19207	12296615	PLATE,IDENTIFICATIO DATA..... UOC:263	1
3	PAOZZ	9905014709026	19207	12362800	PLATE,INSTRUCTION TRANSPORTATION... UOC:CT1	1
3	PAOZZ	9905015024575	19207	12441068	DECAL DATA..... UOC:TC1	1
3	XDOZZ		19207	12436756	DECAL TRANSPORTATION..... UOC:263	1
3	PFOZZ	9905013542362	19207	12355904	PLATE,INSTRUCTION TRANSPORTATION... UOC:SPR	1
4	PFOZZ	7690011112265	19207	12302516	DECAL CAUTION, SILICONE BRAKE FLUID UOC:CT1,SPR,TC1,258,263	1
5	PAOZZ	5305009512437	96906	MS21318-35	SCREW,DRIVE..... UOC:CT1,SPR,TC1,258,263	6
6	PAOZZ	9905008784192	19207	10910691	PLATE,IDENTIFICATIO..... UOC:257	1

END OF FIGURE

1
2-14

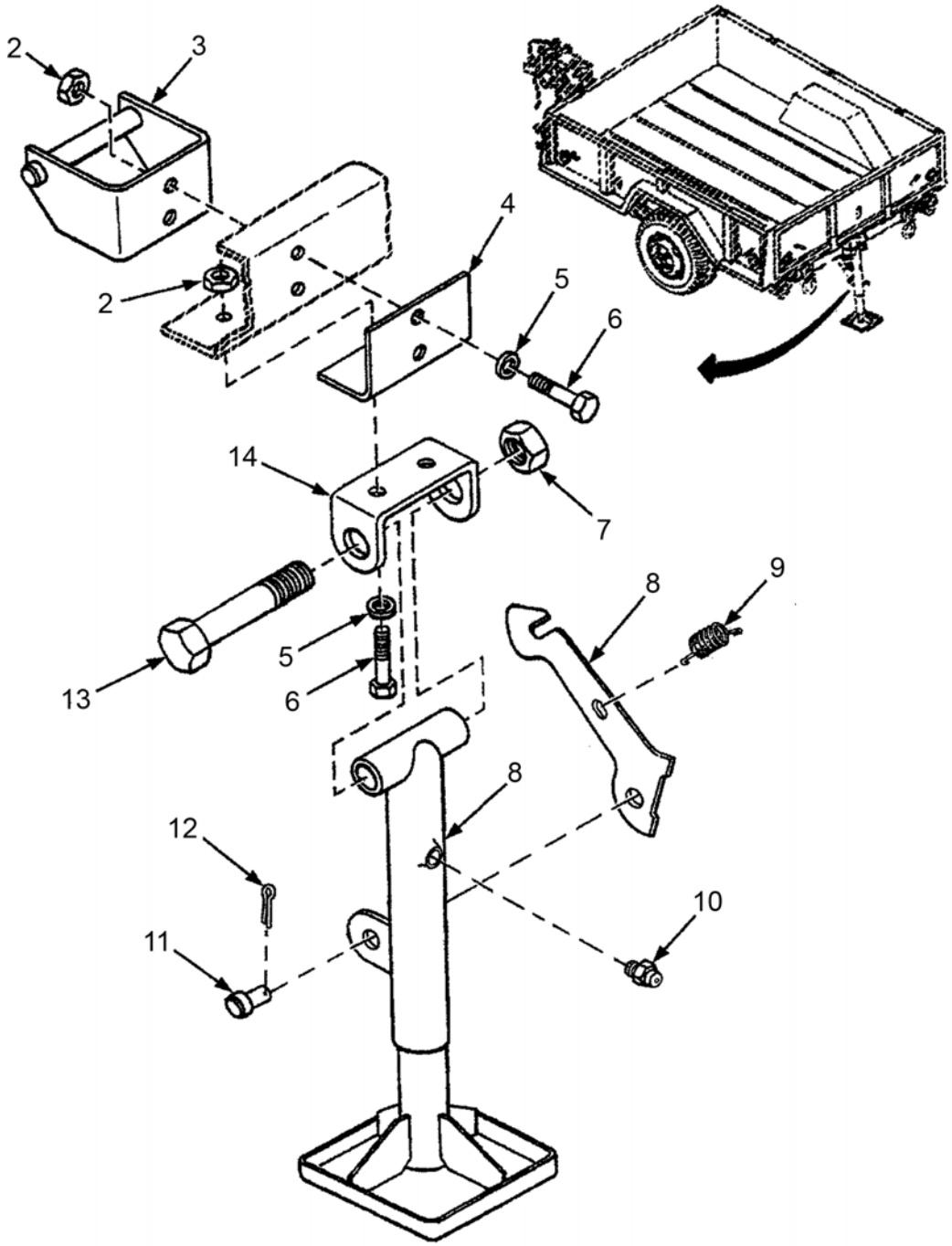


Figure 24. Rear Stabilizer Kit

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 33 SPECIAL PURPOSE KITS	
					GROUP 3307 SPECIAL PURPOSE KITS	
					FIG.24 REAR STABILIZER KIT	
1	PAOZZ	2590011799080	19207	10944400	STABILIZER KIT,REAR REQUIRED FOR GENERATOR SETS ONLY.....	1
2	PAOZZ	5310007320559	96906	MS51968-8	.NUT,PLAIN,HEXAGON.....	4
3	PAOZZ	5340011808610	19207	10944402	.BRACKET,DOUBLE ANGL.....	1
4	PFOZZ	5340011955919	19207	10944399	.BRACKET,ANGLE.....	1
5	PAOZZ	5310006379541	96046	20-14-5	.WASHER,LOCK.....	4
6	PAOZZ	5305002693238	80204	B1821BH038F125N	.SCREW,CAP,HEXAGON H.....	4
7	PAOZZ	5310002256408	96906	MS51922-53	.NUT,SELF-LOCKING,HE.....	1
8	PAOZZ	2590004396288	19207	10916389	.JACK,LEVELING-SUPPO.....	1
9	PAOZZ	5360008868064	19207	8681937	.SPRING,HELICAL,EXTE.....	1
10	PAOZZ	4730000504203	96906	MS15001-1	.FITTING,LUBRICATION 1/4 - 28 TAPER THREAD.....	1
11	PAOZZ	5315009042800	96906	MS20392-7C27	.PIN,STRAIGHT,HEADED.....	1
12	PAOZZ	5315008395822	96906	MS24665-353	.PIN,COTTER 1/8 X 1 INCH.....	1
13	PAOZZ	5306008832619	19207	8681932	.BOLT,SHOULDER.....	1
14	PAOZZ	3040001778056	19207	8681933	.BRACKET,EYE,NONROTA.....	1

END OF FIGURE

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 95 GENERAL USE STANDARDIZED PARTS	
					GROUP 9501 BULK MATERIEL	
					FIG. BULK	
1	PAOZZ		81349	RRC271	CHAIN,WELDLESS..... UOC:CT1,SPR,TC1,258,263	V
2	PAOZZ		81346	ASTM F104	CORK SHEET..... UOC:CT1,SPR,TC1,258,263	V
3	PAOZZ	4710001020108	19207	10943231	TUBE,BENT,METALLIC..... UOC:SPR,258,263	V
4	PAOZZ	4710003509896	81349	M3520-B80B01G	TUBE,METALLIC..... UOC:CT1,SPR,TC1,258,263	V

END OF FIGURE

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5310-00-003-4094	10	16	5310-00-087-4652	20	41
5315-00-012-0123	15	7	5310-00-088-1251	21	10
5315-00-013-7238	12	3	5306-00-088-5742	20	22
5315-00-013-7258	16	15		20	45
6240-00-019-0877	1	8	3110-00-100-4484	12	23
	1	19	3110-00-100-5303	12	9
	1	34	3110-00-100-5329	12	27
6240-00-019-3093	1	11	4710-00-102-0108	BULK	3
5975-00-040-2363	4	19	5305-00-115-9526	20	42
5342-00-040-2364	2	2	5310-00-134-4141	11	3
	2	2		11	6
5340-00-040-2365	2	5		11	18
	2	7		11	24
5340-00-040-2367	12	18	6240-00-143-3159	1	11
2510-00-040-2369	16	6	5310-00-143-6102	11	11
2510-00-040-2370	16	12	5330-00-154-8353	12	25
5340-00-040-2372	15	6	6240-00-155-8717	1	8
2540-00-040-2373	16	21		1	19
5310-00-043-0520	20	8		1	34
5310-00-044-6477	21	9	2530-00-161-7575	9	1
	21	12	2530-00-161-7576	9	1
6240-00-044-6914	1	10	5310-00-167-1313	12	5
	1	20	5935-00-167-7775	2	14
5310-00-045-3296	2	4	5340-00-177-7832	4	11
	4	8		4	11
	4	8	3040-00-177-8056	24	14
5310-00-045-3299	1	17	2530-00-179-7119	8	27
2640-00-050-1229	13	10	5325-00-185-0001	4	6
	14	7	9905-00-202-3639	22	1
4730-00-050-4203	18	3	9905-00-205-2795	22	1
	24	10	5340-00-205-5246	8	24
5999-00-057-2929	2	12	2640-00-208-7541	14	5
5310-00-057-7080	10	15	5310-00-209-0965	12	17
	16	11	5310-00-209-1761	10	11
2640-00-060-3550	14	8	5305-00-225-3843	11	19
5310-00-062-4954	18	9	5310-00-225-6408	19	3
2530-00-064-8102	5	3		24	7
5310-00-067-6356	15	7	5306-00-225-9084	1	27
5305-00-068-0500	4	18	5306-00-225-9096	7	5
5305-00-068-0511	15	1		7	6
	20	29	5306-00-226-4822	9	4
	20	47	5315-00-234-1671	18	1
5305-00-071-1788	12	16	5315-00-236-8368	12	3
5305-00-071-1789	16	7	5325-00-260-4882	12	24
5305-00-071-2512	21	8	5305-00-267-8953	11	12
5975-00-074-2072	4	5	5305-00-267-8959	21	11
5310-00-074-2328	10	19	5305-00-269-2811	7	5
5310-00-080-6004	15	3		7	6
5310-00-087-4652	15	4	5305-00-269-3234	4	14
	20	18	5305-00-269-3236	8	3

CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5305-00-269-3238	15	12	5310-00-582-5965	20	2
	24	6		22	3
5305-00-269-3239	15	12	5310-00-584-5272	20	24
5305-00-269-3244	18	13	2530-00-585-6079	9	5
5310-00-269-4040	16	4	5310-00-595-7237	8	26
5365-00-275-4519	19	1	5325-00-623-0928	1	29
5310-00-275-6635	10	9	5330-00-629-4961	12	19
4730-00-278-8853	11	4	5305-00-633-0785	1	28
5340-00-282-7515	4	9	5310-00-637-9541	1	4
	4	9		1	14
5310-00-285-7037	2	4		4	13
	2	4		8	5
5330-00-291-6658	10	35		24	5
5331-00-297-7106	1	21	5325-00-641-1612	21	3
5315-00-298-1481	18	1		21	16
5306-00-308-1392	7	12	2510-00-650-0998	20	31
5340-00-312-1148	8	32	6220-00-669-5623	1	12
5310-00-335-4735	8	21	5330-00-678-9047	1	31
6220-00-337-6471	1	12	5340-00-693-0681	18	11
4710-00-350-9896	BULK	4	2540-00-693-0744	21	7
5340-00-359-1046	8	20	6150-00-693-3452	1	16
5310-00-368-4954	8	29	5306-00-702-6344	21	13
5360-00-384-0004	8	15	2510-00-705-8968	18	6
5360-00-384-0025	8	11	2510-00-705-8969	15	11
5340-00-385-3288	4	3		15	11
5310-00-395-2948	4	2	5305-00-709-8423	10	7
	4	2	5305-00-709-8515	16	7
5940-00-399-6676	2	15	5305-00-709-8542	10	30
5310-00-407-9566	1	26	5305-00-710-4205	10	6
5305-00-432-4203	4	4	2530-00-715-7260	10	26
	4	4	5305-00-719-5209	10	13
6220-00-433-5966	1	25	5305-00-719-5235	16	20
2590-00-439-6288	24	8		17	3
5310-00-449-2376	13	14	5310-00-723-4458	22	2
5331-00-462-0907	1	3	5305-00-724-5910	16	5
5935-00-462-6603	2	9	5310-00-732-0559	8	6
5365-00-475-8291	7	2		8	25
	7	2		24	2
5310-00-483-8789	15	10	5310-00-732-0560	10	17
	15	10		20	23
4720-00-489-5350	10	33	5340-00-732-8315	16	18
6220-00-500-0437	1	13	5306-00-733-7360	16	3
4710-00-511-1692	10	31		16	3
			2530-00-733-9354	16	19
5310-00-514-6674	9	3	5365-00-733-9359	16	14
5310-00-518-5566	12	31		16	14
2640-00-555-2829	14	3	5340-00-733-9365	15	2
5935-00-572-9180	2	10	5340-00-733-9366	20	21
5310-00-575-5329	16	11		20	44
5310-00-582-5965	11	25	5340-00-733-9367	15	6

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STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5315-00-733-9395	20	17	5935-00-833-8561	2	17
	20	40	5970-00-833-8562	2	16
5340-00-733-9401	18	14	5310-00-833-8567	2	11
5306-00-733-9404	18	12	5315-00-839-5822	20	11
2510-00-733-9406	15	11		20	35
	15	11		24	12
2510-00-733-9407	15	13	6220-00-846-9745	1	24
	15	13	5360-00-852-9790	8	28
2510-00-733-9408	18	4	5310-00-853-9335	18	15
5315-00-733-9438	20	10	5305-00-855-0957	4	1
	20	33		4	1
4010-00-733-9458	16	9	5305-00-855-0958	11	9
	16	9		11	9
2510-00-733-9463	18	10	5305-00-855-0964	11	15
2510-00-733-9464	19	4	5340-00-860-0555	2	2
5310-00-733-9465	19	2		4	15
2510-00-733-9504	20	14		4	15
	20	37	5325-00-864-2993	11	14
5310-00-734-8982	12	20	3040-00-872-8567	8	7
5310-00-734-9223	12	21	5310-00-874-2922	8	8
5330-00-737-3354	10	38	5360-00-877-2964	8	14
2510-00-741-0199	18	2	5310-00-877-5795	10	2
5310-00-741-1028	16	16		16	2
5310-00-741-4702	12	22		18	9
6250-00-741-5451	1	30	5310-00-877-5972	15	3
6220-00-752-6018	1	22	9905-00-878-4191	23	1
6220-00-752-6020	1	22	9905-00-878-4192	23	6
5310-00-761-6882	7	10	5305-00-881-3824	2	3
	22	2		2	3
5305-00-764-0070	1	33	5306-00-883-2619	24	13
4730-00-773-2163	10	39	5360-00-886-8064	24	9
2540-00-773-5482	16	22	5305-00-889-3002	1	18
6220-00-775-2384	1	32	5315-00-904-2800	24	11
5340-00-778-2738	11	8	4730-00-908-3194	10	32
2530-00-786-0195	12	29	5340-00-912-8871	4	17
5310-00-807-1469	7	1	5310-00-929-6417	20	1
	7	1	5310-00-934-9758	2	6
5310-00-809-4058	11	20		4	10
	20	3		4	10
5310-00-809-5998	18	8	5340-00-936-5284	7	7
	20	25		7	7
5310-00-810-1786	7	9	5305-00-945-6412	16	1
	7	9		16	1
3120-00-810-7609	18	5	5305-00-947-2309	16	17
6150-00-830-6672	3	1		17	2
2590-00-830-6673	2	8	5305-00-947-4356	15	9
5310-00-832-9719	16	13	5305-00-949-6184	10	29
	16	23	5305-00-951-2437	23	5
	17	1	5305-00-958-0605	7	4
2590-00-832-9976	2	2		7	4

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STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5305-00-958-5258	12	13	5315-01-112-8102	15	9
5305-00-958-5259	12	30	2510-01-122-1405	20	16
5305-00-958-9428	16	8		20	39
	16	8	2540-01-126-7870	20	20
5310-00-959-1488	10	14		20	43
2530-00-967-6278	6	1	5306-01-130-4240	12	26
4010-00-974-6041	BULK	1	5340-01-132-1175	4	12
5310-00-982-6809	19	3	2530-01-138-9385	5	1
5305-00-984-6191	1	23	5310-01-139-2070	7	8
5305-00-984-6210	2	3		7	8
	4	7	3040-01-139-9900	12	11
	4	7	5330-01-140-8231	12	8
5305-00-984-7350	1	15	5305-01-140-9118	1	5
5305-00-988-1723	22	4		15	5
5305-00-988-1728	22	4		20	19
5340-00-993-6207	11	13	2510-01-144-8847	18	10
5310-00-998-0608	18	7	3040-01-145-0382	12	28
5306-01-009-7117	12	26	5310-01-146-9635	12	6
5340-01-031-6268	21	6	5315-01-147-0855	17	7
	21	19	9905-01-147-5836	23	1
5340-01-031-6310	21	5	9905-01-147-5837	23	2
	21	18	5306-01-147-8225	18	12
4730-01-043-3055	11	21	5340-01-147-8290	18	11
5330-01-044-1941	11	26	2610-01-148-1635	14	1
4030-01-044-6040	15	8	2530-01-148-7074	12	12
5310-01-045-3709	12	31	5310-01-149-0868	12	14
2510-01-050-7136	10	28	3040-01-149-5061	12	2
2530-01-050-7698	10	22	5340-01-151-4202	12	4
5310-01-050-8832	10	20	2540-01-154-3892	16	10
2530-01-050-8929	10	34	2530-01-154-6952	12	1
2540-01-051-6354	10	5	4010-01-158-6795	10	23
2540-01-051-6355	10	3	2530-01-160-0850	9	2
3120-01-052-1151	10	4	6150-01-167-1827	2	1
5365-01-053-6898	10	8	2530-01-167-1999	10	27
4730-01-053-8468	10	12	5340-01-168-1534	21	2
5360-01-054-2281	10	21		21	15
5315-01-056-6023	20	17	2530-01-168-7906	6	1
2540-01-060-7031	10	18	5975-01-170-3480	4	16
5340-01-068-6693	8	16	4030-01-171-8254	20	15
5340-01-069-6705	8	7		20	38
5340-01-070-4475	7	3	2590-01-179-9080	24	1
	7	3	5340-01-180-8610	24	3
2530-01-070-9494	8	13	5340-01-195-5919	24	4
5340-01-071-2098	8	4	5310-01-198-7585	13	8
2530-01-074-7001	8	12	2530-01-216-9259	8	10
5315-01-079-1494	8	2	2530-01-227-6262	8	33
1005-01-083-9297	8	18	5306-01-237-6844	12	10
5360-01-088-0552	8	17	2530-01-254-6539	8	33
2640-01-098-2029	13	9	6220-01-284-2709	1	9
7690-01-111-2265	23	4	2530-01-287-6869	8	1

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STOCK NUMBER	FIG.	ITEM
6220-01-293-2627	1	7
6220-01-297-3217	1	7
2640-01-302-1388	14	3
4720-01-306-6294	11	10
3040-01-317-1579	20	9
	20	32
3040-01-317-1580	20	13
	20	36
2540-01-325-7719	21	1
2610-01-333-7632	14	2
2640-01-334-9453	13	5
2640-01-335-4583	13	11
5331-01-335-8878	13	4
5306-01-336-7175	13	3
2530-01-338-2730	13	6
4730-01-346-1063	13	12
5331-01-346-3806	13	13
2530-01-348-2989	10	1
2510-01-353-3116	18	10
9905-01-354-2362	23	3
6220-01-359-2870	1	2
9905-01-360-3614	23	1
2540-01-369-7471	16	6
4030-01-371-9331	15	8
6220-01-372-3883	1	1
5340-01-385-9852	10	24
5340-01-386-3974	17	8
2590-01-388-0958	17	5
2590-01-388-2416	10	36
5310-01-388-4494	21	14
2510-01-388-6424	20	28
	20	46
5340-01-388-9098	20	6
	20	48
2510-01-389-0410	20	5
	20	30
2510-01-389-0414	20	7
	20	31
2530-01-390-4684	5	2
2530-01-429-8346	6	1
2530-01-430-7250	8	12
2540-01-463-9193	21	1
2510-01-464-6923	20	28
5340-01-467-1461	20	26
9905-01-470-9026	23	3
2510-01-480-7319	16	12
2510-01-492-0298	20	12
	20	34
5306-01-495-0788	20	27
9905-01-495-1373	23	1
5310-01-498-0322	12	5
9905-01-502-4575	23	3
2530-01-534-1110	12	15

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
58536	AA52463-A04	6240-00-155-8717	1	19
			1	34
58536	AA52463-A08	6240-00-019-0877	1	19
			1	34
58536	AA59649-304	3110-00-100-4484	12	23
12387	AEA9630A	4730-00-908-3194	10	32
80205	AN316-16R	5310-00-167-1313	12	5
88044	AN525-416R20		20	4
81346	ASTM F104		BULK	2
34623	A14047	2540-00-773-5482	16	22
58536	A52427-L-0.750	5310-00-518-5566	12	31
58536	A52427-R-0.750	5310-01-045-3709	12	31
58536	A52463-1-08	6240-00-019-0877	1	8
58536	A52463-1-09	6240-00-019-3093	1	11
58536	A52463-2-13		1	10
			1	20
1JUW8	BMS7388452-2	2530-01-534-1110	12	15
1JUW8	BSE10918081		8	19
80204	B1821BH025C100N	5305-00-225-3843	11	19
80204	B1821BH025C225N	5305-00-071-2512	21	8
80204	B1821BH025F063N	5305-00-267-8953	11	12
80204	B1821BH025F225N	5305-00-267-8959	21	11
80204	B1821BH031C050N	5306-00-226-4822	9	4
80204	B1821BH038C075D	5305-00-115-9526	20	42
80204	B1821BH038C088N	5305-01-140-9118	1	5
			15	5
			20	19
80204	B1821BH038C125N	5305-00-068-0511	15	1
			20	29
			20	47
80204	B1821BH038F075N	5305-00-269-3234	4	14
80204	B1821BH038F100N	5305-00-269-3236	8	3
80204	B1821BH038F125N	5305-00-269-3238	15	12
			24	6
80204	B1821BH038F138N	5305-00-269-3239	15	12
80204	B1821BH038F250N	5305-00-269-3244	18	13
80204	B1821BH044C125N	5305-00-071-1788	12	16
80204	B1821BH044C138N	5305-00-071-1789	16	7
80204	B1821BH044F200N	5305-00-709-8542	10	30
80204	B1821BH050F175N	5305-00-719-5235	16	20
			17	3
80204	B1821BH075C350N	5305-00-947-4356	15	9
80204	B1821BH075F375N	5305-00-947-2309	16	17
			17	2
80204	B1821BH075F600N	5305-00-958-9428	16	8
63477	F12300	2530-00-715-7260	10	26
63477	F6019	5330-00-291-6658	10	35
63477	LH-FC-11393-A		8	30
81349	MIL-T-12459/CLMS /SB/9.00-16/D/MS		14	4
96906	MS122031	5310-00-285-7037	2	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS122031	5310-00-285-7037	2	4
96906	MS15001-1	4730-00-050-4203	18	3
			24	10
96906	MS15570-89	6240-00-143-3159	1	11
96906	MS16625-1387	5325-00-260-4882	12	24
80205	MS17829-6F	5310-00-483-8789	15	10
			15	10
96906	MS20392-7C125	5315-01-056-6023	20	17
96906	MS20392-7C27	5315-00-904-2800	24	11
80205	MS21042-5	5310-00-807-1469	7	1
			7	1
80205	MS21042-6	5310-00-810-1786	7	9
			7	9
96906	MS21044-N8	5310-00-877-5795	16	2
80205	MS21044N10	5310-00-982-6809	19	3
96906	MS21044N8	5310-00-877-5795	10	2
			18	9
96906	MS21045-8	5310-00-062-4954	18	9
96906	MS21083-C7	5310-00-074-2328	10	19
96906	MS21245-8	5310-00-449-2376	13	14
96906	MS21318-35	5305-00-951-2437	23	5
96906	MS21333-2	5340-00-778-2738	11	8
80205	MS21333-37	5340-00-282-7515	4	9
			4	9
96906	MS21333-43	5340-00-912-8871	4	17
96906	MS21333-99	5340-00-993-6207	11	13
96906	MS24629-45	5305-00-855-0958	11	9
			11	9
96906	MS24629-46	5305-00-855-0957	4	1
96906	MS24629-48	5305-00-855-0964	11	15
96906	MS24665-353	5315-00-839-5822	20	11
			20	35
			24	12
80205	MS24665-355	5315-00-012-0123	15	7
96906	MS24665-357	5315-00-298-1481	18	1
96906	MS24665-425	5315-00-013-7238	12	3
96906	MS24665-436	5315-00-236-8368	12	3
80205	MS24665-497	5315-00-013-7258	16	15
96906	MS24665-633	5315-00-234-1671	18	1
96906	MS24679-65	5310-00-929-6417	20	1
96906	MS27142-2	5935-00-462-6603	2	9
96906	MS27144-1	5935-00-167-7775	2	14
96906	MS27183-10	5310-00-809-4058	11	20
			20	3
96906	MS27183-14	5310-00-080-6004	15	3
96906	MS27183-18	5310-00-809-5998	18	8
			20	25
96906	MS3367-1-9	5975-00-074-2072	4	5
96906	MS35190-317	5305-00-958-5258	12	13
80205	MS35190-318	5305-00-958-5259	12	30
96906	MS35191-308	5305-00-984-7350	1	15

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS35206-242	5305-00-889-3002	1	18
80205	MS35206-243	5305-00-984-6191	1	23
96906	MS35206-263	5305-00-984-6210	2	3
			4	7
			4	7
96906	MS35206-279	5305-00-988-1723	22	4
96906	MS35206-287	5305-00-988-1728	22	4
80205	MS35207-298	5305-00-958-0605	7	4
			7	4
80205	MS35333-42	5310-00-595-7237	8	26
96906	MS35335-34	5310-00-514-6674	9	3
80205	MS35338-42	5310-00-045-3299	1	17
96906	MS35338-43	5310-00-045-3296	2	4
			4	8
			4	8
96906	MS35338-44	5310-00-582-5965	11	25
			20	2
			22	3
96906	MS35338-45		7	11
96906	MS35338-46	5310-00-637-9541	1	4
			4	13
			8	5
80205	MS35338-47	5310-00-209-0965	12	17
96906	MS35338-48	5310-00-584-5272	20	24
96906	MS35387-1	9905-00-205-2795	22	1
96906	MS35387-2	9905-00-202-3639	22	1
96906	MS35478-1683	6240-00-044-6914	1	10
96906	MS35489-46	5325-00-185-0001	4	6
96906	MS35649-202	5310-00-934-9758	2	6
			4	10
			4	10
96906	MS35650-3252	5310-00-043-0520	20	8
96906	MS35690-404	5310-00-723-4458	22	2
96906	MS35691-13	5310-00-853-9335	18	15
96906	MS35692-61	5310-00-998-0608	18	7
96906	MS35751-15	5306-00-702-6344	21	13
96906	MS35751-70	5306-00-088-5742	20	22
			20	45
96906	MS35771-91	3120-00-810-7609	18	5
96906	MS45904-64	5310-00-395-2948	4	2
			4	2
96906	MS51302-1	6220-00-846-9745	1	24
96906	MS51330-1	6220-00-337-6471	1	12
96906	MS51368-2	2640-00-555-2829	14	3
96906	MS51412-25	5310-00-044-6477	21	9
			21	12
96906	MS51473-01	5310-01-388-4494	21	14
96906	MS51861-47	5305-00-432-4203	4	4
			4	4
96906	MS51922-1	5310-00-088-1251	21	10
96906	MS51922-17	5310-00-087-4652	15	4

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
96906	MS51922-17	5310-00-087-4652	20	18
96906	MS51922-21	5310-00-959-1488	10	14
96906	MS51922-29	5310-00-057-7080	10	15
			16	11
96906	MS51922-49	5310-00-269-4040	16	4
96906	MS51922-53	5310-00-225-6408	19	3
			24	7
96906	MS51922-57	5310-00-067-6356	15	7
96906	MS51922-6	5310-00-143-6102	11	11
96906	MS51922-61	5310-00-832-9719	16	13
			17	1
96906	MS51949-1	5306-01-009-7117	12	26
96906	MS51949-2	5306-01-130-4240	12	26
80205	MS51959-46	5305-00-764-0070	1	33
96906	MS51967-2	5310-00-761-6882	7	10
			22	2
96906	MS51968-14	5310-00-732-0560	10	17
			20	23
96906	MS51968-8	5310-00-732-0559	8	6
			8	25
			24	2
96906	MS51975-2	5305-00-949-6184	10	29
96906	MS521301A204R	4720-00-489-5350	10	33
96906	MS53047-1	6220-00-500-0437	1	13
96906	MS90725-162	5305-00-724-5910	16	5
80205	MS90726-29	5306-00-225-9084	1	27
96906	MS90726-41	5306-00-225-9096	7	5
			7	6
80205	MS90726-67	5305-00-269-2811	7	5
			7	6
96906	MS90726-99	5305-00-710-4205	10	6
96906	MS90727-110	5305-00-719-5209	10	13
96906	MS90727-127	5305-00-945-6412	16	1
			16	1
96906	MS90727-201	5305-00-958-9428	16	8
96906	MS90727-88	5305-00-709-8515	16	7
96906	MS90727-97	5305-00-709-8423	10	7
81349	M3520-B80B01G	4710-00-350-9896	BULK	4
81349	M45913/1-6CG5C	5310-00-087-4652	20	41
81349	M45913/1-7CG5C	5310-00-575-5329	16	11
81349	M45913/2-12FG5C	5310-00-832-9719	16	23
81349	RRC271	4010-00-974-6041	BULK	1
81348	RRC271-8		17	6
73842	TRC1	2640-00-050-1229	14	7
58536	TY-IV/CL1/TR-VC2	2640-00-060-3550	14	8
81348	TYIV/CL1/TRVC8	2640-01-098-2029	13	9
81348	TYV/CL2/TR C1	2640-00-050-1229	13	10
81348	W-L-00111/60	6240-00-155-8717	1	8
81348	ZZ-I-550/G2/9.00 -16/TR177A/ONCEN		14	6
14153	00044	5330-00-154-8353	12	25

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
83299	016128600	5340-00-359-1046	8	20
12195	03612460	2610-01-148-1635	14	1
14892	049206	2530-01-160-0850	9	2
1TUY2	10229 AND 10228	3110-00-100-5303	12	9
71770	10383	5340-00-732-8315	16	18
56161	10511558	5325-00-623-0928	1	29
89346	105502H	3110-00-100-5329	12	27
93072	10614	2530-01-050-8929	10	34
93072	10632	2540-01-060-7031	10	18
93072	10703	2530-01-167-1999	10	27
19200	10910174-3	5310-00-877-5972	15	3
19207	10910691	9905-00-878-4192	23	6
19207	10910692	9905-00-878-4191	23	1
19207	10910697	2540-01-369-7471	16	6
19207	10910698	2510-01-480-7319	16	12
19207	10911050	2530-00-179-7119	8	27
19207	10911051		8	31
19207	10911059	2530-01-227-6262	8	33
19207	10911060	2530-01-254-6539	8	33
19207	10911062		8	30
19207	10911066	5360-00-852-9790	8	28
19207	10911074		8	22
19207	10911075		8	22
19207	10911113	5340-00-312-1148	8	32
19207	10916389	2590-00-439-6288	24	8
19207	10919707	2530-00-064-8102	5	3
19207	10924576	5975-01-170-3480	4	16
19207	10926073	5340-00-936-5284	7	7
			7	7
19207	10926074	5340-01-070-4475	7	3
19207	10926075	5365-00-475-8291	7	2
			7	2
19207	10926094	5310-01-139-2070	7	8
			7	8
19207	10943231	4710-00-102-0108	BULK	3
19207	10944399	5340-01-195-5919	24	4
19207	10944400	2590-01-179-9080	24	1
19207	10944402	5340-01-180-8610	24	3
21450	110357	5310-00-134-4141	11	3
			11	6
			11	18
			11	24
19207	11602356-2	5315-01-147-0855	17	7
19207	11625496	4730-01-043-3055	11	21
19207	11625497	5330-01-044-1941	11	26
19207	11639519-2	5331-00-462-0907	1	3
19207	11652180	6150-01-167-1827	2	1
19207	11652180-2		2	1
19207	11675013	2530-01-348-2989	10	1
19207	11675105	2540-01-154-3892	16	10
19207	11686100		11	1

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PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
19207	11686100-56.5		11	2
19207	11686101	2530-01-168-7906	6	1
19207	11686102		11	5
19207	11686102-1X		11	7
19207	11686103-1		11	22
19207	11686103-1-1X		11	23
19207	11686103-2		11	16
19207	11686103-2-1X		11	17
19207	11686257	2530-01-070-9494	8	13
19207	11686262-1	5340-01-069-6705	8	7
19207	11686262-2	3040-00-872-8567	8	7
19207	11686267-1	2530-00-161-7576	9	1
19207	11686267-2	2530-00-161-7575	9	1
19207	11686270	5360-00-384-0025	8	11
19207	11686271	1005-01-083-9297	8	18
19207	11686272	5360-00-384-0004	8	15
19207	11686273	5315-01-079-1494	8	2
19207	11686274	5360-01-088-0552	8	17
19207	11686275	5340-01-068-6693	8	16
19207	11686276	5340-01-071-2098	8	4
19207	11686277	2530-00-585-6079	9	5
19207	11686279	5360-00-877-2964	8	14
19207	11686280	5310-00-874-2922	8	8
19207	11686281		8	9
19204	11838714	2530-01-216-9259	8	10
19207	12296386	4010-01-158-6795	10	23
19207	12296614	9905-01-147-5836	23	1
19207	12296615	9905-01-147-5837	23	2
19207	12302516	7690-01-111-2265	23	4
19207	12313006	2530-01-138-9385	5	1
19207	12313010	3040-01-139-9900	12	11
19207	12313012	2530-01-148-7074	12	12
19207	12313016	5340-01-147-8290	18	11
19207	12313024	5310-01-146-9635	12	6
19207	12313027	5330-01-140-8231	12	8
19207	12313028	5306-01-147-8225	18	12
19207	12313029	2510-01-144-8847	18	10
19207	12313042	5340-01-151-4202	12	4
19207	12313045		12	7
19207	12313047	5310-01-149-0868	12	14
19207	12313048	3040-01-149-5061	12	2
19207	12314088		10	25
19207	12331722	5340-01-385-9852	10	24
19207	12331725-2	2590-01-388-2416	10	36
19207	12339501	5310-01-198-7585	13	8
19207	12342633	5331-01-335-8878	13	4
19207	12342634	2640-01-335-4583	13	11
19207	12342638	2640-01-334-9453	13	5
34623	12342639	2530-01-338-2730	13	6
19207	12342640		13	7
19207	12342641		13	1

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
19207	12342642		13	2
19207	12342758	5306-01-336-7175	13	3
19207	12342793	4730-01-346-1063	13	12
19207	12342794	5331-01-346-3806	13	13
19207	12354199	4720-01-306-6294	11	10
19207	12354223	5306-01-237-6844	12	10
19207	12354224		11	1
19207	12354224-1		11	2
19207	12354225		11	5
19207	12354225-1		11	7
19207	12354239	2530-00-786-0195	12	29
19207	12354240	2510-01-353-3116	18	10
19207	12355838	4030-01-371-9331	15	8
19207	12355895	9905-01-360-3614	23	1
19207	12355904	9905-01-354-2362	23	3
19207	12360850-1	6220-01-284-2709	1	9
19207	12360870-1	6220-01-293-2627	1	7
19207	12360870-2	6220-01-297-3217	1	7
19207	12362746		10	10
19207	12362791	2530-01-390-4684	5	2
19207	12362795		11	16
19207	12362795-1		11	17
19207	12362796		11	22
19207	12362796-1		11	23
19207	12362799	9905-01-495-1373	23	1
19207	12362800	9905-01-470-9026	23	3
19207	12375837	6220-01-372-3883	1	1
19207	12375838		1	6
19207	12375841	6220-01-359-2870	1	2
19207	12406440-1	5340-01-467-1461	20	26
19207	12436703	5306-01-495-0788	20	27
19207	12436705	2590-01-388-0958	17	5
19207	12436756		23	3
19207	12436764	2510-01-388-6424	20	28
			20	46
19207	12436764-1	2510-01-464-6923	20	28
19207	12436772	2510-01-389-0410	20	5
			20	30
19207	12436773	2510-01-389-0414	20	7
			20	31
19207	12440461	2510-00-650-0998	20	31
19207	12440462	2510-00-733-9504	20	14
			20	37
19207	12440463	2510-01-492-0298	20	12
			20	34
19207	12441016	5340-01-388-9098	20	6
			20	48
19207	12441068	9905-01-502-4575	23	3
19207	12441073	5340-01-386-3974	17	8
19207	12441082-1	2540-00-693-0744	21	7
19207	12441093	5310-01-498-0322	12	5

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
19207	12448035	2530-01-074-7001	8	12
19207	12448059	2530-01-430-7250	8	12
02686	126853		17	9
02686	126861		17	4
02686	126945		10	37
11862	14035374	2530-01-154-6952	12	1
21450	143449	4730-00-278-8853	11	4
92867	15641501	2530-01-429-8346	6	1
92867	15785800	2530-00-967-6278	6	1
80204	1683	6240-00-044-6914	1	20
19207	171591	5305-00-881-3824	2	3
			2	3
93072	1745	3120-01-052-1151	10	4
93072	1804	2530-01-050-7698	10	22
93072	1808-1	2540-01-051-6355	10	3
93072	1828	5360-01-054-2281	10	21
93072	1829	2540-01-051-6354	10	5
93072	1840	5310-01-050-8832	10	20
93072	1841	5365-01-053-6898	10	8
93072	1844-2	2510-01-050-7136	10	28
94189	18496	2530-01-287-6869	8	1
96046	20-14-5	5310-00-637-9541	24	5
81348	21-R-162		21	4
			21	17
01276	210104-8S	5310-00-003-4094	10	16
12603	23E06	5310-00-637-9541	1	14
45152	2477HX	5305-00-855-0957	4	1
6V625	30-600	2640-01-302-1388	14	3
39428	3043T11	5306-00-308-1392	7	12
24617	425335		8	23
24617	426711	5340-00-205-5246	8	24
21450	501437	5325-00-641-1612	21	3
			21	16
19207	5160323	5310-00-209-1761	10	11
19207	5214539	5310-00-275-6635	10	9
19207	5599887	3040-01-145-0382	12	28
19204	572929	5999-00-057-2929	2	12
73331	5942528	5330-00-678-9047	1	31
9Y199	6167100.1	2640-00-208-7541	14	5
19207	7320658	5331-00-297-7106	1	21
19207	7328241	4030-01-171-8254	20	15
			20	38
19207	7336030	5340-01-132-1175	4	12
19207	7339354	2530-00-733-9354	16	19
02386	7339359	5365-00-733-9359	16	14
			16	14
19207	7339360	5306-00-733-7360	16	3
			16	3
19207	7339365	5340-00-733-9365	15	2
19207	7339366	5340-00-733-9366	20	21
			20	44

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
19207	7339367	5340-00-733-9367	15	6
19207	7339368	4030-01-044-6040	15	8
19207	7339369	5315-01-112-8102	15	9
19207	7339395	5315-00-733-9395	20	17
			20	40
19207	7339401	5340-00-733-9401	18	14
19207	7339402	5340-00-040-2367	12	18
19207	7339403	5330-00-629-4961	12	19
19207	7339404	5306-00-733-9404	18	12
19207	7339405	2510-00-705-8969	15	11
			15	11
19207	7339406	2510-00-733-9406	15	11
			15	11
19207	7339407	2510-00-733-9407	15	13
			15	13
19207	7339408	2510-00-733-9408	18	4
19207	7339409	2510-00-705-8968	18	6
19207	7339434	3040-01-317-1579	20	9
			20	32
19207	7339435	3040-01-317-1580	20	13
			20	36
19207	7339438	5315-00-733-9438	20	10
			20	33
19207	7339458	4010-00-733-9458	16	9
			16	9
19207	7339463	2510-00-733-9463	18	10
19207	7339464	2510-00-733-9464	19	4
19207	7339465	5310-00-733-9465	19	2
19207	7339466	5365-00-275-4519	19	1
19207	7339474	2510-00-040-2369	16	6
19207	7339475	2510-00-040-2370	16	12
19207	7339489	5340-00-040-2372	15	6
19207	7339497	2540-00-040-2373	16	21
19207	7339510	2510-01-122-1405	20	16
			20	39
19207	7348982	5310-00-734-8982	12	20
19207	7349223	5310-00-734-9223	12	21
19207	7373354	5330-00-737-3354	10	38
19207	7410199	2510-00-741-0199	18	2
19207	7410218	5310-00-407-9566	1	26
19207	7411019	5310-00-368-4954	8	29
19207	7411028	5310-00-741-1028	16	16
19207	7414702	5310-00-741-4702	12	22
04NP3	743-123-154	2610-01-333-7632	14	2
19207	7526018	6220-00-752-6018	1	22
19207	7526020	6220-00-752-6020	1	22
19207	7720853-1		2	13
19207	7735289	5325-00-864-2993	11	14
19207	7979250	5340-00-385-3288	4	3
19207	7979452	5340-01-031-6268	21	6
			21	19

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CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
19207	7979453	5340-01-031-6310	21	5
			21	18
63477	7979691	4730-00-773-2163	10	39
18876	8017164	5310-00-335-4735	8	21
92867	81-000108	5340-01-070-4475	7	3
19207	8330140	5975-00-040-2363	4	19
19207	8335233	5305-00-633-0785	1	28
19207	8338561	5935-00-833-8561	2	17
19207	8338562	5970-00-833-8562	2	16
19207	8338564	5940-00-399-6676	2	15
19207	8338566	5935-00-572-9180	2	10
19207	8338567	5310-00-833-8567	2	11
19207	8347212	5342-00-040-2364	2	2
			2	2
19207	8347213	5340-00-040-2365	2	5
			2	7
19207	8365426	4710-00-511-1692	10	31
5A910	8378661	6150-00-693-3452	1	16
19207	8378785	6220-00-669-5623	1	12
19207	8382966-1	2540-01-325-7719	21	1
19207	8382966-2	2540-01-463-9193	21	1
19207	8382970	2540-01-126-7870	20	20
			20	43
19207	8382973	5340-00-177-7832	4	11
			4	11
19207	8382975	5340-00-693-0681	18	11
19207	8681932	5306-00-883-2619	24	13
19207	8681933	3040-00-177-8056	24	14
19207	8681937	5360-00-886-8064	24	9
19207	8710494	5340-01-168-1534	21	2
			21	15
19207	8722819	2590-00-830-6673	2	8
19207	8722865	6150-00-830-6672	3	1
19207	8722870	5340-00-860-0555	2	2
			4	15
			4	15
19207	8722943	2590-00-832-9976	2	2
19207	8741646	6220-00-775-2384	1	32
19207	8741650	6220-00-433-5966	1	25
19207	8741651	6250-00-741-5451	1	30
19207	8762000	4730-01-053-8468	10	12
51436	95053070	5305-00-068-0500	4	18

APPENDIX F
EXPENDABLE AND DURABLE ITEMS LIST

Section I. INTRODUCTION

Paragraph Number	Paragraph Title	Page Number
F-1	Scope	F-1
F-2	Explanation of Columns in Section II	F-1

F-1. SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the M101 and M116 Series trailers. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970 or CTA 8-100.

F-2. EXPLANATION OF COLUMNS IN SECTION II.

There are five columns in Section II, Expendable and Durable Items List:

Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the "Initial Setup" of maintenance paragraphs or narrative instructions to identify the material needed. For example: "Solvent, drycleaning (Item 15, Appendix F)."

Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item:

C - Operator/Crew
O - Unit
F - Direct Support
H - General Support

Column (3) - National Stock Number. This is the national stock number assigned to the item; use it to request or requisition the item.

Column (4) - Description (CAGEC). This column contains the Federal item name and, if required, a description to identify the item. The last line for each item indicates the commercial and government entity code (CAGEC) in parentheses followed by the part number, if applicable.

Column (5) - U/M (Unit of Measure). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation: BD (bundle), BE (bale), CA (cartridge), CN (can), DR (drum), EA (each), FT (foot), GL (gallon), PG (package), PT (pint), QT (quart), and RO (roll). 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 AND DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION (CAGEC)	(5) UNIT OF MEAS
1	0	7920-00-061-0038	BRUSH: Scrub (81348) H-B-1490	EA
2	0	7920-00-900-3577	BRUSH: Wire (17987) 15SS	EA
3	0	5350-00-192-5051	CLOTH: Abrasive, 180 Grit (58536) A-A1048 50 Each	PG
4	0	5350-00-174-0985	CLOTH: Abrasive, 600 Grit (81348) GGG-C-520 100 Each	BD
5	C	7930-00-282-9699	DETERGENT: General Purpose, Liquid (81349) MIL-D-16791 1-Gallon Can	GL
6	0		FLUID: Brake Silicone, Automotive, All Weather, Operational and Preservative (81349) MIL-B-46176	
		9150-01-102-9455	1-Gallon Can, Plastic	GL
		9150-01-123-3152	5-Gallon Can	CN
		9150-01-072-8379	55-Gallon Drum	DR
7	0		GREASE: Automotive and Artillery, GAA (81349) MIL-G-10924 E & F	
		9150-01-197-7693	14-Ounce Cartridge	CA
		9150-01-197-7690	1 3/4 Pound Can	CN
		9150-01-197-7689	6 1/2 Pound Can	CN
		9150-01-197-7692	35-Pound Pail	CN
8	0	6640-01-364-1413	JAR: Screw Cap, (15481) 033-670 Package of 12, 32-Ounce Capacity	PG
9	0	2640-01-262-9517	LUBRICANT: Runflat (19207)12339497 2 Packets	PG

Section II. EXPENDABLE AND DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION (CAGEC)	(5) UNIT OF MEAS
10	0		OIL: Lubricating, Internal Combustion Engine, Arctic, OEA (81349) MIL-L-46167	
		9150-00-402-4478	1-Quart Can	QT
		9150-00-402-2372	5-Gallon Can	CN
		9150-00-491-7197	55-Gallon Drum	DR
11	0		OIL: Lubricating, Internal Combustion Engine, Tactical Service, OE/HDO 10 (81349) MIL-L-2104	
		9150-00-189-6727	1-Quart Can	QT
		9150-00-186-6668	5-Gallon Can	CN
		9150-00-191-2772	55-Gallon Drum	DR
12	0		OIL: Lubricating, Internal Combustion Engine, Tactical Service, OE/HDO 30 (81349) MIL-L-2104	
		9150-00-186-6681	1-Quart Can	QT
		9150-00-188-9858	5-Gallon Can	CN
		9150-00-189-6729	55-Gallon Drum	DR
13	C	7920-00-205-1711	RAG: Wiping, Cotton and Cotton Synthetic, White (58536) A-A-531 50-Pound Bale	BE
14	0		ROPE 3/8-Inch Diameter	RL
15	C		SOLVENT: Drycleaning, Type II (81349) P-D-680	
		6850-00-110-4498	1-Pint Can	PT
		6850-00-664-5685	1-Quart Can	QT
		6850-00-281-1985	1-Gallon Can	GL
		6850-00-274-5421	5-Gallon Can	CN
		6850-00-285-8011	55-Gallon Drum	DR
16	0	9905-00-537-8954	TAG: Marker (81349) MIL-T-12755 50 Each	BD

Section II. EXPENDABLE AND DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION (CAGEC)	(5) UNIT OF MEAS
17	0	9330-01-345-0507	TAPE: Adhesive, Acrylic (30076) 353191 60-Yard Roll	RO
18	0	5640-00-103-2254	TAPE: Duct, 2 Inches Wide (07124) C-519 60-Yard Roll	RO
19	0	7510-00-802-8311	TAPE: Pressure Sensitive (52170) 898 3/4 Inch Wide, 60-Yard Roll	RO
20	0	4720-01-014-4915	TUBING: Plastic (06853) 246115 8-Inch, Black	FT

APPENDIX G
ILLUSTRATED LIST OF MANUFACTURED ITEMS

Section I. INTRODUCTION

Paragraph Number	Paragraph Title	Page Number
G-1	Introduction	G-1
Table G-1	Manufactured Items Part Number Index	G-1

G-1. INTRODUCTION.

a. This appendix includes complete instructions for making items authorized to be manufactured or fabricated at the Unit level of maintenance.

b. A part number index in alphanumeric order is provided in Table G-1 for cross-referencing the part number of the item to be manufactured to the figure that covers the fabrication criteria.

c. All bulk materials needed for the manufacture of an item are listed by part number or specification number in a tabular list on the illustration in Section II.

d. When manufacturing items, make sure the appropriate tools are used to cut, shape, and thread materials. Make sure hoses are clean and free of dust and moisture before installing after fabrication.

e. All dimensions given in Section II, Manufacturing Instructions, are in standard units.

Table G-1. Manufactured Items Part Number Index

Part Number	Figure Title	Figure Number
RRC271-8	Adjustable Front Support Leg Chain	G-9
11686100	Hydraulic Brake Tube Assembly, Front (M101A2 and M116A2)	G-1
11686102	Hydraulic Brake Tube Assembly, Rear (M101A2 and M116A2)	G-3
11686103-1	Hydraulic Brake Tube Assembly, Left (M101A2, M116A2, and M116A2E1)	G-5
11686103-2	Hydraulic Brake Tube Assembly, Right (M101A2, M116A2, and M116A2E1)	G-5

Table G-1. Manufactured Items Part Number Index (continued)

Part Number	Figure Title	Figure Number
12354224	Hydraulic Brake Tube Assembly, Front (M101A3, M116A2E1, and M116A3)	G-2
12354225	Hydraulic Brake Tube Assembly, Rear (M101A3, M116A2E1, and M116A3)	G-4
12362795	Hydraulic Brake Tube Assembly, Right (M101A3 and M1 16A3)	G-7
12362796	Hydraulic Brake Tube Assembly, Left (M101A3 and M116A3)	G-6
7339259	Drawbar Clamp Spacer (M101A2 and M116A2)	G-8

Section II. MANUFACTURING INSTRUCTIONS

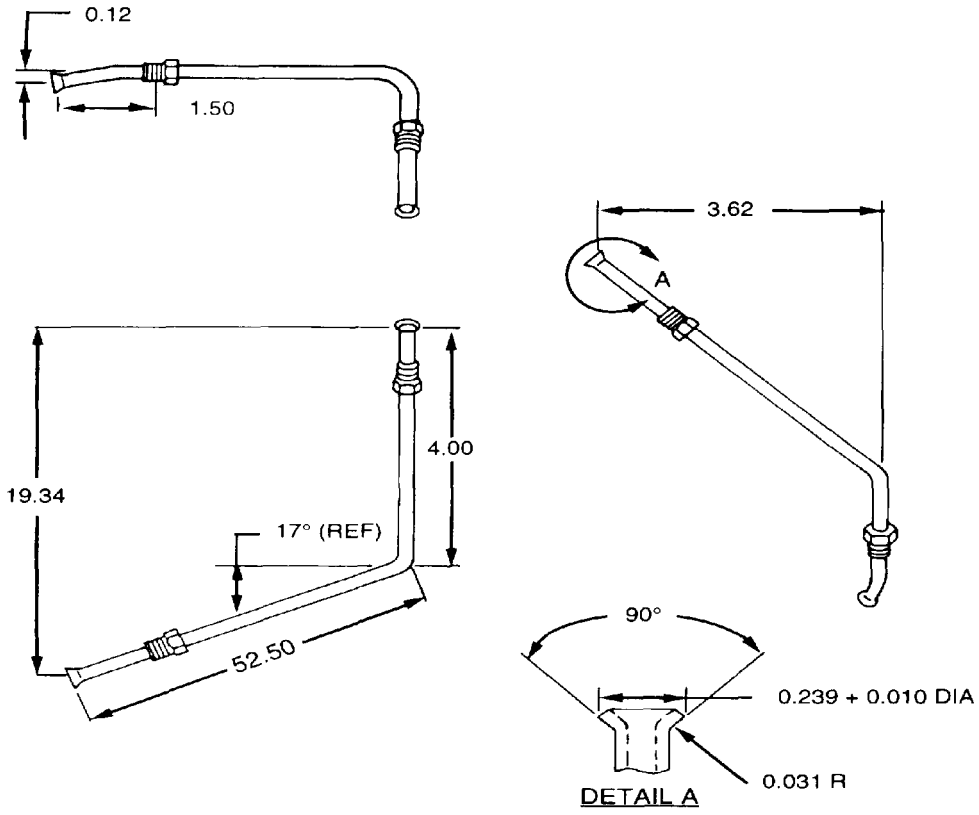
Paragraph Number	Paragraph Title	Page Number

NOTE

Change 2 adds the M101A1. Specific M101A1 information is contained in this chapter and designated in the chapter and section indexes.

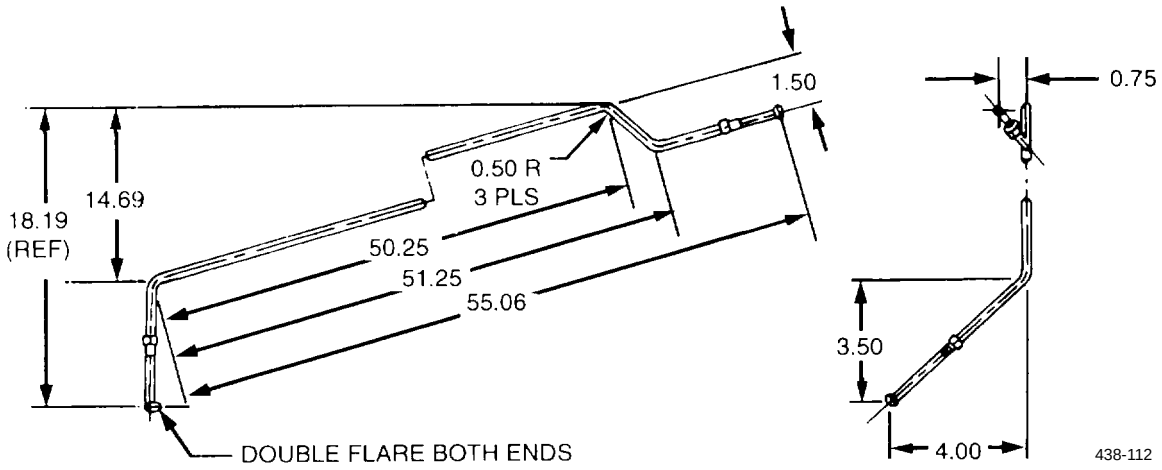
Figure G-1 Hydraulic Brake Tube Assembly, Front (M101A2 and M116A2) G-3
Figure G-2 Hydraulic Brake Tube Assembly, Front (M101A3, M116A2E1, and M116A3) G-4
Figure G-3 Hydraulic Brake Tube Assembly, Rear (M101A2 and M116A2) G-4
Figure G-4 Hydraulic Brake Tube Assembly, Rear (M101A3, M116A2E1, and M116A3) G-5
Figure G-5 Hydraulic Brake Tube Assembly, Left and Right (M101A2, M116A2, and M116A2E1) G-6
Figure G-6 Hydraulic Brake Tube Assembly, Left (M101A3 and M116A3) G-7
Figure G-7 Hydraulic Brake Tube Assembly, Right (M101A3 and M116A3) G-8
Figure G-8 Drawbar Clamp Spacer (M101A2 and M116A2) G-9
Figure G-9 Adjustable Front Support Leg Chain G-9

Figure G-1. Hydraulic Brake Tube Assembly, Front (M101A2 and M116A2)



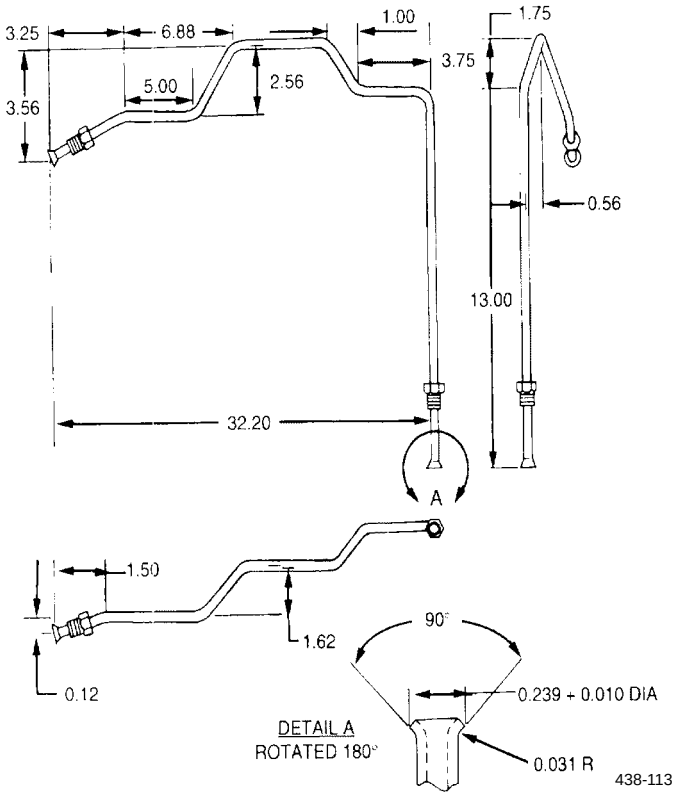
1. Fabricate from tube, part number 10943231, NSN 4710-00-102-0108.
2. Cut to proper length and bend as shown to create part number 11686100-56.5.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

Figure G-2. Hydraulic Brake Tube Assembly, Front (M101A3, M116A2E1, and M116A3)



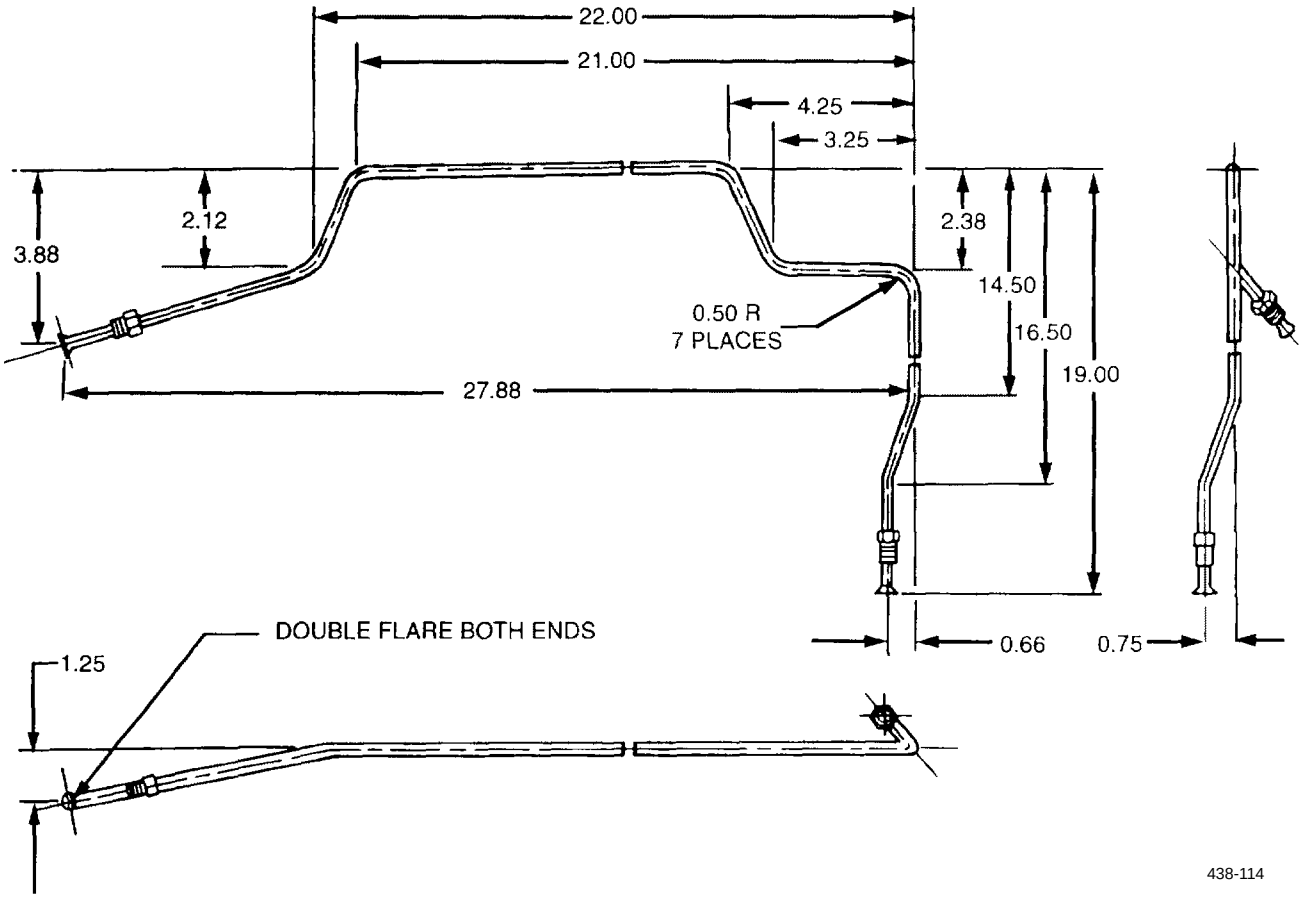
1. Fabricate from tube, part number M3520-B80B01G, NSN 4710-00-350-9896.
2. Cut to proper length and bend as shown to create part number 12354224-1.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

Figure G-3. Figure G-3. Hydraulic Brake Tube Assembly, Rear (M101A2 and M116A2)



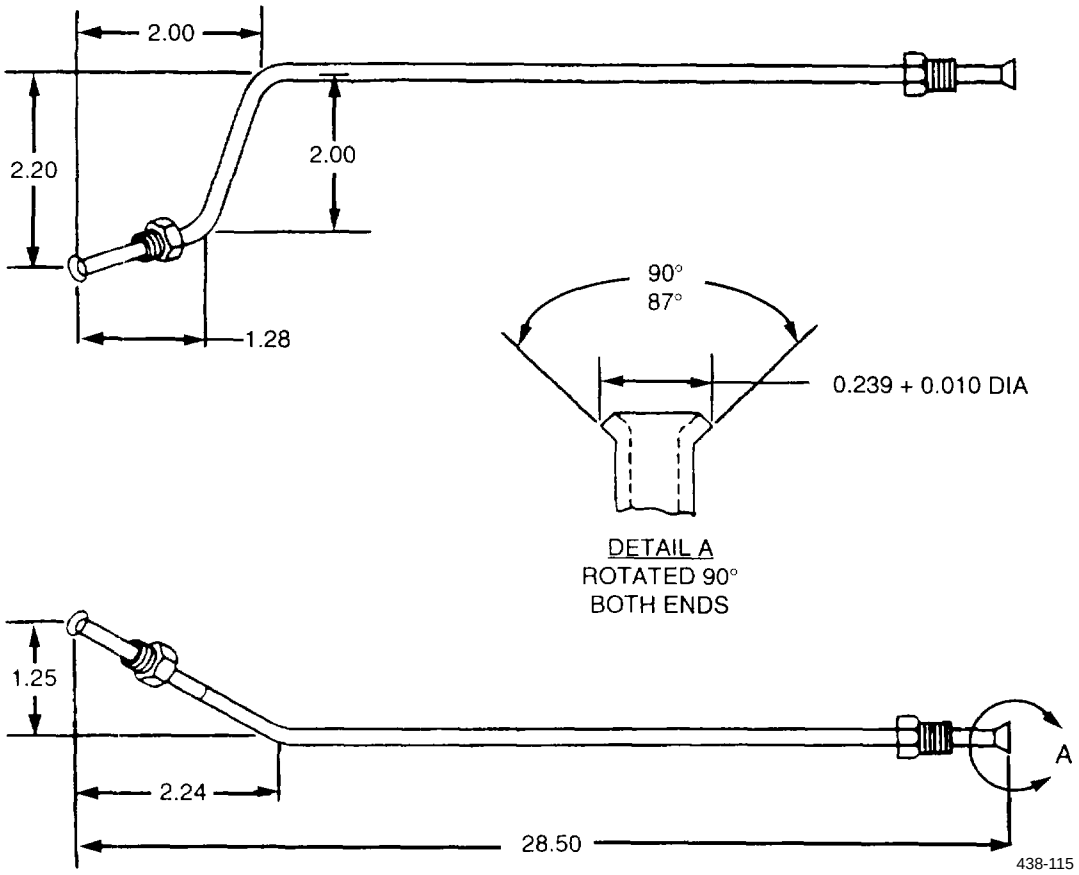
1. Fabricate from tube, part number M3520B80B01G, NSN 4710-00-350-9896.
2. Cut to proper length and bend as shown to create part number 11686102-1X.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

Figure G-4. Hydraulic Brake Tube Assembly, Rear (M101A3, M116A2E1, and M116A3)



1. Fabricate from tube, part number M3520-B80B01G, NSN 4710-00-350-9896.
2. Cut to proper length and bend as shown to create part number 12354225-1.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

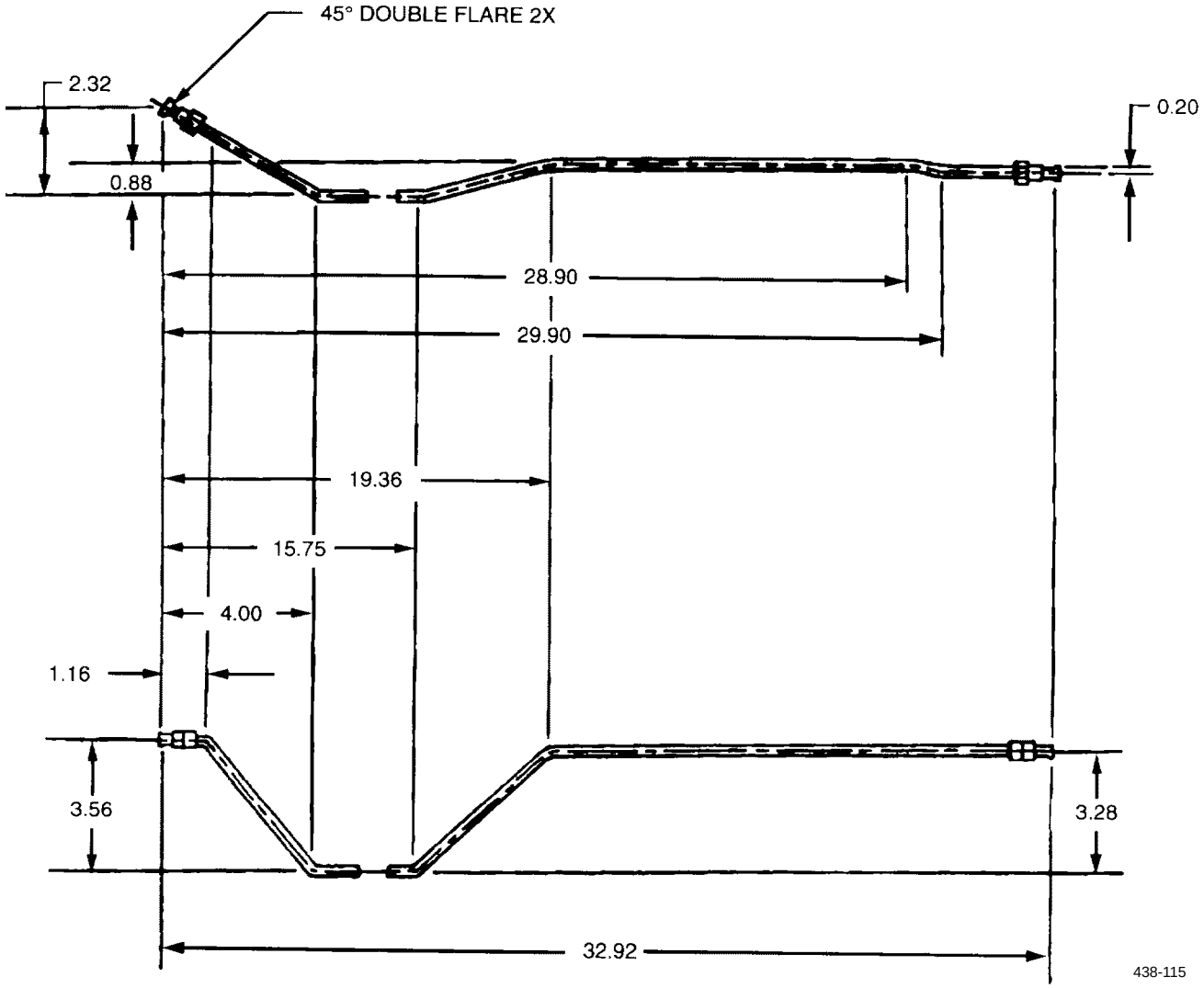
Figure G-5. Hydraulic Brake Tube Assembly, Left and Right (M101A2, M116A2, and M116A2E1)



PART NUMBER	POSITION
11686103-1	Left Side (As Shown)
11686103-2	Right Side (Opposite of Shown)

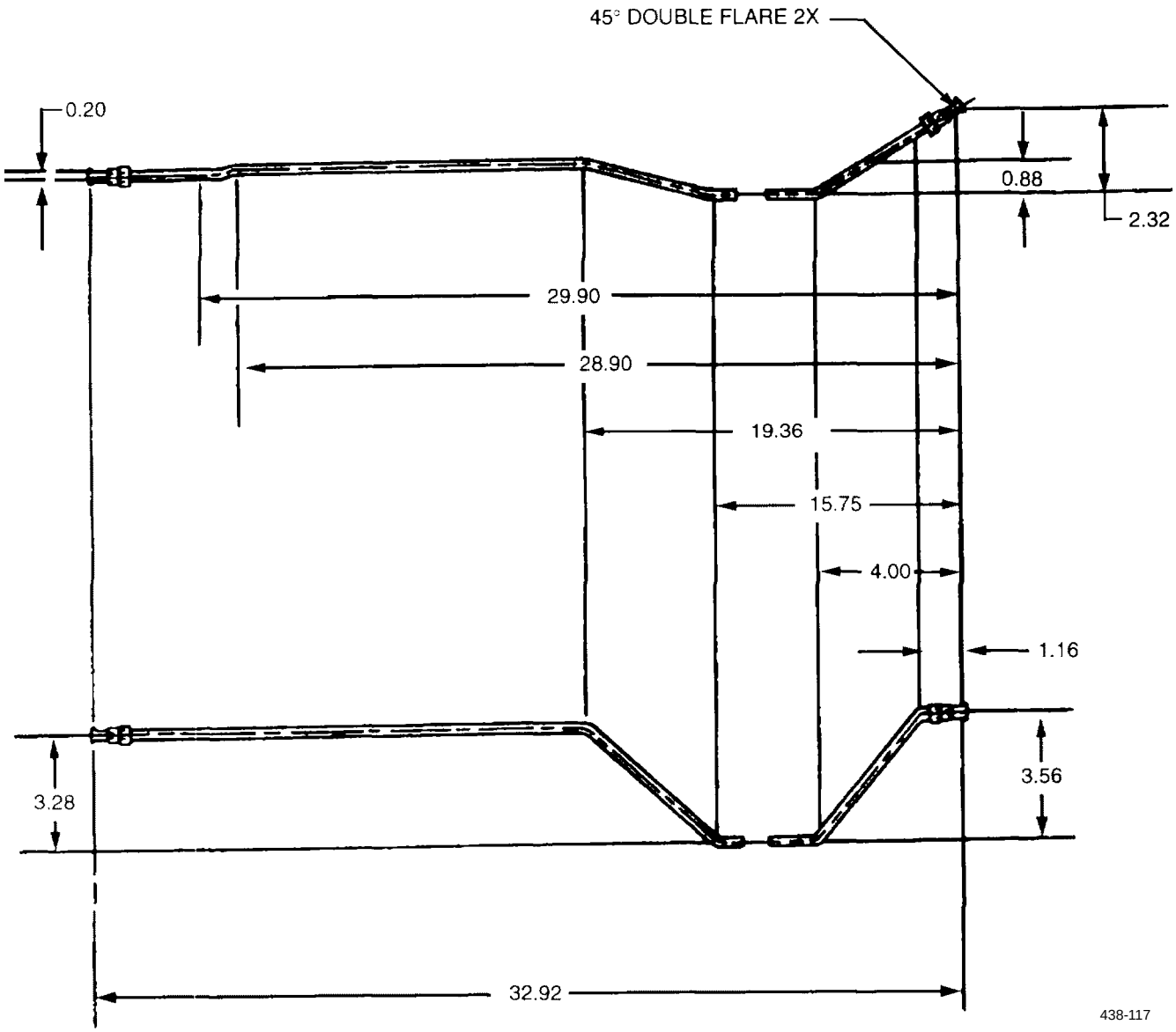
1. Fabricate from tube, part number M3520-B80B01G, NSN 4710-00-350-9896.
2. Cut to proper length and bend as shown.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

Figure G-6. Hydraulic Brake Tube Assembly, Left (M101A3 and M116A3)



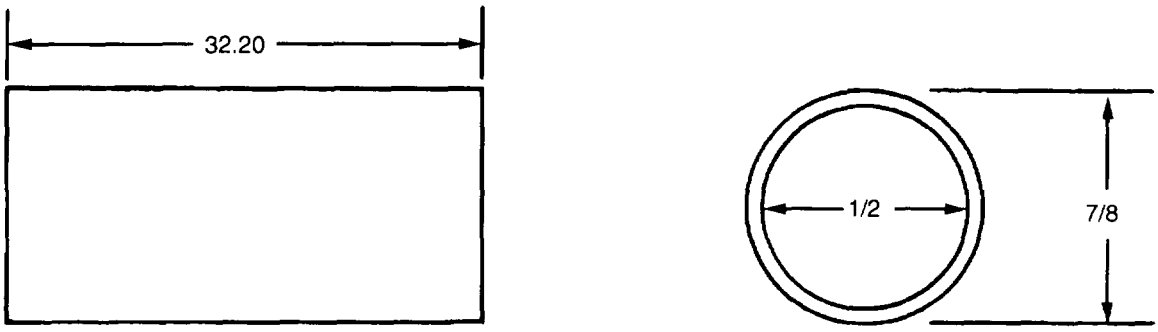
1. Fabricate from tube, part number M3520-B80B01G, NSN 4710-00-350-9896.
2. Cut to proper length and bend as shown to create part number 12362796-1.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

Figure G-7. Hydraulic Brake Tube Assembly, Right (M101A3 and M116A3)



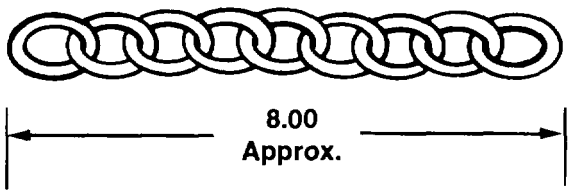
1. Fabricate from tube, part number M3520-B80B01G, NSN 4710-00-350-9896.
2. Cut to proper length and bend as shown to create part number 12362795-1.
3. Install nut, part number 110357, on each end of tube assembly, as shown.

Figure G-8. Drawbar Clamp Spacer (M101A2 and M116A2)



1. Fabricate from tube, part number WWP441 Class A, NSN 4710-00-162-1018.
2. Cut to length as shown. Remove burrs.

Figure G-9. Adjustable Front Support Leg Chain



1. Fabricate from weldless chain, part number RRC271.
2. Cut to approximately 8 inches in length (12 links), as shown, to create part number RRC271-8.

APPENDIX H
TORQUE VALUES FOR THREADED FASTENERS

Paragraph Number	Paragraph Title	Page Number
H-1	General	H-1
H-2	Torque Limits	H-1
H-3	How To Use Torque Table	H-1
H-4	Tightening Metal Fasteners	H-3
H-5	Fastener Size and Thread Pattern	H-4
H-6	Fastener Grade	H-5

H-1. GENERAL.

This section provides general torque limits for screws used on the M101 and Ml 16 Series trailer. Special torque limits are indicated in the maintenance procedures for applicable components. The general torque limits given in this appendix shall be used when specific torque limits are not indicated in the maintenance procedure. These general torque limits cannot be applied to screws that retain rubber components. The rubber components will be damaged before the correct torque limit is reached. If a special torque limit is not given in the maintenance instructions, tighten the screw or nut until it touches the metal bracket, then tighten it one more turn.

H-2. TORQUE LIMITS.

Table H-1 lists dry torque limits. Dry torque limits are used on screws that do not have lubricants applied to threads. Table H-2 lists wet torque limits. Wet torque limits are used on screws that have high-pressure lubricants applied to threads.

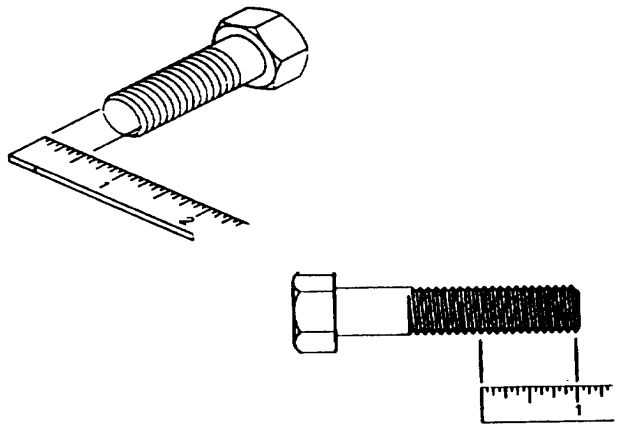
H-3. HOW TO USE TORQUE TABLE.

1. Measure the diameter of the screw to be installed.

2. Count the number of threads per inch or use a pitch gage.

3. Under the heading SIZE, look down the left-hand column until the diameter of screw to be installed is found (there will usually be two lines beginning with the same size).

4. In the second column under SIZE, find the number of threads per inch that matches the number of threads counted in step 2.

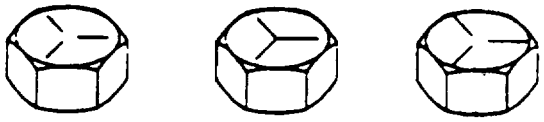


H-3. HOW TO USE TORQUE TABLE (continued).

5. To find the grade of the screw that is to be installed, match the markings on the head to the correct picture of CAPSCREW HEAD MARKINGS on the table.

CAPSCREW HEAD MARKINGS

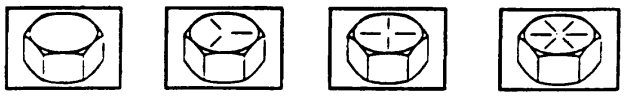
Manufacturer's marks may vary.
These are all SAE Grade No. 5 (3 lines).



6. Look down the column under the picture found in step 5 until the torque limit in foot-pounds for the diameter and threads per inch of the screw being installed is found.

Table H-1. Torque Limits for Dry Fasteners

SAE CAPSCREW HEAD MARKINGS

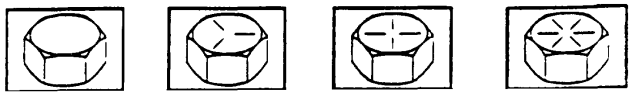


SIZE			TORQUE							
			SAE GRADE No. 1 or 2		SAE GRADE No. 5		SAE GRADE No. 6 or 7		SAE GRADE No. 8	
DIA. (IN.)	THREADS PER INCH	MM	FOOT-POUNDS	N•m	FOOT-POUNDS	N•m	FOOT-POUNDS	N•m	FOOT-POUNDS	N•m
1/4	20	6.35	5	6.78	8.0	10.85	10	13.56	12.0	16.27
1/4	28	6.35	6	8.14	10.0	13.56	—	—	14.0	18.98
5/16	18	7.94	11	14.92	17.0	23.05	19	25.76	24.0	32.52
5/16	24	7.94	13	17.63	19.0	25.76	—	—	27.0	36.61
3/8	16	9.53	18	24.41	31.0	42.04	34	46.10	44.0	59.66
3/8	24	9.53	20	27.12	35.0	47.46	—	—	49.0	66.44
7/16	14	11.11	28	37.97	49.0	66.44	55	74.58	70.0	94.92
7/16	20	—	30	40.68	55.0	74.58	—	—	78.0	105.77
1/2	13	12.70	39	52.88	75.0	101.70	85	115.26	105.0	142.38
1/2	20	—	41	55.60	85.0	115.26	—	—	120.0	162.78
9/16	12	14.28	51	69.16	110.0	149.16	120	162.72	155.0	210.18
9/16	18	—	55	74.58	120.0	162.72	—	—	170.0	230.52
5/8	11	15.88	63	85.43	150.0	203.40	167	226.45	210.0	284.76
5/8	18	—	95	128.82	170.0	230.52	—	—	240.0	325.44
3/4	10	19.05	105	142.38	270.0	356.12	280	379.68	375.0	506.50
3/4	16	—	115	155.94	295.0	400.02	—	—	420.0	596.52
7/8	9	22.23	160	216.96	375.0	536.62	440	596.64	605.0	820.38
7/8	14	—	175	237.30	435.0	599.85	—	—	675.0	915.30
1	8	25.40	235	318.66	590.0	800.04	660	694.96	910.0	1233.96
1	14	—	250	338.00	660.0	894.96	—	—	990.0	1342.44
1 1/8	—	25.58	—	—	800.0	1064.8	—	—	1280.0	1735.7
					880.0	1193.3			1444.0	1952.8
1 1/4	—	31.75	—	—	—	—	—	—	1820.0	2467.9
									2000.0	2712.0
1 3/8	—	34.93	—	—	1460.0	1979.8	—	—	2300.0	3227.3
					1680.0	2278.1			2720.0	3688.3
1 1/2	—	38.10	—	—	1940.0	2630.6	—	—	3160.0	4285.0
					2200.0	2963.2			3560.0	4827.4

H-3. HOW TO USE TORQUE TABLE (continued).

Table H-2. Torque Limits for Wet Fasteners

SAE CAPSCREW HEAD MARKINGS



SIZE			TORQUE							
			SAE GRADE No. 1 or 2		SAE GRADE No. 5		SAE GRADE No. 6 or 7		SAE GRADE No. 8	
DIA. (IN.)	THREADS PER INCH	MM	FOOT-POUNDS	N•m	FOOT-POUNDS	N•m	FOOT-POUNDS	N•m	FOOT-POUNDS	N•m
1/4	20	6.35	4.9	6.10	7.2	9.76	9.0	12.0	10.8	14.64
1/4	28	6.35	5.4	7.33	9.0	12.20	—	—	12.6	17.08
5/16	18	7.94	9.9	13.34	15.3	22.54	17.1	23.18	21.6	29.27
5/16	24	7.94	11.7	15.87	17.1	23.18	—	—	3	32.95
3/8	16	9.53	16.2	21.97	27.9	37.84	30.6	41.49	.6	53.69
3/8	24	9.53	18.0	24.41	31.5	42.71	—	—	44.1	59.80
7/16	14	11.11	25.2	34.17	44.1	59.80	49.5	67.12	63.0	85.42
7/16	20	—	27.0	36.61	49.5	67.12	—	—	70.2	95.19
1/2	13	12.70	35.1	47.58	67.5	91.53	76.5	103.73	94.5	128.14
1/2	20	—	36.9	50.04	76.5	103.73	—	—	106.0	146.50
9/16	12	14.29	45.9	62.24	99.0	134.24	108.0	146.45	139.5	189.16
9/16	18	—	45.5	67.12	106.0	146.45	—	—	153.0	207.47
5/8	11	15.88	56.7	76.89	135.0	183.06	150.3	203.80	189.0	256.28
5/8	18	—	85.5	115.94	153.0	207.47	—	—	216.0	296.90
3/4	10	19.05	94.5	128.14	243.0	329.51	252.0	341.71	337.5	457.65
3/4	16	—	103.5	140.35	265.5	360.2	—	—	378.0	536.87
7/8	9	22.23	144.0	195.26	355.5	482.06	396.0	536.98	544.5	738.34
7/8	14	—	157.5	213.57	391.5	530.87	—	—	607.5	823.77
1	8	25.40	211.5	286.79	531.0	720.04	594.0	805.46	819.0	1110.56
1	14	—	225.0	305.10	594.0	805.46	—	—	891.0	1208.20
1-1/8	—	25.58	—	—	720.0	976.32	—	—	1152.0	1562.13
					792.0	1073.97			1296.0	1757.52
1-1/4	—	31.75	—	—	—	—	—	—	1638.0	2221.11
									1800.0	2440.80
1-3/8	—	34.93	—	—	1314.0	1781.82	—	—	2142.0	2904.57
					1512.0	2050.29			2448.0	3319.47
1-1/2	—	38.10	—	—	1746.0	2367.54	—	—	2844.0	3856.50
					1980.0	2684.88			3204.0	4344.66

H-4. TIGHTENING METAL FASTENERS.

When torquing a fastener, select a torque wrench whose range (Table H-3) fits the required torque value. A torque wrench is most accurate from 25 percent to 75 percent of its stated range. A torque wrench with a stated range of 0 to 100 will be most accurate from 25 to 75 foot-pounds. The accuracy of readings will decrease as you approach 0 foot-pounds or 100 foot-pounds. The ranges in Table H-3 are based on this principle.

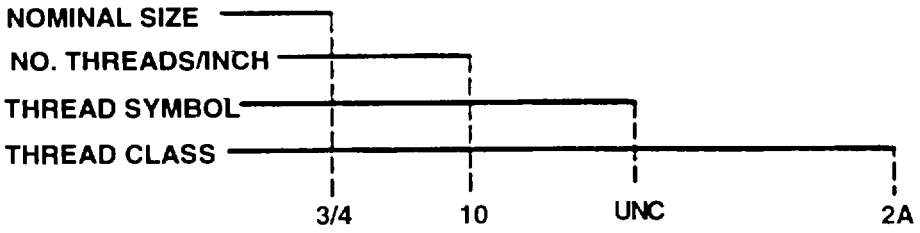
H-4. TIGHTENING METAL FASTENERS (continued).

Table H-3. Torque Ranges	
STATED RANGE	**MOST EFFECTIVE RANGE**
0-600 ft-lb	**150-450 ft-lb**
0-170 ft-lb	**44-131 ft-lb**
15-75 ft-lb	**30-60 ft-lb**

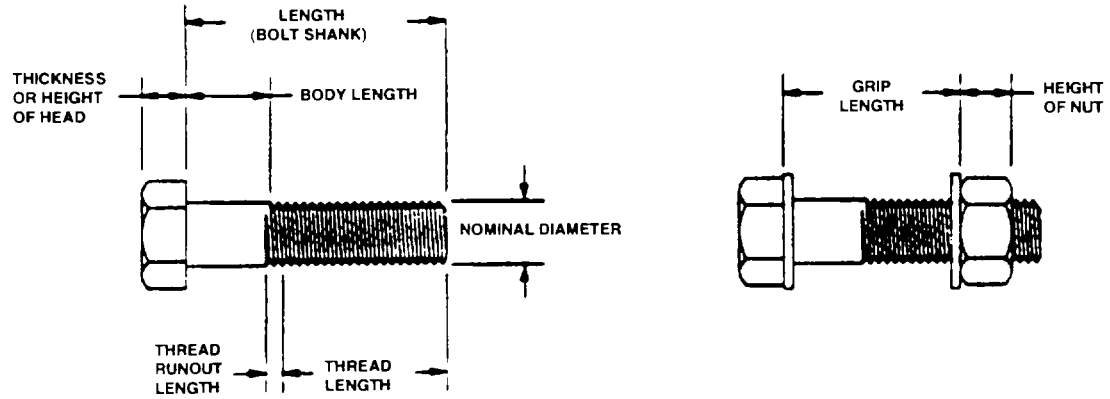
H-5. FASTENER SIZE AND THREAD PATTERN.

Threaded fasteners are categorized according to diameter of the fastener shank. Thread styles are divided into broad groups, the two most common being coarse (Unified Coarse-UNC) and fine (Unified Fine-UNF). These groups are defined by the number of threads per Inch on the bolt shanks. In addition, threads are categorized by thread class (Table H-4), which is a measure of the degree between threads of bolt or screw (external threads) and threads of the attaching nut or tapped hole (internal threads of the attaching nut or tapped hole) (internal threads). The most common thread class for bolts and screws is Class 2.

Table H-4. Thread Classes and Description		
EXTERNAL	**INTERNAL**	**INTERNAL**
1A	**1B**	**LOOSE FIT**
2A	**2B**	**MEDIUM FIT**
3A	**3B**	**CLOSE FIT**



NOTE: Unless followed with -LH (e.g., 314-10 UNC-2A-LH), threads are right-hand.



H-6. FASTENER GRADE.

In addition to being classified by thread type, thread fasteners are also classified by material. The most familiar fastener classification system is the SAE grading system (Table H-5).

Table H-5. SAE Screw and Bolt Markings

SCREWS	BOLTS
SAE GRADE 2 NO MARKING	SAE GRADE 6 4 RADIAL DASHES 90^0 APART
SAE GRADE 3 2 RADIAL DASHES 180^0 APART	SAE GRADE 7 5 RADIAL DASHES 72^0 APART
SAE GRADE 5 3 RADIAL DASHES 120^0 APART	SAE GRADE 8 6 RADIAL DASHES 60^0 APART

Markings on Hex Locknuts

GRADE A - No Marks
GRADE B - 3 Marks
GRADE C - 6 Marks

GRADE A - No Marks
GRADE B - Letter B
GRADE C - Letter C

GRADE A - No Notches
GRADE B - 1 Notch
GRADE C - 2 Notches

APPENDIX I
LUBRICATION INSTRUCTIONS

Paragraph Number	Paragraph Title	Page Number
I-1	General	I-1
I-2	Specific Lubrication Instructions	I-1
I-3	Lubrication Chart	I-2

I-1. GENERAL.

NOTE

These instructions are MANDATORY.

a. The M101 and M116 Series trailers must receive lubrication with approved lubricants at recommended intervals in order to be mission-ready at all times.

b. The KEY (p. I-4) lists lubricants to be used in all temperature ranges and shows the intervals.

c. The Lubrication Chart (p. I-3) shows lubrication points, items to be lubricated, required lubricants, and recommended intervals for lubrication. Any special lubricating instructions for specific components are contained in NOTES (p. I-4).

d. Recommended intervals are based on normal conditions of operation; under extreme conditions, lubricants should always be changed more frequently. When in doubt, notify your supervisor.

I-2. SPECIFIC LUBRICATION INSTRUCTIONS.

a. Keep all lubricants in a closed container and store in a clean, dry place away from extreme heat. Keep container covers clean and do not allow dust, dirt, or other foreign material to mix with lubricants. Keep all lubrication equipment clean and ready for use.

b. Maintain a record of lubrication performed and report any problems noted during lubrication. Refer to DA Pam 750-8 for maintenance forms and procedures for recording and reporting any findings.

WARNING

Wipe excess lubricant from the area of brakeshoe linings to prevent grease from soaking the linings. If brakeshoe linings become soaked, have Unit maintenance replace them. Failure to follow this warning may cause brakes to malfunction, resulting in serious injury or death to personnel.

c. Keep all external parts not requiring lubrication free of lubricants. After lubrication, wipe off excess oil or grease to prevent accumulation of foreign matter.

d. After parts are cleaned, rinse and dry them thoroughly. Apply a light grade of oil to all polished metal surfaces to prevent rusting.

I-2. SPECIFIC LUBRICATION INSTRUCTIONS (CONTINUED).

e. When authorized to install new parts, remove any preservative materials, such as rust preventive compound or protective grease, prior to installation. Apply lubricant prescribed in lubrication instructions if required.

f. Clean and lubricate bearings as specified in TM 9-214.

g. Refer to FM 9-207 for lubrication instructions in cold weather.

h. After operation in mud or in sandy or dusty conditions, clean and inspect all points of lubrication for fouled lubricants. Change lubricants as required.

i. After any fording operation, lubricate vehicle in accordance with lubrication instructions.

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

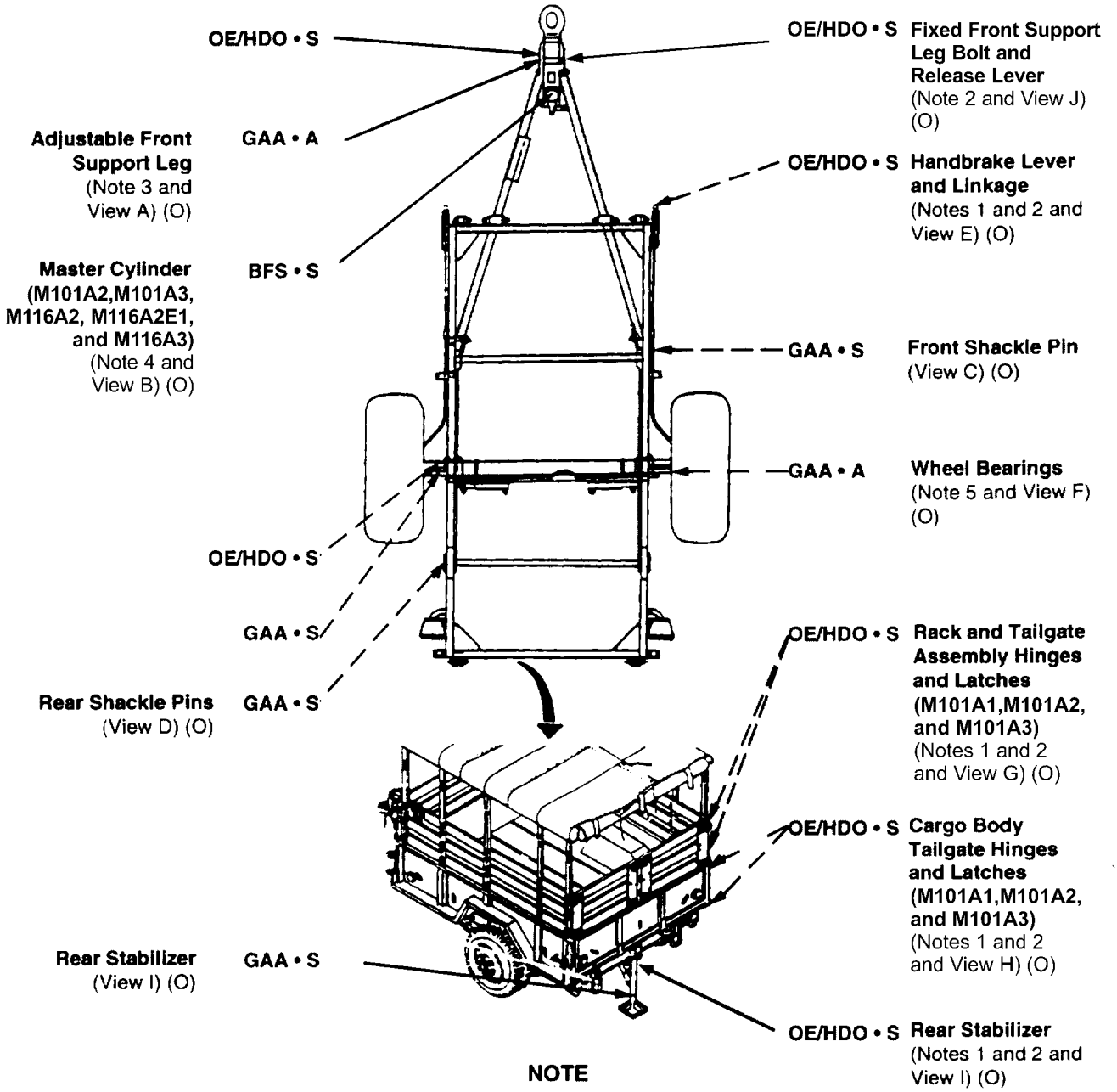
j. Clean all fittings and the area around lubrication points with drycleaning solvent (Item 15, Appendix F) or the equivalent before lubricating equipment. After lubrication, wipe off excess oil grease to preventaccumulation of foreign matter.

I-3. LUBRICATION CHART.

a. The Lubrication Chart covers lubrication points for the M101A1, M101A2 and M101A3 two-wheel, 3/4-ton cargo trailers; the M116A1, M116A2 and M116A2E1 two-wheel, 3/4-ton chassis trailers; and the M116A3 two-wheel, 1-ton chassis trailer. The lubrication points shown are for all models unless otherwise noted.

b. Intervals (on-condition or hard time) and related man-hour times are based on normal operation. The man-hour time specified is the time you need to do all the services prescribed for a particular interval. Decrease the intervals if your lubricants are contaminated or if you are operating equipment under adverse conditions, including longer than usual operating hours. The intervals may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

c. The lowest level of maintenance authorized to lubricate a point is indicated In parentheses by use of the following: (C) Operator/Crew or (O) Unit maintenance.



NOTE

Dotted leader lines indicate that lubrication is required on both sides of the equipment.

INTERVAL	MAN-HOURS*
S	1.0
A	2.7

* The man-hour time specified is the time you need to do all the services prescribed for a particular interval.

– KEY –					
LUBRICANTS	EXPECTED TEMPERATURE			FOR ARCTIC OPERATIONS, REFER TO FM 9-207	INTERVALS
	Above +32°F (Above 0°C)	+40°F to -10°F (+4°C to -23°C)	0°F to -65°F (-18°C to -54°C)		
OE/HDO (MIL-L-2104) Lubricating Oil, Internal Combustion Engine, Tactical Service	OE/HDO-30	OE/HDO-10	—		S – Semiannual A – Annual
OEA (MIL-L-46167) Lubricating Oil, Internal Combustion Engine, Arctic	—	—	OEA		
BFS (MIL-B-46176) Brake Fluid Silicone, Automotive	All Temperatures				
GAA (MIL-G-10924E&F) Grease, Automotive and Artillery	All Temperatures				

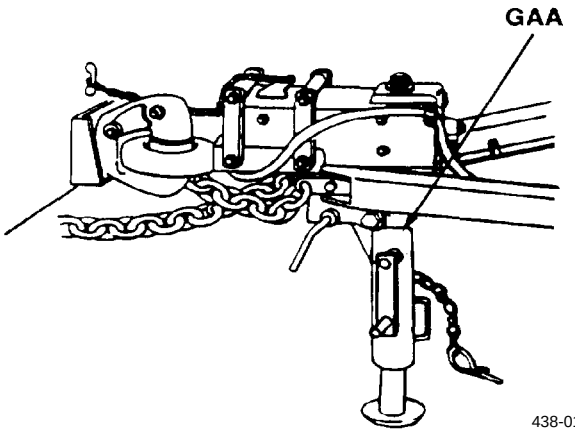
NOTES:

WARNING

Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

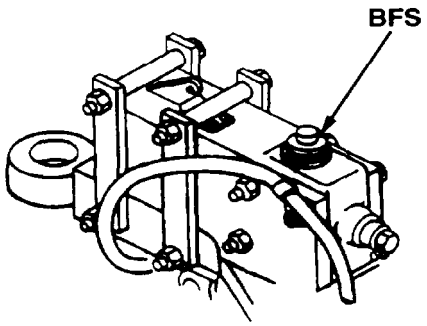
1. For prolonged operation of equipment in extreme cold (temperatures below -10°F [23°C]), remove lubricants prescribed in the KEY for temperatures above -10°F (-23°C). Clean parts with drycleaning solvent (Item 14, Appendix F). Lubricate with lubricants specified in the KEY for temperatures of 0°F to -65°F (18°C to -54°). If OEA lubricant is required to meet the temperature changes prescribed in the KEY, OEA lubricant is to be used in place of OE/HDO-10 lubricant for all temperature ranges where OE/HDO-10 lubricant is specified in the key.
2. Oil Can Points: Semiannually or as required, lubricate the following with OE/HDO: handbrake levers and linkage, adjustable front support leg pivot points and handcrank, rear stabilizer pivot points and latches, cargo body tailgate hinges and latches, and rack and tailgate assembly hinges and latches.
3. Adjustable Front Support Leg: Annually remove, clean, inspect, pack with GAA, and install (para 4-51).
4. Master Cylinder: Semiannually fill to within 1/4 inch (6.35 mm) of top with BFS.
5. Wheel Bearings: Annually remove, clean, inspect, pack with GAA, and install (para 4-43). Refer to TM 9-214.
6. Springs: Do not lubricate.

A ADJUSTABLE FRONT SUPPORT LEG



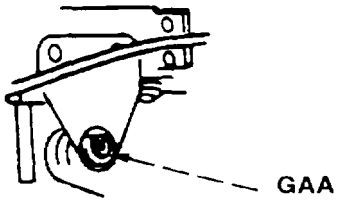
438-018

B MASTER CYLINDER (M101A2, M101A3, M116A2, M116A2E1, and M116A3)



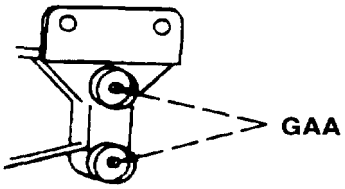
438-019

C FRONT SHACKLE PIN



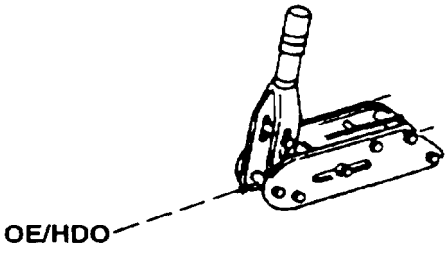
438-020

D REAR SHACKLE PINS



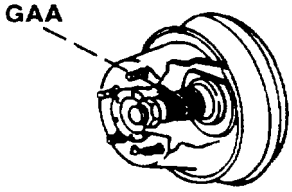
438-021

E HANDBRAKE LEVER AND LINKAGE



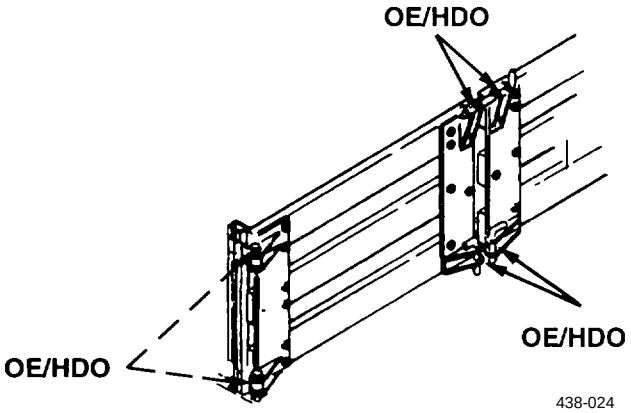
438-022

F WHEEL BEARINGS

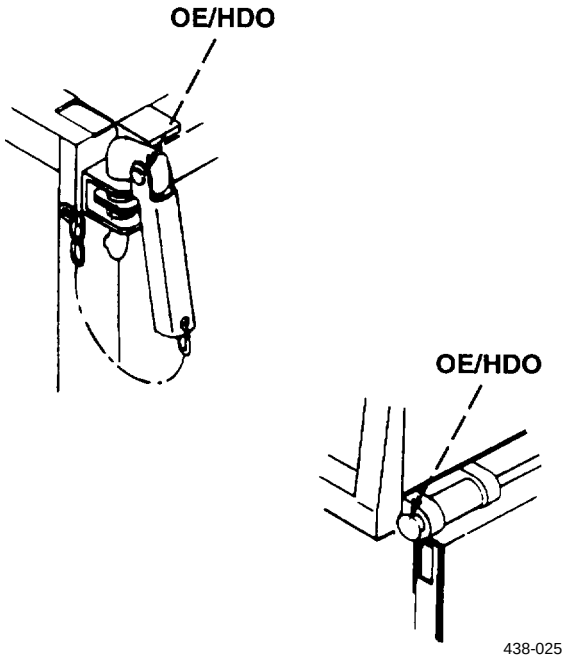


438-023

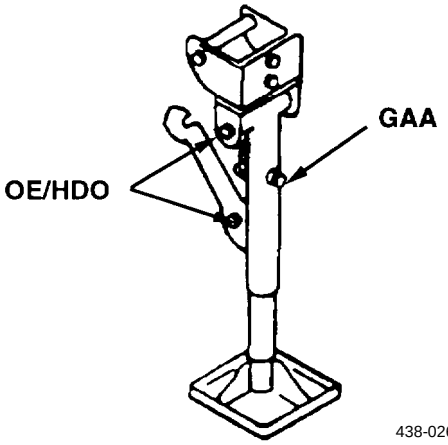
G RACK AND TAILGATE ASSEMBLY HINGES AND LATCHES (M101A1, M101A2, and M101A3)



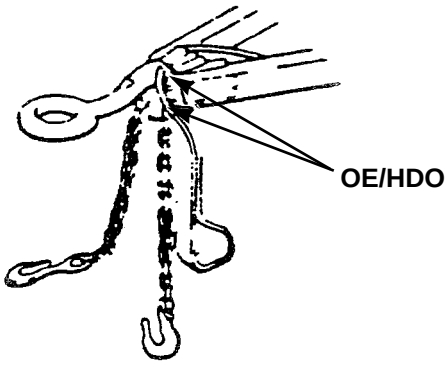
H CARGO BODY TAILGATE HINGES AND LATCHES (M101A1, M101A2, and M101A3



I REAR STABILIZER



J FRONT SUPPORT LEG PIVOT BOLT AND RELEASE LEVER



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By Order of the Secretary of the Army:

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Chief of Staff

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TM X-XXXX-XXX-XX	Date of TM	Title of TM

BE EXACT. PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
24-1	—	—	—

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Item no. 18.
The part number supplied appears to be wrong. When we order it, we receive a retaining ring instead of an axle tube.

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S. – IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEDQUARTERS.

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TEAR ALONG PERFORATED LINE

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches

1 Meter = 100 Centimeters = 1,000 Millimeters = 39.37 Inches

1 Kilometer = 1,000 Meters = 0.621 Miles

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches

1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet

1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches

1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces

1 Liter = 1,000 Milliliters = 33.82 Fluid Ounces

TEMPERATURE

5/9 (°F -32) = °C

212° Fahrenheit is equivalent to 100° Celsius

90° Fahrenheit is equivalent to 32.2° Celsius

32° Fahrenheit is equivalent to 0° Celsius

9/5 C° +32 = F°

WEIGHTS

1 Gram = 0.001 Kilograms = 1,000 Milligrams = 0.035 Ounces

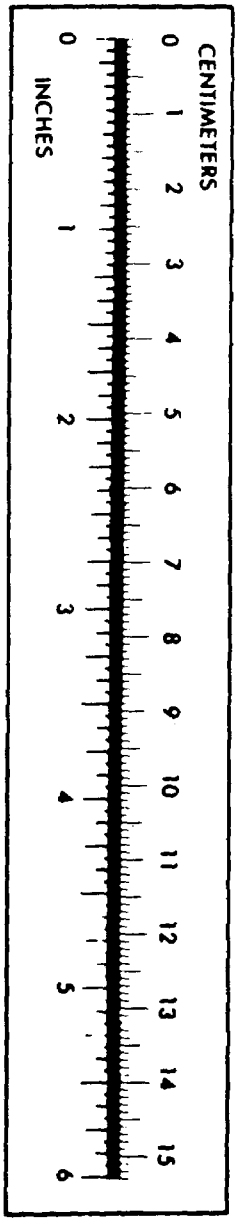
1 Kilogram = 1,000 Grams = 2.2 Lb.

1 Metric Ton = 1,000 Kilograms = 1 Megagram = 1.1 Short Tons

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds Per Square Inch	Kilopascals	6.895
Miles Per Gallon	Kilometers Per Liter	0.425
Miles Per Hour	Kilometers Per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds Per Square Inch	0.145
Kilometers Per Liter	Miles Per Gallon	2.354
Kilometers Per Hour	Miles Per Hour	0.621



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