

TB 9-3950-253-13&P

TECHNICAL BULLETIN

OPERATOR AND FIELD MAINTENANCE, INSTALLATION INSTRUCTIONS, AND REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FOR

PALLETIZED LOAD SYSTEM TRUCK, M1075 and M1075A1 (PLS)
AND HEAVY EXPANDED MOBILITY TACTICAL TRUCK, M1120, M1120A2,
AND M1120A4 (HEMTT)

ENHANCED CONTAINER HANDLING UNIT (E-CHU)

NSN: 3950-20-003-8784



467-189

DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

**HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 2009**

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these warnings could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical bulletin.



BIOLOGICAL - abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.



CHEMICAL - drop of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



EAR PROTECTION - headphones over ears show that noise level will harm ears.



ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.



EYE PROTECTION - person with goggles shows that the material will injure the eyes.



FIRE - flame shows that a material may ignite and cause burns.



FLYING PARTICLES - arrows bouncing off face with face shield show that particles flying through the air will harm face.



HEAVY OBJECT - human figure stooping over heavy object shows physical injury potential from improper lifting techniques.



HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.



HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.



HIGH PRESSURE LIQUID - high pressure liquid spraying human hand shows that liquid escaping under great pressure can cause injury or death.



HOT AREA - hand over object radiating heat shows that part is hot and can burn.



PINCH POINT - Object crushing human figure shows that areas between vehicles or parts present a danger to life or limb.



RADIOACTIVE - identifies a material that emits radioactive energy and can injure human tissue or organs.



SLICK FLOOR - wavy line on floor with legs prone shows that slick floor presents a danger from falling.



VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.

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

WARNING



ADHESIVES AND SEALANTS

Use caution when using adhesives and sealants. Prolonged inhalation of vapors can cause lung irritation. Contact with skin can cause dermatitis. Wear gloves and safety goggles and use product in a well-ventilated area away from open flame. If ingested, keep individual calm and seek medical attention. DO NOT induce vomiting. If contact with skin or eyes is made, flush thoroughly with water. Dispose of cleanup rags IAW local policy and ordinances. Failure to follow this warning may result in injury to personnel.

WARNING

CLAMPING DEVICE

Use caution when removing clamping device. Clamping device is spring loaded and may move erratically during removal. Failure to follow this warning may result in injury to personnel or damage to equipment.

WARNING



CLIMBING ON VEHICLE

During these procedures, operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and a hard hat. Failure to follow this warning may result in injury to personnel.

WARNING



COMPONENT SUPPORT

Components will fall when attaching hardware is removed. Support components while removing attaching hardware. Failure to follow this warning may result in injury to personnel.

WARNING



COMPRESSED AIR

Particles blown by compressed air are hazardous. DO NOT exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. Use a maximum of 30 psi (207 kPa) when cleaning components. DO NOT direct compressed air against human skin. Make sure air stream is directed away from user and other personnel in the area. To prevent injury, user must wear protective goggles or face shield. Failure to follow this warning may result in injury or death to personnel.

WARNING

CONTAINER NOT SECURE

Be aware container may be unsecure on vehicle. Do not drive vehicle with container in this condition. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

WARNING



CUTTING AND GRINDING

- Appropriate safety precautions (including, but not limited to, wearing proper breathing apparatus, hearing protection, safety goggles, etc.) must be observed when working with CARC material.
- All cutting and grinding must be done using an abrasive device only. Use of a cutting torch, plasma cutter, etc., is not permitted.
- Always wear gloves and a face shield or breathing apparatus when grinding painted surfaces. Airborne particles may cause lung irritation or damage to eyes.
- Failure to follow these warnings may cause injury or death to personnel.

WARNING



HEAVY PARTS

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

WARNING



HEAVY PARTS AND LIFTING EQUIPMENT

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable lifting capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury or death to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable lifting capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

WARNING



HOOK AND BAIL BAR

- As a safety precaution against movement of the lift frame, ensure the hook always surrounds (but is not necessarily in contact with) the bail bar.
- During these adjustments, personnel must work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Failure to follow these warnings may result in injury or death to personnel and damage to equipment.

WARNING

LATCH SUPPORT BEAM

Latch support beam will fall toward the right side of the vehicle when the locking pin is removed. Support the latch support beam during removal of the locking pin. Failure to follow this warning may cause injury or death to personnel.

WARNING



LIFT FRAME ADJUSTMENTS

- These instructions require adjustments to the lift frame. Be aware that the frame may swing on hook, especially in high winds.
- During these adjustments, personnel must work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Failure to follow these warnings may result in injury to personnel.

WARNING

LIFT FRAME ON GROUND

Lift frame must be firmly positioned on solid, level ground with adequate support from stands. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

WARNING

LIFT FRAME UNSTABLE ON HOOK

Be aware that the lift frame is unstable when suspended on hook and not stowed. DO NOT move vehicle. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

WARNING

MOVING LIFT FRAME

Undue force or motion exerted on lift frame could cause it to fall over. If conditions require (e.g., your view of the lift frame is inadequate, uneven ground conditions), obtain assistance from an observer on the ground to guide you in moving the hook. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

WARNING

NO TRANS LIGHT

NO TRANS light indicates lifting mechanism is not in home position. Do not attempt to move or drive the vehicle if not in home position. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

WARNING



RAISED CONTAINER

Use caution when working around and under a raised container. Ensure supports are strong enough to hold the weight of container and contents. Failure to follow this warning may result in injury or death to personnel.

WARNING



RELIEVING HYDRAULIC SYSTEM PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses. Failure to follow this warning may result in death or serious injury to personnel.

WARNING



SLIDER CONFIGURATION

- During these adjustments, you are required to work at the rear of the vehicle where there are several protruding parts. Use extreme caution and wear a hard hat.
- Front slider bed is heavy. Use extreme caution while changing the configuration of front slider beds.
- After releasing locking pins, move hands out of the way.
- Failure to follow these warnings may result in injury to personnel.

WARNING



ROLLER PIN

Use caution when removing roller pin. Roller components may fall when roller pin is removed. Support roller components during removal of roller pin. Failure to follow this warning may result in injury to personnel or damage to equipment.

WARNING



SOLVENT CLEANING COMPOUND

Solvent cleaning compound MIL-PRF-680 Type III is an environmentally compliant and low-toxic material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition. Failure to follow this warning may result in injury or death to personnel.

WARNING



TWISTLOCK CONFIGURATION

During this procedure, the twistlock assembly will be allowed to swing free unless it is manually supported. Ensure no personnel are standing in the path of the twistlock assembly. Failure to follow this warning may result in injury to personnel.

WARNING

UNLOADING/LOADING LIFT FRAME

- Use extreme caution while loading/unloading lift frame. Check for overhead wires or cables and verify adequate clearance to complete operation.
- Use a ground guide at all times when unloading/loading lift frame.
- Use extreme caution if high wind conditions exist while unloading lift frame. With assistance, attach guide straps to the legs of the lift frame to stabilize the lift frame during the unloading procedure.
- DO NOT stand behind lift frame while loading/unloading.
- Failure to follow these warnings may result in injury or death to personnel and damage to equipment.

WARNING

UPPER GUIDES ON CORNER CASTINGS

Do not attempt to complete this procedure if upper guides do not become fully located on corner castings. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

WARNING



WORK SAFETY

- DO NOT move vehicle until container is secured.
- During these adjustments, personnel must work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Failure to follow these warnings may result in injury to personnel.

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FOR
PALLETIZED LOAD SYSTEM TRUCK, M1075 and M1075A1 (PLS)
AND HEAVY EXPANDED MOBILITY TACTICAL TRUCK, M1120, M1120A2,
AND M1120A4 (HEMTT)
ENHANCED CONTAINER HANDLING UNIT (E-CHU)
NSN: 3950-20-003-8784**

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TB 9-3950-253-13&P, 30 July 2009, is updated as follows:

1. File this sheet in front of the manual for reference.
2. This change is a result of new preventive maintenance checks and service procedures and new expendable/durable supplies and materials.
3. New or updated text is indicated by a vertical bar in the outer margin of the page.
4. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature hand adjacent to the updated area or a vertical bar adjacent to the figure number.
5. Remove old pages and insert new pages as indicated below:

Remove Pages

A and B
i thru vi
Index-1 thru Index-4
2028 Sample
2028 Blank (3 copies)
FO-1
FO-3
Front Cover

Insert Pages

A and B
i thru vi
Index-1 thru Index-4
2028 Sample
2028 Blank (4 Copies)
FO-1
FO-3
Front Cover

6. Replace the following work packages with their revised version:

Work Package Number

WP 0001
WP 0002
WP 0003
WP 0005
WP 0007

Work Package Number

WP 0008
WP 0011
WP 0017
WP 0018
WP 0019
WP 0021
WP 0023
WP 0029
WP 0037
WP 0038
WP 0044
WP 0045
WP 0048
WP 0050
WP 0051
WP 0052
WP 0054
WP 0055
WP 0059

7. Add the following new work packages:

Work Package Number

WP 0048.1

By Order of Secretary of the Army:

RAYMOND T. ODIERNO
General, United States Army
Chief of Staff

Official:



JOYCE E. MORROW
Administrative Assistant to
the Secretary of the Army

1211003

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: The portion of text affected by the change is indicated by a vertical bar in the outer margins of the page. Changes to illustrations are indicated by a vertical bar adjacent to the title. Zero in the "Change No." column indicates an original page or work package.

Date of issue for the original manual is:

Original. 30 July 2009
 Change 1 1 June 2012

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 46 AND TOTAL NUMBER OF WORK PACKAGES IS 62, CONSISTING OF THE FOLLOWING:

Page/WP No.	Change No.	Page/WP No.	Change No.
Front Cover	1	WP 0025 (4 pgs)	0
Warning Summary (8 pgs).	0	WP 0026 (8 pgs)	0
i thru vi	1	WP 0027 (4 pgs)	0
Chapter 1 title page	0	WP 0028 (4 pgs)	0
WP 0001 (4 pgs)	1	WP 0029 (32 pgs)	1
WP 0002 (6 pgs)	1	WP 0030 (8 pgs)	0
WP 0003 (2 pgs)	1	WP 0031 (4 pgs)	0
Chapter 2 title page	0	WP 0032 (6 pgs)	0
WP 0004 (2 pgs)	0	WP 0033 (4 pgs)	0
WP 0005 (2 pgs)	1	WP 0034 (12 pgs)	0
WP 0006 (6 pgs)	0	WP 0035 (22 pgs)	0
WP 0007 (32 pgs)	1	WP 0036 (6 pgs)	0
WP 0008 (26 pgs)	1	WP 0037 (8 pgs)	1
WP 0009 (12 pgs)	0	WP 0038 (6 pgs)	1
WP 0010 (2 pgs)	0	WP 0039 (8 pgs)	0
WP 0011 (2 pgs) - DELETED	1	WP 0040 (4 pgs)	0
Chapter 3 title page	0	WP 0041 (4 pgs)	0
WP 0012 (2 pgs)	0	WP 0042 (4 pgs)	0
WP 0013 (2 pgs)	0	WP 0043 (6 pgs)	0
WP 0014 (8 pgs)	0	WP 0044 (10 pgs)	1
Chapter 4 title page	0	WP 0045 (10 pgs)	1
WP 0015 (8 pgs)	0	WP 0046 (8 pgs)	0
WP 0016 (18 pgs)	0	WP 0047 (4 pgs)	0
Chapter 5 title page	0	WP 0048 (10 pgs)	1
WP 0017 (14 pgs)	1	WP 0048.1(18 pgs)	1
WP 0018 (2 pgs)	1	Chapter 7 title page	0
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Chapter 6 title page	0	WP 0050 (6 pgs)	1
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WP 0024 (6 pgs)	0	WP 0054 (64 pgs)	1

LIST OF EFFECTIVE PAGES/WORK PACKAGES

Page/WP No.	Change No.	Page/WP No.	Change No.
Chapter 9 title page	0	WP 0061 (4 pgs)	0
WP 0055 (2 pgs)	1	INDEX-1 -INDEX-4	1
WP 0056 (4 pgs)	0	FP1	1
WP 0057 (4 pgs)	0	FP2	0
WP 0058 (2 pgs)	0	FP3	1
WP 0059 (2 pgs)	1	FP4-FP12	0
WP 0060 (4 pgs)	0	Back cover	0

HEADQUARTERS, DEPARTMENT OF THE ARMY
Washington, D.C., 30 July 2009

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NSN: 3950-20-003-8784**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any errors, or if you would like to recommend any improvements to the procedures in this publication, please let us know. The preferred method is to submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet on the TACOM Unique Logistics Support Applications (TULSA) Web site. The Internet address is <https://tulsa.tacom.army.mil>. Access to all applications requires CAC authentication, and you must complete the Access Request form the first time you use it. The DA Form 2028 is located under the TULSA Applications on the left-hand navigation bar. Fill out the form and click on SUBMIT. Using this form on the TULSA Web site will enable us to respond more quickly to your comments and to better manage the DA Form 2028 program. You may also mail, e-mail, or fax your comments or DA Form 2028 directly to the U.S. Army TACOM Life Cycle Management Command. The postal mail address is U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP / TECH PUBS, MS 727, 6501 E. 11 Mile Road, Warren, MI 48397-5000. The e-mail address is tacomlcmc.daform2028@us.army.mil. The fax number is DSN 786-1856 or Commercial (586) 282-1856. A reply will be furnished to you.

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HOW TO USE THIS TECHNICAL BULLETIN

NOTE

If at any time you are unsure how to use this technical bulletin (TB) or you cannot locate the information you need, notify your supervisor.

INTRODUCTION

1. This TB is designed to help you operate the Enhanced Container Handling Unit (E-CHU) and perform troubleshooting and maintenance on the equipment.
2. This TB is written in work package format:
 - a. Chapters divide the manual into major categories of information.
 - b. Each chapter is divided into work packages which are identified by a 4-digit number (e.g., 0001, 0002) located in the upper right-hand corner of each page. The work package page number (e.g., 0001-1, 0001-2) is centered at the bottom of each page.
 - c. TM references in the Equipment Condition section of the INITIAL SETUP blocks are general. Please refer to the model specific TMs for additional information as required.
3. Read through this TB to become familiar with its organization and contents before attempting to operate or maintain the equipment.

CONTENTS OF THIS TECHNICAL BULLETIN

1. A *Warning Summary* is located at the beginning of the TB. Become familiar with these warnings before performing troubleshooting or maintenance on the E-CHU.
2. A *Table of Contents*, located in the front of the TB, lists all chapters and work packages in this TB.
 - a. The title block page provides *Reporting Errors and Recommending Improvements* information and DA Form 2028 addresses, for the submittal of corrections to this TB.
 - b. If you cannot find what you are looking for in the *Table of Contents*, refer to the alphabetical *Index* at the back of this TB.
3. Chapter 1, *General Information, Equipment Description, and Theory of Operation*, provides general information on the TB and the equipment.
4. Chapter 2, *Operator Instructions*, explains and illustrates all operator controls and indicators. It also describes how to perform all operating procedures for the E-CHU, including *Operation Under Usual Conditions* and *Operation Under Unusual Conditions*.
5. Chapter 3 covers *Operator Troubleshooting Procedures*. WP 0013 contains the *Troubleshooting Symptom Index*. If the E-CHU malfunctions, this index should always be consulted to locate the appropriate troubleshooting procedure.
6. Chapter 4 covers *Operator Maintenance Instructions*.
7. Chapter 5 covers *Field Maintenance Troubleshooting Procedures*.
8. Chapter 6 covers *Field Maintenance Instructions*.
9. Chapter 7 covers *Installation Instructions*.
10. Chapter 8 contains the *Repair Parts and Special Tools List (RPSTL)*.
11. Chapter 9 provides *Supporting Information*. Covered are *References*, *Maintenance Allocation Chart (MAC)*, *Basic Issue Items (BII) List*, *Expendable and Durable Items List*, and various supplemental information.

FEATURES OF THIS TECHNICAL BULLETIN

1. WARNINGS, CAUTIONS, NOTES are as follows:

WARNING

A WARNING indicates a hazard which may result in serious injury or death to personnel.

CAUTION

A CAUTION is a reminder of safety practices or directs attention to usage practices that may result in damage to equipment.

NOTE

A NOTE is a statement containing information that will make the procedures easier to perform.

2. Statements and words of particular interest may be printed in CAPITAL letters to create emphasis.
3. Within a procedural step, reference may be made to another work package in this TB or to another TB. These references indicate where you should look for more complete information.
4. Illustrations are placed after, and as close to, the procedural steps to which they apply. Callouts placed on the art are text or numbers.
5. Numbers located at lower right corner of art (e.g., 467-0001; 467-0002) are art control numbers and are used for tracking purposes only.
6. Technical instructions include metric units as well as standard units. For your reference, the *Metric System and Equivalent* is located on the inside back cover of the TB.

CHAPTER 1
GENERAL INFORMATION, EQUIPMENT
DESCRIPTION, AND THEORY OF OPERATION

OPERATOR AND FIELD MAINTENANCE**GENERAL INFORMATION**

SCOPE**1. Type of Technical Bulletin.**

- a. This TB provides instructions on how to operate the Enhanced Container Handling Unit (E-CHU).
- b. Also included are Operator and Field Maintenance instructions, including removal/disassembly, adjustments, troubleshooting, and periodic inspections and lubrication services to keep the E-CHU serviceable.
- c. Original Equipment Removal and Installation Instructions are included in this TB.
- d. An illustrated Repair Parts and Special Tools List (RPSTL) for all components of the E-CHU is included in this TB (WP 0054).

2. Equipment Name.

Enhanced Container Handling Unit (E-CHU), NSN: 3950-20-003-8784

3. Purpose of Equipment.

The E-CHU is a kit, designed to be bolted onto the PLS M1075 and M1075A1 truck or HEMTT LHS M1120, M1120A2, and M1120A4, which allows the truck to load, transport, and unload 20 ft long ISO containers directly onto the truck.

4. HEMMT M1120 and M1120A2 are similar for E-CHU operation and maintenance purposes.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by PAM 750-8, *The Army Maintenance Management System (TAMMS) User's Manual*.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your E-CHU needs improvements, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. (E-Mail: TACOM-TECH-PUBS@conus.army.mil) We will send you a reply. The preferred method for submitting Quality Deficiency Reports (QDRs) is through the Army Electronic Product Support (AEPS) website under the Electronic Deficiency Reporting System (EDRS). The web address is: <http://aeps.ria.army.mil>. If the above method is not available to you, put it on an SF 368 (Product Quality Deficiency Report), and mail it to us at: Department of the Army, U.S. Army Tank-automotive and Armaments Command, AMSRD-TAR-E, PDQR MS 268, 6501 E. 11 Mile Road, Warren, MI 48397-5000.

CORROSION PREVENTION AND CONTROL (CPC)

1. CPC of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.
2. Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.
3. Plastic, composites, and rubber can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking.
4. SF Form 368, *Product Quality Deficiency Report* should be submitted to the address specified in PAM 750-8, *TAMMS User's Manual*.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

For destruction of Army materiel to prevent enemy use, refer to TM 750-244-3 *Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)*.

PREPARATION FOR SHIPMENT

Refer to WP 0048.1 for *Preparation for Shipment*.

LIST OF ABBREVIATIONS**NOTE**

- For standard abbreviations, refer to ASME Y14.38-2007, *Abbreviations and Acronyms*.
- Only non-standard abbreviations are listed here.

ABBREVIATION/ACRONYM	DEFINITION
AAL	Additional Authorization List
BII	Basic Issue Items
CAGEC	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
COEI	Components of End Item
CPC	Corrosion Prevention and Control
E-CHU	Enhanced Container Handling Unit
EIR	Equipment Improvement Recommendation
GAWR	Gross Axle Weight Rating
GVWR	Gross Vehicle Weight Rating
HEMTT	Heavy Expanded Mobility Tactical Truck
IAW	In Accordance With
ISO	International Organization for Standardization
KG	Kilogram
LB	Pound
LB-FT	Pound-Foot
LHS	Load Handling System
MSDS	Material Safety Data Sheets
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, and Chemical
NIIN	National Item Identification Number
Nm	Newton Meter
NSN	National Stock Number
OSHA	Occupational Safety and Health Administration
PCB	Printed Circuit Board

LIST OF ABBREVIATIONS – CONTINUED

ABBREVIATION/ACRONYM	DEFINITION
PLS	Palletized Load System
PMCS	Preventive Maintenance Checks and Services
PPE	Personnel Protective Equipment
PQDR	Product Quality Deficiency Report
RPSTL	Repair Parts and Special Tools List
SAE	Society of Automotive Engineers
SMR (Code)	Source, Maintenance, and Recoverability (Code)
SOP	Standard Operating Procedure
TAMCN	Table of Allowance Materiel Control Number
TAMMS	The Army Maintenance Management System
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TOE/MTOE	Table of Organization and Equipment/Modified Table of Organization and Equipment
UV	Ultraviolet
WCA	Warranty Claim Action
WP	Work Package

QUALITY OF MATERIAL

Material used for replacement, repair, or modification must meet the requirements of this TB. If quality of material requirements are not stated in this TB, the material must meet the requirements of the drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment.

END OF WORK PACKAGE

OPERATOR AND FIELD MAINTENANCE**EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

1. The Enhanced Container Handling Unit (E-CHU) consists of a lifting frame, stowage unit and rear slider assembly. These 3 main assemblies are 100% common between the M1120, M1120A2, and M1120A4 HEMTT-LHS and M1075 and M1075A1 PLS.
 - a. The lifting frame is a separate structure that is equipped with a bail-bar, upper locks, lower container pins, and a bail bar lock. The LHS on the vehicle picks up the lifting frame at the bail-bar and positions the lifting frame on the end of an ISO container. The upper locks and lower container pins secure the lifting frame to the container. The bail bar lock prevents the lifting frame from disengaging the hook. Use of the bail bar lock is mandatory when the lifting frame is loaded on the hook.
 - b. The stowage unit is mounted on the vehicle chassis in front of the compression frame. The stowage unit secures the lifting frame on the vehicle when a container is not loaded, prevents the lifting frame from interfering with loading, carrying, and unloading a flatrack, and releases the lifting frame for retrieval in preparation for loading a container.
 - c. The rear slider assembly is mounted to the rear of the chassis and is used for supporting a container when it is loaded, carried, and unloaded. At the rear of the slider assembly is a twistlock unit for securing the container during transit.
2. The E-CHU provides an interface between the load handling system (LHS) on the HEMTT and PLS and an ISO standard container, flatrack, or shelter having a length of 20 ft (6,058 mm), width of 8 ft (2,438 mm), and a minimum height of 8 ft (2,438 mm) to a maximum height of 8 ft 6 in. (2,591 mm).
3. The E-CHU automatically guides and centers a container when loading, and is capable of engaging a container in the following circumstances:
 - a. When container is at a 0% to 10% yaw angle relative to vehicle
 - b. When container is at a 0% to 10% roll angle relative to vehicle.
 - c. When container is on a 0% to 10% ground slope either uphill or downhill.
 - d. When container is resting on a surface that is between 12 in. below and 5 ft above ground level. For this purpose, ground level is defined as the plane upon which the wheels of the vehicle are resting.
 - e. When the bottom corner castings of the container are submerged up to 6 in. above the top of the casting in mud, unpacked snow or sand.
4. The rear slider assembly has two configurations, container and flatrack
 - a. In container configuration, the front slider beds and twistlock assemblies are positioned to be on the same horizontal plane as the rear slider beds.
 - b. In flatrack configuration, the front slider beds are at an angle to the rear slider beds and on the same horizontal plane as the truck bed. On the HEMTT only, the rear twistlocks are folded under rear slider beds to comply with departure angle requirements.
5. The E-CHU kit includes Automatic Mode Sensors to adjust the loci path during loading/unloading, and Lockout Sensors to prevent the unloading operation from proceeding if the container locks are not removed and properly stowed.
6. The lifting frame is equipped with supporting legs (stands) enabling the frame to be positioned in a freestanding configuration.
7. When carrying an empty 8 ft high container, with the truck's tires inflated to highway pressure, the overall height on both vehicles is 14 ft 2 in. (4,318 mm).
8. To maintain the vehicles transportability profile (for rail and air transport), the lifting frame and stowage assembly can be lowered to the truck bed. Refer to *Preparation for Shipment* (WP 0048.1).

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

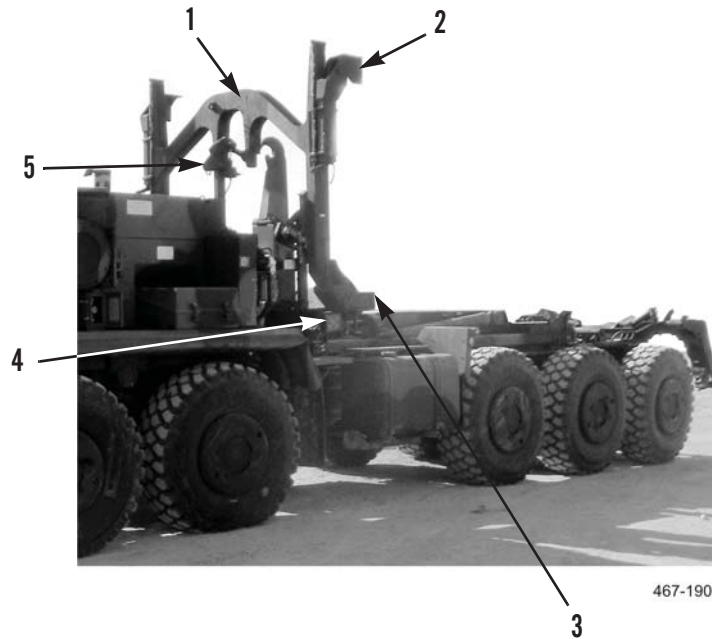


Figure 1. Left-Front View.

KEY	COMPONENT	DESCRIPTION
1	Lift Frame	Attaches to ISO standard container for loading, transport, and unloading container from vehicle.
2	Left Upper Lock	Engages with upper-left corner of ISO container. Locks lift frame to container.
3	Left Lower Lock	Engages with lower-left corner of ISO container. Locks lift frame to container and to stowage assembly when stowed on vehicle.
4	Stowage Control Panel	Container operator control buttons for operation of stowage unit.
5	Stowage Latch	Engages with bail bar on lift frame to secure lift frame to stowage assembly.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

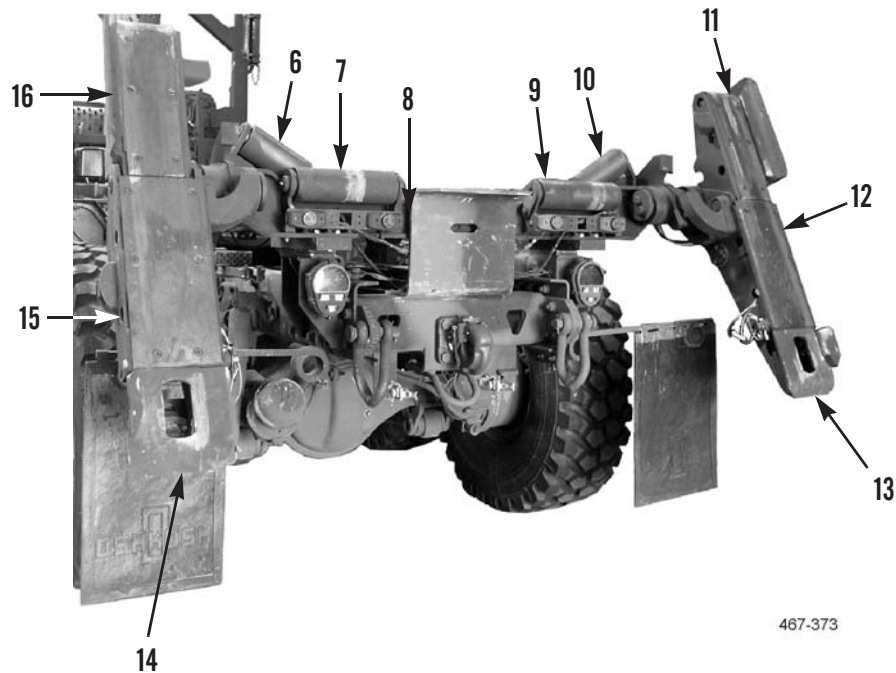


Figure 2. Rear View.

KEY	COMPONENT	DESCRIPTION
6	Left Angled Roller	Centers flatrack on truck during loading procedure.
7	Left Horizontal Roller	Guides flatrack onto truck bed during loading procedure.
8	Slider Assembly	Guides, centers, and enables ISO standard containers and flatracks to be loaded, transported, and unloaded from vehicle.
9	Right Horizontal Roller	Guides flatrack onto truck bed during loading procedure.
10	Right Angled Roller	Guides flatrack onto truck bed during loading procedure.
11	Right Front Slider Bed	Provides support for container during loading, transport, and unloading.
12	Right-Rear Slider Bed	Provides support for container during loading, transport, and unloading.
13	Right Twistlock	Locks container to slider assembly.
14	Left Twistlock	Locks container to slider assembly.
15	Left-Rear Slider Bed	Provides support container during loading, transport, and unloading.
16	Left-Front Slider Bed	Provides support for container during loading, transport, and unloading.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

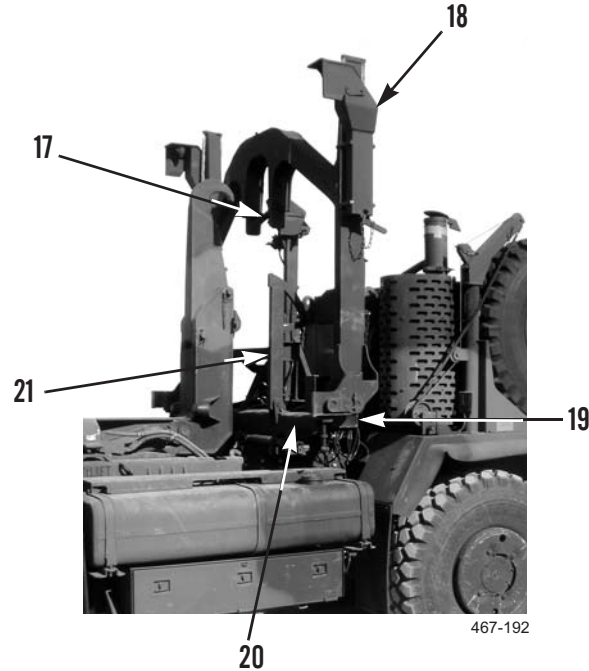


Figure 3. Right-Side View.

KEY	COMPONENT	DESCRIPTION
17	Bail Bar	Lifting point for hook arm during deployment of lift frame. Secured by stowage actuator when in stowed position on vehicle.
18	Right Upper Lock	Engages with upper-left corner of ISO container. Locks lift frame to container.
19	Stowage Electrical Controls	Three boxes containing electrical components and controls for E-CHU.
20	Right Transport Lock	Extends to lower-right corner of container. Secures container during transport.
21	Stowage Guide	Guides placement of lift frame during unloading and stowing operation.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS – CONTINUED

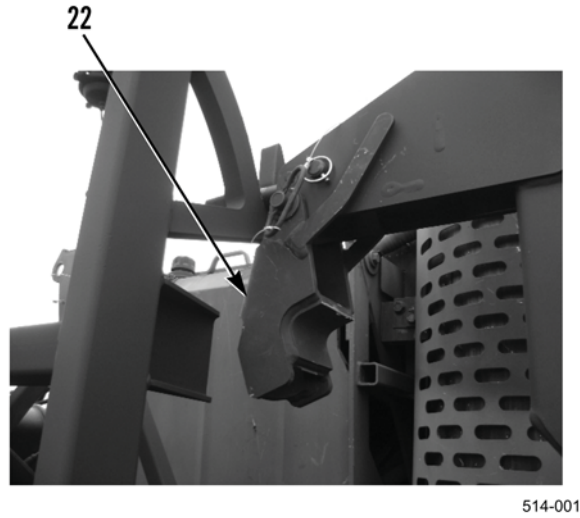


Figure 4. Right-Side View.

KEY	COMPONENT	DESCRIPTION
22	Bail Bar Lock	Installed on hook when lift frame is engaged, to prevent lift frame from disengaging hook. Use is mandatory.

END OF WORK PACKAGE

OPERATOR AND FIELD MAINTENANCE**THEORY OF OPERATION**

INTRODUCTION

The Enhanced-Container Handling Unit (E-CHU) is a kit for the PLS M1075 and M1075A1 or HEMTT LHS M1120, M1120A2, and M1120A4 that allows the vehicle to load, transport, and unload 20 ft long ISO containers.

DESCRIPTION

1. The E-CHU consists of three main assemblies: the stowage unit, lift frame, and roller assembly.
 - a. Stowage Unit:
 - (1) The stowage unit is installed forward of the compression frame and is used to secure the lift frame while a container is not loaded on the vehicle.
 - (2) The stowage unit unloads the lift frame enabling the vehicle's Load Handling System (LHS) to engage the lift frame at the bail bar and position the lift frame on the end of an ISO container.
 - (3) The transport locks on the stowage unit secure the lower-front corner castings while a container is loaded on the vehicle.
 - b. Lift Frame:
 - (1) The lift frame is stored on the stowage unit when not deployed on an ISO standard container.
 - (2) When deployed, the lift frame locks onto the upper and lower corner castings of the container enabling the LHS of the truck to load and unload the container.
 - (3) The bail bar lock secures the lift frame on the hook preventing the lift frame from disengaging.
 - c. Slider Assembly:
 - (1) The slider assembly is installed at the rear of the truck and aligns, centers, and supports the container during loading and unloading operations.
 - (2) Two Twistlock modules on the rear of the slider assembly lock the lower-rear corner castings of the container into place for transport.
 - (3) The slider assembly can be configured by the operator for either flatrack or container operation.
2. The E-CHU includes Automatic Mode Sensors and Lockout Sensors.
 - a. The Automatic Mode Sensors are located on the hook arm and the middle frame. They sense the position of the LHS during loading/unloading and adjust the loci path, keeping the lift frame clear of the rear slider assembly.
 - b. Lockout Sensors are located in the twistlock modules on the slider assembly and in the transport locks on the stowage unit. These sensors detect the status of the twistlocks and transport locks. All unloading functions are stopped if any of the locks are not in the stowed position or still engaged in the container.

END OF WORK PACKAGE

CHAPTER 2
OPERATOR INSTRUCTIONS

OPERATOR MAINTENANCE
DESCRIPTION AND USE OF OPERATOR CONTROLS

GENERAL

This work package describes the location and function of all operator controls of the Enhanced Container Handling Unit (E-CHU). Do not attempt to operate equipment until becoming familiar with these controls.

STOWAGE CONTROL PANEL

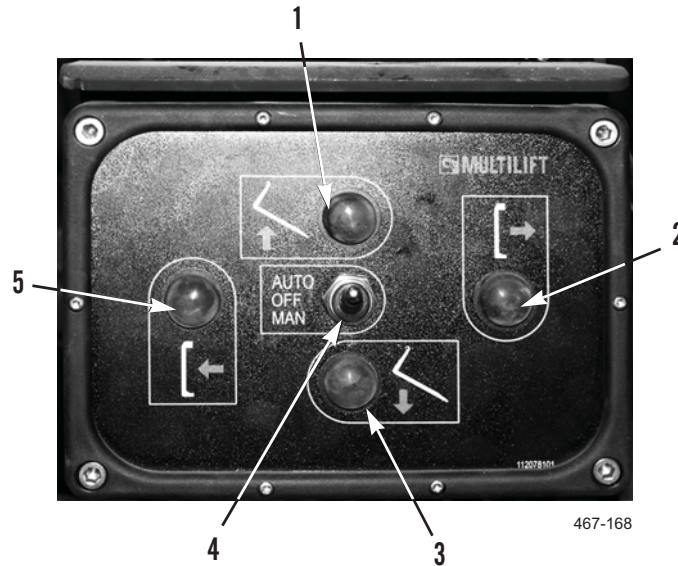


Figure 1. Stowage Control Panel.

KEY	CONTROL OR INDICATOR	FUNCTION
1	UP Button	Press and hold button to activate. Raises hook arm to allow for stowage and retrieval of lifting frame.
2	RETRIEVE Button	Press and hold button to activate. Moves lifting frame or stowage guide rearward.
3	DOWN Button	Press and hold button to activate. Lowers hook arm to allow for stowage and retrieval of lifting frame.
4	OFF/AUTO/MAN switch	Toggle switch to turn stowage controls to AUTOMATIC, MANUAL or OFF. When set to OFF, joystick in cab operates normally and stowage controls are disabled. When in either AUTO or MAN position, the joystick is disabled and stowage controls are enabled.
5	STOW Button	Press and hold button to activate. Moves lifting frame or stowage guide forward.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPERATION UNDER USUAL CONDITIONS
Introduction, Preparation for Use, E-CHU Operation

INITIAL SETUP**References**

WP 0001
 WP 0002
 WP 0004
 WP 0006
 WP 0007
 WP 0008
 WP 0009

References

WP 0012
 WP 0015

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

INTRODUCTION

1. This work package contains an introduction to operating Enhanced Container Handling Unit (E-CHU), fitted to PLS and HEMTT, under usual conditions. *Slider Bed Configuration* (WP 0006), *Unloading and Loading Empty Lift Frame* (WP 0007), and *Loading and Unloading Container* (WP 0008) contain further instructions for operating E-CHU.
2. Before operating E-CHU, read and become familiar with *General Information* (WP 0001). Also read warnings located in *Warning Summary* at front of this manual.
3. Refer to following, as needed, to assist in locating components related to operation:
 - a. *Equipment Description and Data* (WP 0002).
 - b. *Description and Use of Operator's Controls* (WP 0004).
4. *Operation Under Unusual Conditions* is covered in WP 0009.
5. For vehicle information not specific to E-CHU refer to one to the following technical manuals:
 - a. PLS: M1075 TM 9-2320-364-14&P, M1075A1 TM 9-2320-319-13&P.
 - b. HEMTT: M1120A4: TM 9-2320-326-14&P, M1120: TM 9-2320-279-14&P, M1120A2: TM 9-2320-325-14&P.

PREPARATION FOR USE

1. Persons supervising and operating equipment must be certified as trained in loading and unloading containers.
2. When working with E-CHU, wear the following protective gear:
 - a. Hard hat.
 - b. Heavy-duty work gloves.
 - c. Non-slip, steel capped boots.
 - d. Ear protection.
3. Prior to operating E-CHU, perform *Before operation Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions* (WP 0015).
4. Unless otherwise instructed, carry out all operations with vehicle stationary, parking brake applied, neutral gear selected, and engine running at idling speed.

PREPARATION FOR USE – CONTINUED

5. Before loading a container, ensure the following conditions are met:
 - a. Container is of correct type and size for E-CHU and vehicle.
 - b. Weight of cargo in container does not exceed maximum rating of container.
 - c. Cargo in container is evenly distributed.
 - d. Cargo is sufficiently secured for container to be inclined up to 35° to horizontal.
 - e. Center of gravity of cargo is as low and central as possible.
 - f. Total weight of cargo and container does not cause GVWR of vehicle to be exceeded, or GAWR of any axle to be exceeded.
 - g. If a container is stuck or frozen to ground, loosen it with an adequately rated forklift truck or bucket loader. Do not attempt to loosen container with E-CHU.

E-CHU OPERATION

1. To adjust configuration of rear slider assembly refer to *Slider Bed Configuration* (WP 0006).
2. Procedures for unloading and loading the lift frame can be found in *Unloading and Loading Empty Lift Frame* (WP 0007).
3. Procedures for loading and unloading a container can be found in *Loading and Unloading Container* (WP 0008).

END OF TASK**END OF WORK PACKAGE**

OPERATOR MAINTENANCE

SLIDER BED CONFIGURATION

**Introduction, Convert Slider Beds from Flatrack to Container Configuration,
Convert Slider Beds from Container to Flatrack Configuration**

INITIAL SETUP

References

- TM 9-2320-326-14&P
- TM 9-2320-364-14&P

Equipment Conditions

- Hook arm in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
- MODE switch set to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

Equipment Conditions - Continued

- Stowage switch set to OFF position (WP 0004)
- NO TRANS light off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
- Vehicle in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

INTRODUCTION

The rear slider assembly has two configurations: container and flatrack.

- a. In container configuration, the front slider beds and twistlock assemblies are positioned to be on the same horizontal plane as the rear slider beds.
- b. In flatrack configuration, the front slider beds are at an angle to the rear slider beds and on the same horizontal plane as the truck bed. On the HEMTT only, the rear twistlocks are folded under rear slider beds to comply with departure angle requirements.

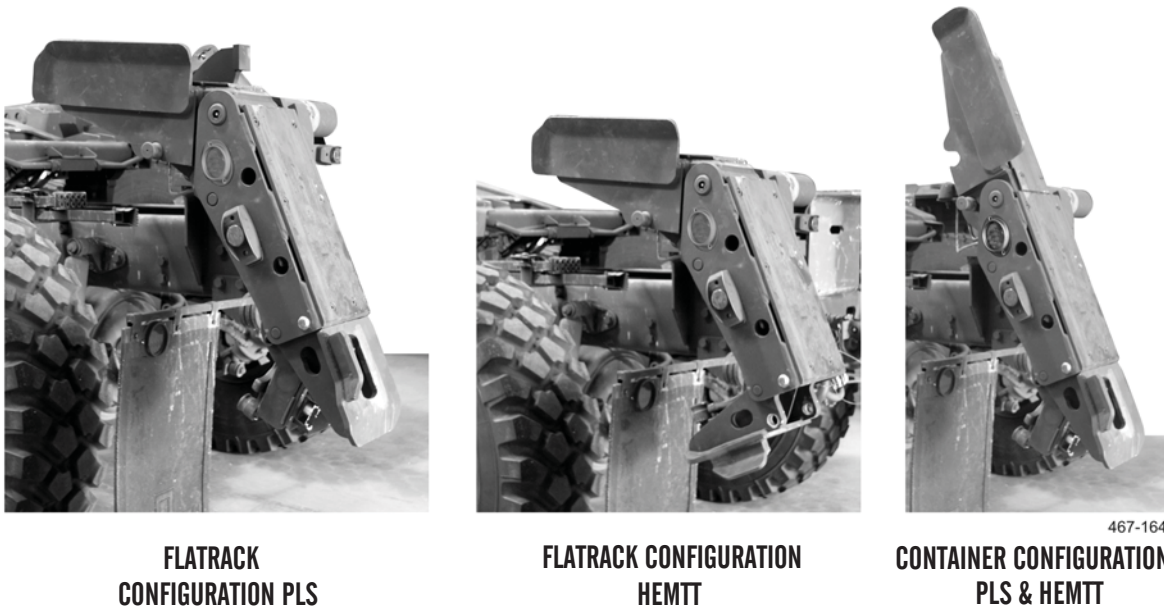


Figure 1. Slider Bed Configurations.

CONVERT SLIDER BEDS FROM FLATRACK TO CONTAINER CONFIGURATION

Front Slider Bed Configuration

NOTE

- Front slider bed container configuration is the same for both PLS and HEMTT.
 - Rear twistlocks on HEMTT require adjustment for container configuration.
1. Position vehicle as if loading a flatrack (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

WARNING

- During these adjustments, you are required to work at rear of vehicle where there are several protruding parts. Use extreme caution and wear a hard hat.
- Front slider bed is heavy. Use extreme caution while changing configuration of front roller beds.
- Failure to follow these warnings may result in injury to personnel.

NOTE

Perform steps 2 and 3 for both right and left sides.

2. From rear of vehicle, on left side, raise front slider bed (Figure 2, Item 1) slightly to relieve tension on locking pin (Figure 2, Item 3).
3. Continue to pivot front slider bed (Figure 2, Item 1) until it aligns with rear slider bed (Figure 2, Item 2) and locking pin engages into locked position.

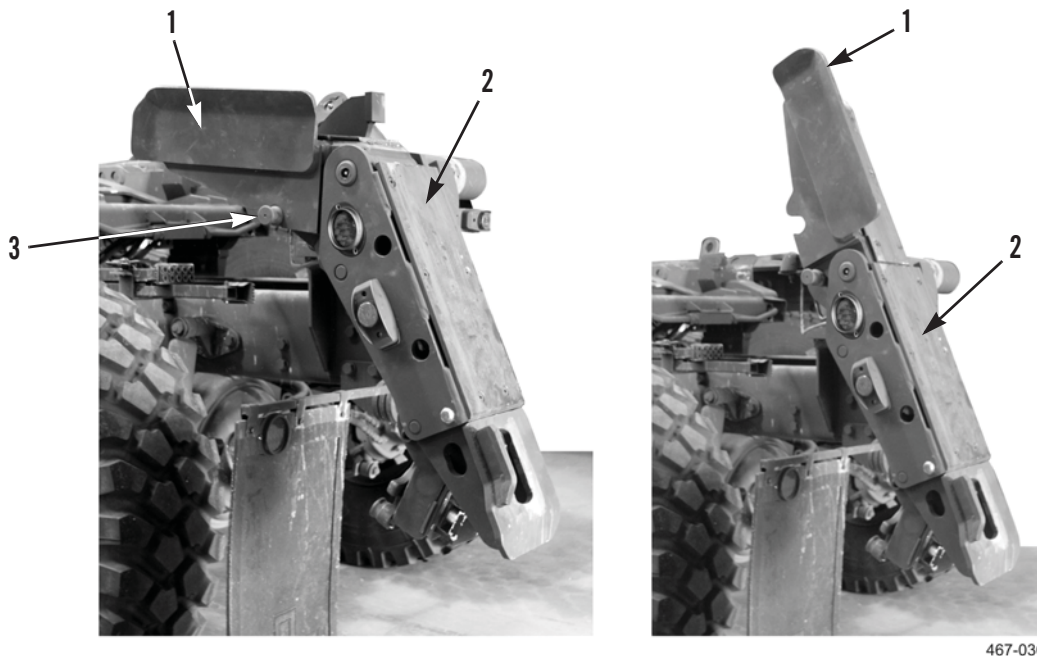
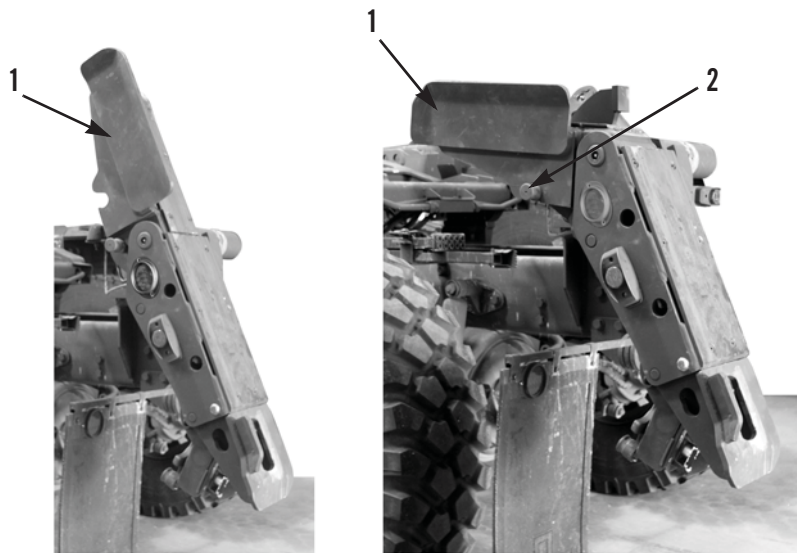


Figure 2. Front Slider Bed (Flatrack to Container).

CONVERT SLIDER BEDS FROM CONTAINER TO FLATRACK CONFIGURATION**Front Slider Bed Configuration****WARNING**

- During these adjustments, you are required to work at the rear of the vehicle where there are several protruding parts. Use extreme caution and wear a hard hat.
 - Front slider bed is heavy. Use extreme caution while changing the configuration of front slider beds.
 - After releasing locking pin, move hands out of the way to avoid pinching.
 - Failure to follow these warnings may result in injury to personnel.
1. From rear of vehicle, on left side, push front slider bed (Figure 4, Item 1) slightly to relieve tension on locking pin (Figure 4, Item 2) and push down on locking pin, keeping it from engaging with front slider bed.
 2. Allow front slider bed (Figure 4, Item 1) to pivot downward until it reaches a horizontal position and locking pin (Figure 4, Item 2) engages into locked position.



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Figure 4. Front Slider Bed (Container to Flatrack).

CONVERT SLIDER BEDS FROM CONTAINER TO FLATRACK CONFIGURATION – CONTINUED**Rear Twistlock Configuration****WARNING**

During this procedure, the twistlock assembly will be allowed to swing free unless it is manually supported. Ensure no personnel are standing in the path of the twistlock assembly. Failure to follow this warning may result in injury to personnel.

NOTE

- Rear twistlocks require adjustment on HEMTT only.
 - Perform steps 1 through 7 for both right and left sides.
1. While supporting twistlock (Figure 5, Item 6) remove locking pin (Figure 5, Item 4) from rear slider bed (Figure 5, Item 3).
 2. Rotate twistlock (Figure 5, Item 6) up until locking tube (Figure 5, Item 5) aligns with upper locking hole in rear slider bed (Figure 5, Item 3) and insert locking pin (Figure 5, Item 4).
 3. Remove R clip (Figure 5, Item 2) from rear slider bed (Figure 5, Item 3).
 4. While supporting twistlock housing (Figure 5, Item 7), remove locking pin (Figure 5, Item 1).
 5. Rotate anvil (Figure 5, Item 8) until aligned with opening in twistlock housing (Figure 5, Item 7).
 6. Rotate twistlock housing (Figure 5, Item 7) up until it engages with twistlock (Figure 5, Item 6) and install locking pin (Figure 5, Item 1)
 7. Install R clip (Figure 5, Item 2) in rear slider bed (Figure 5, Item 3).

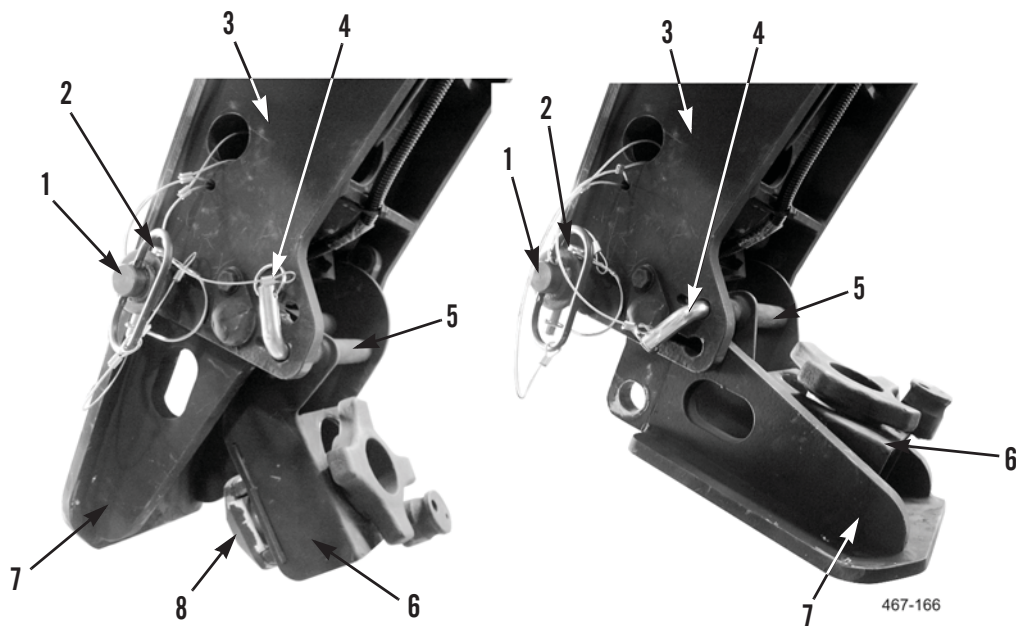


Figure 5. Twistlock Assembly (Container to Flatrack).

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE**UNLOADING AND LOADING EMPTY LIFT FRAME**

Retrieve Lift Frame, Unload with Empty Lift Frame, Place Lift Frame on Ground, Pick up Lift Frame from Ground, Load with Empty Lift Frame, Stow Lift Frame

INITIAL SETUP**References**

WP 0006
WP 0008

Equipment Conditions

Hook arm in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Slider beds in container configuration (WP 0006)

Equipment Conditions - Continued

MODE switch set to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Stowage switch set to OFF position (WP 0004)
NO TRANS light off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

WARNING

Use extreme caution while loading/unloading lift frame. Check for overhead wires or cables and verify adequate clearance to complete operation. Failure to follow this warning may result in damage to equipment and injury or death to personnel.

RETRIEVE LIFT FRAME**Retrieve Lift Frame - Stage 1****NOTE**

If lift frame is to be placed on ground, slider beds can be in either configuration.

1. Verify these conditions exist:
 - a. Lift mechanism in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
 - b. Vehicle in neutral gear and parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - c. MODE switch set to OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
2. Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
3. In cab, set MODE switch (Figure 1, Item 1) to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
4. At stowage control panel (Figure 1, Item 2) set toggle switch (Figure 1, Item 3) to AUTO position.

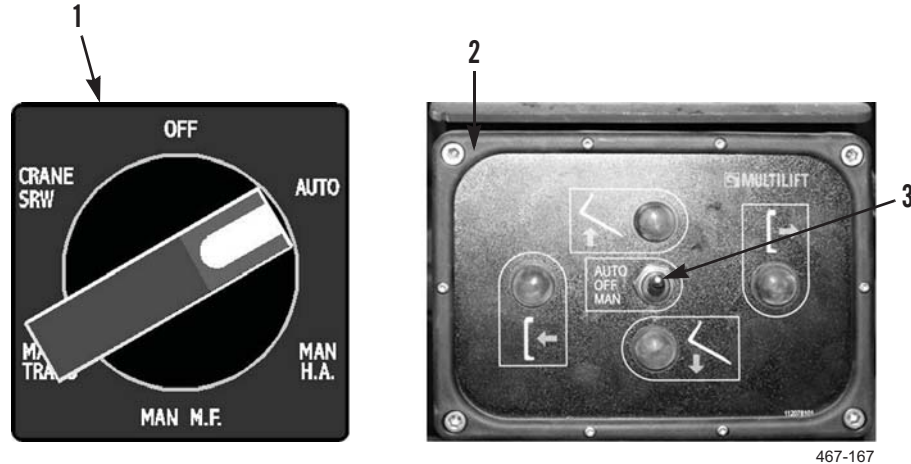
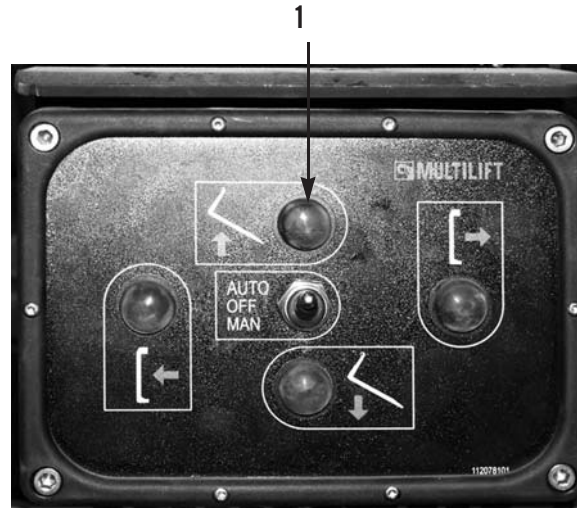


Figure 1. MODE Switch and Stowage Control Panel.

RETRIEVE LIFT FRAME – CONTINUED**Retrieve Lift Frame - Stage 1 – Continued**

5. Press and hold UP button (Figure 2, Item 1) until hook arm frame rises by approximately 4 in. (10 cm) and stops. Release UP button.



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Figure 2. Frame Retrieval/Stowage Position.

RETRIEVE LIFT FRAME – CONTINUED**Retrieve Lift Frame - Stage 1 – Continued**

6. Press and hold RETRIEVE button (Figure 3, Item 1) until stowage guide (Figure 3, Item 2) stops at intermediate position. Release RETRIEVE button. Stowage latch opens and stowage guide rotates rearward carrying lift frame (Figure 3, Item 3) with it.

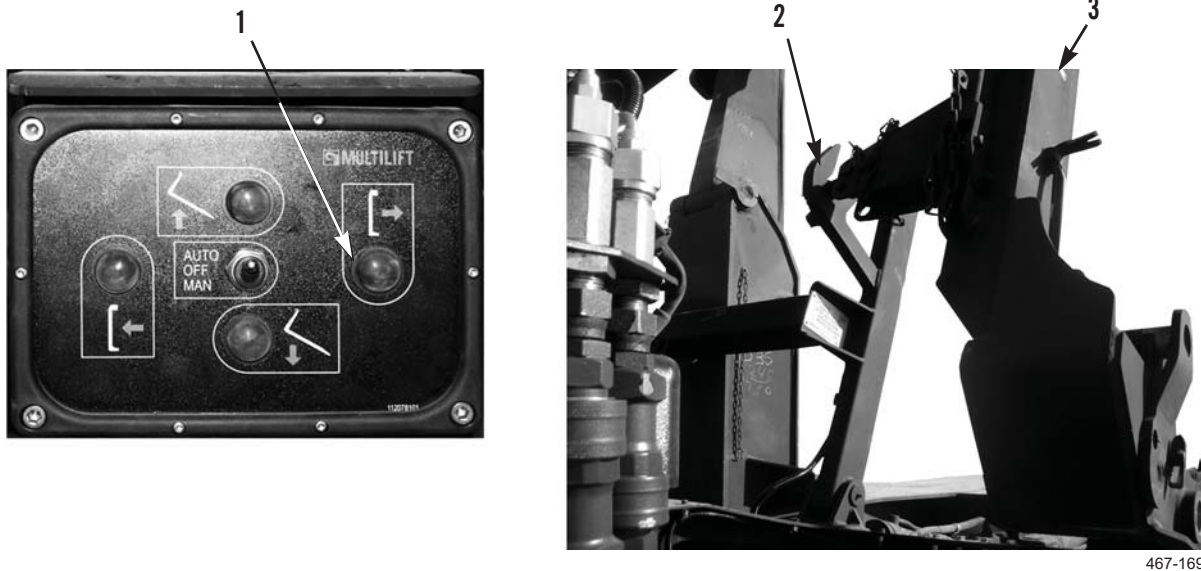


Figure 3. Intermediate Retrieval Position.

RETRIEVE LIFT FRAME – CONTINUED**Retrieve Lift Frame - Stage 1 – Continued**

- Press and hold DOWN button (Figure 4, Item 6) until hook arm (Figure 4, Item 5) stops moving downward. Release DOWN button.

NOTE

Lift frame bail bar (Figure 4, Item 3) has entered opening of lift mechanism hook (Figure 4, Item 2).

- Press and hold RETRIEVE button (Figure 4, Item 1) until stowage guide (Figure 4, Item 4) stops moving. Release RETRIEVE button.

NOTE

Lift frame bail bar (Figure 4, Item 3) is now positioned against inside of lift mechanism hook (Figure 4, Item 2).

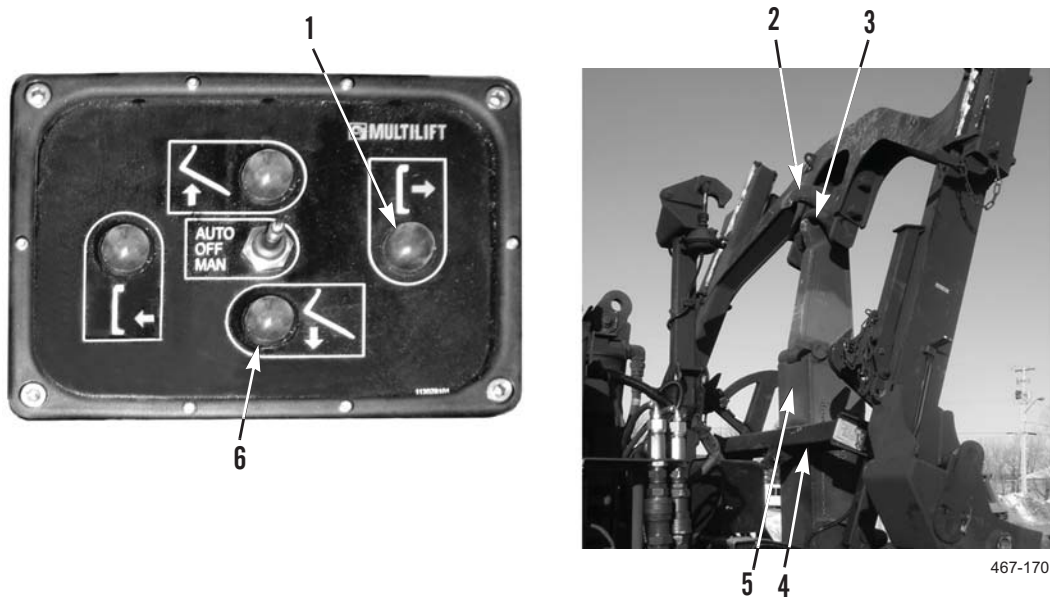


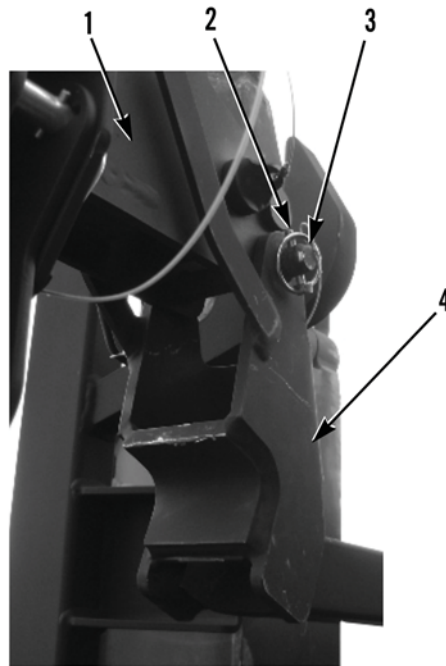
Figure 4. Bail Bar Inside Lift Hook.

RETRIEVE LIFT FRAME – CONTINUED**Retrieve Lift Frame - Stage 1 – Continued****WARNING**

- During these procedures, operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat.
- Bail bar lock **MUST** be securely installed on hook before continuing with procedure. Without bail bar lock installed, lift frame may disengage from hook and fall to ground.
- Failure to follow these warnings may result in injury or death to personnel.

9. Remove snap pin (Figure 5, Item 2) from locking bar (Figure 5, Item 3).

10. Remove locking bar (Figure 5, Item 3), and bail bar lock (Figure 5, Item 4) from lift frame (Figure 5, Item 1).

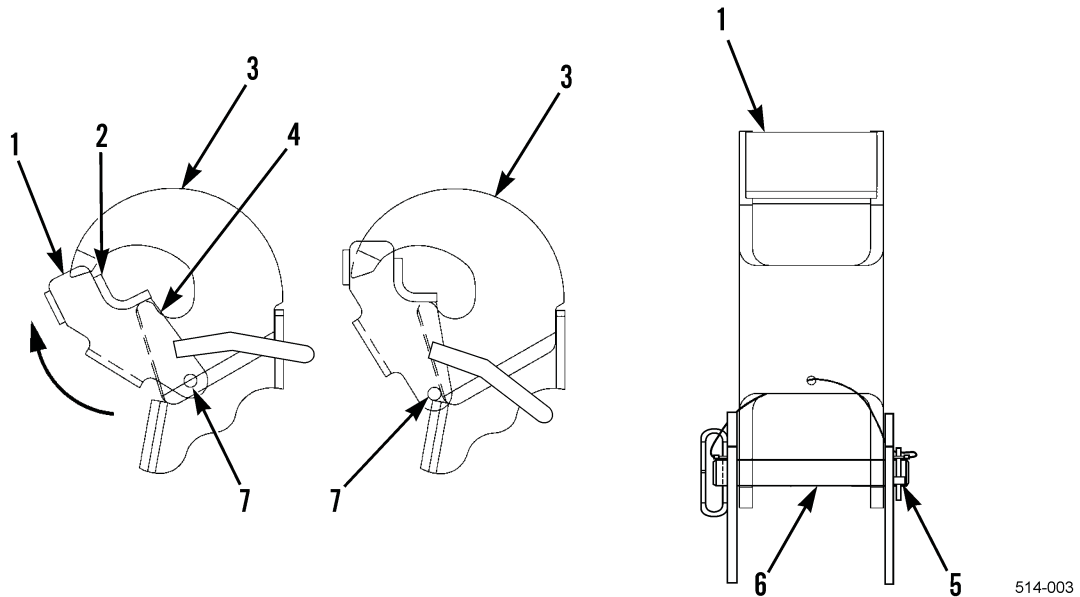


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Figure 5. Bail Bar Lock Stowed on Lift Frame.

RETRIEVE LIFT FRAME – CONTINUED**Retrieve Lift Frame - Stage 1 – Continued**

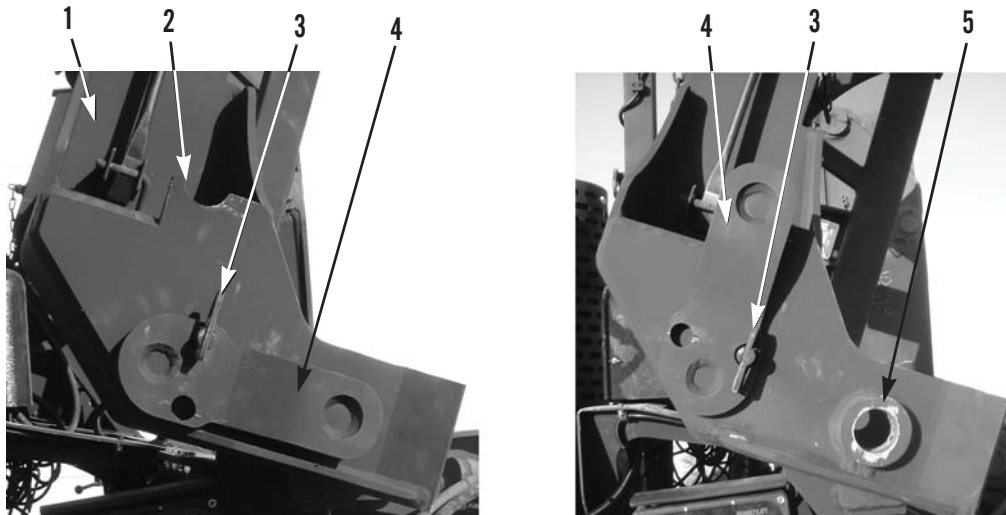
11. Position bail bar lock (Figure 6, Item 1) on hook (Figure 6, Item 3) with locking bar hole (Figure 6, Item 7) at bottom of hook and angled plate (Figure 6, Item 2) resting on hook thumb (Figure 6, Item 4).
12. Rotate bail bar lock (Figure 6, Item 1) upward until locking bar hole (Figure 6, Item 7) clears bottom of hook (Figure 6, Item 3).
13. Insert locking bar (Figure 6, Item 6) in locking bar hole (Figure 6, Item 7) and install snap pin (Figure 6, Item 5) in locking bar.

**Figure 6. Install Bail Bar Lock on Hook.**

RETRIEVE LIFT FRAME – CONTINUED**Release Locking Pins****NOTE**

- Perform steps 1 through 4 for both sides of lift frame.
- Press UP and DOWN button on control panel as required to enable release of locking pin. Keep up and down movement to a minimum.

1. From left side of lift frame (Figure 7, Item 1), release lower locking pin anti-loose fastener (Figure 7, Item 3).
2. Pull out lower locking pin (Figure 7, Item 4) from securing tube (Figure 7, Item 5) and rotate locking pin to vertical position.
3. Align locking pin (Figure 7, Item 4) with cradle (Figure 7, Item 2) on lift frame (Figure 7, Item 1) and push locking pin toward lift frame.
4. Lock anti-loose fastener (Figure 7, Item 3).



467-171

Figure 7. Secure Locking Pin.

RETRIEVE LIFT FRAME – CONTINUED**Retrieve Lift Frame - Stage 2**

1. At stowage control panel, press and hold UP button (Figure 8, Item 2) until hook arm stops. Release UP button.
2. Verify both stowage rollers (Figure 8, Item 5) are clear of stowage guide rails (Figure 8, Item 6).
3. If stowage rollers (Figure 8, Item 5) are not clear of guide rails (Figure 8, Item 6), press and hold UP button (Figure 8, Item 2) again.
4. Press and hold STOW button (Figure 8, Item 8) until stowage guide (Figure 8, Item 6) stops at fully forward position. Release STOW button.
5. Set stowage toggle switch (Figure 8, Item 7) to OFF position. Lift frame (Figure 8, Item 4) should now be supported in hook (Figure 8, Item 3) and ready to be unloaded.

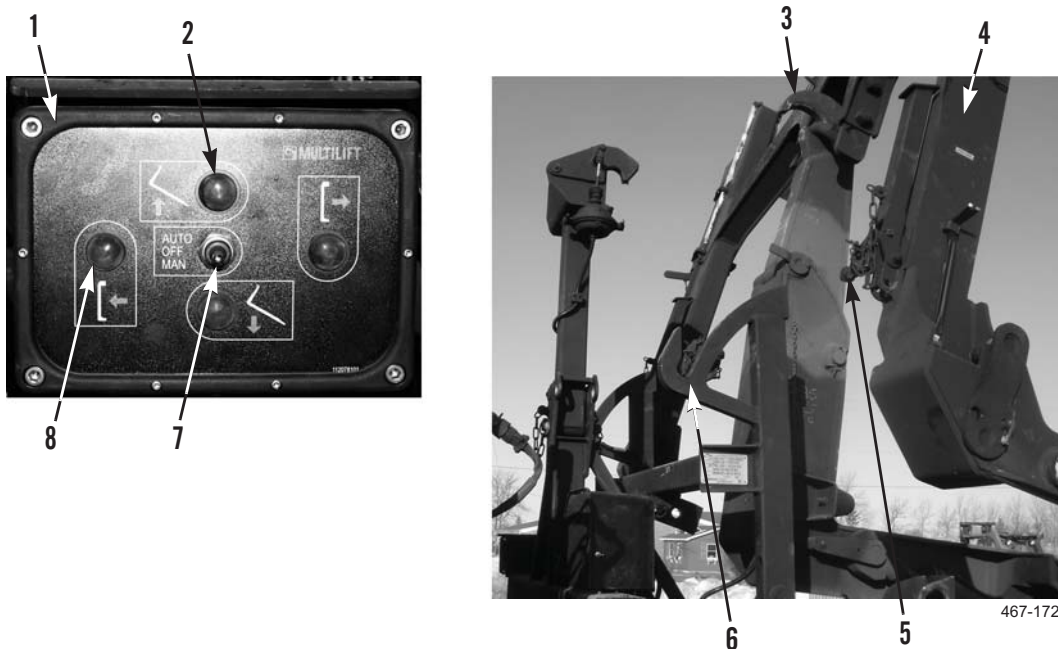


Figure 8. Retrieve Lift Frame - Stage 2.

END OF TASK

UNLOAD AN EMPTY LIFT FRAME

1. Verify these conditions exist:
 - a. Lift frame supported by hook (*Retrieve Lift Frame - Stage 2*).
 - b. Bail bar lock installed on hook (*Retrieve Lift Frame - Stage 1*).
 - c. MODE switch set to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - d. Stowage toggle switch set to OFF position (WP 0004).
 - e. NO TRANS light off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

WARNING

- Use a ground guide at all times when unloading/loading lift frame.
 - Use extreme caution if high wind conditions exist while unloading lift frame. With assistance, attach guide straps to the legs of the lift frame to stabilize the lift frame during the unloading procedure.
 - Failure to follow this warning may result in injury to personnel and damage to equipment.
2. With engine at idle speed, set MODE switch (Figure 9, Item 1) to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

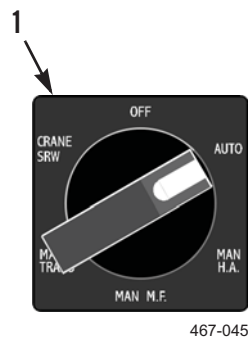


Figure 9. MODE Switch at AUTO Position.

UNLOAD AN EMPTY LIFT FRAME – CONTINUED

3. With engine at idle speed, set joystick (Figure 10, Item 3) to UNLOAD position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
4. Increase engine speed (maximum 1,500 rpm) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
5. Hook arm (Figure 10, Item 1) rises and pivots rearward carrying lift frame (Figure 10, Item 2) with it. NO TRANS light goes on.

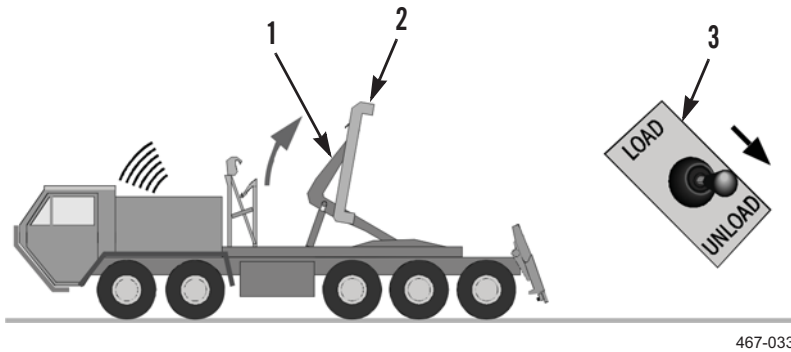


Figure 10. Lift Frame Pivots Rearward.

6. When hook arm (Figure 11, Item 2) reaches its travel limit, middle frame actuators (Figure 11, Item 1) will engage and continue unloading process. Keep joystick in UNLOAD position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

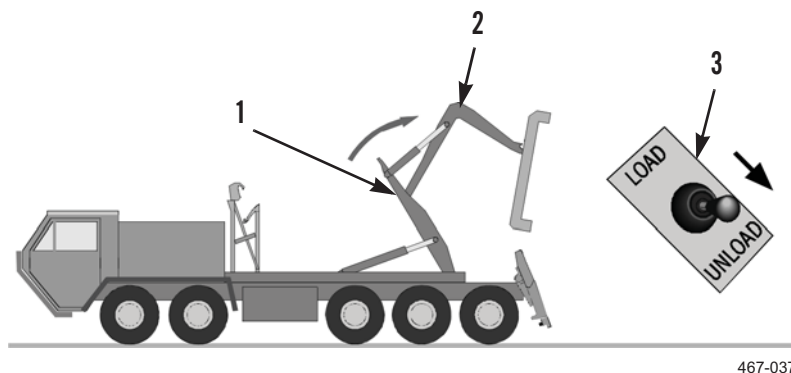


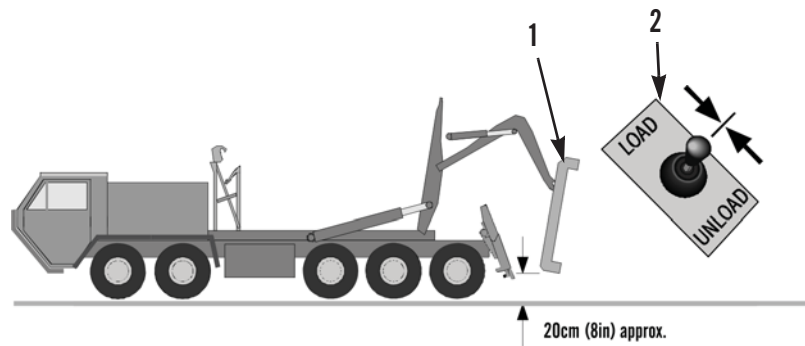
Figure 11. Raise Middle Frame.

UNLOAD AN EMPTY LIFT FRAME – CONTINUED

NOTE

If preparing to load container, refer to *Loading and Unloading Container* (WP 0008).

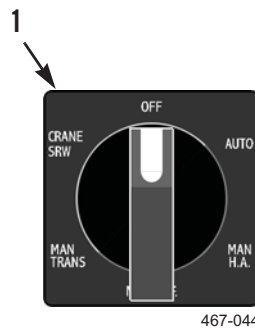
- Return engine to idle speed and release joystick (Figure 12, Item 2) when base of lift frame (Figure 12, Item 1) is approximately 3 ft (91 cm) above ground.



467-038

Figure 12. Lift Frame 3 ft (91 cm) Above Ground.

- With parking brake engaged and engine at idling speed, set MODE switch (Figure 13, Item 1) to OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).



467-044

Figure 13. MODE Switch at OFF.

END OF TASK

PLACE LIFT FRAME ON GROUND

1. Verify these conditions exist:
 - a. Lift mechanism deployed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. Lift frame on hook (*Unload Empty Lift Frame*).
 - c. Stowage toggle switch set to OFF position (WP 0004).
 - d. NO TRANS light off (WP 0004).

WARNING

- These instructions require adjustments to the lift frame. Beware that the frame may swing on hook, especially in high winds.
- During these adjustments, personnel must work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Lift frame must be firmly positioned on solid, level ground with adequate support from stands.
- Failure to follow these warnings may result in injury or death to personnel and damage to equipment.

NOTE

Perform steps 2 and 3 for right and left stands.

2. With stand (Figure 14, Item 1) in upright position on lift frame (Figure 14, Item 2), remove locking pin (Figure 14, Item 3) from stand.
3. Rotate stand (Figure 14, Item 1) down until hole in stand aligns with hole in lower bracket (Figure 14, Item 4) and insert locking pin (Figure 14, Item 3).

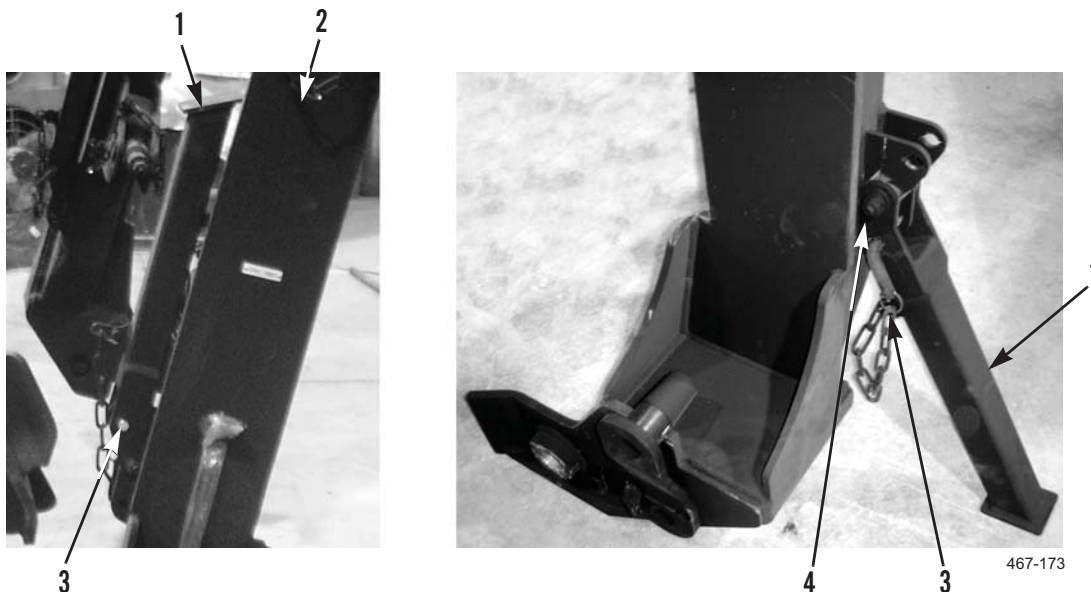


Figure 14. Deploy Stands.

PLACE LIFT FRAME ON GROUND – CONTINUED

4. With engine at idling speed, set MODE switch (Figure 15, Item 1) to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

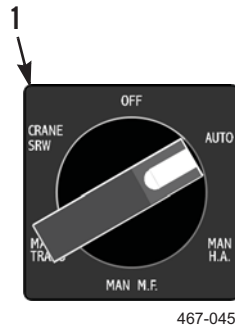


Figure 15. MODE Switch at AUTO.

5. Keep engine at idling speed and set joystick (Figure 16, Item 1) to UNLOAD (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

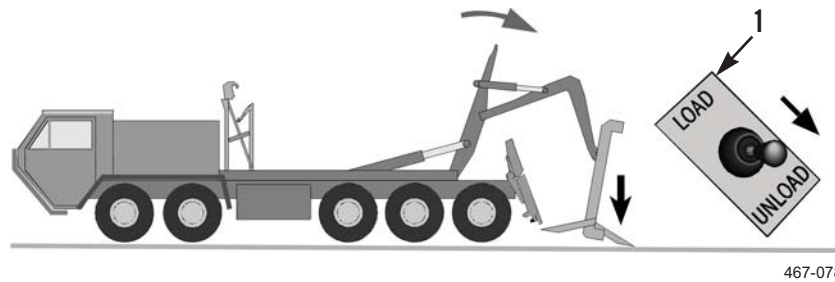


Figure 16. Joystick at UNLOAD.

6. Release joystick (Figure 17, Item 2) when lift frame (Figure 17, Item 1) makes initial contact with ground (lift frame is at an angle to ground).

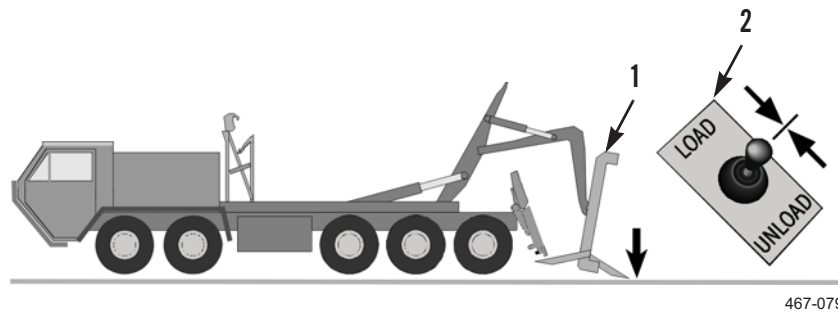


Figure 17. Lift Frame at Initial Contact with Ground.

PLACE LIFT FRAME ON GROUND – CONTINUED**NOTE**

Do not fully disengage hook. Ensure hook surrounds bail bar but is not applying pressure to it.

7. Move vehicle forward and lower hook (Figure 18, Item 1) until lift frame (Figure 18, Item 2) and stand are placed fully on ground.

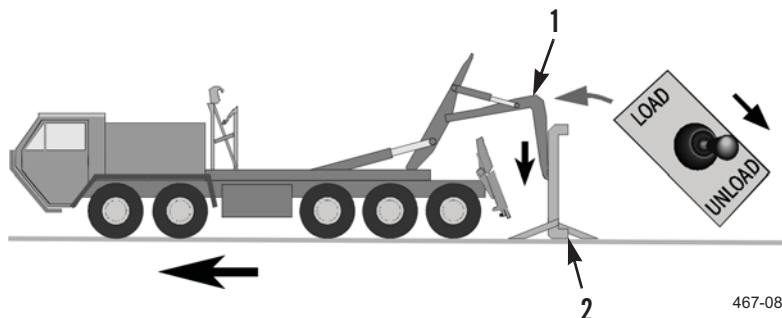


Figure 18. Lift Frame at Vertical Position and Fully on Ground.

WARNING

Lift frame must be firmly positioned on solid, level ground with adequate support from stands. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

8. Exit cab to check lift frame is firmly positioned on ground with adequate support from stands.

WARNING

Undue force or motion exerted on lift frame could cause it to fall over. If conditions require (e.g., your view of the lift frame is inadequate, uneven ground conditions), obtain assistance from an observer on the ground to guide you in moving the hook. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

9. Remove snap pin (Figure 19, Item 2) from locking bar (Figure 19, Item 3).
10. Remove locking bar (Figure 19, Item 3), and bail bar lock (Figure 19, Item 4) from hook (Figure 19, Item 1).

PLACE LIFT FRAME ON GROUND – CONTINUED

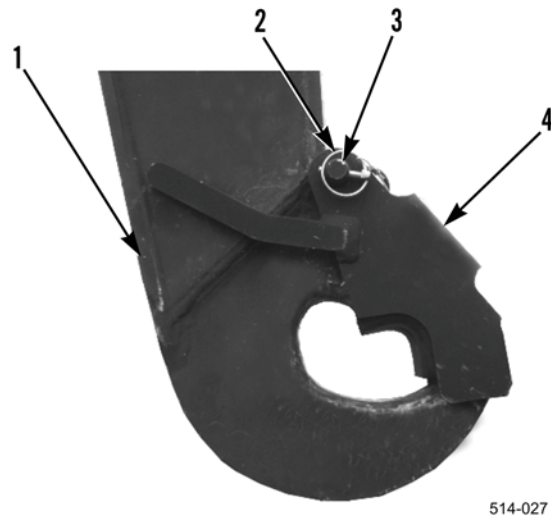


Figure 19. Bail Bar Lock on Hook.

11. Install bail bar lock (Figure 20, Item 4), and locking bar (Figure 20, Item 3) on lift frame (Figure 20, Item 1).
12. Install snap pin (Figure 20, Item 2) in locking bar (Figure 20, Item 3).

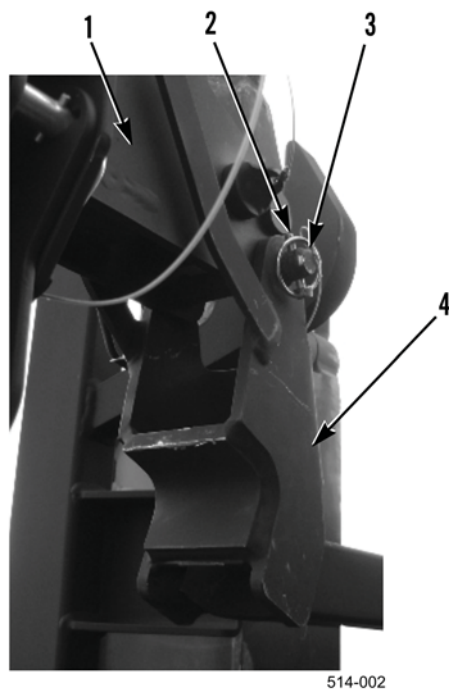
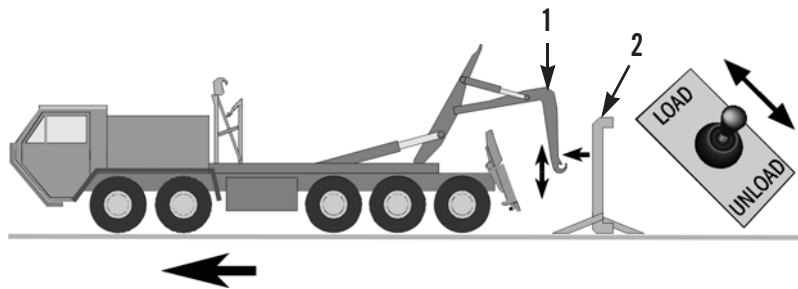


Figure 20. Bail Bar Stowed on Lift Frame.

PLACE LIFT FRAME ON GROUND – CONTINUED

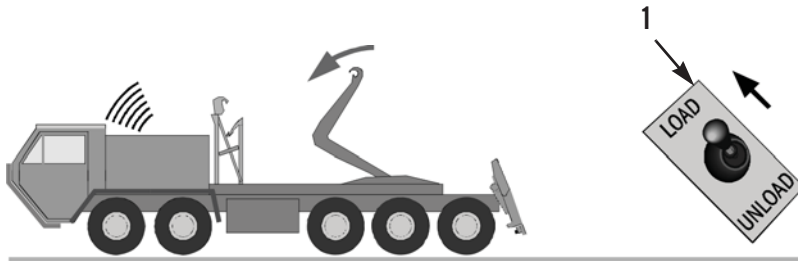
13. By moving hook (Figure 21, Item 1) and vehicle, move hook approximately 3 ft (1 m) away from bail bar of lift frame (Figure 21, Item 2).



467-081

Figure 21. Hook and Vehicle.

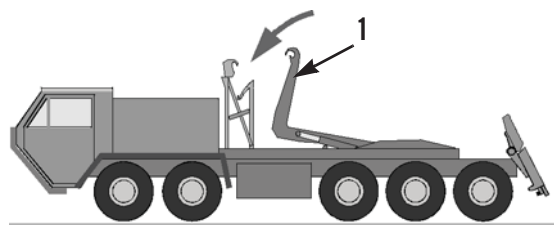
14. With parking brake engaged and engine at idling speed, set joystick (Figure 22, Item 1) to LOAD. Increase engine speed (maximum 1,500 rpm) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).



467-082

Figure 22. Joystick at LOAD.

15. When hook arm (Figure 23, Item 1) nears home position, return engine to idling speed.



467-083

Figure 23. Hook Arm Near Home Position.

PLACE LIFT FRAME ON GROUND – CONTINUED

16. As soon as hook arm (Figure 24, Item 1) stops moving, release joystick (Figure 24, Item 2) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

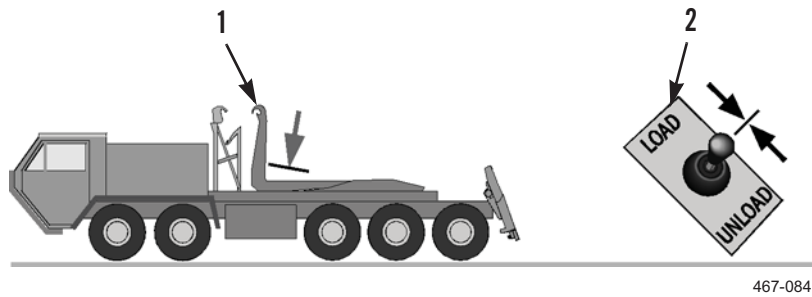


Figure 24. Hook Arm Stopped.

17. With engine at idling speed, set MODE switch (Figure 25, Item 1) to OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

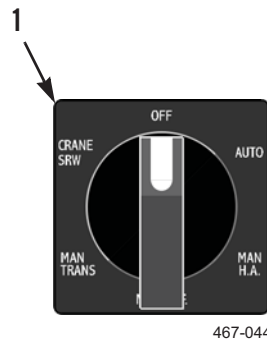


Figure 25. Mode Switch at OFF.

END OF TASK

PICK UP LIFT FRAME FROM GROUND

1. Verify these conditions exist:
 - a. Lift mechanism in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. Vehicle in neutral gear and parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - c. MODE switch set to OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - d. Stowage toggle switch set to OFF position (WP 0004).
 - e. Slider beds in container configuration (WP 0006).
 - f. Container locking pins on lift frame in stowed position (*Release Locking Pins* in this work package).
 - g. NO TRANS light off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - h. HEMTT only: PTO switch in ON position (TM 9-2320-326-14&P).

WARNING

- Use a ground guide at all times when unloading/loading lift frame.
 - Use extreme caution if high wind conditions exist while unloading/loading lift frame. With assistance, attach guide straps to the legs of the lift frame to stabilize the lift frame during the unloading/loading procedure.
 - DO NOT stand directly behind lift frame during unloading/loading.
 - Failure to follow these warnings may result in injury or death to personnel.
2. Position rear of vehicle (Figure 26, Item 1) so it is in front of (i.e., with hook-bar projecting toward vehicle) and parallel with lift frame (Figure 26, Item 2), and is approximately 5 ft (1.5 m) from lift frame.

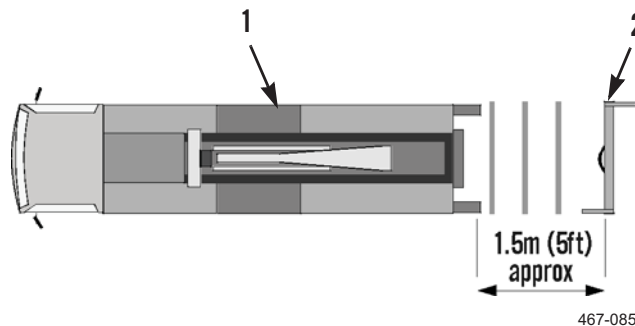
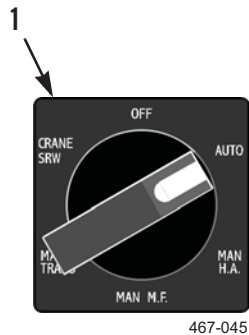


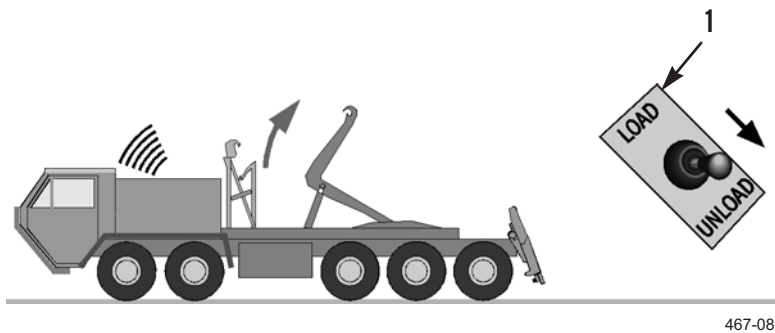
Figure 26. Rear of Vehicle from Lift Frame.

PICK UP LIFT FRAME FROM GROUND – CONTINUED

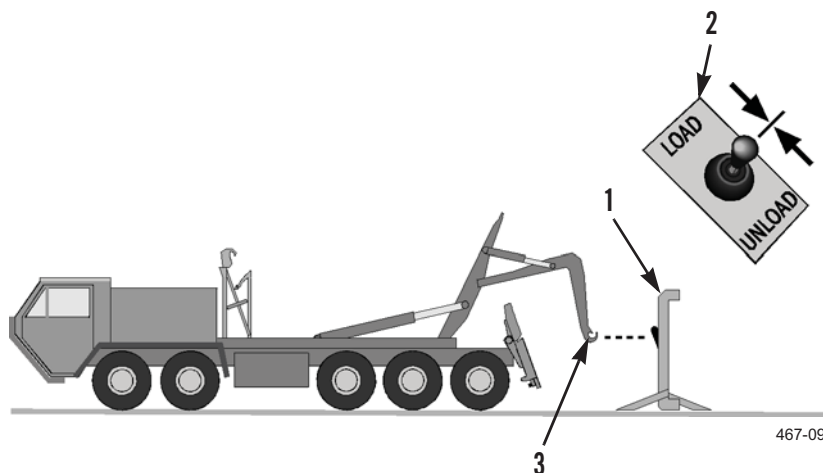
- With engine at idling speed, set MODE switch (Figure 27, Item 1) to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

**Figure 27. MODE Switch at AUTO.**

- With engine at idling speed, push joystick (Figure 28, Item 1) to UNLOAD (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-279-10).
- Increase engine speed (maximum 1,500 rpm) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

**Figure 28. Joystick at Unload.**

- When hook (Figure 29, Item 3) is just below level of bail bar (Figure 29, Item 1) of lift frame, return engine to idling speed and release joystick (Figure 29, Item 2).

**Figure 29. Hook Just Below Bail Bar.**

PICK UP LIFT FRAME FROM GROUND – CONTINUED

7. Keeping engine at idling speed, slowly reverse vehicle to position hook (Figure 30, Item 3) under bail bar (Figure 30, Item 2). Use joystick (Figure 30, Item 1) to adjust hook to locate it on bail bar.

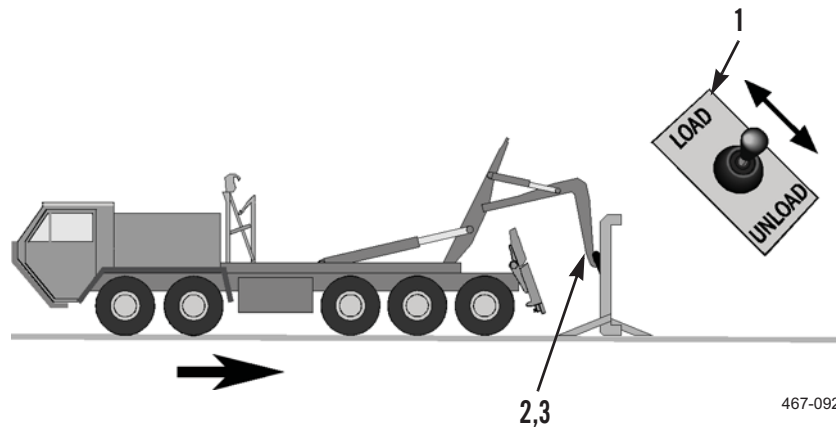


Figure 30. Hook Located on Bail Bar.

WARNING

Bail bar lock MUST be securely installed on hook before continuing with procedure. Without bail bar lock installed, lift frame may disengage from hook and fall to ground. Failure to follow this warning may result in injury or death to personnel.

8. Remove snap pin (Figure 31, Item 2) from locking bar (Figure 31, Item 3).
9. Remove locking bar (Figure 31, Item 3) and bail bar lock (Figure 31, Item 4) from lift frame (Figure 31, Item 1).

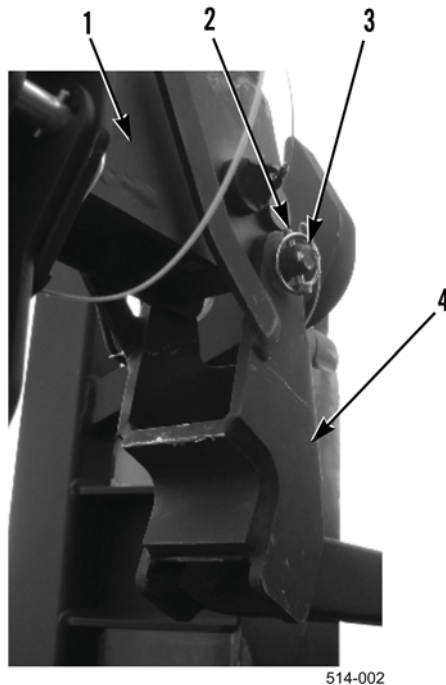
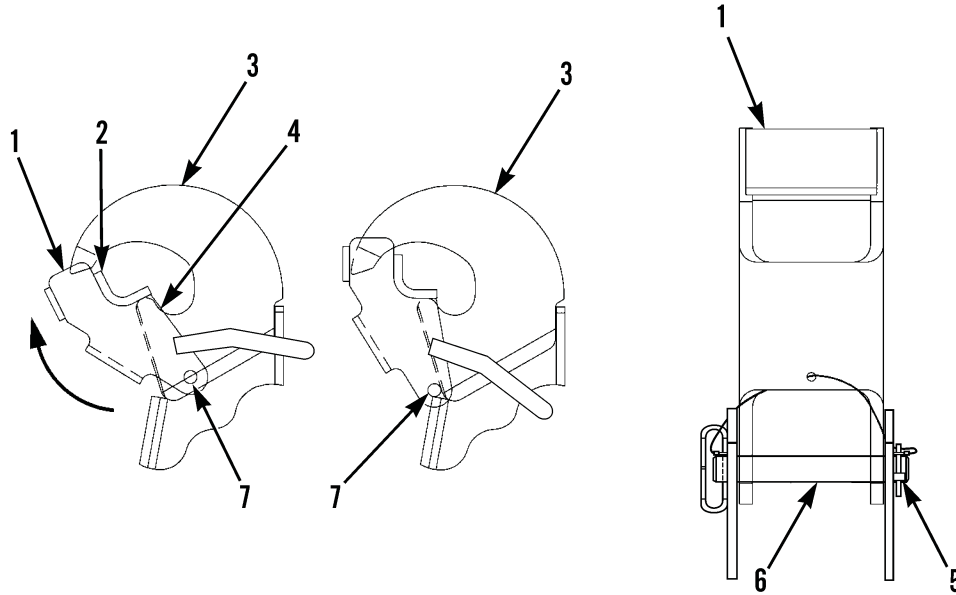


Figure 31. Bail Bar Lock Stowed on Lift Frame.

PICK UP LIFT FRAME FROM GROUND – CONTINUED

10. Position bail bar lock (Figure 32, Item 1) on hook (Figure 32, Item 3) with angled plate (Figure 32, Item 2) resting on hook thumb (Figure 32, Item 4).
11. Rotate bail bar lock (Figure 32, Item 1) until locking bar hole (Figure 32, Item 7) clears bottom of hook (Figure 32, Item 3).
12. Insert locking bar (Figure 32, Item 6) in locking bar hole (Figure 32, Item 7) and install snap pin (Figure 32, Item 5) in locking bar.



514-003

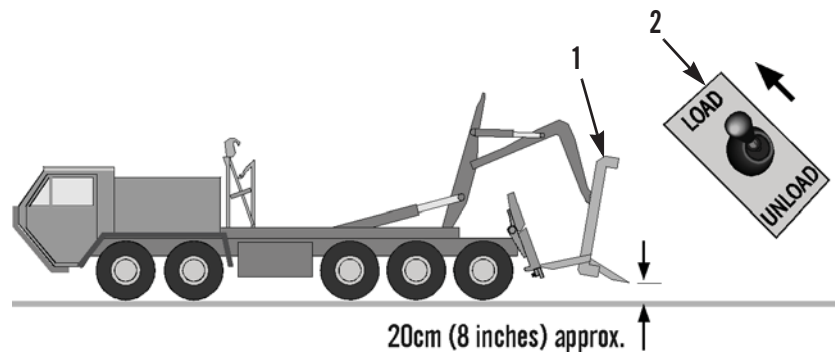
Figure 32. Install Bail Bar Lock on Hook.

PICK UP LIFT FRAME FROM GROUND – CONTINUED

WARNING

Be aware that the lift frame is unstable when suspended on hook and not stowed. DO NOT move vehicle. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

13. Keeping engine at idling speed, push joystick (Figure 33, Item 2) to **LOAD** and raise lift frame (Figure 33, Item 1) approximately 8 in. (20 cm) from ground.



467-093

Figure 33. Raise Lift Frame.

PICK UP LIFT FRAME FROM GROUND – CONTINUED

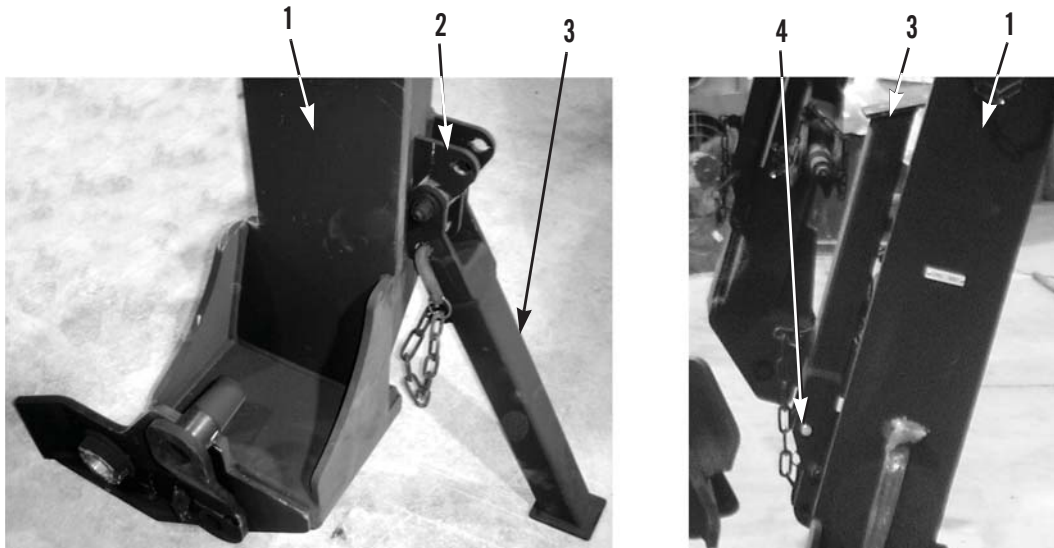
WARNING

- These instructions require adjustments to the lift frame. Beware that frame may swing on hook, especially in high winds.
- During these adjustments, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Failure to follow these warnings may result in injury to personnel.

NOTE

Perform steps 14 and 15 for right and left stands.

14. With stand (Figure 34, Item 3) in deployed position on lift frame (Figure 34, Item 1), remove locking pin (Figure 34, Item 4) from stand.
15. Rotate stand (Figure 34, Item 3) upward until hole in stand aligns with hole in upper bracket (Figure 34, Item 2) and insert locking pin (Figure 34, Item 4).



467-174

Figure 34. Stow Stands.

END OF TASK

LOAD WITH EMPTY LIFT FRAME

1. Verify these conditions exist:
 - a. Lift mechanism in deployed position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. Lift mechanism hook surrounds bail bar of lift frame (*Attach Lift Frame to Container*).
 - c. Bail bar lock installed on hook (*Install Bail Bar Lock*).
 - d. MODE switch set to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - e. Stowage toggle switch set to OFF position (WP 0004).
 - f. NO TRANS light on (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

WARNING

- Bail bar lock **MUST** be securely installed on hook before continuing with procedure. Without bail bar lock installed, lift frame may disengage from hook and fall to ground.
- **DO NOT** move vehicle while lift frame is suspended on hook.
- Failure to follow these warnings may result in injury or death to personnel and damage to equipment.

CAUTION

Immediately reduce engine speed and release joystick if lift frame sways excessively or makes contact with any part of the load handling equipment. Failure to follow this caution may result in damage to equipment.

2. With engine at idling speed, set MODE switch (Figure 35, Item 1) to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

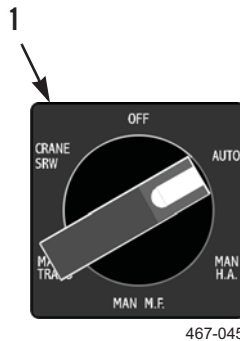


Figure 35. MODE Switch at AUTO.

LOAD WITH EMPTY LIFT FRAME – CONTINUED

- Keeping engine at idling speed, set joystick (Figure 36, Item 1) to LOAD (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). Increase engine speed (maximum 1,500 rpm) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

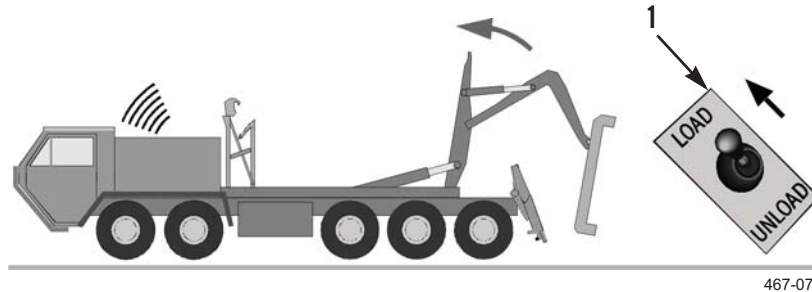


Figure 36. Lift Frame Being Loaded.

WARNING

Be aware that the lift frame is unstable when suspended on hook and not stowed. DO NOT move vehicle. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

- When hook arm (Figure 37, Item 1) is near home position, return engine to idling speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

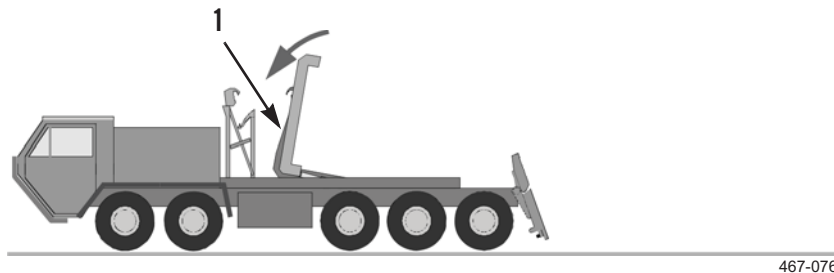


Figure 37. Hook Arm Near Home Position.

LOAD WITH EMPTY LIFT FRAME – CONTINUED

5. As soon as lift mechanism reaches 2 ft (61 cm) above home position, release joystick (Figure 38, Item 1) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

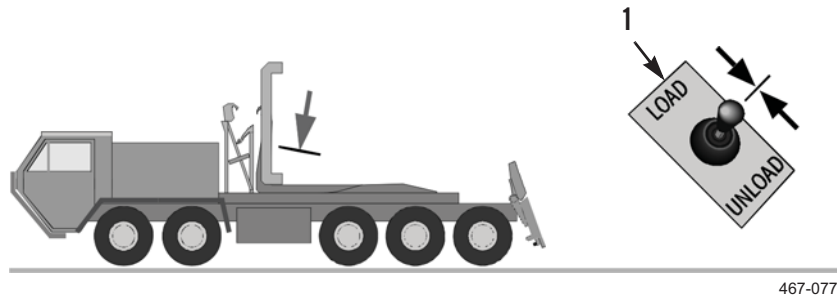
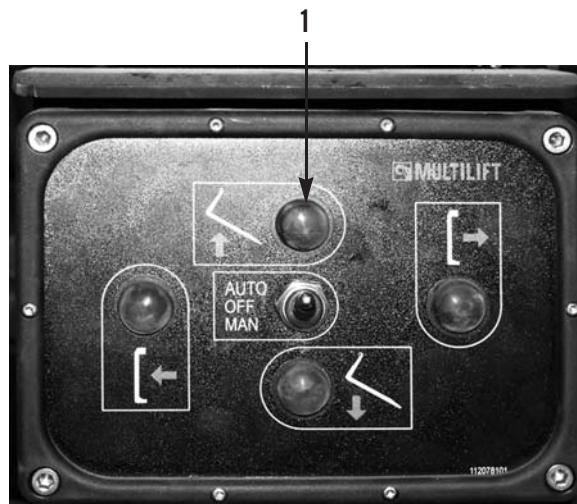


Figure 38. Lift Mechanism Home Position.

END OF TASK**STOW LIFT FRAME**

1. Verify these conditions exist:
 - a. Hook arm 2 ft (61 cm) above home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. Lift frame suspended on hook (*Retrieve Lift Frame*).
 - c. MODE switch set to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - d. Stowage toggle switch set to OFF position (WP 0004).
 - e. NO TRANS light off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - f. Container locking pins on lift frame in stowed position (*Release Locking Pins* in this work package).
2. At stowage control panel (Figure 39, Item 1), set toggle switch (Figure 39, Item 2) to AUTO.



467-168

Figure 39. Toggle Switch at AUTO.

STOW LIFT FRAME – CONTINUED

WARNING

Keep hands below top plate of control panel and completely away from lift frame locking plate during loading/unloading of lift frame. Failure to follow this warning may result in injury or death to personnel.

NOTE

For HEMMT M1120A4 only, if locking plates are misaligned, deflate and inflate suspension air bags (TM 9-2320-326-14&P).

3. Press and hold RETRIEVE button (Figure 40, Item 1). As soon as stowage guide (Figure 40, Item 3) has stopped tilting rearward, release button.
4. Stowage guide (Figure 40, Item 3) will be positioned under stowage rollers on lift frame (Figure 40, Item 2).

NOTE

- Do not release DOWN button until hook arm stops.
 - Press UP and DOWN button as required to align locking plate with stowage assembly.
5. Press and hold DOWN button (Figure 40, Item 4). As soon as hook arm stops moving, release button.

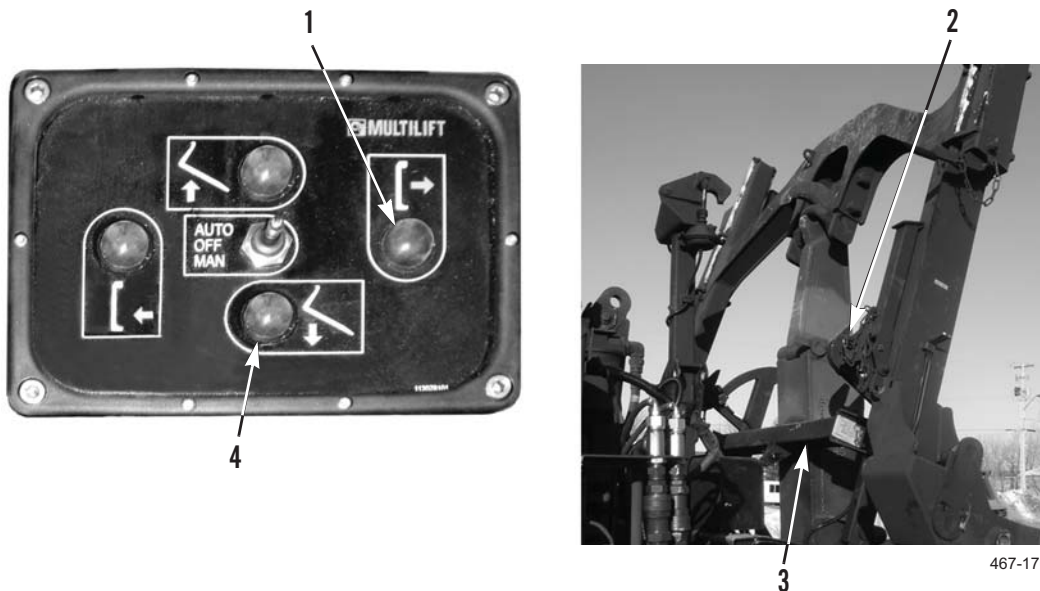


Figure 40. Lift Frame Positioned on Stowage Guide.

STOW LIFT FRAME – CONTINUED**NOTE**

Perform steps 6 through 9 for both right and left sides.

6. Release anti-loose fastener (Figure 41, Item 2) on lower locking plate (Figure 41, Item 1).
7. Pull out lower locking plate (Figure 41, Item 1) from cradle on lift frame (Figure 41, Item 3) and rotate locking plate to horizontal position.
8. Align locking plate with securing tube (Figure 41, Item 4) and push locking plate toward lift frame (Figure 41, Item 3).
9. Lock anti-loose fastener (Figure 41, Item 2).

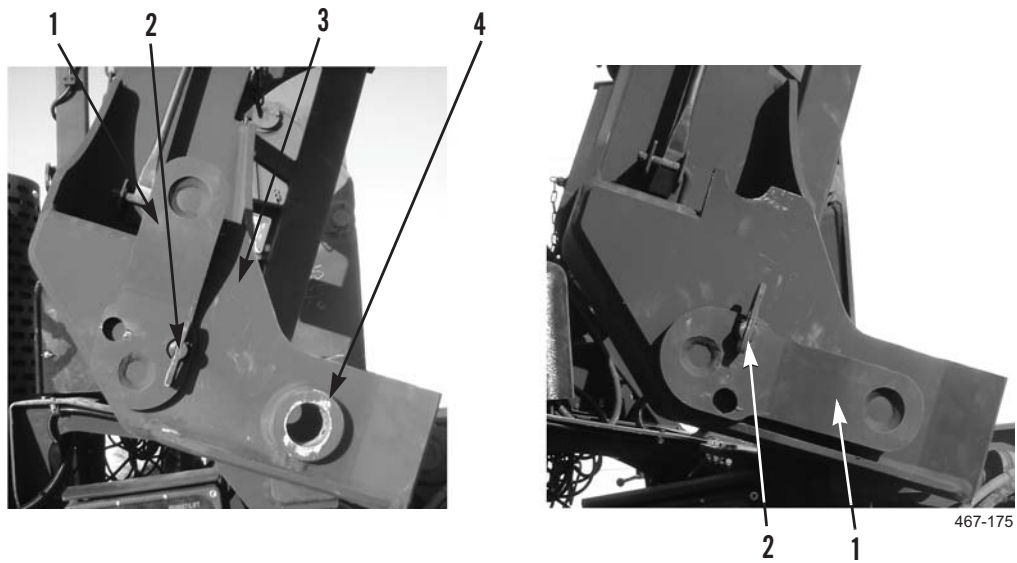


Figure 41. Engage Locking Plate.

STOW LIFT FRAME – CONTINUED

WARNING

During these procedures, operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury or death to personnel.

10. Remove snap pin (Figure 42, Item 3) from locking bar (Figure 42, Item 4).
11. Remove locking bar (Figure 42, Item 4), and bail bar lock (Figure 42, Item 1) from hook (Figure 42, Item 2).

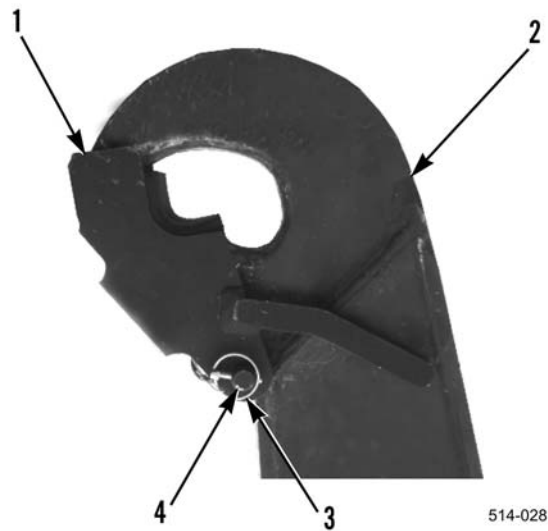


Figure 42. Bail Bar Lock on Hook.

STOW LIFT FRAME – CONTINUED

12. Install bail bar lock (Figure 43, Item 4), and locking bar (Figure 43, Item 3) on lift frame (Figure 43, Item 1).
13. Install snap pin (Figure 43, Item 2) in locking bar (Figure 43, Item 3).

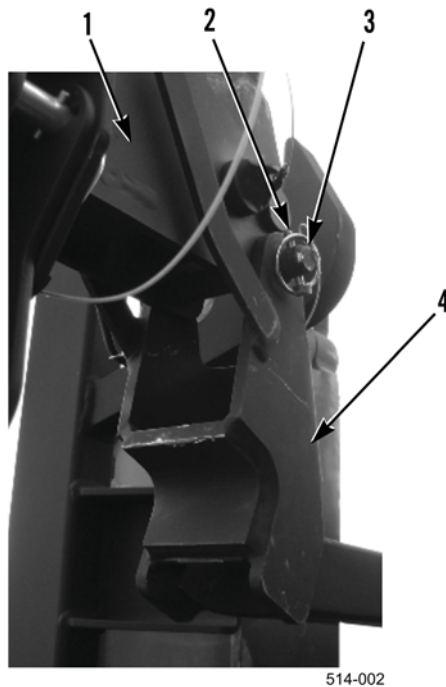


Figure 43. Bail Bar Stowed on Lift Frame.

NOTE

- If required, press DOWN button until hook is clear from bail bar.
 - If required, use lifting lever to adjust height of lift frame in order to clear hook.
14. Press and hold STOW button (Figure 44, Item 1). As soon as stowage guide (Figure 44, Item 2) stops at its intermediate position, release button.

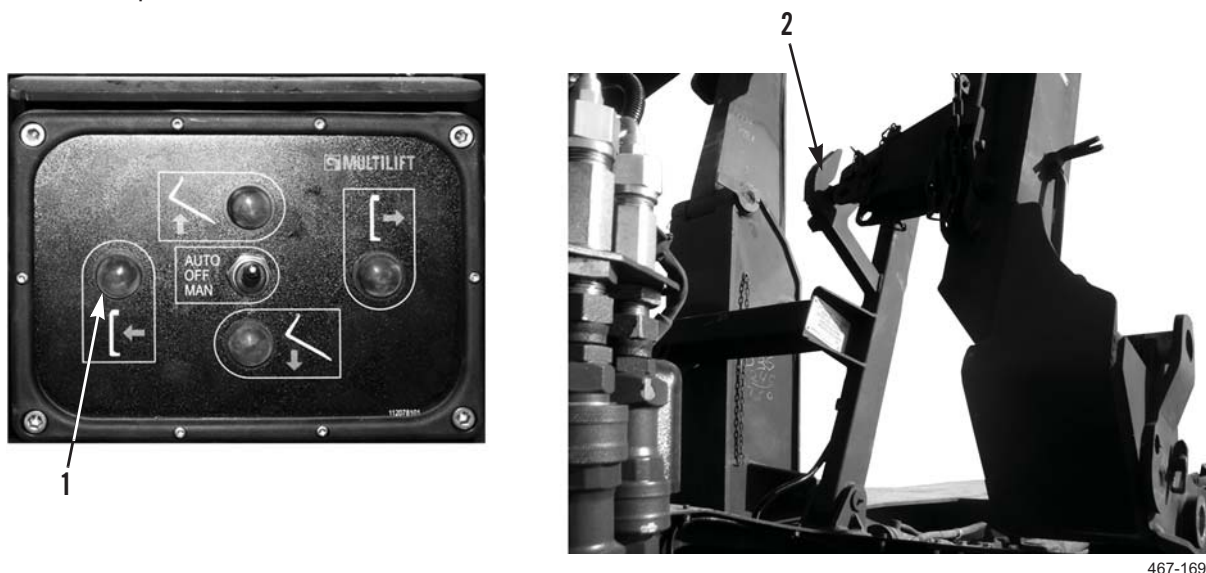


Figure 44. Stowage Guide at Intermediate Position.

STOW LIFT FRAME – CONTINUED**NOTE**

If required, place toggle switch in MAN position to complete stowing procedure.

15. Press and hold UP button (Figure 45, Item 2). As soon as hook arm is clear from bail bar, release button.
16. Press and hold STOW button (Figure 45, Item 1). When stowage guide reaches home position, release button.
17. Press and hold DOWN button until hook arm reaches home position, then release button.

NOTE

Lift frame is now held at top by stowage latch, at bottom by locking pins, and by hooks at forward end of stowage guide rails.

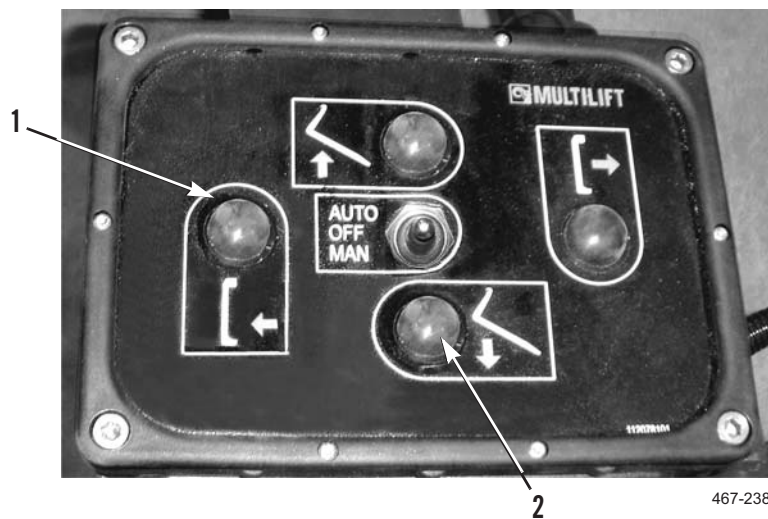


Figure 45. Stowed Lift Frame.

18. Set toggle switch (Figure 46, Item 1) to OFF.

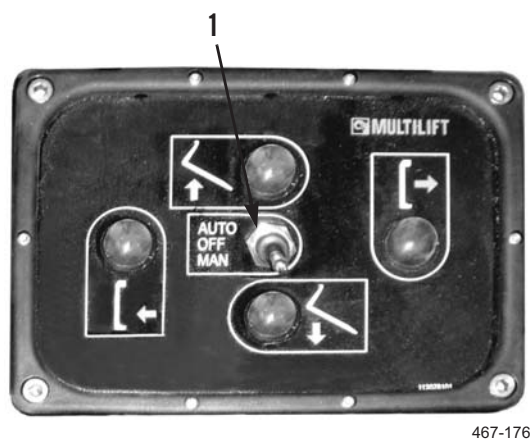


Figure 46. Toggle Switch at OFF.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE**LOADING AND UNLOADING CONTAINER**

Attach Lift Frame to Container, Load Container, Secure Container for Transport, Release Container for Unloading, Unload Container

INITIAL SETUP**Equipment Conditions**

Lifting mechanism in deployed position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Lift frame retrieved and unloaded (WP 0007)
Bail bar lock installed on hook (WP 0007)
Slider bed assemblies in container configuration (WP 0006)

Equipment Conditions - Continued

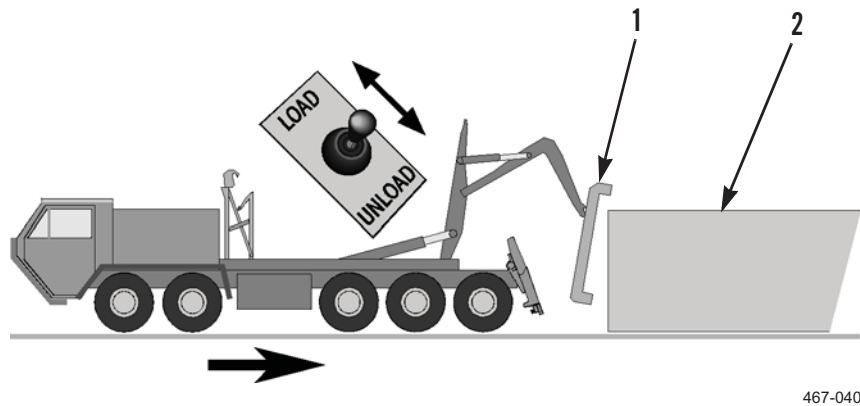
MODE switch set to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Stowage toggle switch set to OFF (WP 0004)
NO TRANS light on (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

INTRODUCTION

1. Before loading a container, ensure the following conditions are met:
 - a. Container is of correct type and size for E-CHU and vehicle.
 - b. Weight of cargo in container does not exceed maximum rating of container.
 - c. Cargo in container is evenly distributed.
 - d. Cargo is sufficiently secured for container to be inclined up to 35° to horizontal.
 - e. Center of gravity of cargo is as low and central as possible.
 - f. Total weight of cargo and container does not cause GVWR of vehicle to be exceeded, or GAWR of any axle to be exceeded.
2. If a container is stuck or frozen to ground, loosen it with an adequately rated forklift truck or bucket loader. Do not attempt to loosen container with E-CHU.

ATTACH LIFT FRAME TO CONTAINER**Attach Upper Guides****WARNING**

- Use a ground guide AT ALL TIMES when unloading/loading lift frame and container.
 - Stay clear of moving lift frame during unloading/loading.
 - Failure to follow these warnings may result in injury or death to personnel.
1. Reverse vehicle and position upper guides (Figure 1, Item 1) just above top of container (Figure 1, Item 2). If necessary, use joystick to adjust height of lift frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).



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Figure 1. Position Upper Guides.

ATTACH LIFT FRAME TO CONTAINER – CONTINUED**Attach Upper Guides – Continued****WARNING**

Do not attempt to complete step 2 if upper guides do not become fully located on corner castings. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

2. Keeping engine at idle speed, set joystick (Figure 2, Item 1) to UNLOAD (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) and move vehicle as required to ensure upper locating pins fully descend into upper apertures in upper-corner castings of container (Figure 2, Item 2). Top plates of upper guides should be in contact with corner castings.

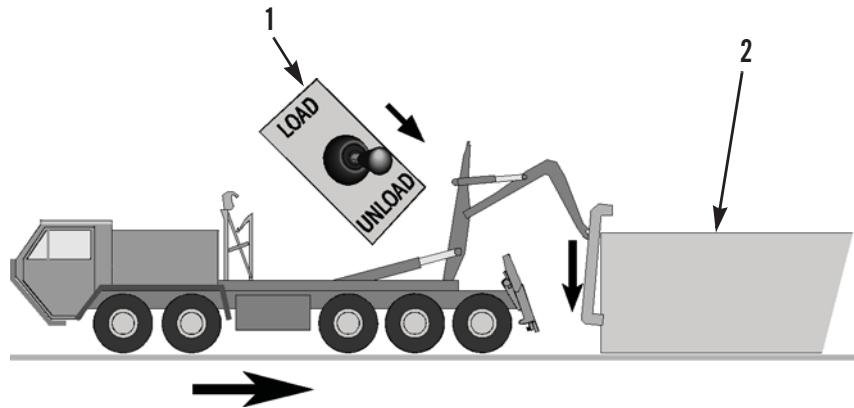


Figure 2. Upper Locating Pins Fully Lowered.

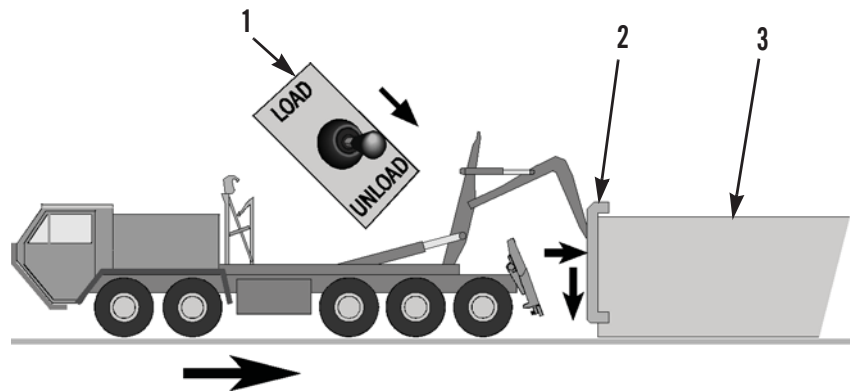
ATTACH LIFT FRAME TO CONTAINER – CONTINUED**Attach Upper Guides – Continued**

3. If upper guides do not become fully located on corner castings, perform these procedures:
 - *Load with Empty Lift Frame* (WP 0007).
 - *Stow Lift Frame* (WP 0007).
 - Reposition vehicle to pick up other end of container (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - *Retrieve Lift Frame* (WP 0007).
 - *Bail Bar Lock Installed on Hook* (WP 0007).
 - *Unload with Empty Lift Frame* (WP 0007).
 - *Attach Lift Frame to Container* in this work package.

NOTE

Alternatively, use an appropriate means to gain access to upper apertures and clear them of obstructions, using crowbar if necessary. Afterwards, return crowbar to its storage location on lift frame.

4. Keep engine at idling speed and joystick (Figure 3, Item 1) at UNLOAD to further lower lift frame (Figure 3, Item 2). Also slowly reverse vehicle in order to press lift frame fully against container (Figure 3, Item 3).

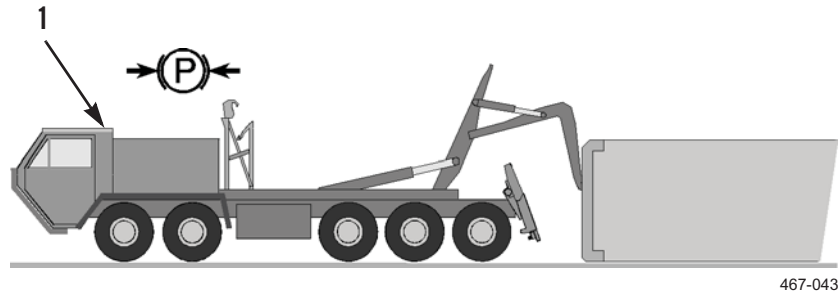


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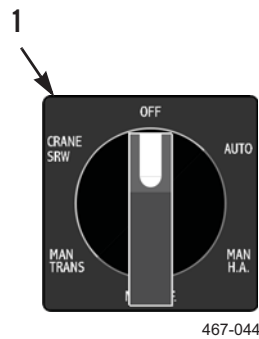
Figure 3. Aligned Lower Guides.

ATTACH LIFT FRAME TO CONTAINER – CONTINUED**Attach Upper Guides – Continued**

5. Apply foot brake and then parking brake to prevent forward creep of vehicle (Figure 4, Item 1). Select neutral gear (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
6. Lower hook arm until lower guides on lift frame are aligned with corner castings on container.

**Figure 4. Prevent Forward Creep.**

7. With engine at idling speed, set MODE switch (Figure 5, Item 1) to OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

**Figure 5. MODE Switch at OFF.**

8. Exit vehicle cab.

ATTACH LIFT FRAME TO CONTAINER – CONTINUED**Attach Lower Guides****WARNING**

During these adjustments, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

- If misalignment is too great, lower section of lift frame may need to be repositioned by either lowering (unloading) or raising (loading) hook.
 - Perform steps 1 through 5 for both right and left sides.
1. Check that hole in each lower guide (Figure 6, Item 3) is aligned with aperture in side of corner casting of container (Figure 6, Item 2). Small amounts of misalignment may be acceptable.
 2. Release anti-loose fastener (Figure 6, Item 4) that secures lower locking plate (Figure 6, Item 1).
 3. Pull out locking plate (Figure 6, Item 1) and rotate it 90° to align locking pin with locking hole in lower guide (Figure 6, Item 3).
 4. Push locking plate (Figure 6, Item 1) to fully insert locking pin through locking hole in lower guide (Figure 6, Item 3) and into corner casting.
 5. Lock anti-loose fastener (Figure 6, Item 4) to hold locking plate in position.

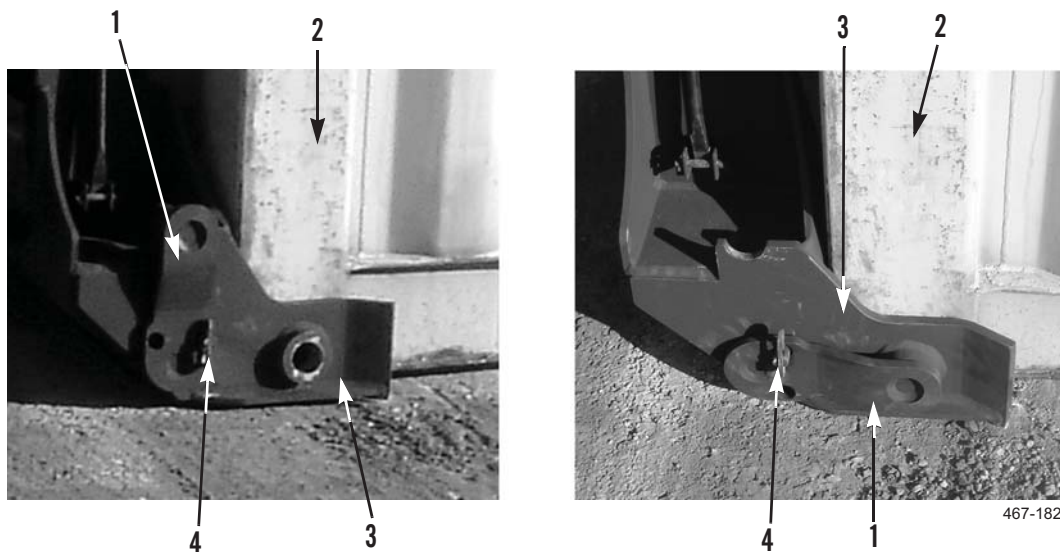


Figure 6. Lock Lower Guides.

ATTACH LIFT FRAME TO CONTAINER – CONTINUED**Lock Slide Housings****NOTE**

Perform steps 1 through 3 for both right and left sides.

1. Remove locking pin (Figure 7, Item 4) from slide housing (Figure 7, Item 1).
2. Push locking handle (Figure 7, Item 3) toward container (Figure 7, Item 2) to secure slide lock in upper corner casting.
3. Install locking pin (Figure 7, Item 4) in slide housing (Figure 7, Item 1).

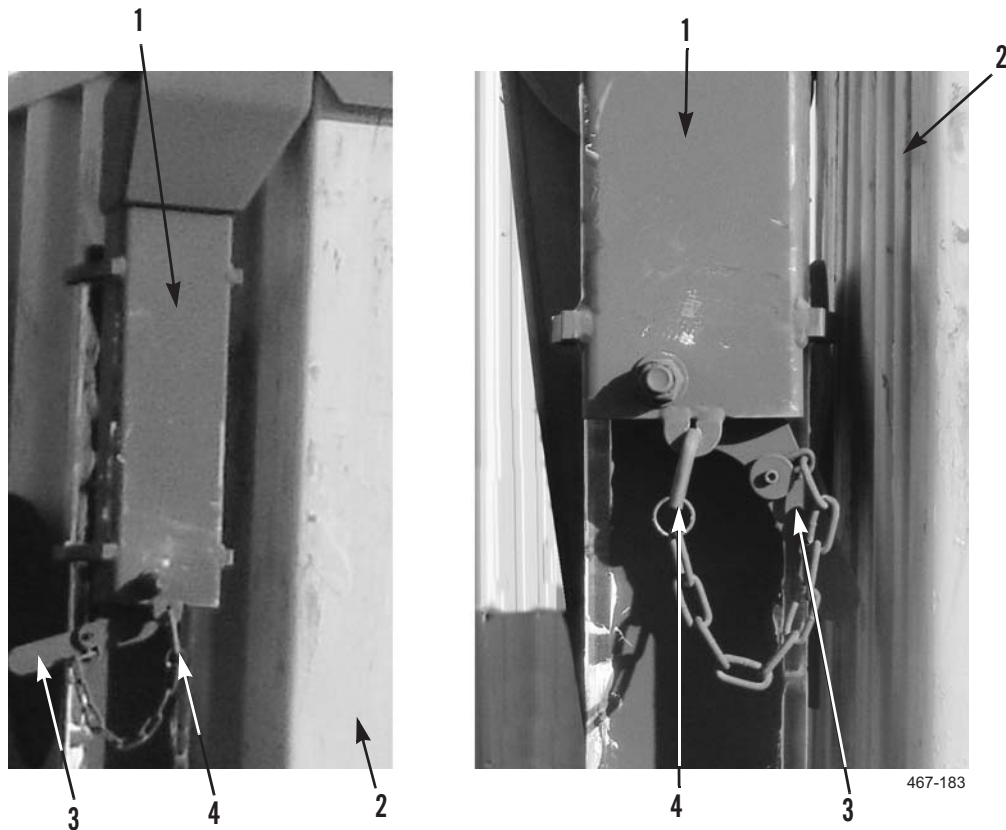


Figure 7. Lock Both Slide Housing Locking Handles.

Checks

1. Verify both upper guides are fully lowered into apertures on top of container.
2. Verify both slide housing locking handles are locked.
3. Verify both lower locking pins are inserted in corner castings of container.
4. Verify anti-loose fastener on each lower guide is locked.
5. Verify bail bar lock is installed on hook.

END OF TASK

LOAD CONTAINER

WARNING

Bail bar lock **MUST** be securely installed before continuing with procedure. Without bail bar lock installed, lift frame and container may disengage from hook and fall to the ground. Failure to follow this warning may result in injury or death to personnel.

1. With engine at idling speed, set MODE switch (Figure 8, Item 1) to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

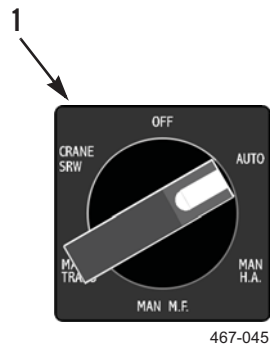


Figure 8. MODE Switch at AUTO.

2. Keeping engine at idling speed, set joystick (Figure 9, Item 1) to LOAD (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) to raise front of container (Figure 9, Item 2) approximately 8 in. (20 cm) from ground. At this point, release parking brake.

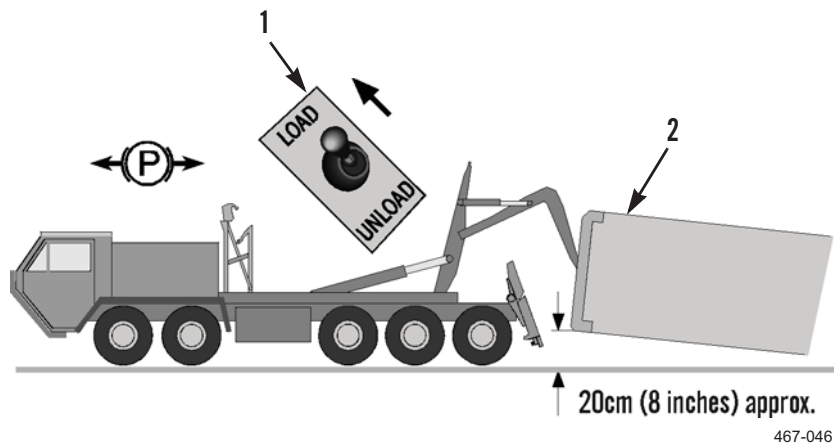


Figure 9. Joystick Set at Load.

LOAD CONTAINER – CONTINUED

3. Keeping joystick (Figure 10, Item 1) at LOAD, increase engine speed (maximum 1,500 rpm) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). Middle frame (Figure 10, Item 2) pivots forward, further raising front of container (Figure 10, Item 3) and moving vehicle rearward.

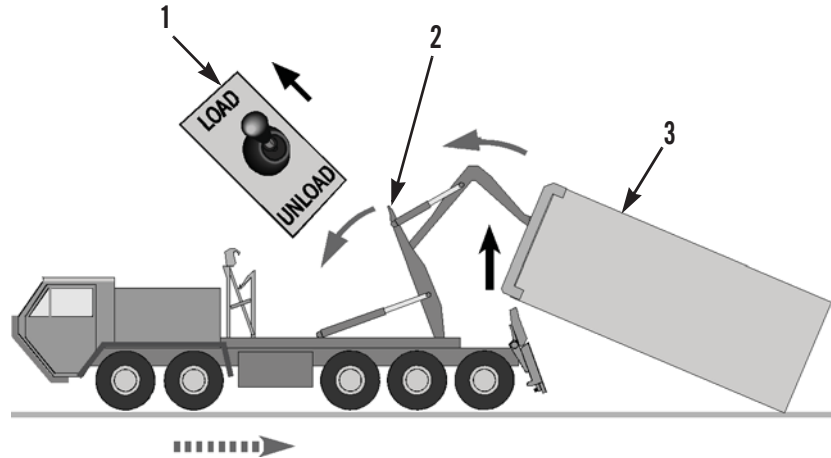


Figure 10. Middle Frame Pivots Forward.

LOAD CONTAINER – CONTINUED**NOTE**

If container becomes lodged on tapered guide, raise and lower hook arm until container is released. It may be necessary to temporarily place front slider bed in flatrack configuration (WP 0006) in order to realign container.

4. While watching container (Figure 11, Item 2) in right and left mirrors, verify that container is between right and left tapered guides (Figure 11, Item 1) on rear slider beds, before it makes contact with rear sliders (Figure 11, Item 3). If necessary, steer vehicle to guide container between tapered guides, or unload and repeat load procedure.

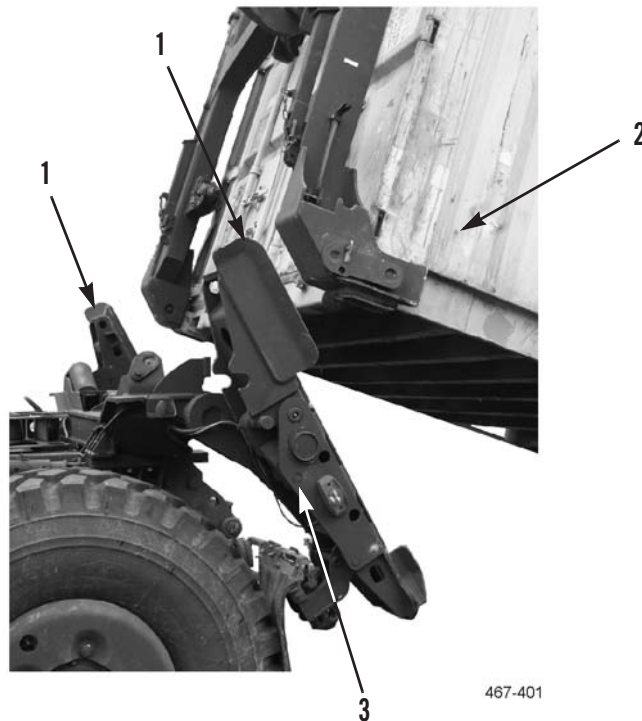


Figure 11. Container Between Tapered Guides.

LOAD CONTAINER – CONTINUED

5. As soon as container (Figure 12, Item 1) makes contact with rear sliders (Figure 12, Item 3) (and container is lifted from ground), apply parking brake. Keep joystick (Figure 12, Item 2) at LOAD and maintain engine speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

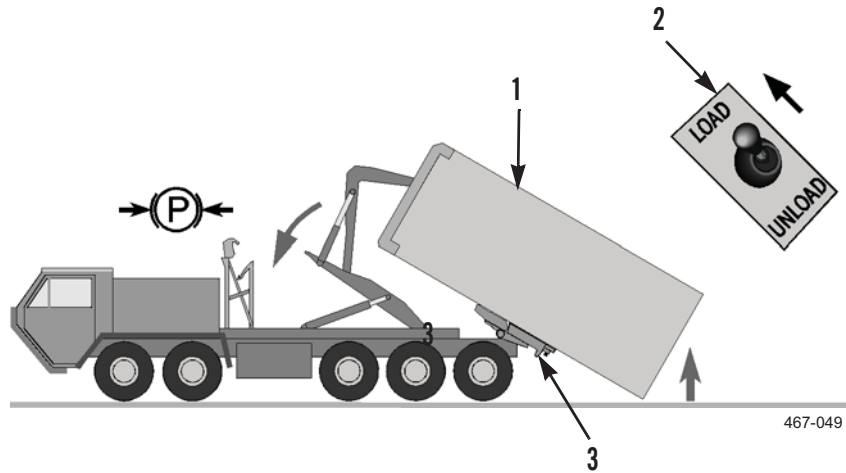


Figure 12. Parking Brake Applied.

6. When hook arm (Figure 13, Item 1) is near its home position, return engine to idling speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

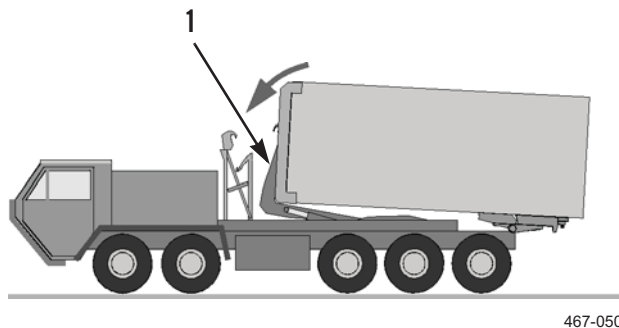


Figure 13. Hook Arm Near Home Position.

7. As soon as hook arm stops moving, release joystick (Figure 14, Item 1) (PLS: TM 9-2320-364-14&, HEMTT: TM 9-2320-326-14&P).

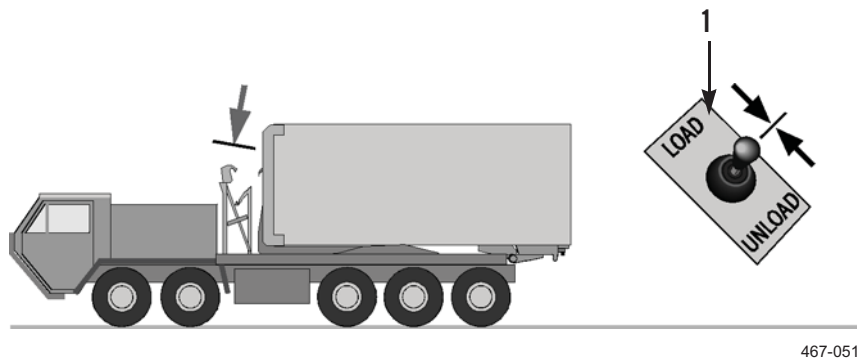


Figure 14. Hook Arm Stopped and Joystick Released.

LOAD CONTAINER – CONTINUED**WARNING**

- NO TRANS light on indicates lifting mechanism is not in home position. Refer to *Unload Container* in this work package. Then repeat *Load Container*.
 - If NO TRANS light is still on, exit cab and visually check that lifting mechanism is in home position, then set MODE switch at MAN TRANS. DO NOT attempt to move or drive vehicle if not in home position.
 - Failure to follow these warnings may result in injury or death to personnel and damage to equipment.
8. Check to see NO TRANS light (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) is off.
 9. With engine at idling speed, set MODE switch (Figure 15, Item 1) to OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

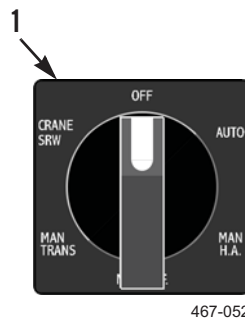


Figure 15. MODE Switch at OFF.

10. Exit vehicle cab.

Checks

1. Check that both rear corners of container are positioned within guides on slider beds
2. If container is not correctly positioned, follow instructions in *Unload Container* in this work package. Then repeat *Load Container*.

END OF TASK**SECURE CONTAINER FOR TRANSPORT****Secure Twistlocks**

1. Verify these conditions are met:
 - a. Hook arm is in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. Lift frame is supported by hook and attached to container (*Load Container*).
 - c. Slider bed assemblies are in container configuration (*Convert Slider Beds to Container Configuration*) (WP 0006).
 - d. MODE toggle switch is set to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - e. Stowage toggle switch is set to OFF position (WP 0004).
 - f. NO TRANS light is OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - g. Parking brake is set (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

SECURE CONTAINER FOR TRANSPORT – CONTINUED

Secure Twistlocks

WARNING



- DO NOT move vehicle until container is secured.
- During these adjustments, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Failure to follow these warnings may result in injury to personnel.

NOTE

Perform steps 2 through 6 for both right and left sides.

2. At rear of vehicle, remove locking pin (Figure 16, Item 6) and rotate twistlock assembly (Figure 16, Item 3) up into twistlock housing (Figure 16, Item 1). Install locking pin.
3. Pull down handwheel locking pin (Figure 16, Item 4) and rotate to position that allows movement of handwheel (Figure 16, Item 5).
4. Loosen handwheel (Figure 16, Item 5) to extend anvil (Figure 16, Item 7) into container corner casting (Figure 16, Item 2). Rotate anvil 90° to position perpendicular with opening in corner casting.
5. While maintaining anvil (Figure 16, Item 7) position, securely tighten handwheel (Figure 16, Item 5).
6. Pull down and rotate handwheel locking pin (Figure 16, Item 4) into position between handwheel fingers.

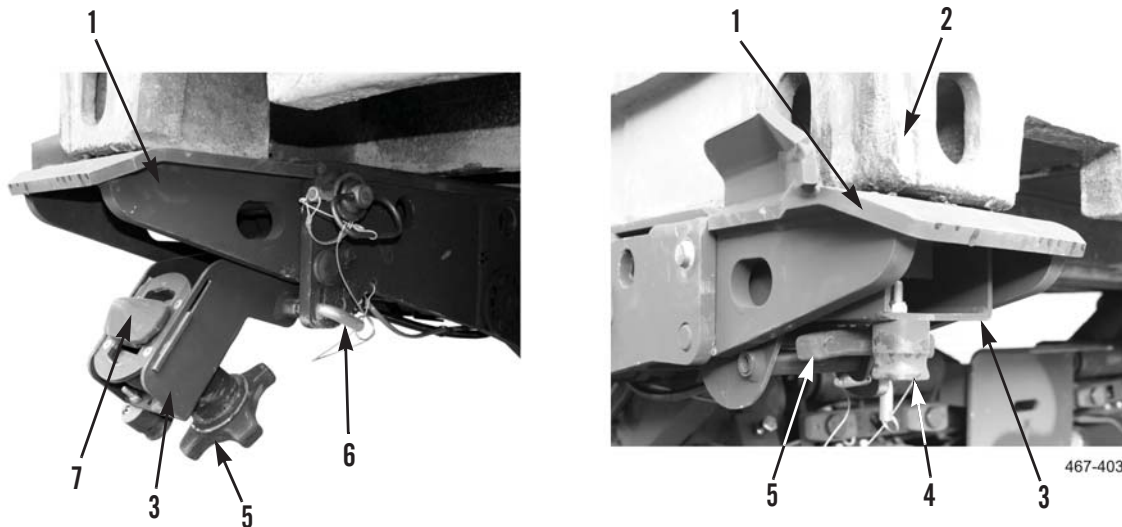


Figure 16. Secure Twistlock Assembly.

SECURE CONTAINER FOR TRANSPORT – CONTINUED**Secure Transport Locks****NOTE**

Perform steps 1 through 13 for both right and left sides.

1. Remove clip (Figure 17, Item 12) from transport lock (Figure 17, Item 8).
2. At stowage assembly, lift handwheel lock (Figure 17, Item 7) and loosen handwheel (Figure 17, Item 9) to full extension.
3. Rotate anvil (Figure 17, Item 13) and remove transport lock (Figure 17, Item 8) from stowage bracket (Figure 17, Item 14).
4. Push transport lock (Figure 17, Item 8) upward into container corner casting (Figure 17, Item 6). Verify that anvil (Figure 17, Item 13) is inserted into container corner casting.
5. Continue to support transport lock handwheel (Figure 17, Item 9) and turn it 90° clockwise.
6. Lower transport lock handwheel (Figure 17, Item 9) and check that anvil shoulders are now resting on inner surface of container corner casting (Figure 17, Item 6).
7. Maintaining downward pressure on handwheel (Figure 17, Item 9), tighten handwheel until transport lock (Figure 17, Item 8) is snug against container but loose enough to adjust position.
8. Remove clip (Figure 17, Item 10), bolt (Figure 17, Item 2), and transport lock arm (Figure 17, Item 3) from stowage bracket (Figure 17, Item 1).
9. If necessary, remove clip pin (Figure 17, Item 11) from adjustment lever (Figure 17, Item 4), loosen adjustment lever and adjust length of transport lock arm until clevis (Figure 17, Item 5) aligns with transport lock (Figure 17, Item 8).
10. Install clevis (Figure 17, Item 5), bolt (Figure 17, Item 2), and clip (Figure 17, Item 10) on transport lock (Figure 17, Item 8).
11. If loosened, tighten adjustment lever (Figure 17, Item 4) and install clip pin (Figure 17, Item 11).
12. Lift handwheel lock (Figure 17, Item 7) and tighten handwheel (Figure 17, Item 9) until transport lock (Figure 17, Item 8) is secure against container corner casting (Figure 17, Item 6).
13. Ensuring it passes between two finger grips on handwheel (Figure 17, Item 9), lower handwheel lock (Figure 17, Item 7).

SECURE CONTAINER FOR TRANSPORT – CONTINUED

Secure Transport Locks – Continued

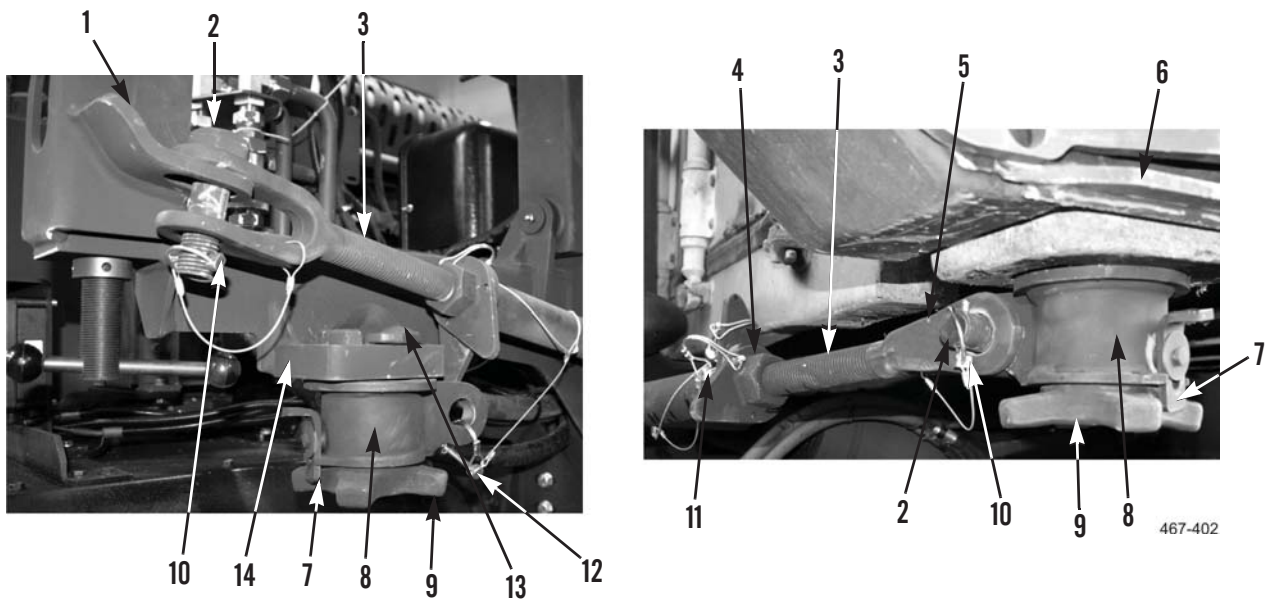


Figure 17. Secure Transport Locks.

14. Verify twistlocks on slider bed assemblies are securely locked into rear lower corner casting of container.
15. Verify front transport locks are securely locked into front lower corner castings of container.

END OF TASK

RELEASE CONTAINER FOR UNLOADING

Verify these conditions exist:

- a. MODE switch set at OFF (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- b. Stowage toggle switch set to OFF position (WP 0004).
- c. NO TRANS light is off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- d. Parking brake is set (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Release and Stow Transport Locks**WARNING**

During these adjustments, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

- Sensors on twistlock housing and transport lock stowage brackets detect the deployment of these locks. If twistlocks and transport locks are not released and properly stowed, unloading sequence will not function.
- Perform steps 1 through 10 for both right and left sides.

RELEASE CONTAINER FOR UNLOADING – CONTINUED**Release and Stow Transport Locks – Continued**

1. At front corner of container, remove clip (Figure 18, Item 10), bolt (Figure 18, Item 2), and transport lock arm (Figure 18, Item 3) from transport lock (Figure 18, Item 8).
2. If necessary, remove clip pin (Figure 18, Item 11) from adjustment lever (Figure 18, Item 4), loosen adjustment lever and adjust length of transport lock arm until clevis (Figure 18, Item 5) aligns with stowage bracket (Figure 18, Item 1).
3. Install clevis (Figure 18, Item 5), bolt (Figure 18, Item 2), and clip (Figure 18, Item 10) on stowage bracket (Figure 18, Item 1).
4. If loosened, tighten adjustment lever (Figure 18, Item 4) and install clip pin (Figure 18, Item 11).
5. Lift handwheel lock (Figure 18, Item 7) and loosen handwheel (Figure 18, Item 9) to full extension.
6. Rotate anvil (Figure 18, Item 13) and remove transport lock (Figure 18, Item 8) from container corner casting (Figure 18, Item 6).
7. Push transport lock (Figure 18, Item 8) upward into stowage bracket (Figure 18, Item 14) and rotate anvil (Figure 18, Item 12) until anvil shoulders are resting on stowage bracket.
8. Maintaining downward pressure on handwheel (Figure 18, Item 9), lift handwheel lock and tighten handwheel until transport lock (Figure 18, Item 8) is secure against stowage bracket.
9. Ensuring it passes between two finger grips on handwheel (Figure 18, Item 9), lower handwheel lock (Figure 18, Item 7).
10. Install clip (Figure 18, Item 12) on transport lock (Figure 18, Item 8).

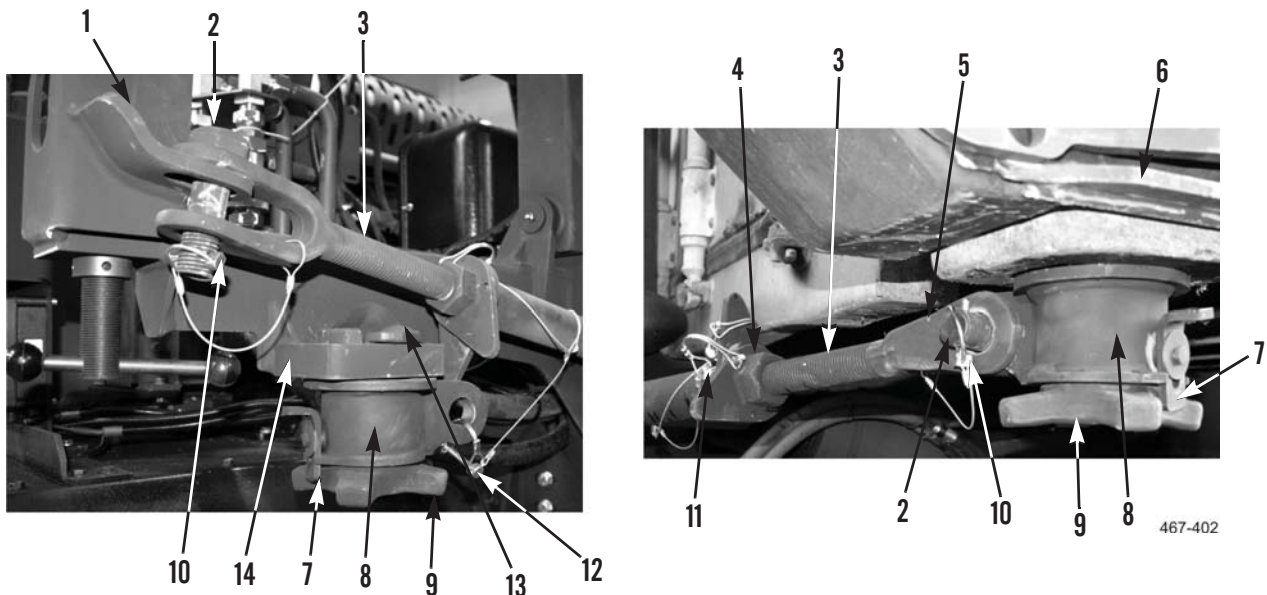


Figure 18. Release and Stow Transport Locks.

RELEASE CONTAINER FOR UNLOADING – CONTINUED**Release and Stow Rear Twistlocks**

1. Pull down handwheel locking pin (Figure 19, Item 4) and rotate to position that allows movement of handwheel (Figure 19, Item 5).
2. Loosen handwheel (Figure 19, Item 5) to release anvil (Figure 19, Item 7) in container corner casting (Figure 19, Item 2).
3. Rotate anvil 90° to position aligned with opening in corner casting and lower twistlock (Figure 19, Item 3) out of corner casting (Figure 19, Item 2).
4. Tighten handwheel (Figure 19, Item 5) until handwheel and anvil (Figure 19, Item 7) are secure within twistlock (Figure 19, Item 3).
5. Position handwheel (Figure 19, Item 5) to allow handwheel locking pin (Figure 19, Item 4) to fit between two fingers on handwheel.
6. Pull down handwheel locking pin (Figure 19, Item 4) and rotate into position between two fingers on handwheel (Figure 19, Item 5).
7. Remove locking pin (Figure 19, Item 6) from twistlock housing (Figure 19, Item 1), rotate twistlock assembly (Figure 19, Item 3) until aligned with forward hole in twistlock housing, and insert locking pin in forward position of twistlock housing.

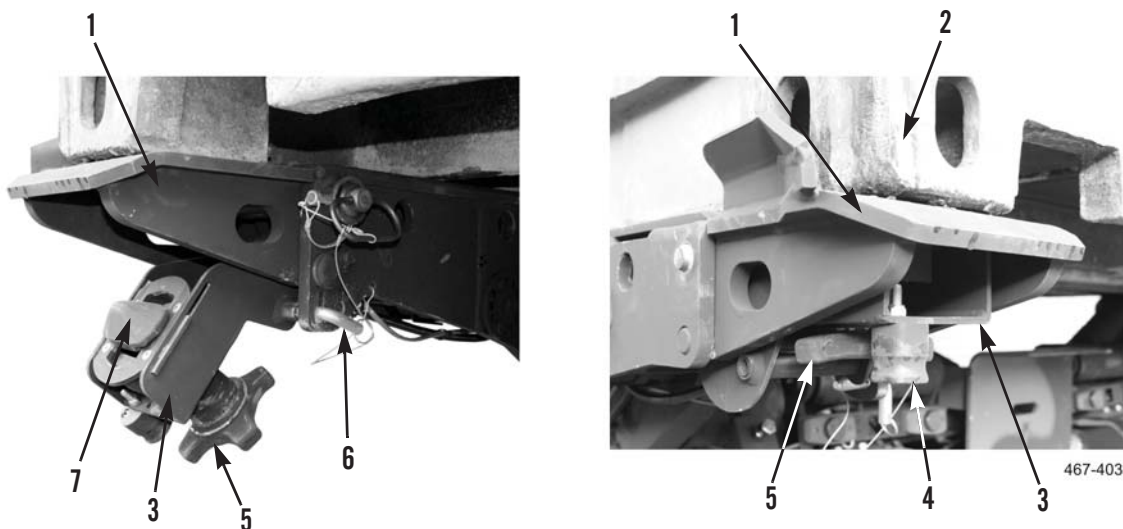


Figure 19. Release and Stow Rear Twistlocks.

RELEASE CONTAINER FOR UNLOADING – CONTINUED**WARNING**

Be aware container is now unsecure on vehicle. DO NOT drive vehicle with container in this condition. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

Checks

1. Verify front transport locks are released from container castings and stowed on stowage assembly
2. Verify rear twistlocks are unlocked and stowed within twistlock housing
3. Verify twistlock handwheels are secured by locking bolts.

END OF TASK**UNLOAD CONTAINER**

1. With engine at idling speed, set MODE switch (Figure 20, Item 1) to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
2. HEMTT only: Set PTO switch to ON position (TM 9-2320-326-14&P).

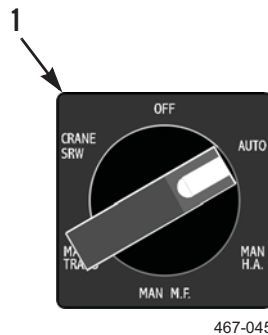


Figure 20. MODE Switch at AUTO.

UNLOAD CONTAINER – CONTINUED

WARNING

Be aware container is now unsecured on vehicle. DO NOT drive vehicle with container in this condition. Failure to follow this warning may result in injury or death to personnel and damage to equipment.

- With engine at idling speed, set joystick (Figure 21, Item 1) to UNLOAD, then increase engine speed (maximum 1,500 rpm) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). Hook (Figure 21, Item 2) rises and pivots rearward pushing container (Figure 21, Item 3). NO TRANS light turns on (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

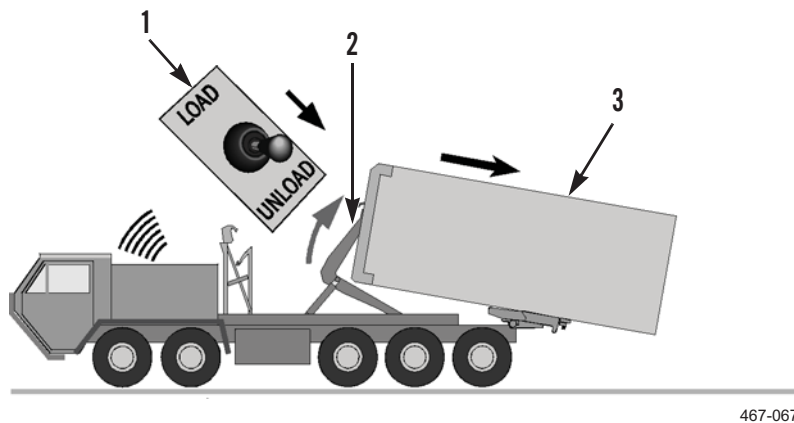


Figure 21. Hook Rises and Pivots Rearward.

- As soon as container (Figure 22, Item 1) rises from rear sliders (Figure 22, Item 3), release parking brake (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Keep joystick (Figure 22, Item 2) at UNLOAD and engine at same speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). Vehicle will move forward as container (Figure 22, Item 1) is lowered to ground.

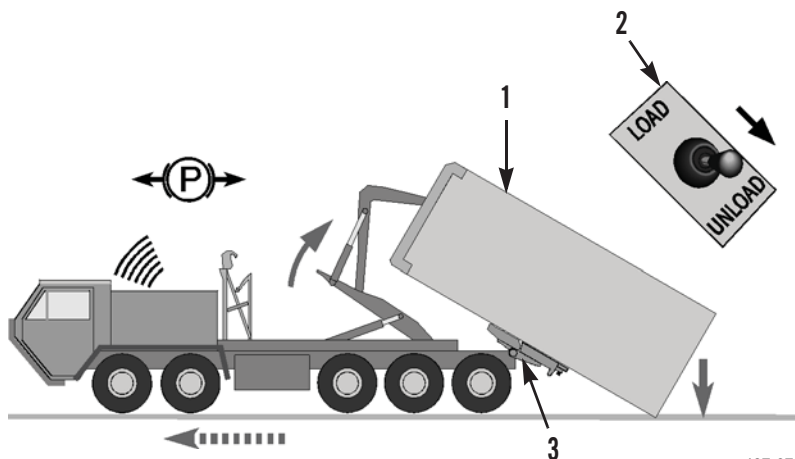


Figure 22. Release Parking Brake.

UNLOAD CONTAINER – CONTINUED

6. When front of container (Figure 23, Item 1) is lowered to approximately 8 in. (20 cm) from ground, return engine to idling speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

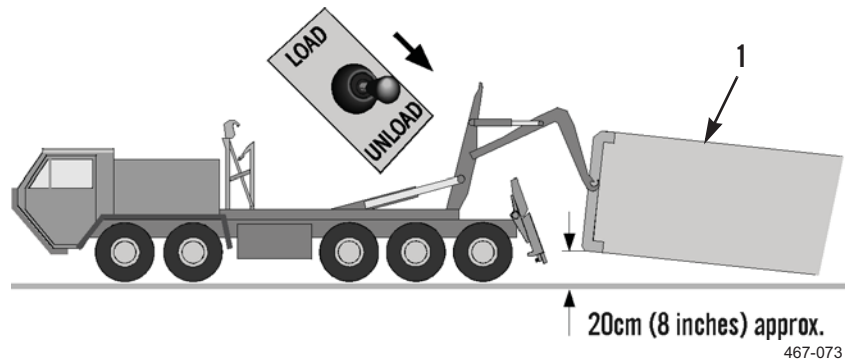


Figure 23. Container Lowered to 8 in. (20 cm) from Ground.

CAUTION

Stop unloading before rear of vehicle becomes raised by hook pressing down on bail bar.
Failure to follow this caution may result in damage to equipment.

7. Release joystick (Figure 24, Item 2) when front of container (Figure 24, Item 4) is on ground and hook (Figure 24, Item 1) still surrounds bail bar (Figure 24, Item 3) but is no longer making contact with it.

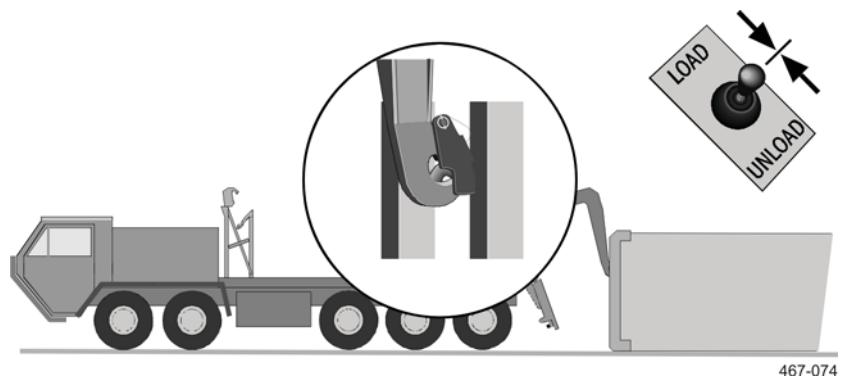


Figure 24. Hook Surrounds Bail Bar.

UNLOAD CONTAINER – CONTINUED**Release Upper Guides****WARNING**

- As a safety precaution against movement of lift frame, ensure that hook always surrounds (but is not necessarily in contact with) bail bar.
- During these adjustments, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required.
- Failure to follow this warning may result in injury or death to personnel and damage to equipment.

NOTE

Perform steps 1 and 2 for both right and left sides.

1. Remove locking pin (Figure 25, Item 4) and pull upper lock handle (Figure 25, Item 3) out away from container (Figure 25, Item 2).
2. Align hole in upper lock handle (Figure 25, Item 3) with hole in upper lock housing (Figure 25, Item 1) and insert locking pin (Figure 25, Item 4).

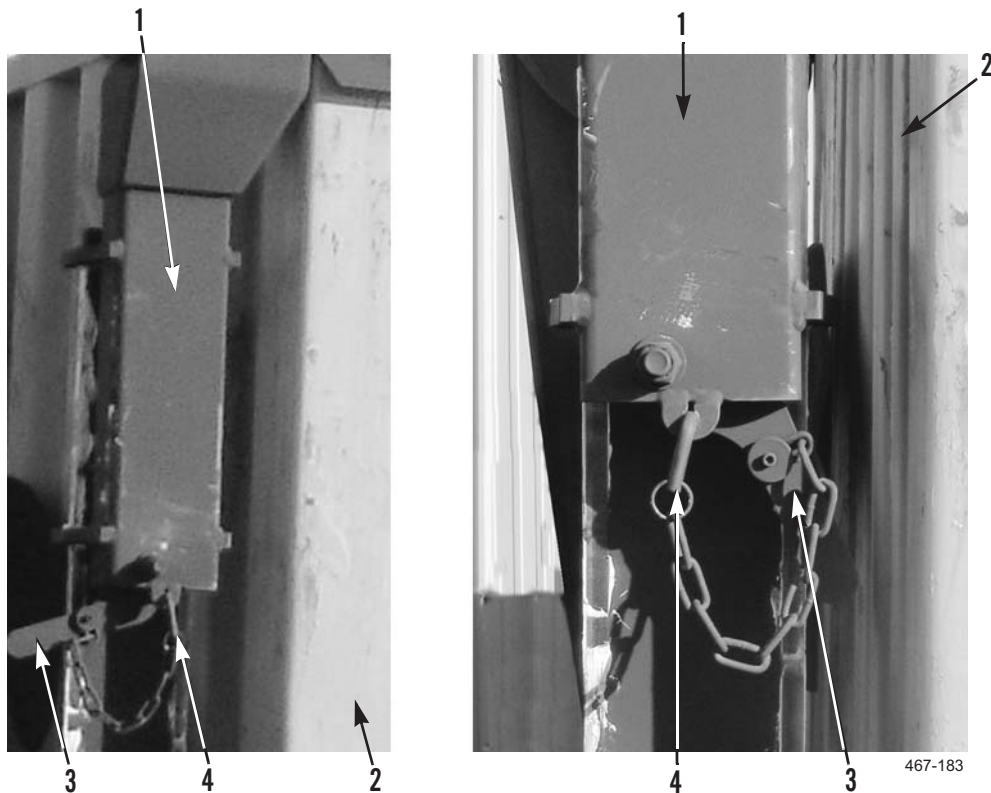


Figure 25. Slide Housing Locking Handles.

UNLOAD CONTAINER – CONTINUED**Release Lower Guides****NOTE**

Perform steps 1 through 4 for both right and left sides.

1. Release anti-loose fastener (Figure 26, Item 4) that secures lower locking plate (Figure 26, Item 1) to container (Figure 26, Item 2).
2. Pull out locking plate (Figure 26, Item 1) and rotate it up 90° to align locking pin with cradle in lower guide (Figure 26, Item 3).
3. Push locking plate (Figure 26, Item 1) in to lower guide (Figure 26, Item 3).
4. Lock anti-loose fastener (Figure 26, Item 4) to hold locking plate in position.

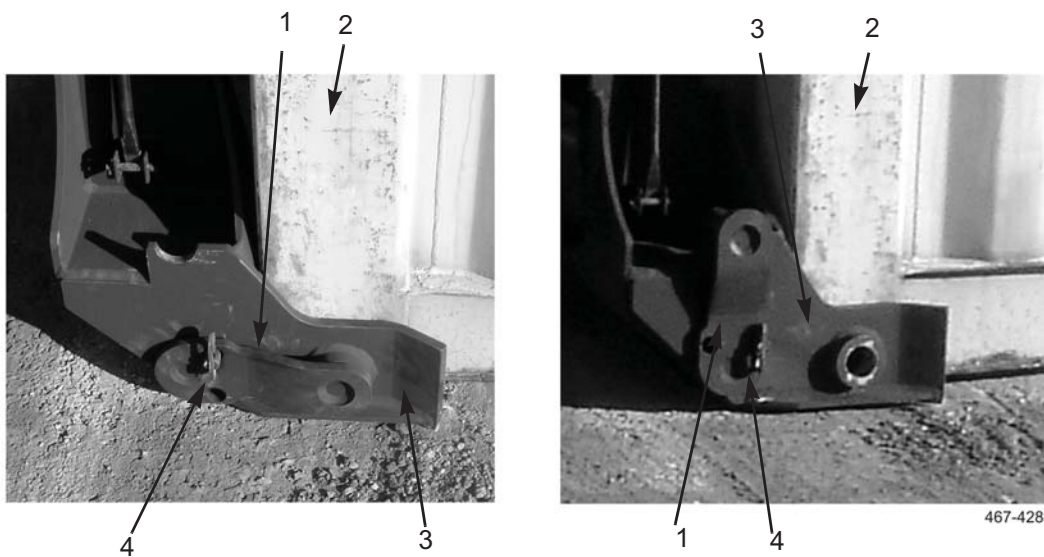


Figure 26. Release Lower Guides.

UNLOAD CONTAINER – CONTINUED**Detach Lift Frame from Container**

1. Keeping engine at idling speed, set joystick (Figure 27, Item 1) to LOAD (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). Hook arm (Figure 27, Item 2) will raise lift frame (Figure 27, Item 3) and upper guides (Figure 27, Item 4) from container (Figure 27, Item 4). When raised approximately 6 in. (183 cm), release joystick.

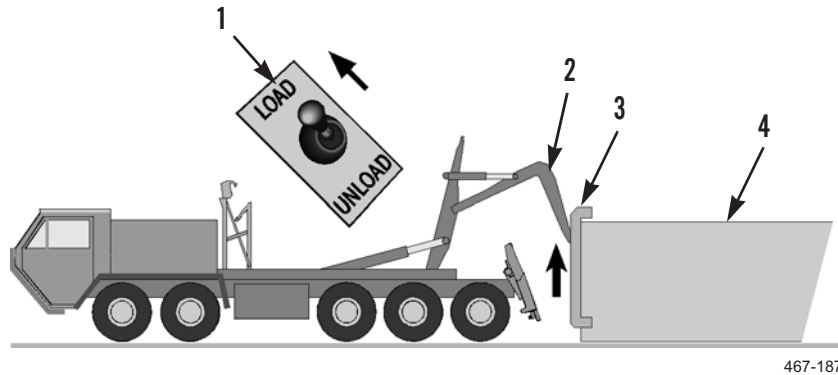


Figure 27. Detach Lift Frame from Container.

2. Keeping engine at idling speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P), drive vehicle (Figure 28, Item 1) forward approximately 2 ft (0.6 m) to separate lift frame (Figure 28, Item 3) from container (Figure 28, Item 4).

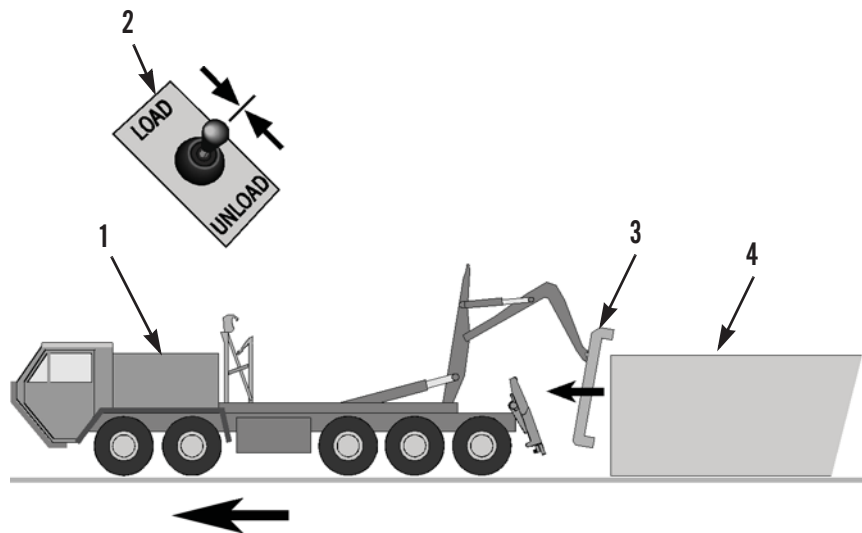


Figure 28. Separate Lift Frame from Container.

UNLOAD CONTAINER – CONTINUED**Checks**

1. Verify locking pins on lower guides are fully inserted in stowage plate of lift frame
2. Verify anti-loose fasteners on lower guides are in locked position
3. Verify both slide housing locking handles are unlocked.

END OF TASK**FOLLOW-ON TASKS**

1. Load and stow lift frame (WP 0007).
2. Place slider beds in flatrack (empty) configuration (WP 0006).

END OF TASK**END OF WORK PACKAGE**

OPERATOR MAINTENANCE
OPERATION UNDER UNUSUAL CONDITIONS
Raise a Partially Submerged Container, Pick Up a Tipped Over Lift Frame

INITIAL SETUP
References

WP 0002
 WP 0003
 WP 0005
 WP 0007
 WP 0008

Equipment Conditions

Lifting mechanism in deployed position (PLS:
 TM 9-2320-364-14&P, HEMTT: TM 9-2320-
 326-14&P)

Equipment Conditions - Continued

Lift frame retrieved and unloaded (WP 0007)
 Slider bed assemblies in container configura-
 tion (WP 0006)
 MODE switch set to MAN M.F. position (PLS:
 TM 9-2320-364-14&P, HEMTT: TM 9-2320-
 326-14&P)
 Stowage toggle switch set to OFF position
 (WP 0004)
 NO TRANS light on (PLS: TM 9-2320-364-
 14&P, HEMTT: TM 9-2320-326-14&P)

INTRODUCTION

1. This work package contains instructions on how to operate the Enhanced Cargo Handling Unit (E-CHU) under unusual conditions.
2. Before operating E-CHU under unusual conditions, read and become familiar with the warnings located in the *Warning Summary* at the front of this bulletin, *Equipment Description and Data* (WP 0002), *Theory of Operation* (WP 0003), *Description and Use of Operator Controls* (WP 0004), *Operation Under Usual Conditions* (WP 0005), *Slider Bed Configuration* (WP 0006), *Unloading and Loading Empty Lift Frame* (WP 0007), and *Loading and Unloading Container* (WP 0008).

RAISE A PARTIALLY SUBMERGED CONTAINER
Starting Conditions

1. Lifting mechanism is in deployed position with lift frame suspended on hook and bail bar lock installed on hook (WP 0007).
2. Slider bed assemblies are in container configuration (WP 0006).
3. MODE switch is set to AUTO (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
4. Stowage toggle switch set to OFF position (WP 0004).
5. NO TRANS light is on (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED

Attaching Upper Guides

- Reverse vehicle to position upper guides on lift frame (Figure 1, Item 2) just above top of container (Figure 1, Item 3). If necessary, use joystick (Figure 1, Item 1) to adjust height of lift frame.

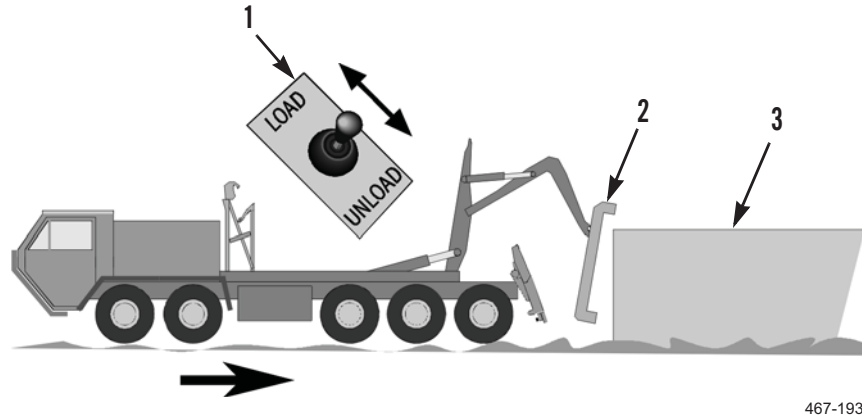


Figure 1. Position Upper Guides Above Container.

NOTE

DO NOT attempt to complete step 2 if upper guides do not become fully located on corner castings. Instead, load and stow lift frame (WP 0007) and reposition vehicle to pick up other end of container.

- Keeping engine at idling speed, set joystick (Figure 2, Item 1) to UNLOAD and move vehicle as required to ensure upper locating pins on lift frame (Figure 2, Item 2) fully descend into upper corner castings of container (Figure 2, Item 3). Top plates of upper guides should be in contact with corner castings.

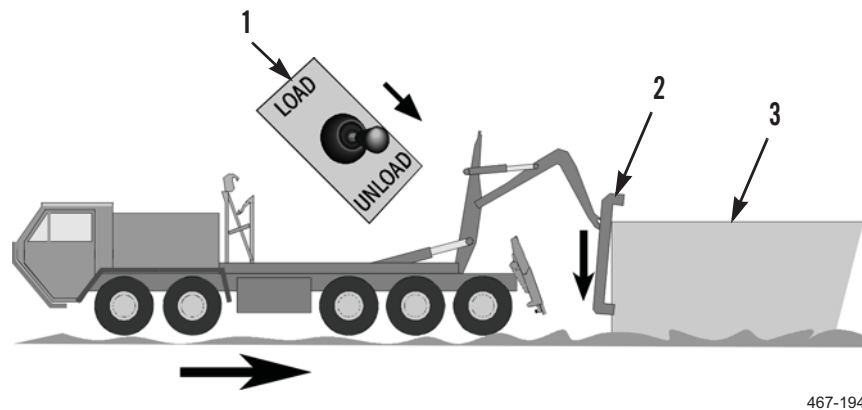


Figure 2. Lower Lift Frame to Container.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED

Attaching Upper Guides – Continued

- Release joystick (Figure 3, Item 1) as soon as lower section of lift frame (Figure 3, Item 2) starts to descend, while upper section remains stationary.

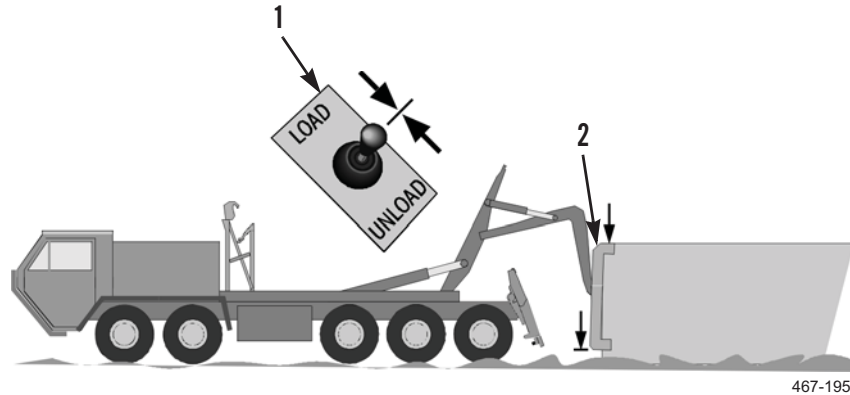


Figure 3. Upper Guides Positioned on Container.

- Slowly reverse vehicle to press lift frame (Figure 4, Item 1) fully against container (Figure 4, Item 2). Apply foot brake and parking brake to prevent forward creep of vehicle. Select neutral gear.

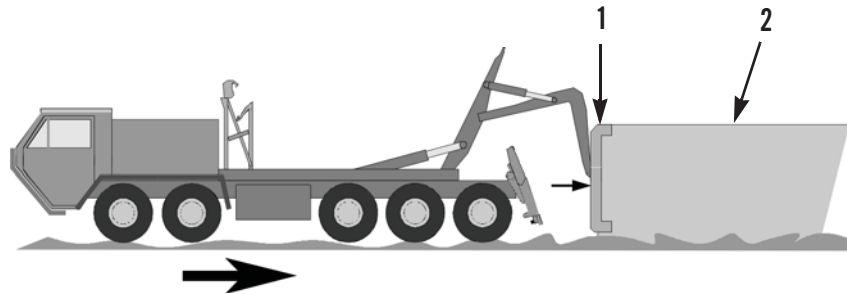


Figure 4. Lift Frame Positioned Against Container.

- With engine at idling speed, set MODE switch (Figure 5, Item 1) to OFF.

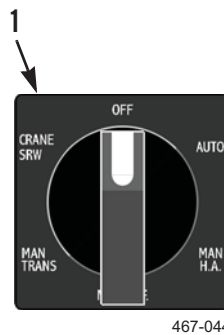


Figure 5. MODE Switch Set at OFF.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Lock Slide Housings****WARNING**

During the following adjustments personnel are required to work outside vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

The following procedure is for left upper slide lock. Repeat same procedure for right side.

1. Remove locking pin (Figure 6, Item 4) from slide housing (Figure 6, Item 1).
2. Push locking handle (Figure 6, Item 3) toward container (Figure 6, Item 2) to secure slide lock in upper corner casting.
3. Install locking pin (Figure 6, Item 4) in slide housing (Figure 6, Item 1).

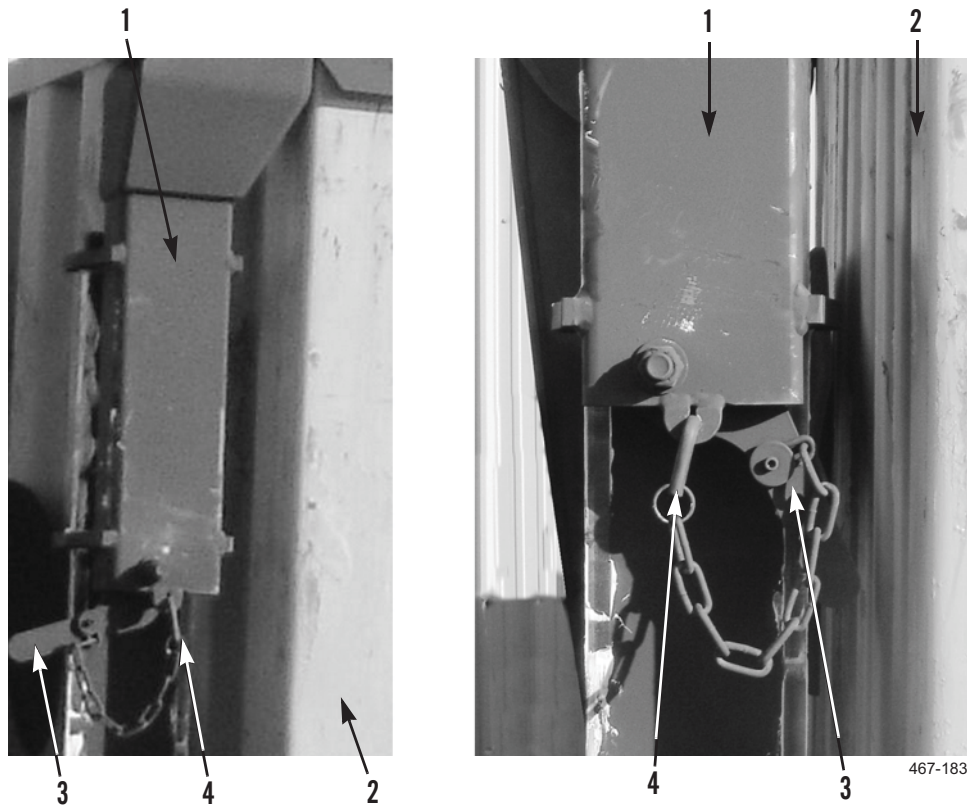
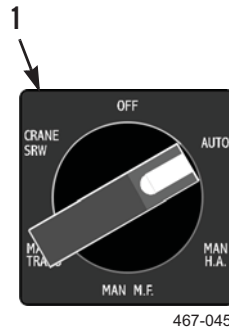


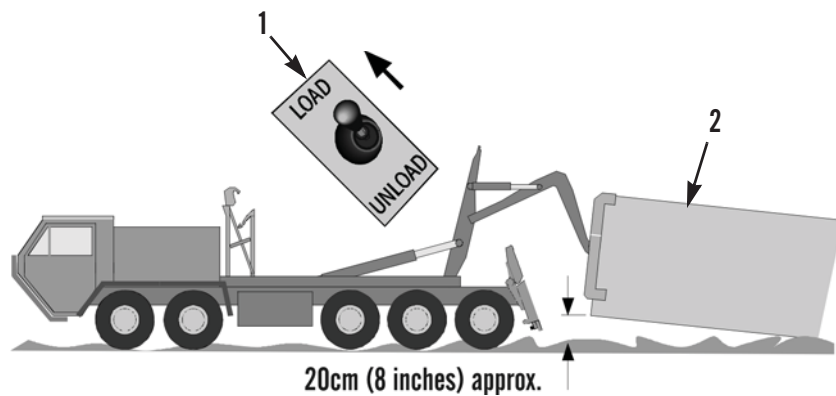
Figure 6. Lock Both Slide Housing Locking Handles.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Raising Container**

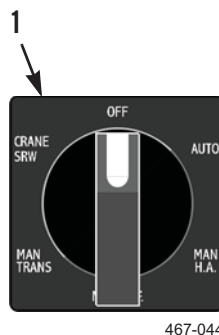
1. Start engine (PLS: TM 9-2320-364-14&P, HEMTT TM 9-2320-326-14&P). Set PTO switch to ON (HEMTT only). With engine at idling speed, set MODE switch (Figure 7, Item 1) to AUTO.

**Figure 7. MODE Switch at AUTO.**

2. Set joystick (Figure 8, Item 1) to LOAD to raise front of container (Figure 8, Item 2) approximately 8 in. (20 cm) above mud, etc.

**Figure 8. Container Raised.**

3. With engine at idling speed, set MODE switch (Figure 9, Item 1) to OFF.

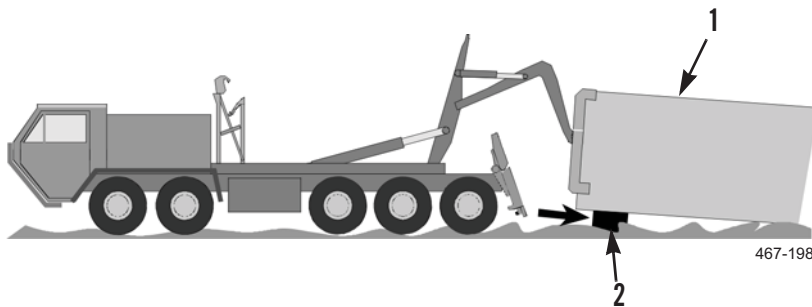
**Figure 9. MODE Switch at OFF.**

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Raising Container – Continued**

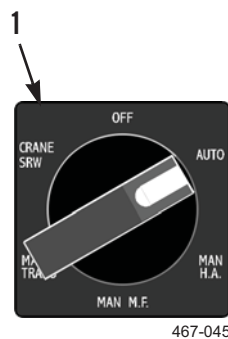
4. Apply parking brake and select neutral gear.
5. Exit vehicle cab.

WARNING

- Use caution when working around and under a raised container.
 - Ensure supports are strong enough to hold weight of container and contents.
 - Failure to follow these warnings can result in injury or death to personnel.
6. Place suitable supports (Figure 10, Item 2) under container (Figure 10, Item 1) approximately 12 in. (30 cm) from front edge of container.

**Figure 10. Support Placed Under Container.**

7. Clear any mud and debris from surfaces and holes of lower corner castings of container.
8. With engine at idling speed, set MODE switch (Figure 11, Item 1) to AUTO.

**Figure 11. MODE Switch at AUTO.**

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Raising Container – Continued**

9. Keeping engine at idling speed, set joystick (Figure 12, Item 1) to UNLOAD to lower front of container (Figure 12, Item 2) onto supports (Figure 12, Item 3) and remove weight of container from hook (Figure 12, Item 4). Release joystick.

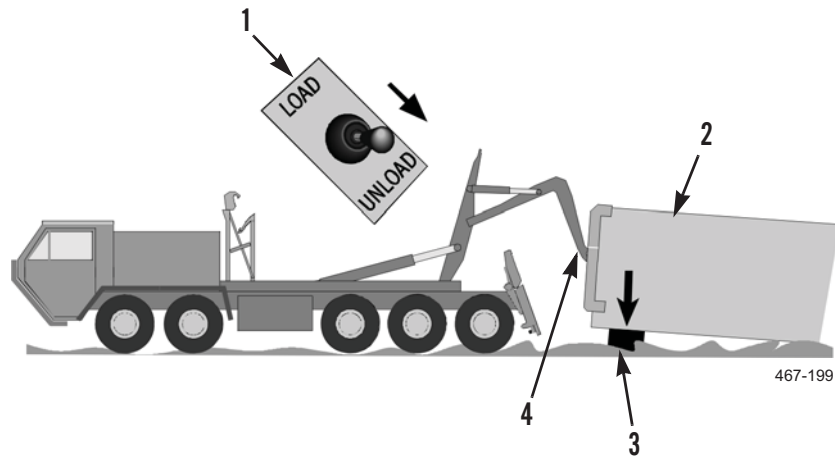


Figure 12. Container Lowered to Support.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Raising Container – Continued**

10. Exit cab to visually check container is firmly supported.
11. Keeping engine at idling speed, set joystick (Figure 13, Item 1) to UNLOAD to lower lift frame (Figure 13, Item 2) on container (Figure 13, Item 3).
12. Release joystick (Figure 13, Item 1) when locking-pin holes in lower guides are aligned with lower corner castings of container (Figure 13, Item 3).

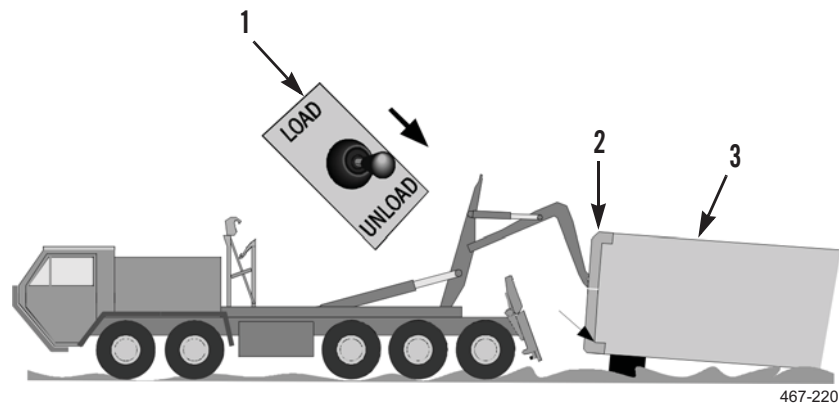


Figure 13. Lower Guides Aligned with Lower Castings.

13. With engine at idling speed, set MODE switch (Figure 14, Item 1) to OFF.

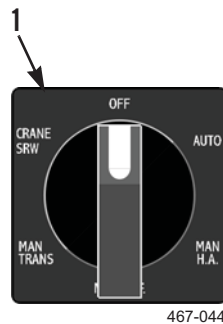


Figure 14. MODE Switch at OFF.

14. Verify parking brake is applied and exit vehicle cab.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Attaching Lower Guides****WARNING**

During these adjustments, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

- If misalignment is too great, lower section of lift frame may need to be repositioned by either lowering (unloading) or raising (loading) hook.
 - Perform steps 1 through 5 for both right and left sides.
1. Check that hole in each lower guide (Figure 15, Item 3) is aligned with aperture in side of corner casting of container (Figure 15, Item 2). Small amounts of misalignment may be acceptable.
 2. Release anti-loose fastener (Figure 15, Item 4) that secures lower locking plate (Figure 15, Item 1).
 3. Pull out locking plate (Figure 15, Item 1) and rotate it 90° to align locking pin with locking hole in lower guide (Figure 15, Item 3).
 4. Push locking plate (Figure 15, Item 1) to fully insert locking pin through locking hole in lower guide (Figure 15, Item 3) and into corner casting.
 5. Lock anti-loose fastener (Figure 15, Item 4) to hold locking plate (Figure 15, Item 1) in position.

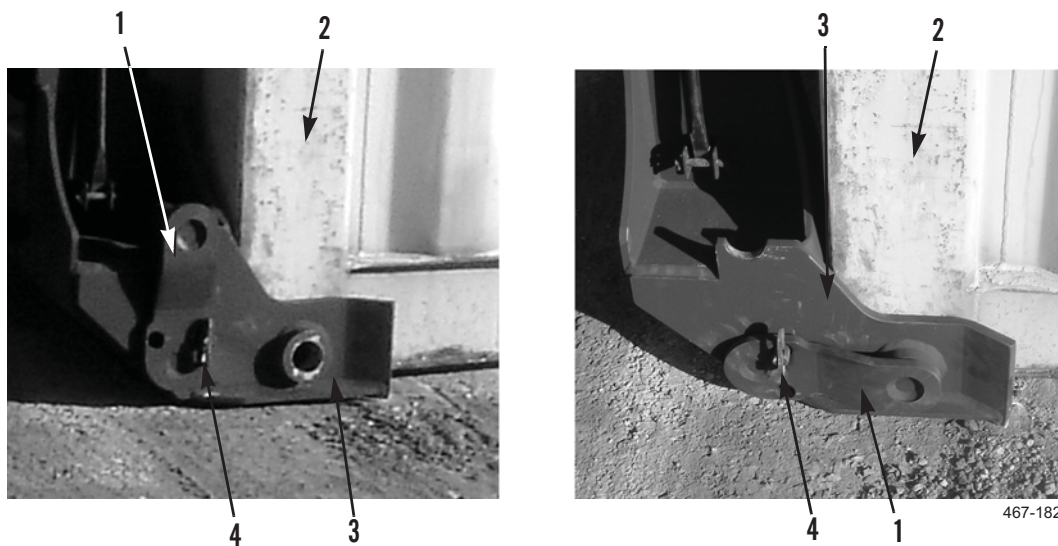


Figure 15. Lock Lower Guides.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Checks**

1. Check that both upper slide locking handles are locked.
2. Check both lower locking pins are inserted in corner castings of container.
3. Check anti-loose fastener on each lower guide is locked.

Removing Supports**WARNING**

Use caution when working around and under a raised container. Failure to follow this warning can cause injury or death to personnel.

1. Set MODE switch (Figure 16, Item 1) to AUTO.

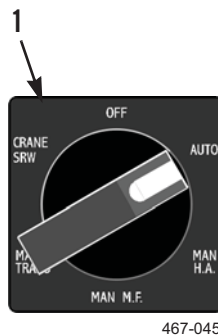


Figure 16. MODE Switch at AUTO.

2. With engine at idling speed, set joystick (Figure 17, Item 1) to LOAD. As soon as front of container (Figure 17, Item 2) is lifted from supports (Figure 17, Item 3), release joystick.

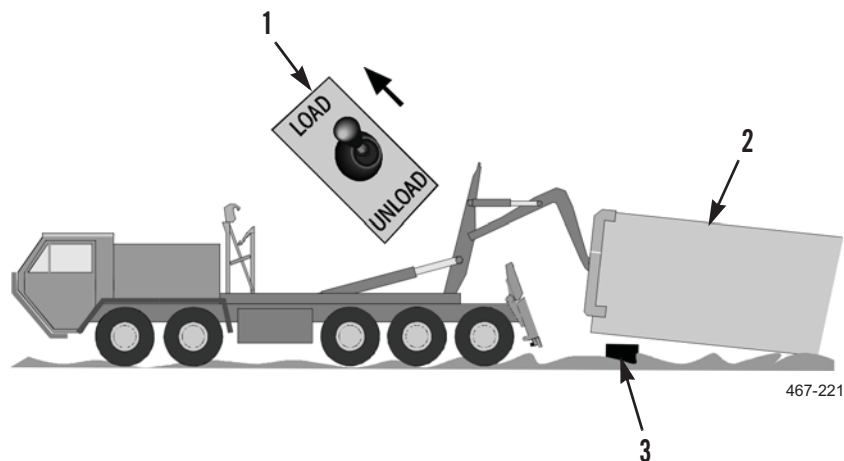


Figure 17. Container Raised from Supports.

RAISE A PARTIALLY SUBMERGED CONTAINER – CONTINUED**Removing Supports – Continued**

3. With engine at idling speed, set MODE switch to OFF.

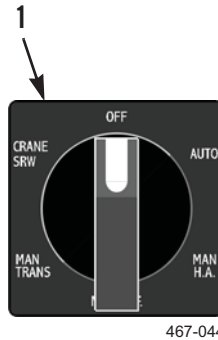


Figure 18. MODE Switch at OFF.

4. Exit vehicle cab and remove supports.
5. Continue loading container (WP 0008).

END OF TASK

PICK UP A TIPPED OVER LIFT FRAME**WARNING**

Use extreme caution while raising lift frame from the ground. Lift frame may move erratically and slide along ground surface while being lifted. Failure to follow this warning may result in injury or death to personnel.

1. Attach sling and lifting device to bail bar (Figure 19, Item 2) on lift frame (Figure 19, Item 1).
2. Use lifting device to slowly raise lift frame (Figure 19, Item 1) until it is off ground and fully supported by lifting device.
3. Use lifting device to slowly lower lift frame (Figure 19, Item 1) until supported by stands (Figure 19, Item 3).
4. Remove lifting device and sling from bail bar.

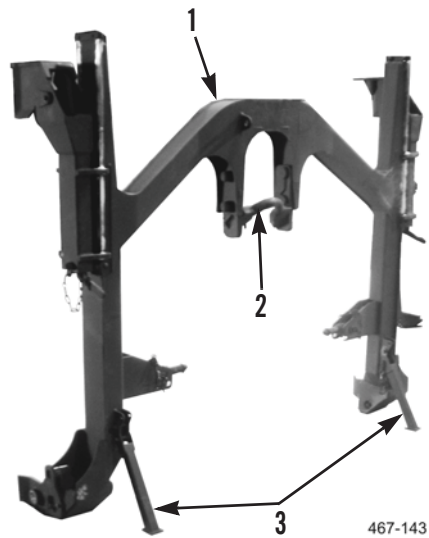


Figure 19. Lift Frame.

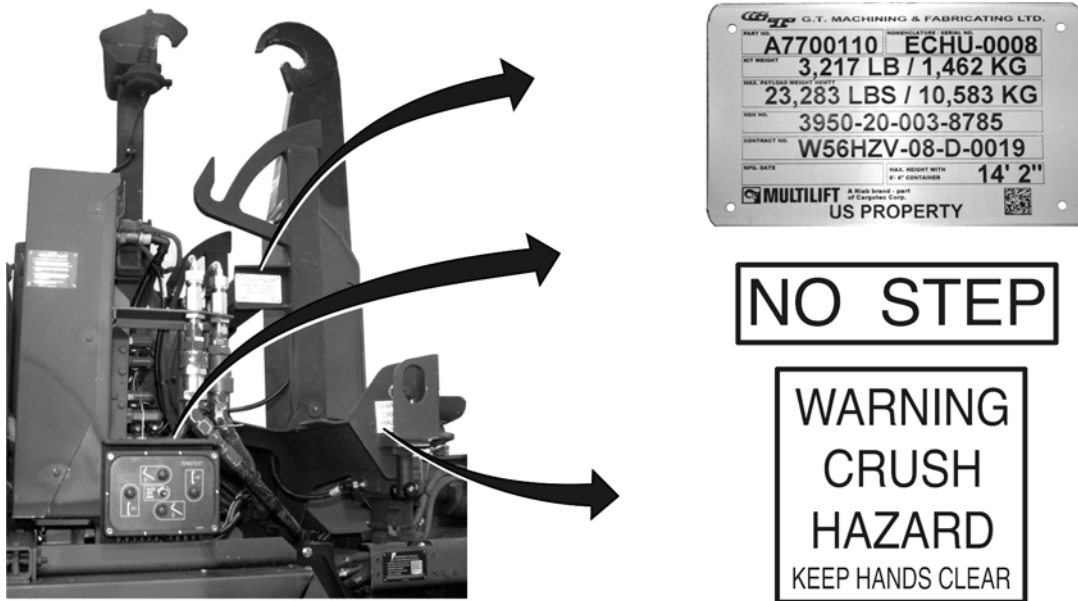
END OF TASK

END OF WORK PACKAGE

OPERATOR AND FIELD MAINTENANCE

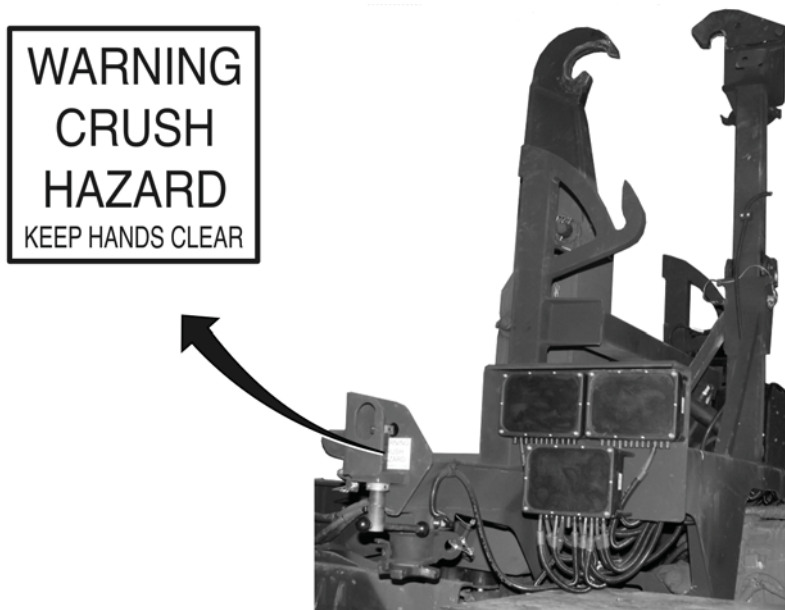
DECALS AND DATA PLATE GUIDE

DECALS



467-370

Figure 1. E-CHU Data Plate and Warning Decal.



467-374

Figure 2. Warning Decal.

DECALS – CONTINUED

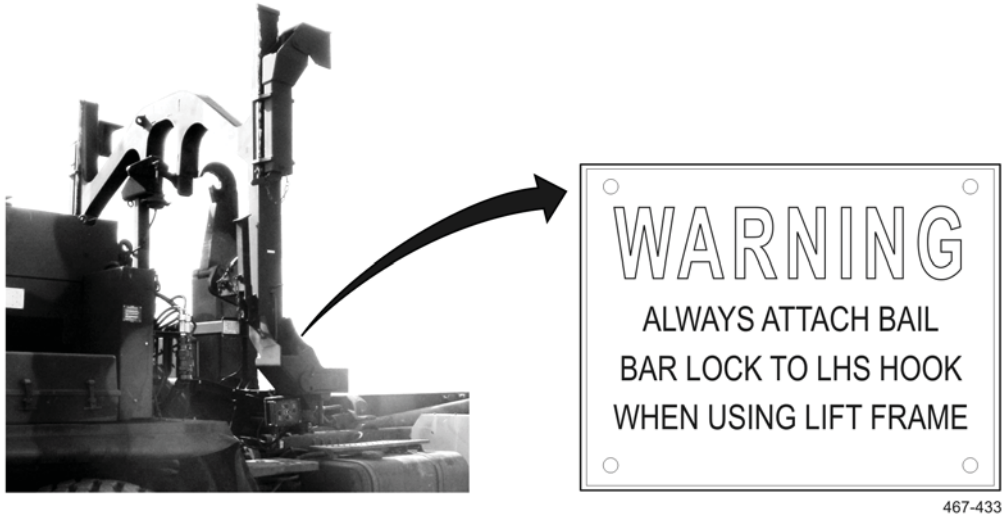


Figure 3. Bail Bar Lock Warning Decal.

END OF WORK PACKAGE

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CHAPTER 3
OPERATOR TROUBLESHOOTING PROCEDURES

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING INTRODUCTION

INTRODUCTION

1. This chapter provides information for identifying and correcting malfunctions which may develop while operating Enhanced Container Handling Unit (E-CHU).
2. The *Operator Troubleshooting Symptom Index* (WP 0013) lists common malfunctions which may occur and refers you to the proper page in WP 0014 for a troubleshooting procedure.
3. If you are unsure of the location or operation of an item mentioned in troubleshooting, refer to *Location and Description of Major Components* located in WP 0002 or *Description and Use of Operator Controls* (WP 0004).
4. Before performing troubleshooting, read and follow all safety instructions found in *General Information* (WP 0001), and in the *Warning Summary* at the front of this bulletin.
5. The *Operator Troubleshooting Symptom Index* (WP 0013) 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 listed corrective actions, notify your supervisor.
6. When troubleshooting a malfunction:
 - a. Locate the symptom or symptoms in WP 0013 that best describe the malfunction.
 - b. Turn to the page in WP 0014 where the troubleshooting procedures for the malfunction in question are described. Headings at the top of each page show how each troubleshooting procedure is organized: MALFUNCTION, TEST OR INSPECTION (in step number order), and CORRECTIVE ACTION.
 - c. 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.

EXPLANATION OF COLUMNS

The columns in the troubleshooting table in WP 0014 are defined as follows:

1. **MALFUNCTION.** A visual or operational indication that something is wrong with the equipment.
2. **TEST OR INSPECTION.** A procedure to isolate the problem in a system or component.
3. **CORRECTIVE ACTION.** A procedure to correct the problem.

END OF WORK PACKAGE

OPERATOR MAINTENANCE

OPERATOR TROUBLESHOOTING SYMPTOM INDEX

Malfunction/Symptom	Troubleshooting Procedure Page
CONTROL PANEL	
1. UP Button Inoperative. . . . .	.0014-1
2. RETRIEVE Button Inoperative. . . . .	.0014-2
3. DOWN Button Inoperative. . . . .	.0014-3
4. STOW Button Inoperative. . . . .	.0014-4
5. AUTO/OFF/MAN Toggle Switch Inoperative. . . . .	.0014-5
6. Joystick UNLOAD Position is Inoperative with Container Loaded. . . . .	.0014-6
7. Lift Frame Locking Plate Will Not Engage Into Container Lower Castings. . . . .	.0014-6
8. Rear Twistlocks Will Not Engage Into Container Lower Castings. . . . .	.0014-7
9. Transport Locks Will Not Engage Into Container Lower Castings. . . . .	.0014-7
10. Container Jerks While in Contact with Sliders During Loading or Unloading. . . . .	.0014-7
STOWAGE ASSEMBLY	
1. Stowage Latch Inoperative. . . . .	.0014-7
2. Stowage Cylinder Inoperative. . . . .	.0014-8
SLIDER BED ASSEMBLY	
1. Front Slider Bed Will Not Change Configuration. . . . .	.0014-8
2. Twistlock Will Not Change Configuration. . . . .	.0014-8
END OF WORK PACKAGE	

OPERATOR MAINTENANCE
OPERATOR TROUBLESHOOTING PROCEDURES

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
--------------------	---------------------------	--------------------------

CONTROL PANEL

1. UP BUTTON INOPERATIVE.

- | | |
|----------|---|
| Step 1. | Verify that hydraulic oil level is within normal range (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Add hydraulic oil to normal operating level (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). |
| Step 2. | Verify that engine is started and running at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). |
| Step 3. | Verify that MODE switch is set to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P). |
| Step 4. | Verify that stowage control panel AUTO/OFF/MAN switch is set to AUTO position (WP 0004).

Set stowage control panel AUTO/OFF/MAN switch to AUTO position (WP 0004). |
| Step 5. | HEMTT only: verify that PTO switch is set to ON position (TM 9-2320-326-14&P).

Set PTO switch to ON position (TM 9-2320-326-14&P). |
| Step 6. | Verify that transport locks are in stowed position (WP 0008) and sensor lights are on.

Stow transport locks (WP 0008). |
| Step 7. | Verify that rear twistlocks are in stowed position (WP 0008) and sensor lights are on.

Stow rear twistlocks (WP 0008). |
| Step 8. | Verify that lift frame is in stowed or retrieved position (WP 0008) and both guide sensor lights are on. |
| Step 9. | Inspect stowage assembly hydraulic hoses and fittings for leaks or damage (WP 0016).

If leaks are found, notify Field Maintenance. |
| Step 10. | If UP button is still inoperative, notify Field Maintenance. |

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

CONTROL PANEL – CONTINUED

2. RETRIEVE BUTTON INOPERATIVE.

- Step 1. Verify that hydraulic oil level is within normal range (PLS: 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Add hydraulic oil to normal operating level (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Verify that engine is started and running at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 3. Verify that MODE switch is set to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 4. Verify that stowage control panel AUTO/OFF/MAN switch is set to AUTO position (WP 0004).
 Set stowage control panel AUTO/OFF/MAN switch to AUTO position (WP 0004).
- Step 5. HEMTT only: verify that PTO switch is set to ON position (TM 9-2320-326-14&P).
 Set PTO switch to ON position (TM 9-2320-326-14&P).
- Step 6. Verify that transport locks are in stowed position (WP 0008).
 Stow transport locks (WP 0008).
- Step 7. Verify that rear twistlocks are in stowed position (WP 0008) and sensor lights are on.
 Stow rear twistlocks (WP 0008).
- Step 8. Verify that lift frame is in stowed position (WP 0008) and both guide sensor lights are on.
 If lift frame is stowed and guide lights are not on, notify Field Maintenance.
- Step 9. Verify that hook arm is in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Move hook arm to home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 10. Inspect stowage assembly hydraulic hoses and fitting for leaks or damage (WP 0016).
 If leaks are found, notify Field Maintenance.
- Step 11. Inspect stowage guide for debris restricting movement of guide.
 Remove debris from guide as access allows.
- Step 12. Stowage guide may require lubrication.
 Clean stowage guide grease fittings and apply grease to fittings (WP 0016).
- Step 13. If RETRIEVE button is still inoperative, notify Field Maintenance.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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CONTROL PANEL – CONTINUED

3. DOWN BUTTON INOPERATIVE.

- Step 1. Verify that hydraulic oil level is within normal range (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
Add hydraulic oil to normal operating level (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Verify that engine is started and running at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 3. Verify that MODE switch is set to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
Set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 4. Verify that stowage control panel AUTO/OFF/MAN switch is set to AUTO position (WP 0004).
Set stowage control panel AUTO/OFF/MAN switch to AUTO position (WP 0004).
- Step 5. HEMTT only: verify that PTO switch is set to ON position (TM 9-2320-326-14&P).
Set PTO switch to ON position (TM 9-2320-326-14&P).
- Step 6. Verify that transport locks are in stowed position (WP 0008) and sensor lights are on.
Stow transport locks (WP 0008).
- Step 7. Verify that rear twistlocks are in stowed position (WP 0008) and sensor lights are on.
Stow rear twistlocks (WP 0008).
- Step 8. Verify that lift frame is in stowed or retrieved position (WP 0008) and both guide sensor lights are on.
If leaks are found, notify Field Maintenance.
- Step 9. Inspect stowage assembly hydraulic hoses and fittings for leaks or damage (WP 0016).
If leaks are found, notify Field Maintenance.
- Step 10. If DOWN button is still inoperative, notify Field Maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

CONTROL PANEL – CONTINUED

4. STOW BUTTON INOPERATIVE.

- Step 1. Verify that hydraulic oil level is within normal range (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Add hydraulic oil to normal operating level (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Verify that engine is started and running at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 3. Verify that MODE switch is set to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 4. Verify that stowage control panel AUTO/OFF/MAN switch is set to AUTO position (WP 0004).
 Set stowage control panel AUTO/OFF/MAN switch to AUTO position (WP 0004).
- Step 5. HEMTT only: verify that PTO switch is set to ON position (TM 9-2320-326-14&P).
 Set PTO switch to ON position (TM 9-2320-326-14&P).
- Step 6. Verify that transport locks are in stowed position (WP 0008) and sensor lights are on.
 Stow transport locks (WP 0008).
- Step 7. Verify that rear twistlocks are in stowed position (WP 0008) and sensor lights are on.
 Stow rear twistlocks (WP 0008).
- Step 8. Verify that lift frame is in stowed or retrieved position (WP 0008) and both guide sensor lights are on.
- Step 9. Inspect stowage assembly hydraulic hoses and fittings for leaks or damage (WP 0016).
 If leaks are found, notify Field Maintenance.
- Step 10. Inspect stowage guide for debris restricting movement of guide.
 Remove debris from guide as access allows.
- Step 11. Stowage guide may require lubrication.
 Clean stowage guide grease fittings and apply grease to fittings (WP 0016).
- Step 12. If STOW button is still inoperative, notify Field Maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

CONTROL PANEL – CONTINUED

5. AUTO/OFF/MAN TOGGLE SWITCH INOPERATIVE.

- Step 1. Verify that hydraulic oil level is within normal range (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Add hydraulic oil to normal operating level (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Verify that engine is started and running at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 3. Verify that MODE switch is set to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 Set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 4. Verify that stowage control panel AUTO/OFF/MAN switch is set to AUTO position (WP 0004).
 Set stowage control panel AUTO/OFF/MAN switch to AUTO position (WP 0004).
- Step 5. HEMTT only: verify that PTO switch is set to ON position (TM 9-2320-326-14&P).
 Set PTO switch to ON position (TM 9-2320-326-14&P).
- Step 6. Verify that transport locks are in stowed position (WP 0008) and sensor lights are on.
 Stow transport locks (WP 0008).
- Step 7. Verify that rear twistlocks are in stowed position (WP 0008) and sensor lights are on.
 Stow rear twistlocks (WP 0008).
- Step 8. Verify that lift frame is in stowed or retrieved position (WP 0008) and both guide sensor lights are on.
- Step 9. Inspect stowage assembly hydraulic hoses and fittings for leaks or damage (WP 0016).
 If leaks are found, notify Field Maintenance.
- Step 10. If AUTO/OFF/MAN switch is still inoperative, notify Field Maintenance.
- a. Disconnect stowage angle sensor harness from stowage angle sensor (WP 0036).

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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CONTROL PANEL – CONTINUED

6. JOYSTICK UNLOAD POSITION IS INOPERATIVE WITH CONTAINER LOADED.

- Step 1. Verify that hydraulic oil level is within normal range (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
Add hydraulic oil to normal operating level (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Verify that engine is started and running at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
Start engine and run at idle speed (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 3. Verify that MODE switch is set to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
Set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 4. Verify that stowage control panel AUTO/OFF/MAN switch is set to AUTO position (WP 0004)
Set stowage control panel AUTO/OFF/MAN switch to AUTO position (WP 0004).
- Step 5. HEMTT only: verify that PTO switch is set to ON position (TM 9-2320-326-14&P).
Set PTO switch to ON position (TM 9-2320-326-14&P).
- Step 6. Verify that transport locks are in stowed position (WP 0008) and sensor lights are on.
Stow transport locks (WP 0008).
- Step 7. Verify that rear twistlocks are in stowed position (WP 0008) and sensor lights are on.
Stow rear twistlocks (WP 0008).
- Step 8. Verify that lift frame is in stowed or retrieved position (WP 0008) and both guide sensor lights are on.
- Step 9. If joystick UNLOAD position is still inoperative, notify Field Maintenance.

7. LIFT FRAME LOCKING PLATE WILL NOT ENGAGE INTO CONTAINER LOWER CASTINGS.

- Step 1. Inspect for mud and debris in and around both container lower castings.
Clean mud and debris from container lower castings.
- Step 2. Inspect for mud and debris in and around both lift frame lower locking plates.
Clean mud and debris from lift frame lower locking plates.
- Step 3. Inspect both locking plates for damage.
If one or both locking plates are damaged or bent, notify Field Maintenance.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
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CONTROL PANEL – CONTINUED

8. REAR TWISTLOCKS WILL NOT ENGAGE INTO CONTAINER LOWER CASTINGS.

- Step 1. Inspect for mud and debris in and around both container lower castings.
Clean mud and debris from container lower castings.
- Step 2. Check that container is fully stowed on vehicle.
Reload container on vehicle (WP 0008).
- Step 3. Inspect both twistlocks for damage.
If one or both twistlocks are damaged or bent, notify Field Maintenance.

9. TRANSPORT LOCKS WILL NOT ENGAGE INTO CONTAINER LOWER CASTINGS.

- Step 1. Inspect for mud and debris in and around both container lower castings.
Clean mud and debris from container lower castings.
- Step 2. Check that container is fully stowed on vehicle.
Reload container on vehicle (WP 0008).
- Step 3. Inspect both transport locks for damage.
If one or both transport locks are damaged or bent, notify Field Maintenance.

10. CONTAINER JERKS WHILE IN CONTACT WITH SLIDERS DURING LOADING OR UNLOADING.

- Step 1. Inspect sliders for debris restricting movement of containers.
Remove debris from sliders as access allows.
- Step 2. Sliders may require lubrication.
Apply grease to slider surface (WP 0016).

STOWAGE ASSEMBLY

1. STOWAGE LATCH INOPERATIVE.

- Step 1. Inspect for lubrication on face of stowage latch.
Apply grease to face of stowage latch (WP 0016).
- Step 2. Inspect pneumatic hose on stowage latch.
If pneumatic hose is damaged, notify Field Maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

STOWAGE ASSEMBLY – CONTINUED

2. STOWAGE CYLINDER INOPERATIVE.

- Step 1. Inspect stowage cylinder for debris restricting movement of cylinder.
 Remove debris from cylinder as access allows.
- Step 2. Stowage cylinder may require lubrication.
 Clean stowage cylinder grease fittings and apply grease to fittings (WP 0016).
- Step 3. Inspect hydraulic hoses on stowage cylinder.
 If hydraulic hoses are damaged, notify Field Maintenance.

SLIDER BED ASSEMBLY

1. FRONT SLIDER BED WILL NOT CHANGE CONFIGURATION.

- Step 1. Inspect for mud and debris in and around pivot point of front and rear slider bed.
 Clean mud and debris from pivot point.
- Step 2. Inspect for mud and debris in and around clamping device.
 Clean mud and debris from clamping device.
- Step 3. Inspect clamping device for damage or misaligned pins or springs.
 If clamping device is damaged, or pin or springs are misaligned, notify Field Maintenance.
- Step 4. Inspect for damage to pivot pin or damaged or bent front or rear slider bed housing.
 If pivot pin is damaged, or front or rear slider bed housing is damaged or bent, notify Field Maintenance.

2. TWISTLOCK WILL NOT CHANGE CONFIGURATION.

- Step 1. Inspect for mud and debris in and around pivot point of twistlock and rear slider bed.
 Clean mud and debris from pivot point.
- Step 2. Inspect for damage to pivot pin or damaged or bent twistlock housing.
 If pivot pin is damaged, or twistlock housing is damaged or bent, notify Field Maintenance.

END OF WORK PACKAGE

CHAPTER 4
OPERATOR MAINTENANCE INSTRUCTIONS

OPERATOR MAINTENANCE**OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS),
INCLUDING LUBRICATION INSTRUCTIONS INTRODUCTION**

GENERAL

1. To ensure Enhanced Container Handling Unit (E-CHU) is ready for operation at all times, it must be inspected on a regular basis so defects may be found and corrected before they result in injury, damage, or equipment failure.
2. Table 1 in WP 0016, *Operator PMCS, Including Lubrication Instructions*, contains systematic instructions on inspections, lubrications, services, tests, and corrections to be performed to keep your equipment in good operating condition and ready for its primary mission.
3. For information on Corrosion Prevention and Control (CPC), refer to WP 0001.

EXPLANATION OF TABLE ENTRIES

1. **Item No. Column.** Numbers in this column are for reference. When completing DA Form 2404 or DA Form 5988-E, *Equipment Inspection and Maintenance Worksheet*, include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must perform checks and services for the interval listed.
2. **Interval Column.** This column tells you when you must perform the procedure in the Procedure column.

NOTE

- If both calendar and hourly intervals are indicated, perform procedure at whichever interval comes first.
 - If you are operating the E-CHU for the first time, perform your *Weekly* and *Monthly* PMCS the first time you do your *Before* PMCS.
- a. *Before* procedures must be done immediately before you operate the E-CHU.
 - b. *During* procedures must be done while you are operating the E-CHU.
 - c. *After* procedures must be done immediately after you have operated the E-CHU.
 - d. *Weekly* procedures must be done once each week. If the E-CHU has not been operated in a week, also perform *Before* PMCS at the same time.
 - e. *Monthly* procedures must be done once each month.
 - f. *Hourly* procedures must be done at hour interval indicated.
3. **Location, Item to Check/Service Column.** This column provides the location and item to be checked or serviced.

NOTE

The WARNINGS and CAUTIONS appearing in your PMCS table should always be observed. WARNINGS and CAUTIONS appear before applicable procedures. You must observe these WARNINGS to prevent serious injury to yourself and others, and CAUTIONS to prevent your equipment from being damaged.

4. **Procedure Column.** This column gives the procedure you must perform to check or service the item listed in the Item to Check/Service column, to know if the equipment is ready or available for its intended mission. You must perform the procedure at the time stated in the Interval column.
5. **Not Fully Mission Capable If: Column.** Information in this column tells you what faults will prevent your equipment from being capable of performing its primary mission. If you perform check/service procedures that show faults listed in this column, the equipment is not mission-capable. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

GENERAL PMCS PROCEDURES

1. If time and mission allows, always perform PMCS in the same order so it gets to be a habit. Once you have had some practice, you will spot anything wrong in a hurry. If the E-CHU does not perform as required, refer to *Operator Troubleshooting Symptom Index* (WP 0013) for an appropriate troubleshooting procedure.
2. If anything looks wrong and you cannot fix it, write it on your DA Form 2404 or DA Form 5988-E. If you find something seriously wrong, IMMEDIATELY report it to your supervisor.
3. Before performing preventive maintenance, read all the checks required for the applicable interval and prepare all that is needed to make all the checks. You will always need a Rag, Wiping (WP 0060, Item 10) or two.

WARNING



Solvent cleaning compound MIL-PRF-680 Type III is an environmentally compliant and low-toxicity material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition. Failure to follow this warning may result in injury or death to personnel.

- a. **Keep It Clean.** Dirt, grease, oil, and debris get in the way and may cover up a serious problem. Clean as you work and as needed. Use Cleaning Compound, Solvent, Type III (WP 0060, Item 4) on all metal surfaces. Use Detergent, General Purpose, Liquid (WP 0060, Item 6) and water when you clean rubber, plastic, and painted surfaces.

WARNING



When servicing this equipment, performing maintenance, or disposing of materials such as lubricating oil, fuel, brake fluid, battery acids, batteries, and CARC paint, consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance. Failure to follow this warning may result in injury or death to personnel.

- b. **Hazardous Waste Disposal.** Ensure all spills are cleaned up IAW spill containment plan and disposed of IAW using unit's Standard Operating Procedure (SOP).
- c. **Rust and Corrosion.** Check metal parts for rust and corrosion. If any bare metal or corrosion exists, clean and apply a light coat of Oil, Lubricating, OE/HDO-10 (WP 0060, Item 9).
- d. **Bolts, Nuts, and Screws.** Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition. You cannot try them all with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one is loose, tighten it.
- e. **Welds.** Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to your supervisor.
- f. **Electrical Wires, Harnesses, and Connectors.** Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors. Ensure wires are in good condition. Notify Field Maintenance if wires are disconnected.
- g. **Hydraulic Lines, Hoses, and Fittings.** Look for wear, damage, and signs of leaks. Check for loose clamps and fittings. Wet spots indicate leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, correct problem.

GENERAL PMCS PROCEDURES – CONTINUED

- h. **Fluid Leakage.** It is necessary for you to know how fluid leakage affects the status of your equipment. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your equipment. Learn and be familiar with them, and remember: when in doubt, notify your supervisor.

CAUTION

- Equipment operation is allowable with minor leakage (Class I or II), except for fuel and brake fluid where no leaks are allowable. Of course, consideration must be given to the fluid capacity of the item or system being checked. When in doubt, ask your supervisor.
- When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS.
- Class III leaks should be reported immediately to your supervisor.

Leakage Definitions for Operator PMCS

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 enough to cause drops to drip from item being checked.
Class III	Leakage of fluid great enough to form drops that fall from the item being checked.

GENERAL LUBRICATION PROCEDURES**NOTE**

- Lubrication instructions contained in Operator PMCS are MANDATORY.
 - Overall views of lubrication points are located at the end of this work package.
 - Localized lubrication views are located in the PMCS table in WP 0016.
 - Dashed leader lines used in illustrations of lubrication points indicate that lubrication is required on both sides of the machine.
1. Recommended intervals are based on normal conditions of operation, temperature, and humidity. When operating under extreme conditions, such as high or low temperatures or exposure to sand or dust, lubricants should always be changed more frequently. Lubricants that have become contaminated will be changed regardless of interval. When in doubt, notify your supervisor.

WARNING

When servicing this equipment, performing maintenance, or disposing of materials such as lubricating oil, fuel, brake fluid, battery acids, batteries, and CARC paint, consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance. Failure to follow this warning may result in injury or death to personnel.

2. Ensure all fluids drained as a result of lubrication or maintenance are collected in a suitable container and disposed of IAW using unit's SOP. Clean up any spills immediately IAW spill containment plan.
3. 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.

GENERAL LUBRICATION PROCEDURES – CONTINUED

4. Maintain a good record of all lubrication performed and report any problem noted during lubrication. Refer to DA Form 2404 or DA Form 5988-E (*Equipment Inspection and Maintenance Worksheet*) to record and report any findings.

WARNING

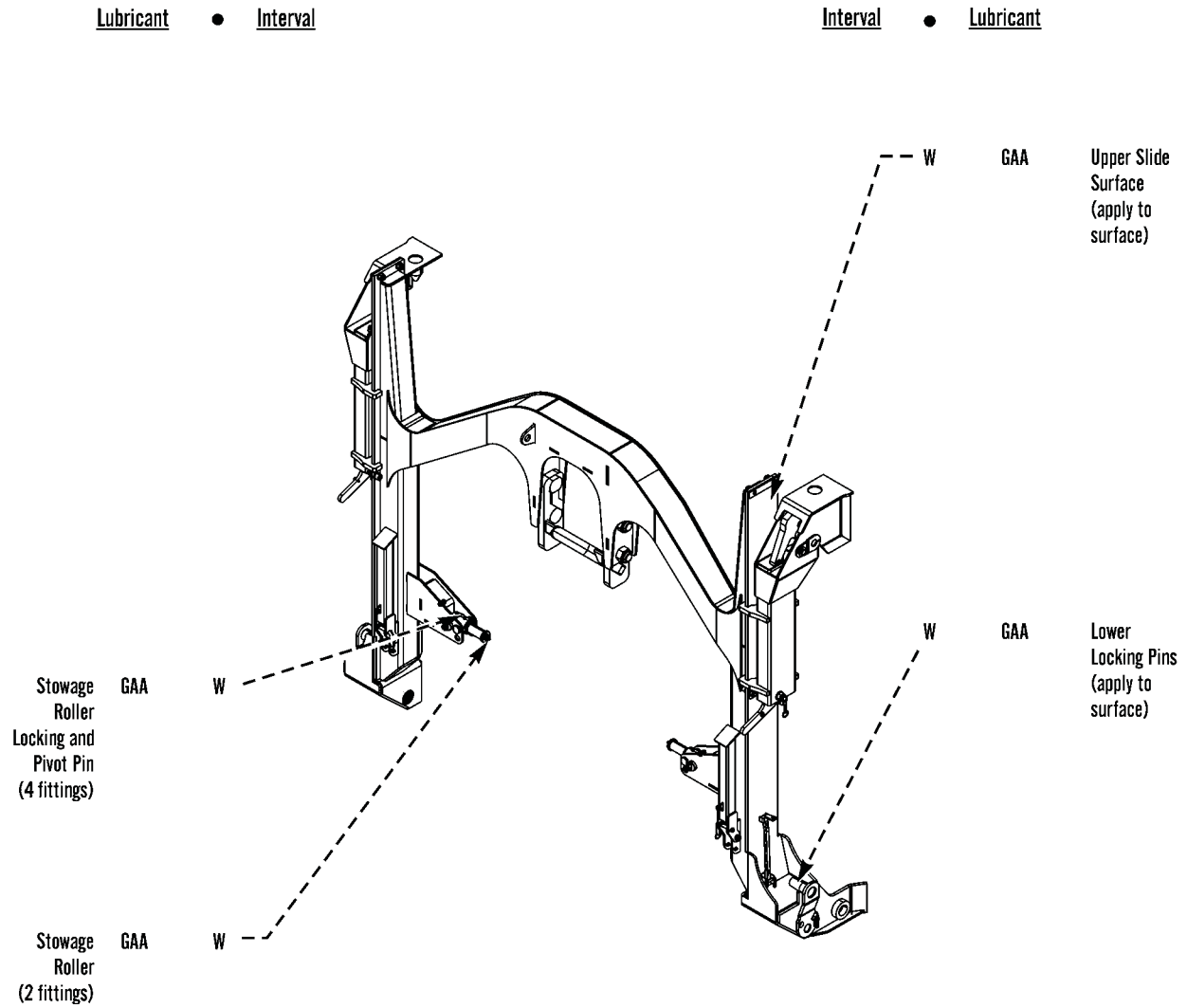
Solvent cleaning compound MIL-PRF-680 Type III is an environmentally compliant and low-toxicity material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition. Failure to follow this warning may result in injury or death to personnel.

5. Keep all external parts of equipment not requiring lubrication free of lubricants. Before lubrication, wipe lubrication fittings with a Rag, Wiping (WP 0060, Item 10) and Cleaning Compound, Solvent, Type III (WP 0060, Item 4). After lubrication, wipe off excess oil or grease to prevent accumulation of foreign matter.
6. Refer to FM 9-207, *Operation and Maintenance of Ordnance Materiel in Cold Weather* for lubrication instructions in cold weather.

Table 1. Lubrication Requirements.

LOCATION	TEMPERATURE RANGE	LUBRICANT MIL SYMBOL (NATO CODE) SPECIFICATION	CAPACITY	INTERVAL	MAN-HOUR
External Lubrication Points	-4°F to 104°F (-20°C to 40°C)	GAA NLGI Grade 2 (MIL-PRF-10924) Grease, Multipurpose, High Temperature NLG12	As Required	Before	0.5
Transport Lock Adjustment Strut		Graphite, Dry (MIL-G-155))	As Required	Weekly	0.2

GENERAL LUBRICATION PROCEDURES – CONTINUED



467-019

Figure 1. Operator PMCS - Front Lifting Adapter Lubrication.

GENERAL LUBRICATION PROCEDURES – CONTINUED

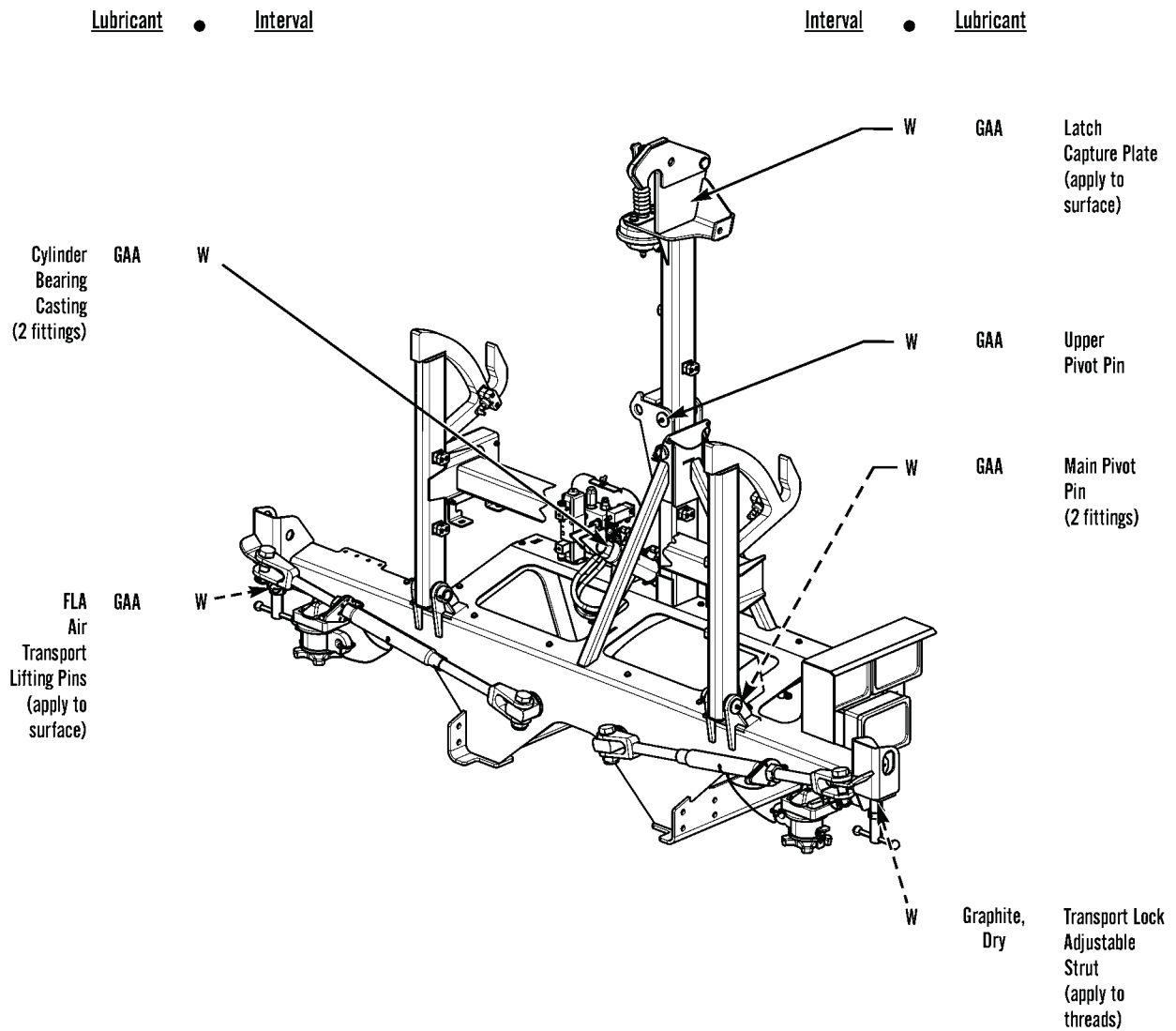


Figure 2. Operator PMCS - Stowage Assembly Lubrication.

467-020

GENERAL LUBRICATION PROCEDURES – CONTINUED

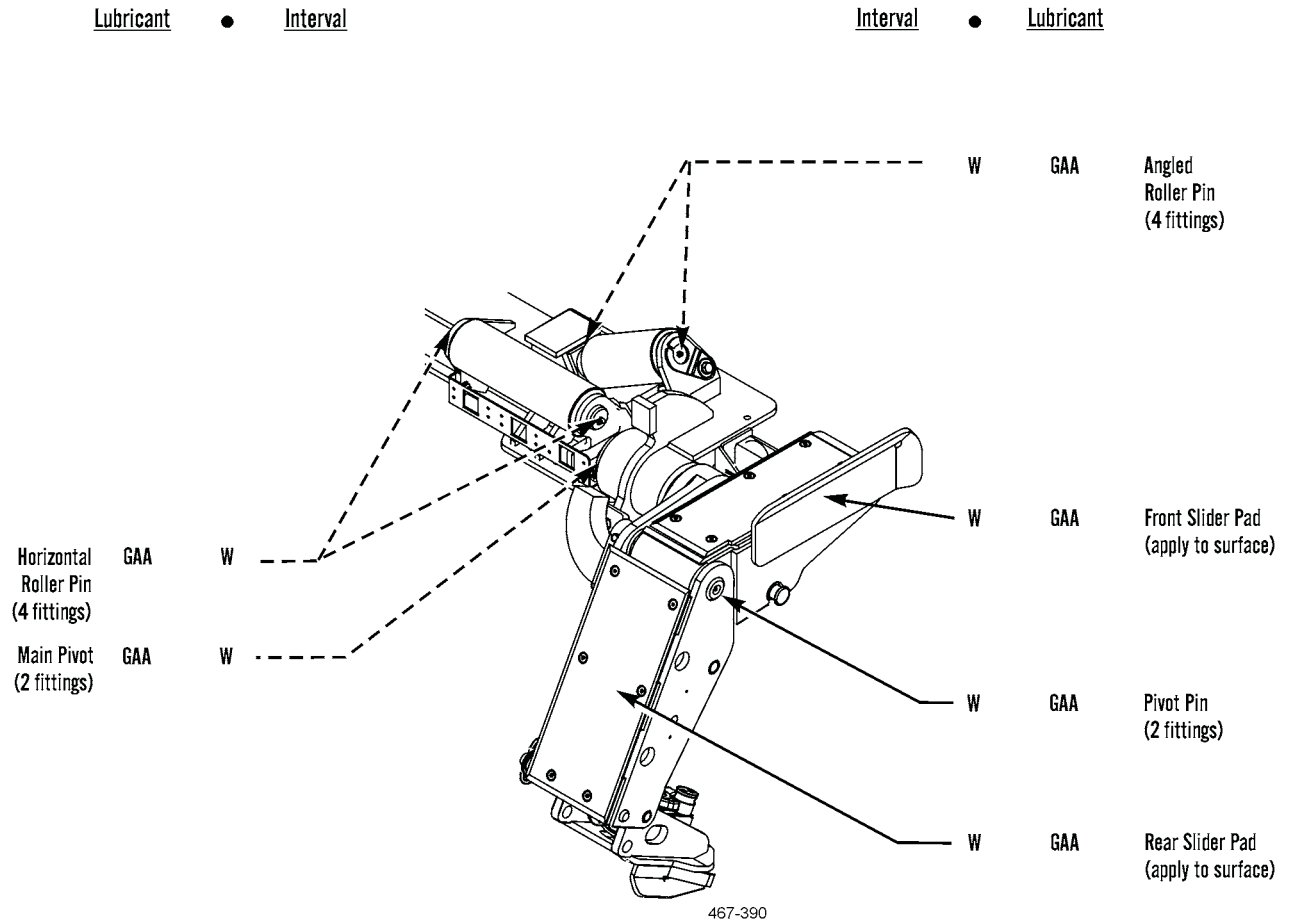


Figure 3. Operator PMCS - Slider Assembly Lubrication.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE**OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES
(PMCS), INCLUDING LUBRICATION INSTRUCTIONS**

INITIAL SETUP**Tools and Special Tools**

Lubricating Gun, Hand

Materials/PartsCleaning Compound, Solvent, Type III (WP
0060, Item 4)Detergent, General Purpose, Liquid (WP
0060, Item 6)Grease, Automotive and Artillery, GAA (WP
0060, Item 8)**Materials/Parts - Continued**Oil, Lubricating, OE/HDO-10 (WP 0060, Item
9)

Rag, Wiping (WP 0060, Item 10)

References

WP 0005

WP 0006

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
NOTE				
<ul style="list-style-type: none"> • Review all WARNINGS, CAUTIONS, and NOTES before performing PMCS on the E-CHU. • If you are operating E-CHU for the first time, perform your <i>Weekly</i> and <i>Monthly</i> PMCS the first time you do your <i>Before</i> PMCS. • If performing <i>Weekly</i> PMCS and E-CHU has not been operated in a week, perform <i>Before</i> PMCS at the same time. • If performing <i>Monthly</i> PMCS and E-CHU has not been operated in a month, perform <i>After</i> PMCS at the same time. • Unless otherwise indicated, perform preventive maintenance and lubrication with vehicle, parked on level ground, engine shut down, and parking brake applied. • Begin walkaround inspection at left side of stowage assembly and proceed in a counterclockwise direction. 				
1	Before	<p style="text-align: center;">STOWAGE ASSEMBLY LEFT SIDE</p> <hr/> <p>Overall View</p>	<p>a. Check for hydraulic fluid under stowage assembly. If hydraulic fluid is found, identify source of leak.</p> <p>b. Check stowage assembly for signs of tampering, damage, and missing parts.</p> <p>c. Remove any dirt or debris in and around stowage assembly.</p>	<p>Any Class III hydraulic fluid leaks are visible.</p> <p>Stowage assembly inoperative due to tampering, damage or missing parts.</p>

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

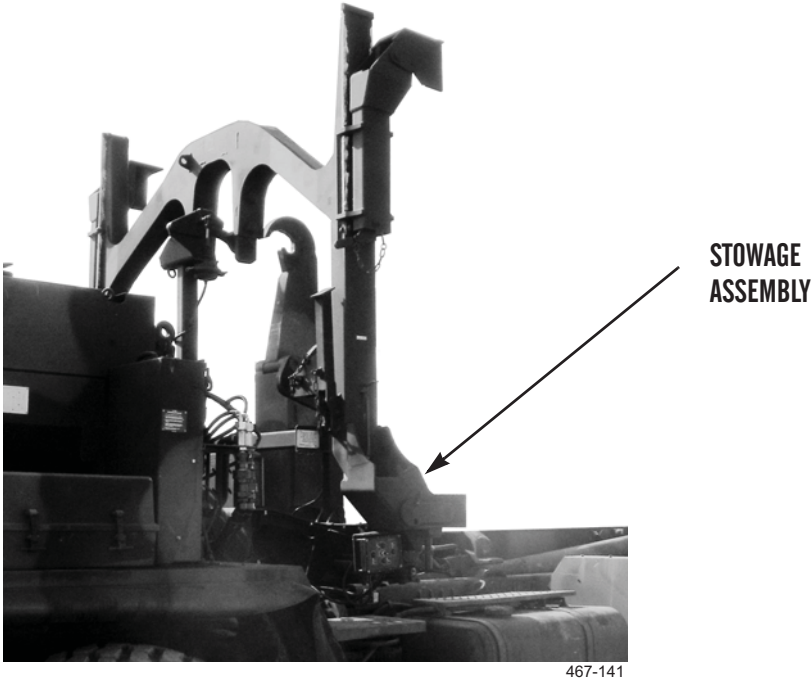
ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
1 (Cont)	Before	Overall View		
 <p>467-141</p>				
<p>Figure 1. Left-Side Overall View.</p>				

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
2	Before	Transport Lock	Verify proper operation of transport lock (WP 0005).	Transport lock does not operate correctly.
3	Before	Transport Lock Adjustable Strut	a. Verify proper operation of transport lock adjustable strut. b. Check transport lock adjustable strut fasteners and mounting hardware for excessive damage or wear, or missing or damaged hardware.	Transport lock adjustable strut does not operate correctly. Transport lock adjustable strut is excessively damaged or worn, or fasteners or mounting hardware is missing or damaged.
4	Before	Air Transport Lifting Pin	Verify proper operation of air transport lifting pin. Notify Field Maintenance if air transport lifting pin does not operate correctly.	

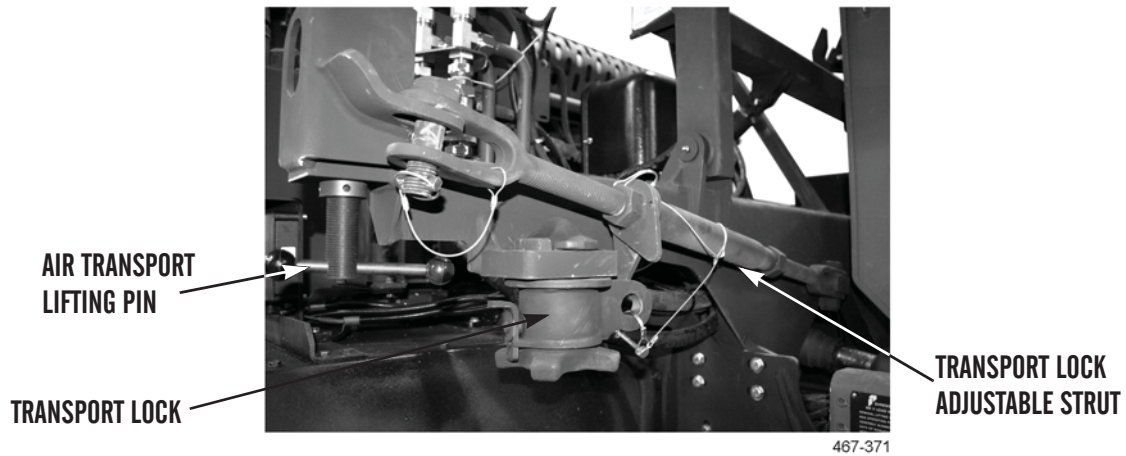


Figure 2. Left-Side Transport Lock.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
5	Before	<p>SLIDER ASSEMBLY LEFT SIDE</p> <p>Front and Rear Slider Beds</p>	<p>a. Check front and rear slider beds for excessive damage/wear, cracks, and loose or missing hardware.</p> <p>b. Move front slider to flatrack and back to container configuration to verify proper operation (WP 0006).</p>	<p>Front or rear slider bed is excessively damaged/worn, cracked, or hardware is loose or missing.</p> <p>Front slider bed does not change configuration properly.</p>

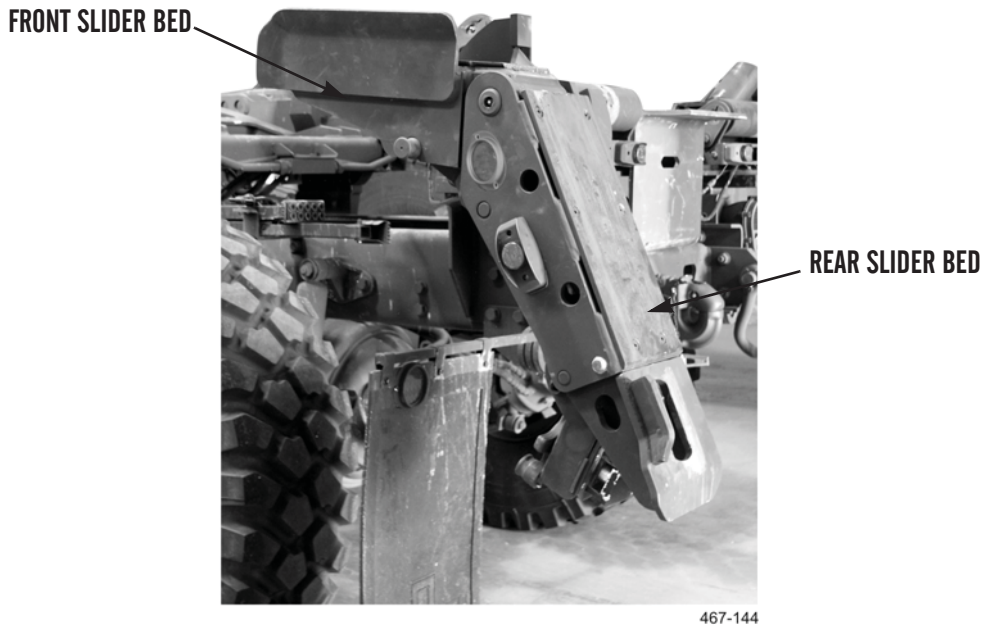


Figure 3. Left Front and Rear Slider Beds.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
6	Before	Twistlock Assembly	a. Move twistlock to container configuration and back to flatrack configuration to verify proper operation (WP 0006). b. Move twistlock housing to container and back to flatrack configuration to verify proper operation (WP 0006). c. Verify proper operation of handwheel locking pin and handwheel (WP 0006).	Twistlock does not change configuration properly. Twistlock housing does not change configuration properly. Handwheel or handwheel locking pin do not operate properly.

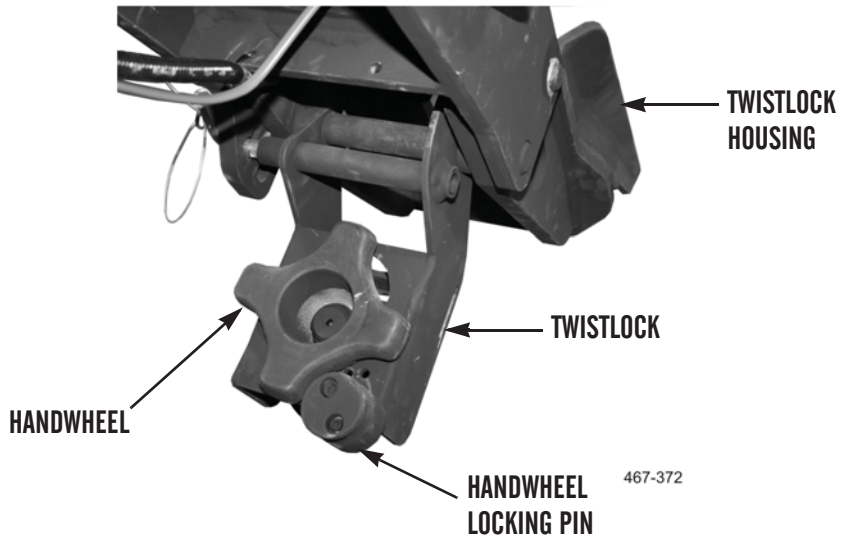
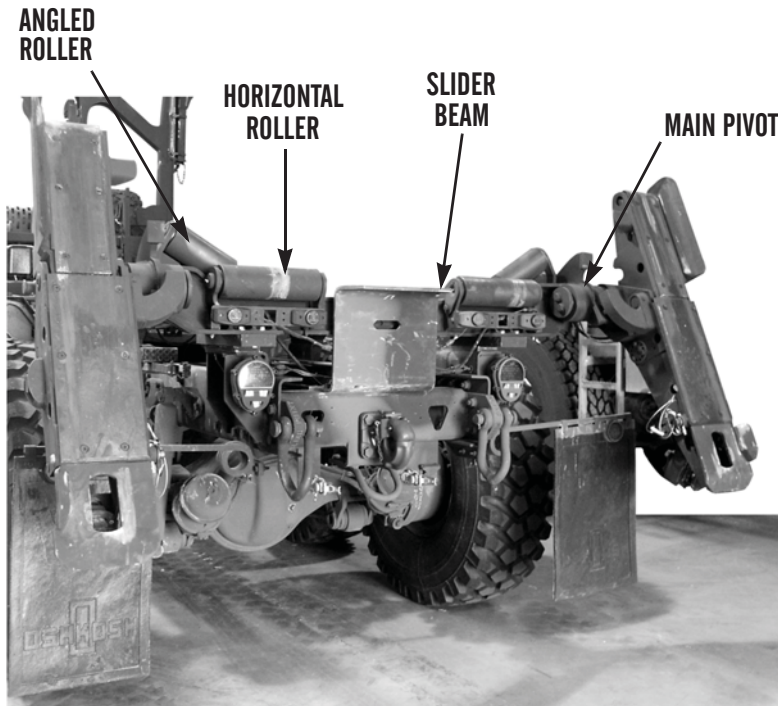


Figure 4. Left Twistlock Assembly.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
		SLIDER ASSEMBLY REAR		
7	Before	Slider Beam	Check slider beam for excessive damage/wear, cracks, and loose or missing hardware.	Slider beam is excessively damaged/worn, cracked, or hardware is loose or missing. Main pivot is excessively damaged/worn, cracked, or hardware is loose or missing.
8	Before	Horizontal and Angled Rollers	Rotate horizontal and angled rollers to verify that rollers rotate freely. Notify Field Maintenance if one or more rollers do not rotate freely.	
9	Before	Main Pivot	Check main pivot for excessive damage/wear, cracks, and loose or missing hardware	

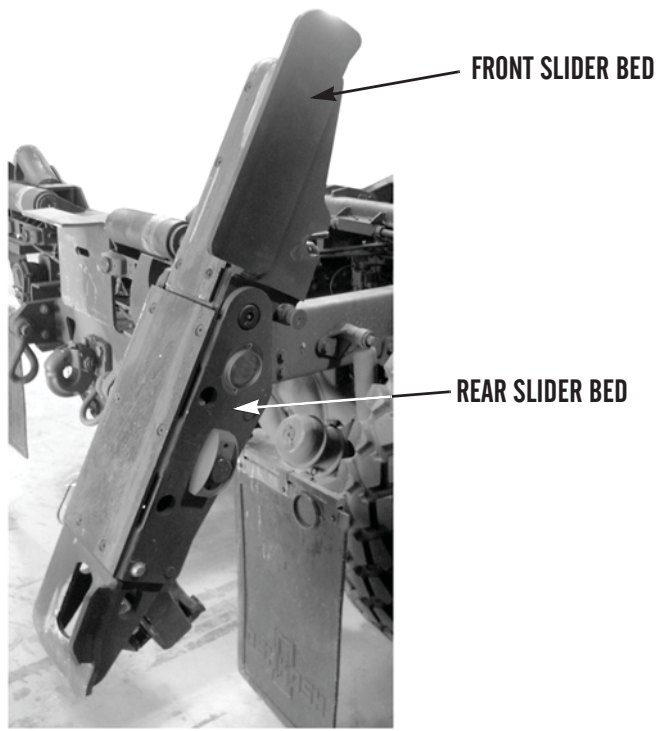


467-146

Figure 5. Slider Beam.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
10	Before	<p>SLIDER ASSEMBLY RIGHT SIDE</p> <p>Front and Rear Slider Beds</p>	<p>a. Check front and rear slider beds for excessive damage/wear, cracks, and loose or missing hardware.</p> <p>b. Move front slider to flatrack and back to container configuration to verify proper operation (WP 0006).</p>	<p>Front or rear slider bed is excessively damaged/worn, cracked, or hardware is loose or missing.</p> <p>Front slider bed does not change configuration properly.</p>

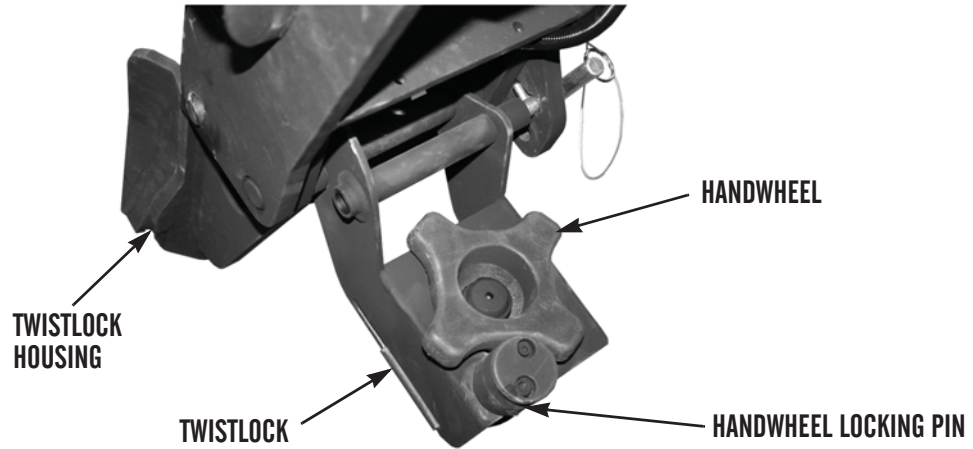


467-147

Figure 6. Right Front and Rear Slider Beds.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
11	Before	Twistlock Assembly	<p>a. Move twistlock to container configuration and back to flatrack configuration to verify proper operation (WP 0006).</p> <p>b. Move twistlock housing to container and back to flatrack configuration to verify proper operation (WP 0006).</p> <p>c. Verify proper operation of handwheel locking pin and handwheel (WP 0006).</p>	<p>Twistlock does not change configuration properly.</p> <p>Twistlock housing does not change configuration properly.</p> <p>Handwheel or handwheel locking pin do not operate properly.</p>



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Figure 7. Right Twistlock Assembly.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
		STOWAGE ASSEMBLY RIGHT SIDE		
12	Before	Air Transport Lifting Pin	Verify proper operation of air transport lifting pin. Notify Field Maintenance if air transport lifting pin does not operate correctly.	
13	Before	Transport Lock	Verify proper operation of transport lock (WP 0006).	Transport lock does not operate correctly.
14	Before	Transport Lock Adjustable Strut	a. Verify proper operation of transport lock adjustable strut. b. Check transport lock adjustable strut fasteners and mounting hardware for excessive damage or wear, or missing or damaged hardware.	Transport lock adjustable strut does not operate correctly. Transport lock adjustable strut is excessively damaged or worn, or fasteners or mounting hardware is missing or damaged.

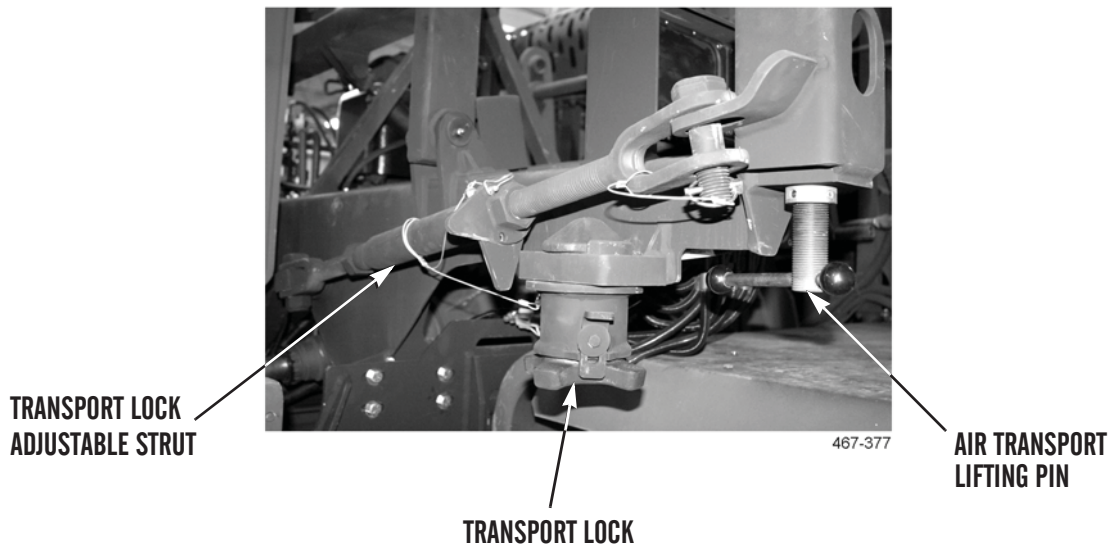


Figure 8. Right-Side Transport Lock.

15	Before	Overall View	a. Check for hydraulic fluid under stowage assembly. If hydraulic fluid is found, identify source of leak. b. Check stowage assembly for signs of tampering, damage, and missing parts.	Any Class III hydraulic fluid leaks are visible.
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Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

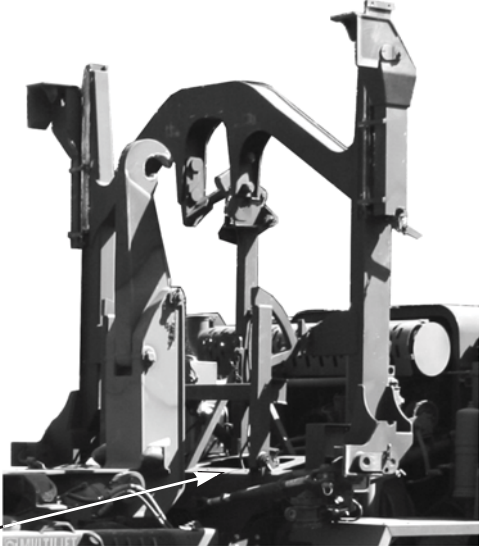
ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
15 (Cont)	Before	Overall View	c. Remove any dirt or debris in and around stowage assembly.	
				
<p>STOWAGE ASSEMBLY</p> <p>Figure 9. Right-Side Overall View.</p>				

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
		LIFT FRAME	NOTE	
16	Before	Lift Frame	<p>If time and mission allows, fully deploy lift frame and perform checks as instructed.</p> <p>a. Check right and left lift frame stands for excessive damage or wear, or missing or damaged attaching/locking hardware.</p> <p>b. Unstow lift frame to verify proper operation (WP 0007).</p> <p>c. Fully deploy E-CHU placing lift frame on level ground (WP 0007).</p>	<p>Frame stand is excessively damaged or worn, or attaching/locking hardware is missing or damaged.</p> <p>Front lift frame cannot be properly unstowed.</p> <p>Front lift frame cannot be fully deployed.</p>
17	Before	Lift Frame On Level Ground	<p>a. Verify proper operation of upper locks (WP 0007).</p> <p>b. Check bail bar for excessive damage or wear, or loose or missing hardware.</p> <p>c. Verify proper operation of left and right lower guide locking pins (WP 0007).</p> <p>d. Check upper and lower stop plates for excessive damage or loose or missing hardware.</p> <p>e. Verify proper operation of left and right roller pins (WP 0011).</p> <p>f. Verify that crowbar is in place. Notify Field Maintenance if crowbar is missing.</p>	<p>Upper locks do not operate properly.</p> <p>Bail bar is excessively damaged or worn, or hardware is loose or missing.</p> <p>Lower guide locking plates do not operate properly.</p> <p>One or more stop plates are excessively damaged or worn, or hardware is loose or missing</p> <p>Roller pins do not operate properly.</p>

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
17 (Cont)	Before	Lift Frame On Level Ground		

The diagram shows a symmetrical metal lift frame assembly. At the top, two vertical posts are labeled 'UPPER STOP PLATE'. Below these, the main horizontal structure is labeled 'LIFT FRAME'. On the left side, there is an 'UPPER LOCK' and a 'LOWER STOP PLATE'. At the bottom left, a 'LOWER GUIDE LOCKING PLATE' is shown. In the center, a curved 'BAIL BAR' is attached to the lift frame. On the right side, there is another 'UPPER STOP PLATE' and a 'LOWER STOP PLATE'. Below the right side, a 'CROW BAR (HIDDEN)' is indicated. At the very bottom, two 'FRAME STANDS' are shown, which are supported by 'ROLLER PINS'. A small number '467-143' is located near the roller pins.

Figure 10. Lift Frame.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
		STOWAGE ASSEMBLY LEFT SIDE		
18	Monthly	Main Pivot Pin	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fitting on main pivot pin.	
19	Monthly	Stowage Latch Capture Plate	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to surface of stowage latch capture plate.	
20	Monthly	Air Transport Lifting Pin	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to surface of air transport lifting pin.	

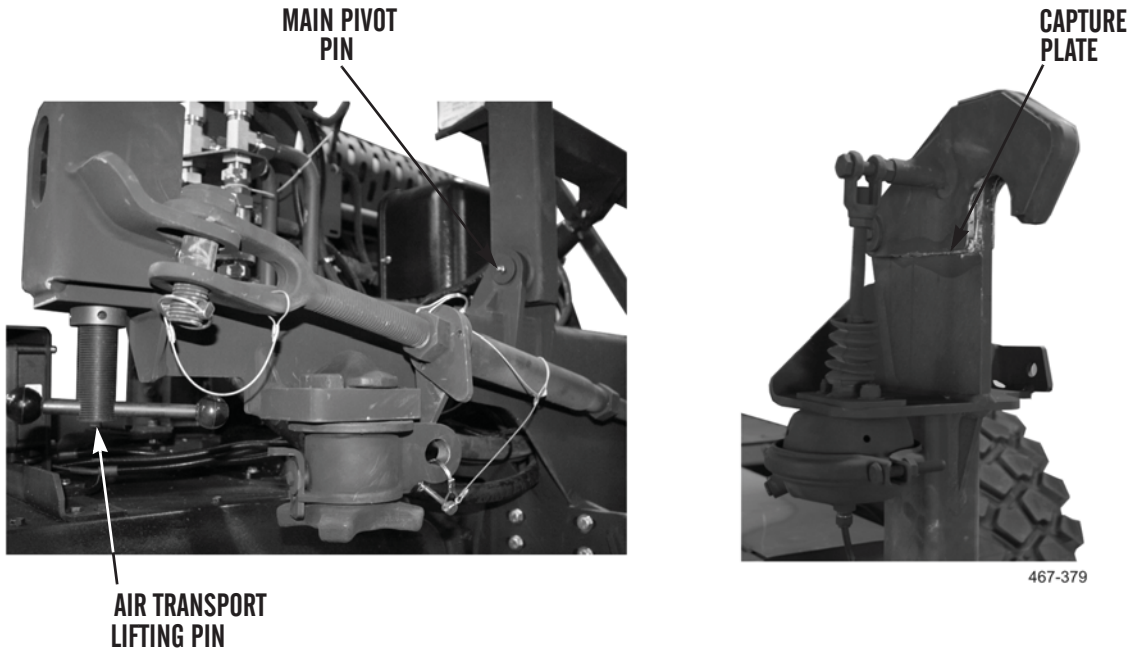
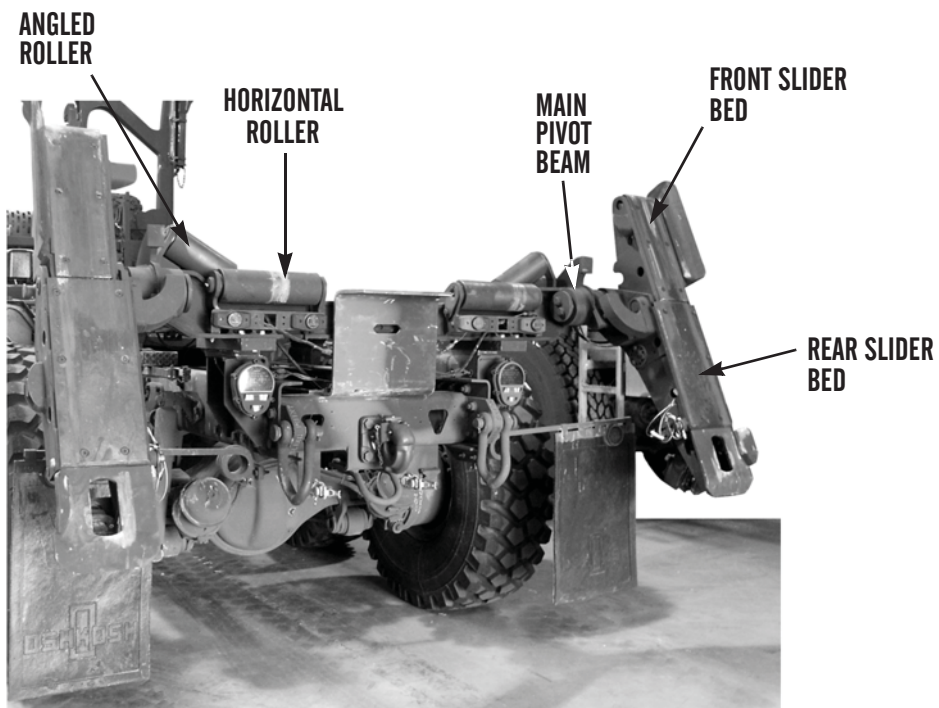


Figure 11. Left-Side Grease Fittings.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
21	Monthly	ROLLER ASSEMBLY	a. Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to pads on front and rear slider beds. b. Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fitting on main pivot pin.	
		Front and Rear Slider Beds - Left Side		
		22			Monthly	Roller Beam	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fittings on horizontal and angled rollers.
23	Monthly	Front and Rear Slider Beds - Right Side	a. Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to pads on front and rear slider beds. b. Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fitting on main pivot pin.	



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Figure 12. Rear Slider Assembly Lubrication.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
		STOWAGE ASSEMBLY RIGHT SIDE		
24	Monthly	Main Pivot Pin	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fitting on main pivot pin.	
25	Monthly	Cylinder Bearing	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fitting on cylinder bearing.	
26	Monthly	Air Transport Lifting Pin	Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to surface of air transport lifting pin.	

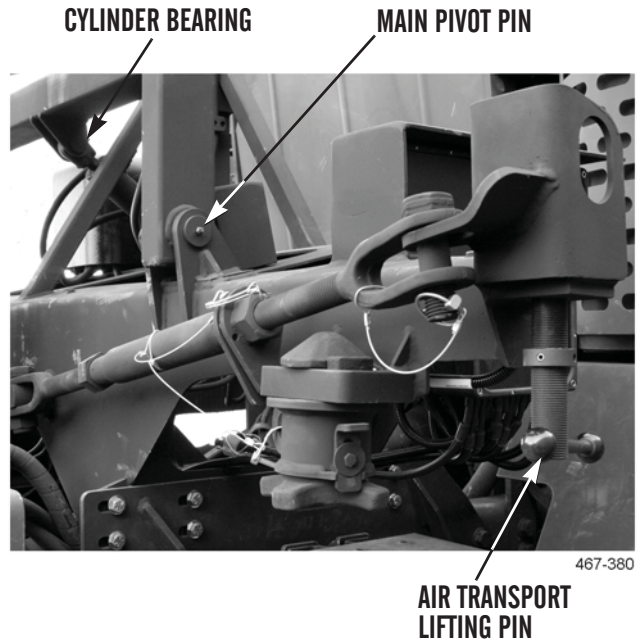


Figure 13. Right-Side Stowage Lubrication.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS), Including Lubrication Instructions for the E-CHU - Continued.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/SERVICE		
27	Monthly	LIFT FRAME	<p style="text-align: center;">NOTE</p> <p>If time and mission allows, fully deploy lift frame and perform checks as instructed.</p> <p>a. Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to fittings on:</p> <ol style="list-style-type: none"> 1. Stowage roller (LH and RH). 2. Stowage roller locking and pivot pin (LH and RH). <p>b. Apply Grease, Automotive and Artillery, GAA (WP 0060, Item 8) to surface of:</p> <ol style="list-style-type: none"> 1. Upper lock slide area. 2. Container locking pin. 	
		Lift Frame		

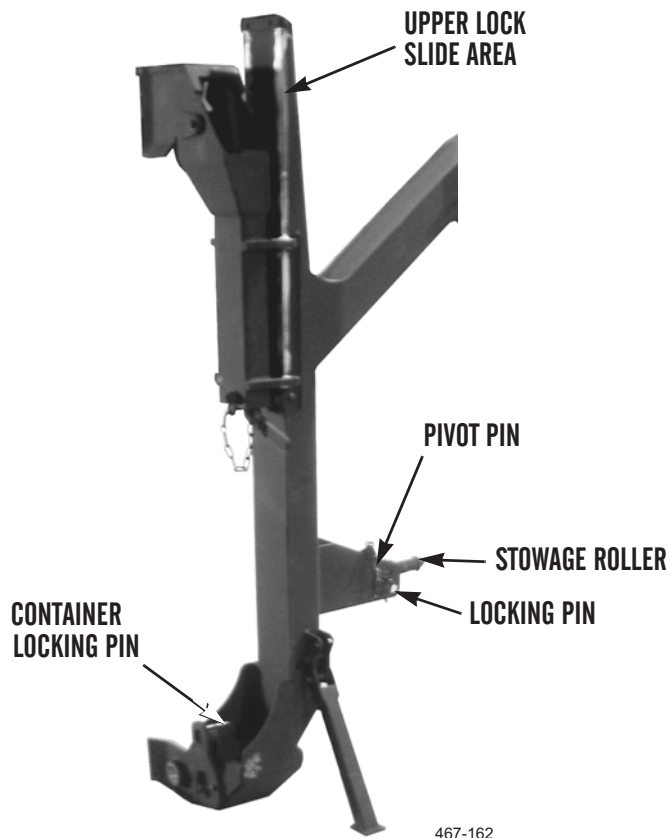


Figure 14. Lift Frame Lubrication.

END OF TASK
 END OF WORK PACKAGE

CHAPTER 5
FIELD MAINTENANCE TROUBLESHOOTING PROCEDURES

FIELD MAINTENANCE**FIELD MAINTENANCE TROUBLESHOOTING INTRODUCTION**

INTRODUCTION

1. This chapter provides Field Maintenance Troubleshooting Procedures for identifying and correcting electrical, hydraulic and pneumatic malfunctions which may develop while operating the Enhanced Container Handling Unit (E-CHU).
2. Before performing troubleshooting at the Field Maintenance level, ensure all applicable Operator Troubleshooting Procedures have been performed (WP 0014).
3. The *Field Maintenance Troubleshooting Symptom Index* (WP 0018) lists common malfunctions which may occur and refers you to the proper page in WP 0019 for a troubleshooting procedure.
4. If you are unsure of the location or operation of an item mentioned in troubleshooting, refer to *Location and Description of Major Components* (WP 0002) or *Description and Use of Operator Controls* (WP 0004).
5. Before performing troubleshooting, read and follow all safety instructions found in the *Warning Summary* at the front of this manual.
6. The *Field Maintenance Troubleshooting Symptom Index* (WP 0018) 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 listed corrective actions, notify your supervisor.
7. When troubleshooting a malfunction:
 - a. Locate the symptom or symptoms in WP 0018 that best describe the malfunction.
 - b. Turn to the page in WP 0019 where the troubleshooting procedures for the malfunction in question are described. Headings at the top of each page show how each troubleshooting procedure is organized: MALFUNCTION, TEST OR INSPECTION (in step number order), and CORRECTIVE ACTION.
 - c. 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.

TROUBLESHOOTING INFORMATION

1. To view error codes from E-CHU system, remove cover from Space 4000 ST box and start vehicle.
2. Two numbers may alternately flash when errors are present. The first number indicates the quantity of errors detected, and the second number is the lowest numeric code detected. After one minute, the quantity of errors may decrease by one, as error 24 (Real Time Lost) will drop off the current error listing. Error code 24 indicates that temporary settings were lost while the battery disconnect switch was off, and is consistent with normal operation,
3. Each sensor contains LEDs that will illuminate when metal sensor plate is detected. Use these LEDs when adjusting and diagnosing sensors.
4. Middle frame and hook arm sensors are utilized by the system to control unload and load angles. Use manual mode operation when fault is present in these sensors.
5. Twistlock and transport lock sensors are utilized by the system to confirm twistlocks are in stowed position while attempting to load or unload a container. System will not operate if twistlocks and transport locks are not properly stowed.
6. 15 amp fuse is located behind cover by relay box. 10 amp fuse is located behind cover of space 4000 ST box.
7. Stowage angle sensor is utilized by system to control stowage guide angle during retrieve and stowing operations.
8. T-fittings installed at top of quick disconnect fittings provide hydraulic fluid to the stowage manifold to retrieve and stow the lift frame.

TROUBLESHOOTING INFORMATION – CONTINUED

9. A press lock fitting installed at the air tank provides air to the stowage latch actuator to lock and release the lift frame from the stowage assembly.

EXPLANATION OF COLUMNS

The columns in the troubleshooting table in WP 0019 are defined as follows:

1. **MALFUNCTION.** A visual or operational indication that something is wrong with the equipment.
2. **TEST OR INSPECTION.** A procedure to isolate the problem in a system or component.
3. **CORRECTIVE ACTION.** A procedure to correct the problem.

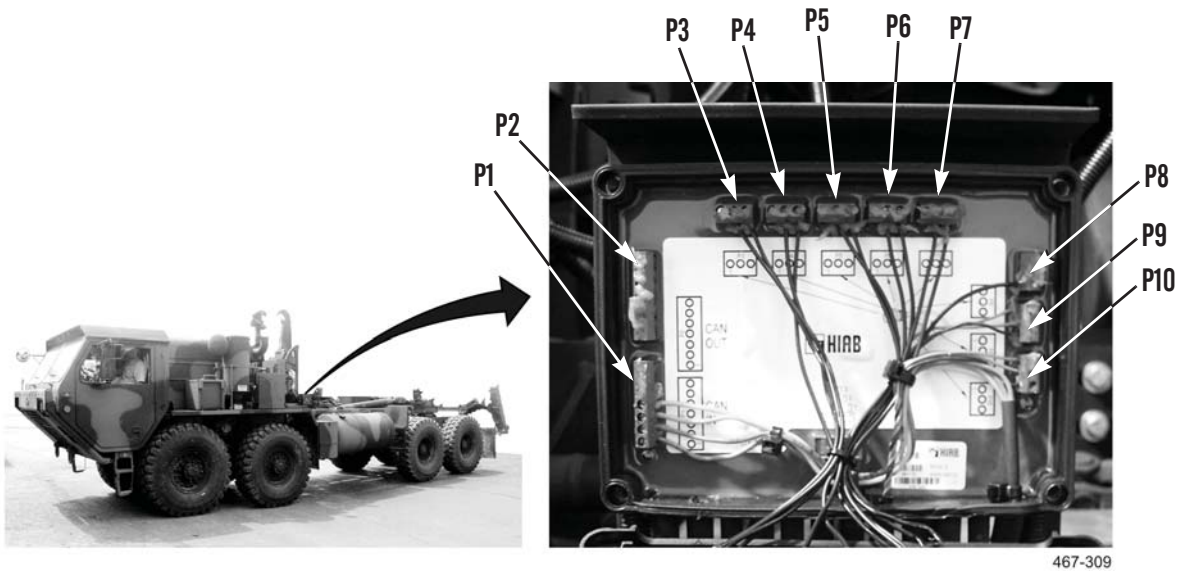
LOCATOR VIEWS

Figure 1. Stowage MUX Box (Control Panel).

LOCATOR VIEWS – CONTINUED

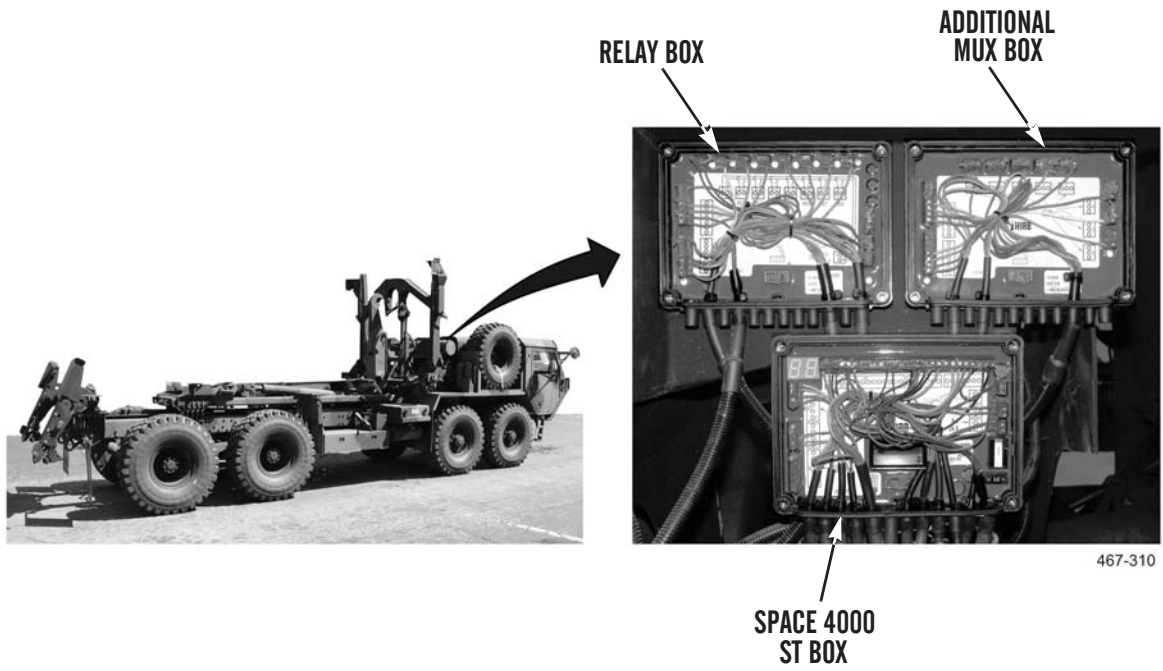
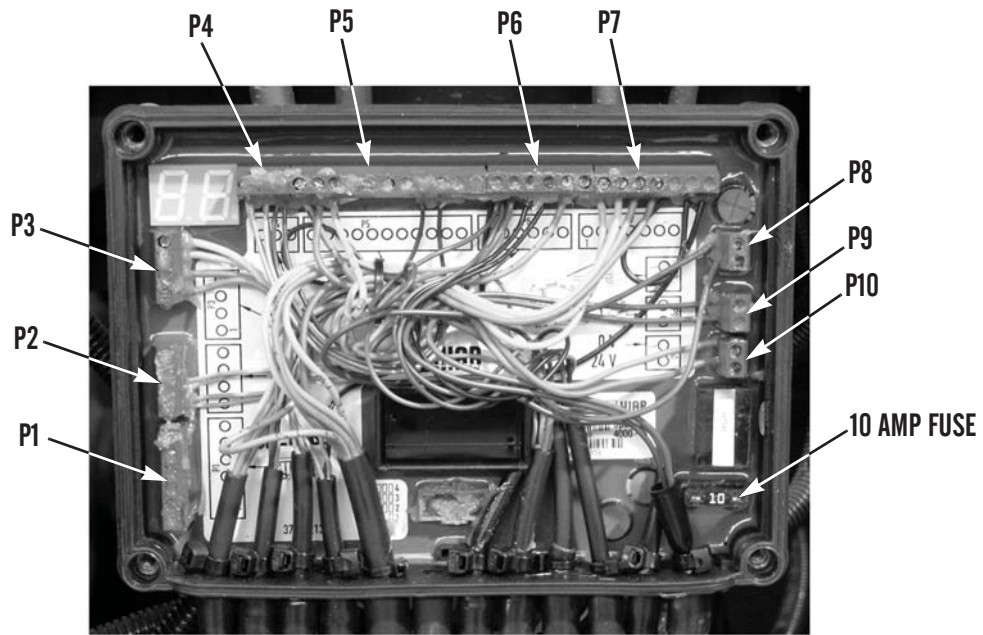


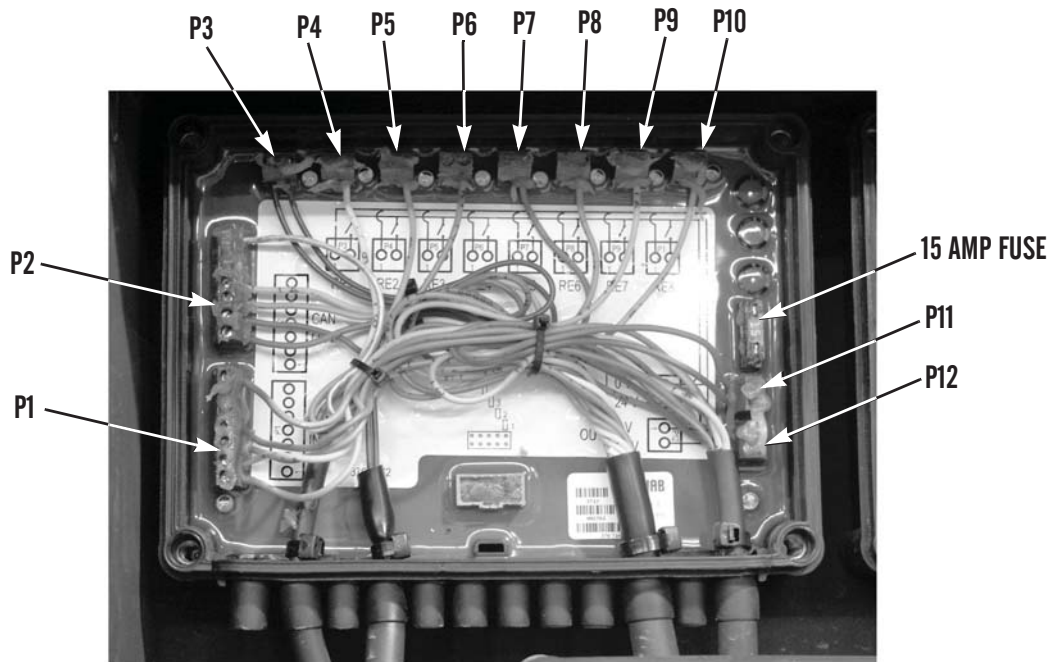
Figure 2. Relay Box, Additional MUX Box, and Space 4000 ST Box.

LOCATOR VIEWS – CONTINUED



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Figure 3. Space 4000 ST Box.



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Figure 4. Relay Box.

LOCATOR VIEWS – CONTINUED

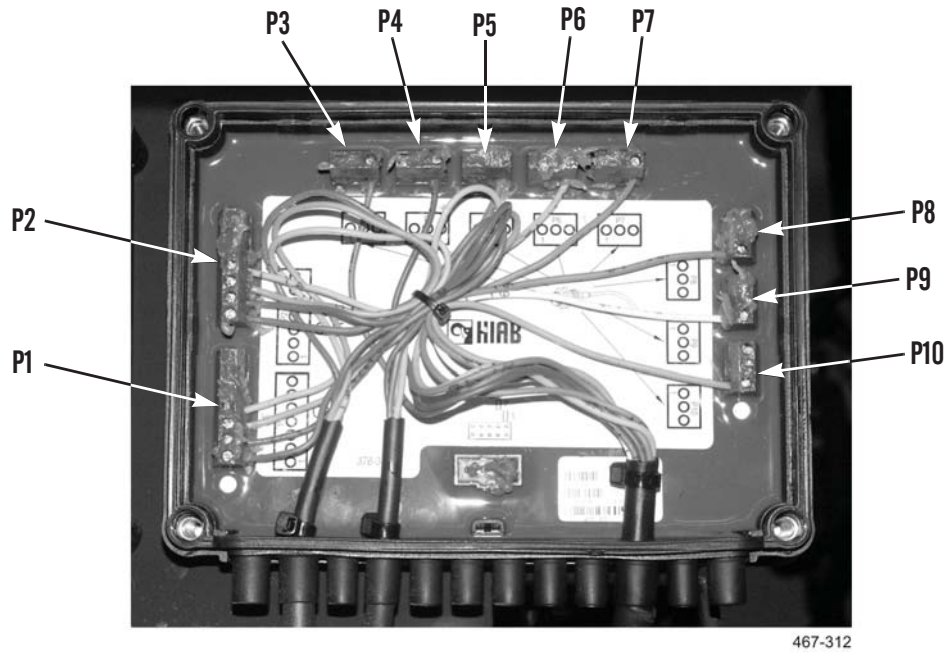


Figure 5. Additional MUX Box.

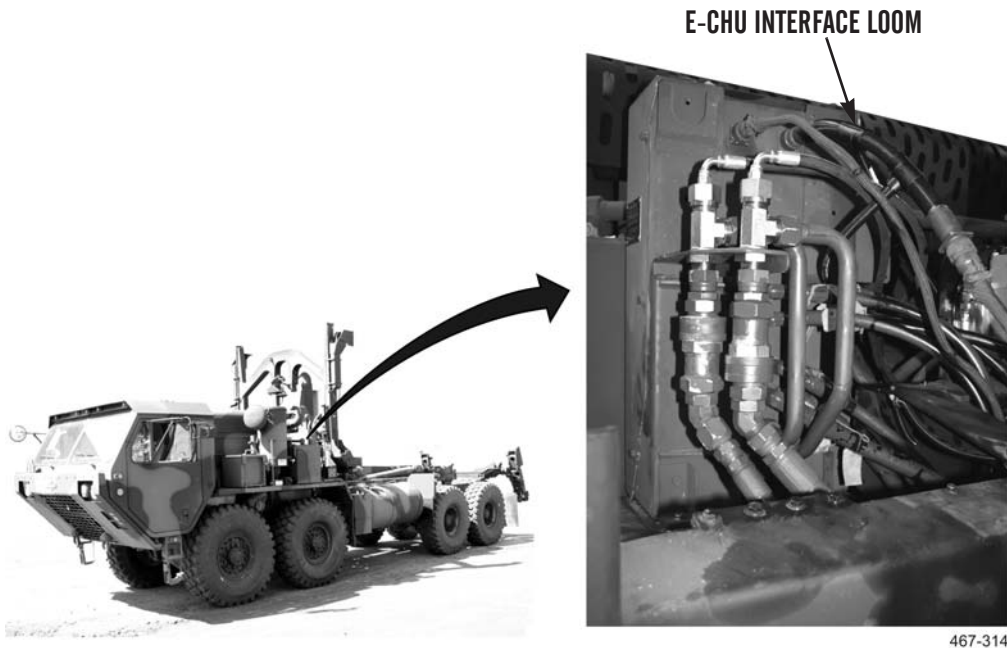


Figure 6. E-CHU Interface Loom.

LOCATOR VIEWS – CONTINUED

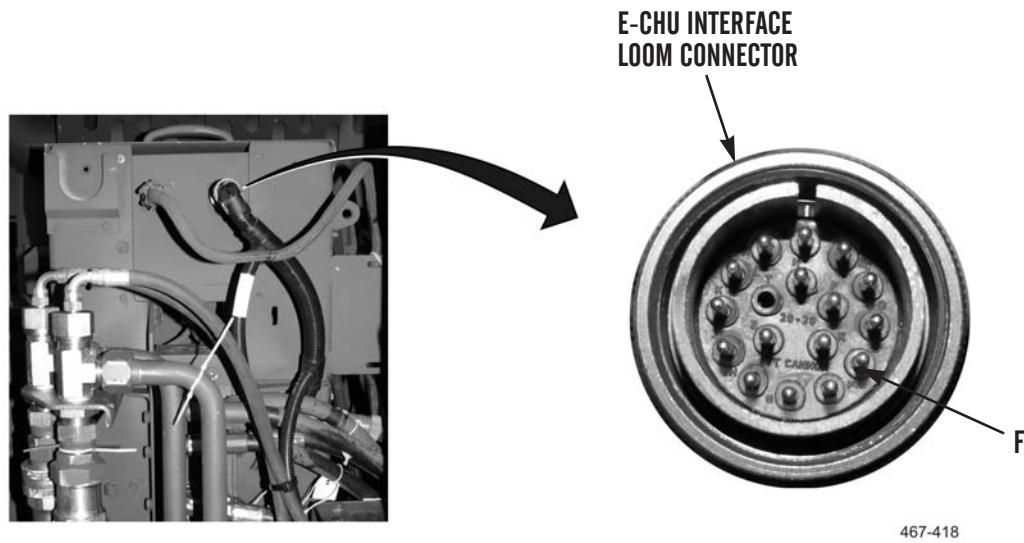


Figure 7. E-CHU Interface Loom Connector.

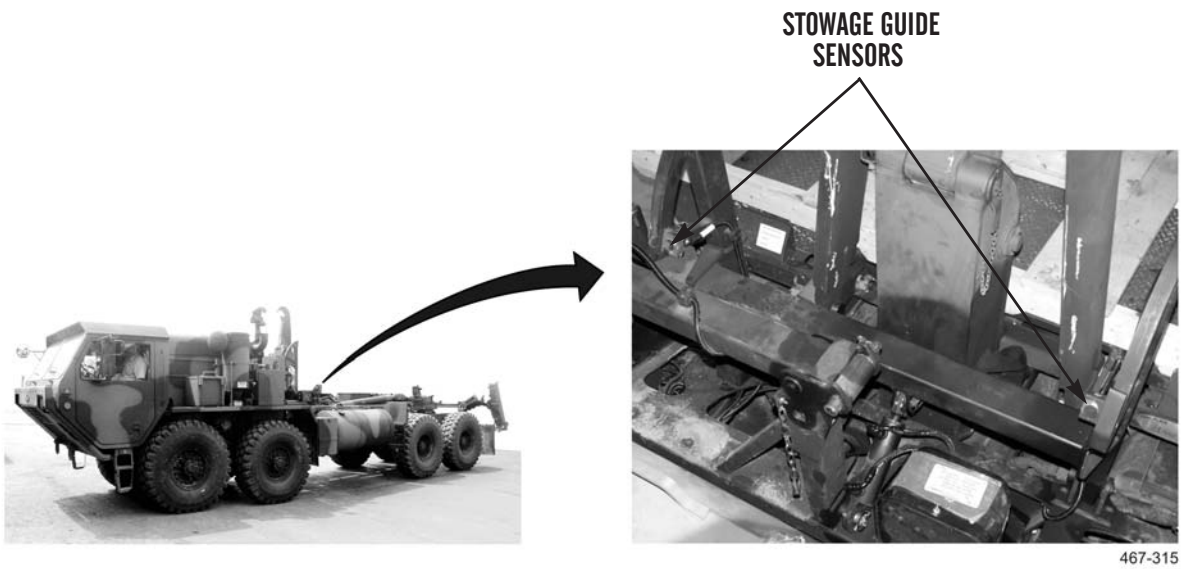


Figure 8. Stowage Guide Sensors.

LOCATOR VIEWS – CONTINUED

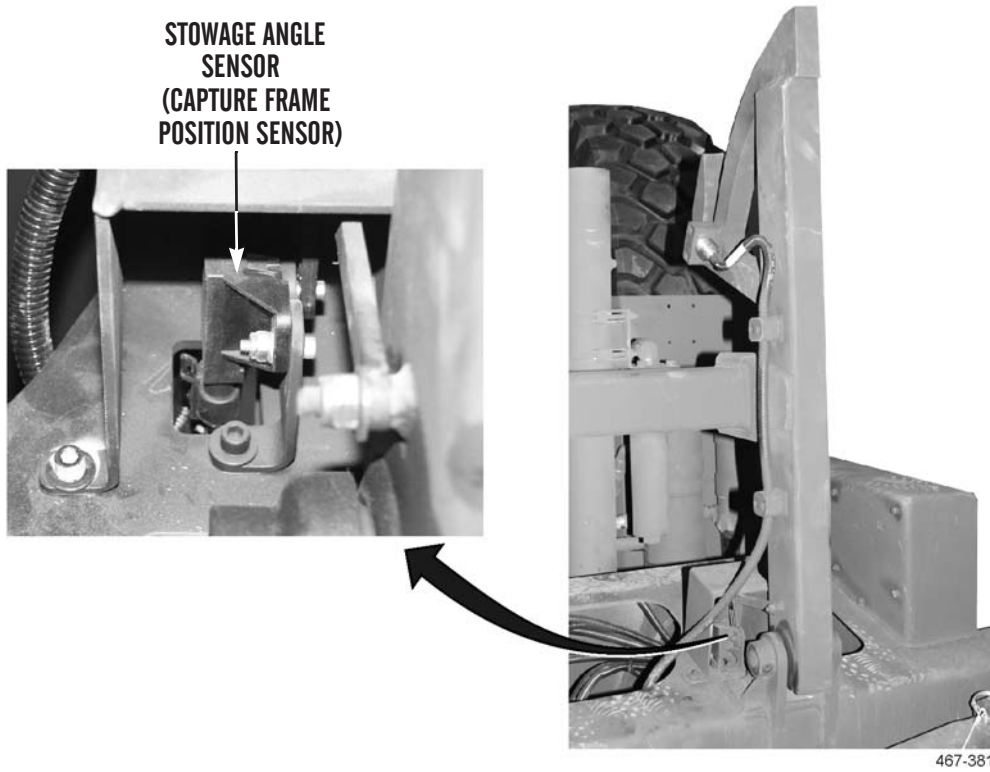


Figure 9. Stowage Angle Sensor (Capture Frame Position Sensor).

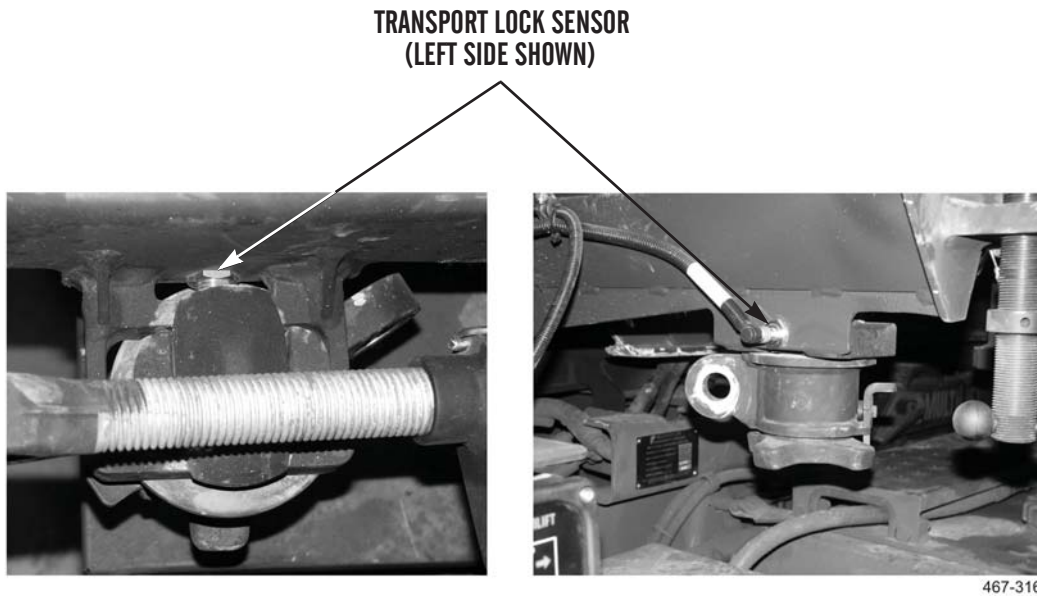


Figure 10. Transport Lock Sensor (Left Side Shown).

LOCATOR VIEWS – CONTINUED

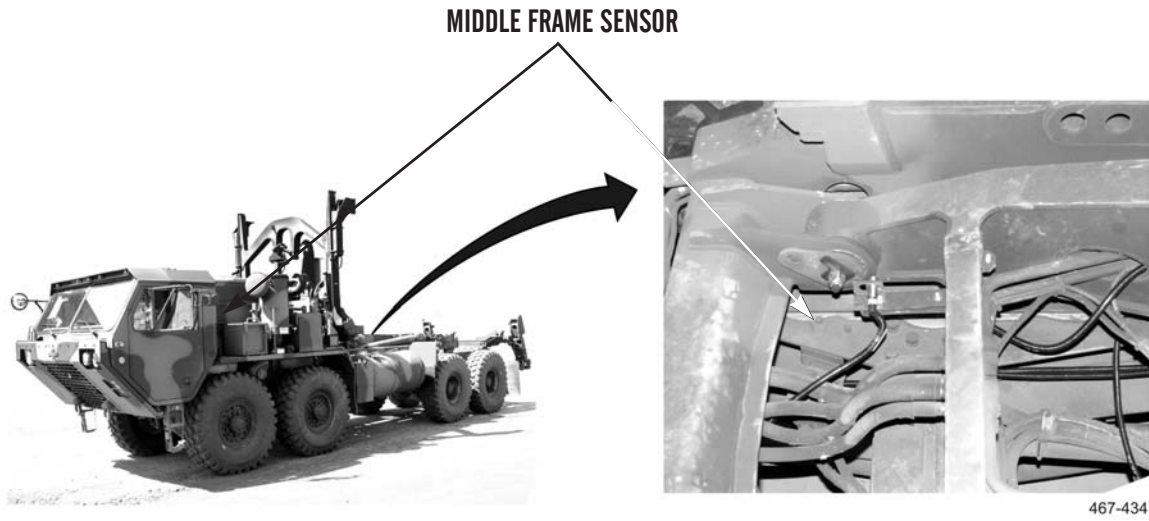


Figure 11. Middle Frame Sensor.

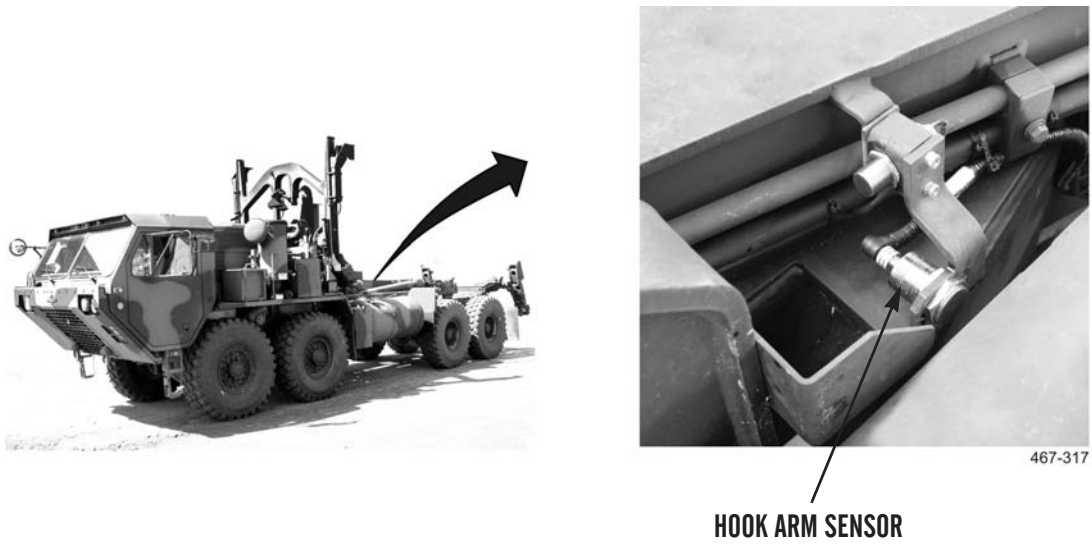


Figure 12. Hook Arm Sensor.

LOCATOR VIEWS – CONTINUED

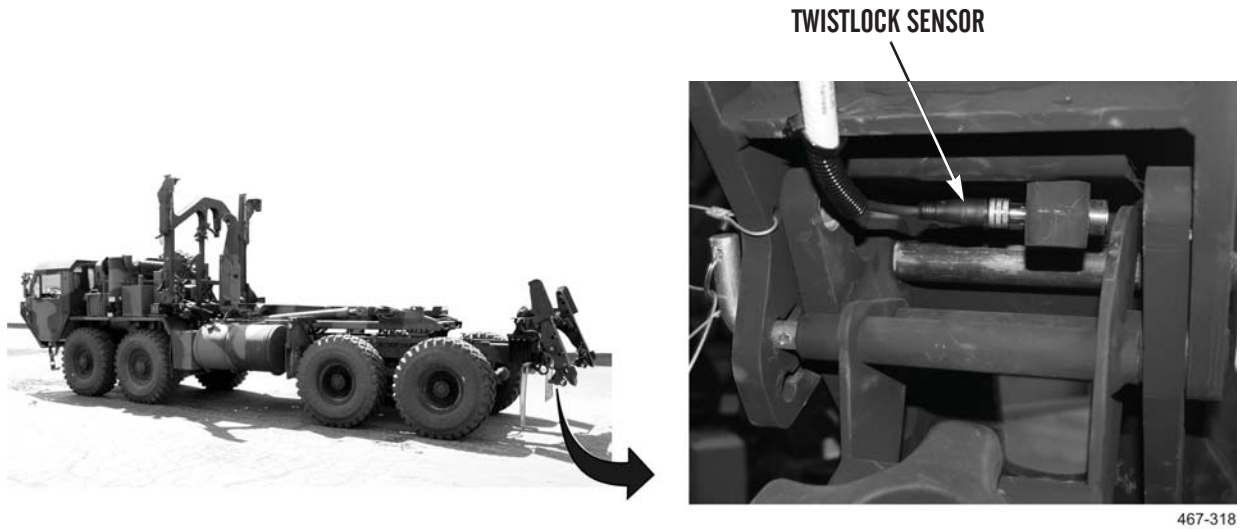


Figure 13. Twistlock Sensor (Left Side Shown).

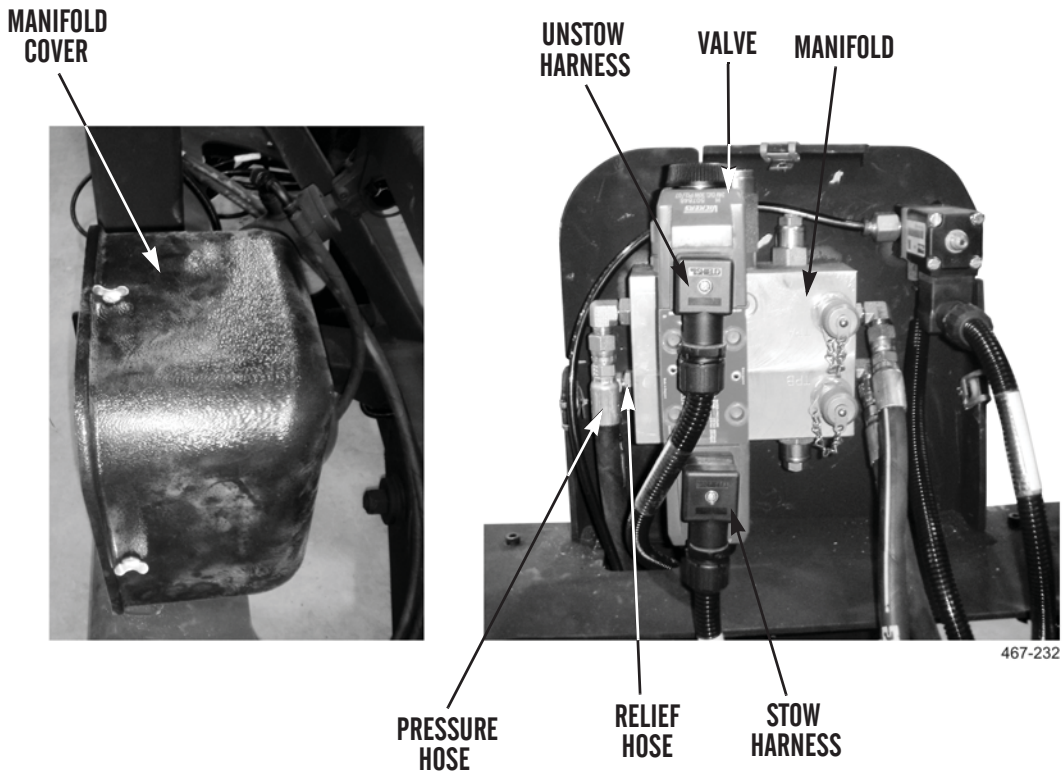
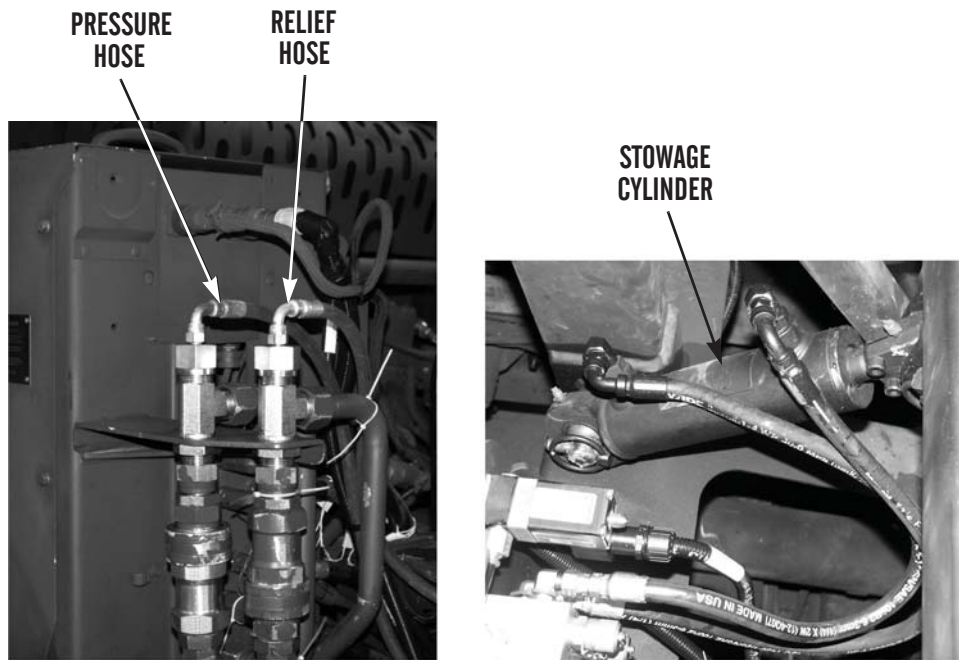


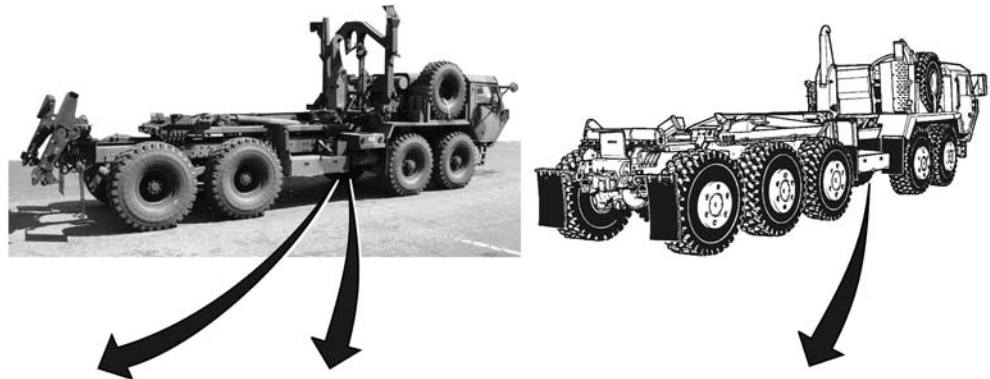
Figure 14. Hydraulic Manifold, Hoses, and Harnesses.

LOCATOR VIEWS – CONTINUED



467-319

Figure 15. Stowage Cylinder and Hydraulic Hoses.



HEMTT M1120 A4
AIR FEED



HEMTT M1120
AIR FEED



PLS AIR FEED

514-015

Figure 16. Air Supply Fittings at Tanks.

LOCATOR VIEWS – CONTINUED

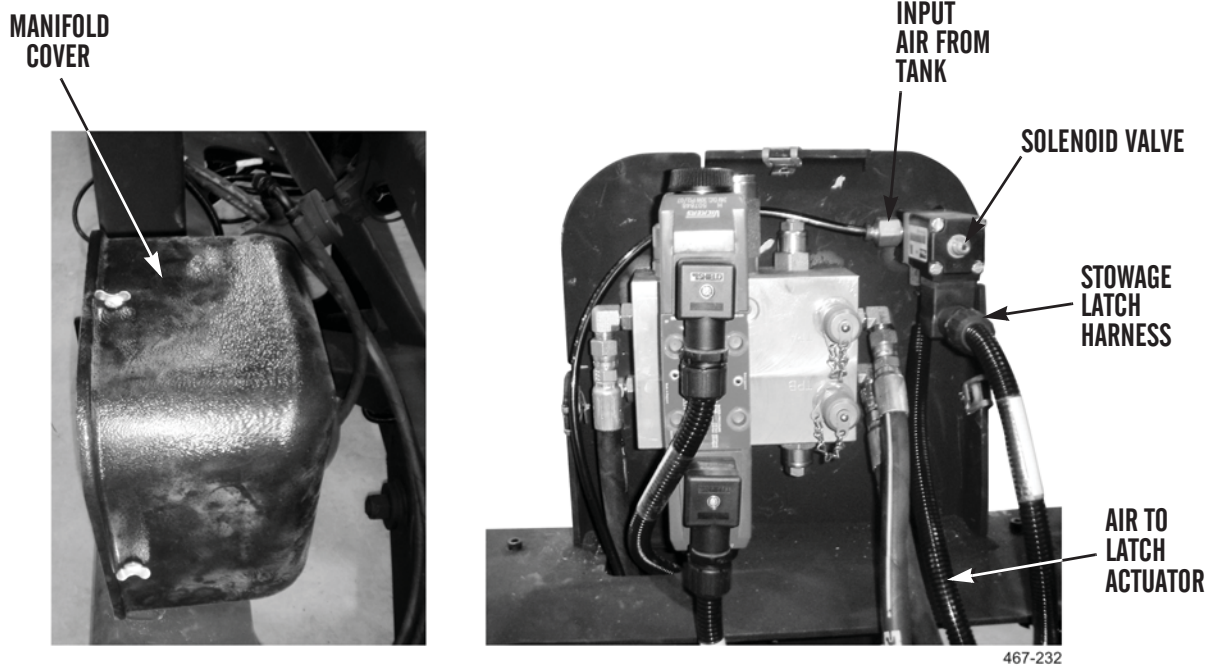


Figure 17. Air Solenoid Valve and Hoses.

LOCATOR VIEWS – CONTINUED

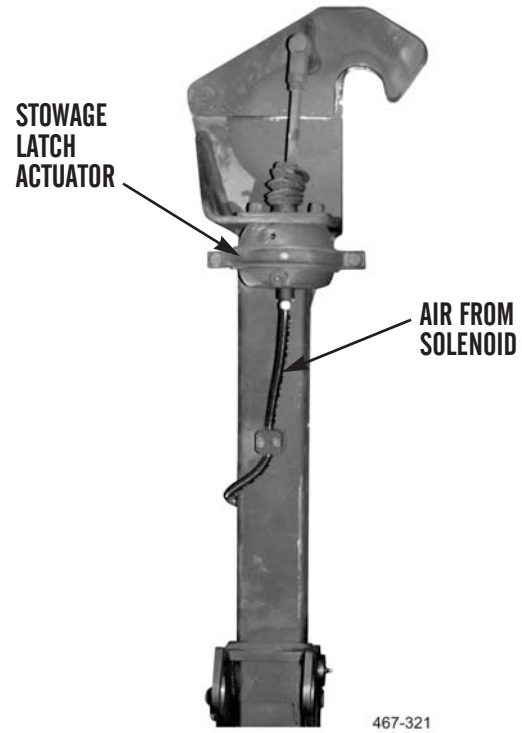


Figure 18. Stowage Latch Actuator.

LOCATOR VIEWS – CONTINUED

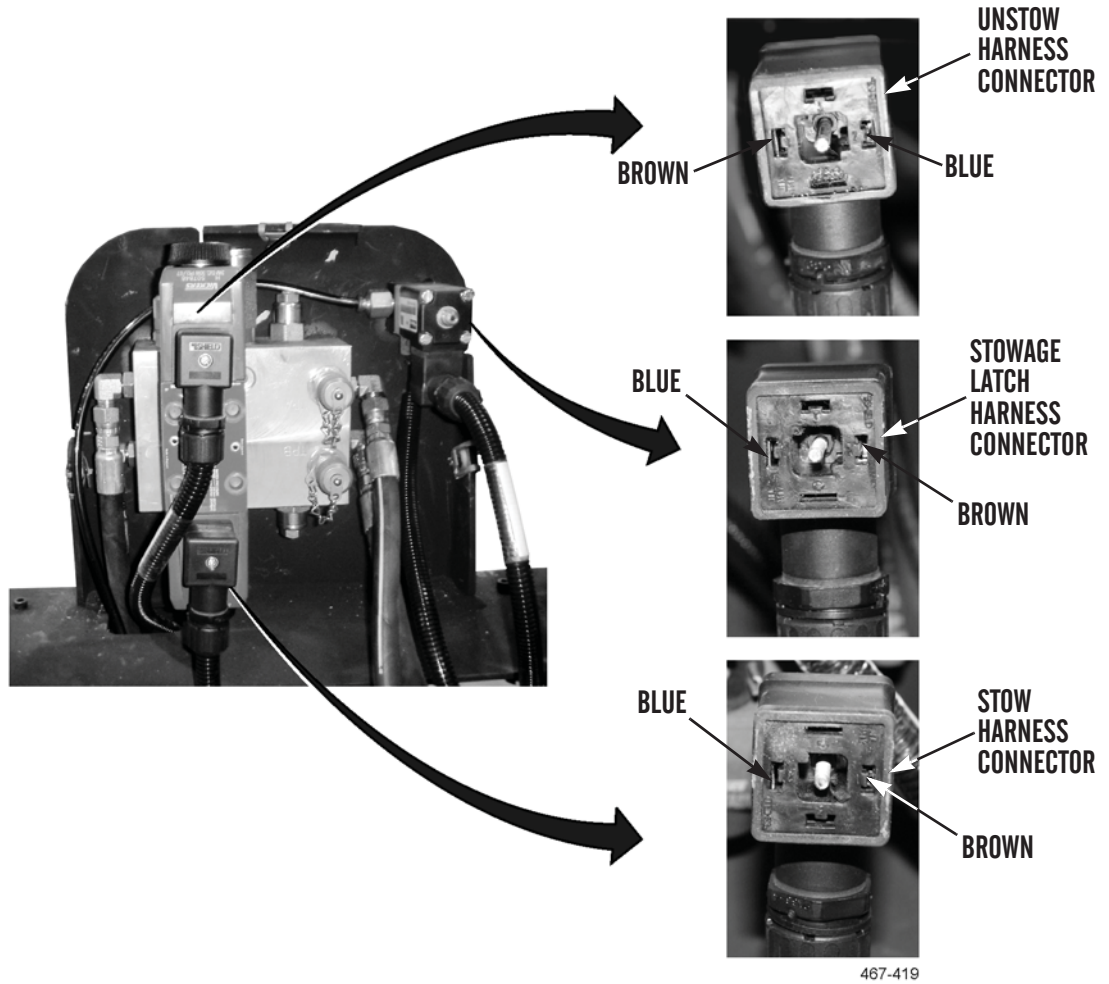


Figure 19. Hydraulic Manifold and Air Solenoid Valve Connectors.

END OF WORK PACKAGE

FIELD MAINTENANCE

FIELD MAINTENANCE TROUBLESHOOTING SYMPTOM INDEX

Malfunction/Symptom	Troubleshooting Procedure Page
ELECTRICAL SYSTEM	
1. No Stowage Function (Error Codes 0 and 1).....	.0019-1
2. No Stowage Function (Error Code 2).....	.0019-4
3. No Stowage Function (Error Code 5).....	.0019-4
4. No Stowage Function (Error Code 6).....	.0019-5
5. No Stowage Function (Error Code 7).....	.0019-6
6. No Stowage Function (Error Code 9).....	.0019-7
7. No Stowage Function (Error Code 11, 12, 14 and 23).....	.0019-8
8. No Stowage Function (Error Code 17).....	.0019-10
9. No Stowage Function (Error Code 18).....	.0019-11
10. No Stowage Function (Error Code 30).....	.0019-12
11. No Stowage Function (Error Code 31).....	.0019-13
12. No Stowage Function (Error Code 32).....	.0019-14
13. No Stowage Function (Error Code 33).....	.0019-15
14. No Stowage Function (Error Code 34).....	.0019-16
15. No Stowage Function (Error Code 35).....	.0019-17
16. No Stowage Function (Error Code 36).....	.0019-18
17. No Stowage Function (Error Code 37).....	.0019-19
18. No Stowage Function (Error Code C3).....	.0019-19
19. Stowage Movement is Irregular (Error Codes 8 and 10).....	.0019-20
20. Total Stop of System (Error Code 20).....	.0019-20
21. Total Stop of System (Error Code 22).....	.0019-21
22. No Hook Lift Function (Error Code C0).....	.0019-22
23. No Hook Lift Function (Error Code C1).....	.0019-23
24. No Hook Lift Function (Error Code C2).....	.0019-24
25. Unable to Calibrate (HEMTT Only) (Error Code C4).....	.0019-24
26. No Stowage Mode (Error Code D0).....	.0019-24
27. No Stowage Mode (Error Code D1).....	.0019-24
28. No Hook Lift Functions (Error Code D2).....	.0019-25
HYDRAULIC SYSTEM	
No Retrieve or Stow Function.....	.0019-25
PNEUMATIC SYSTEM	
1. No Stowage Latch Function.....	.0019-28
2. LHS Hook Not Aligned With Lift Frame Bail Bar.....	.0019-30
END OF WORK PACKAGE	

FIELD MAINTENANCE

FIELD MAINTENANCE TROUBLESHOOTING PROCEDURES

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM****NOTE**

- Tag all wires, connections, hoses and fittings upon removal.
- Cap all hoses and fittings to prevent contamination.
- Install all wires, connections, hoses, and fittings as tagged during removal.

1. NO STOWAGE FUNCTION (ERROR CODES 0 AND 1).

Step 1. Check vehicle charging system for correct operation (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Step 2. Check for shorted sensor.

- a. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- b. Disconnect wiring harnesses from middle frame sensor, hook arm sensor, stowage angle sensor, and two stowage guide sensors (WP 0034).

NOTE

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- c. Set battery disconnect switch and ignition switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- d. If error code 0 or 1 is still displayed, proceed to Step 3.
- e. If error code 0 or 1 is not displayed, reconnect sensors one at a time to identify faulty sensor.
 1. Set ignition switch and battery disconnect switch to OFF position.
 2. Connect right side stowage guide sensor harness to right side stowage guide sensor (WP 0034).
 3. Set battery disconnect switch and ignition switch to ON position.
 4. If error code is displayed, replace right side stowage guide sensor (WP 0034).
 5. If no error code, proceed with this sequence.
 6. Set ignition switch and battery disconnect switch to OFF position.
 7. Connect left side stowage guide sensor harness to left side stowage guide sensor (WP 0034).
 8. Set battery disconnect switch and ignition switch to ON position.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****1. NO STOWAGE FUNCTION (ERROR CODES 0 AND 1) – CONTINUED.**

9. If error code is displayed, replace left side stowage guide sensor (WP 0034).
10. If no error code, proceed with this sequence.
11. Set ignition switch and battery disconnect switch to OFF position.
12. Connect angle sensor harness to angle sensor (WP 0034).
13. Set battery disconnect switch and ignition switch to ON position.
14. If error code is displayed, replace angle sensor (WP 0034).
15. If no error code, proceed with this sequence.
16. Set ignition switch and battery disconnect switch to OFF position.
17. Connect hook arm sensor harness to hook arm sensor (WP 0034).
18. Set battery disconnect switch and ignition switch to ON position.
19. If error code is displayed, replace hook arm sensor (WP 0034).
20. If no error code, proceed with this sequence.
21. Set ignition switch and battery disconnect switch to OFF position.
22. Connect middle frame sensor harness to middle frame sensor (WP 0034).
23. Set battery disconnect switch and ignition switch to ON position.
24. If error code is displayed, replace middle frame sensor (WP 0034).

Step 3. Check for error code after power reset.

- a. Set ignition switch and battery disconnect switch to OFF position.
- b. Disconnect wires from positions 1, 2, and 3 on P4 in Space 4000 ST box (WP 0029).
- c. Disconnect wires from positions 1, 2, and 3 on P5 in Space 4000 ST box (WP 0029).
- d. Disconnect wires from positions 1, 2, 3, and 4 on P6 in Space 4000 ST box (WP 0029).
- e. Set battery disconnect switch and ignition switch to ON position. If error code is still displayed, replace Space 4000 ST box (WP 0029).
- f. If error code is not displayed, proceed to Step 4.

Step 4. Check stowage guide sensor harnesses for shorted circuit.

- a. Set ignition switch and battery disconnect switch to OFF position.
- b. Disconnect wiring harnesses from both stowage guide sensors (WP 0034).
- c. Connect LH stowage guide harness to pins 1, 2, and 3 on P4 in Space 4000 ST box.
- d. Set battery disconnect switch and ignition switch to ON position.
- e. If error is displayed, replace LH stowage guide harness (WP 0034).
- f. If error code is not displayed, proceed with this sequence.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**1. NO STOWAGE FUNCTION (ERROR CODES 0 AND 1) – CONTINUED.**

- g. Set ignition switch and battery disconnect switch to OFF position.
- h. Connect RH stowage guide harness to pins 1, 2, and 3 on P4 in Space 4000 ST box.
- i. Set battery disconnect switch and ignition switch to ON position.
- j. If error is displayed, replace RH stowage guide harness (WP 0034).
- k. If error code is not displayed, proceed to Step 5.

Step 5. Check stowage angle sensor harness for shorted circuit.

- a. Set ignition switch and battery disconnect switch to OFF position.
- b. Disconnect stowage angle sensor harness from position sensor (WP 0034).
- c. Connect stowage angle guide harness to pins 1, 2, and 3 on P5 in Space 4000 ST box.
- d. Set battery disconnect switch and ignition switch to ON position.
- e. If error code is displayed, replace position sensor harness (WP 0034).
- f. If error code is not displayed, proceed to Step 6.

Step 6. Check middle frame sensor harness for shorted circuit.

- a. Set ignition switch and battery disconnect switch to OFF position.
- b. Disconnect middle frame sensor harness from middle frame sensor (WP 0034).
- c. Connect middle frame sensor harness to pins 1, 2, and 4 on P6 in Space 4000 ST box.
- d. Set battery disconnect switch and ignition switch to ON position.
- e. If error code is displayed, replace middle frame sensor harness (WP 0034).
- f. If error code is not displayed, proceed to Step 7.

Step 7. Check hook arm sensor harness for shorted circuit.

- a. Set ignition switch and battery disconnect switch to OFF position.
- b. Disconnect hook arm sensor harness from hook arm sensor (WP 0034).
- c. Connect hook arm sensor harness to pins 1, 2, and 3 on P6 in Space 4000 ST box.
- d. Set battery disconnect switch and ignition switch to ON position.
- e. If error code is displayed, replace hook arm sensor harness (WP 0034).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****2. NO STOWAGE FUNCTION (ERROR CODE 2).**

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Check 15 amp fuse in relay box.

NOTE

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- a. Replace 15 amp fuse in relay box and set battery disconnect switch and ignition switch to ON position.
 - b. If error code is still displayed, continue to Step 3.
- Step 3. Check valve.
- a. Set ignition switch and battery disconnect switch to OFF position.
 - b. Disconnect stow harness from valve (WP 0026).
 - c. Set battery disconnect switch and ignition switch to ON position.
 - d. If error code is not displayed, replace valve (WP 0026).
 - e. If error code is still displayed, proceed to Step 4.
- Step 4. Check stow harness for shorted circuit.
- a. Set battery disconnect switch and ignition switch to OFF position
 - b. Disconnect wires from positions 1 and 2 on P9 in Space 4000 ST box.
 - c. Set battery disconnect switch and ignition switch to ON position to reset power.
 - d. If error code is still displayed, replace Space 4000 ST box (WP 0029).
 - e. If error code is not displayed, replace stow harness (WP 0029).

3. NO STOWAGE FUNCTION (ERROR CODE 5).

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Check stowage angle sensor.
- a. Disconnect stowage angle sensor harness from stowage angle sensor (WP 0034).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**3. NO STOWAGE FUNCTION (ERROR CODE 5) – CONTINUED.****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- b. Set battery disconnect switch and ignition switch to ON position.
- c. If error code is not displayed, replace stowage angle sensor (WP 0034).
- d. If error code displayed, proceed to Step 3.

Step 3. Check stowage angle harness.

- a. Set ignition switch and battery disconnect switch to OFF position.
- b. Disconnect wires from positions 1, 2, and 3 on P5 in Space 4000 ST box.
- c. Set battery disconnect switch and ignition switch to ON position to reset power.
- d. If error code is still displayed, replace Space 4000 ST box (WP 0029).
- e. If error code is not displayed, replace stowage angle sensor harness (WP 0029).

4. NO STOWAGE FUNCTION (ERROR CODE 6).

Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Step 2. Disconnect wires from positions 1, 2, 3 and 4 on P3 in Space 4000 ST box.

NOTE

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

Step 3. Set battery disconnect switch and ignition switch to ON position.

- a. If error code is not displayed, replace space computer harness (WP 0029).
- b. If error code is still displayed, replace Space 4000 ST box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****5. NO STOWAGE FUNCTION (ERROR CODE 7).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect wires from positions 1, 2, 3, and 4 on P7 and position 5 on P6 in Space 4000 ST box.
- Step 3. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is still displayed, replace Space 4000 ST box (WP 0029).
 - b. If error code is not displayed, set ignition switch and battery disconnect switch to OFF position, reconnect pins 1, 2, 3, and 4 to P7 and pin 5 to P6 in stowage Space 4000 ST box and proceed to Step 4.
- Step 4. Disconnect wires from positions 1, 2, 3, 4, and 7 on P1 in relay box.
- Step 5. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is still displayed, set ignition switch and battery disconnect switch to OFF position, and replace CAN bus harness between Space 4000 ST box and relay box (WP 0029).
 - b. If error code is not displayed, set ignition switch and battery disconnect switch to OFF position, reconnect pins 1, 2, 3, 4, and 7 to P1 in relay box and proceed to Step 6.
- Step 6. Disconnect wires from positions 1, 2, 3, and 4 on P2 in relay box.
- Step 7. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is still displayed, set ignition switch and battery disconnect switch to OFF position, and replace relay box (WP 0029).
 - b. If error code is not displayed, set ignition switch and battery disconnect switch to OFF position, reconnect pins 1, 2, 3, and 4 to P2 in relay box and proceed to Step 8.
- Step 8. Disconnect wires from positions 1, 2, 3, and 4 on P1 in additional MUX box.
- Step 9. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is still displayed, set ignition switch and battery disconnect switch to OFF position, and replace CAN bus harness between relay box and additional MUX box (WP 0029).
 - b. If error code is not displayed, set ignition switch and battery disconnect switch to OFF position, reconnect pins 1, 2, 3, and 4 to P1 in additional MUX box and proceed to Step 10.
- Step 10. Disconnect wires from positions 1, 2, 3, and 4 on P2 in additional MUX box.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**5. NO STOWAGE FUNCTION (ERROR CODE 7) – CONTINUED.**

- Step 11. Set battery disconnect switch and ignition switch to ON position.
- If error code is still displayed, set ignition switch and battery disconnect switch to OFF position, and replace additional MUX box (WP 0029).
 - If error code is not displayed, set ignition switch and battery disconnect switch to OFF position, reconnect pins 1, 2, 3, and 4 to P2 in additional MUX box and proceed to Step 12.
- Step 12. Disconnect wires from positions 1, 2, 3, and 4 on P1 in stowage MUX box (control panel).
- Step 13. Set battery disconnect switch and ignition switch to ON position.
- If error code is still displayed, set ignition switch and battery disconnect switch to OFF position, and replace CAN bus harness between additional MUX box and stowage MUX box (WP 0029).
 - If error code is not displayed, set ignition switch and battery disconnect switch to OFF position, and replace stowage MUX box (control panel) (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**6. NO STOWAGE FUNCTION (ERROR CODE 9).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Check stowage angle (capture frame position) sensor for loose or damaged connection.
Tighten or repair angle (capture frame position) sensor connection.
- Step 3. Set battery disconnect switch and ignition switch to ON position.
If error code is still displayed, proceed to Step 4.
- Step 4. Calibrate stowage angle (stowage capture frame position) sensor (WP 0025).
If calibration not successful, proceed to Step 5.
- Step 5. Set battery disconnect switch and ignition switch to ON position.
If error code is still displayed, proceed to Step 6.
- Step 6. Set battery disconnect switch to OFF position.
- Step 7. Disconnect wires from positions 1, 2, and 3 on P5 in Space 4000 ST box.
- Step 8. Connect jumper wire between pins 1 and 2 at connector end of harness and check resistance of same wires at sensor end of harness.
If resistance measures >200 Ohms, replace harness.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****7. NO STOWAGE FUNCTION (ERROR CODE 11, 12, 14 AND 23).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Check pin connections 1, 2, 3, and 4 on P2 in relay box.
Secure any loose connections (WP 0029).
- Step 3. Check pin connections 1, 2, 3, and 4 on P1 in additional MUX box.
Secure any loose connections (WP 0029).
- Step 4. If loose connections found, set battery disconnect switch and ignition switch to ON position and check for error code.
If error code is still displayed, proceed to Step 5.
- Step 5. Disconnect wires from positions 1, 2, 3, and 4 on P2 in relay box.
- Step 6. Disconnect wires from positions 1, 2, 3, and 4 on P1 in additional MUX box.
- Step 7. Install jumper between wires 3 and 4 and measure resistance at other end of harness. Resistance should be <200 Ohms.
If resistance is >200 Ohms, replace CAN bus linking harness relay box and additional MUX box (WP 0029).
- Step 8. Install jumper between wires 1 and 2 and measure resistance at other end of harness. Resistance should be <200 Ohms.
If resistance is >200 Ohms, replace CAN bus linking harness between relay box and additional MUX box (WP 0029).
- Step 9. Check pin connections 1, 2, 3, and 4 on P2 in additional MUX box.
Secure any loose connections (WP 0029).
- Step 10. Check pin connections 1, 2, 3, and 4 on P1 in stowage MUX box (control panel).
Secure any loose connections (WP 0029).
- Step 11. If loose connections found, set battery disconnect switch and ignition switch to ON position and check for error code.
If error code is still displayed, proceed to Step 12.
- Step 12. Disconnect wires from positions 1, 2, 3, and 4 on P1 in stowage MUX box (control panel).
- Step 13. Disconnect wires from positions 1, 2, 3, and 4 on P2 in additional MUX box.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****7. NO STOWAGE FUNCTION (ERROR CODE 11, 12, 14 AND 23) – CONTINUED.**

- Step 14. Install jumper between wires 3 and 4 and measure resistance at other end of harness. Resistance should be <200 Ohms.
- If resistance is >200 Ohms, replace CAN bus linking harness between additional MUX box and stowage MUX box (WP 0029).
- Step 15. Install jumper between wires 1 and 2 and measure resistance at other end of harness. Resistance should be <200 Ohms.
- If resistance is >200 Ohms, replace CAN bus linking harness between additional MUX box and stowage MUX box (WP 0029).
- Step 16. Check pin connections 1, 2, 3, 4 and 7 on P1 in relay box.
- Secure any loose connections (WP 0029).
- Step 17. Check pin connections 1, 2, 3, and 4 on P7 and 5 on P6 in Space 4000 ST box.
- Secure any loose connections (WP 0029).
- Step 18. If loose connections found, set battery disconnect switch and ignition switch to ON position and check for error code.
- If error code is still displayed, proceed to Step 19.
- Step 19. Disconnect wires from positions 1, 2, 3, and 4 on P7 and position 5 on P6 in Space 4000 ST box.
- Step 20. Disconnect wires from positions 1, 2, 3, 4 and 7 on P1 in relay box.
- Step 21. Install jumper between wires 3 and 4 and measure resistance at other end of harness. Resistance should be <200 Ohms.
- If resistance is >200 Ohms, replace CAN bus linking harness between relay box and Space 4000 ST box (WP 0029).
- Step 22. Install jumper between wires 1 and 2 and measure resistance at other end of harness. Resistance should be <200 Ohms.
- If resistance is >200 Ohms, replace CAN bus linking harness between relay box and Space 4000 ST box (WP 0029).
- Step 23. Measure resistance of wire 5 in Space 4000ST box to wire 7 in relay box. Resistance should be <200 Ohms.
- a. If resistance is >200 Ohms, replace CAN bus linking harness between relay box and Space 4000 ST box (WP 0029).
 - a. If resistance is <200 Ohms, replace Space 4000 ST box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**7. NO STOWAGE FUNCTION (ERROR CODE 11, 12, 14 AND 23) – CONTINUED.**

Step 24. Set battery disconnect switch and ignition switch to ON position.

If error code is still displayed, replace stowage MUX box (Control Panel) (WP 0045).

Step 25. Set battery disconnect switch and ignition switch to ON position.

If error code is still displayed, replace stowage additional MUX box and relay box (WP 0029).

8. NO STOWAGE FUNCTION (ERROR CODE 17).**NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Step 2. Disconnect wire 1465 from position 3 on P3 in additional MUX box

Step 3. Disconnect wire 1467 from position 3 on P4 in additional MUX box.

Step 4. Disconnect wire 1468 from position 3 on P5 in additional MUX box.

Step 5. Disconnect wire 1464 from position 3 on P6 in additional MUX box.

Step 6. Disconnect wire 1463 from position 3 on P7 in additional MUX box.

Step 7. Disconnect wire 1462 from position 3 on P8 in additional MUX box.

Step 8. Disconnect wire 1469 from position 3 on P9 in additional MUX box.

Step 9. Disconnect wire 1466 from position 3 on P10 in additional MUX box.

Step 10. Set battery disconnect switch and ignition switch to ON position.

a. If error code is still displayed, replace additional MUX box (WP 0029).

b. If error code is not displayed, replace stowage interface loom (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****9. NO STOWAGE FUNCTION (ERROR CODE 18).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect LH twistlock sensor harness from LH twistlock sensor (WP 0034).
- Step 3. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace LH twistlock sensor (WP 0034).
 - b. If error code is still displayed, proceed to Step 4.
- Step 4. Set ignition switch and battery disconnect switch to OFF position.
Disconnect RH twistlock sensor harness from RH twistlock sensor (WP 0034).
- Step 5. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace RH twistlock sensor (WP 0034).
 - b. If error code is still displayed, proceed to Step 7.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect wires from positions 1, 2 and 3 on P9 in stowage MUX box (control panel).
- Step 8. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace LH twistlock sensor harness (WP 0029).
 - b. If error code is still displayed, proceed to Step 10.
- Step 9. Set ignition switch and battery disconnect switch to OFF position.
- Step 10. Disconnect wires from positions 1, 2 and 3 on P10 in stowage MUX box (control panel).
- Step 11. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace RH twistlock sensor harness (WP 0029).
 - b. If error code is still displayed, replace stowage MUX box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**10. NO STOWAGE FUNCTION (ERROR CODE 30).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage latch harness from valve (WP 0026).
- Step 3. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace valve (WP 0026).
 - b. If error code is still displayed, proceed to Step 4.
- Step 4. Set ignition switch and battery disconnect switch to OFF position.
- Step 5. Disconnect wires 1 and 2 from P3 in relay box.
- Step 6. Set battery disconnect switch and ignition switch to ON position
 - a. If error code is not displayed, replace stowage latch harness (WP 0029).
 - b. If error code is still displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****11. NO STOWAGE FUNCTION (ERROR CODE 31).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Set battery disconnect switch to ON position, start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1466 from pin 2 on P4 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****12. NO STOWAGE FUNCTION (ERROR CODE 32).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1469 from pin 2 on P5 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****13. NO STOWAGE FUNCTION (ERROR CODE 33).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1462 from pin 2 on P6 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****14. NO STOWAGE FUNCTION (ERROR CODE 34).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1463 from pin 2 on P7 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****15. NO STOWAGE FUNCTION (ERROR CODE 35).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1464 from pin 2 on P8 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****16. NO STOWAGE FUNCTION (ERROR CODE 36).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1468 from pin 2 on P9 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****17. NO STOWAGE FUNCTION (ERROR CODE 37).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Disconnect wire 1467 from pin 2 on P10 in relay box.
- Step 10. Set battery disconnect switch and ignition switch to ON position.
 - a. If error code is not displayed, replace stowage interface loom (WP 0029).
 - b. If error code is displayed, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

ELECTRICAL SYSTEM – CONTINUED**18. NO STOWAGE FUNCTION (ERROR CODE C3).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

Step 1. Internal error in stowage MUX box (control panel). Turn vehicle off and set battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Step 2. Set battery disconnect switch to ON position and start vehicle (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

If error code is still displayed, replace stowage MUX box (control panel) (WP 0029).

19. STOWAGE MOVEMENT IS IRREGULAR (ERROR CODES 8 AND 10).**NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

Step 1. Internal error within Space 4000 ST Box. Turn vehicle off and set battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

Step 2. Set battery switch to ON position and start vehicle.

Attempt to operate system. If error code is displayed, replace Space 4000 ST Box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****20. TOTAL STOP OF SYSTEM (ERROR CODE 20).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Check for 24V on pin 2 of P12 in relay box.
 - a. If 24V found, proceed to Step 6.
 - b. If 24V not found proceed to Step 3.
- Step 3. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 4. Disconnect loom from hydraulic control box.
- Step 5. Measure resistance between pin 2 on P12 in relay box and pin F on control box loom connector.
 - a. If resistance is >200 Ohms, replace loom.
 - b. If resistance is <200 Ohms, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 6. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 7. Check 15 amp fuse in relay box.
Replace fuse if blown, continue to Step 8.
- Step 8. Set battery disconnect switch and ignition switch to ON position.
- Step 9. If fuse blows again, replace relay box (WP 0029).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****21. TOTAL STOP OF SYSTEM (ERROR CODE 22).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Set battery disconnect switch and ignition switch to ON position and start engine.
Attempt to operate system. If error code is still displayed, replace Space 4000 ST Box (WP 0029).

22. NO HOOK LIFT FUNCTION (ERROR CODE C0).**NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****22. NO HOOK LIFT FUNCTION (ERROR CODE C0) – CONTINUED.**

- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Check middle frame sensor plate for correct position (WP 0034).
Set middle frame sensor plate to correct position (WP 0034).
- Step 10. Check middle frame sensor for illuminated LED when sensor plate is in correct position.
If LED is illuminated, replace middle frame sensor (WP 0034).
- Step 11. Check middle frame sensor for damage, loose connection or damaged wiring harness.
- a. Tighten or repair sensor mounting or connection.
 - b. Replace harness if damaged.
- Step 12. Calibrate middle frame sensor (WP 0034).
If error code is still displayed, replace middle frame sensor (WP 0034).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****23. NO HOOK LIFT FUNCTION (ERROR CODE C1).****NOTE**

When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

- Step 1. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 2. Disconnect stowage interface loom from vehicle control box (WP 0029).
- Step 3. Disconnect vehicle wiring harness from stowage interface loom (WP 0029) and connect vehicle wiring harness to vehicle control box.
- Step 4. Start engine and set MODE switch to AUTO position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 5. Fully extend hook arm and middle frame (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - a. If hook arm and middle frame do not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If hook arm and middle frame operate correctly, return hook arm to home position and proceed to Step 6.
- Step 6. Set ignition switch and battery disconnect switch to OFF position.
- Step 7. Disconnect vehicle wiring harness from vehicle control box (WP 0029).
- Step 8. Connect vehicle wiring harness to stowage interface loom, and connect stowage interface loom to vehicle control box (WP 0029).
- Step 9. Check hook arm sensor for illuminated LED when hook arm is in home position.
If LED is illuminated, replace hook arm sensor (WP 0034).
- Step 10. Check hook arm sensor for damage, loose connection or damaged wiring harness.
 - a. Tighten or repair sensor mounting or connection.
 - b. Replace harness if damaged.
- Step 11. Calibrate hook arm sensor (WP 0034).
If error code is still displayed, replace hook arm sensor (WP 0034).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****24. NO HOOK LIFT FUNCTION (ERROR CODE C2).**

- Step 1. Check two rear twistlocks and two transport twistlocks for correct stowed position (WP 0005).
Correctly stow all twistlocks (WP 0005).
- Step 2. Check all four twistlock sensors for damage, loose connection, or damaged wiring harness.
- Tighten or repair sensor mounting or connection.
 - Replace sensor or harness if damaged.
- Step 3. Calibrate twistlock sensors (WP 0034).
- Step 4. Set battery disconnect switch and ignition switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- If any twistlock sensor LED does not illuminate when twistlock is correctly stowed, replace twistlock sensor (WP 0034).

25. UNABLE TO CALIBRATE (HEMTT ONLY) (ERROR CODE C4).

- Step 1. Check position of vehicle mode switch (TM 9-2320-326-14&P).
Set vehicle mode switch to AUTO position (TM 9-2320-326-14&P).

26. NO STOWAGE MODE (ERROR CODE D0).

- Step 1. Lower middle frame to fully down position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- If error code is still displayed, refer to vehicle TM to diagnose middle frame down sensor (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

27. NO STOWAGE MODE (ERROR CODE D1).

- Step 1. Lower hook arm to home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- If error code is still displayed, refer to vehicle TM to diagnose hook arm up sensor (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****ELECTRICAL SYSTEM – CONTINUED****28. NO HOOK LIFT FUNCTIONS (ERROR CODE D2).**

- Step 1. Check two rear twistlocks and two transport twistlocks for correct stowed position (WP 0005).
Correctly stow all twistlocks (WP 0005).
- Step 2. Check all four twistlock sensors for damage, loose connection or damaged wiring harness.
- Tighten or repair sensor mounting or connection.
 - Replace sensor or harness if damaged.
- Step 3. Calibrate twistlock sensors (WP 0034).
- Step 4. Set battery disconnect switch and ignition switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- If any twistlock sensor LED does not illuminate when twistlock is correctly stowed, replace twistlock sensor (WP 0034).

HYDRAULIC SYSTEM**NOTE**

- Tag all wires, connections, hoses, and fittings upon removal.
- Install all wires, connections, hoses, and fittings as tagged during removal.

NO RETRIEVE OR STOW FUNCTION.

- Step 1. Verify correct operation of vehicle LHS (PLS: TM 9-230-364-14&P, HEMTT: TM 9-2320-326-14&P).
- If vehicle LHS does not operate correctly, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - If vehicle LHS operates correctly, return hook arm to home position and proceed to next step.
- Step 2. Verify correct installation of hydraulic hoses (WP 0050 *HEMTT/PLS: Stowage Assembly Installation*).
- Install pressure hose on pressure T fitting and relief hose on relief T fitting.
- Step 3. Check hydraulic hoses for damage, loose or damaged fittings (WP 0043).
- Replace damaged hoses or fittings (WP 0043).
- Step 4. Check stowage cylinder for damage, damaged or bent casing, damaged or bent cylinder rod.
- Replace stowage cylinder if damaged or bent (WP 0023).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****HYDRAULIC SYSTEM - CONTINUED****NO RETRIEVE OR STOW FUNCTION – CONTINUED.****NOTE**

- P8 has 24V only when STOW or RETRIEVE button on control panel is activated.
- When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.

Step 5. Check for 24V supply.

- a. With engine on, press retrieve button on Control Panel and check for 24V supply on P8 pin 1 and 2 in Space 4000 ST Box.
 1. If no 24V, replace Space 4000 ST box.
 2. If 24V, proceed with this sequence.
- b. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- c. Disconnect unstow harness from solenoid valve (WP 0026).
- d. Set ignition switch and battery disconnect switch to ON position.
- e. With engine on, press retrieve button on Control Panel and check for 24V supply between pins 1 and 2 at solenoid end of unstow harness.
 1. If no 24V, replace unstow harness (WP 0029).
 2. If 24V, set ignition and battery disconnect switch to OFF position, reconnect unstow harness (WP 0026) and process to next step.

Step 6. Set battery disconnect switch to ON position and start engine (PLS: TM 9-2320-364-14&P, HEMTT TM 9-2320-326-14&P).

Step 7. While pressing unstow button on control panel, press and hold unstow manual over-ride button at top of solenoid valve.

- a. If stowage guide moves, replace solenoid valve (WP 0026).
- b. If stowage guide does not move, set ignition and battery disconnect switch to OFF position and proceed to next step.

Step 8. Disconnect stow harness from solenoid valve (WP 0026).

- a. With engine on, press stow button on Control Panel and check for 24V supply between pins 1 and 2 at valve actuator end of stow harness.
 1. If no 24V, replace stow harness (WP 0030).
 2. If 24V, set ignition and battery disconnect switch to OFF position, reconnect stow harness (WP 0026) and proceed to next step.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****HYDRAULIC SYSTEM - CONTINUED****NO RETRIEVE OR STOW FUNCTION – CONTINUED.****WARNING**

- During these procedures, the operator will be required to climb on and around vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat.
 - Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure.
 - Failure to follow these warnings may result in death or serious injury to personnel.
- Step 9. Remove pressure hose from input side of manifold, install T-fitting between hose and manifold, and connect pressure gauge to T-fitting.
- Step 10. With engine on, press unstow button on Control Panel and check for hydraulic pressure.
- a. If hydraulic pressure is <100 psi (689 kPa) turn off engine and replace pressure hose (WP 0044).
 - b. If hydraulic pressure is >100 psi (689 kPa), turn off engine, remove pressure gauge from T-fitting, T-fitting from hose and manifold, install pressure hose on manifold and proceed to next step.
- Step 11. Remove pressure hose from output side of manifold, install T-fitting between hose and manifold and connect pressure gauge to T-fitting.
- Step 12. With engine on, press unstow button on Control Panel and check for hydraulic pressure.
- a. If hydraulic pressure is <100 psi (689 kPa) turn off engine and replace manifold (WP 0026).
 - b. If hydraulic pressure is >100 psi (689 kPa), turn off engine, remove pressure gauge from T-fitting, T-fitting from hose and manifold, install pressure hose on output side of manifold and proceed to next step.
- Step 13. Remove pressure hose from lower fitting on cylinder, install T-fitting between hose and cylinder and connect pressure gauge to T-fitting.
- Step 14. With engine on, press unstow button on Control Panel and check for hydraulic pressure.
- a. If hydraulic pressure is <100 psi (689 kPa) turn off engine and replace pressure hose from manifold to cylinder (WP 0044).
 - b. If hydraulic pressure is >100 psi (689 kPa), turn off engine, remove pressure gauge from T-fitting, T-fitting from hose and cylinder, install pressure hose on cylinder and proceed to next step.
- Step 15. Remove relief hose from upper fitting on cylinder, install T-fitting between hose and cylinder and connect pressure gauge to T-fitting.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****HYDRAULIC SYSTEM - CONTINUED****NO RETRIEVE OR STOW FUNCTION – CONTINUED.**

- Step 16. With engine on, press unstow button on Control Panel and check for hydraulic pressure.
- If hydraulic pressure is <100 psi (689 kPa) turn off engine and replace cylinder (WP 0023).
 - If hydraulic pressure is >100 psi (689 kPa), turn off engine, remove pressure gauge from T-fitting, T-fitting from hose and cylinder, install relief hose on cylinder and proceed to next step.
- Step 17. Remove relief hose from lower fitting on output side of manifold, install T-fitting between hose and cylinder and connect pressure gauge to T-fitting.
- Step 18. With engine on, press unstow button on Control Panel and check for hydraulic pressure.
- If hydraulic pressure is <100 psi (689 kPa) turn off engine and replace relief hose from cylinder to manifold (WP 0044).
 - If hydraulic pressure is >100 psi (689 kPa), turn off engine, remove pressure gauge from T-fitting, T-fitting from hose and manifold, install relief hose on manifold and proceed to next step.
- Step 19. Remove relief hose from lower fitting on input side of manifold, install T-fitting between hose and cylinder and connect pressure gauge to T-fitting.
- Step 20. With engine on, press unstow button on Control Panel and check for hydraulic pressure.
- If hydraulic pressure is >100 psi (689 kPa) turn off engine and replace manifold (WP 0026).
 - If hydraulic pressure is <100 psi (689 kPa), turn off engine, remove T-fitting from hose and manifold, and replace relief hose from manifold to quick-disconnect fitting (WP 0044).

PNEUMATIC SYSTEM**NOTE**

- Tag all wires, connections, hoses, and fittings upon removal.
- Install all wires, connections, hoses, and fittings as tagged during removal.

1. NO STOWAGE LATCH FUNCTION.

- Step 1. Check pneumatic hose from air tank to valve and from valve to actuator for damage and loose or damaged fittings (WP 0044).
- Replace damaged hose or fittings (WP 0044).
- Step 2. Check stowage latch capture plate for damage and loose or damaged hardware (WP 0022).
- Replace damaged capture plate or hardware (WP 0022).
- Step 3. Check stowage latch actuator for damage and loose or damaged hardware (WP 0022).
- Replace damaged actuator or hardware (WP 0022).

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION****PNEUMATIC SYSTEM - CONTINUED****1. NO STOWAGE LATCH FUNCTION – CONTINUED.****NOTE**

- P3 has 24V only when STOW or RETRIEVE button on control panel is activated.
 - When ignition switch is turned on after battery disconnect switch has been turned off and back on, error codes 1 and 24 may alternately display for one minute. This error code indicates that temporary settings were lost while battery disconnect switch was off, and is consistent with normal operation.
- Step 4. With engine on, press RETRIEVE button on control panel and check for 24V supply on P3 pin 1 and 2 in relay box.
- a. If no 24V, replace relay box (WP 0029).
 - b. If 24V, proceed to next step.
- Step 5. Set ignition switch and battery disconnect switch to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 6. Disconnect stowage latch harness from solenoid valve (WP 0026).
- Step 7. Set ignition switch and battery disconnect switch to ON position and start engine.
- Step 8. Press STOW button on control panel and check for 24V supply between pins 1 and 2.
- a. If no 24V, replace stowage latch harness (WP 0026).
 - b. If 24V, set ignition switch and battery disconnect switch to off position and proceed to Step 9.
- Step 9. Relieve air system pressure (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
- Step 10. Disconnect air input hose from valve actuator and connect test gauge hose to input hose.
- Step 11. Set battery disconnect switch to ON position and start engine.
- Step 12. Press STOW button and check input pressure. Air input pressure should be 130 psi.
- a. If input pressure is less than 130 psi, refer to vehicle TM (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. If input pressure is 130 psi, turn off engine, relieve air system pressure and proceed to Step 13.

MALFUNCTION**TEST OR INSPECTION****CORRECTIVE ACTION**

PNEUMATIC SYSTEM - CONTINUED**1. NO STOWAGE LATCH FUNCTION – CONTINUED.**

- Step 13. Disconnect test gauge from input hose, and connect input hose to valve actuator.
- Step 14. Disconnect air hose from stowage latch actuator and connect test gauge hose to air hose.
- Step 15. Set battery disconnect switch to ON position and start engine.
- Step 16. Press RETRIEVE button and check air output pressure from solenoid valve.
 - a. If output pressure is less than 130 psi, replace solenoid valve (WP 0026).
 - b. If output pressure equals 130 psi, replace stowage latch actuator (WP 0022).

2. LHS HOOK NOT ALIGNED WITH LIFT FRAME BAIL BAR.**NOTE**

- Inconsistent air bag pressure may cause LHS hook to become off center with vehicle frame. Draining and refilling air bag will realign hook.
- For the HEMTT family, air bags are found only on the M1120A4.
 - Step 1. Visually inspect LHS hook in relation to lift frame bail bar. If LHS hook is not aligned with center of lift frame bail bar, drain and refill air bag system.
 - a. Completely drain vehicle air system (PLS: TM 9-2320-364-10, HEMTT: TM 9-2320-345-10).
 - c. Start engine and allow vehicle air system to fully charge (PLS: TM 9-2320-364-10, HEMTT: TM 9-2320-345-10).

Table 2. Enhanced Container Handling Unit (E-CHU).

ERROR CODE	DESCRIPTION	COMMENTS/ PROBLEM	LOCATION	POSSIBLE ACTION	TROUBLESHOOTING REFERENCE
0	Low Power	Supply Voltage Is Below 16 Volts	Truck	Check alternator output	Refer to <i>No Stowage Function</i> Malfunction
1	I/O Fuse	Fuse Blown Due To Short Circuit On 24V Supply To P4:2 Stowage guide sensors (ski ramp sensors) P5:2 (Angle Sensor) P6:2 (Middle Frame 134 in. & Hook Arm 77 in. Sensors)	Space 4000 ST Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
2	Fuse	Fuse Blown Due To Short Circuit On Output P9 (Stow Harness)	Space 4000 ST Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
5	Column Fuse	Fuse Blown Due To Short Circuit On P5 (Angle Sensor)	Space 4000 ST Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
6	Terminal Fuse	Fuse Blown Due To Short Circuit On P3 (Service Terminal Connection)	Space 4000 ST Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Storage Function</i> Malfunction
7	CAN Fuse	Fuse Blown Due To Short Circuit On The CAN Bus (5v Missing)	Any Position	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
8	Internal Error	Internal Error On Stowage Control Box	Space 4000 ST Box	Replace Space 4000 ST Box If Error Repeats	Refer to <i>Stowage Movement Is Irregular</i> Malfunction
9	Pressure Sensor	Values From Angle Sensor Not Legal	Space 4000 ST Box	Check Connection/Setting/ Replace Sensor	Refer to <i>No Stowage Function</i> Malfunction
10	Parameter	Internal Parameter Error - Default Parameters Have Been Restored	Space 4000 ST Box	Check Parameters/Reset/ Replace Space 4000 ST Box	Refer to <i>Stowage Movement Is Irregular</i> Malfunction

Table 2. Enhanced Container Handling Unit (E-CHU) - Continued.

ERROR CODE	DESCRIPTION	COMMENTS/ PROBLEM	LOCATION	POSSIBLE ACTION	TROUBLESHOOTING REFERENCE
11	Hin 1 Time Out	CAN Bus Not Able To Communicate With Additional MUX Box	Any Position	Check Box/CAN Bus Wire & Replace If Necessary	Refer to <i>No Stowage Function</i> Malfunction
12	Hin 2 Time Out	CAN Bus Not Able To Communicate With Stowage MUX Box (Control Panel)	Any Position	Check Box/CAN Bus Wire & Replace If Necessary	Refer to <i>No Stowage Function</i> Malfunction
14	Hout Time Out	CAN Bus Not Able To Communicate With Output Box	Any Position	Check Box/CAN Bus Wire & Replace If Necessary	Refer to <i>No Stowage Function</i> Malfunction
17	Hin 1 Fuse	Fuse Blown Due To Short Circuit On Any Inputs	Additional MUX Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
18	Hin 2 Fuse	Fuse Blown Due To Short Circuit On Any Inputs	Stowage MUX Box (Control Panel)	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
20	Hout Error	Short Circuit On Any Output Or Box Fuse Or Supply Missing	Relay Box	Auto Reset On Outputs/Replace Box Fuse	Refer to <i>Total Stop Of System</i> Malfunction
22	Not Running	Program Has Stopped Running	Space 4000 ST Box	Power Off/ Power On To Reset	Refer to <i>Total Stop Of System</i> Malfunction
23	CAN Buffer Over Run	CAN Bus Not Able To Communicate With Any Box	Any Position	Check CAN Bus Wire & Replace If Necessary	Refer to <i>No Stowage</i> Malfunction
24	Real Time Lost	Code May Be Displayed For 1 Minute After Power On	Space 4000 ST Box		None
30	Hout - Relay 1 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Stowage Latch)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction

Table 2. Enhanced Container Handling Unit (E-CHU) - Continued.

ERROR CODE	DESCRIPTION	COMMENTS/ PROBLEM	LOCATION	POSSIBLE ACTION	TROUBLESHOOTING REFERENCE
31	Hout - Relay 2 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Hook Arm Up Sensor)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
32	Hout - Relay 3 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Middle Frame Down Sensor)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
33	Hout - Relay 4 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Free-flow Solenoid)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
34	Hout - Relay 5 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Transit Valve)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
35	Hout - Relay 6 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Hook Arm Unload Solenoid)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
36	Hout - Relay 7 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Middle Frame Load Solenoid)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
37	Hout - Relay 8 Fuse	Fuse Blown Due To Short Circuit On Relay Output (Hook Arm Load Solenoid)	Relay Box	Fuse Will Auto Reset After Fault Rectified	Refer to <i>No Stowage Function</i> Malfunction
CONFLICTS					
C0	Middle Frame Sensor Conflict	Signals Present From Both Sensors On The Middle Frame	Hook Lift	Check Both Sensors - Replace If Necessary	Refer to <i>No Hook Lift Function</i> Malfunction
C1	Hook Arm Sensor Conflict	Signals Present From Both Sensors On The Hook Arm	Hook Lift	Check Both Sensors - Replace If Necessary	Refer to <i>No Hook Lift Function</i> Malfunction

Table 2. Enhanced Container Handling Unit (E-CHU) - Continued.

ERROR CODE	DESCRIPTION	COMMENTS/ PROBLEM	LOCATION	POSSIBLE ACTION	TROUBLESHOOTING REFERENCE
C2	Twistlock Sensor Conflict	All Four Signals From The Twistlock Sensors Are Not Identical	Rear Sliders & Stowage	Lock or unlock and stow all twistlocks	Refer to <i>No Hook Lift Function</i> Malfunction
C3	Mode Switch Conflict	Signals Present From Both Auto And Manual Modes On The Stowage Controls	Stowage Box	Check Switch - Replace If Necessary	Refer to <i>No Stowage Function</i> Malfunction
C4	Vehicle Mode Switch Conflict (HEMTT Only)	Vehicle Mode Switch Not In Correct position for calibration	Vehicle Dash	Set Vehicle Mode Switch to AUTO Position	Refer to <i>Unable to Calibrate (HEMTT Only)</i>
DIAGNOSES					
D0	Middle Frame Not Down	The Middle Frame Is Not Fully Down Before Selecting A Stowage Mode	Hooklift	Lower The Middle Frame Fully Down Using Hooklift Controls	Refer to <i>No Stowage Mode</i> Malfunction
D1	Hook Arm Up	The Hook Arm Has Reached The 77 in.or Fully Back Sensor During Stowage Operation	Hooklift	Lower The Hook To Its Fully Down Position Using Hooklift Controls	Refer to <i>No Stowage Mode</i> Malfunction
D2	Twist Locks Not Open	The Hooklift Will Not Unload Due To One Or More Of The Twistlocks Being Locked	Rear Sliders & Stowage	Undo & Stow All Twistlocks	Refer to <i>No Hooklift Functions</i> Malfunction

END OF WORK PACKAGE

CHAPTER 6
FIELD MAINTENANCE INSTRUCTIONS

FIELD MAINTENANCE
GENERAL MAINTENANCE INSTRUCTIONS

GENERAL

1. These general maintenance instructions contain general shop practices and specific methods with which you must be familiar to properly maintain the Enhanced Container Handling Unit (E-CHU). You should read and understand these practices and methods before performing any Field Maintenance procedures.
2. 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.
3. In some cases, a part may be damaged during removal. If the part appears to be good, and other parts behind it are not defective, leave it in place and continue with the procedure. Here are a few simple rules:
 - a. DO NOT remove dowel pins or studs unless loose, bent, broken, or otherwise damaged.
 - b. DO NOT remove bearings or bushings unless damaged. If you need to remove them to access parts behind, carefully pull out bearings and bushings.
 - c. Replace all gaskets, lockwashers, locknuts, seals, sealing washers, sealing rings, cotter pins, and O-rings.

WORK SAFETY

1. Before beginning a procedure, think about the safety risks and hazards to yourself and to others. Wear protective gear such as safety goggles or lenses, safety shoes, rubber apron, or gloves.
2. Before beginning a procedure, ensure the following conditions have been observed, unless otherwise specified:
 - a. Engine must be off (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
 - b. Components must be at operating temperature to be tested.
 - c. Components which are hot at operating temperatures (i.e., hydraulic systems) must cool down before they are removed.
3. Immediately clean up spilled fluids, IAW spill containment plan, to avoid slipping.
4. When lifting heavy parts, have someone help you. Ensure lifting equipment or jack is working properly, meets weight requirement of part being lifted, and is securely fastened to part.
5. Always use power tools carefully.
6. Observe all WARNINGS, CAUTIONS, and NOTES.

CLEANING INSTRUCTIONS

WARNING

Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. To prevent this, refer to TM 9-247, *Materials Used for Cleaning, Preserving, Abrading and Cementing Ordnance Materiel and Related Materials, Including Chemicals*, for further instructions.

1. **General.** Cleaning instructions will be the same for the majority of parts and components which make up the E-CHU. The following applies to all cleaning operations:
 - a. Clean all parts before inspection, after repair, and before assembly.
 - b. Keep hands free of grease which can collect dust, dirt, and grit.
 - c. After cleaning, all parts should be covered or wrapped to protect them from dust and dirt. Parts that are subject to rust should be lightly oiled after cleaning.
2. **Castings, Forgings, and Metal Parts.**
 - a. Clean inner and outer surfaces with (Detergent, General Purpose, Liquid (WP 0060, Item 6)) and dry with a Rag, Wiping (WP 0060, Item 10).
 - b. Remove grease and accumulated deposits with a scrub brush.

WARNING



Particles blown by compressed air are hazardous. DO NOT exceed 15 psi (103 kPa) nozzle pressure when drying parts with compressed air. Use a maximum of 30 psi (207 kPa) when cleaning components. DO NOT direct compressed air against human skin. Failure to follow this warning may result in injury or death to personnel. Make sure air stream is directed away from user and other personnel in the area. To prevent injury, user must wear protective goggles or face shield.

- c. Clear all threaded holes with compressed air to remove dirt and cleaning fluids.

CAUTION

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

3. **Oil Seals, Electrical Cables, and Flexible Hoses.** Wash oil seals, electrical cables, and flexible hoses with a solution of Detergent, General Purpose, Liquid (WP 0060, Item 6) and water, and wipe dry with a clean Rag, Wiping (WP 0060, Item 10).

PRESERVATION OF PARTS

Unpainted metal parts that will not be installed immediately after cleaning may be covered with a thin coat of light oil Oil, Lubricating, OE/HDO-10 (WP 0060, Item 9).

PAINTING

On painted areas where paint has been removed, paint in accordance with procedures outlined in MIL-T-704, *Treatment and Painting of Materiel*.

INSPECTION INSTRUCTIONS

NOTE

All damaged areas should be marked for repair or replacement.

1. All components and parts must be carefully checked to determine if they are serviceable for use, can be repaired, or must be scrapped.
2. Inspect drilled and tapped (threaded) holes for the following:
 - a. Wear, distortion, cracks, and any other damage in or around holes.
 - b. Threaded areas for wear, distortion (stretching), and evidence of cross-threading.
3. Inspect metal lines, flexible lines or hoses, and metal fittings and connectors for the following:
 - a. Metal lines for sharp kinks, cracks, bad bends, and dents.
 - b. Flexible lines or hoses for fraying, evidence of leakage, and loose metal fittings or connectors.
 - c. Metal fittings and connectors for thread damage and worn or rounded hex heads.
4. Inspect castings, forgings, and vehicle metal parts for the following:
 - a. Equipment surfaces for nicks, burrs, raised metal wear, and other damage.
 - b. Inner and outer surfaces for breaks and cracks.

DISASSEMBLY AND ASSEMBLY INSTRUCTIONS

1. Keep major components together whenever possible and practical.
2. Tag hoses, tubes, electrical wires, cables, and harnesses to identify them and aid during installation.
3. Keep related parts together for identification purposes.
4. Temporarily install attaching hardware such as screws, bolts, washers, and nuts to prevent loss.
5. Only disassemble to the point of the problem.
6. Ensure parts are clean and lubricated before assembly.

REPAIR INSTRUCTIONS

1. Repair castings, forgings, and parts using the following instructions:
 - a. Repair minor cracked castings or forgings IAW TC 9-237, *Operator's Circular Welding Theory and Application*.
 - b. Repair minor damage to surfaces with an Cloth, Abrasive (WP 0060, Item 5) dipped in detergent Detergent, General Purpose, Liquid (WP 0060, Item 6).
 - c. Replace any deeply nicked surface that could affect the assembly operation.
 - d. Repair minor damage to threaded capscrew holes with thread tap of same size to prevent cutting oversize.
2. After repair, thoroughly clean all parts to prevent dirt, metal chips, or other foreign material from entering any working parts.

LUBRICATION INSTRUCTIONS

1. Refer to *Operator PMCS, Including Lubrication Instructions Introduction* (WP 0015) for detailed, illustrated instructions on proper lubrication.
2. Some general practices to remember:
 - a. Use the correct lubricant.
 - b. Keep lubricants clean.
 - c. Clean all fittings prior to lubrication.
 - d. Lubricate clean disassembled and new parts to prevent rust.

APPLICATION OF ADHESIVES AND SEALING COMPOUNDS

1. **General.** Adhesives are recommended in some tasks to ensure and strengthen seals. Sealing compounds are used to seal parts against moisture. The following information describes their correct use and application.
2. **Adhesive.** Adhesive provides a seal against leakage and a resistance to loosening when used in the assembly of threaded, slip-fitted, or press-fitting parts. Always use the grade of adhesive specified and never use adhesive when other retaining means are provided, such as lockwires, lockwashers, lockplates, and fasteners.
3. **Sealing Compound.**
 - a. Anytime a seal is broken, the part must be thoroughly cleaned to remove any remaining sealing compound and dirt.
 - b. Thoroughly clean surface before applying sealing compound.
 - c. When applying sealing compound, ensure the area is completely covered. Press sealing compound into and around parts as necessary.
 - d. Refer to manufacturer's instructions for time needed to set sealing compound.

STANDARD TOOL REQUIREMENTS

1. The following are general practices regarding the use of tools:
 - a. Always use the proper tool kit and tools for the procedure being performed.
 - b. Ensure tools are clean and lubricated to reduce wear and prevent rust.
 - c. Keep track of tools. DO NOT be careless with them.
 - d. Return tools to toolbox when finished with repair or maintenance.
 - e. Return toolboxes and tools to tool storage when not in use.
 - f. Inventory tools before and after each use.
2. Some maintenance tasks may require special or fabricated tools. The "Initial Setup" of the procedure will specify any special or fabricated tools needed to perform that procedure. Use these special tools only for the maintenance procedures for which they are designed or called out. If you are unfamiliar with a required tool, see your supervisor.

TAGGING WIRES AND LINES

1. Use Tag, Marker (WP 0060, Item 12) to identify all electrical wires and hydraulic fluid lines, and any other parts which may be hard to identify or replace later. Fasten tags to parts during removal by wrapping wire fasteners around or through parts and twisting ends together. Position tags to be out of the way during cleaning, inspection, and repair. Mark tags with a pencil, pen, or marker.
2. Whenever possible, identify electrical wires 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, and use 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 the description of the wire and the point to 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 the wires during assembly. If you need to identify a loose wire, look for an identifying number near the end of the wire, stamped on a permanent metal tag. Compare the number to wire numbers on the appropriate electrical schematic.
3. Identify hydraulic fluid lines when you are taking off more than one line at the same time. Mark tags with points to which lines and hoses must be connected. If it is not obvious which end of a line goes where, tag each end of the line.
4. Identify and tag other parts as required by name and installed location.

LINES AND PORTS

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

- a. Clean fittings and surrounding area before disconnecting lines.
- b. Cover lines with protective Cap Set, Protective, Dust and Moisture (WP 0060, Item 3) or tape lines and ports after disconnecting lines. When these are not available, use plastic bags and rubber bands, Rag, Wiping (WP 0060, Item 10), or other similar materials to prevent dirt from entering system.
- c. Ensure new and used parts are clean before installing.
- d. Wait to remove cover, cap, plug, or tape from lines and ports until just before installing lines.

FLUID DISPOSAL

Dispose of contaminated drained fluids IAW the Standard Operating Procedures (SOP) of your unit.

END OF WORK PACKAGE

FIELD MAINTENANCE**STOWAGE ASSEMBLY REPLACEMENT**

HEMTT Stowage Assembly Removal, PLS Stowage Assembly Removal, HEMTT Bracket Removal, PLS Bracket Removal, Cleaning and Inspection, PLS Bracket Installation, HEMTT Bracket Installation, PLS Stowage Assembly Installation, HEMTT Stowage Assembly Installation, Stowage Assembly Placement

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Sling, Nylon (WP 0057, Item 1)
Tool Set, SATS Base (WP 0057, Item 3)
Lifting Device

Materials/Parts

Cap Set, Protective, Dust and Moisture
(WP 0060, Item 3)
Grease, Automotive and Artillery, GAA
(WP 0060, Item 8)
Strap, Tiedown, Electrical Components
(WP 0060, Item 11)
Tag, Marker (WP 0060, Item 12)

Personnel Required

Two

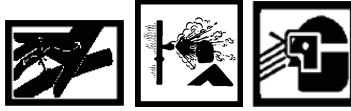
References

WP 0020
WP 0029

Equipment Conditions

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Toolbox removed - HEMTT only (TM 9-2320-326-14&P)
Lift frame placed on level ground (WP 0007)
Hook arm fully extended (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Air system pressure relieved (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

HEMTT STOWAGE ASSEMBLY REMOVAL

WARNING

- Disconnecting quick disconnect fittings will not relieve hydraulic system pressure.
- Use extreme caution when disconnecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure.
- Failure to follow these warnings may result in death or serious injury to personnel.

NOTE

- Tag and note position of all hoses and fittings to aid in installation.
 - Cap all hoses and fittings on removal to prevent contamination.
 - Remove and discard tiedown straps as required.
 - Perform steps 1 and 2 for HEMTT M1120 trucks.
 - Perform steps 3 and 4 for HEMTT M1120A4 trucks.
1. Disconnect two hydraulic hoses (Figure 1, Item 5) from quick connect fittings (Figure 1, Item 1) and route to under stowage assembly (Figure 1, Item 3).
 2. Slowly disconnect four lower hydraulic hoses (Figure 1, Item 4) from fittings on control box (Figure 1, Item 2) and route to under stowage assembly (Figure 1, Item 3).

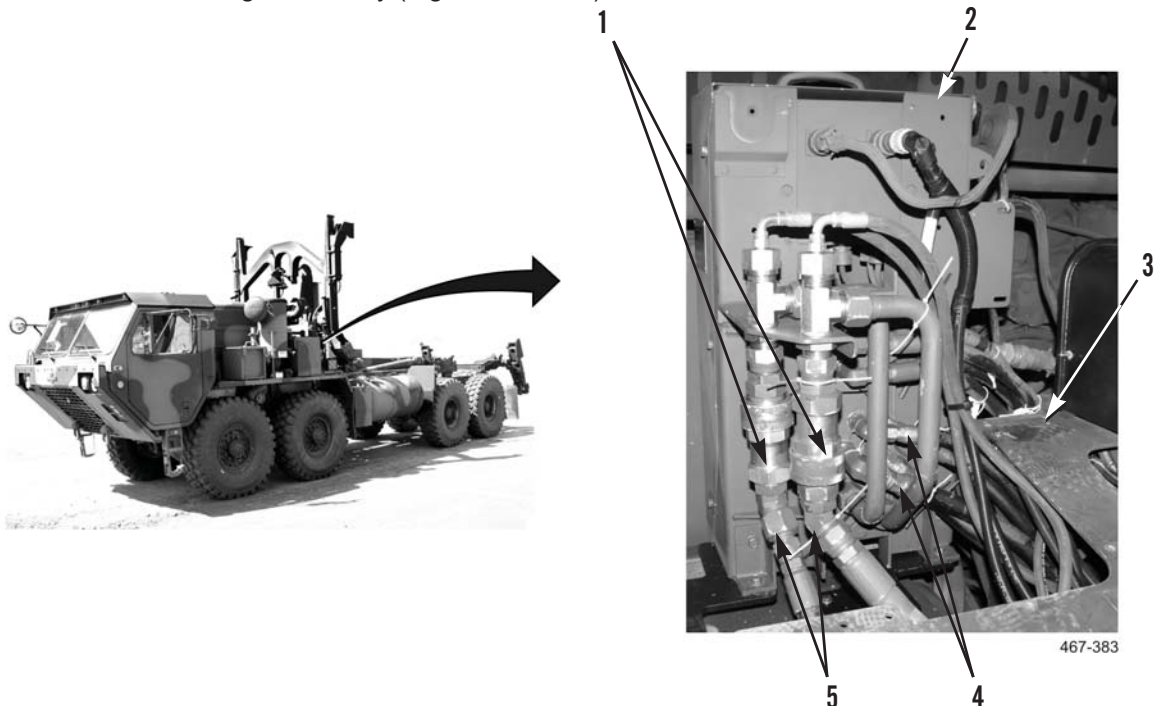


Figure 1. Remove Hydraulic Lines - HEMTT, M1120.

HEMTT STOWAGE ASSEMBLY REMOVAL – CONTINUED

3. Disconnect two hydraulic hoses (Figure 2, Item 5) from quick connect fittings (Figure 2, Item 1) and route to under stowage assembly (Figure 2, Item 3).
4. Slowly disconnect four lower hydraulic hoses (Figure 2, Item 4) from fittings on control box (Figure 2, Item 2) and route to under stowage assembly (Figure 2, Item 3).

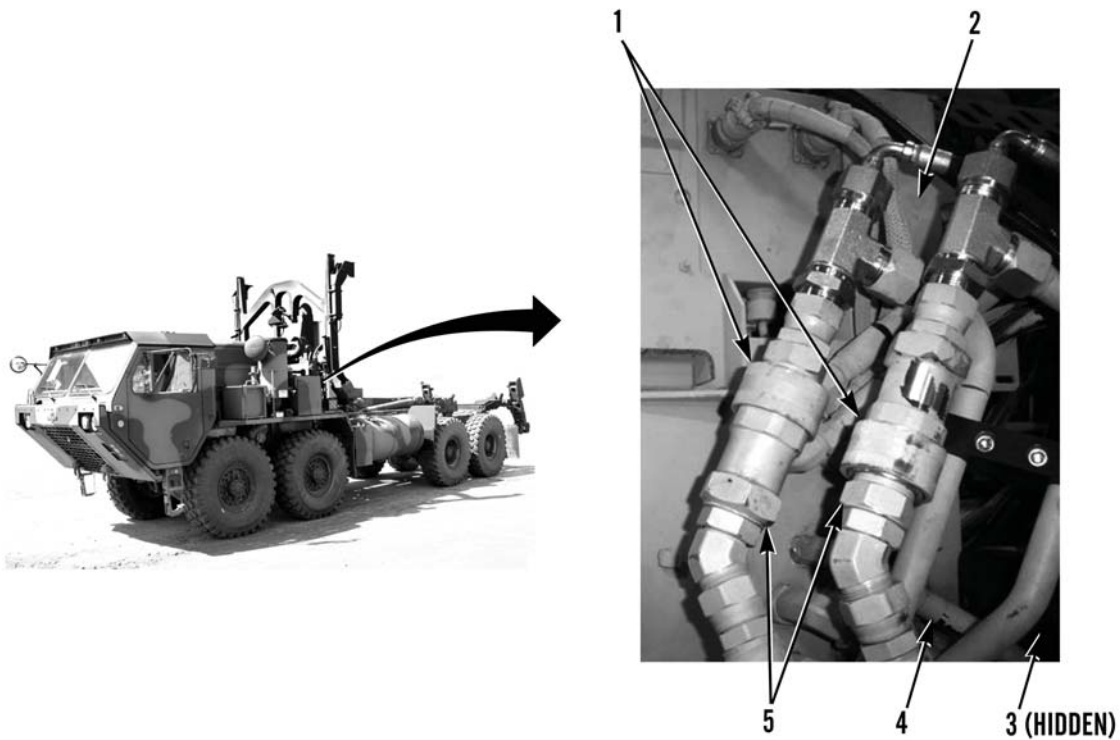


Figure 2. Remove Hydraulic Lines - HEMTT, M1120A4.

HEMTT STOWAGE ASSEMBLY REMOVAL – CONTINUED

5. Loosen three locking pins (Figure 3, Item 1), and remove manifold cover (Figure 3, Item 2) from stowage assembly (Figure 3, Item 7).
6. Disconnect two hydraulic hoses (Figure 3, Item 3) from manifold (Figure 3, Item 4) and route to under stowage assembly (Figure 3, Item 7).
7. Disconnect pneumatic line (Figure 3, Item 5) from solenoid valve (Figure 3, Item 6) and route to under stowage assembly (Figure 3, Item 7).

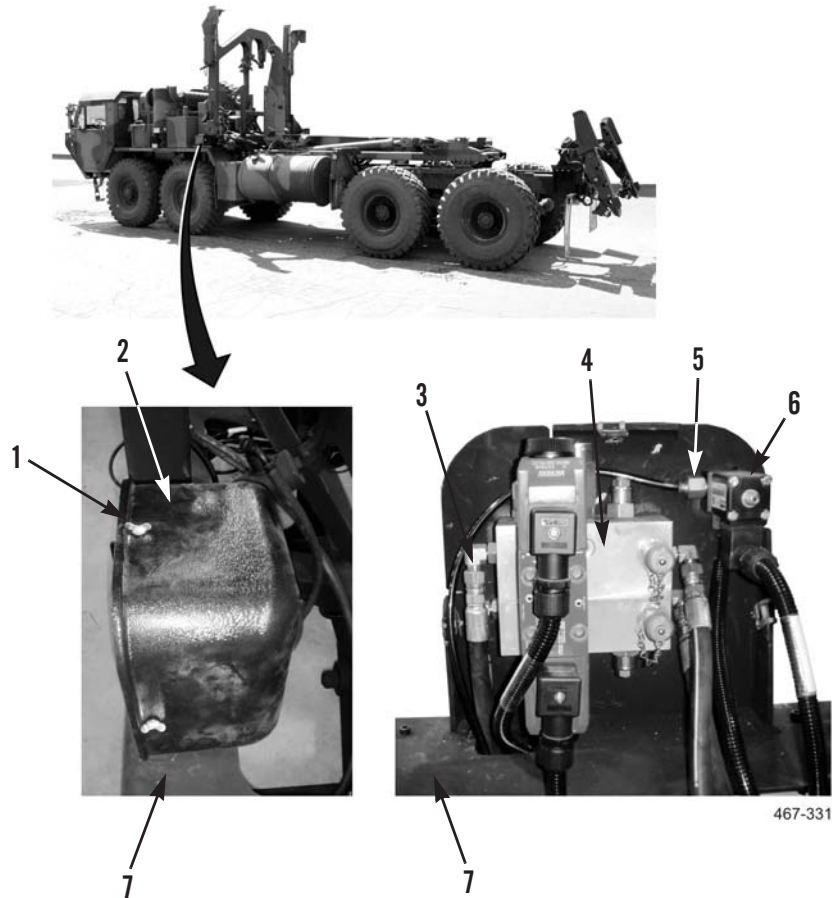


Figure 3. Disconnect Hydraulic and Pneumatic Lines.

8. Remove control boxes and wiring harnesses from stowage assembly (WP 0029).

HEMTT STOWAGE ASSEMBLY REMOVAL – CONTINUED**WARNING**

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

CAUTION

Move all disconnected hoses and wiring harnesses away from stowage assembly. Failure to follow this caution may result in damage to equipment.

NOTE

Stowage assembly weighs 640 lb (290 kg).

9. Attach sling and lifting device to stowage assembly.
10. Remove 12 nuts (Figure 4, Item 4), washers (Figure 4, Item 3), bolts (Figure 4, Item 1), and washers (Figure 4, Item 2) from left and right stowage assembly brackets (Figure 4, Item 5).

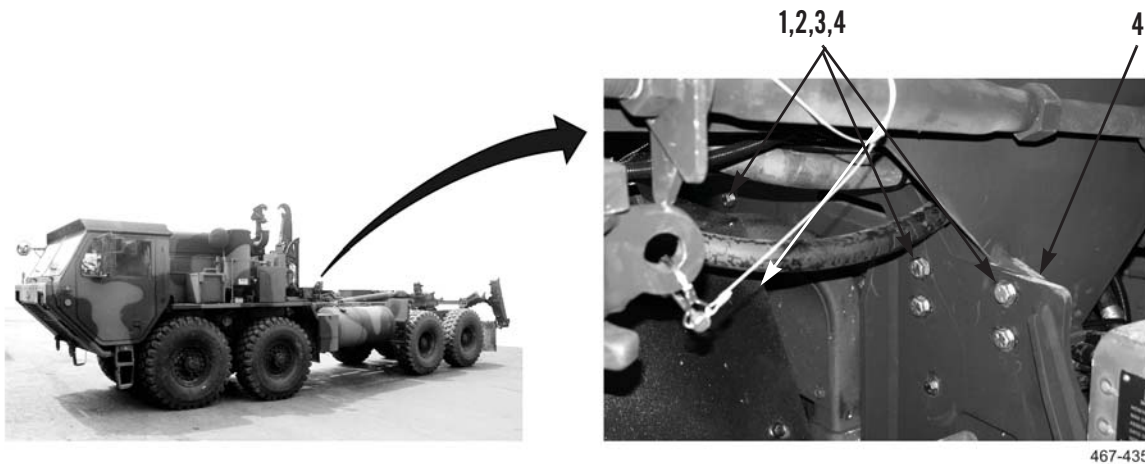
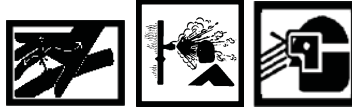


Figure 4. HEMTT Stowage Assembly Bracket.

11. Use lifting device to remove stowage assembly from vehicle and lower onto flat surface.
12. Remove sling and lifting device from stowage assembly.

END OF TASK

PLS STOWAGE ASSEMBLY REMOVAL**WARNING**

- Disconnecting quick disconnect fittings will not relieve hydraulic system pressure.
- Use extreme caution when disconnecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure.
- Failure to follow these warnings may result in death or serious injury to personnel.

NOTE

- Tag and note position of all hoses and fittings to aid in installation.
 - Cap all hoses and fittings on removal to prevent contamination.
 - Remove and discard tiedown straps as required.
1. Loosen three locking pins (Figure 5, Item 1), and remove manifold cover (Figure 5, Item 2) from stowage assembly (Figure 5, Item 7).
 2. Disconnect two hydraulic hoses (Figure 5, Item 3) from manifold (Figure 5, Item 4) and route to under stowage assembly (Figure 5, Item 7).
 3. Disconnect pneumatic line (Figure 5, Item 5) from solenoid valve (Figure 5, Item 6) and route to under stowage assembly (Figure 5, Item 7).

PLS STOWAGE ASSEMBLY REMOVAL – CONTINUED

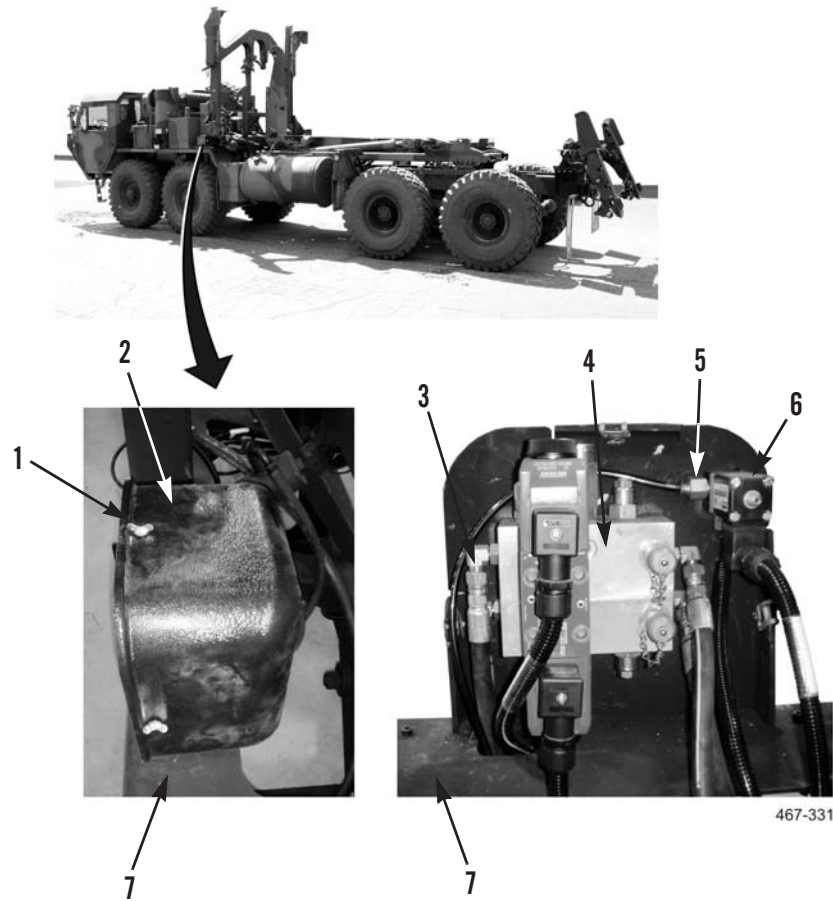


Figure 5. Disconnect Hydraulic and Pneumatic Lines.

PLS STOWAGE ASSEMBLY REMOVAL – CONTINUED

4. Remove control boxes and wiring harnesses from stowage assembly (WP 0029).
5. Remove 12 nuts (Figure 6, Item 4), washers (Figure 6, Item 3), bolts (Figure 6, Item 1), and washers (Figure 6, Item 2) from right and left stowage assembly brackets (Figure 6, Item 5).

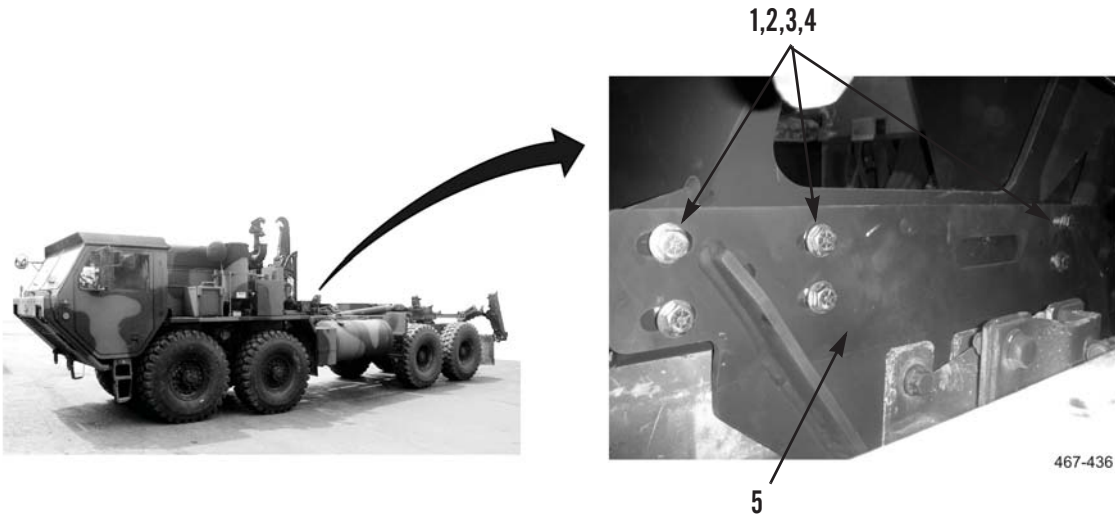


Figure 6. PLS Stowage Assembly Bracket.

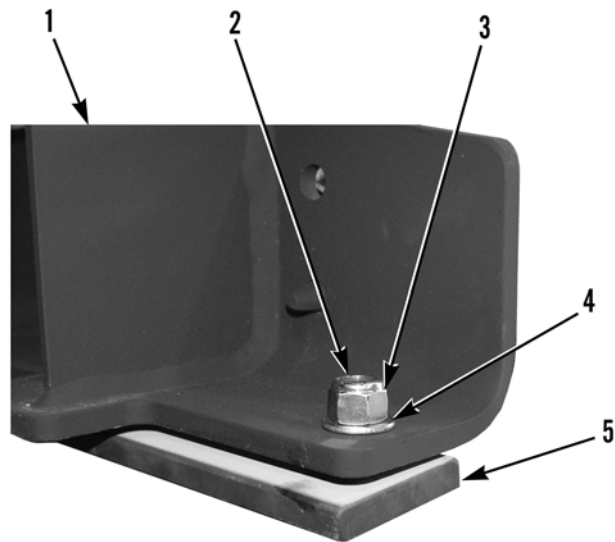
PLS STOWAGE ASSEMBLY REMOVAL – CONTINUED**WARNING**

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

Stowage assembly weighs 640 lb (290 kg).

6. Attach lifting device and sling to stowage assembly.
7. Use lifting device to remove stowage assembly from vehicle and lower onto flat surface.
8. Remove sling and lifting device from stowage assembly.
9. Remove four locknuts (Figure 7, Item 3), washers (Figure 7, Item 4), bolts (Figure 7, Item 2), and two spacers (Figure 7, Item 5) from stowage assembly (Figure 7, Item 1). Discard locknuts.



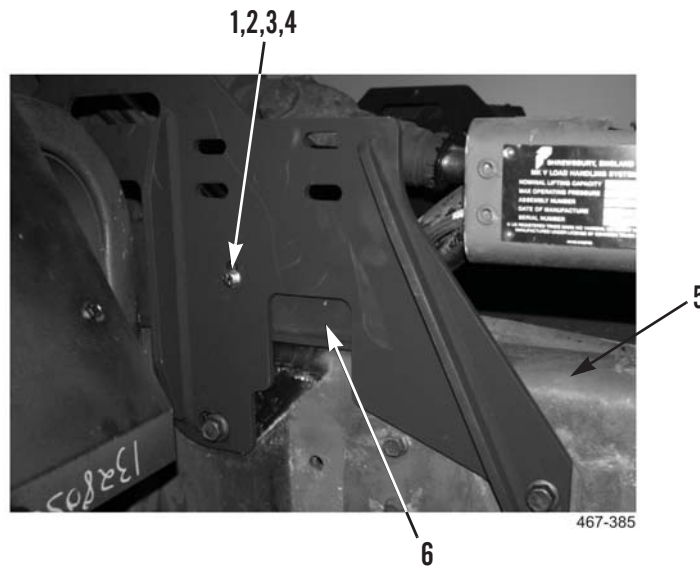
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Figure 7. PLS Spacers.

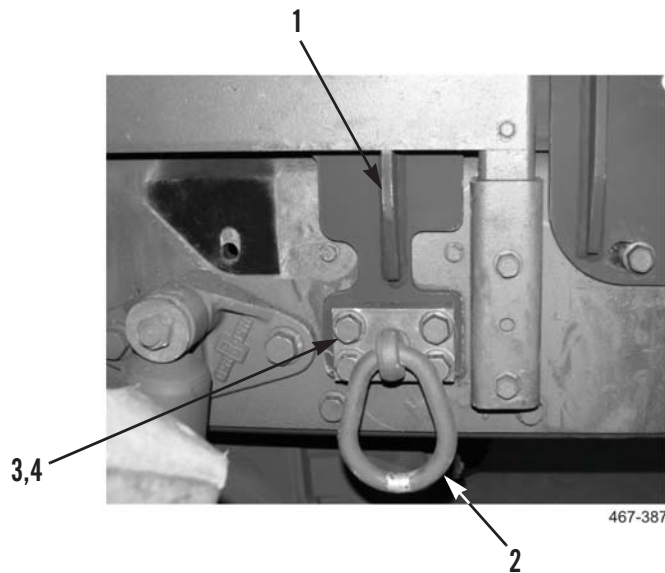
END OF TASK

HEMTT BRACKET REMOVAL**NOTE**

- Spacer and bracket removal is the same for both sides.
 - Note size and placement of bolts to aid in installation.
1. Remove two nuts (Figure 8, Item 4), washers (Figure 8, Item 3), bolts (Figure 8, Item 1), washers (Figure 8, Item 2), and spacer (Figure 8, Item 6) from frame (Figure 8, Item 5) of vehicle.

**Figure 8. Spacer Removal.**

2. Remove four nuts (Figure 9, Item 4), bolts (Figure 9, Item 3), and tiedown link (Figure 9, Item 2) from bracket (Figure 9, Item 1).

**Figure 9. Tiedown Removal.**

HEMTT BRACKET REMOVAL – CONTINUED

3. Remove three nuts (Figure 10, Item 3), bolts (Figure 10, Item 2), and HEMTT bracket (Figure 10, Item 1) from vehicle.



Figure 10. HEMTT Bracket Removal.

END OF TASK

PLS BRACKET REMOVAL**NOTE**

- Note placement of bolts to aid in installation.
 - Bracket removal is the same for both sides.
1. Remove seven nuts (Figure 11, Item 1), bolts (Figure 11, Item 2), and PLS bracket (Figure 11, Item 3) from vehicle.
 2. If damaged, loosen nut (Figure 11, Item 4) and bolt (Figure 11, Item 5) and remove shim (Figure 11, Item 6) from vehicle.

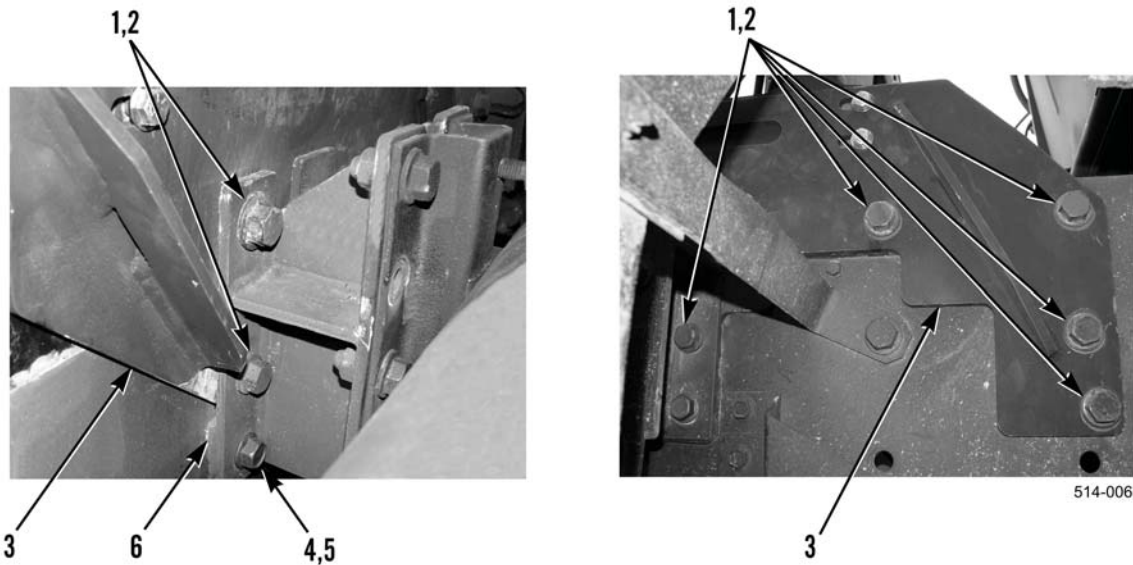


Figure 11. PLS Bracket Removal.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK**PLS BRACKET INSTALLATION****NOTE**

- Install bolts as noted during removal.
 - Bracket installation is the same for both sides.
 - Hand tighten bracket bolts on installation.
1. If removed, install shim (Figure 11, Item 6) and tighten bolt (Figure 11, Item 5) and nut (Figure 11, Item 4) on vehicle.
 2. Install PLS bracket (Figure 11, Item 3), seven bolts (Figure 11, Item 1), and nuts (Figure 11, Item 2) on vehicle.

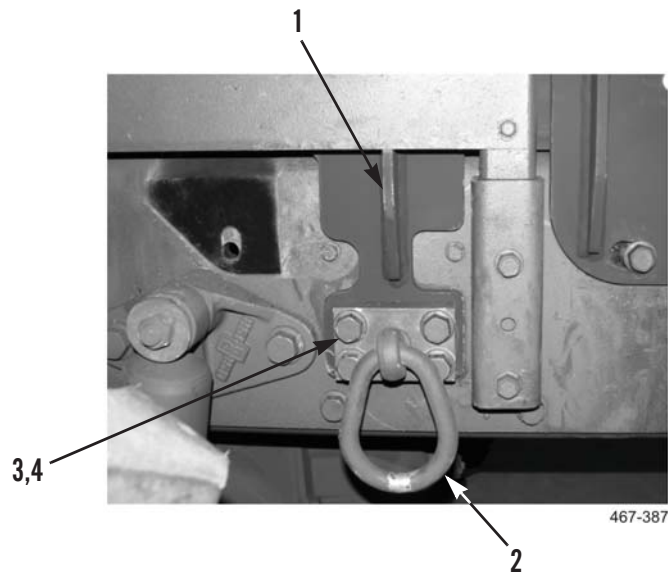
END OF TASK

HEMTT BRACKET INSTALLATION**NOTE**

- Install bolts as noted during removal.
 - Bracket installation is the same for both sides.
 - Hand tighten bracket bolts on installation.
1. Install HEMTT bracket (Figure 12, Item 1), three bolts (Figure 12, Item 2), and nuts (Figure 12, Item 3) on vehicle.

**Figure 12. HEMTT Bracket.**

2. Install tiedown (Figure 13, Item 2), four bolts (Figure 13, Item 3), 2nd nuts (Figure 13, Item 4) on bracket.

**Figure 13. Tiedown Installation.**

HEMTT BRACKET INSTALLATION – CONTINUED

3. Install spacer (Figure 14, Item 6), two washers (Figure 14, Item 2), bolts (Figure 14, Item 1), washers (Figure 14, Item 3), and nuts (Figure 14, Item 4) on frame (Figure 14, Item 5) of vehicle.

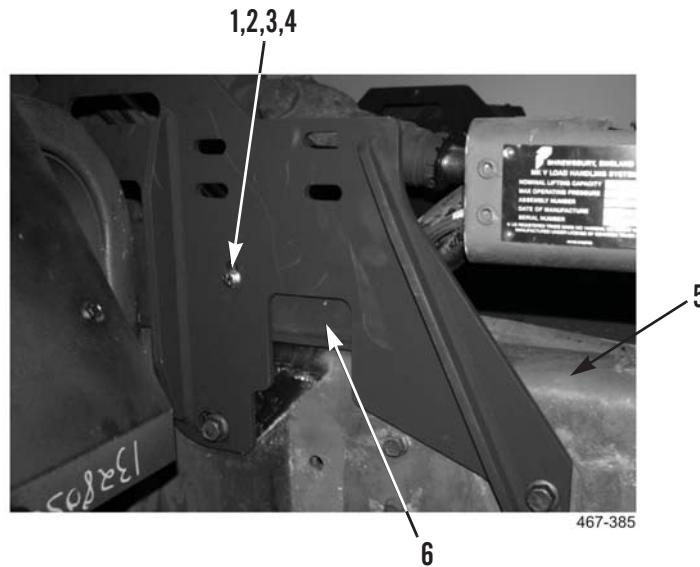


Figure 14. Spacer Installation.

END OF TASK**PLS STOWAGE ASSEMBLY INSTALLATION**

1. Install two spacers (Figure 15, Item 5), four bolts (Figure 15, Item 2), washers (Figure 15, Item 4), and new locknuts (Figure 15, Item 3) on stowage assembly (Figure 15, Item 1).

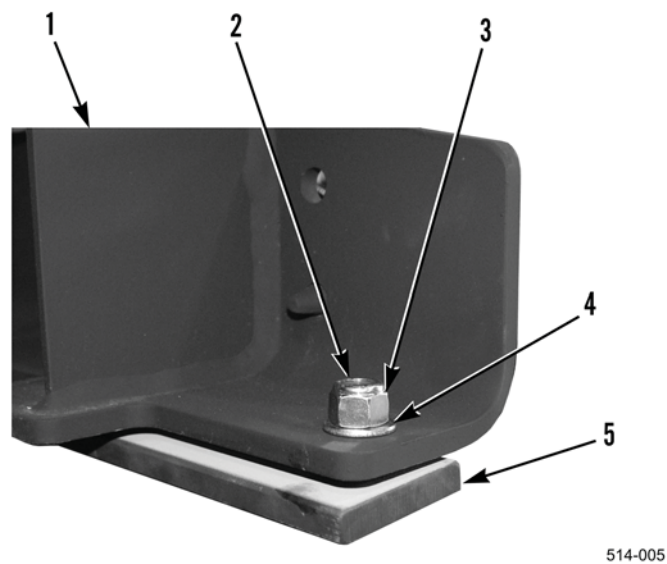


Figure 15. PLS Spacers.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED**WARNING**

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

- Stowage assembly weighs 640 lb (290 kg).
 - Hand tighten bolts on installation.
2. Attach sling and lifting device to stowage assembly.
 3. Use lifting device to install stowage assembly on vehicle.
 4. Install 12 washers (Figure 16, Item 2), bolts (Figure 16, Item 1), washers (Figure 16, Item 5), and nuts (Figure 16, Item 4) on right and left stowage assembly brackets (Figure 16, Item 5).
 5. Remove sling and lifting device from stowage assembly.

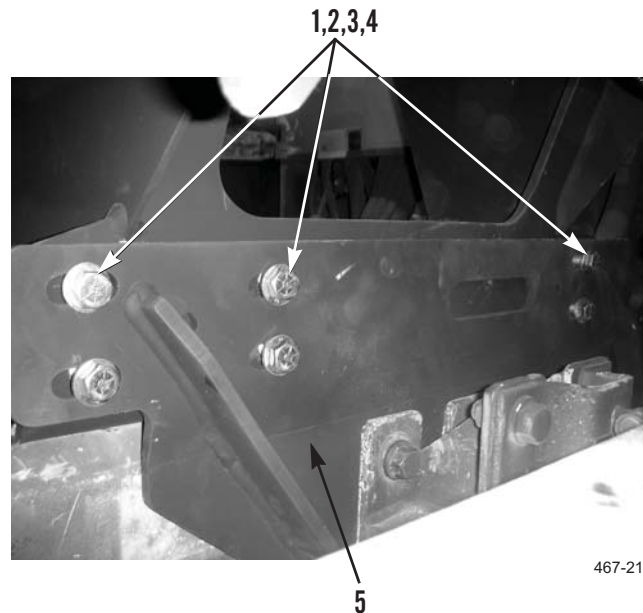


Figure 16. PLS Stowage Assembly Installation.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

6. Install wiring harnesses and control boxes on stowage assembly (WP 0029).

NOTE

Install hoses as noted during removal.

7. Route pneumatic line (Figure 17, Item 5) from under stowage assembly and connect to solenoid valve (Figure 17, Item 6).
8. Route two hydraulic hoses (Figure 17, Item 3) from under stowage assembly and connect to manifold (Figure 17, Item 4).
9. Install manifold cover (Figure 17, Item 2) on stowage assembly (Figure 17, Item 7) and tighten three locking pins (Figure 17, Item 1).

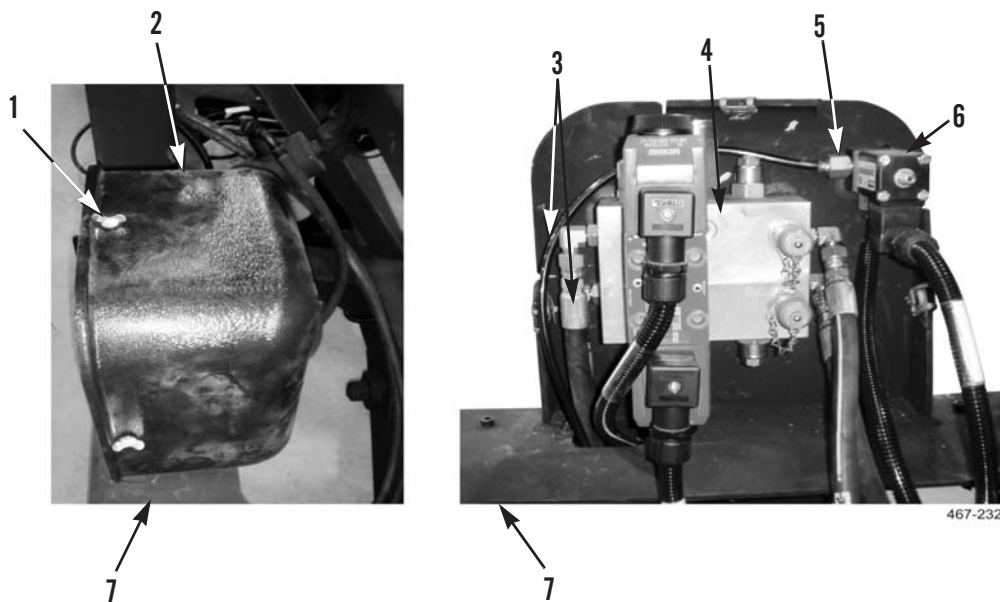


Figure 17. Connect Hydraulic and Pneumatic Lines.

END OF TASK

HEMTT STOWAGE ASSEMBLY INSTALLATION**WARNING**

Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

CAUTION

Verify that all hoses are positioned out of the way of stowage assembly. Failure to follow this caution may result in damage to equipment.

NOTE

- Stowage assembly weighs 640 lb (290 kg).
 - Hand tighten bolts on installation.
1. Attach lifting device and sling to stowage assembly.
 2. Use lifting device to install stowage assembly on vehicle.
 3. Install 12 washers (Figure 18, Item 2), bolts (Figure 18, Item 1), washers (Figure 18, Item 3), and nuts (Figure 18, Item 4) on left and right stowage assembly brackets (Figure 18, Item 5).
 4. Remove sling and lifting device from stowage assembly.

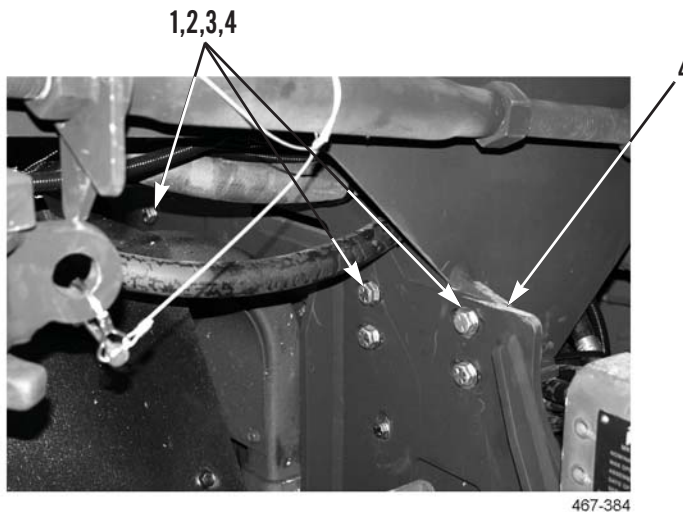


Figure 18. HEMTT Stowage Assembly Bracket.

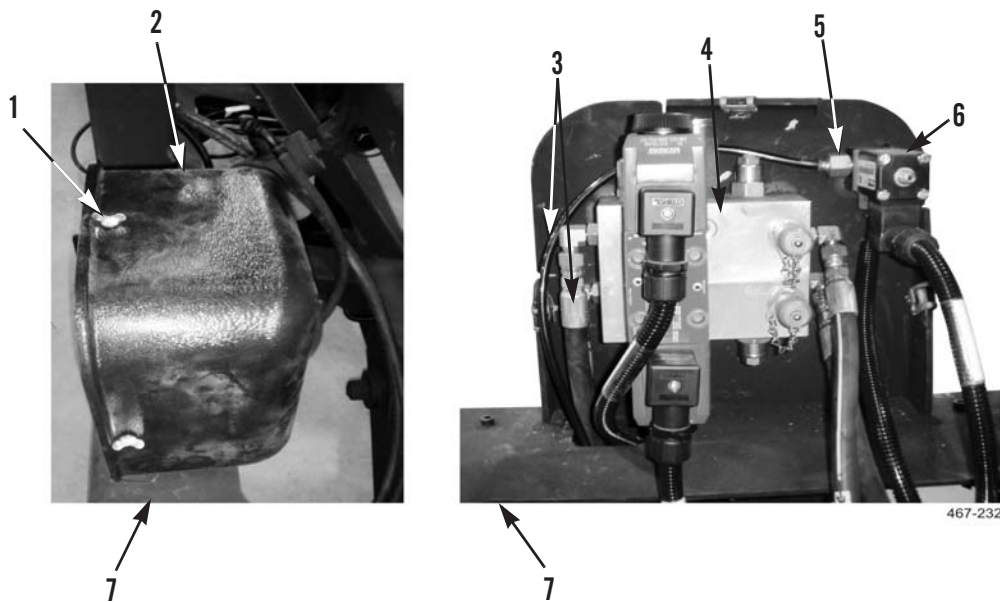
HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

5. Install control boxes on stowage assembly (WP 0029).

NOTE

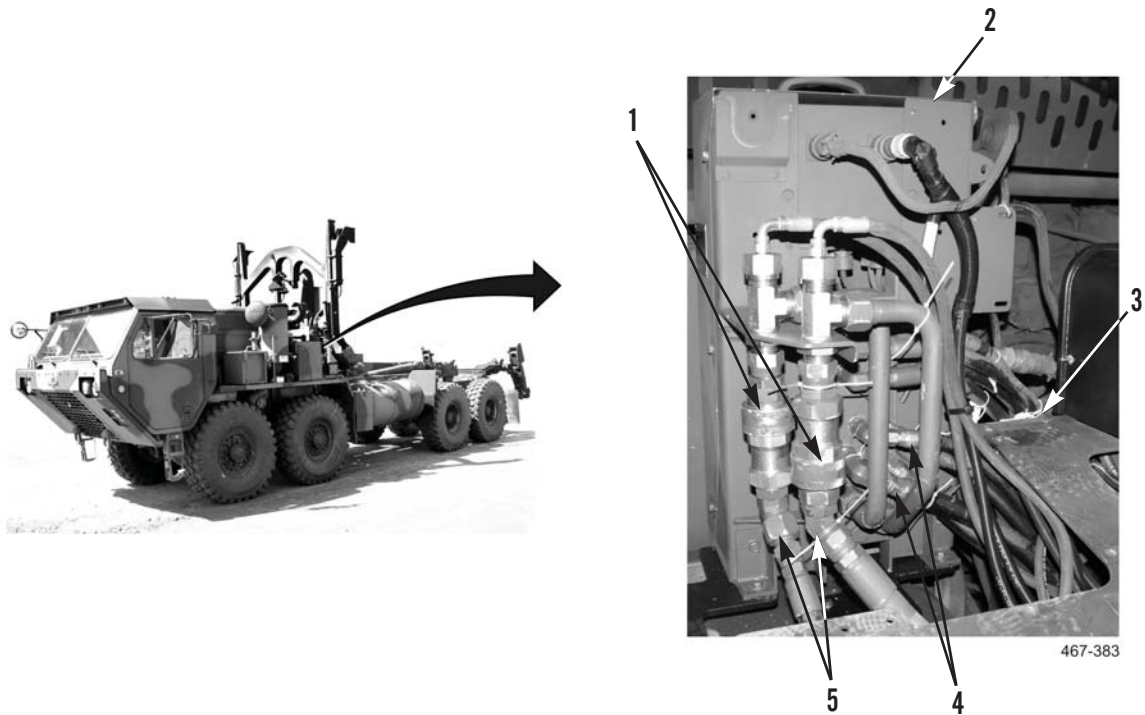
Install hoses as noted during removal.

6. Route pneumatic line (Figure 19, Item 5) from under stowage assembly and connect to solenoid valve (Figure 19, Item 6).
7. Route two hydraulic hoses (Figure 19, Item 3) from under stowage assembly and connect to manifold (Figure 19, Item 4).
8. Install manifold cover (Figure 19, Item 2) on stowage assembly (Figure 19, Item 7) and tighten three locking pins (Figure 19, Item 1).



HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

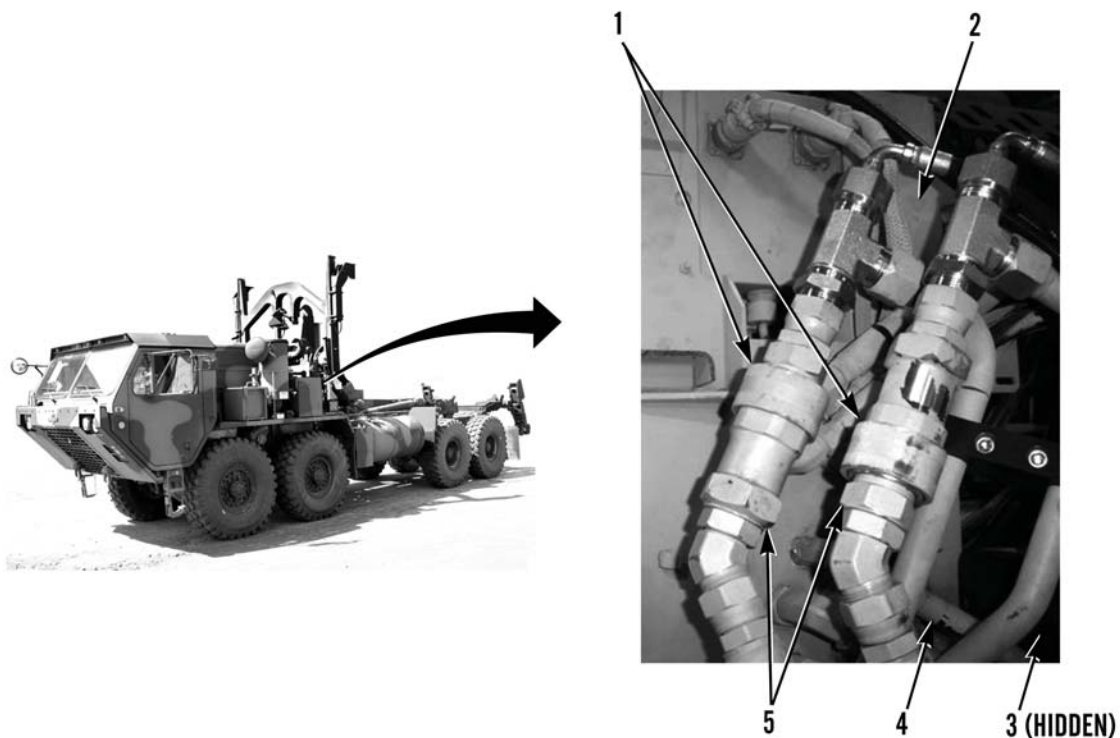
- Install hoses as tagged during removal.
 - Perform steps 9 and 10 for HEMTT M1120 trucks.
 - Perform steps 11 and 12 for HEMMT M1120A4 trucks.
9. Route four lower hydraulic lines (Figure 20, Item 4) from under stowage assembly (Figure 20, Item 3) and connect to fittings on control box (Figure 20, Item 2).
 10. Route two hydraulic hoses (Figure 20, Item 5) from under stowage assembly (Figure 20, Item 3) and connect to quick connect fittings (Figure 20, Item 1).

**Figure 20. Hydraulic Lines.**

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

WARNING

- Use extreme caution when connecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves, and protective clothing while connecting hydraulic hoses.
 - Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure.
 - Failure to follow these warnings may result in death or serious injury to personnel.
11. Route four lower hydraulic lines (Figure 21, Item 4) from under stowage assembly (Figure 21, Item 3) and connect to fittings on control box (Figure 21, Item 2).
 12. Route two hydraulic hoses (Figure 21, Item 5) from under stowage assembly (Figure 21, Item 3) and connect to quick connect fittings (Figure 21, Item 1).



514-004

Figure 21. Hydraulic Lines - HEMTT A4.

END OF TASK

STOWAGE ASSEMBLY PLACEMENT

1. Move hook arm to stowed position (PLS: TM 9-2320-364-14&P, HEMTT: 9-2320-326-14&P).

NOTE

Rear edge of stowage assembly must be positioned 3 1/8 in. (80 mm) from front edge of stowed hook arm. Measure distance on right and left sides of hook arm for accurate placement of stowage assembly.

2. Adjust placement of stowage assembly (Figure 22, Item 1) on frame until distance between stowage assembly and front edge of hook arm (Figure 22, Item 2) measures 3 1/8 in. (80 mm).

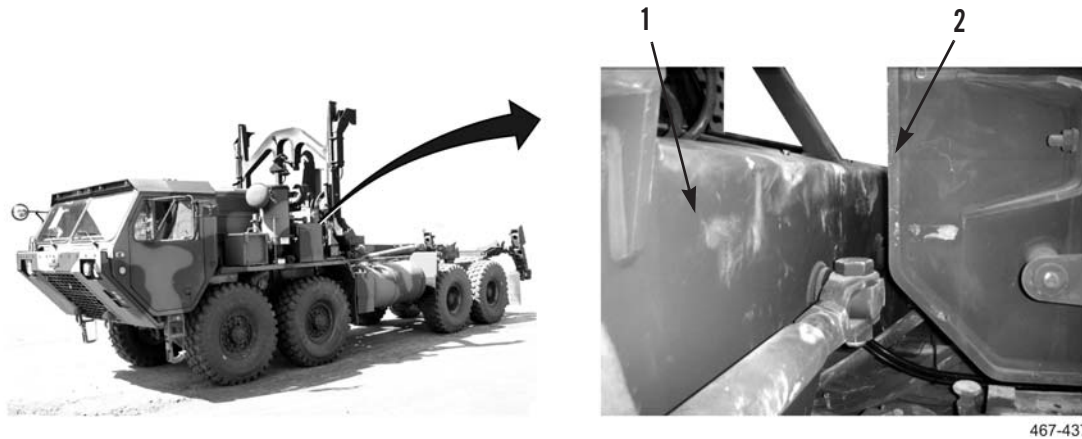


Figure 22. Distance Between Stowage Assembly and Hook Arm.

STOWAGE ASSEMBLY PLACEMENT – CONTINUED**HEMTT Stowage Assembly Bolt Tightening**

3. Tighten 12 bolts (Figure 23, Item 1) and nuts (Figure 23, Item 2) securing stowage assembly to support brackets (Figure 23, Item 3).
4. Tighten four bolts (Figure 23, Item 8) and nuts (Figure 23, Item 9) securing spacers (Figure 23, Item 7) to support brackets (Figure 23, Item 3).
5. Tighten eight bolts (Figure 23, Item 4) and nuts (Figure 23, Item 5) securing tiedown links (Figure 23, Item 6) to frame.
6. Tighten six bolts (Figure 23, Item 10) and nuts (Figure 23, Item 11) securing support brackets (Figure 23, Item 3) to frame.

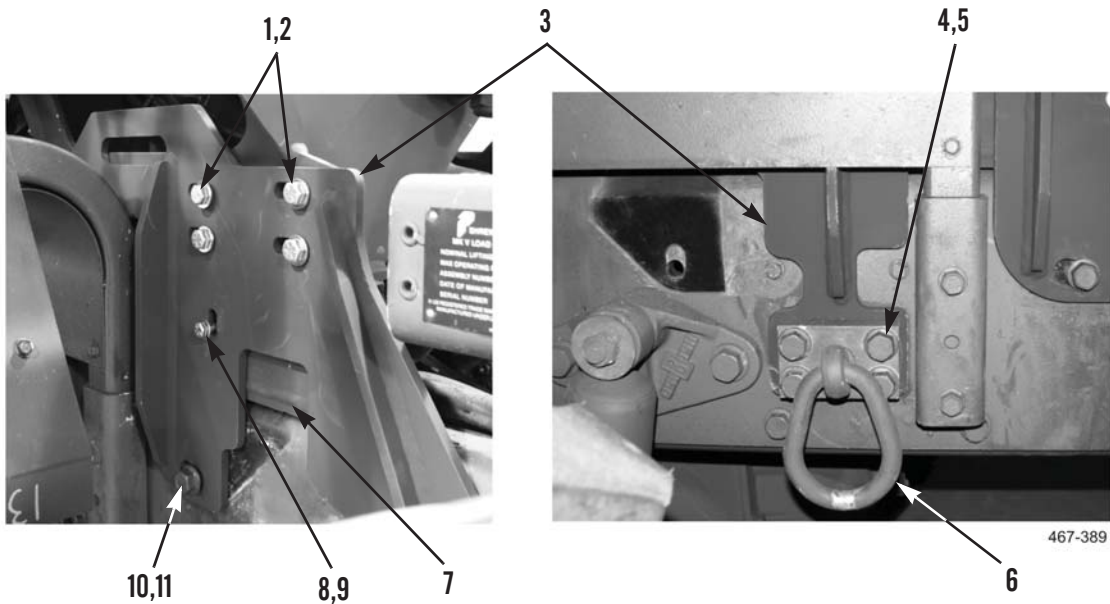


Figure 23. Tighten HEMTT Bolts.

STOWAGE ASSEMBLY PLACEMENT – CONTINUED**PLS Stowage Assembly Bolt Tightening**

7. Tighten 12 bolts (Figure 24, Item 1) and nuts (Figure 24, Item 2) securing stowage assembly to support brackets (Figure 24, Item 5).
8. Tighten 14 bolts (Figure 24, Item 3) and nuts (Figure 24, Item 4) securing support brackets (Figure 24, Item 5) to frame.

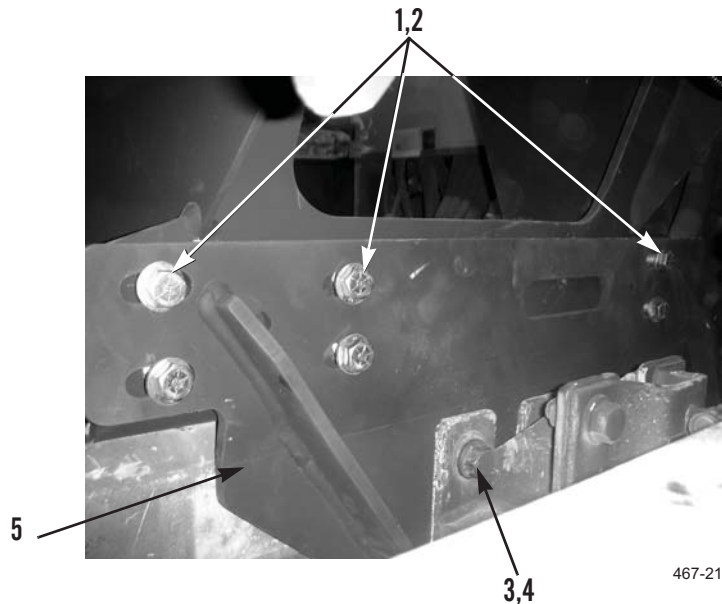


Figure 24. Tighten PLS Bolts.

END OF TASK**FOLLOW-ON TASKS**

1. Install toolbox - HEMTT only (TM 9-2320-326-14&P).
2. Stow lift frame on vehicle (WP 0007).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
STOWAGE LATCH AND ACTUATOR REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Locknut (WP 0059, Item 12) (2)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

Lift frame placed on level ground (WP 0007)

Air system pressure relieved (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

REMOVAL**WARNING**

- During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat.
- Use extreme caution when removing pneumatic hoses. Wear protective goggles or face shield.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Note position of actuator to aid in installation.

REMOVAL – CONTINUED

1. Remove bolt (Figure 1, Item 1), yoke (Figure 1, Item 2), and nut (Figure 1, Item 3) from capture plate (Figure 1, Item 7).
2. Remove bolt (Figure 1, Item 4), end washer (Figure 1, Item 5), pivot pin (Figure 1, Item 6), and capture plate (Figure 1, Item 7) from latch assembly (Figure 1, Item 8).
3. Remove yoke (Figure 1, Item 2), jam nut (Figure 1, Item 17), and boot (Figure 1, Item 16) from actuator (Figure 1, Item 11).
4. Remove fitting (Figure 1, Item 9) and washer (Figure 1, Item 10) from actuator (Figure 1, Item 11).
5. Remove two locknuts (Figure 1, Item 15), washers (Figure 1, Item 14), bracket (Figure 1, Item 13), and actuator (Figure 1, Item 11) from mounting plate (Figure 1, Item 12). Discard locknuts.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK**INSTALLATION****WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat be worn. Failure to follow this warning may result in injury to personnel.

1. Install actuator (Figure 1, Item 11), bracket (Figure 1, Item 13), two washers (Figure 1, Item 14), and new locknuts (Figure 1, Item 15) on mounting plate (Figure 1, Item 12).
2. Install washer (Figure 1, Item 10), and fitting (Figure 1, Item 9) on actuator (Figure 1, Item 11).
3. Install capture plate (Figure 1, Item 7), pivot pin (Figure 1, Item 6), end washer (Figure 1, Item 5), and bolt (Figure 1, Item 4) on latch assembly (Figure 1, Item 8).
4. Install boot (Figure 1, Item 16), jam nut (Figure 1, Item 17), and yoke (Figure 1, Item 2) on actuator (Figure 1, Item 11).
5. Adjust placement of yoke (Figure 1, Item 2) on actuator (Figure 1, Item 11) to align yoke with boss on capture plate (Figure 1, Item 7). Tighten jam nut when aligned.

NOTE

Finger tighten bolt on installation. Tighten nut to capture plate when aligned.

6. Install bolt (Figure 1, Item 1), yoke (Figure 1, Item 2), and nut (Figure 1, Item 3) on capture plate (Figure 1, Item 7). Adjust depth of bolt to vertically align yoke on actuator.

INSTALLATION – CONTINUED

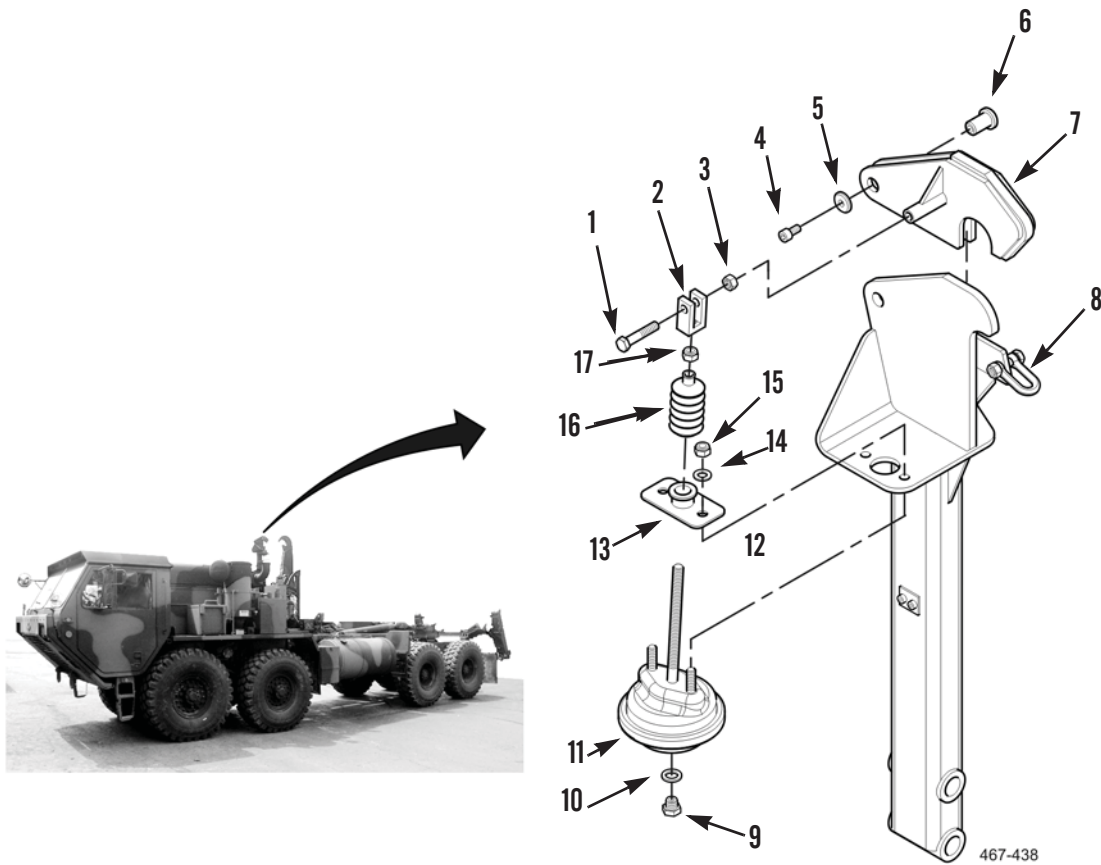


Figure 1. Stowage Latch and Actuator.

END OF TASK

FOLLOW-ON TASKS

1. Check for air leaks (WP 0020).
2. Verify proper operation of stowage latch (WP 0007).
3. Stow lift frame on vehicle (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE CYLINDER REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)

Materials/Parts

Cap Set, Protective, Dust and Moisture
(WP 0060, Item 3)

Rag, Wiping (WP 0060, Item 10)

Tag, Marker (WP 0060, Item 12)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P, HEMTT: TM 9-2320-326-
14&P)

Hydraulic system pressure relieved (PLS: TM
9-2320-364-10, HEMTT: TM 9-2320-279-
10-1)

Lift frame on level ground (WP 0007)

REMOVAL**WARNING**

- During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat.
- Use extreme caution when disconnecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure.
- Failure to follow these warnings may result in death or serious injury to personnel.

NOTE

- Tag hydraulic hoses to aid in installation.
- Cap hoses and fittings to prevent contamination.

REMOVAL – CONTINUED

1. Remove two hydraulic hoses (Figure 1, Item 7) from stowage cylinder (Figure 1, Item 5).
2. Remove snap ring pin (Figure 1, Item 4) and retaining pin (Figure 1, Item 3) from stowage cylinder (Figure 1, Item 5).
3. Remove snap ring pin (Figure 1, Item 2), stowage cylinder (Figure 1, Item 5), and cylinder bearing (Figure 1, Item 6) from stowage assembly (Figure 1, Item 1).

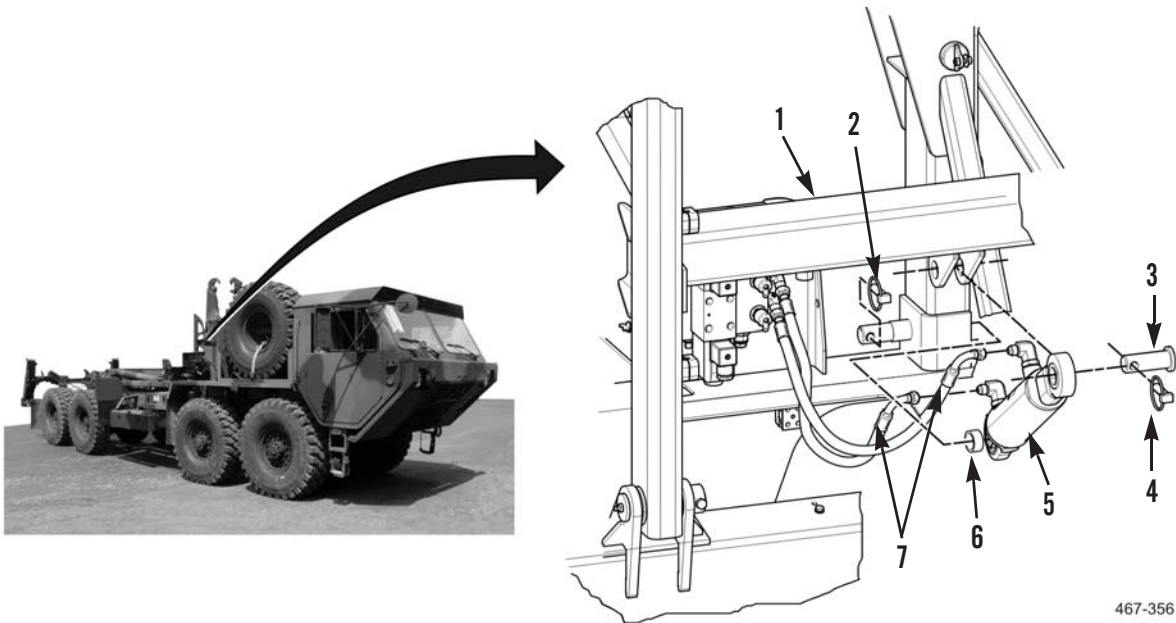


Figure 1. Stowage Actuator.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

NOTE

- Install hoses as tagged during removal.
 - Remove caps from hoses and fittings prior to installation.
1. Install stowage cylinder (Figure 1, Item 5), cylinder bearing (Figure 1, Item 6), and snap ring pin (Figure 1, Item 2) on stowage assembly (Figure 1, Item 1).
 2. Install stowage cylinder (Figure 1, Item 5), retaining pin (Figure 1, Item 3), and snap ring pin (Figure 1, Item 4) on stowage assembly (Figure 1, Item 1).
 3. Install two hydraulic hoses (Figure 1, Item 7) on stowage cylinder (Figure 1, Item 5).

END OF TASK

FOLLOW-ON TASKS

1. Stow lift frame on vehicle (WP 0007).

NOTE

When stowing lift frame, if lift frame lower securing tube is positioned above and to the front of stowage rack lock bracket, the cylinder rod end may need adjustment. This adjustment will move the stop position of the capture frame rearward, causing the lift frame securing tube to move rearward and downward. The cylinder rod end may be adjusted to a maximum of 3/8 in. out from original position. A 1/8 in. adjustment in the cylinder rod end will move the lift frame securing tube approximately 1/4 in.

2. Unload lift frame and place on ground (WP 0007).
3. Remove snap ring pin (Figure 2, Item 6), retaining pin (Figure 2, Item 5), and stowage cylinder (Figure 2, Item 1) from capture frame (Figure 2, Item 4).
4. Loosen two bolts (Figure 2, Item 7) on cylinder rod end (Figure 2, Item 3).
5. Hold cylinder shaft (Figure 2, Item 2) in place, and loosen cylinder rod end (Figure 2, Item 3) to desired position.
6. Tighten two bolts (Figure 2, Item 7) on cylinder rod end (Figure 2, Item 3).
7. Install stowage cylinder (Figure 2, Item 1), retaining pin (Figure 2, Item 5), and snap ring pin (Figure 2, Item 6), on capture frame (Figure 2, Item 4).
8. Stow lift frame on vehicle (WP 0007). Repeat adjustment procedure as required.

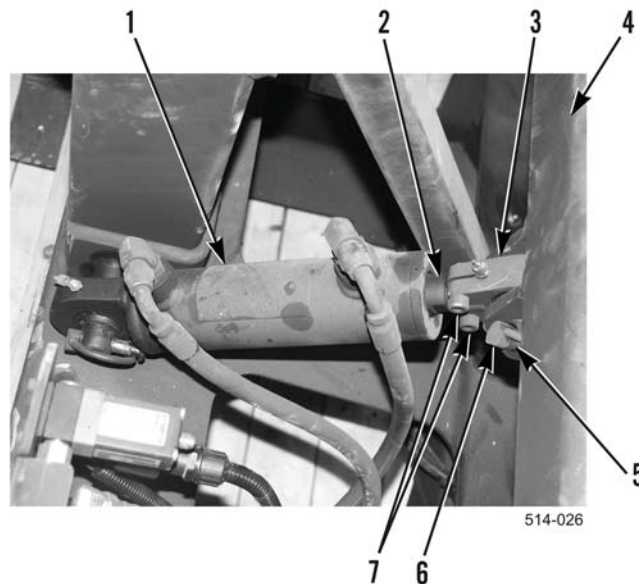


Figure 2. Stowage Cylinder Rod End Adjustment.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE GUIDE REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)
Sling, Nylon (WP 0057, Item 1)
Tool Set, SATS Base (WP 0057, Item 3)
Tool Kit, Bearing Removal (WP 0057, Item 4)
Lifting Device

Materials/Parts

Grease, Automotive and Artillery, GAA (WP 0060, Item 8)
Rag, Wiping (WP 0060, Item 10)
Spring Pin (WP 0059, Item 2)

Personnel Required

2

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Lift frame placed on level ground (WP 0007)
Hook arm fully extended (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Stowage angle sensor arm removed from guide (WP 0025)
Lift frame sensors removed (WP 0034)

REMOVAL

1. Attach sling and lifting device to stowage guide (Figure 1, Item 1).

WARNING

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

2. Remove snap ring pin (Figure 1, Item 3), pivot pin (Figure 1, Item 2), and stowage cylinder (Figure 1, Item 8), from stowage guide (Figure 1, Item 1).

WARNING

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

Stowage guide weighs 107 lb (49 kg).

3. Remove two grease fittings (Figure 1, Item 5) from pivot pins (Figure 1, Item 4).
4. Remove two spring pins (Figure 1, Item 6) and pivot pins (Figure 1, Item 4) from stowage guide (Figure 1, Item 1).

REMOVAL – CONTINUED

5. Use lifting device to remove stowage guide (Figure 1, Item 1) from stowage assembly (Figure 1, Item 7) and lower onto level surface.
6. Remove two bearings (Figure 1, Item 9) from stowage guide (Figure 1, Item 1).

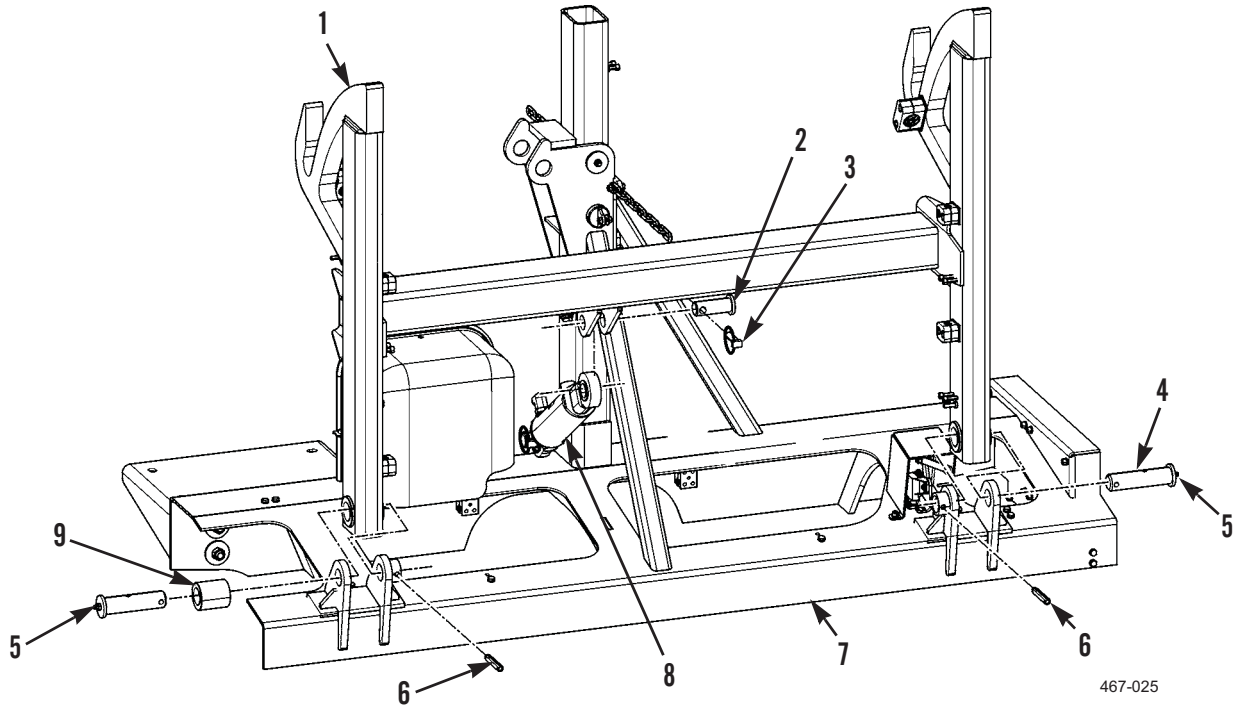


Figure 1. Stowage Guide.

END OF TASK**CLEANING AND INSPECTION**

1. Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.
2. Inspect bore hole for burrs. Remove if found.

END OF TASK

INSTALLATION

1. Install two bearings (Figure 2, Item 9) in stowage guide (Figure 2, Item 1).

WARNING

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

Stowage guide weighs 107 lb (49 kg).

2. Attach sling and lifting device to stowage guide (Figure 2, Item 1).
3. Use lifting device to install stowage guide (Figure 2, Item 1) on stowage assembly (Figure 2, Item 7).

WARNING

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

4. Apply grease to two pivot pins (Figure 2, Item 4).
5. Install two pivot pins (Figure 2, Item 4) and new spring pins (Figure 2, Item 6) in stowage guide (Figure 2, Item 1).
6. Install two grease fittings (Figure 2, Item 5) on pivot pins (Figure 2, Item 4).
7. Apply grease to pivot pin (Figure 2, Item 2).
8. Install stowage cylinder (Figure 2, Item 8), pivot pin (Figure 2, Item 2), and snap ring pin (Figure 2, Item 3) on stowage guide (Figure 2, Item 1).

INSTALLATION – CONTINUED

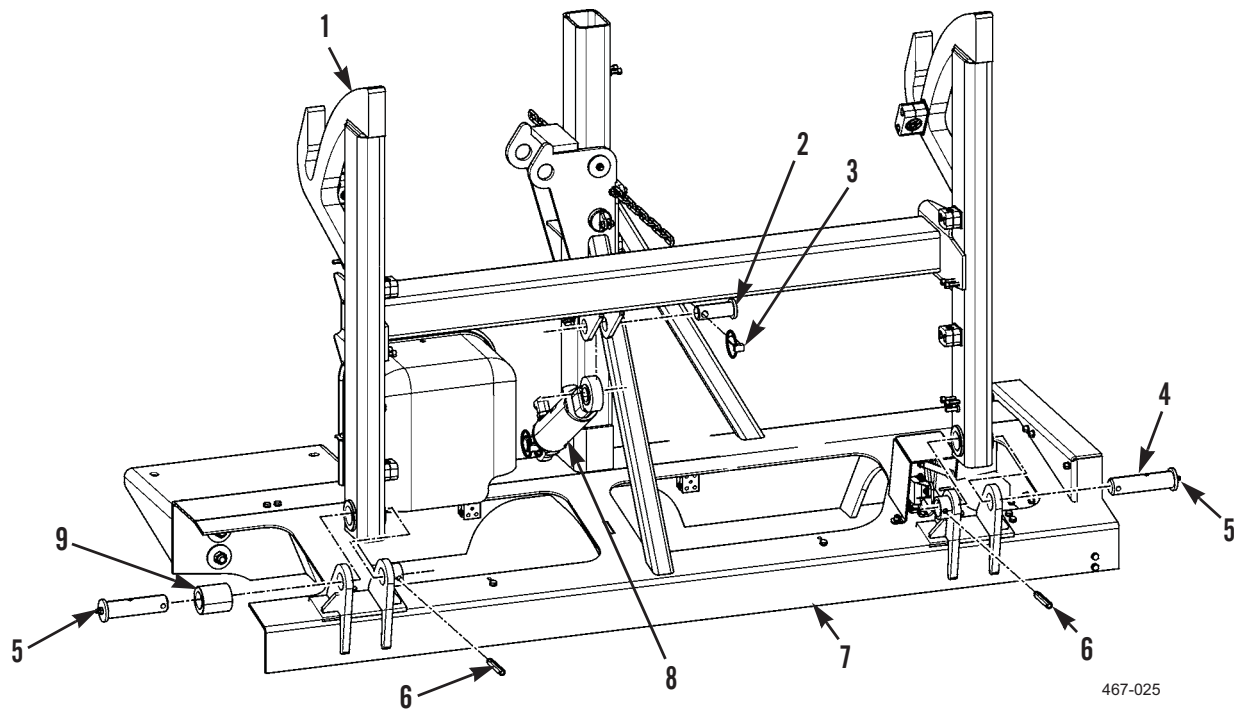


Figure 2. Stowage Guide.

END OF TASK

FOLLOW-ON TASKS

1. Install stowage angle sensor arm on guide (WP 0025).
2. Install lift frame sensors (WP 0034).
3. Stow lift frame on vehicle (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**STOWAGE ANGLE SENSOR REPLACEMENT**
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057,
Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Spring Pin (WP 0059, Item 2) (4)
Locknut (WP 0059, Item 1) (2)
Locknut (WP 0059, Item 3) (1)
Locknut (WP 0059, Item 6) (4)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P HEMTT: TM 9-2320-326-
14&P)

Lift frame placed on level ground (WP 0007)

REMOVAL**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

1. Remove three locknuts (Figure 1, Item 19), washers (Figure 1, Item 20), bolts (Figure 1, Item 1), washers (Figure 1, Item 2), and sensor cover (Figure 1, Item 3) from stowage assembly (Figure 1, Item 21). Discard locknuts.

NOTE

Note placement of sensor arm on sensor linkage to aid in installation.

2. Remove locknut (Figure 1, Item 8), washer (Figure 1, Item 7), bolt (Figure 1, Item 15), washer (Figure 1, Item 14), and sensor arm (Figure 1, Item 6) from sensor linkage (Figure 1, Item 13). Discard locknut.
3. Remove locknut (Figure 1, Item 5), washer (Figure 1, Item 4), and sensor arm (Figure 1, Item 6) from stowage guide (Figure 1, Item 22). Discard locknut.
4. Remove two locknuts (Figure 1, Item 10), washers (Figure 1, Item 11), bolts (Figure 1, Item 18), washers (Figure 1, Item 17), and angle sensor (Figure 1, Item 9) from sensor bracket (Figure 1, Item 16). Discard locknuts.
5. Disconnect harness (Figure 1, Item 12) from angle sensor (Figure 1, Item 9).

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK**INSTALLATION****WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

1. Connect harness (Figure 1, Item 12) to angle sensor (Figure 1, Item 9).
2. Install angle sensor (Figure 1, Item 9), two washers (Figure 1, Item 17), bolts (Figure 1, Item 18), washers (Figure 1, Item 11), and new locknuts (Figure 1, Item 10) on sensor bracket (Figure 1, Item 16).

INSTALLATION – CONTINUED

NOTE

- Install sensor arm on sensor linkage as noted during removal.
 - Leave locknuts on sensor arm loose enough to allow movement of arm.
3. Install sensor arm (Figure 1, Item 6), washer (Figure 1, Item 4), and new locknut (Figure 1, Item 5) on stowage guide (Figure 1, Item 22).
 4. Install bolt (Figure 1, Item 15), washer (Figure 1, Item 14), sensor arm (Figure 1, Item 6), washer (Figure 1, Item 7), and new locknut (Figure 1, Item 8) on sensor linkage (Figure 1, Item 13).
 5. Install sensor cover (Figure 1, Item 3), three washers (Figure 1, Item 2), bolts (Figure 1, Item 1), washers (Figure 1, Item 20), and new locknuts (Figure 1, Item 19) on stowage assembly (Figure 1, Item 21).

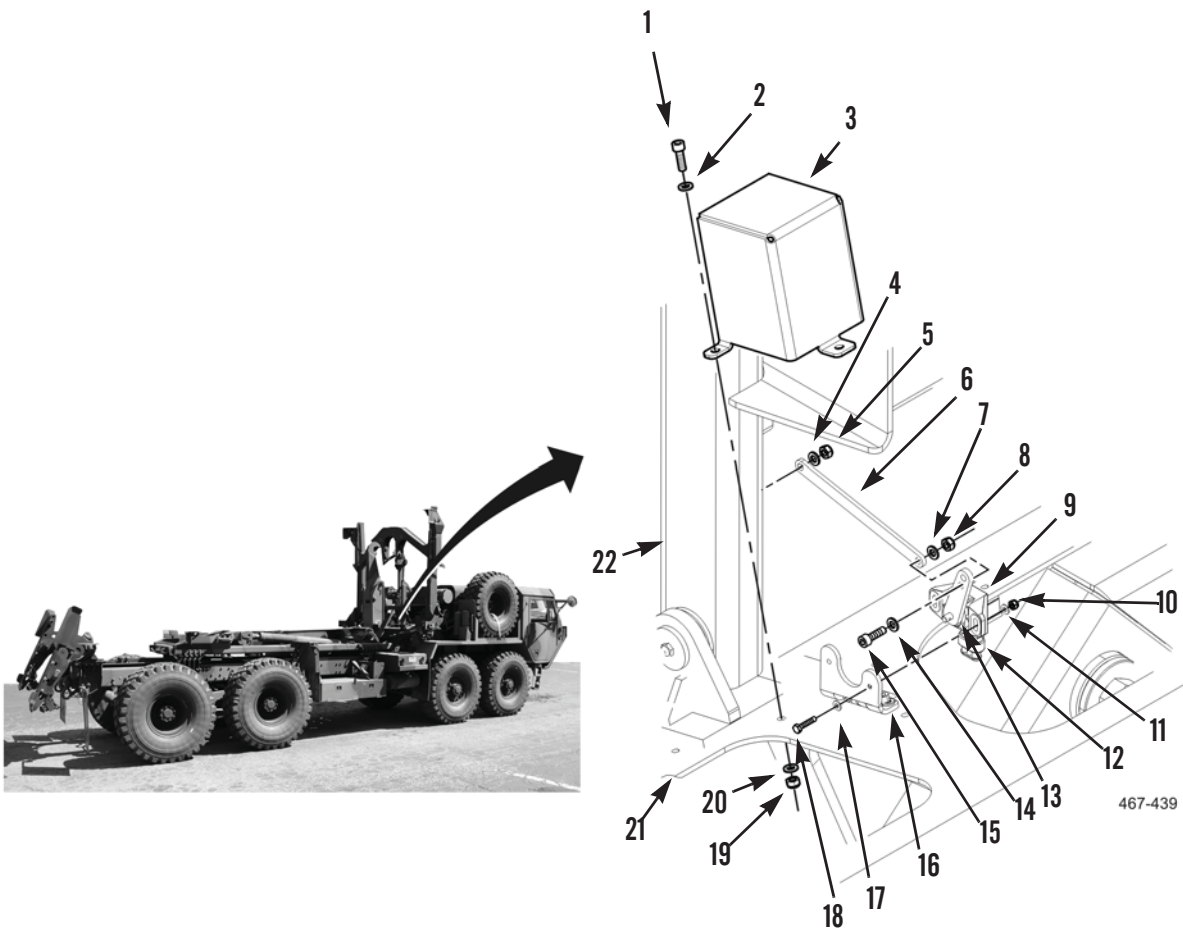


Figure 1. Angle Sensor.

END OF TASK

FOLLOW-ON TASKS

1. Calibrate stowage angle sensor (WP 0046).
2. Calibrate stowage guide position (WP 0048).
3. Stow lift frame (WP 0007).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
STOWAGE MANIFOLD AND SOLENOID VALVE REPLACEMENT
Manifold Removal, Solenoid Valve Removal, Disassembly, Cleaning and Inspection, Assembly, Solenoid Valve Installation, Manifold Installation

INITIAL SETUP
Tools and Special Tools

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Adhesive, Thread (WP 0060, Item 1)
 Cap Set, Protective, Dust and Moisture (WP 0060, Item 3)
 Strap, Tiedown, Electrical Components (WP 0060, Item 11)
 Tag, Marker (WP 0060, Item 12)
 O-Ring (WP 0059, Item 15) (4)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

Hydraulic pressure relieved (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

WARNING


- During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses.
- Failure to follow these warnings may result in death or serious injury to personnel.

NOTE

- Tag and note location of harnesses, hydraulic hoses, and fittings to aid in installation.
- Cap hoses and fittings to prevent contamination.
- Remove and discard tiedown straps as required.

MANIFOLD REMOVAL

1. Loosen three wing bolts (Figure 1, Item 1) and remove manifold cover (Figure 1, Item 2) from mounting bracket (Figure 1, Item 6).
2. Disconnect four hydraulic hoses (Figure 1, Item 3) from fittings (Figure 1, Item 4).
3. Loosen screw (Figure 1, Item 7) and remove unstow harness (Figure 1, Item 8) from valve (Figure 1, Item 5).
4. Loosen screw (Figure 1, Item 9) and remove stow harness (Figure 1, Item 10) from valve (Figure 1, Item 5).

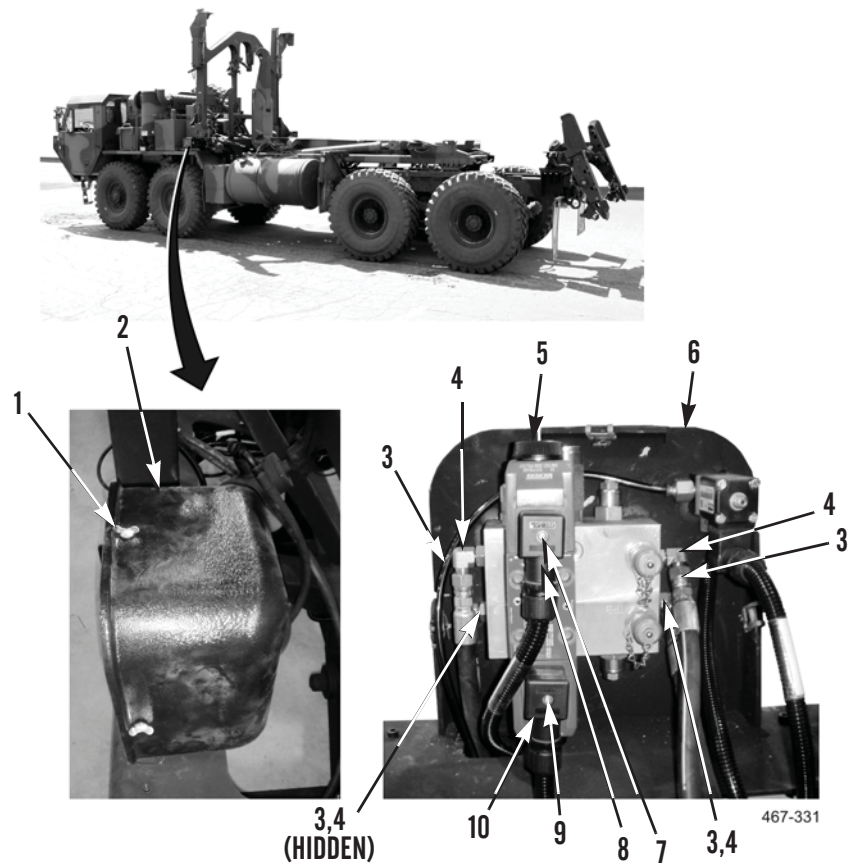


Figure 1. Manifold.

MANIFOLD REMOVAL – CONTINUED

- Remove four bolts (Figure 2, Item 3), washers (Figure 2, Item 4), and manifold (Figure 2, Item 2) from mounting bracket (Figure 2, Item 1).

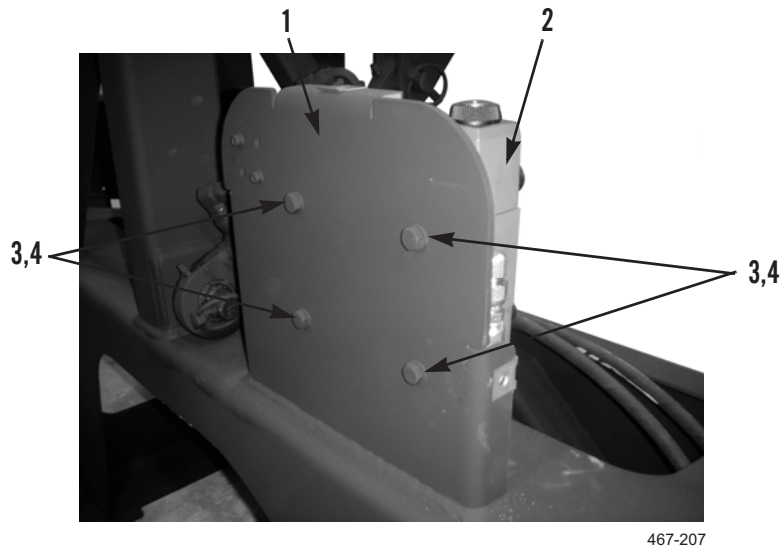


Figure 2. Manifold.

END OF TASK**SOLENOID VALVE REMOVAL**

- Loosen three wing bolts (Figure 3, Item 1) and remove cover (Figure 3, Item 2) from support bracket (Figure 3, Item 3).
- Disconnect two air lines (Figure 3, Item 4) from fittings (Figure 3, Item 5).
- Loosen screw (Figure 3, Item 7) and remove stowage latch harness (Figure 3, Item 8) from solenoid valve (Figure 3, Item 6).

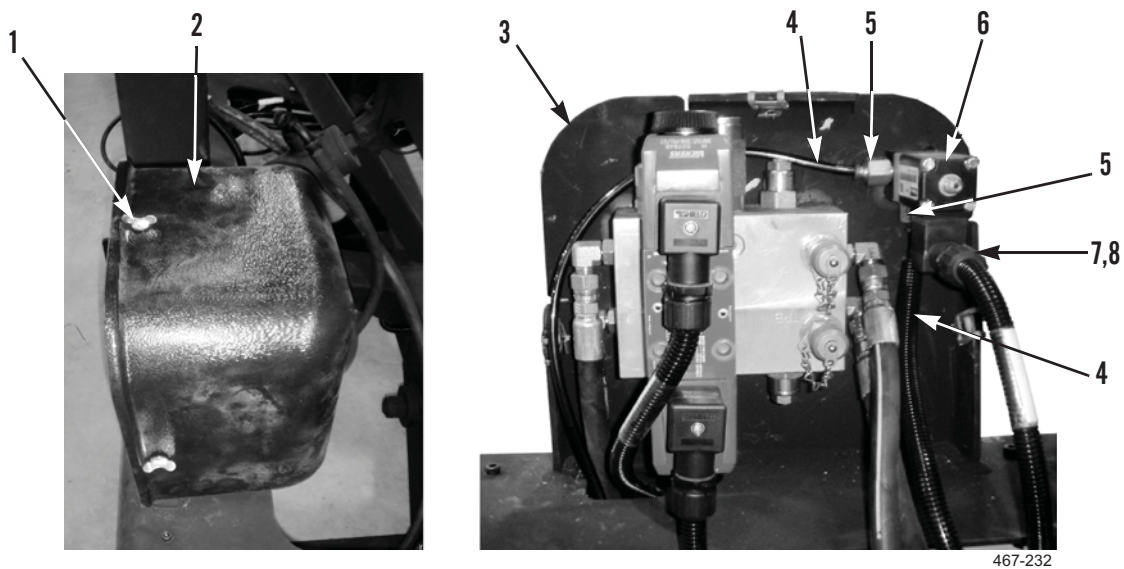
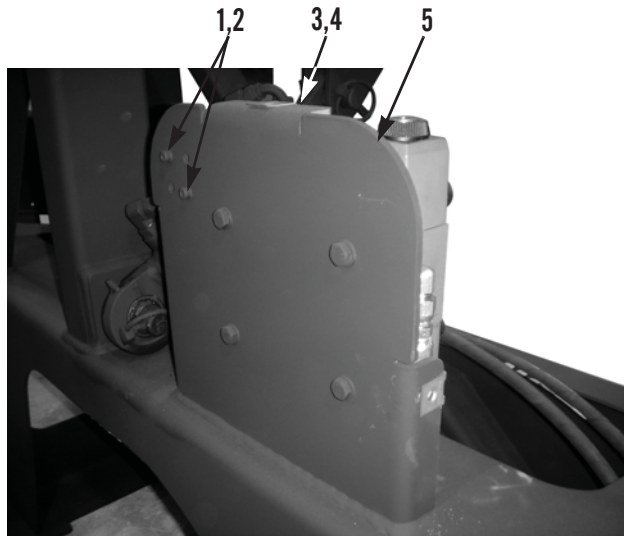


Figure 3. Solenoid Valve.

SOLENOID VALVE REMOVAL – CONTINUED

4. Remove two screws (Figure 4, Item 1), washers (Figure 4, Item 2), solenoid valve (Figure 4, Item 3), and spacer (Figure 4, Item 4) from mounting bracket (Figure 4, Item 5).



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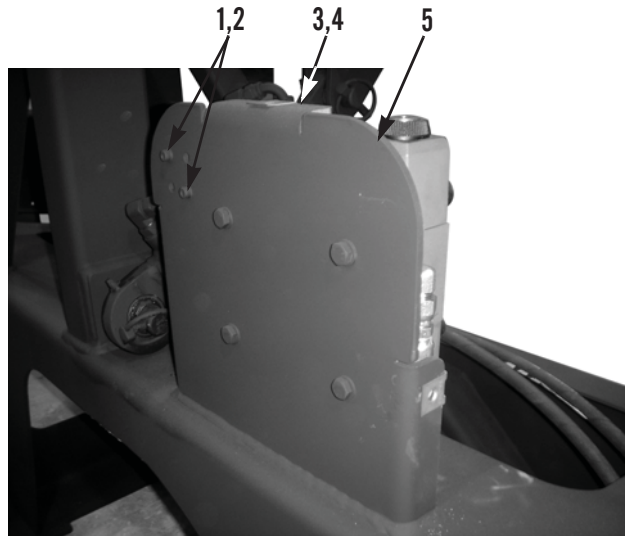
Figure 4. Solenoid Valve Removal.**END OF TASK****CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

SOLENOID VALVE INSTALLATION

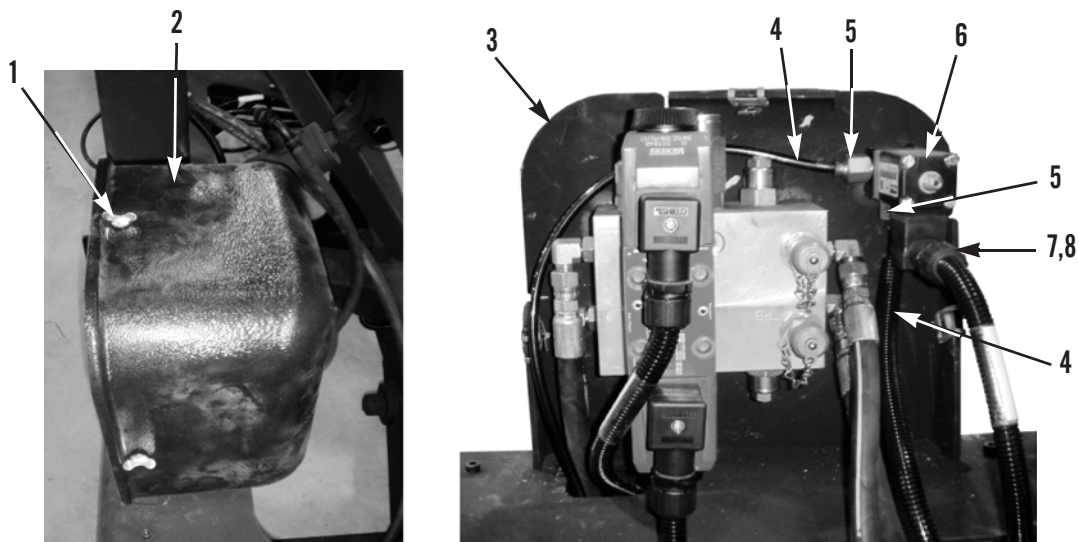
1. Apply thread adhesive to two screws (Figure 5, Item 1).
2. Install solenoid valve (Figure 5, Item 3), spacer (Figure 5, Item 4), two screws (Figure 5, Item 1), and washers (Figure 5, Item 2) on mounting bracket (Figure 5, Item 5).



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Figure 5. Solenoid Valve Installation.

3. Connect stowage latch harness (Figure 6, Item 8) to solenoid valve (Figure 6, Item 6) and tighten screw (Figure 6, Item 7).
4. Connect two air lines (Figure 6, Item 4) to fittings (Figure 6, Item 5).
5. Install cover (Figure 6, Item 2) on support bracket (Figure 6, Item 3) and tighten three wing bolts (Figure 6, Item 1).



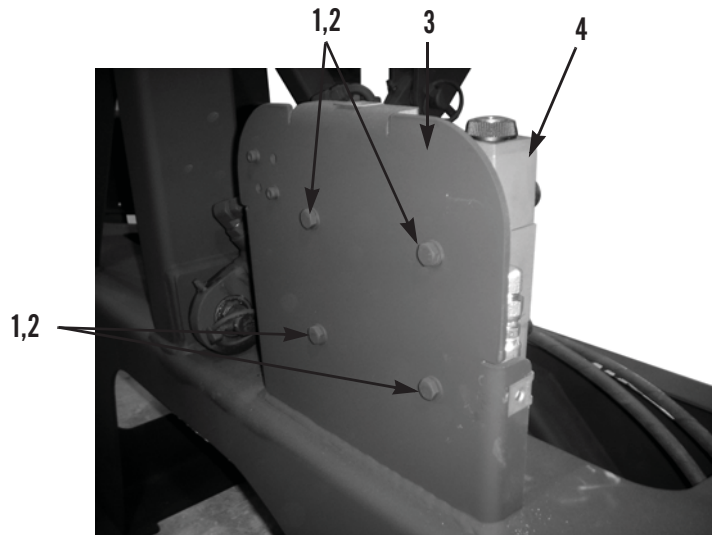
467-232

Figure 6. Solenoid Valve.

END OF TASK

MANIFOLD INSTALLATION

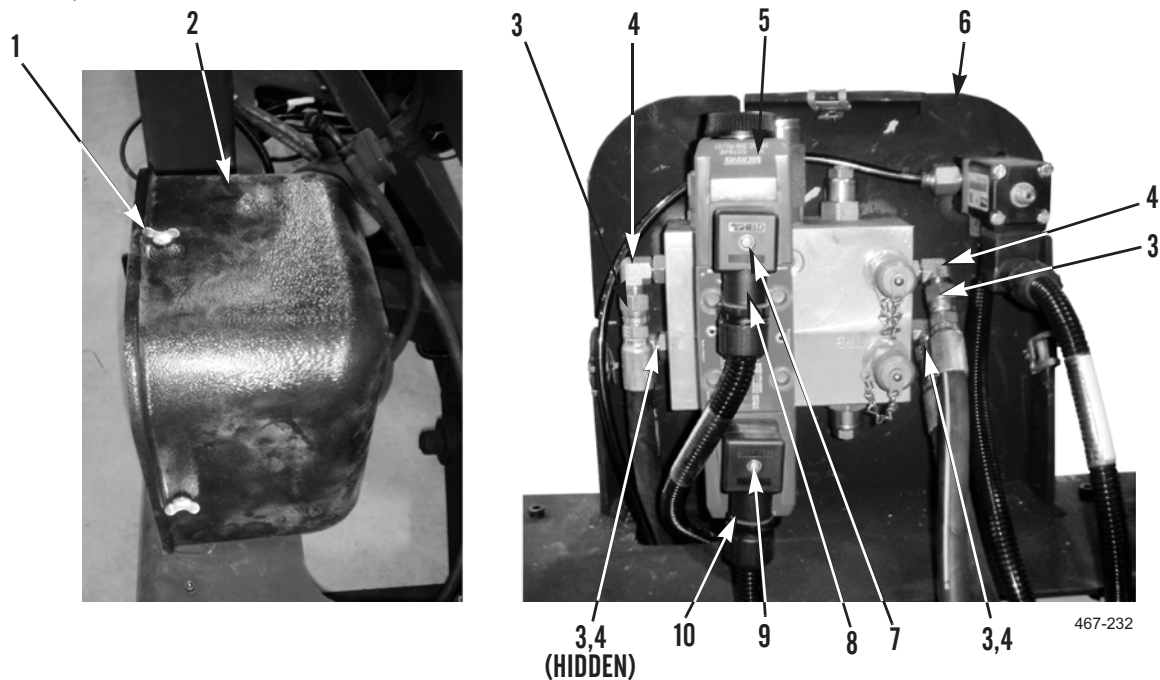
1. Apply thread adhesive to four bolts (Figure 7, Item 1).
2. Install manifold (Figure 7, Item 4), four washers (Figure 7, Item 2), and bolts (Figure 7, Item 1) on mounting bracket (Figure 7, Item 3).



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Figure 7. Manifold.

3. Connect stow harness (Figure 8, Item 10) to valve (Figure 8, Item 5) and tighten screw (Figure 8, Item 9).
4. Connect unstow harness (Figure 8, Item 8) to valve (Figure 8, Item 5) and tighten screw (Figure 8, Item 7).
5. Connect four hydraulic hoses (Figure 8, Item 3) to fittings (Figure 8, Item 4).
6. Install cover (Figure 8, Item 2) on support bracket (Figure 8, Item 6) and tighten three wing bolts (Figure 8, Item 1).



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Figure 8. Manifold.

END OF TASK

FOLLOW-ON TASKS

1. Start vehicle. (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
2. Check for proper operation of stowage guide (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**STOWAGE TRANSPORT LOCK ADJUSTABLE STRUT REPLACEMENT**
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057,
Item 2)

Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)

Locknut (WP 0059, Item 13)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P, HEMTT: TM 9-2320-326-
14&P)

REMOVAL**WARNING**

During these procedures, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

Perform steps 1 through 3 for both right and left sides.

1. Remove clip (Figure 1, Item 7) from bolt (Figure 1, Item 2).
2. Remove bolt (Figure 1, Item 2) and transport lock adjustable strut (Figure 1, Item 3) from bracket (Figure 1, Item 1).
3. Remove nut (Figure 1, Item 6), bolt (Figure 1, Item 4), and transport lock adjustable strut (Figure 1, Item 3) from pin (Figure 1, Item 5).

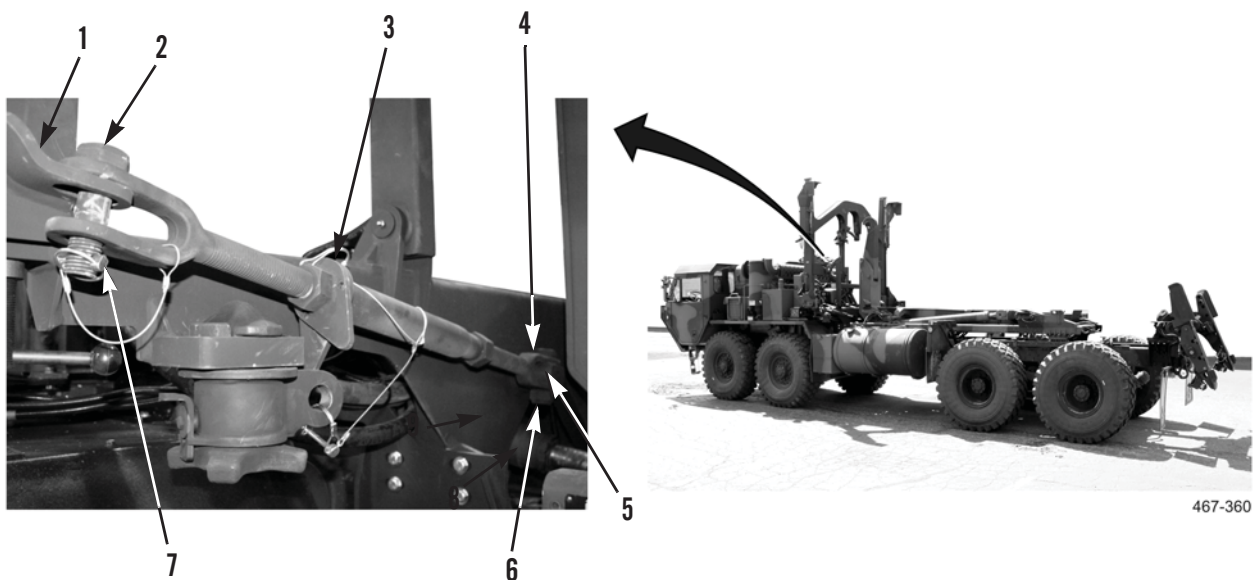


Figure 1. Transport Lock Adjustable Strut.

REMOVAL – CONTINUED

4. Remove locknut (Figure 2, Item 3), washer (Figure 2, Item 4), and pin (Figure 2, Item 2) from stowage assembly (Figure 2, Item 1). Discard locknut.

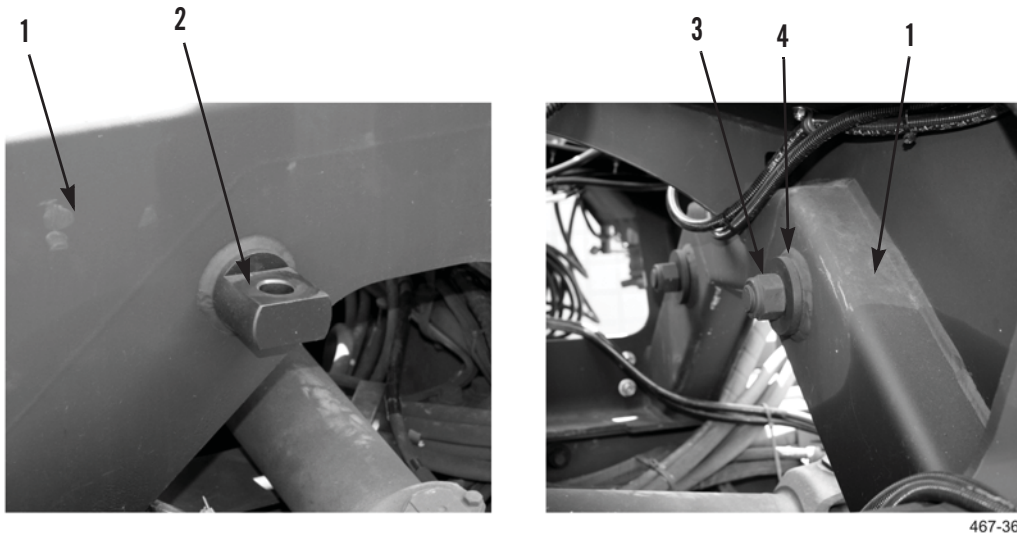


Figure 2. Pin Removal.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK**INSTALLATION****WARNING**

During these procedures, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

1. Install pin (Figure 2, Item 2), washer (Figure 2, Item 4), and new locknut (Figure 2, Item 3) on stowage assembly (Figure 2, Item 1).
2. Install transport lock adjustable strut (Figure 1, Item 3), bolt (Figure 1, Item 4), and nut (Figure 1, Item 6) on pin (Figure 1, Item 5).
3. Install transport lock adjustable strut (Figure 1, Item 3) and bolt (Figure 1, item 2) on bracket (Figure 1, Item 1).
4. Install clip (Figure 1, Item 7) on bolt (Figure 1, Item 2).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE**AIR TRANSPORT LIFTING PIN REPLACEMENT**
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057,
Item 2)

Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)

Spring Pin (WP 0059, Item 8) (2)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P, HEMTT: TM 9-2320-326-
14&P)

REMOVAL**WARNING**

During these procedures, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

- Perform steps 1 through 6 for both right and left sides.
 - Note position of collars on lifting pin to aid in installation.
1. Raise air transport lifting pin (Figure 1, Item 7) until collar (Figure 1, Item 2) and spring pin (Figure 1, Item 3) are accessible through cutout (Figure 1, Item 9).
 2. Remove spring pin (Figure 1, Item 3) and collar (Figure 1, Item 2) from air transport lifting pin (Figure 1, Item 7).
 3. Remove air transport lifting pin (Figure 1, Item 7) from stowage assembly (Figure 1, Item 1).
 4. Remove spring pin (Figure 1, Item 4) and collar (Figure 1, Item 8) from air transport lifting pin (Figure 1, Item 7).
 5. Remove two knobs (Figure 1, Item 5) from handle (Figure 1, Item 6).
 6. Remove handle (Figure 1, Item 6) from air transport lifting pin (Figure 1, Item 7).

REMOVAL – CONTINUED

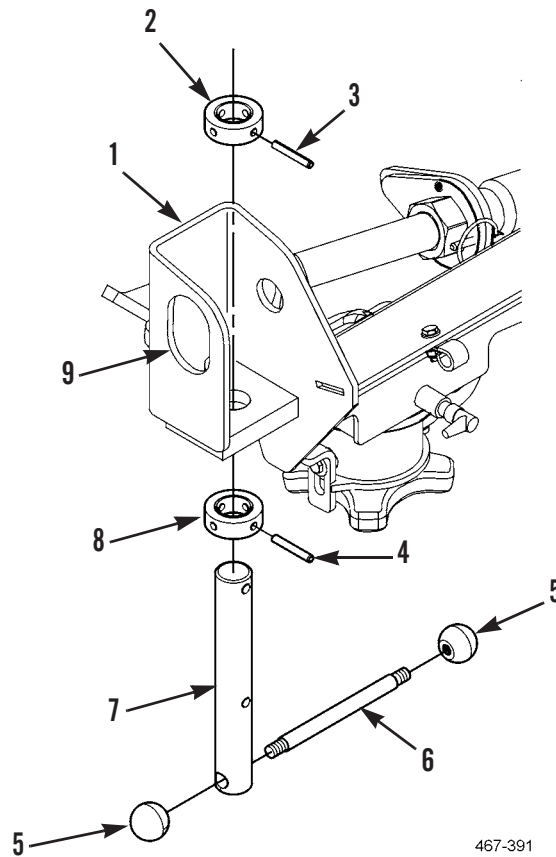


Figure 1. Air Transport Lifting Pin.

END OF TASK

CLEANING AND INSPECTION

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

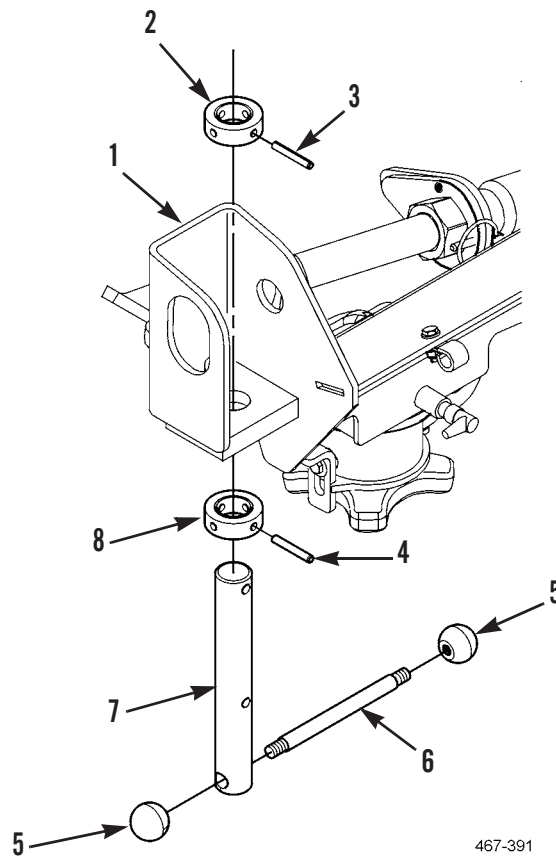
INSTALLATION

WARNING

During these procedures, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

INSTALLATION – CONTINUED**NOTE**

- Perform steps 1 through 6 for both right and left sides.
 - Install collars as noted during removal.
1. Install handle (Figure 2, Item 6) in air transport lifting pin (Figure 2, Item 7).
 2. Install two knobs (Figure 2, Item 5) on handle (Figure 2, Item 6).
 3. Install collar (Figure 2, Item 8) and spring pin (Figure 2, Item 4) on air transport lifting pin (Figure 2, Item 7).
 4. Install air transport lifting pin (Figure 2, Item 7) on stowage assembly (Figure 2, Item 1).
 5. Install collar (Figure 2, Item 2) and spring on (Figure 2, Item 3) on air transport lifting pin (Figure 2, Item 7).
 6. Lower air transport lifting pin (Figure 2, Item 7) until collar (Figure 2, Item 2) is at base of bracket.

**Figure 2. Air Transport Lifting Pin.****END OF TASK****END OF WORK PACKAGE**

FIELD MAINTENANCE
STOWAGE ELECTRIC KIT REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)

Materials/Parts

Strap, Tiedown, Electrical Components
(WP 0060, Item 11)

Tag, Marker (WP 0060, Item 12)

Locknut (WP 0059, Item 6) (2)

References

WP 0020

WP 0052

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P, HEMTT: TM 9-2320-326-
14&P)

Battery disconnect switch in OFF position
(PLS: TM 9-2320-364-14&P, HEMTT: TM 9-
2320-326-14&P)

Lift frame unloaded (WP 0007)

Stowage control unit removed (WP 0045)

REMOVAL**WARNING**

During these procedures, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

Twistlock Sensor Harness Removal**NOTE**

- Tag wires and connectors upon removal to aid in installation.
 - Note routing of wires and harnesses to aid in installation.
 - Perform steps 1 through 3 for both right and left sides.
1. Disconnect twistlock sensor harness (Figure 1, Item 1) from twistlock sensor (Figure 1, Item 2).

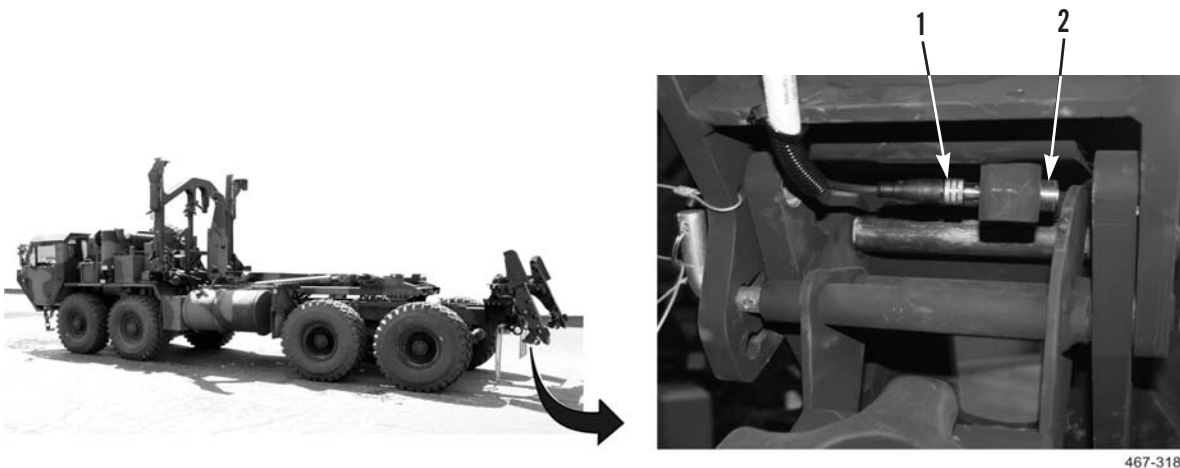


Figure 1. Twistlock Sensor Harness Disconnect.

REMOVAL – CONTINUED**Twistlock Sensor Harness Removal – Continued**

2. Remove and discard tiedown straps (Figure 2, Item 3) as required.
3. Remove twistlock sensor harness (Figure 2, Item 1) from slider assembly (Figure 2, Item 2).

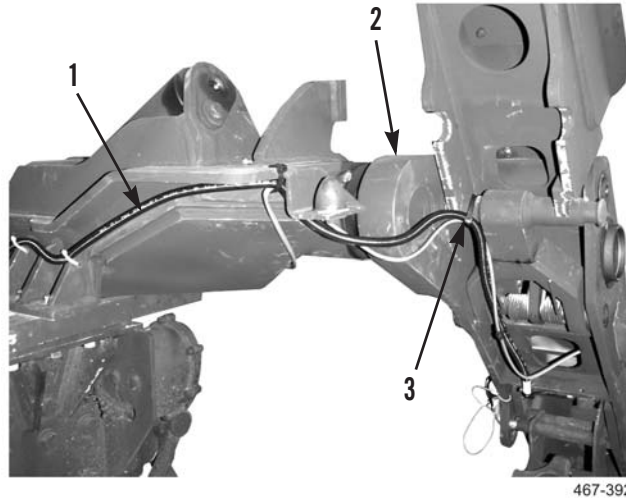


Figure 2. Twistlock Sensor Harness Removal.

REMOVAL – CONTINUED**Hook Arm Sensor Harness Removal**

1. Disconnect hook arm sensor harness (Figure 3, Item 2) from hook arm sensor (Figure 3, Item 3).
2. Remove and discard tiedown straps (Figure 3, Item 4) as required.
3. Pull hook arm sensor harness (Figure 3, Item 2) back through hook arm frame (Figure 3, Item 1) toward rear of vehicle.

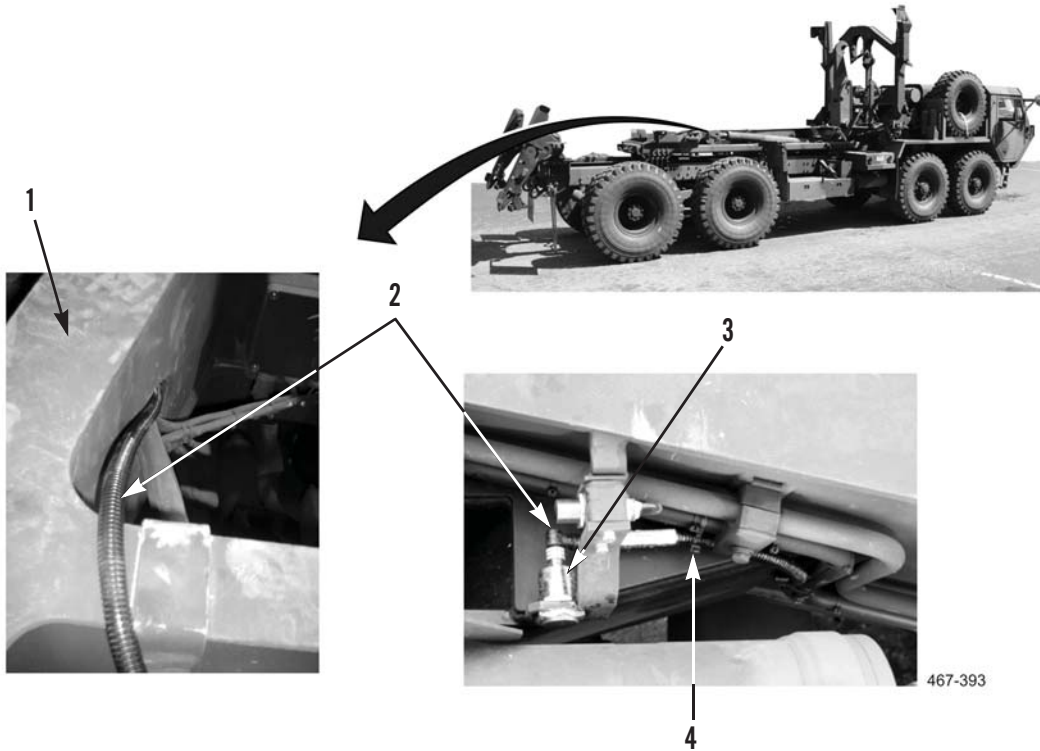


Figure 3. Hook Arm Sensor Harness Removal.

REMOVAL – CONTINUED**Middle Frame Sensor Harness Removal**

1. Disconnect middle frame sensor harness (Figure 4, Item 2) from middle frame sensor (Figure 4, Item 3).
2. Remove and discard tiedown straps (Figure 4, Item 1) as required.

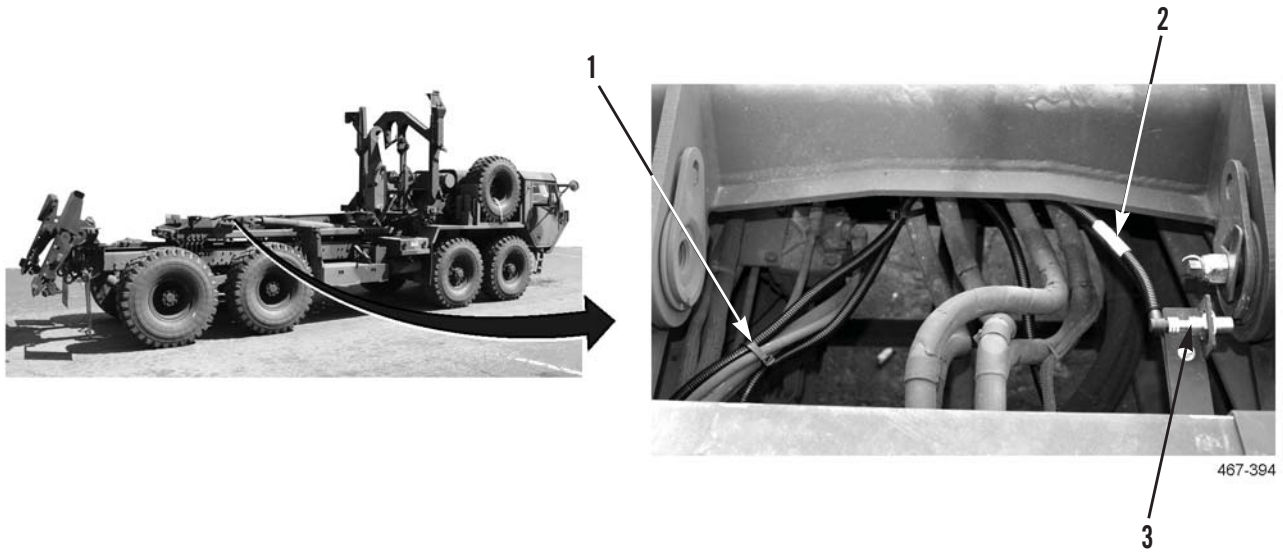


Figure 4. Middle Frame Sensor Harness Removal.

REMOVAL – CONTINUED**Middle Frame Sensor Harness Removal – Continued**

3. Along right and left side of frame (Figure 5, Item 1), remove and discard tiedown straps (Figure 5, Item 4) as required.
4. Remove twistlock sensor harnesses (Figure 5, Item 2) and middle frame and hook arm sensor harnesses (Figure 5, Item 3) from frame (Figure 5, Item 1).

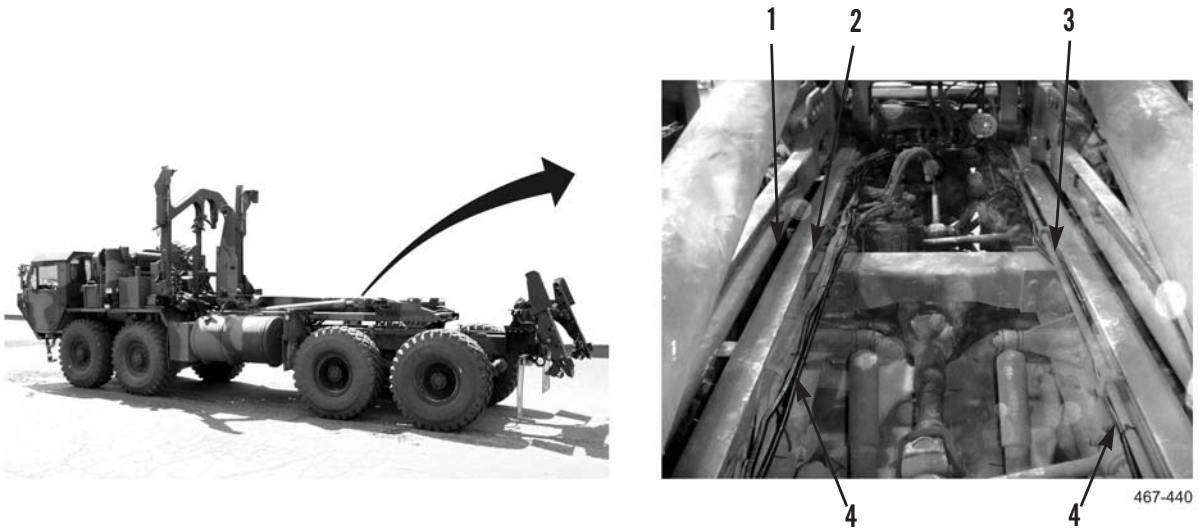


Figure 5. Wiring Harnesses Removal.

REMOVAL – CONTINUED**Transport Lock Sensor Harness Removal****NOTE**

Perform steps 1 and 2 for both right and left sides.

1. Remove transport lock sensor harness (Figure 6, Item 4) from transport lock sensor (Figure 6, Item 3).
2. Remove locknut (Figure 6, Item 6), washer (Figure 6, Item 7), clamp (Figure 6, Item 5), bolt (Figure 6, Item 1), and washer (Figure 6, Item 2) from transport lock sensor harness (Figure 6, Item 4). Discard locknut.

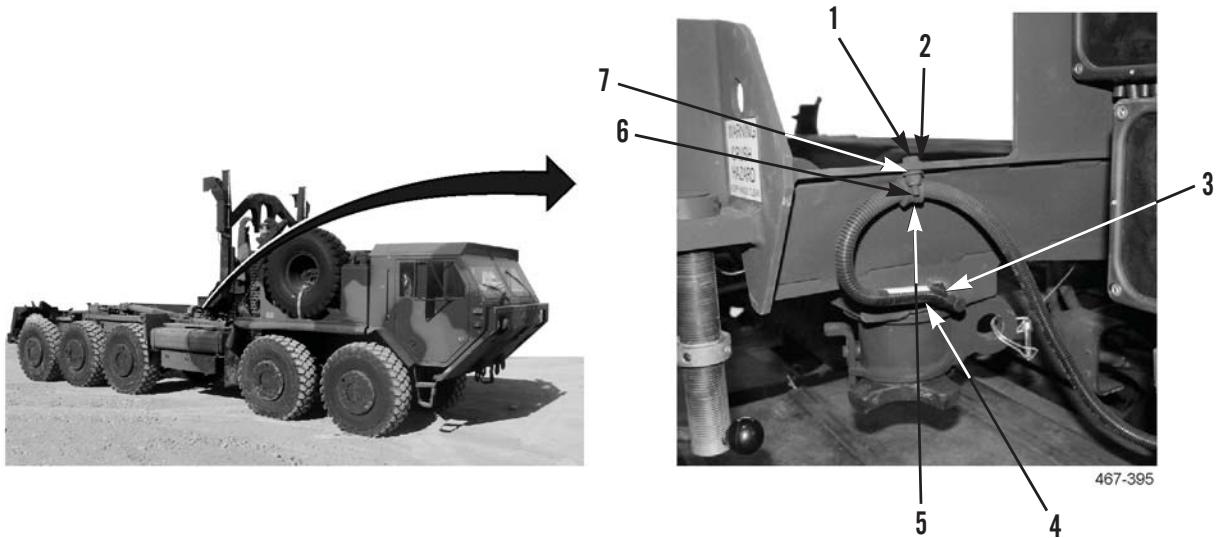


Figure 6. Transport Lock Sensor Harness Removal.

REMOVAL – CONTINUED**Valve Harness Removal**

1. Loosen three wing bolts (Figure 7, Item 1) and remove manifold cover (Figure 7, Item 2) from stowage assembly (Figure 7, Item 11).
2. Loosen screw (Figure 7, Item 4) and remove unstow harness (Figure 7, Item 3) from hydraulic valve (Figure 7, Item 5).
3. Loosen screw (Figure 7, Item 10) and remove stow harness (Figure 7, Item 9) from hydraulic valve (Figure 7, Item 5).
4. Loosen screw (Figure 7, Item 7) and remove stowage latch harness (Figure 7, Item 8) from pneumatic valve (Figure 7, Item 6).

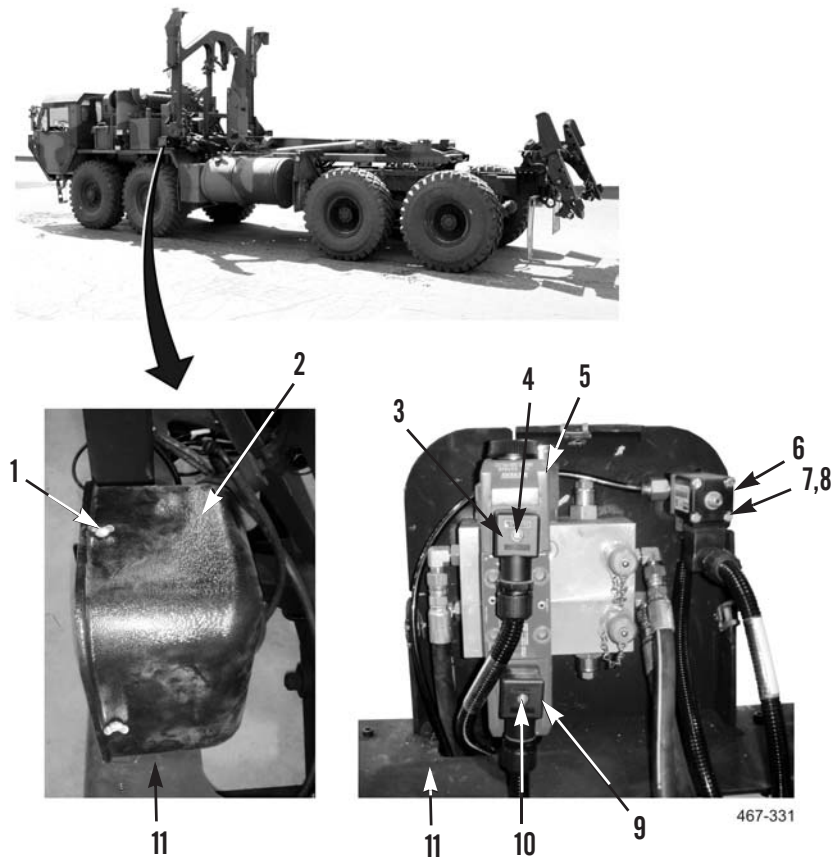


Figure 7. Disconnect Valve Harnesses.

REMOVAL – CONTINUED**E-CHU Interface Loom Removal**

1. Disconnect E-CHU interface loom (Figure 8, Item 2) from control box (Figure 8, Item 1).
2. Disconnect vehicle wiring harness (Figure 8, Item 3) from E-CHU interface loom (Figure 8, Item 2).

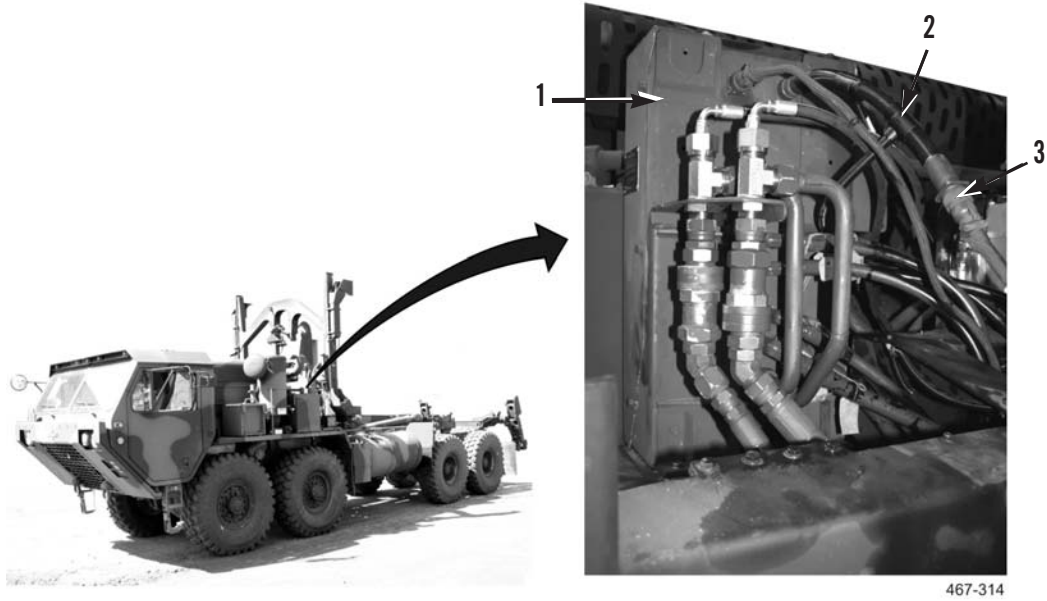
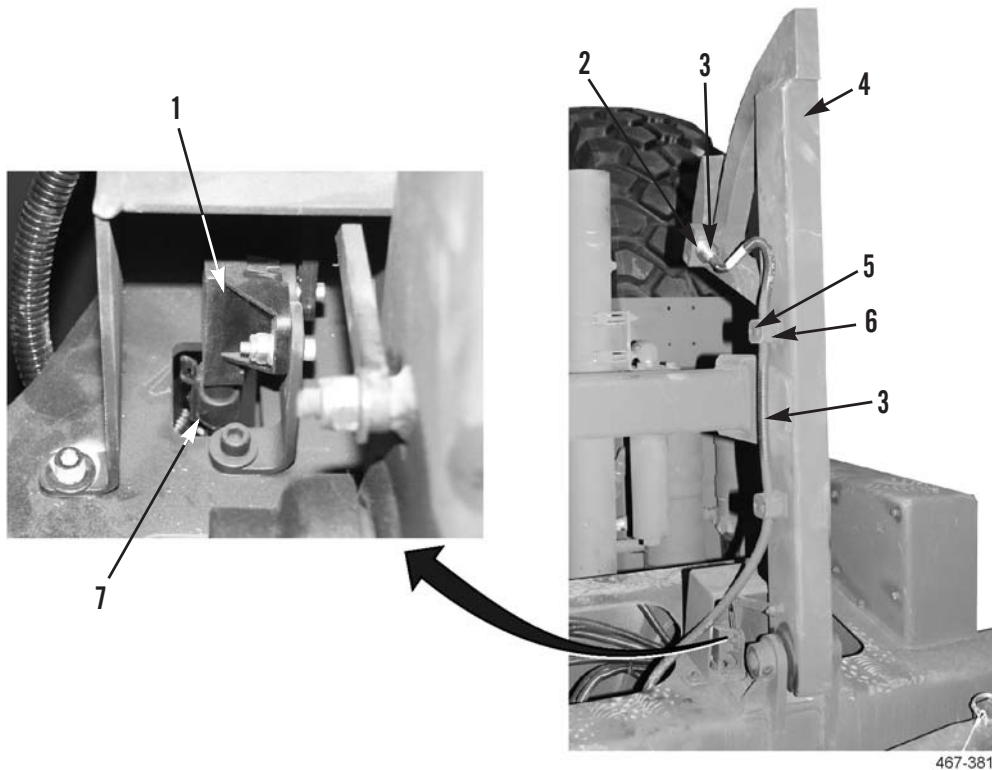


Figure 8. Disconnect E-CHU Interface Loom.

REMOVAL – CONTINUED**Stowage Guide Sensor Harness Removal****NOTE**

Perform steps 1 through 3 for both right and left sides.

1. Disconnect stowage guide sensor harness (Figure 9, Item 3) from stowage guide sensor (Figure 9, Item 2).
2. Remove four bolts (Figure 9, Item 5), two cable clamp caps (Figure 9, Item 6), and stowage guide sensor harness (Figure 9, Item 3) from stowage guide (Figure 9, Item 4).
3. Disconnect stowage angle sensor harness (Figure 9, Item 7) from stowage angle sensor (Figure 9, Item 1).



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Figure 9. Stowage Sensor Harness Removal.

REMOVAL – CONTINUED**Stowage Guide Sensor Harness Removal – Continued**

4. Underneath stowage assembly (Figure 10, Item 1), remove and discard tiedown straps (Figure 10, Item 5) as required.
5. Remove 13 nuts (Figure 10, Item 2), bolts (Figure 10, Item 3), and clamps (Figure 10, Item 4) from stowage assembly (Figure 10, Item 1).

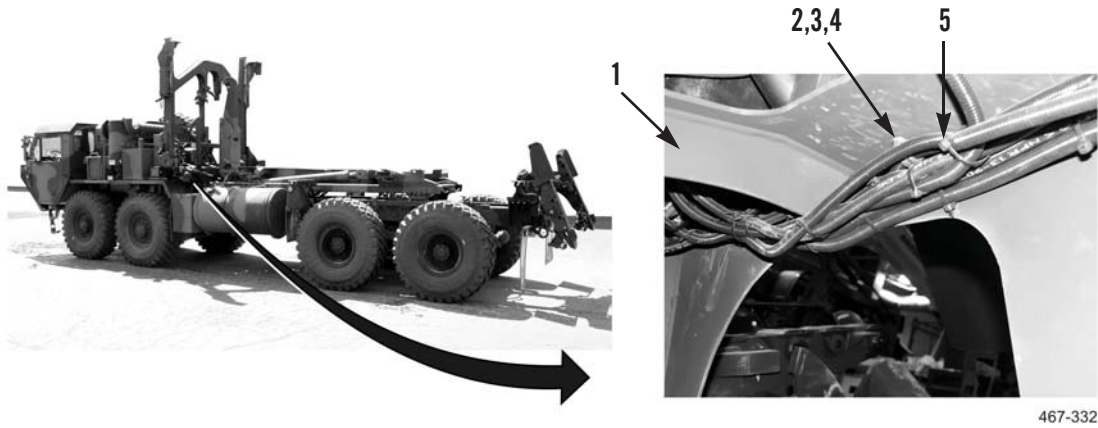


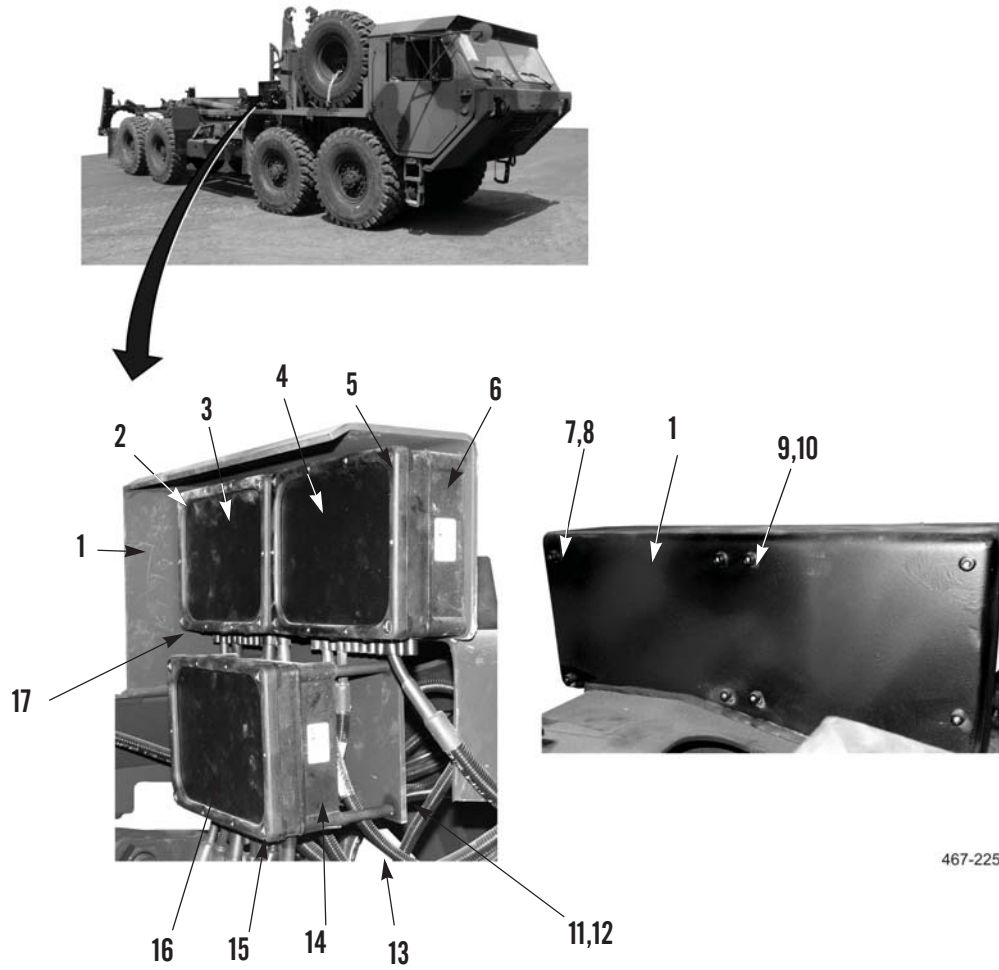
Figure 10. Clamp and Tiedown Strap Removal.

REMOVAL – CONTINUED**Control Box Removal**

1. Loosen four bolts (Figure 11, Item 15) and remove cover (Figure 11, Item 16) from Space 4000 ST box (Figure 11, Item 14).
2. Loosen four bolts (Figure 11, Item 2) and remove cover (Figure 11, Item 3) from Relay box (Figure 11, Item 17).
3. Loosen four bolts (Figure 11, Item 5) and remove cover (Figure 11, Item 4) from Additional MUX box (Figure 11, Item 6).
4. Remove four bolts (Figure 11, Item 11), washers (Figure 11, Item 12), spacers (Figure 11, Item 13), and Space 4000 ST box (Figure 11, Item 14) from support bracket (Figure 11, Item 1) and place on flat work surface.
5. Remove four bolts (Figure 11, Item 7), washers (Figure 11, Item 8), and Additional MUX box (Figure 11, Item 6) from support bracket (Figure 11, Item 1) and place on flat work surface.
6. Remove four bolts (Figure 11, Item 9), washers (Figure 11, Item 10), and Relay box (Figure 11, Item 17) from support bracket (Figure 11, Item 1) and place on flat work surface.

REMOVAL – CONTINUED

Control Box Removal – Continued



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Figure 11. Stowage Control Box Removal.

REMOVAL – CONTINUED**Space 4000 ST Box Wiring Removal****NOTE**

- Tag wires and connectors upon removal to aid in installation.
 - Note routing of wires and harnesses to aid in installation.
 - Remove and discard tiedown straps as required.
1. Disconnect brown wire from position 1 (Figure 12, Item 38), red wire from position 2 (Figure 12, Item 39), orange wire from position 3 (Figure 12, Item 40), and yellow wire from position 4 (Figure 12, Item 41) on P3.
 2. Remove space computer harness (Figure 12, Item 35) from Space 4000 ST box (Figure 12, Item 1).
 3. Disconnect two blue wires from position 1 (Figure 12, Item 2), two brown wires from position 2 (Figure 12, Item 3), two black wires from position 3 (Figure 12, Item 4) on P4.
 4. Remove LH (Figure 12, Item 34) and RH (Figure 12, Item 33) stowage guide sensor harnesses from Space 4000 ST box (Figure 12, Item 1).
 5. Disconnect brown wire from position 1 (Figure 12, Item 5), red wire from position 2 (Figure 12, Item 6), orange wire from position 3 (Figure 12, Item 7) on P5.
 6. Remove stowage angle sensor harnesses (Figure 12, Item 29) from Space 4000 ST box (Figure 12, Item 1).
 7. Disconnect two blue wires from position 1 (Figure 12, Item 36), and two brown wires from position 2 (Figure 12, Item 37) on P2.
 8. Disconnect black wire from position 8 (Figure 12, Item 8) on P5.
 9. Remove LH transport lock sensor harnesses (Figure 12, Item 32) from Space 4000 ST box (Figure 12, Item 1).
 10. Disconnect black wire from position 9 (Figure 12, Item 9) on P5.
 11. Remove RH transport lock sensor harnesses (Figure 12, Item 30) from Space 4000 ST box (Figure 12, Item 1).
 12. Disconnect two blue wires from position 1 (Figure 12, Item 10), two brown wires from position 2 (Figure 12, Item 11), and black wire from position 4 (Figure 12, Item 13) on P6.
 13. Remove middle frame sensor harness (Figure 12, Item 28) from Space 4000 ST box (Figure 12, Item 1).
 14. Disconnect black wire from position 3 (Figure 12, Item 12) on P6.
 15. Remove hook arm sensor harness (Figure 12, Item 27) from Space 4000 ST box (Figure 12, Item 1).
 16. Disconnect lilac wire from position 5 (Figure 12, Item 14) on P6.
 17. Disconnect orange wire from position 1 (Figure 12, Item 15), yellow wire from position 2 (Figure 12, Item 16), green wire from position 3 (Figure 12, Item 17), and blue wire from position 4 (Figure 12, Item 18) on P7.
 18. Disconnect brown wire from position 1 (Figure 12, Item 23), and blue wire from position 2 (Figure 12, Item 24) on P10.
 19. Remove CAN bus harness (Figure 12, Item 31) from Space 4000 ST box (Figure 12, Item 1).
 20. Disconnect brown wire from position 1 (Figure 12, Item 19), and blue wire from position 2 (Figure 12, Item 20) on P8.

REMOVAL – CONTINUED

Space 4000 ST Box Wiring Removal – Continued

21. Remove unstow harness (Figure 12, Item 26) from Space 4000 ST box (Figure 12, Item 1).
22. Disconnect brown wire from position 1 (Figure 12, Item 21), and blue wire from position 2 (Figure 12, Item 22) on P9.
23. Remove stow harness (Figure 12, Item 25) from Space 4000 ST box (Figure 12, Item 1).

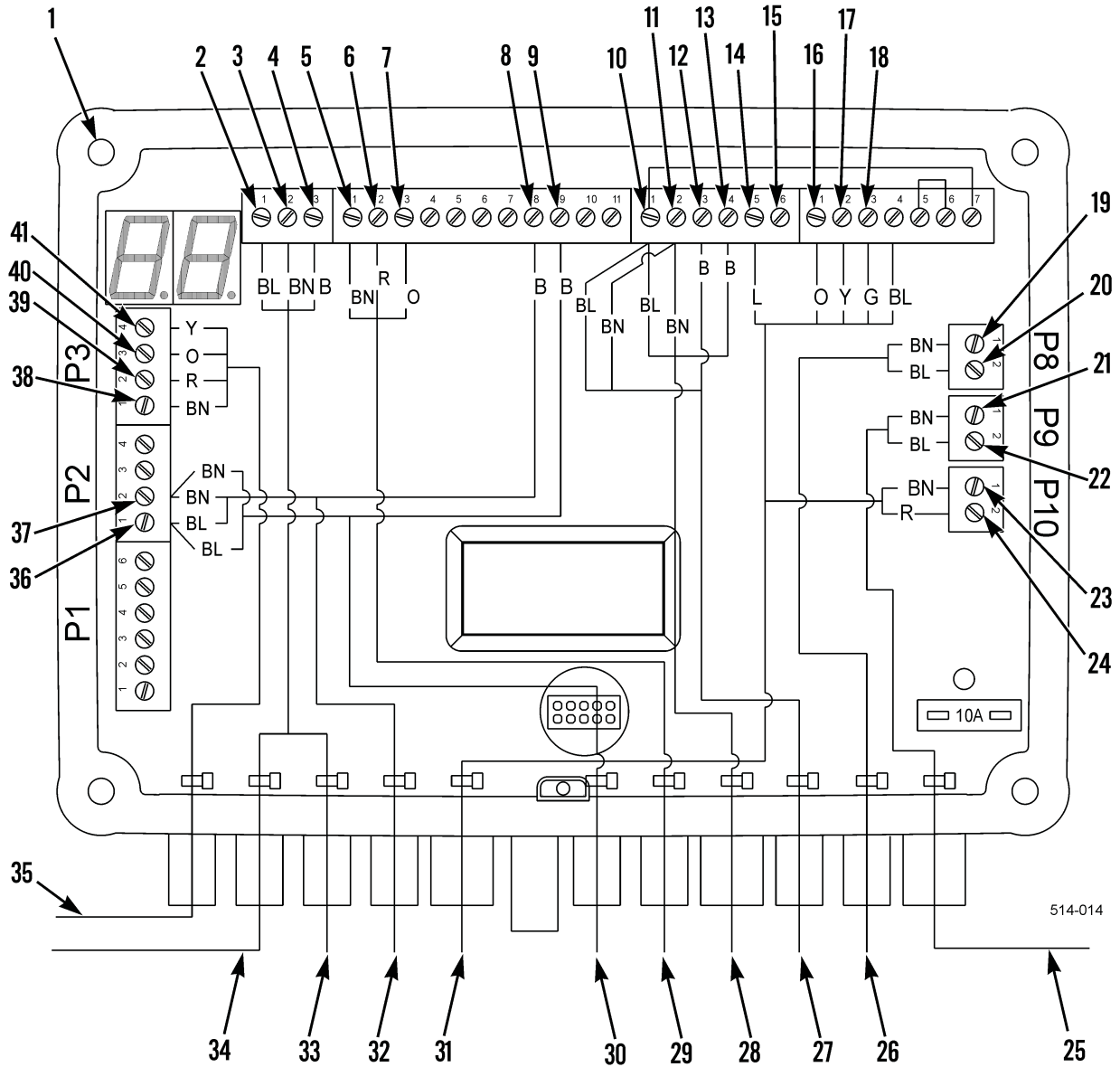


Figure 12. Space 4000 ST Box Wiring Removal.

REMOVAL – CONTINUED

Relay Box Wiring Removal

1. Disconnect orange wire from position 1 (Figure 13, Item 19), yellow wire from position 2 (Figure 13, Item 20), green wire from position 3 (Figure 13, Item 21), blue wire from position 4 (Figure 13, Item 22), and lilac wire from position 7 (Figure 13, Item 23) on P1.
2. Disconnect brown wire from position 1 (Figure 13, Item 11), and red wire from position 2 (Figure 13, Item 12) on P11.
3. Remove CAN bus harness (Figure 13, Item 15) from Relay box (Figure 13, Item 1).
4. Disconnect brown wire from position 1 (Figure 13, Item 24), red wire from position 2 (Figure 13, Item 25), orange wire from position 3 (Figure 13, Item 26), and yellow wire from position 4 (Figure 13, Item 27), on P2.
5. Remove CAN bus harness (Figure 13, Item 18) from Relay box (Figure 13, Item 1).
6. Disconnect brown wire from position 1 (Figure 13, Item 2), and blue wire from position 2 (Figure 13, Item 3), on P3.
7. Remove stowage latch harness (Figure 13, Item 17) from Relay box (Figure 13, Item 1).
8. Disconnect 1471 wire from position 7 (Figure 13, Item 28) on P2, 1466 wire from position 2 (Figure 13, Item 4) on P4, 1469 wire from position 2 (Figure 13, Item 5) on P5, and 1462 wire from position 2 (Figure 13, Item 6) on P6.
9. Disconnect 1463 wire from position 2 (Figure 13, Item 7) on P7, 1464 wire from position 2 (Figure 13, Item 8) on P8, 1468 wire from position 2 (Figure 13, Item 9) on P9, and 1467 wire from position 2 (Figure 13, Item 10) on P10.
10. Disconnect 1435 wire from position 1 (Figure 13, Item 13) on P12, and 1472 wire from position 2 (Figure 13, Item 14) on P12.
11. Remove stowage loom harness (Figure 13, Item 16) from Relay box (Figure 13, Item 1).

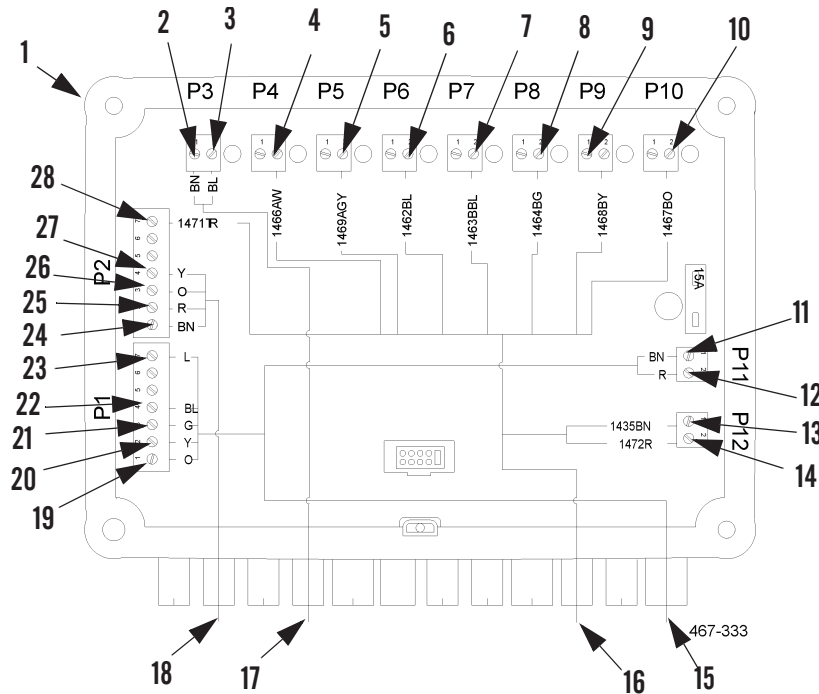


Figure 13. Relay Box Wiring Removal.

REMOVAL – CONTINUED**Additional MUX Box Wiring Removal**

1. Disconnect brown wire from position 1 (Figure 14, Item 13), red wire from position 2 (Figure 14, Item 14), orange wire from position 3 (Figure 14, Item 15), and yellow wire from position 4 (Figure 14, Item 16), on P1.
2. Remove CAN bus harness (Figure 14, Item 11) from additional MUX box (Figure 14, Item 1).
3. Disconnect brown wire from position 1 (Figure 14, Item 17), red wire from position 2 (Figure 14, Item 18), orange wire from position 3 (Figure 14, Item 19), and yellow wire from position 4 (Figure 14, Item 20), on P2.
4. Remove CAN bus harness (Figure 14, Item 12) from additional MUX box (Figure 14, Item 1).
5. Disconnect 1465 wire from position 3 (Figure 14, Item 2) on P3, 1467 wire from position 3 (Figure 14, Item 3) on P4, 1468 wire from position 3 (Figure 14, Item 4) on P5, and 1464 wire from position 3 (Figure 14, Item 5) on P6.
6. Disconnect 1463 wire from position 3 (Figure 14, Item 6) on P7, 1462 wire from position 3 (Figure 14, Item 7) on P8, 1469 wire from position 3 (Figure 14, Item 8) on P9, and 1466 wire from position 3 (Figure 14, Item 9) on P10.
7. Remove stowage loom harness (Figure 14, Item 10) from additional MUX box (Figure 14, Item 1).

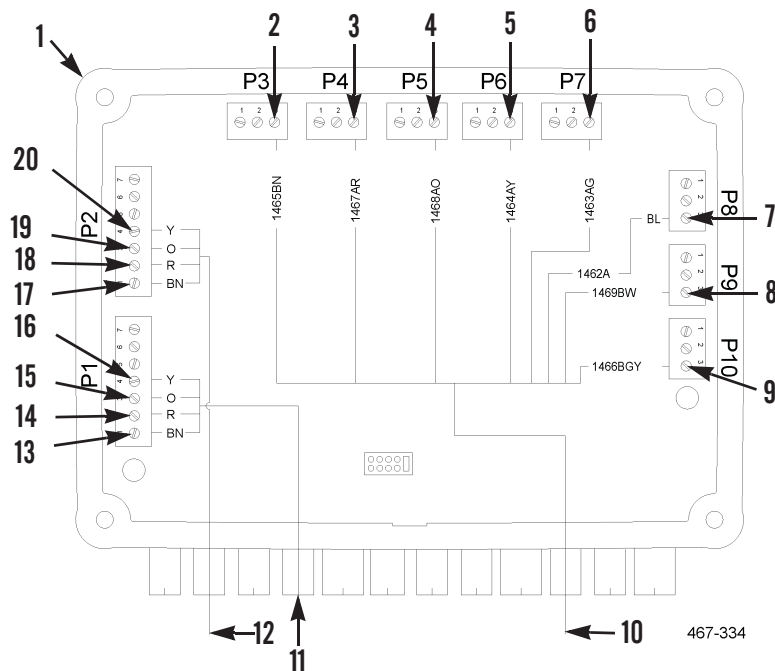


Figure 14. Additional MUX Box Wiring Removal.

END OF TASK

CLEANING AND INSPECTION

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION

WARNING

During these procedures, personnel are required to work outside the vehicle where there are several projecting parts, and personnel are required to bend down. Take care when bending and straightening. A hard hat is required. Failure to follow this warning may result in injury to personnel.

NOTE

- Route and install wires as tagged during removal.
- Install new tiedown straps as required.

Additional MUX Box Wiring Installation.

1. Route stowage loom harness (Figure 15, Item 10) into additional MUX box (Figure 15, Item 1).
2. Connect 1463 wire to position 3 (Figure 15, Item 6) on P7, 1462 wire to position 3 (Figure 15, Item 7) on P8, 1469 wire to position 3 (Figure 15, Item 8) on P9, and 1466 wire to position 3 (Figure 15, Item 9) on P10.
3. Connect 1465 wire to position 3 (Figure 15, Item 2) on P3, 1467 wire to position 3 (Figure 15, Item 3) on P4, 1468 wire to position 3 (Figure 15, Item 4) on P5, and 1464 wire to position 3 (Figure 15, Item 5) on P6.
4. Route CAN bus harness (Figure 15, Item 12) into additional MUX box (Figure 15, Item 1).
5. Connect brown wire to position 1 (Figure 15, Item 17), red wire to position 2 (Figure 15, Item 18), orange wire to position 3 (Figure 15, Item 19), and yellow wire to position 4 (Figure 15, Item 20), on P2.
6. Route CAN bus harness (Figure 15, Item 11) into additional MUX box (Figure 15, Item 1).
7. Connect brown wire to position 1 (Figure 15, Item 13), red wire to position 2 (Figure 15, Item 14), orange wire to position 3 (Figure 15, Item 15), and yellow wire to position 4 (Figure 15, Item 16), on P1.

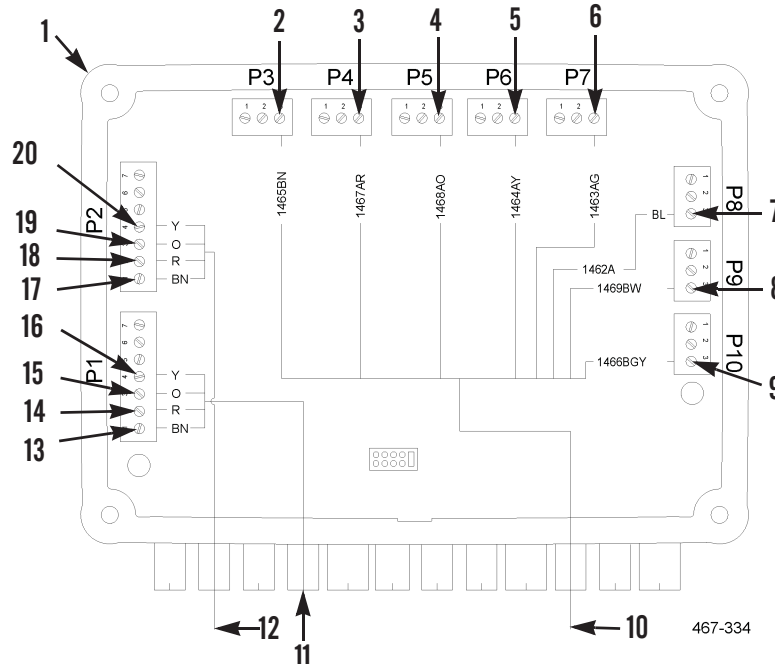


Figure 15. Additional MUX Box Wiring Installation.

INSTALLATION – CONTINUED**Space 4000 ST Box Wiring Installation**

1. Route stow harness (Figure 17, Item 25) into Space 4000 ST box (Figure 17, Item 1).
2. Connect brown wire to position 1 (Figure 17, Item 21), and blue wire to position 2 (Figure 17, Item 22) on P9.
3. Route unstow harness (Figure 17, Item 26) into Space 4000 ST box (Figure 17, Item 1).
4. Connect brown wire to position 1 (Figure 17, Item 19), and blue wire to position 2 (Figure 17, Item 20) on P8.
5. Route CAN bus harness (Figure 17, Item 31) into Space 4000 ST box (Figure 17, Item 1).
6. Connect brown wire to position 1 (Figure 17, Item 23), and blue wire to position 2 (Figure 17, Item 24) on P10.
7. Connect orange wire to position 1 (Figure 17, Item 15), yellow wire to position 2 (Figure 17, Item 16), green wire to position 3 (Figure 17, Item 17), and blue wire to position 4 (Figure 17, Item 18) on P7.
8. Connect lilac wire to position 5 (Figure 17, Item 14) on P6.
9. Route hook arm sensor harness (Figure 17, Item 27) into Space 4000 ST box (Figure 17, Item 1).
10. Connect black wire to position 3 (Figure 17, Item 12) on P6.
11. Route middle frame sensor harness (Figure 17, Item 28) into Space 4000 ST box (Figure 17, Item 1).
12. Connect two blue wires to position 1 (Figure 17, Item 10), two brown wires to position 2 (Figure 17, Item 11), and black wire to position 4 (Figure 17, Item 13) on P6.
13. Route RH transport lock sensor harnesses (Figure 17, Item 30) into Space 4000 ST box (Figure 17, Item 1).
14. Connect black wire to position 9 (Figure 17, Item 9) on P5.
15. Route LH transport lock sensor harnesses (Figure 17, Item 32) into Space 4000 ST box (Figure 17, Item 1).
16. Connect black wire to position 8 (Figure 17, Item 8) on P5.
17. Connect two blue wires to position 1 (Figure 17, Item 36), and two brown wires to position 2 (Figure 17, Item 37) on P2.
18. Route LH (Figure 17, Item 34) and RH (Figure 17, Item 33) stowage guide angle sensor harnesses into Space 4000 ST box (Figure 17, Item 1).
19. Connect two blue wires to position 1 (Figure 17, Item 2), two brown wires to position 2 (Figure 17, Item 3), two black wires to position 3 (Figure 17, Item 4) on P4.
20. Route space computer harness (Figure 17, Item 35) into Space 4000 ST box (Figure 17, Item 1).
21. Connect brown wire to position 1 (Figure 17, Item 38), red wire to position 2 (Figure 17, Item 39), orange wire to position 3 (Figure 17, Item 40), and yellow wire to position 4 (Figure 17, Item 41) on P3.

INSTALLATION – CONTINUED

Space 4000 ST Box Wiring Installation – Continued

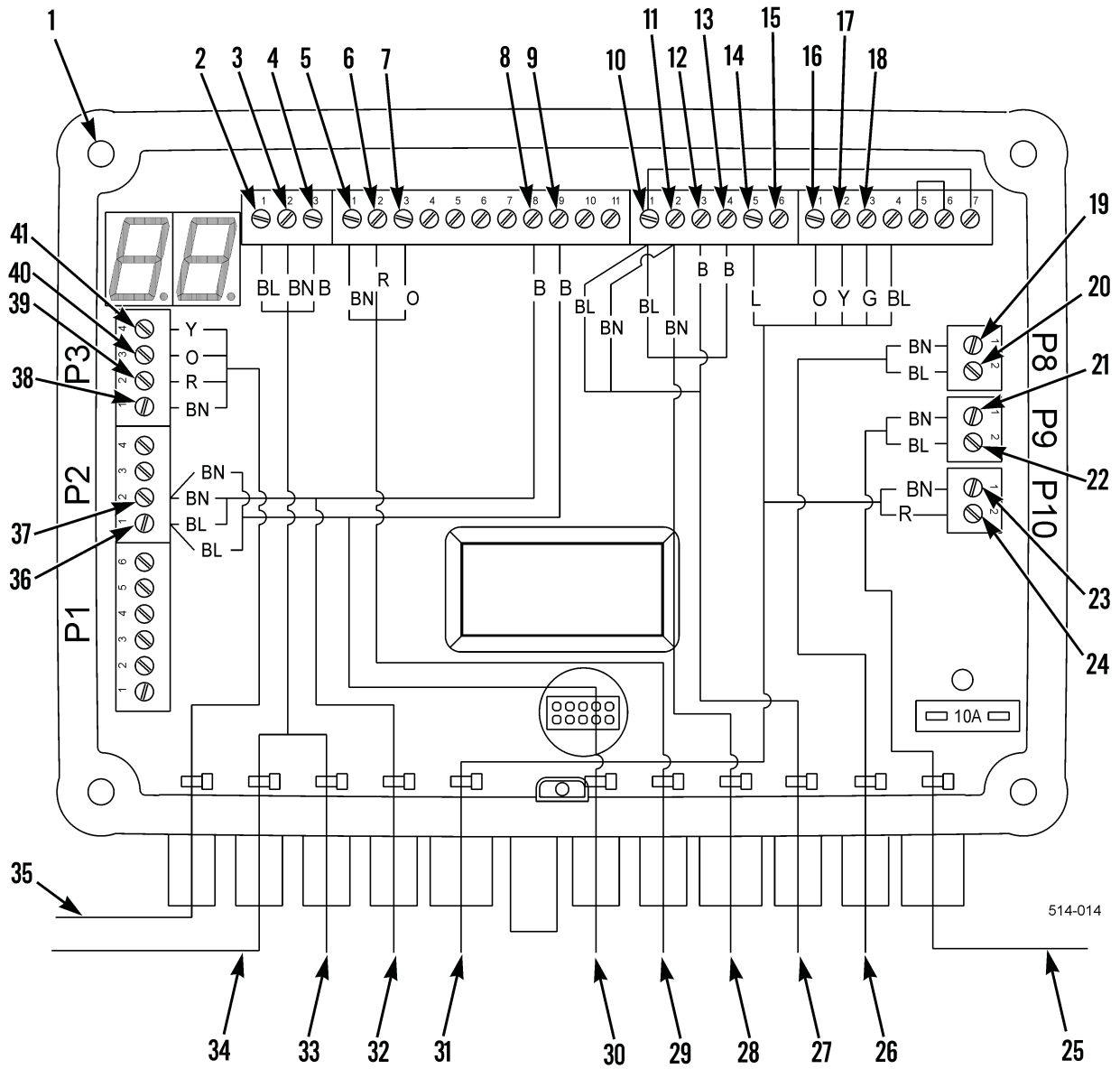


Figure 17. Space 4000 ST Box Wiring Installation.

INSTALLATION – CONTINUED

Control Box Installation

1. Install Relay box (Figure 18, Item 17), four washers (Figure 18, Item 10), and bolts (Figure 18, Item 9) on support bracket (Figure 18, Item 1).
2. Install Additional MUX box (Figure 18, Item 6), four washers (Figure 18, Item 8), and bolts (Figure 18, Item 7) on support bracket (Figure 18, Item 1).
3. Install Space 4000 ST box (Figure 18, Item 14), four spacers (Figure 18, Item 13), washers (Figure 18, Item 12), and bolts (Figure 18, Item 11) on support bracket (Figure 18, Item 1).
4. Install cover (Figure 18, Item 4) and tighten four bolts (Figure 18, Item 5) on Additional MUX box (Figure 18, Item 6).
5. Install cover (Figure 18, Item 3) and tighten four bolts (Figure 18, Item 2) on Relay box (Figure 18, Item 17).
6. Install cover (Figure 18, Item 16) and tighten four bolts (Figure 18, Item 15) on Space 4000 ST box (Figure 18, Item 14).

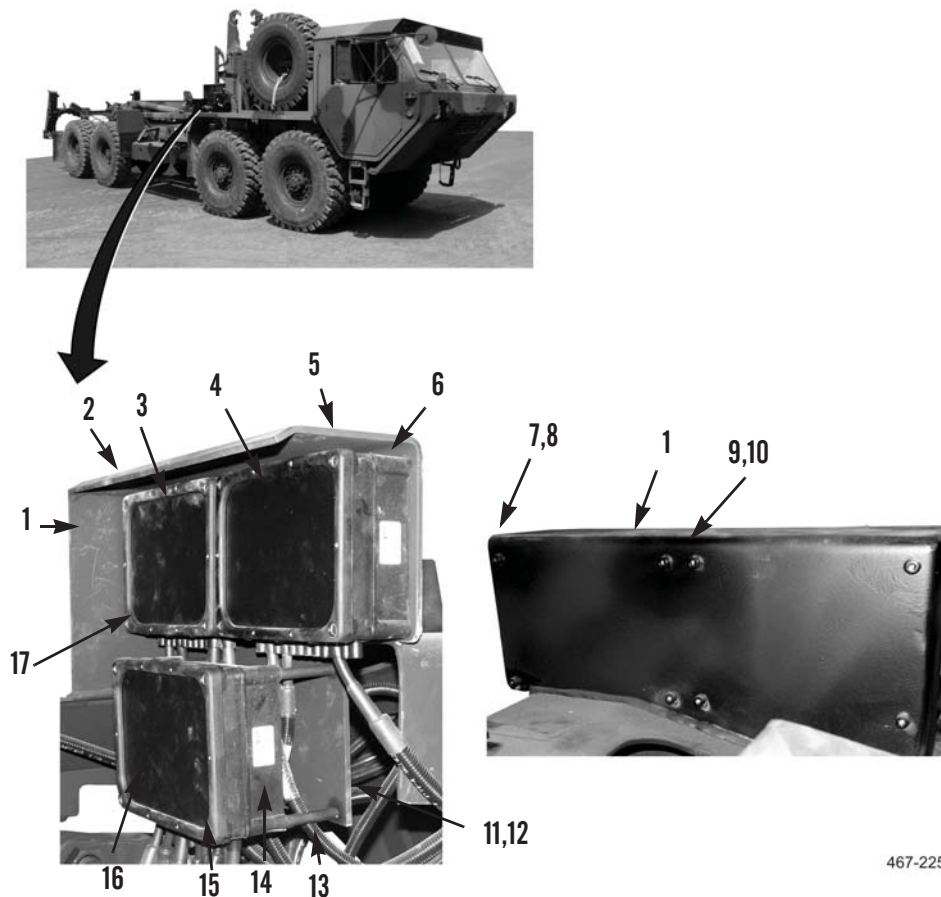


Figure 18. Control Box Installation.

INSTALLATION – CONTINUED**Stowage Guide Sensor Harness Installation**

1. Install 13 clamps (Figure 19, Item 4), bolts (Figure 19, Item 3), and nuts (Figure 19, Item 2) on stowage assembly (Figure 19, Item 1).
2. Underneath stowage assembly (Figure 19, Item 1), install new tiedown straps (Figure 19, Item 5) as necessary to secure wiring harnesses to stowage assembly.

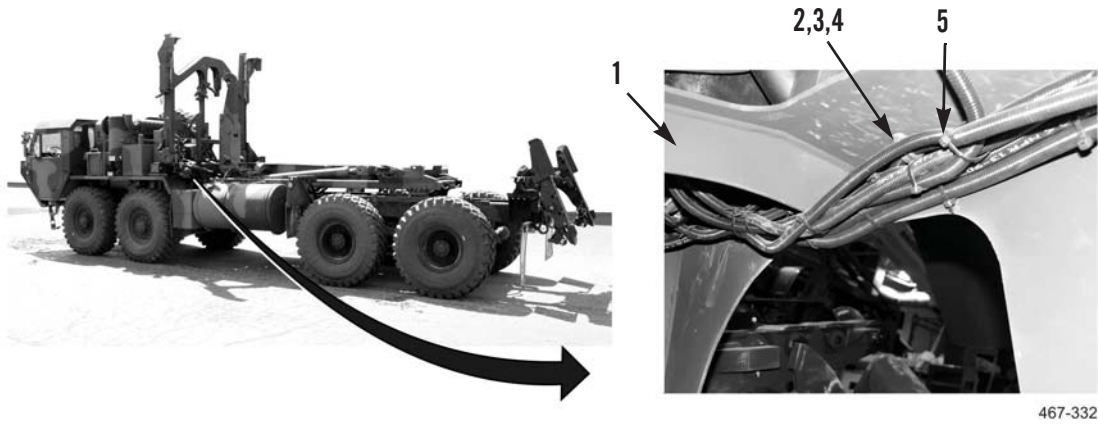


Figure 19. Clamp and Tiedown Strap Installation.

INSTALLATION – CONTINUED**Stowage Guide Sensor Harness Installation – Continued****NOTE**

Perform steps 3 through 5 for both right and left sides.

3. Connect stowage angle sensor harness (Figure 20, Item 7) to stowage angle sensor (Figure 20, Item 1).
4. Install stowage guide sensor harness (Figure 20, Item 3), two cable clamp caps (Figure 20, Item 6), and four bolts (Figure 20, Item 5) on stowage guide (Figure 20, Item 4).
5. Connect stowage guide sensor harness (Figure 20, Item 3) to stowage guide sensor (Figure 20, Item 2).

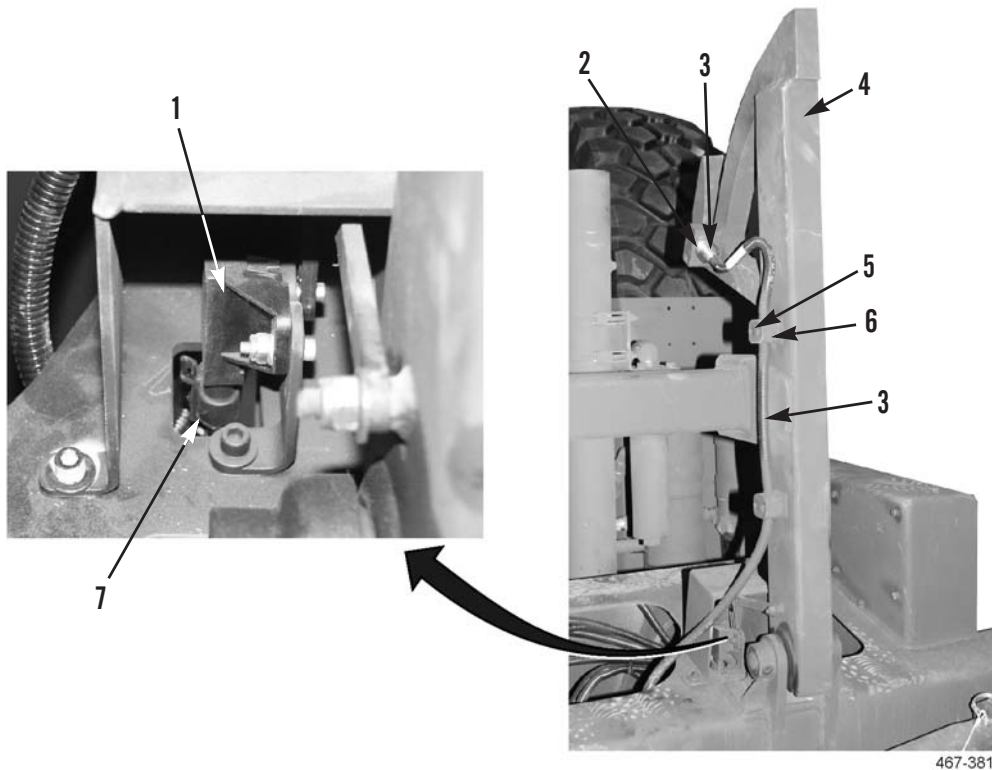


Figure 20. Stowage Guide and Angle Sensor Installation.

INSTALLATION – CONTINUED**E-CHU Interface Loom**

1. Connect vehicle wiring harness (Figure 21, Item 3) to E-CHU interface loom (Figure 21, Item 2).
2. Connect E-CHU interface loom (Figure 21, Item 2) to control box (Figure 21, Item 1).

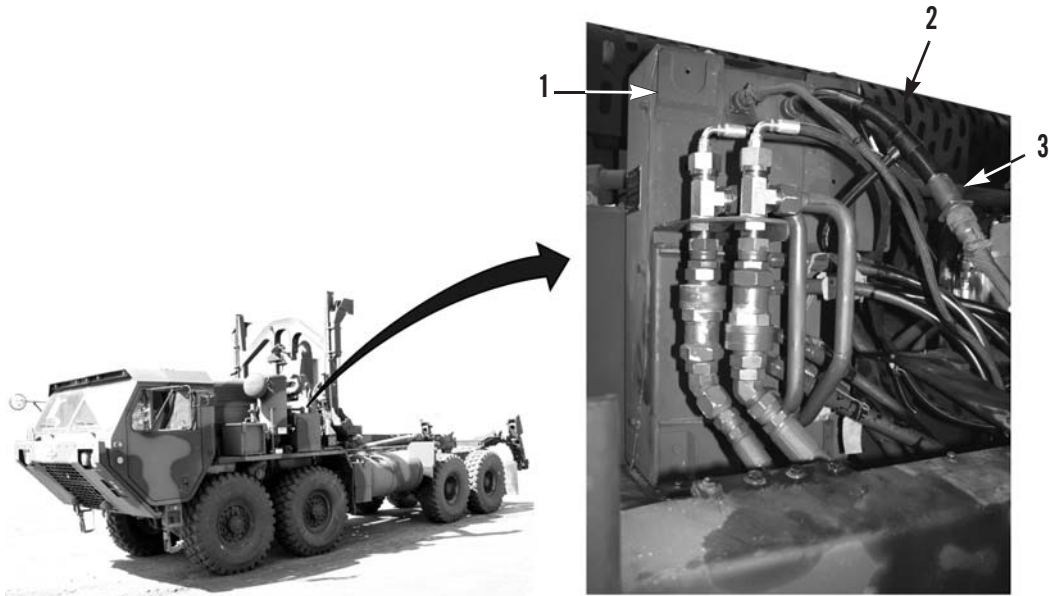
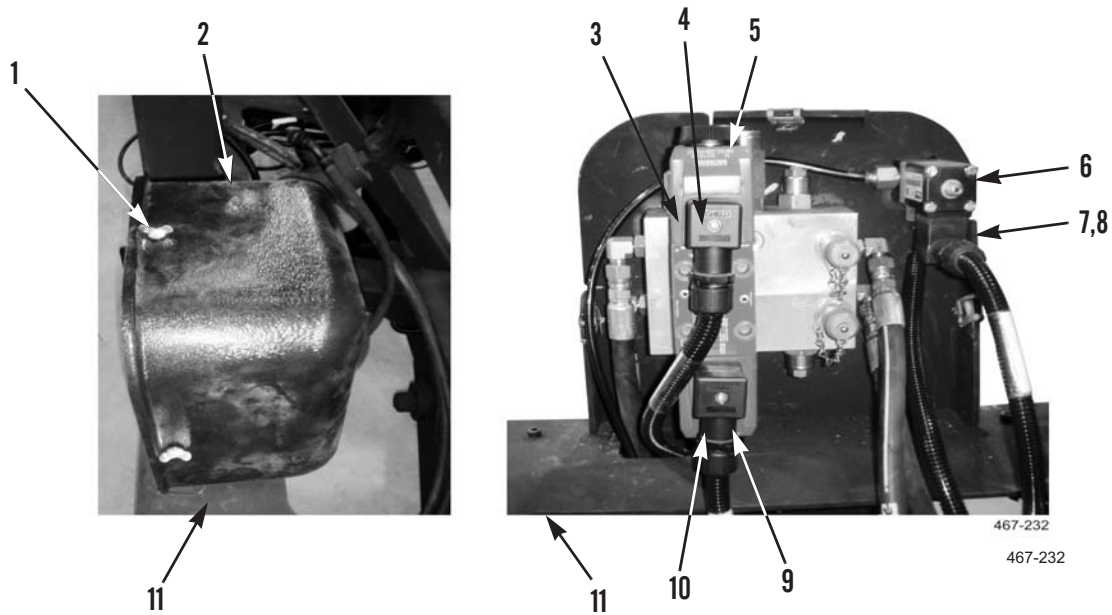


Figure 21. Connect E-CHU Interface Loom.

INSTALLATION – CONTINUED**Valve Harness Installation**

1. Install stowage latch harness (Figure 22, Item 8) on pneumatic valve (Figure 22, Item 6) and tighten screw (Figure 22, Item 7).
2. Install stow harness (Figure 22, Item 9) on hydraulic valve (Figure 22, Item 5) and tighten screw (Figure 22, Item 10).
3. Install unstow harness (Figure 22, Item 3) on hydraulic valve (Figure 22, Item 5) and tighten screw (Figure 22, Item 4).
4. Install manifold cover (Figure 22, Item 2) on stowage assembly (Figure 22, Item 11) and tighten three wing bolts (Figure 22, Item 1).

**Figure 22. Connect Valve Harnesses.**

INSTALLATION – CONTINUED**Transport Lock Sensor Harness Installation****NOTE**

Perform steps 1 and 2 for both right and left sides.

1. Install washer (Figure 23, Item 2), bolt (Figure 23, Item 1), clamp (Figure 23, Item 5), washer (Figure 23, Item 7) and new locknut (Figure 23, Item 6) on transport lock sensor harness (Figure 23, Item 4).
2. Connect transport lock sensor harness (Figure 23, Item 4) to transport lock sensor (Figure 23 Item 3). Install tiedown straps as required.

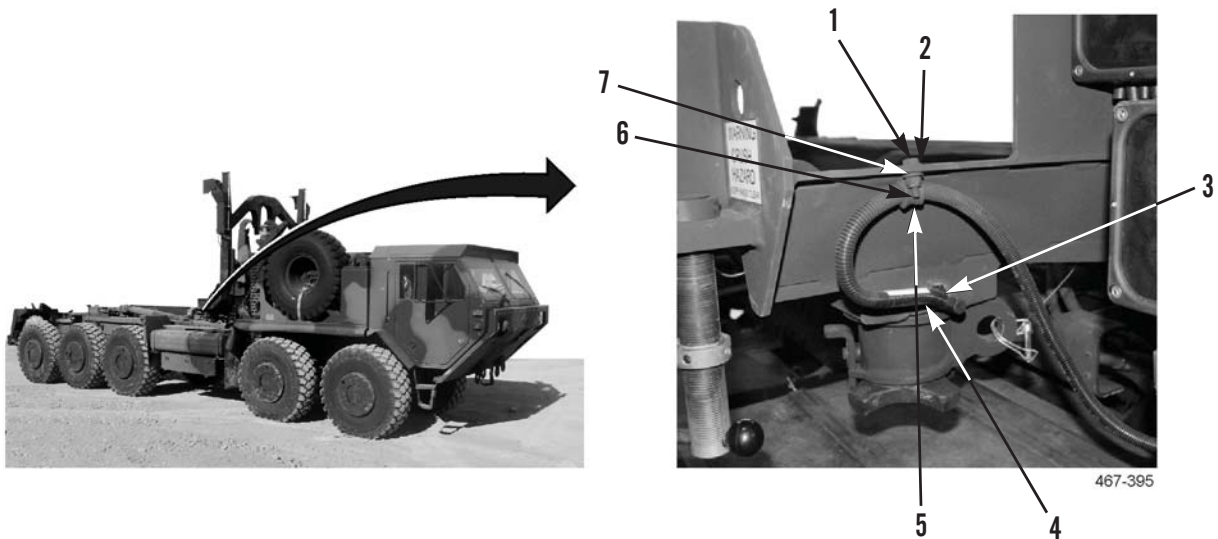


Figure 23. Transport Lock Sensor Installation.

INSTALLATION – CONTINUED**Middle Frame Sensor Harness Installation****NOTE**

Route and install wiring harnesses as noted during removal

1. Route middle frame and hook arm sensor harnesses (Figure 24, Item 3) along frame (Figure 24, Item 1) and install new tiedown straps (Figure 24, Item 4) as required.
2. Route twistlock harnesses (Figure 24, Item 2) along frame (Figure 24, Item 1) and install new tiedown straps (Figure 24, Item 4) as required.

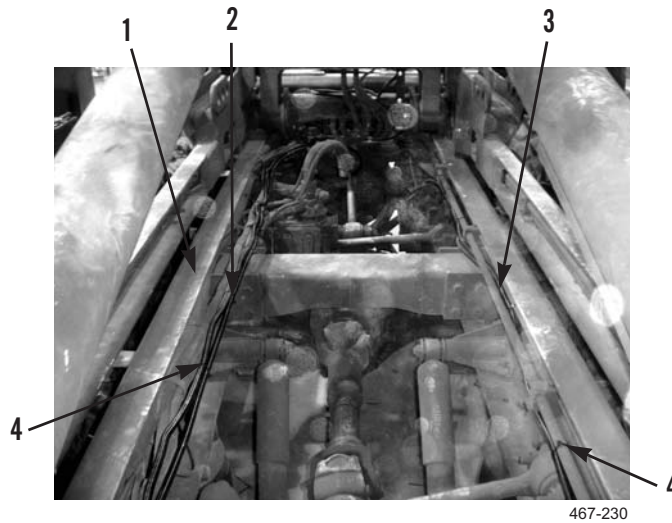


Figure 24. Wiring Harnesses Installation.

INSTALLATION – CONTINUED**Middle Frame Sensor Harness Installation – Continued**

3. Connect middle frame sensor harness (Figure 25, Item 2) to middle frame sensor (Figure 25, Item 3).
4. Instal tiedown straps (Figure 25, Item 4) as required.

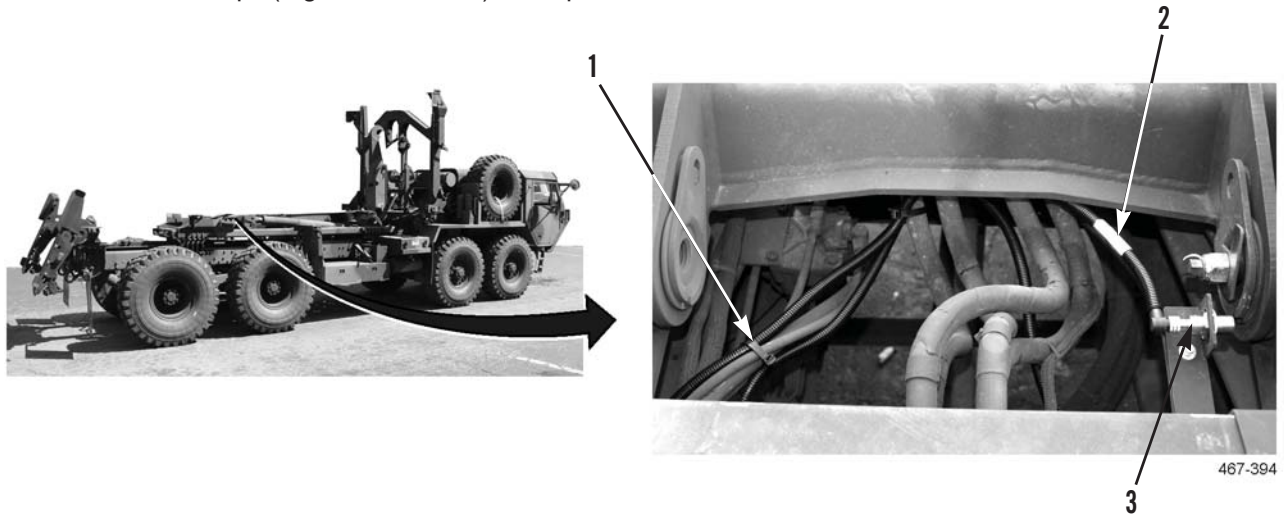


Figure 25. Middle Frame Sensor Installation.

Hook Arm Sensor Installation

1. Route hook arm sensor wiring harnesses (Figure 26, Item 2) through hook arm frame (Figure 26, Item 1).
2. Connect hook arm sensor harness (Figure 26, Item 2) to hook arm sensor (Figure 26, Item 3).
3. Install new tiedown straps (Figure 26, Item 4) as required.

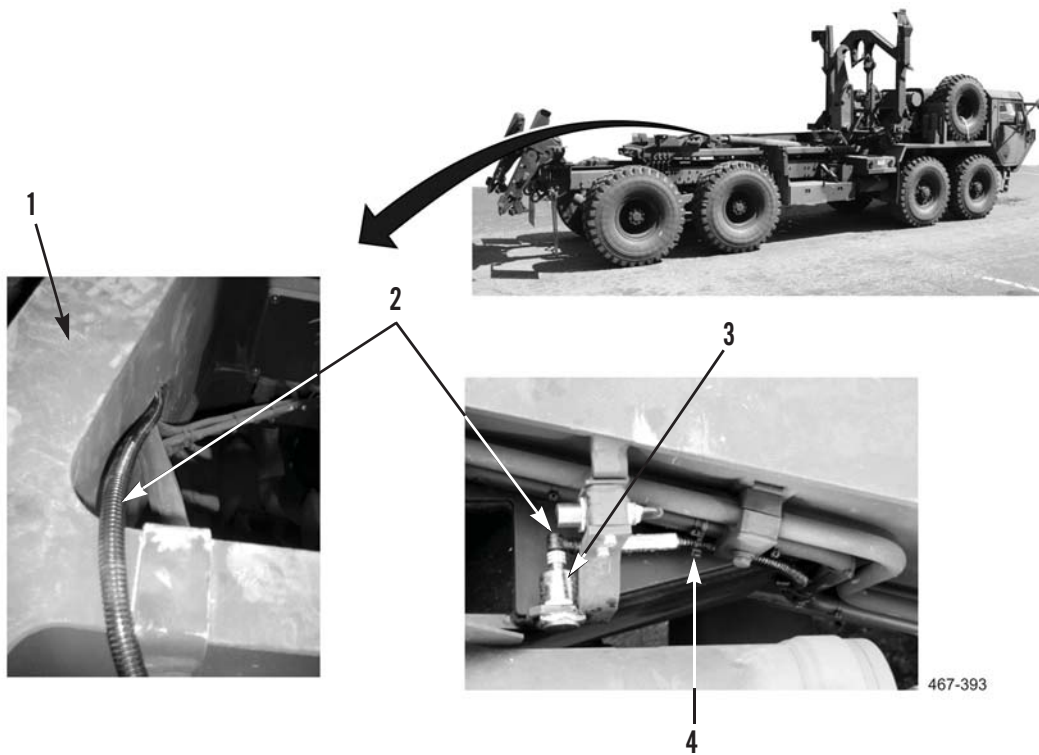


Figure 26. Hook Arm Sensor Installation.

INSTALLATION – CONTINUED**Twistlock Sensor Harness Installation****NOTE**

Perform step 1 for both right and left sides.

1. Route twistlock harness (Figure 27, Item 1) to slider assembly (Figure 27, Item 2), and install new tiedown straps (Figure 27, Item 3) as required.

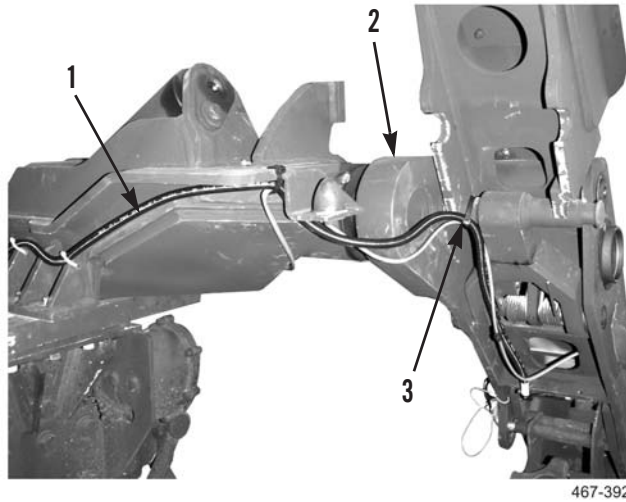


Figure 27. Twistlock Sensor Harness Installation.

INSTALLATION – CONTINUED**Twistlock Sensor Harness Installation – Continued****NOTE**

Perform step 2 for both right and left sides.

2. Connect twistlock sensor harness (Figure 28, Item 1) to twistlock sensor (Figure 28, Item 2).

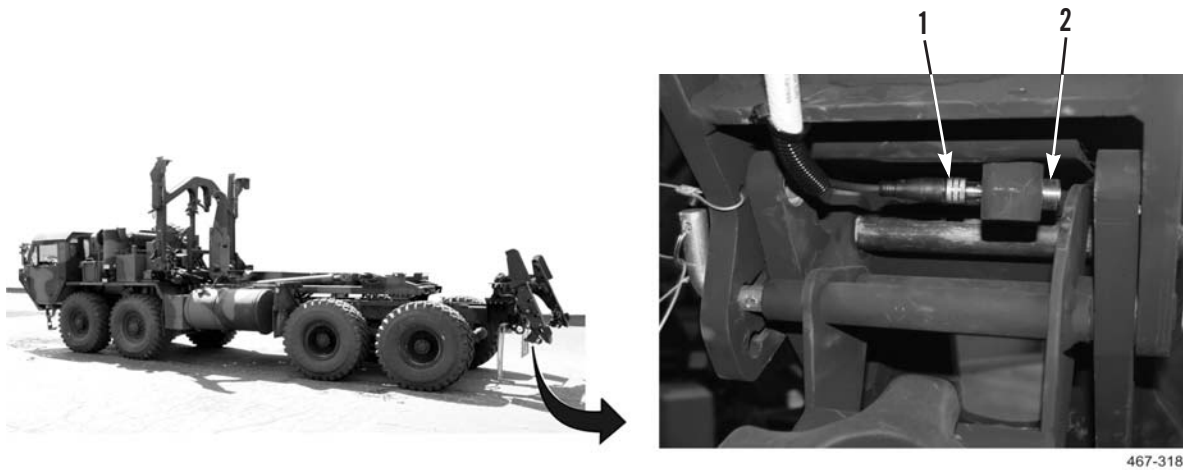


Figure 28. Twistlock Sensor Installation.

END OF TASK**FOLLOW-ON TASKS**

1. Install stowage control unit (WP 0045).
2. Calibrate middle frame and hook arm sensors. Refer to *Sensor Calibration* in *Installation Instructions* (WP 0052).
3. Load lift frame (WP 0007).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

LIFT FRAME UPPER LOCK REPAIR

Removal, Disassembly, Cleaning and Inspection, Assembly, Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's (WP 0057, Item 2)

Tool Set, SATS Base (WP 0057, Item 3)

Sling, Nylon (WP 0057, Item 1)

Lifting Equipment (2,000-lb Capacity)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)

Locknut (WP 0059, Item 7) (4)

Locknut (WP 0059, Item 5)

Locknut (WP 0059, Item 12)

Cotter Pin (WP 0059, Item 9)

Personnel

Two

References

WP 0020

Equipment Condition

Lift frame placed on level ground and supported by hook arm or alternate lifting device (WP 0007)

REMOVAL

WARNING

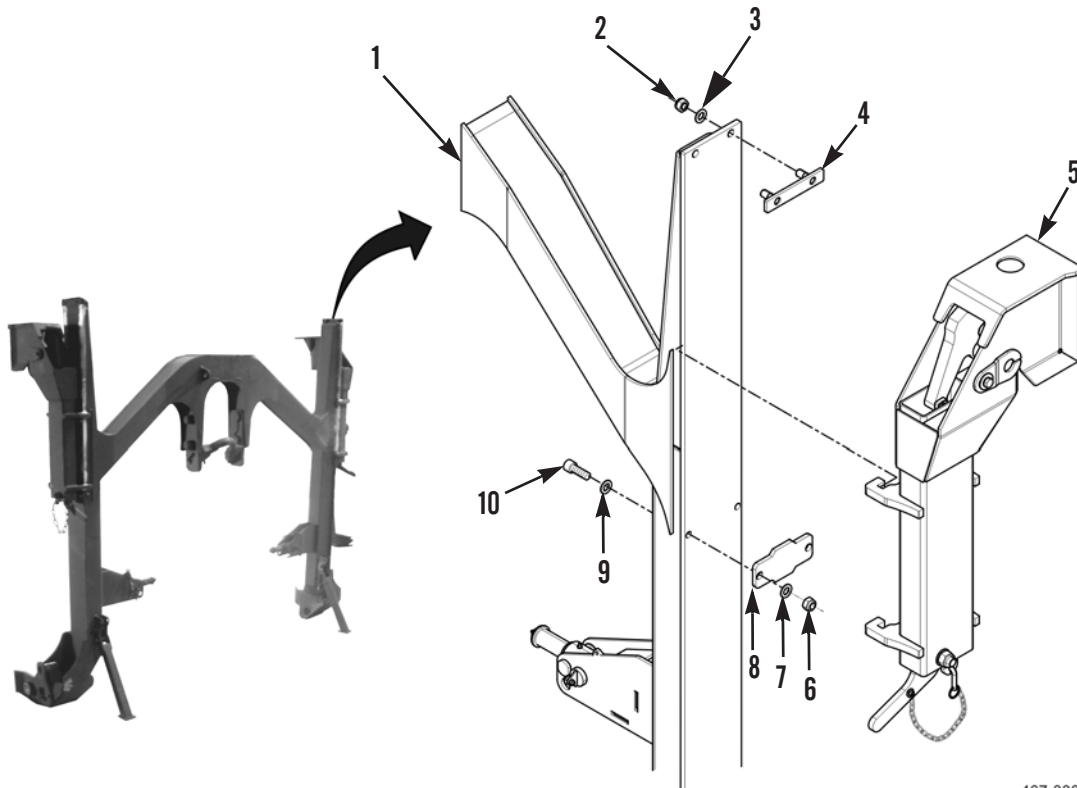
- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Lift frame must be firmly positioned on solid, level ground with adequate support from stands.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

- Upper lock assembly weighs 90 lb (41 kg).
- Perform these procedures for both right and left sides.
- Note placement of upper lock on lift frame to aid in installation.

REMOVAL – CONTINUED

1. Attach sling and lifting device to upper lock assembly (Figure 1, Item 5).
2. Use lifting device to remove slack from sling.
3. Remove two locknuts (Figure 1, Item 2), washers (Figure 1, Item 3), and stop block (Figure 1, Item 4) from lift frame (Figure 1, Item 1). Discard locknuts.
4. Use lifting device to remove upper lock assembly (Figure 1, Item 5) from lift frame (Figure 1, Item 1).
5. Remove two locknuts (Figure 1, Item 6), washers (Figure 1, Item 7), bolts (Figure 1, Item 10), washers (Figure 1, Item 9), and plate (Figure 1, Item 8) from lift frame (Figure 1, Item 1). Discard locknuts.

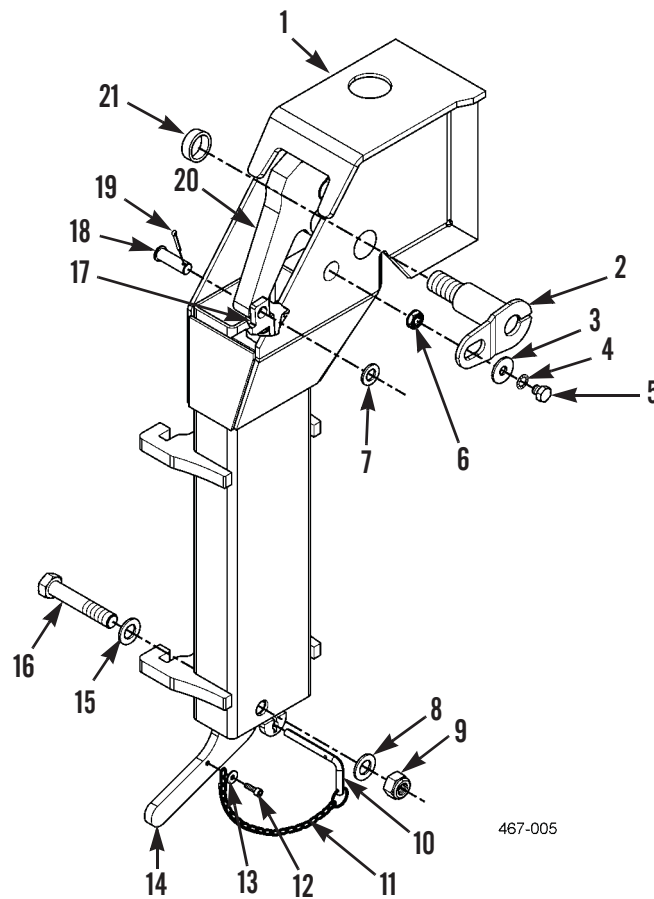


467-338

Figure 1. Upper Lock Removal.**END OF TASK**

DISASSEMBLY

1. Remove bolt (Figure 2, Item 12), washer (Figure 2, Item 13), and chain (Figure 2, Item 11) from latch handle (Figure 2, Item 14).
2. Remove keylock (Figure 2, Item 10) from latch handle (Figure 2, Item 14).
3. Remove bolt (Figure 2, Item 5), star washer (Figure 2, Item 4), washer (Figure 2, Item 3), shaft (Figure 2, Item 2), spacer (Figure 2, Item 6), and bushing (Figure 2, Item 21) from upper lock assembly (Figure 2, Item 1).
4. Remove cotter pin (Figure 2, Item 19), washer (Figure 2, Item 7), clevis (Figure 2, Item 18), and latch plate (Figure 2, Item 20) from latch rod (Figure 1, Item 17). Discard cotter pin.
5. Remove locknut (Figure 2, Item 9), washer (Figure 2, Item 8), bolt (Figure 2, Item 16), washer (Figure 2, Item 15), and latch handle (Figure 2, Item 14) from upper lock assembly (Figure 2, Item 1). Discard locknut.



467-005

Figure 2. Upper Lock Disassembly.

DISASSEMBLY – CONTINUED

- Remove locknut (Figure 3, Item 8), washer (Figure 3, Item 7), washer (Figure 3, Item 4), bolt (Figure 3, Item 5), and latch handle (Figure 3, Item 6) from adjustment bar (Figure 3, Item 3). Discard locknut.

NOTE

Mark location of nut on latch rod to aid in installation.

- Loosen nut (Figure 3, Item 2) and remove adjustment bar (Figure 3, Item 3) from latch rod (Figure 3, Item 1).

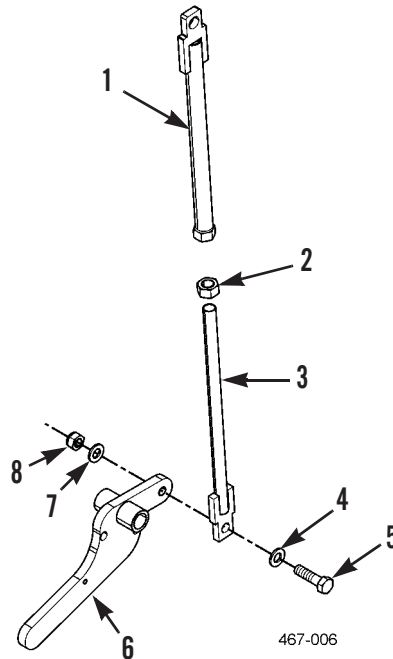


Figure 3. Latch Handle.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

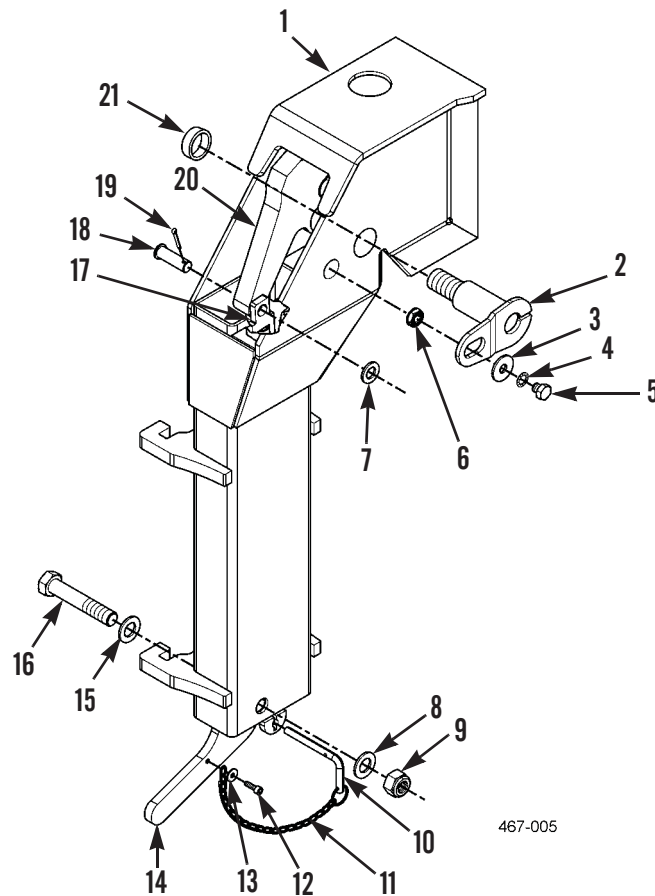
END OF TASK

ASSEMBLY

NOTE

Install latch rod as noted during removal.

1. Install latch rod (Figure 3, Item 1) and nut (Figure 3, Item 2) on adjustment bar (Figure 3, Item 3) keeping rod ends parallel.
2. Install latch handle (Figure 3, Item 6), bolt (Figure 3, Item 5), washer (Figure 3, Item 4), washer (Figure 3, Item 7), and new locknut (Figure 3, Item 8) on adjustment bar (Figure 3, Item 3).
3. Install latch handle (Figure 4, Item 14), washer (Figure 4, Item 15), bolt (Figure 4, Item 16), washer (Figure 4, Item 8), and new locknut (Figure 4, Item 9) in upper lock assembly (Figure 4, Item 1).
4. Install latch plate (Figure 4, Item 20), clevis (Figure 4, Item 18), washer (Figure 4, Item 7), and new cotter pin (Figure 4, Item 19) on latch rod (Figure 4, Item 17).
5. Install shaft (Figure 4, Item 2), bushing (Figure 4, Item 21), spacer (Figure 4, Item 6), washer (Figure 4, Item 3), star washer (Figure 4, Item 4), and bolt (Figure 4, Item 5) on upper lock assembly (Figure 4, Item 1) aligning spacer with opening in shaft.
6. Install keylock (Figure 4, Item 10) in latch handle (Figure 4, Item 14).
7. Install chain (Figure 4, Item 11), washer (Figure 4, Item 13), and bolt (Figure 4, Item 12) on latch handle (Figure 4, Item 14).



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Figure 4. Upper Lock Assembly.

END OF TASK

INSTALLATION

1. Install plate (Figure 5, Item 8), two washers (Figure 5, Item 9), bolts (Figure 5, Item 10), washers (Figure 5, Item 7), and new locknuts (Figure 5, Item 6) on lift frame (Figure 5, Item 1).

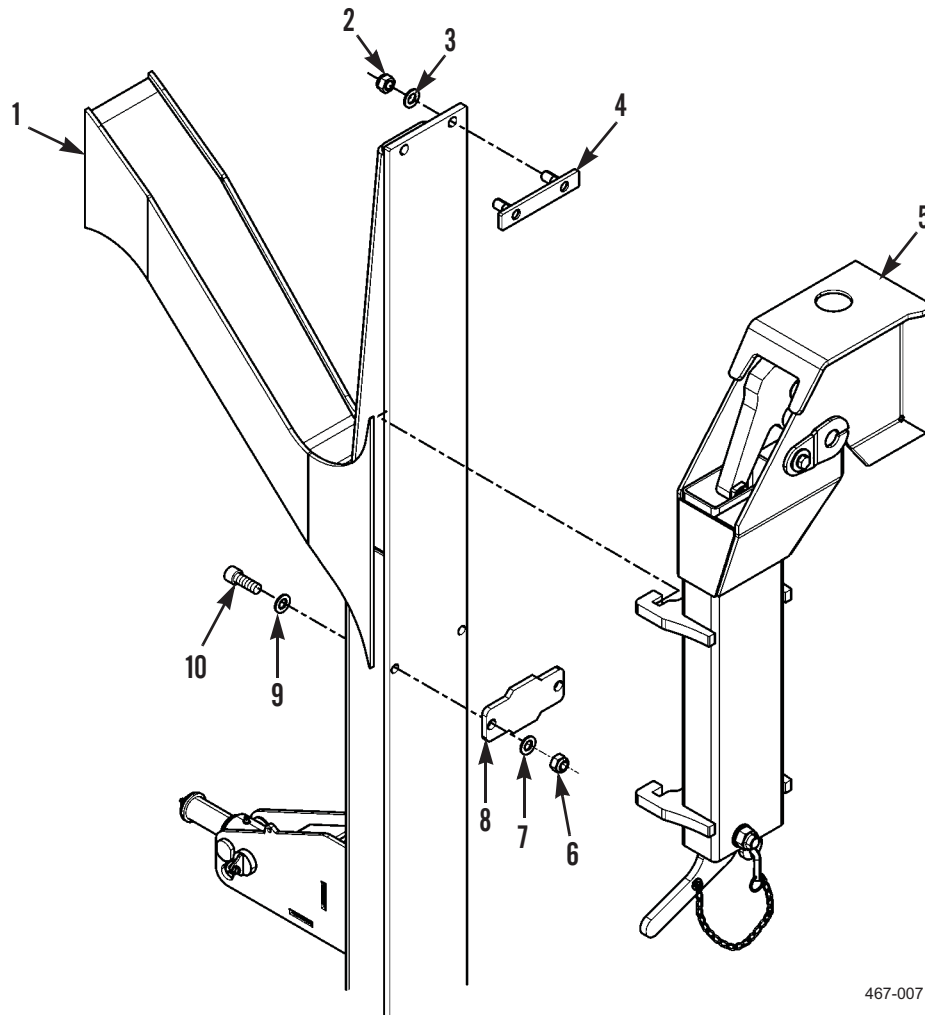
WARNING

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

- Upper lock assembly weighs 90 lb (41 kg).
 - Perform these procedures for both right and left sides.
 - Install upper lock assembly on lift frame as noted during removal.
2. Attach sling and lifting device to upper lock assembly (Figure 1, Item 5).
 3. Use lifting device to install upper lock assembly (Figure 5, Item 5) on lift frame (Figure 5, Item 1).
 4. Install stop block (Figure 5, Item 4), two washers (Figure 5, Item 3), and new locknuts (Figure 5, Item 2) on lift frame (Figure 5, Item 1).
 5. Remove lifting device and sling from upper lock assembly (Figure 5, Item 5).

INSTALLATION – CONTINUED



467-007

Figure 5. Upper Lock Installation.

END OF TASK**FOLLOW-ON TASKS**

Stow lift frame on vehicle (WP 0007).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
LIFT FRAME BAIL BAR REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057,
Item 2)
Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Adhesive, Thread (WP 0060, Item 1)
Rag, Wiping (WP 0060, Item 10)
Locknut (WP 0059, Item 10) (4)

References

WP 0020

Equipment Condition

Lift frame placed on level ground and supported by hook arm or alternate lifting device (WP 0007)

REMOVAL**WARNING**

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Failure to follow this warning may result in injury or death to personnel.

NOTE

Bail bar weighs 61 lb (28 kg).

Remove four locknuts (Figure 1, Item 4), mounting pins (Figure 1, Item 2), and bail bar (Figure 1, Item 3) from lift frame (Figure 1, Item 1). Discard locknuts.

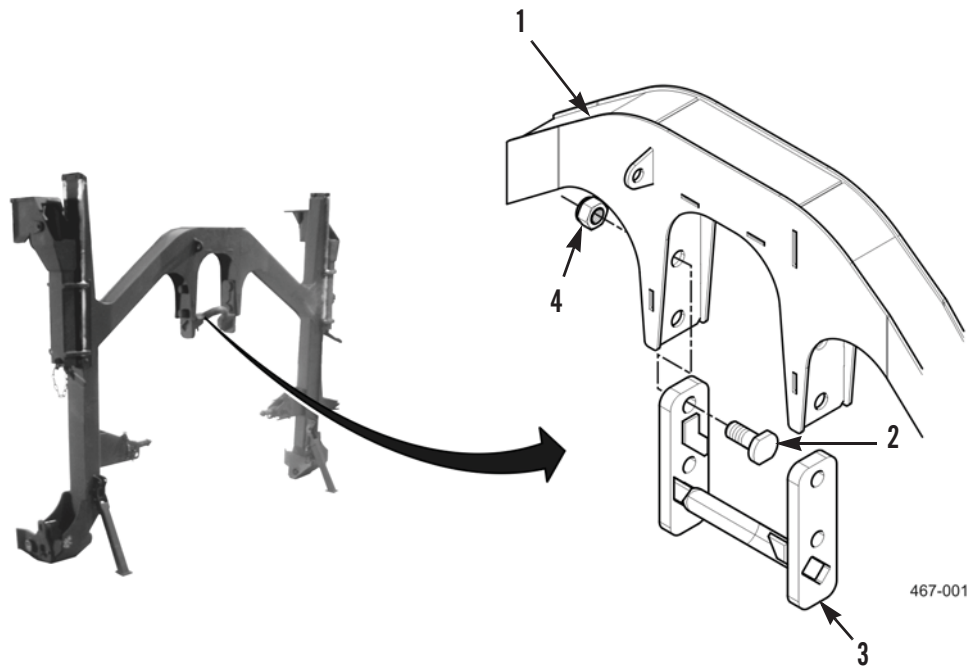


Figure 1. Bail Bar.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**WARNING**

- Use caution when using adhesives and sealants. Prolonged inhalation of vapors can cause lung irritation. Contact with skin can cause dermatitis. Wear gloves and safety goggles and use product in a well-ventilated area away from open flame. If ingested, keep individual calm and seek medical attention. DO NOT induce vomiting. If contact with skin or eyes is made, flush thoroughly with water. Dispose of cleanup rags IAW local policy and ordinances.
 - Component will fall when attaching hardware is removed. Support component while installing attaching hardware.
 - Failure to follow these warnings may result in injury to personnel.
1. Apply thread adhesive to four mounting pins (Figure 1, Item 2).

WARNING

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Failure to follow this warning may result in injury or death to personnel.

NOTE

Bail bar weighs 61 lb (28 kg).

2. With assistance, install bail bar (Figure 1, Item 3), four mounting pins (Figure 1, Item 2), and new locknuts (Figure 1, Item 4) on lift frame (Figure 1, Item 1). Tighten locknuts to 147 lb-ft (200 Nm).

END OF TASK**FOLLOW-ON TASKS**

Stow lift frame on vehicle WP 0007, *Unloading and Loading Empty Lift Frame*.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE**LIFT FRAME ROLLER AND ROLLER PIN REPLACEMENT**
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Locknut (WP 0059, Item 6) (2)

References

WP 0020

Equipment Condition

Lift frame placed on level ground and supported by hook arm or alternate lifting device (WP 0007)

REMOVAL

NOTE

Perform steps 1 through 7 for both right and left sides.

1. Remove three grease fittings (Figure 1, Item 3) from roller pin (Figure 1, Item 2).
2. Remove nut (Figure 1, Item 5), washer (Figure 1, Item 4), and roller (Figure 1, Item 1) from roller pin (Figure 1, Item 2).

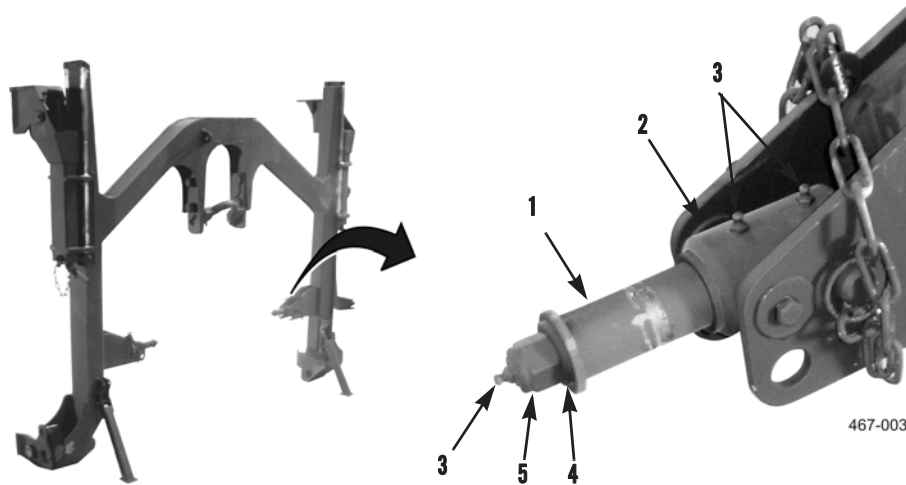


Figure 1. Roller and Grease Fittings.

3. Remove locknut (Figure 2, Item 16), washer (Figure 2, Item 17), chains (Figure 2, Items 4 and 15), bolt (Figure 2, Item 3), and washer (Figure 2, Item 2) from lift frame (Figure 2, Item 1). Discard locknut.
4. Remove locknut (Figure 2, Item 14), chain (Figure 2, Item 15), bolt (Figure 2, Item 12), and washer (Figure 2, Item 13), from pin (Figure 2, Item 11). Discard locknut.
5. Remove bolt (Figure 2, Item 6), washer (Figure 2, Item 7), two spacers (Figure 2, Item 8), and pivot pin (Figure 2, Item 10) from lift frame (Figure 2, Item 1).
6. Remove snap ring pin (Figure 2, Item 5), from pin (Figure 2, Item 11).
7. Remove pin (Figure 2, Item 11) and roller pin (Figure 2, Item 9) from lift frame (Figure 2, Item 1).

REMOVAL – CONTINUED

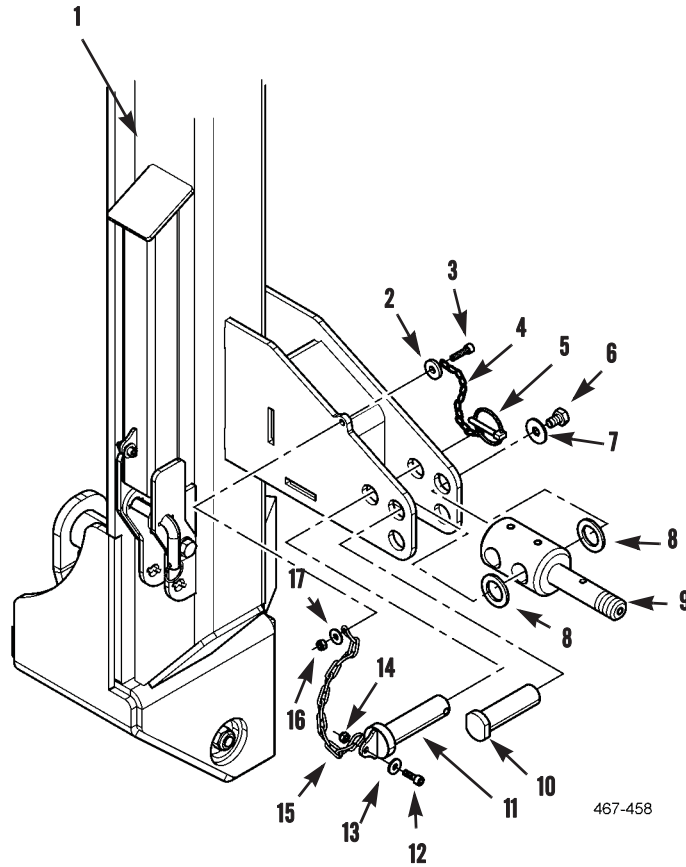


Figure 2. Roller Pin and Chains.

END OF TASK

CLEANING AND INSPECTION

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**NOTE**

Perform steps 1 through 7 for both right and left sides.

1. Install roller pin (Figure 3, Item 9) and pin (Figure 3, Item 11) in lift frame (Figure 3, Item 1).
2. Install snap ring pin (Figure 3, Item 5) in pin (Figure 3, Item 11).
3. Install two spacers (Figure 3, Item 8), pivot pin (Figure 3, Item 10), washer (Figure 3, Item 7), and bolt (Figure 3, Item 6) on lift frame (Figure 3, Item 1).
4. Install washer (Figure 3, Item 13), bolt (Figure 3, Item 12), chain (Figure 3, Item 15), and new locknut (Figure 3, Item 14) on pin (Figure 3, Item 11).
5. Install washer (Figure 3, Item 2), bolt (Figure 3, Item 3), chains (Figure 3, Items 4 and 15), washer (Figure 3, Item 17), and new locknut (Figure 3, Item 16) on lift frame (Figure 3, Item 1).

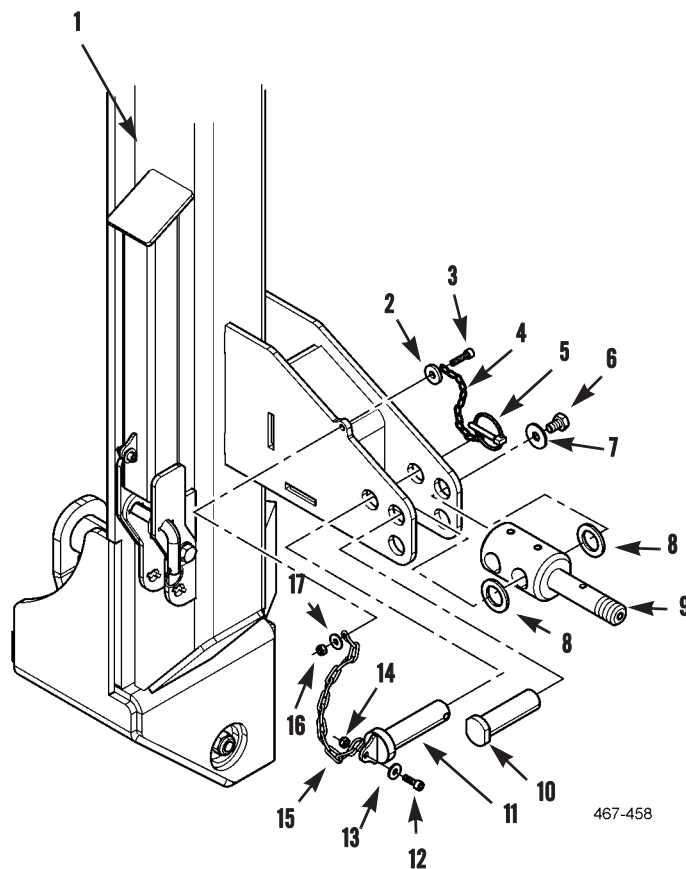


Figure 3. Roller Pins and Chains.

INSTALLATION – CONTINUED**NOTE**

Roller must move freely on roller pin.

6. Install roller (Figure 4, Item 1), washer (Figure 4, Item 4), and nut (Figure 4, Item 5) on roller pin (Figure 4, Item 2).
7. Install three grease fittings (Figure 4, Item 3) on roller pin (Figure 4, Item 2).

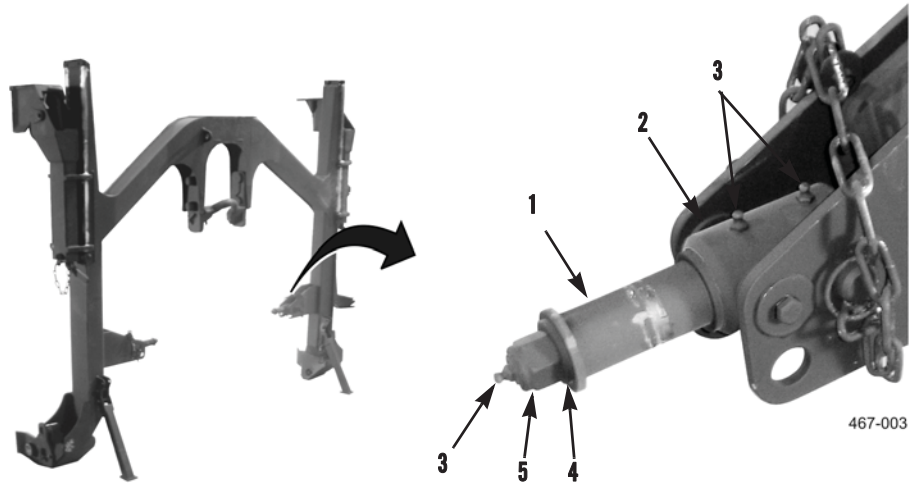


Figure 4. Roller and Grease Fittings.

END OF TASK**FOLLOW-ON TASKS**

Stow lift frame on vehicle (WP 0007).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE**LIFT FRAME CONTAINER PIN REPLACEMENT**
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Locknut (WP 0059, Item 1)

References

WP 0020

Equipment Condition

Lift frame placed on level ground and supported by hook arm or alternate lifting device (WP 0007)

REMOVAL**NOTE**

Perform steps 1 and 2 for both right and left sides.

1. Remove locknut (Figure 1, Item 5) and washer (Figure 1, Item 4) from container pin (Figure 1, Item 2). Discard locknut.
2. Release anti-loose fastener (Figure 1, Item 3) and remove container pin (Figure 1, Item 2) from lift frame (Figure 1, Item 1).

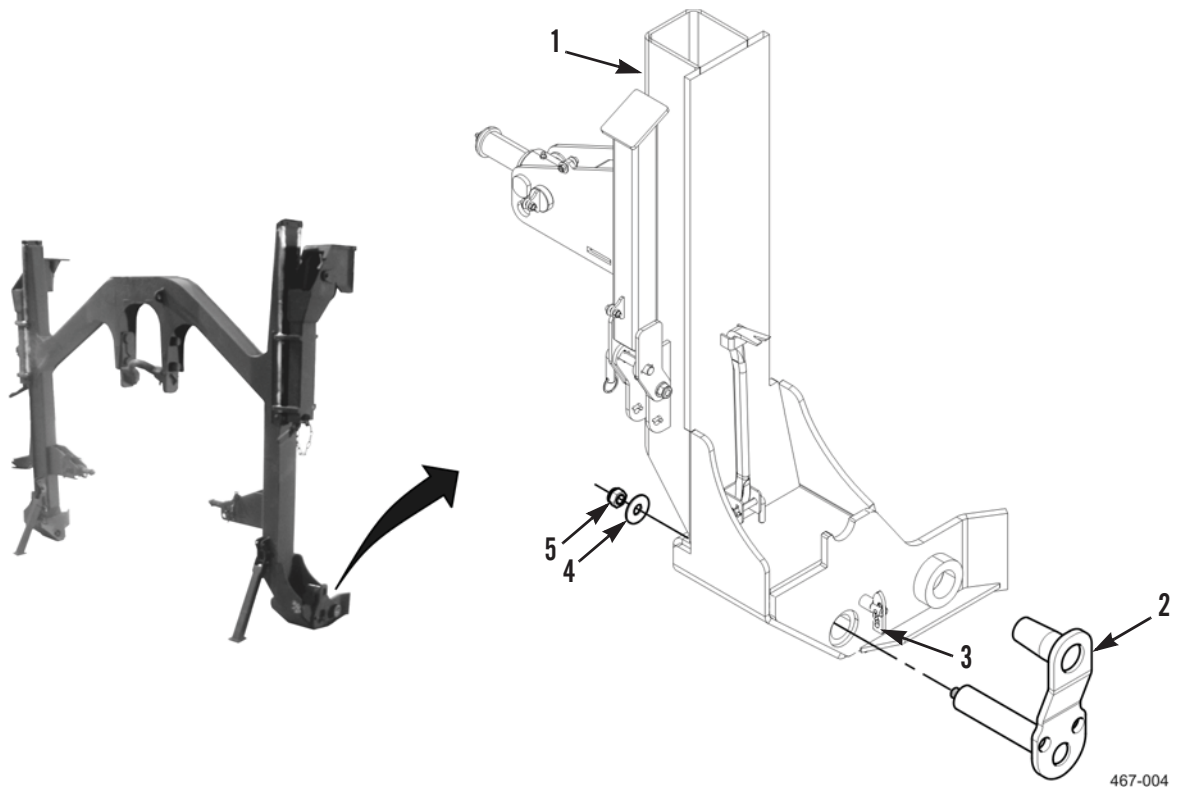


Figure 1. Container Pin.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, General Maintenance Instructions.

END OF TASK

INSTALLATION

1. Release anti-loose fastener (Figure 1, Item 3) and install container pin (Figure 1, Item 2) on lift frame (Figure 1, Item 1).
2. Install washer (Figure 1, Item 4) and new locknut (Figure 1, Item 5) on container pin (Figure 1, Item 2).

END OF TASK**FOLLOW-ON TASKS**

Stow lift frame on vehicle (WP 0007).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

SENSOR REPLACEMENT

Hook Arm Sensor Removal, Middle Frame Sensor Removal, Twistlock Sensor Removal, Front Transport Lock Sensor Removal, Lift Frame Sensor Removal, Cleaning and Inspection, Lift Frame Sensor Installation, Front Transport Lock Sensor Installation, Twistlock Sensor Installation, Middle Frame Sensor Installation, Hook Arm Sensor Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Strap, Tiedown, Electrical Components (WP 0060, Item 11)
Tag, Marker (WP 0060, Item 12)

References

WP 0007
WP 0008
WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

Battery disconnect switch set to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

WARNING

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

NOTE

- Tag and mark position of all harnesses to aid in installation.
- Remove and discard tiedown straps as required.

HOOK ARM SENSOR REMOVAL

1. Disconnect electrical connector (Figure 1, Item 1) from hook arm sensor (Figure 1, Item 2).
2. Remove locking nut (Figure 1, Item 4) from hook arm sensor (Figure 1, Item 2)
3. Remove hook arm sensor (Figure 1, Item 2) from bracket (Figure 1, Item 3).

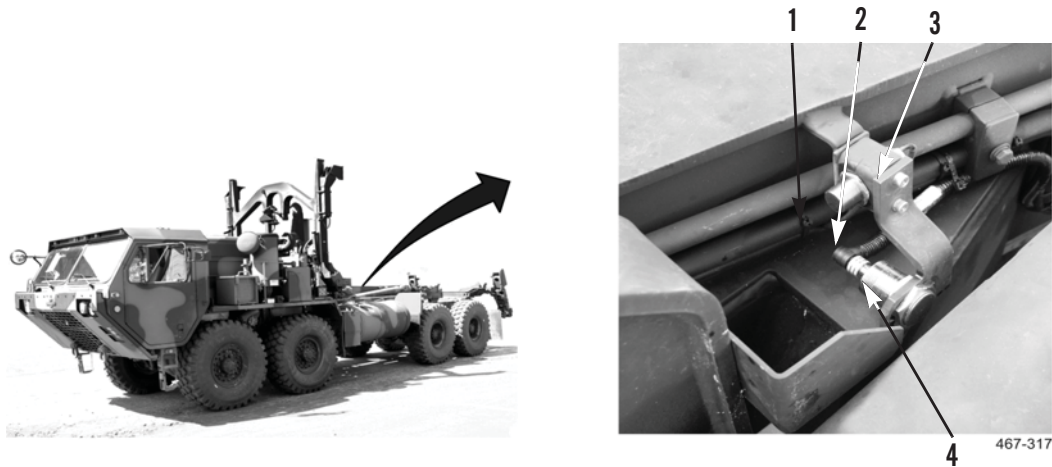


Figure 1. Hook Arm Sensor.

END OF TASK**MIDDLE FRAME SENSOR REMOVAL**

1. Disconnect electrical connector (Figure 2, Item 2) from middle frame sensor (Figure 2, Item 4).
2. Remove locking nut (Figure 2, Item 3) from middle frame sensor (Figure 2, Item 4).
3. Remove middle frame sensor (Figure 2, Item 4) from bracket (Figure 2, Item 1).

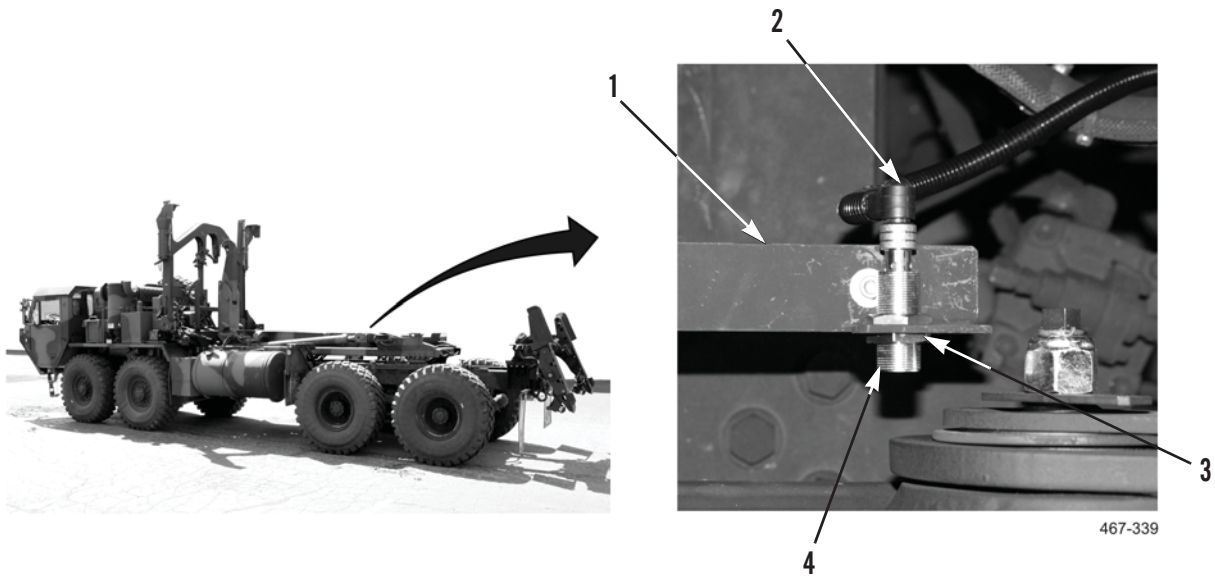


Figure 2. Middle Frame Sensor.

END OF TASK

TWISTLOCK SENSOR REMOVAL

1. Disconnect electrical connector (Figure 3, Item 1) from twistlock sensor (Figure 3, Item 3).
2. Loosen two bolts (Figure 3, Item 4) in cable clamp (Figure 3, Item 2).
3. Remove twistlock sensor (Figure 3, Item 3) from cable clamp (Figure 3, Item 2).

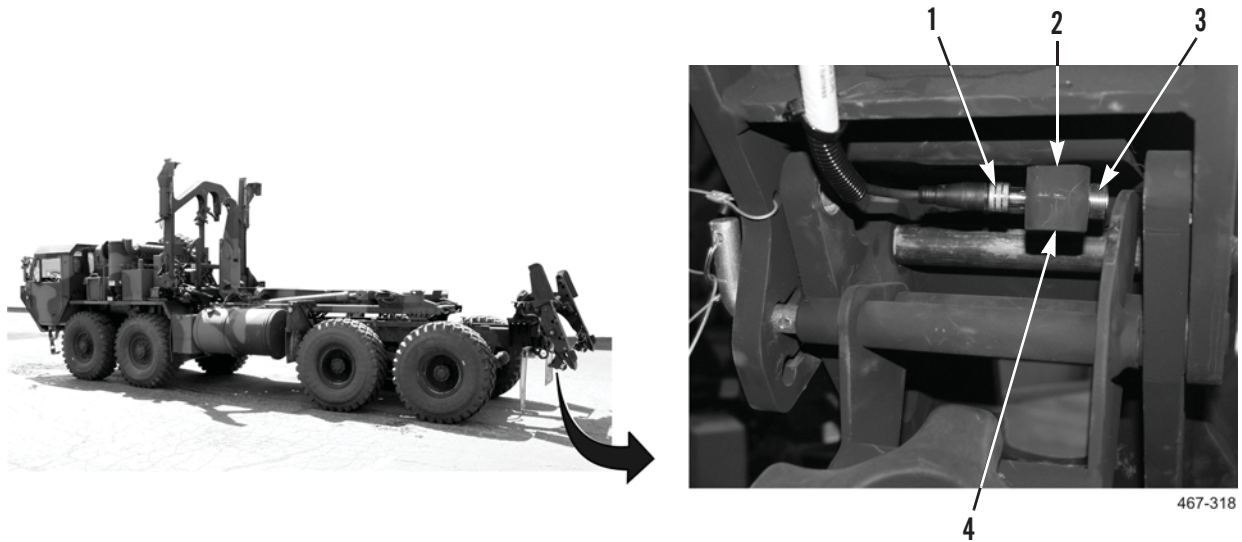


Figure 3. Twistlock Sensor.

END OF TASK

FRONT TRANSPORT LOCK SENSOR REMOVAL

1. Disconnect electrical connector (Figure 4, Item 1) from transport lock sensor (Figure 4, Item 2).
2. Remove transport lock (Figure 4, Item 4) from bracket (Figure 4, Item 3) (WP 0008).

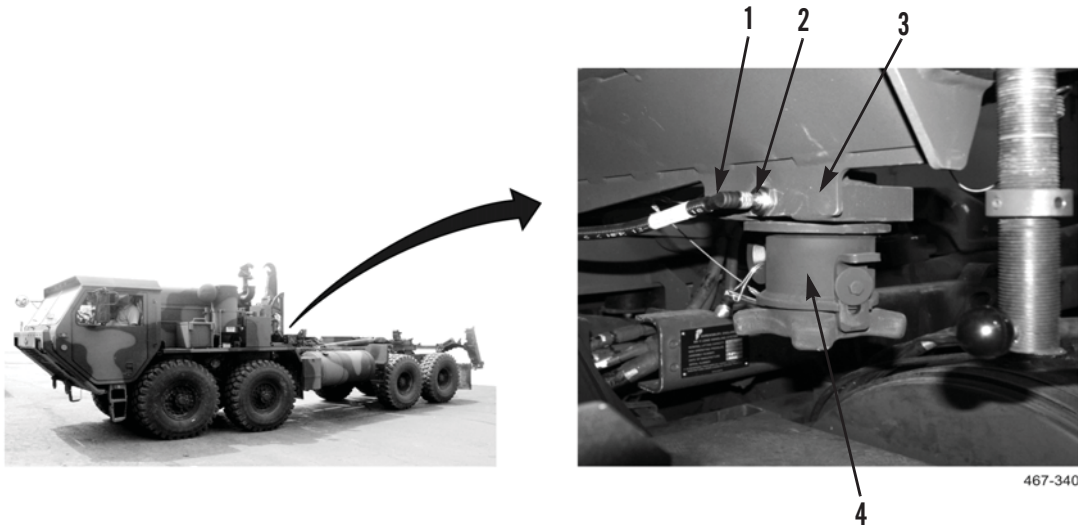


Figure 4. Front Transport Lock Sensor.

3. Remove locking nut (Figure 5, Item 1) from transport lock sensor (Figure 5, Item 2).
4. Remove transport lock sensor (Figure 5, Item 2) from bracket (Figure 5, Item 3).

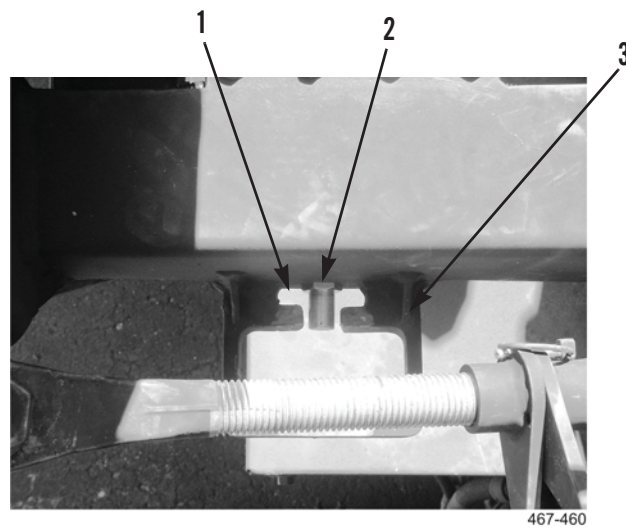


Figure 5. Front Transport Lock Sensor.

END OF TASK

LIFT FRAME SENSOR REMOVAL

1. Disconnect electrical connector (Figure 6, Item 3) from lift frame sensor (Figure 6, Item 4).
2. Loosen two bolts (Figure 6, Item 1) in cable clamp (Figure 6, Item 2).
3. Remove lift frame sensor (Figure 6, Item 4) from cable clamp (Figure 6, Item 2).

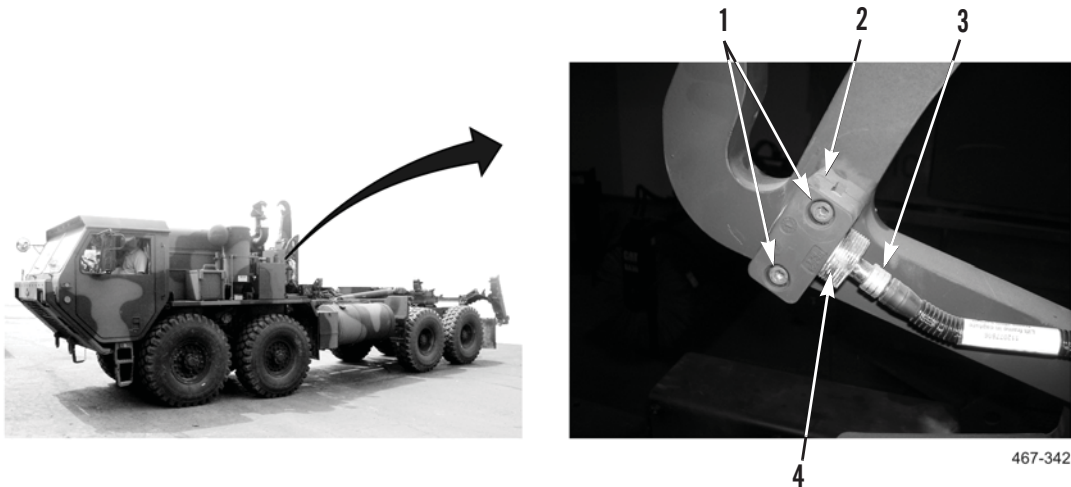


Figure 6. Lift Frame Sensor Removal.

END OF TASK

CLEANING AND INSPECTION

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

LIFT FRAME SENSOR INSTALLATION

CAUTION

Incorrectly installed and configured sensors may result in damage to equipment.

1. Loosen two bolts (Figure 6, Item 1) in cable clamp (Figure 6, Item 2) and insert lift frame sensor (Figure 6, Item 4) into clamp.
2. Adjust lift frame sensor (Figure 6, Item 4) placement until end of sensor is flush with cable clamp (Figure 6, Item 2) and tighten two bolts (Figure 6, Item 1).
3. Connect electrical connector (Figure 6, Item 3) to lift frame sensor (Figure 6, Item 4).

LIFT FRAME SENSOR INSTALLATION – CONTINUED

4. Load and stow lift frame (WP 0007).
5. Loosen two bolts (Figure 7, Item 4) in cable clamp (Figure 7, Item 5).
6. Adjust lift frame sensor (Figure 7, Item 3) placement until face of sensor is 0.0625 to 0.1875 in. (2 to 3 mm) from collar (Figure 7, Item 2) on roller pin (Figure 7, Item 1) and tighten two bolts (Figure 7, Item 4).

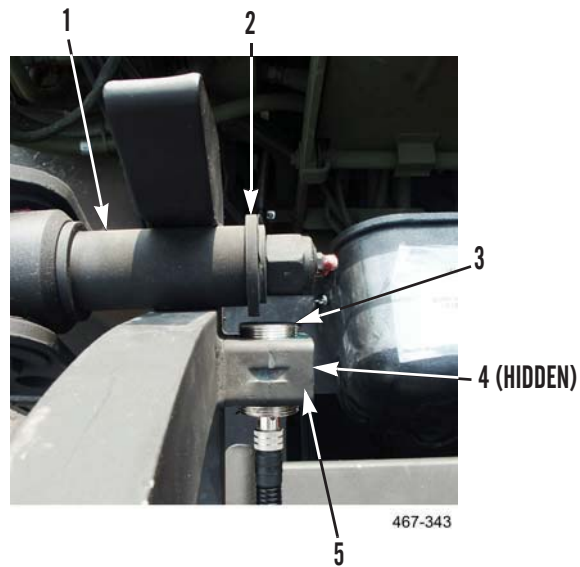
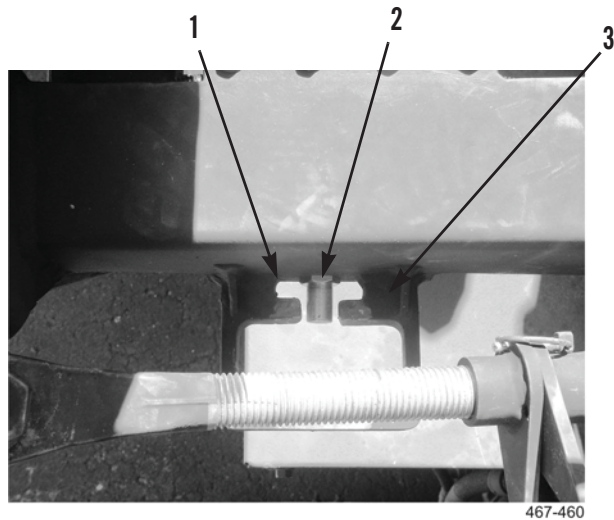


Figure 7. Lift Frame Sensor Calibration.

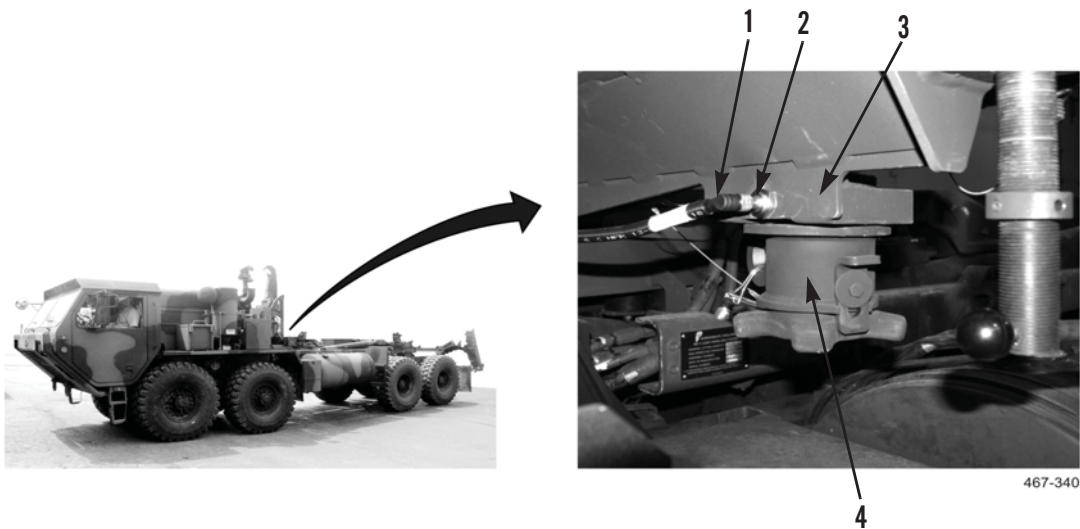
END OF TASK

FRONT TRANSPORT LOCK SENSOR INSTALLATION

1. Insert front transport lock sensor (Figure 8, Item 2) into bracket (Figure 8, Item 3) and loosely install locking nut (Figure 8, Item 1).
2. Turn adjusting nut until face of front transport lock sensor (Figure 8, Item 2) is flush with inner edge of bracket (Figure 8, Item 3). Tighten locking nut (Figure 8, Item 1).

**Figure 8. Front Transport Lock Sensor.**

3. Connect electrical connector (Figure 9, Item 1) to front transport lock sensor (Figure 9, Item 2).
4. Install transport lock (Figure 9, Item 4) in bracket (Figure 9, Item 3) (WP 0008).

**Figure 9. Front Transport Lock Sensor.****END OF TASK**

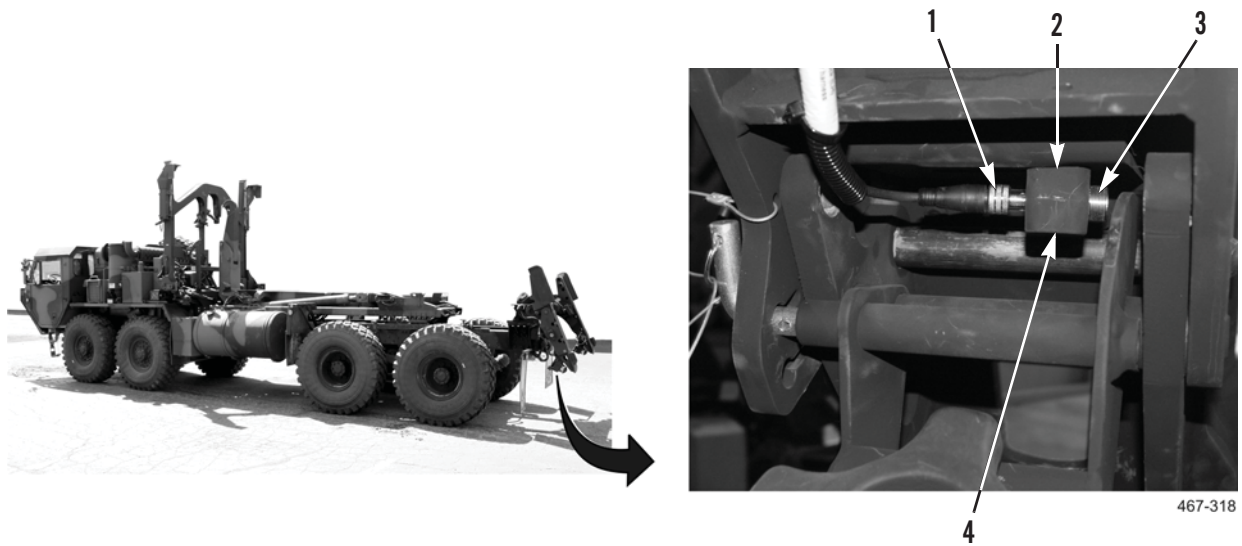
TWISTLOCK SENSOR INSTALLATION

1. Loosely install two bolts (Figure 10, Item 4) in cable clamp (Figure 10, Item 2) and insert twistlock sensor (Figure 10, Item 3) into clamp.

NOTE

Verify that sensor is perpendicular to twistlock plate.

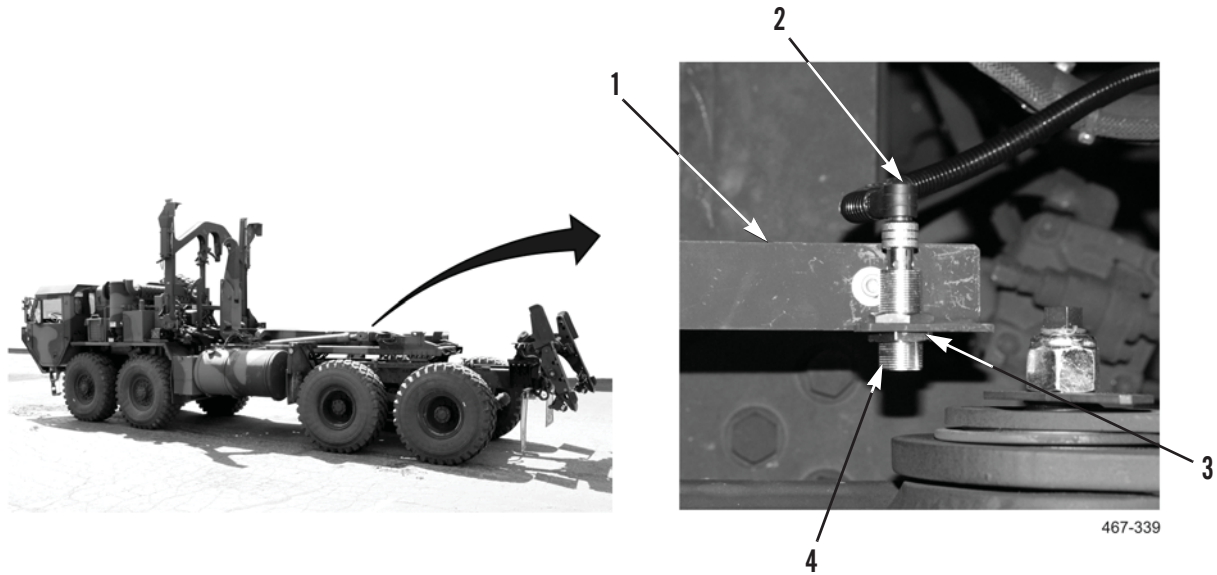
2. Adjust twistlock sensor (Figure 10, Item 3) placement until end of sensor is 0.0625 to 0.1875 in. (2 to 3 mm) from twistlock plate (Figure 10, Item 4) and tighten two bolts (Figure 10, Item 4) in cable clamp (Figure 10, Item 2).
3. Connect electrical connector (Figure 10, Item 1) to twistlock sensor (Figure 10, Item 3).



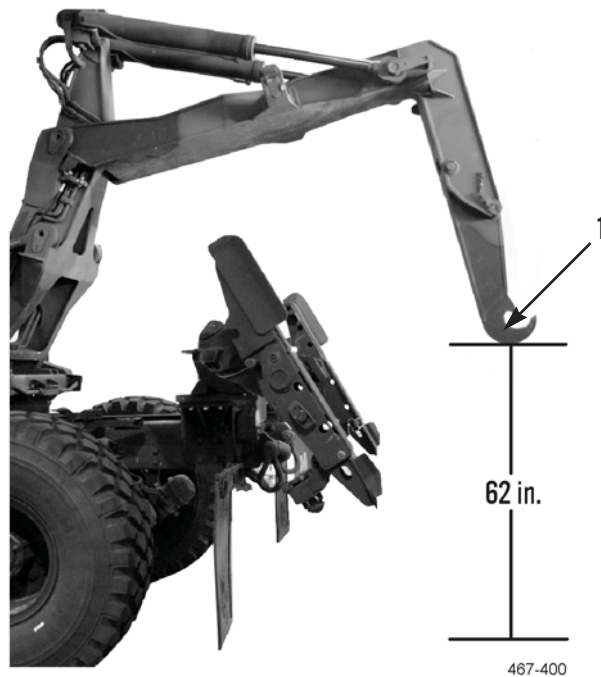
END OF TASK

MIDDLE FRAME SENSOR INSTALLATION

1. Connect electrical connector (Figure 11, Item 2) to middle frame sensor (Figure 11, Item 4).
2. Insert middle frame sensor (Figure 11, Item 4) into bracket (Figure 11, Item 1) and loosely install locking nut (Figure 11, Item 3).

**Figure 11. Middle Frame Sensor.**

3. With MODE switch set to AUTO position, extend hook arm (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) until bottom of hook (Figure 12, Item 1) is 62 in. (1,574.8 mm) from ground.

**Figure 12. Hook Position from Ground.**

MIDDLE FRAME SENSOR INSTALLATION – CONTINUED**NOTE**

It may be necessary to adjust position of sensor plate in order to activate sensor light.

4. Adjust nut (Figure 13, Item 4) until face of sensor (Figure 13, Item 1) is 0.0625 to 0.1875 in. (2 to 3 mm) from sensor plate (Figure 13, Item 6).
5. Slide middle frame sensor (Figure 13, Item 1) on bracket (Figure 13, Item 3) toward sensor plate (Figure 13, Item 6) and identify position where sensor light (Figure 13, Item 5) turns on. Tighten nut (Figure 13, Item 2) at that position.
6. Return hook arm to stowed position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

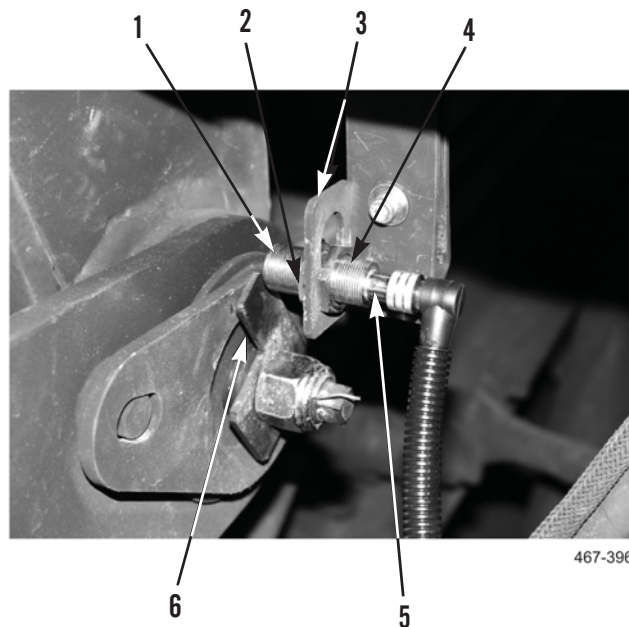


Figure 13. Middle Frame Sensor Calibration.

END OF TASK

HOOK ARM SENSOR INSTALLATION

1. Insert hook arm sensor (Figure 14, Item 2) into bracket (Figure 14, Item 3) and loosely install locking nut (Figure 14, Item 4).
2. Connect electrical connector (Figure 14, Item 1) to hook arm sensor (Figure 14, Item 2).

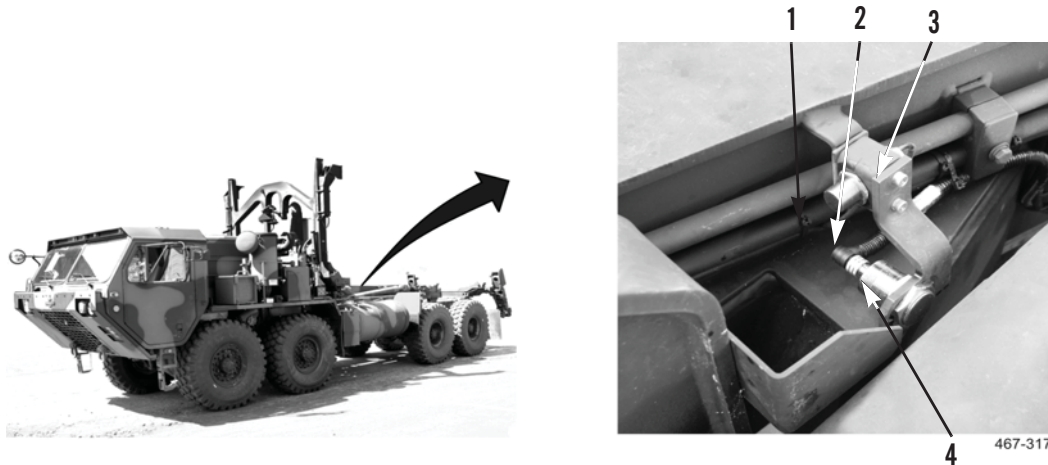


Figure 14. Hook Arm Sensor Installation.

3. With MODE switch set to AUTO position, partially extend hook arm (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) until cylinder arm (Figure 15, Item 1) is extended 28 in. (711 mm) measured from base of cylinder arm cap (Figure 15, Item 2) to top of cylinder casing (Figure 15, Item 3).

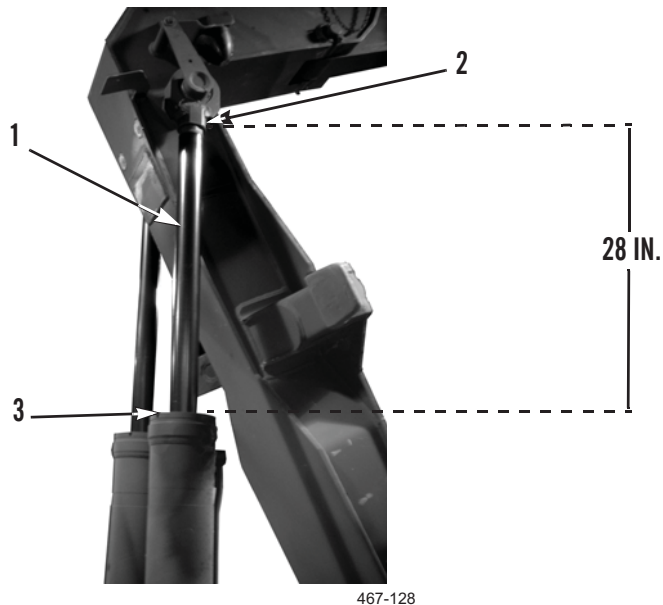


Figure 15. Hook Arm Cylinder Extension.

HOOK ARM SENSOR INSTALLATION – CONTINUED

4. Shut off vehicle and set ignition switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

NOTE

Ensure stowage control toggle switch is set to OFF position.

5. Adjust nut (Figure 16, Item 4) until face of sensor is 0.0625 to 0.1875 in. (2 to 3 mm) from sensor plate (Figure 16, Item 6).
6. Slide hook arm sensor (Figure 16, Item 2) on bracket (Figure 16, Item 3) toward sensor plate (Figure 16, Item 6) and identify position where sensor light (Figure 16, Item 1) turns on. Tighten nut (Figure 16, Item 5) at that position.
7. Return hook arm to stowed position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

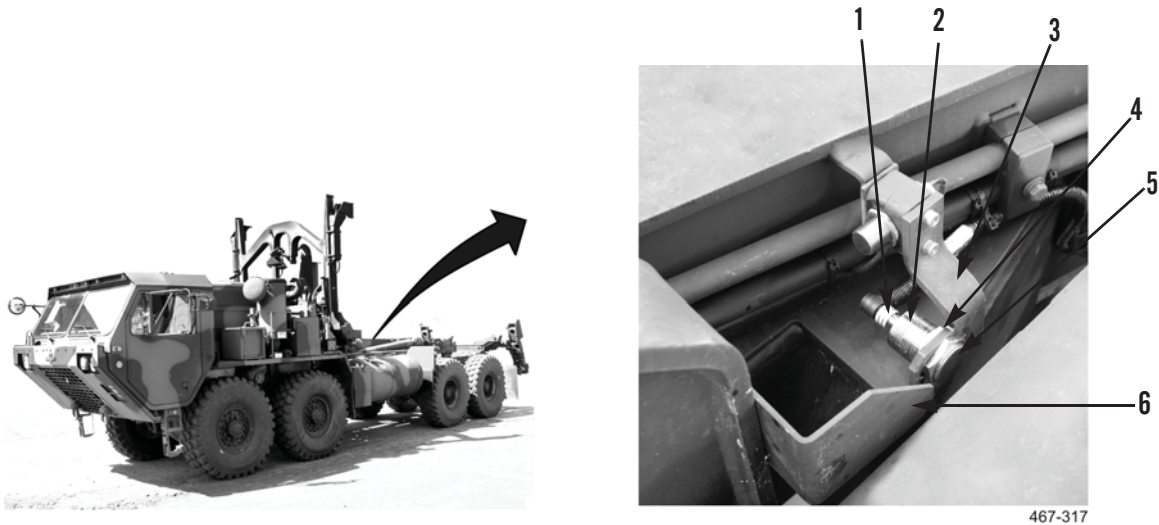


Figure 16. Hook Arm Sensor Calibration.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**REAR SLIDER ASSEMBLY REPLACEMENT**
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Sling, Nylon (WP 0057, Item 1)

Tool Set, SATS Base (WP 0057, Item 3)

Lifting Device

Materials/Parts

Adhesive, Thread (WP 0060, Item 1)

Rag, Wiping (WP 0060, Item 10)

Strap, Tiedown, Electrical Components (WP 0060, Item 11)

Personnel Required

2

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

Slider beds in container configuration (WP 0006)

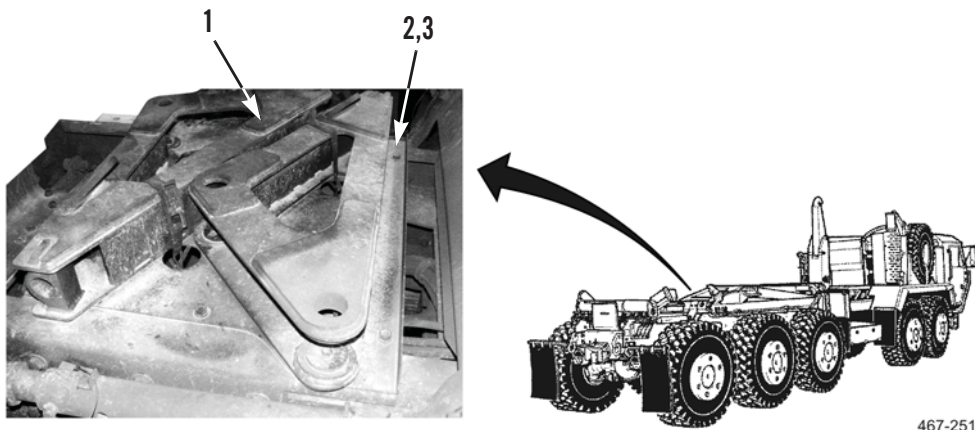
REMOVAL**PLS Only - Hard Lift Removal****WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Hard lift assembly weighs 240 lb (109 kg).

1. Attach sling and lifting device to hard lift (Figure 1, Item 1).
2. Remove six nuts (Figure 1, Item 2) and bolts (Figure 1, Item 3) from hard lift (Figure 1, Item 1).
3. Use lifting device to remove hard lift (Figure 1, Item 1) from vehicle and lower onto flat surface.



467-251

Figure 1. Hard Lift Removal.

REMOVAL – CONTINUED**Bumper Stop Removal**

With assistance, remove six nuts (Figure 2, Item 2), bolts (Figure 2, Item 3), and bumper stop bracket (Figure 2, Item 1) from frame (Figure 2, Item 4).

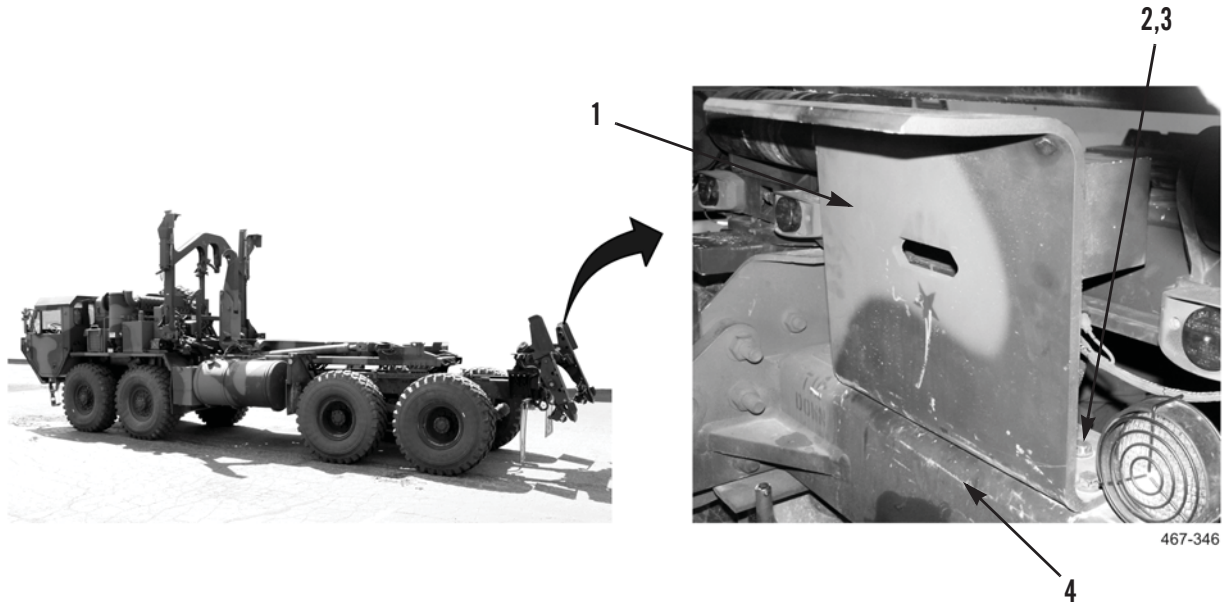


Figure 2. Bumper Stop Removal.

Lights and Light Bar Removal

1. Remove two screws (Figure 3, Item 2) and light cover (Figure 3, Item 1) from light (Figure 3, Item 3).

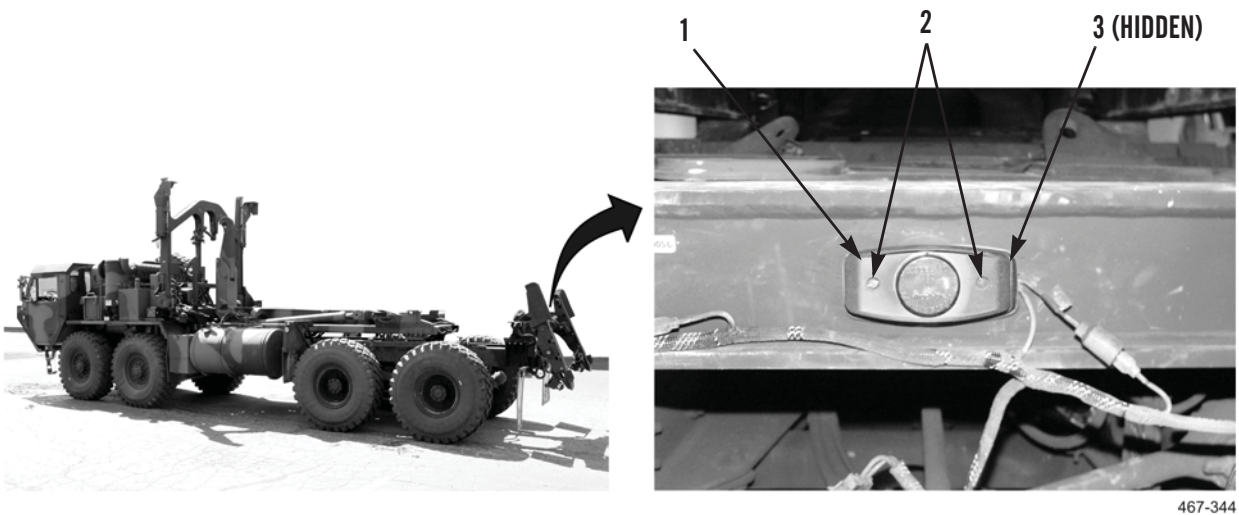


Figure 3. Slider Beam Light Cover Removal.

REMOVAL – CONTINUED**Lights and Light Bar Removal – Continued**

2. Disconnect light connector (Figure 4, Item 4) from vehicle wiring harness (Figure 4, Item 7).
3. Remove two screws (Figure 4, Item 2), ground wires (Figure 4, Item 3), light (Figure 4, Item 8), and gasket (Figure 4, Item 9) from slider beam (Figure 4, Item 1).
4. Remove two screws (Figure 4, Item 6) and mounting plate (Figure 4, Item 5) from slider beam (Figure 4, Item 1).

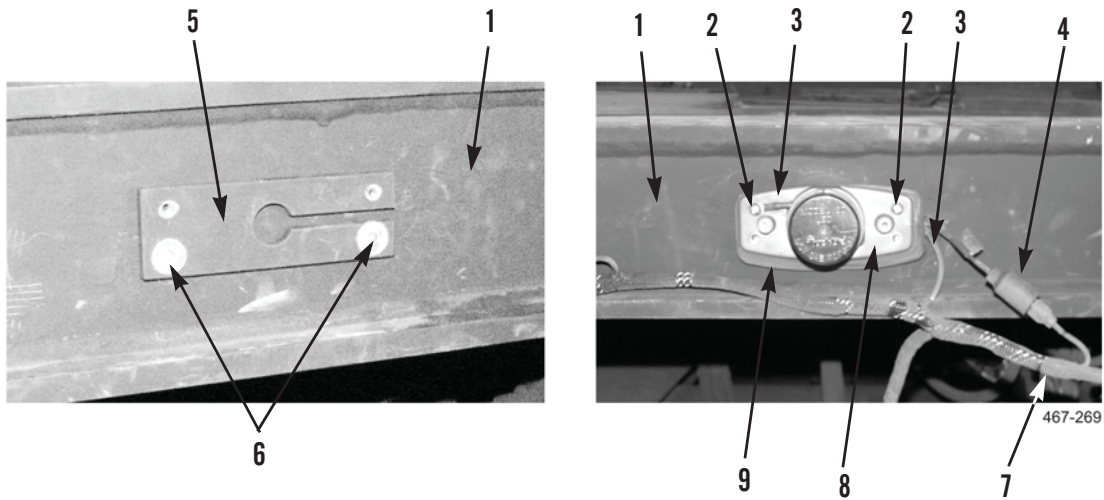


Figure 4. Slider Beam Light and Mounting Plate Removal.

REMOVAL – CONTINUED**Lights and Light Bar Removal – Continued****NOTE**

Perform steps 5 through 8 for both right and left sides.

5. Disconnect three light connectors (Figure 5, Item 2) from vehicle wiring harness (Figure 5, Item 3).
6. Remove and discard tiedown straps (Figure 5, Item 7) as required.
7. Remove nut (Figure 5, Item 8), bolt (Figure 5, Item 9), and ground wire (Figure 5, Item 10) from slider assembly (Figure 5, Item 1).
8. Remove nut (Figure 5, Item 4), bolt (Figure 5, Item 5), and light bracket (Figure 5, Item 6) from slider assembly (Figure 5, Item 1).

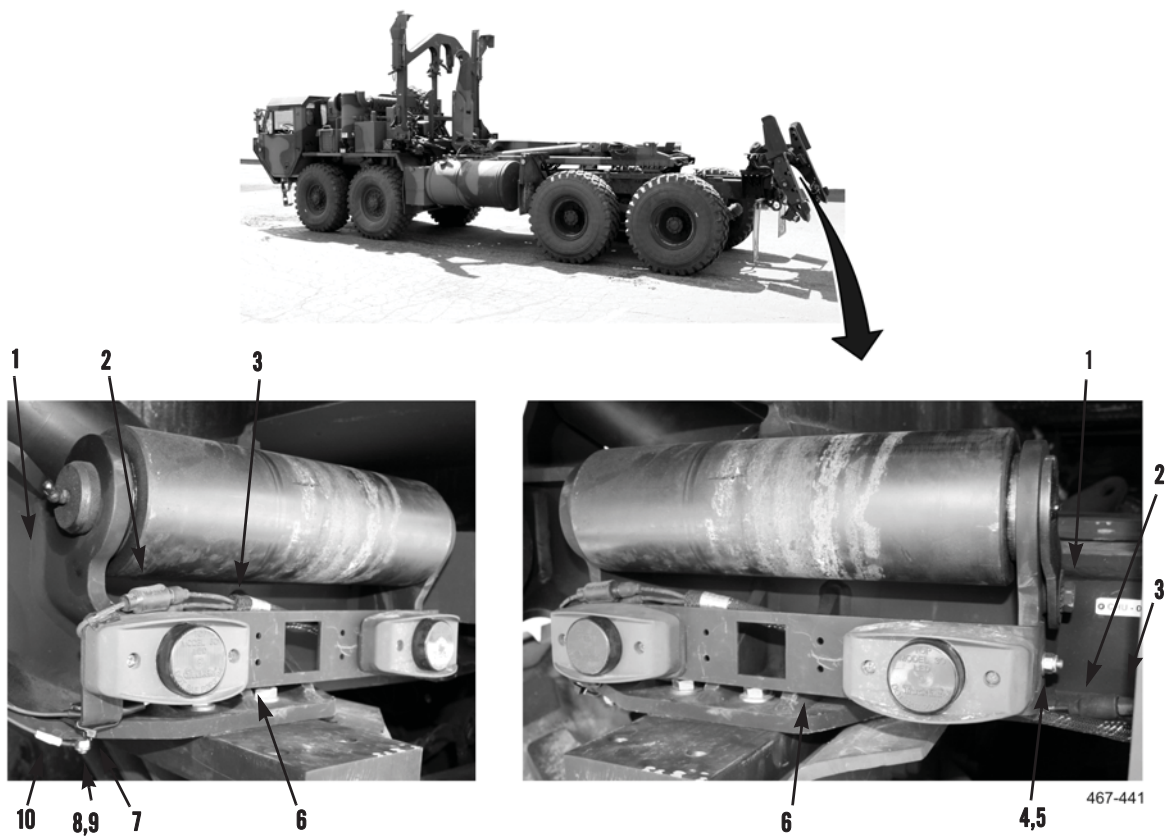


Figure 5. Light Bracket Removal.

REMOVAL – CONTINUED**Lights and Light Bar Removal – Continued****NOTE**

Perform steps 9 through 11 for both right and left sides.

9. Remove and discard tiedown straps (Figure 6, Item 7) as required.
10. Remove two screws (Figure 6, Item 3) and light cover (Figure 6, Item 2) from slider bed (Figure 6, Item 1).
11. Remove two screws (Figure 6, Item 4), ground wires (Figure 6, Item 5), light (Figure 6, Item 6), and light wiring harness (Figure 6, Item 8) from slider bed (Figure 6, Item 1).

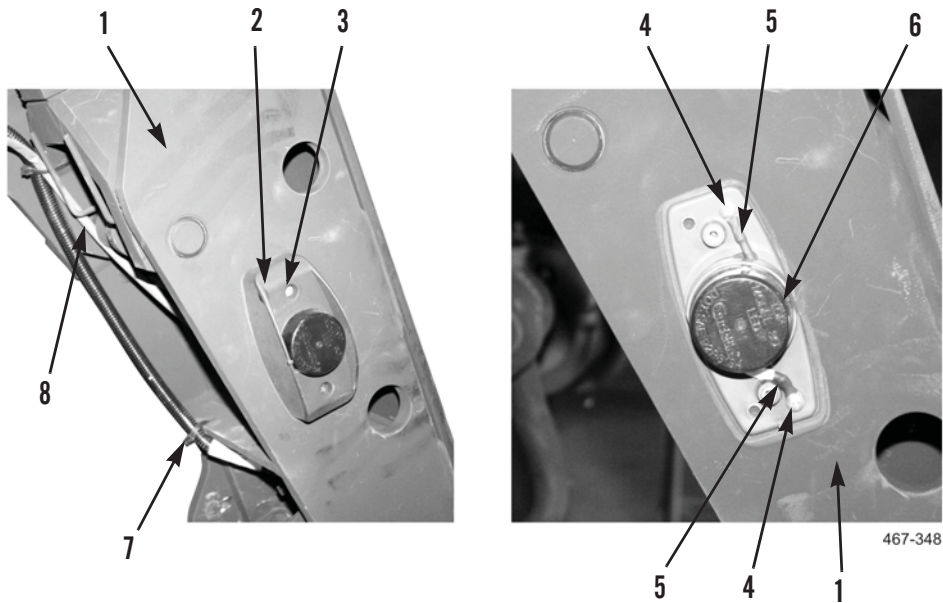


Figure 6. Slider Bed Light Removal.

REMOVAL – CONTINUED

Lights and Light Bar Removal – Continued

NOTE

Perform step 12 for reflectors on right and left side of slider assembly.

12. Remove two screws (Figure 7, Item 3) and reflector (Figure 7, Item 2) from slider assembly (Figure 7, Item 1).

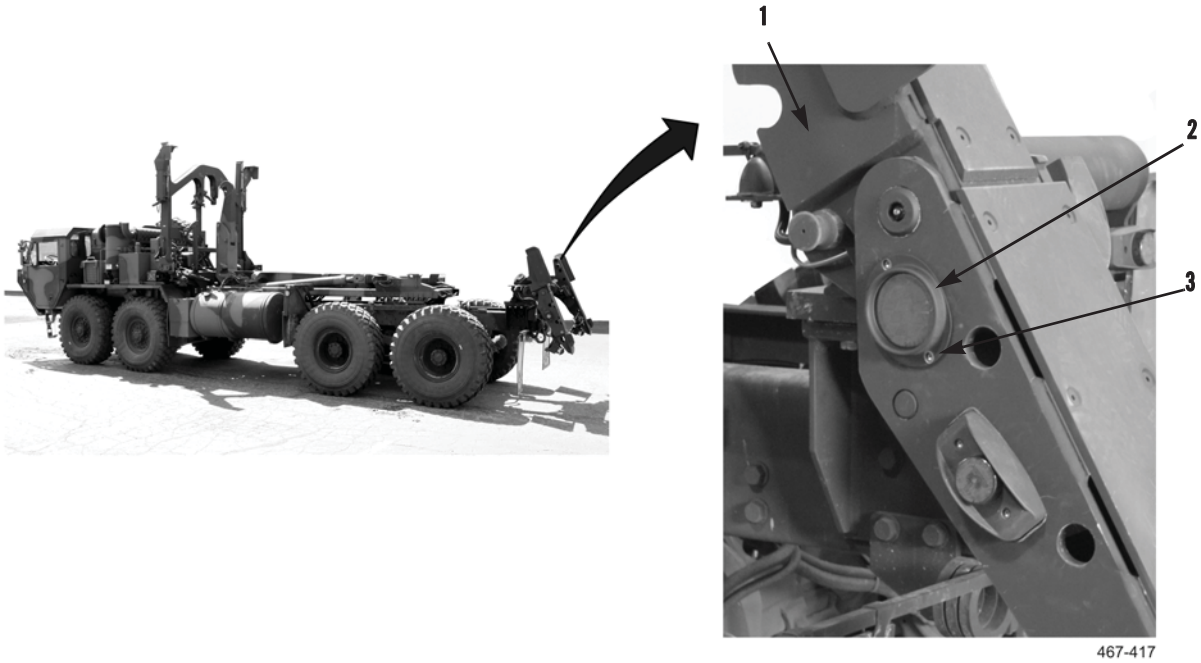


Figure 7. Reflector Removal.

REMOVAL – CONTINUED**Twistlock Sensor Removal****NOTE**

Perform step 1 for both right and left sides.

Loosen two clamp bolts (Figure 8, Item 3) and remove twistlock sensor (Figure 8, Item 2) from clamp (Figure 8, Item 1).

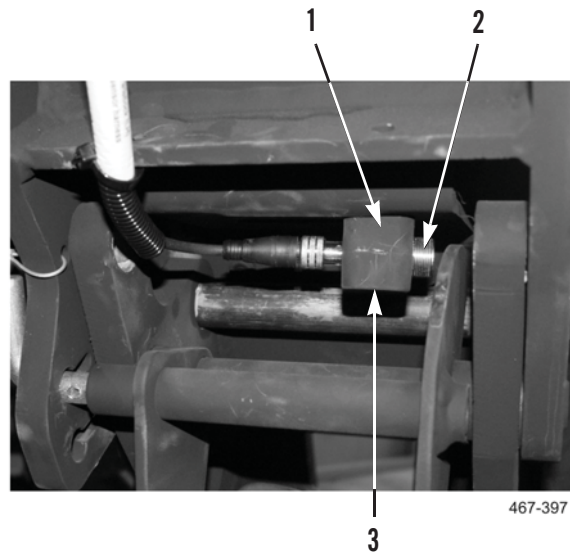


Figure 8. Twistlock Sensor Removal.

REMOVAL – CONTINUED**Slider Assembly Removal****WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

- Slider assembly weighs 1,400 lb (635 kg).
 - Note location of slider assembly on mounting blocks to aid installation.
1. Attach sling and lifting device to slider assembly. Loop one strap (Figure 9, Item 4) around center of beam (Figure 9, Item 3) and two straps (Figure 9, Item 1) on right and left twistlock housings (Figure 9, Item 2). Adjust placement of straps until slider assembly is level when raised.

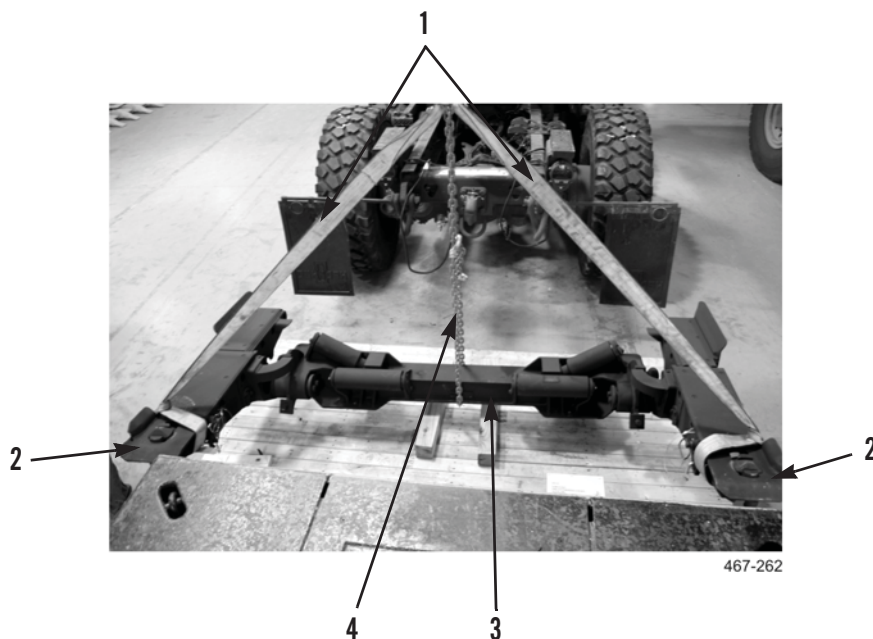


Figure 9. Slider Assembly With Straps.

REMOVAL – CONTINUED**Slider Assembly Removal – Continued**

2. Remove eight bolts (Figure 10, Item 2) and washers (Figure 10, Item 3) from rear slider assembly (Figure 10, Item 1).
3. Use lifting device to remove rear slider assembly (Figure 10, Item 1) from mounting blocks (Figure 10, Item 4) and place on flat work surface.
4. Remove lifting device and sling from rear slider assembly (Figure 10, Item 1).

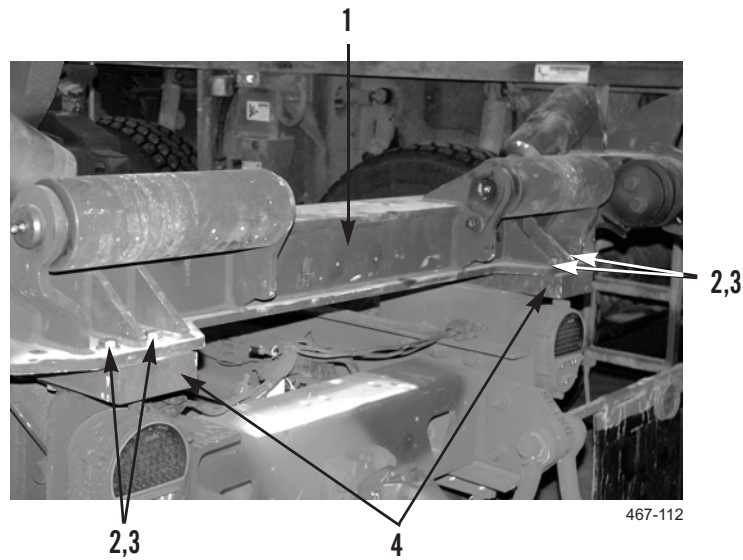


Figure 10. Rear Slider Assembly.

REMOVAL – CONTINUED**Slider Assembly Removal – Continued****NOTE**

- For HEMTT only, remove two spacers under mounting block.
 - Perform step 5 for both right and left sides.
5. Remove three bolts (Figure 11, Item 3), washers (Figure 11, Item 2), and slider mounting block (Figure 11, Item 1) from mounting bracket (Figure 11, Item 4).

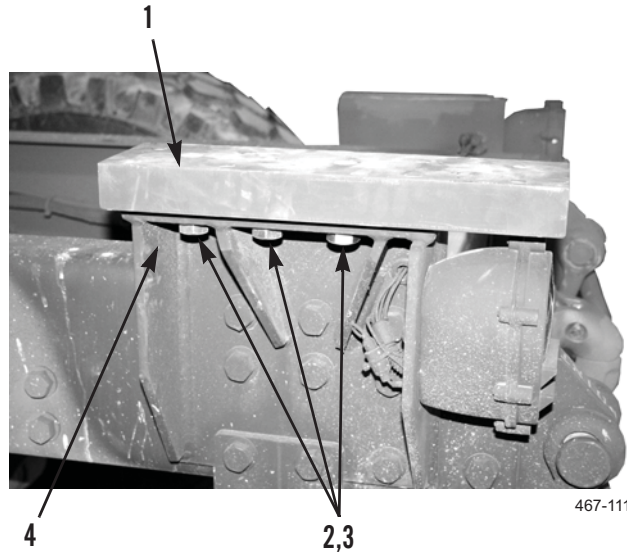


Figure 11. HEMTT Slider Mounting Block Removal.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, General Maintenance Instructions.

END OF TASK

INSTALLATION

Slider Assembly Installation

NOTE

- For HEMTT only, install two spacers under mounting block.
 - Perform step 1 for both right and left sides.
 - Hand tighten bolts to allow repositioning during installation.
1. Install slider mounting block (Figure 12, Item 1), three washers (Figure 12, Item 3), and bolts (Figure 12, Item 2), on mounting bracket (Figure 12, Item 4).

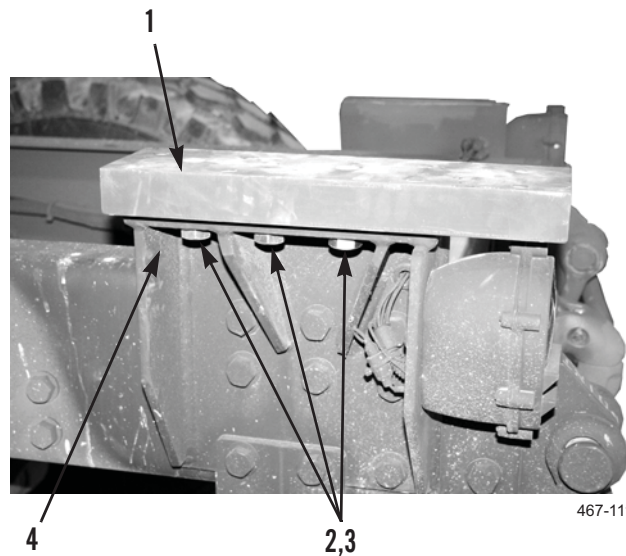


Figure 12. HEMTT Slider Mounting Block Installation.

INSTALLATION – CONTINUED**Slider Assembly Installation – Continued****WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

- Slider assembly weighs 1,400 lb (635 kg).
 - Install slider assembly on mounting blocks as noted during removal.
2. Attach sling and lifting device to slider assembly. Loop one strap (Figure 13, Item 4) around center of beam (Figure 13, Item 3) and two straps (Figure 13, Item 1) on right and left twistlock housings (Figure 13, Item 2). Adjust placement of straps until slider assembly is level when raised.

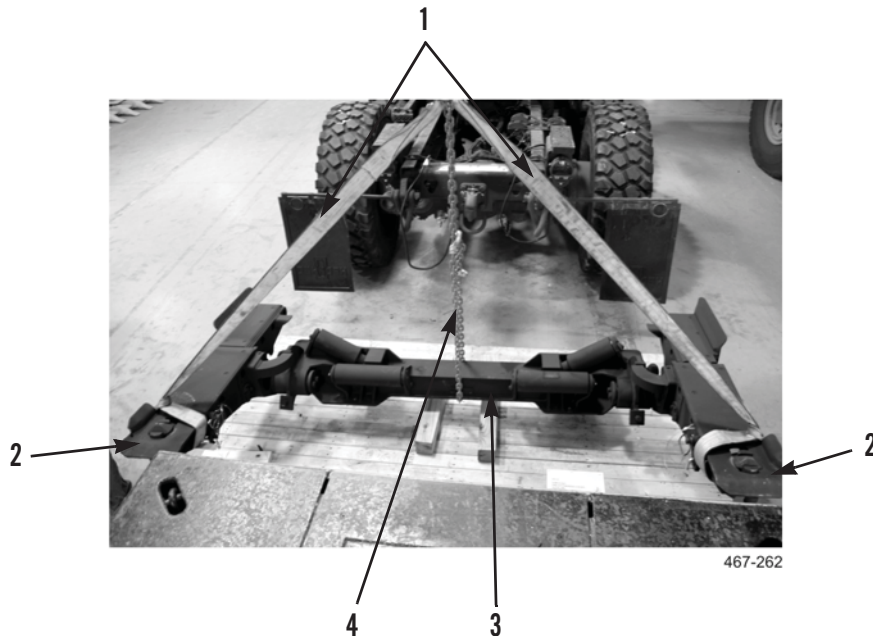


Figure 13. Slider Assembly With Straps.

INSTALLATION – CONTINUED**Slider Assembly Installation – Continued**

3. Use lifting device to place rear slider assembly (Figure 14, Item 1) on mounting blocks (Figure 14, Item 4), aligning holes in rear slider assembly with front holes in mounting block.

NOTE

Perform steps 4 through 6 for both right and left sides.

4. Apply thread adhesive to four bolts.
5. Install four washers (Figure 14, Item 2) and bolts (Figure 14, Item 3) in rear slider assembly (Figure 14, Item 1).
6. Remove lifting device and sling from rear slider assembly.

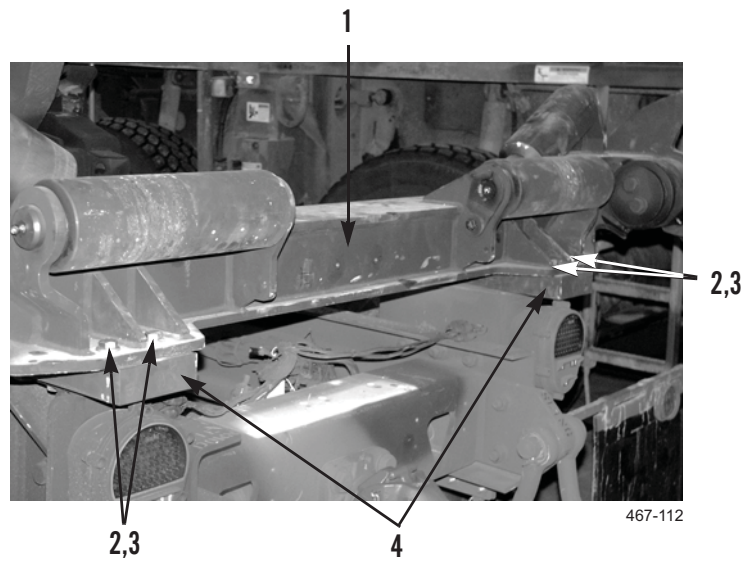


Figure 14. Rear Slider Assembly.

INSTALLATION – CONTINUED**Twistlock Sensor Installation**

Install twistlock sensor (Figure 15, Item 2) in clamp (Figure 15, Item 1) and tighten two bolts (Figure 15, Item 3).

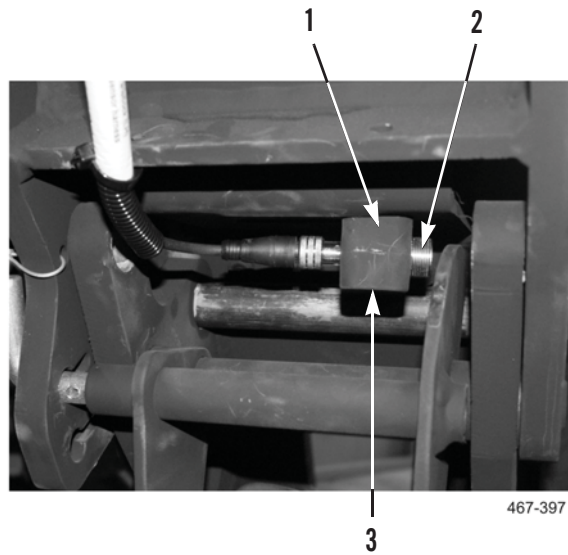


Figure 15. Twistlock Sensor.

INSTALLATION – CONTINUED**Lights and Light Bar Installation****NOTE**

Perform step 1 for reflectors on right and left sides of slider assembly.

1. Install reflector (Figure 16, Item 2) and two screws (Figure 16, Item 3) on slider assembly (Figure 16, Item 1).

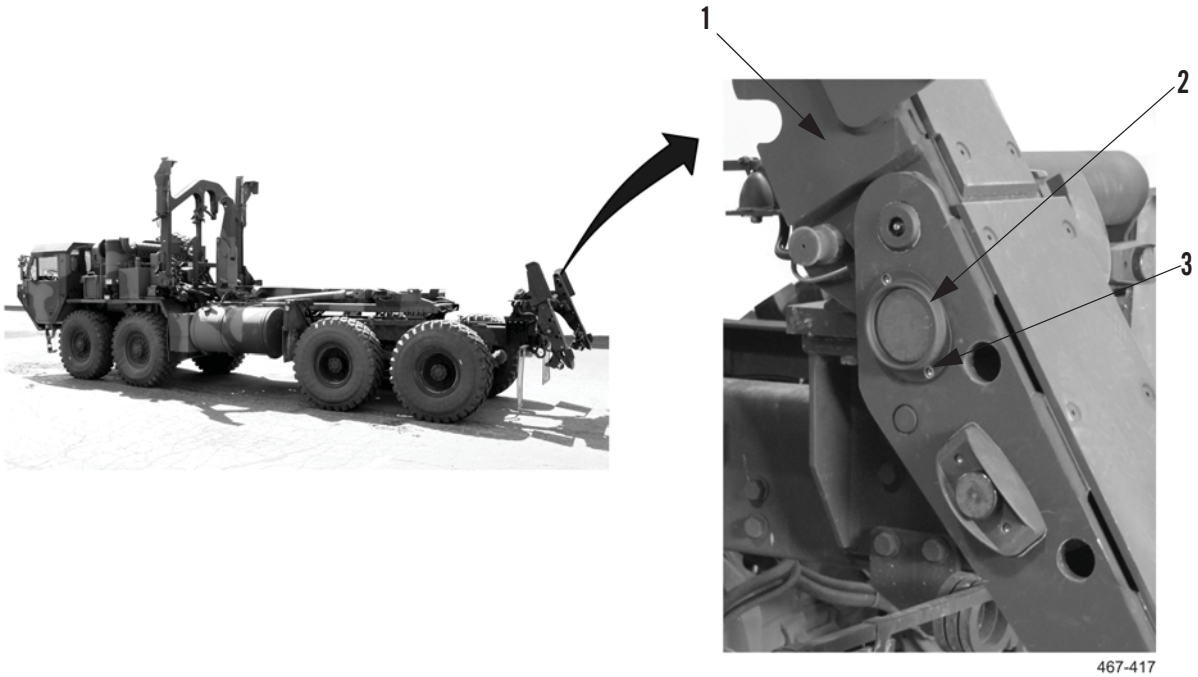


Figure 16. Reflector Installation.

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INSTALLATION – CONTINUED**Lights and Light Bar Installation – Continued****NOTE**

Perform steps 2 through 4 for both right and left sides.

2. Feed wiring harness (Figure 17, Item 8) through slider bed (Figure 17, Item 1) and install light (Figure 17, Item 6), two ground wires (Figure 17, Item 5), and screws (Figure 17, Item 4) on slider bed.
3. Install light cover (Figure 17, Item 2) and two screws (Figure 17, Item 3) on light (Figure 17, Item 6).
4. Install new tiedown straps (Figure 17, Item 7) as required.

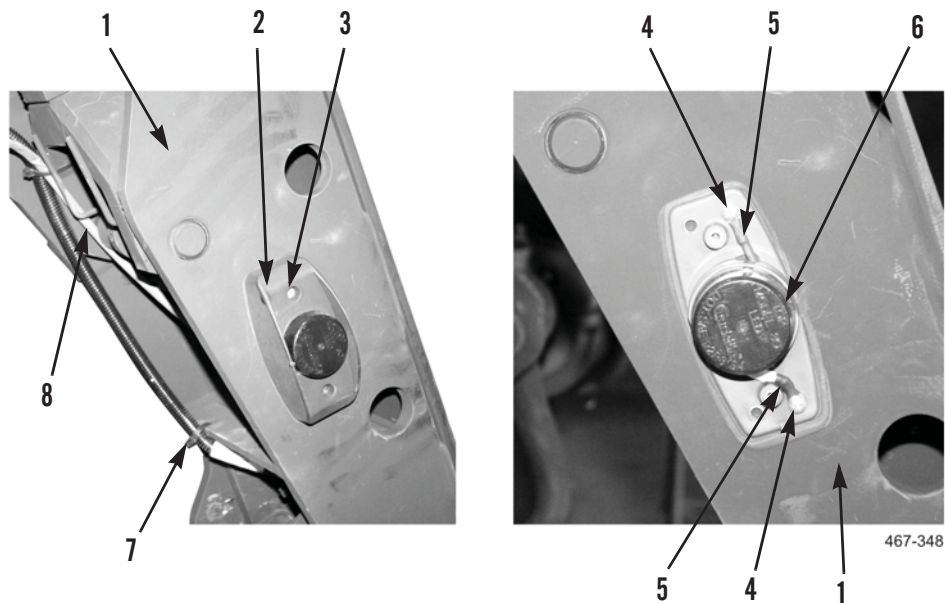


Figure 17. Slider Bed Light Installation.

INSTALLATION – CONTINUED**Lights and Light Bar Installation - Continued****NOTE**

Perform steps 5 through 8 for both right and left sides.

5. Install light bracket (Figure 18, Item 6), bolt (Figure 18, Item 5), and nut (Figure 18, Item 4) on slider assembly (Figure 18, Item 1).
6. Install bolt (Figure 18, Item 9), ground wire (Figure 18, Item 10), and nut (Figure 18, Item 8) on slider assembly (Figure 18, Item 6).
7. Connect three light connectors (Figure 18, Item 2) to vehicle wiring harness (Figure 18, Item 3).
8. Install new tiedown straps (Figure 18, Item 7) as required.

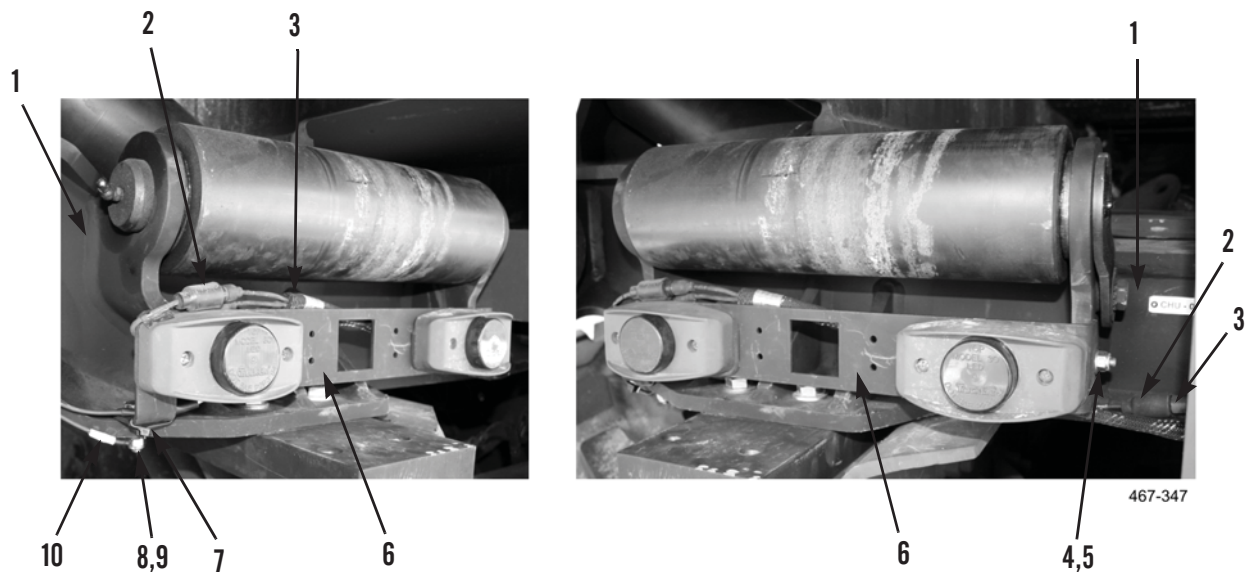


Figure 18. Light Bracket Installation.

INSTALLATION – CONTINUED**Lights and Light Bar Installation - Continued**

9. Install mounting plate (Figure 19, Item 5), and two screws (Figure 19, Item 6) on slider beam (Figure 19, Item 1).
10. Install gasket (Figure 19, Item 9), light (Figure 19, Item 8), two ground wires (Figure 19, Item 3), and screws (Figure 19, Item 2) on slider beam (Figure 19, Item 1).
11. Connect light connector (Figure 19, Item 4) to vehicle wiring harness (Figure 19, Item 7).

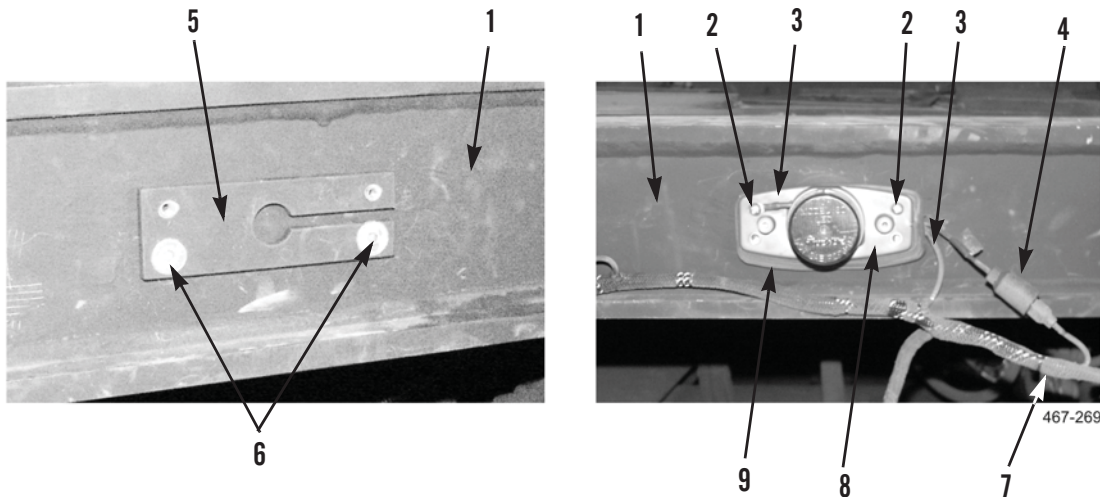


Figure 19. Slider Beam Light and Mounting Plate Installation.

12. Install light cover (Figure 20, Item 1) and two screws (Figure 20, Item 2) on light (Figure 20, Item 3).

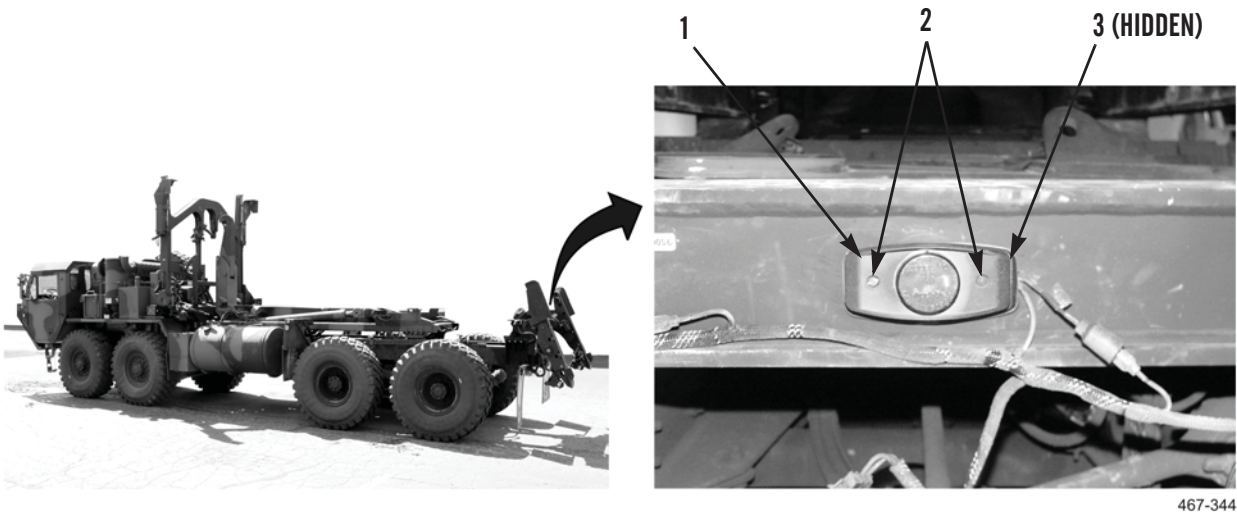


Figure 20. Slider Beam Light Cover Installation.

INSTALLATION – CONTINUED

Bumper Stop Installation

With assistance, install bumper stop bracket (Figure 21, Item 1), six bolts (Figure 21, Item 2), and nuts (Figure 21, Item 3) on frame (Figure 21, Item 4).

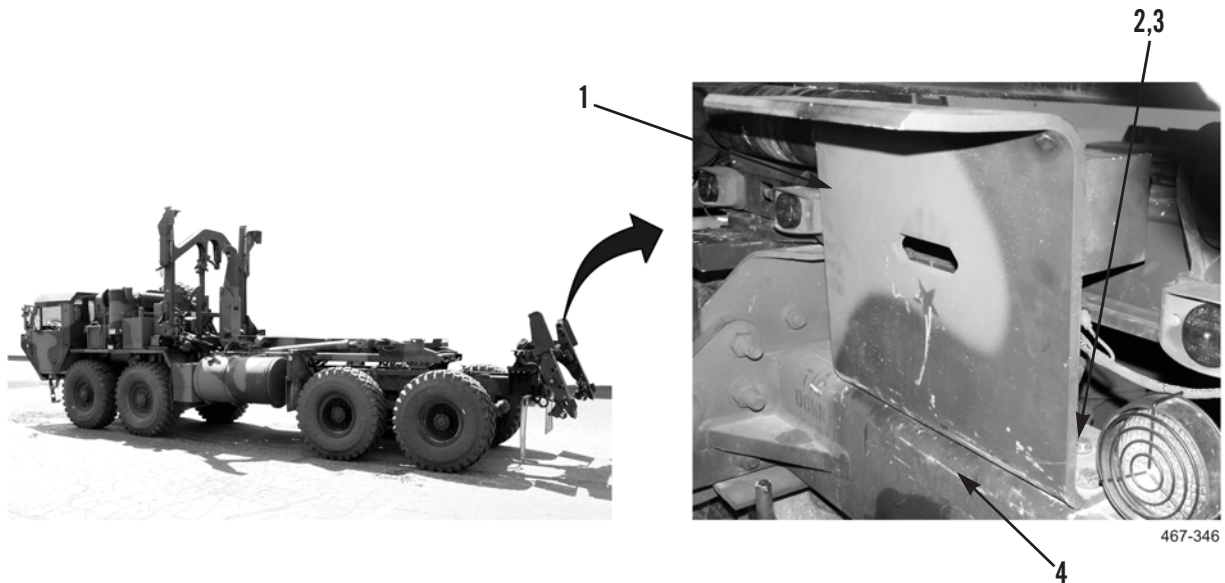


Figure 21. Bumper Stop Installation.

PLS Only - Hard Lift Installation

WARNING



- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Hard lift assembly weighs 240 lb (109 kg).

INSTALLATION – CONTINUED**PLS Only - Hard Lift Installation – Continued**

1. Attach sling and lifting device to hard lift (Figure 22, Item 1).
2. Use lifting device to install hard lift (Figure 22, Item 1) on vehicle.
3. Install six bolts (Figure 22, Item 3) and nuts (Figure 22, Item 2), on hard lift (Figure 22, Item 1).

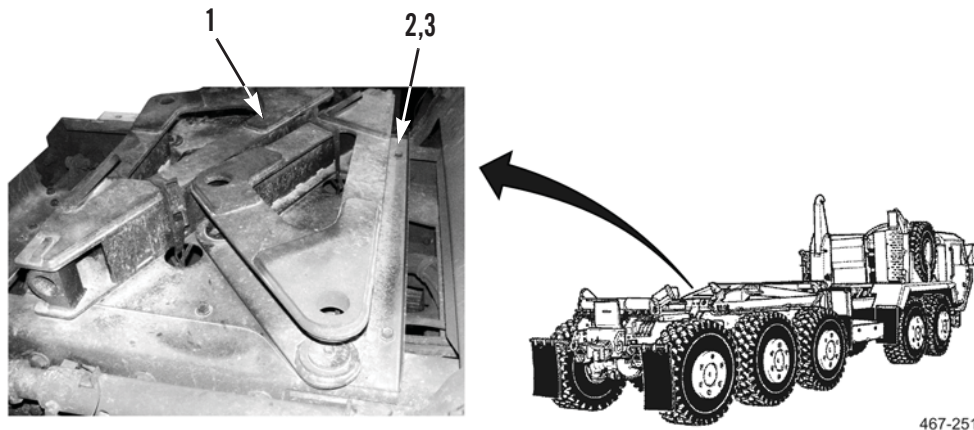


Figure 22. Hard Lift Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
SLIDER PAD REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Grease, Automotive and Artillery, GAA (WP 0060, Item 8)

Rag, Wiping (WP 0060, Item 10)

Locknut (WP 0059, Item 4) (Front: 8, Rear: 6)

Personnel Required

Two

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-10, HEMTT: TM 9-2320-279-10-1)

Front slider bed in container configuration (WP 0006)

REMOVAL**Front Slider Pad Removal****WARNING**

Components will fall when attaching hardware is removed. Support components while removing attaching hardware. Failure to follow this warning may result in injury to personnel.

NOTE

- Perform steps 1 and 2 for both right and left sides.
 - Note location of bolts on removal to aid installation.
1. Remove eight locknuts (Figure 1, Item 4) from bolts (Figure 1, Item 3). Discard locknuts.
 2. With assistance, remove eight bolts (Figure 1, Item 3) and front slider pad (Figure 1, Item 2) from front slider bed (Figure 1, Item 1).

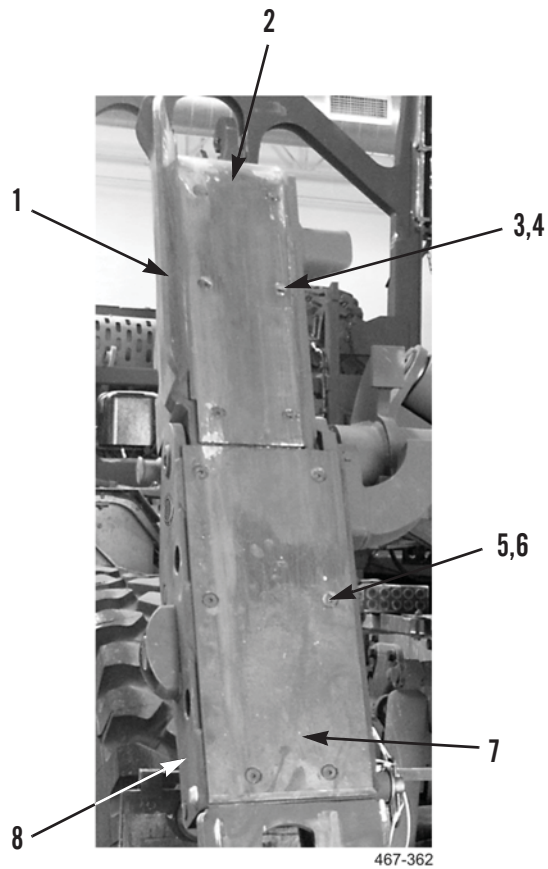
Rear Slider Pad Removal**WARNING**

Components will fall when attaching hardware is removed. Support components while removing attaching hardware. Failure to follow this warning may result in injury to personnel.

NOTE

Perform this procedure for both right and left sides.

1. Remove six locknuts (Figure 1, Item 6) from bolts (Figure 1, Item 5). Discard locknuts.
2. With assistance, remove six bolts (Figure 1, Item 5) and rear slider pad (Figure 1, Item 7) from rear slider bed (Figure 1, Item 8).

REMOVAL – CONTINUED**Rear Slider Pad Removal – Continued****END OF TASK****CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, General Maintenance Instructions.

END OF TASK

INSTALLATION

Rear Slider Pad Installation

NOTE

Perform steps 1 and 2 for both right and left sides.

1. With assistance, install rear slider pad (Figure 2, Item 7), six bolts (Figure 2, Item 5), and new locknuts (Figure 2, Item 6) on rear slider bed (Figure 2, Item 8).
2. Apply grease to rear slider pad (Figure 2, Item 7) surface.

Front Slider Pad Installation

NOTE

- Install bolts as noted during removal.
 - Perform steps 1 and 2 for both right and left sides.
1. With assistance, install front slider pad (Figure 2, Item 2) on front slider bed (Figure 2, Item 1).
 2. Install eight bolts (Figure 2, Item 3) and new locknuts (Figure 2, Item 4) on front slider pad (Figure 2, Item 1).
 3. Apply grease to front slider pad (Figure 2, Item 2) surface.

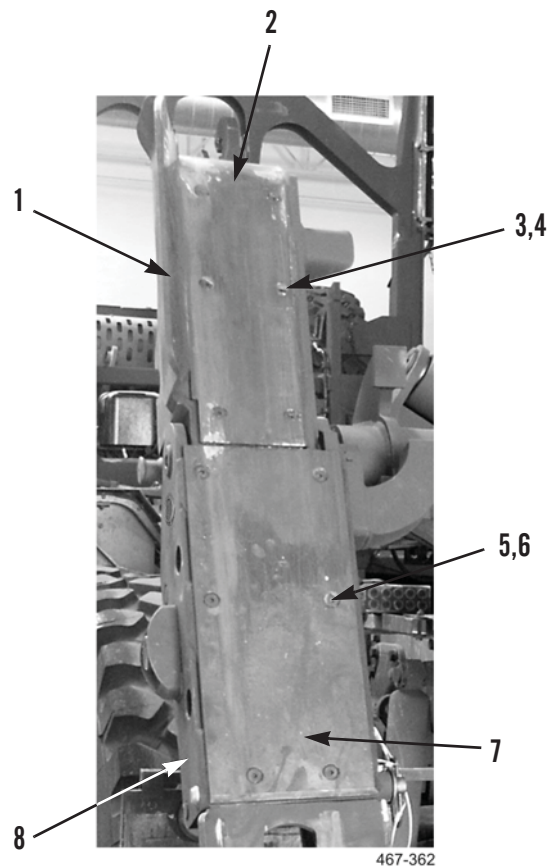


Figure 2. Slider Pad Installation.

END OF TASK

FOLLOW-ON TASKS

Verify that from slider bed moves correctly between container and flatrack positions (WP 0006).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
FRONT SLIDER BED REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Sling, Nylon (WP 0057, Item 1)
Tool Set, SATS Base (WP 0057, Item 3)
Lifting Equipment (1,000-lb Capacity)

Materials/Parts

Grease, Automotive and Artillery, GAA
(WP 0060, Item 8)
Rag, Wiping (WP 0060, Item 10)
Locknut (WP 0059, Item 11) (2)

Personnel Required

Two

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied
(PLS: TM 9-2320-364-10,
HEMTT: TM 9-2320-326-14&P)
Front slider bed in flatrack configuration
(WP 0006)

REMOVAL**WARNING**

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

- Front slider bed weighs 137 lb (62 kg).
 - Perform steps 1 through 6 for both right and left sides.
1. Attach sling and lifting device to front slider bed (Figure 1, Item 1).
 2. Use lifting device to remove slack from sling.
 3. Remove locknut (Figure 1, Item 5) and bolt (Figure 1, Item 6) from rear slider bed (Figure 1, Item 7). Discard locknut.

WARNING

Use caution when removing pin. Components may fall when pin is removed. Support components during removal of pin. Failure to follow this warning may result in injury to personnel or damage to equipment.

NOTE

Note number and location of shims to aid in installation.

4. Remove pin (Figure 1, Item 4), shims (Figure 1, Item 2) and spacer (Figure 1, Item 3) from front slider bed (Figure 1, Item 1).
5. Use lifting device to remove front slider bed (Figure 1, Item 1) from rear slider bed (Figure 1, Item 7) and place on flat work surface.
6. Remove lifting device and sling from front slider bed (Figure 1, Item 1).

REMOVAL –CONTINUED

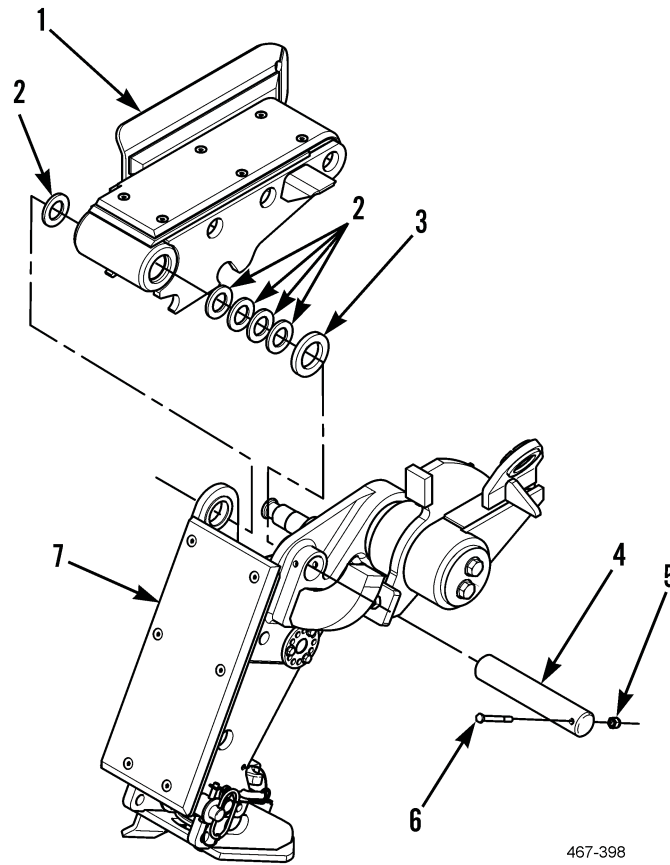


Figure 1. Front Slider Bed.

END OF TASK

CLEANING AND INSPECTION

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**WARNING**

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

- Front slider bed weighs 137 lb (62 kg).
 - Perform steps 1 through 5 for both right and left sides.
1. Attach sling and lifting device to front slider bed (Figure 2, Item 1).

WARNING

Components may fall during installation of pin. If necessary, support components during installation. Failure to follow this warning may result in injury to personnel or damage to equipment.

2. Use lifting device to install front slider bed (Figure 2, Item 1) on rear slider bed (Figure 2, Item 7).
3. Apply GAA to pin (Figure 2, Item 4).

NOTE

Install shims as noted during removal.

4. Install spacer (Figure 2, Item 3), shims (Figure 2, Item 2), and pin (Figure 2, Item 4) in front slider bed (Figure 2, Item 1).
5. Install bolt (Figure 2, Item 6) and new locknut (Figure 2, Item 5) in rear slider bed (Figure 2, Item 7).

INSTALLATION – CONTINUED

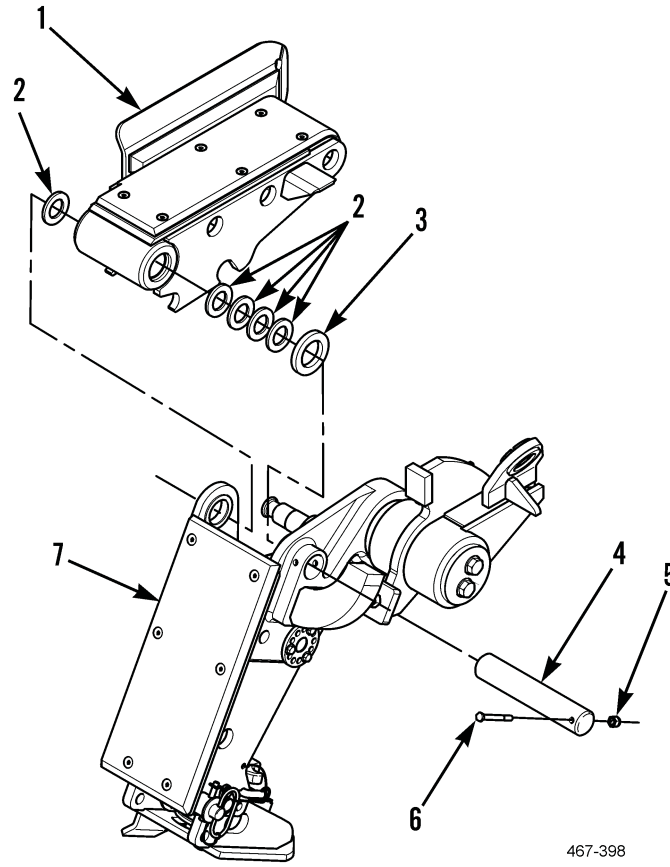


Figure 2. Front Slider Bed.

END OF TASK

FOLLOW-ON TASKS

1. Verify that front slider bed moves correctly between container and flatrack positions (WP 0006).
If clamping device pin does not engage correctly in front slider bed notch, adjust clamping device block shims as necessary (WP 0038).

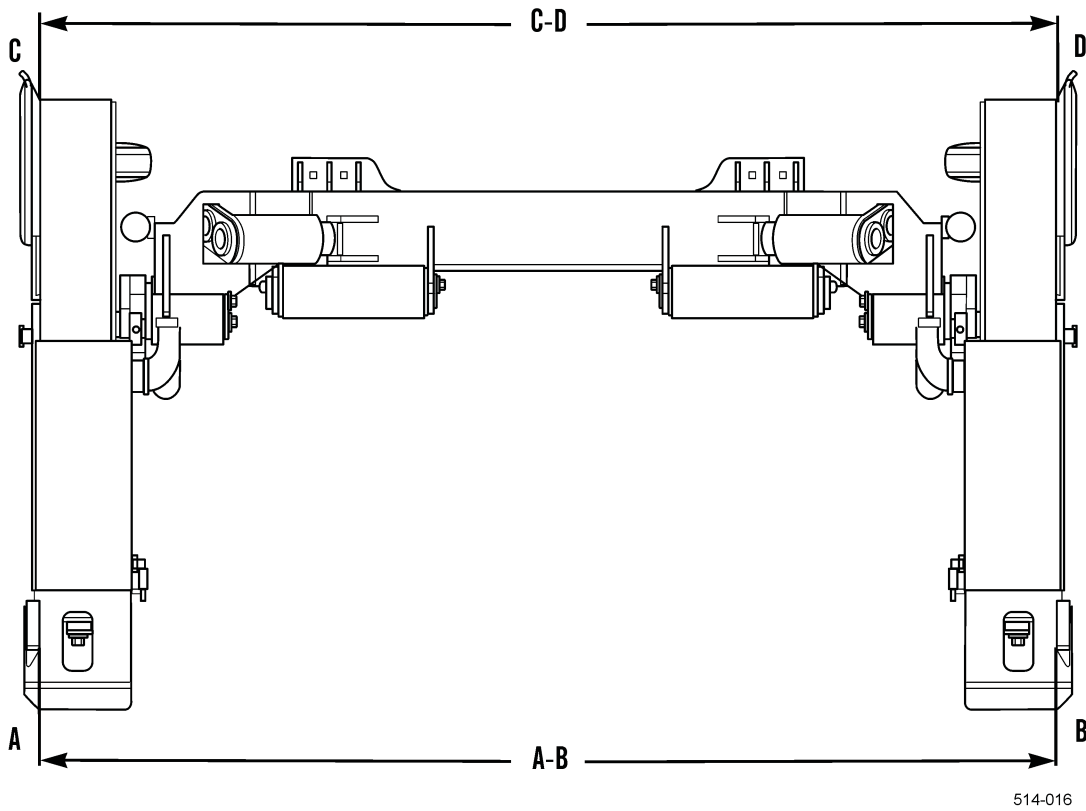
WARNING

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

- Slider assembly weighs 1,400 lb (635 kg).
 - The following steps will verify that slider bed alignment is within acceptable tolerances. The relationship between the width of front guides and rear guides is critical to ensure that rear twistlocks can correctly engage container corner castings.
 - These dimensions must be verified with front slider beds in container configuration, and slider assemblies rotated parallel to truck frame.
2. Using suitable lifting devices, rotate both slider bed assemblies until parallel with truck frame.
 3. Measure and record the distance between left front slider guide (Figure 3, Item C) and right front slider guide (Figure 3, Item D).
 4. Measure and record the distance between left rear slider guide (Figure 3, Item A) and right rear slider guide (Figure 3, Item B).

FOLLOW-ON TASKS – CONTINUED



514-016

Figure 3. Slider Guide Measurement.

FOLLOW-ON TASKS – CONTINUED**NOTE**

- Add or remove shims equally on both right and left slider beds.
 - Shims are 0.04 in. (1 mm) thick. Divide the difference between measured value and chart value by two to determine number of shims required per side.
 - Sum of A-B and C-D dimensions must equal 191.26 in. +/- 0.08 in. (4858 mm +/- 2 mm).
5. Locate recorded A-B dimension in Table 1. Compare recorded C-D dimension to corresponding C-D dimension in Table 1.
 6. If recorded C-D dimension is less than required value, remove shims from outboard side of front slider bed and add shims to inboard side of front slider bed.
 7. If recorded C-D dimension is greater than required value, remove shims from inboard side of front slider bed and add shims to outboard side of front slider bed.

Prod Note: Keep Table 1 in place following step 7.

Table 1. Slider Tolerances.

IF DIMENSION A-B IS	THEN C-D MUST BE
94.7 in. +/- 0.08 (2425 mm +/- 2 mm)	95.79 in. +/- 0.08 (2433 mm +/- 2 mm)
95.5 in. +/- 0.08 (2426 mm +/- 2 mm)	95.75 in. +/- 0.08 (2432 mm +/- 2 mm)
95.55 in. +/- 0.08 (2427 mm +/- 2 mm)	95.7 in. +/- 0.08 (2431 mm +/- 2 mm)
95.6 in. +/- 0.08 (2428 mm +/- 2 mm)	95.67 in. +/- 0.08 (2430 mm +/- 2 mm)
95.67 in. +/- 0.08 (2430 mm +/- 2 mm)	95.6 in. +/- 0.08 (2428 mm +/- 2 mm)
95.7 in. +/- 0.08 (2431 mm +/- 2 mm)	95.55 in. +/- 0.08 (2427 mm +/- 2 mm)
95.75 in. +/- 0.08 (2432 mm +/- 2 mm)	95.5 in. +/- 0.08 (2426 mm +/- 2 mm)
95.79 in. +/- 0.08 (2433 mm +/- 2 mm)	95.3 in. +/- 0.08 (2424 mm +/- 2 mm)

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
CLAMPING DEVICE REPAIR
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Grease, Automotive and Artillery, GAA
(WP 0060, Item 8)
Rag, Wiping (WP 0060, Item 10)
Strap, Tiedown, Electrical Components
(WP 0060, Item 11)
Spring Pin (WP 0059, Item 2)

Personnel Required

Two

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-10, HEMTT: TM 9-2320-326-
14&P)

Front slider bed removed (WP 0038)

REMOVAL

WARNING

Use caution and wear eye protection when removing clamping device. Clamping device is spring loaded and may move erratically during removal. Failure to follow this warning may result in injury to personnel or damage to equipment.

NOTE

- Perform steps 1 through 8 for both right and left sides.
 - Mark position of holes in end of shaft to aid in installation.
1. Remove and discard tiedown straps (Figure 1, Item 1) as required.
 2. Remove two bolts (Figure 1, Item 5) and washers (Figure 1, Item 4) from shaft (Figure 1, Item 3).
 3. Place punch in open hole to prevent shaft movement.
 4. While supporting clamping device handle (Figure 1, Item 2), remove bolt (Figure 1, Item 5), washer (Figure 1, Item 4), and punch from shaft (Figure 1, Item 3).

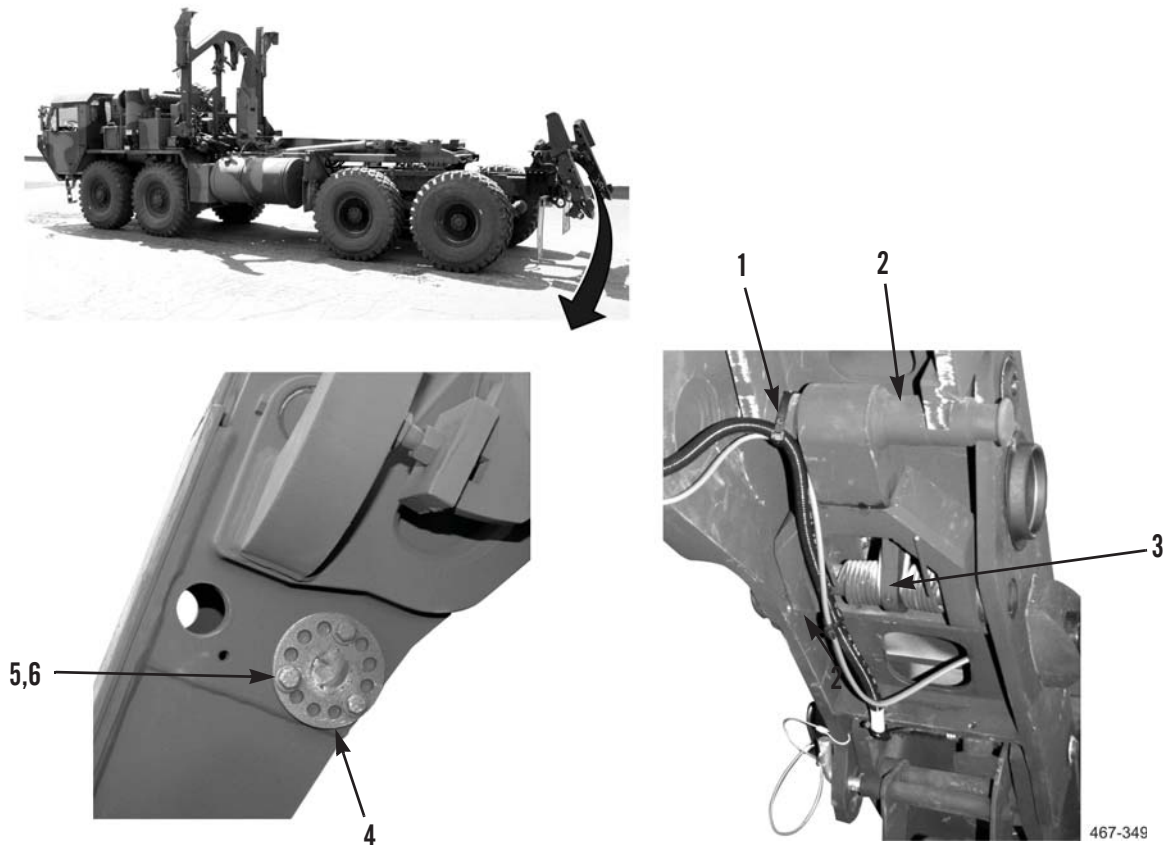
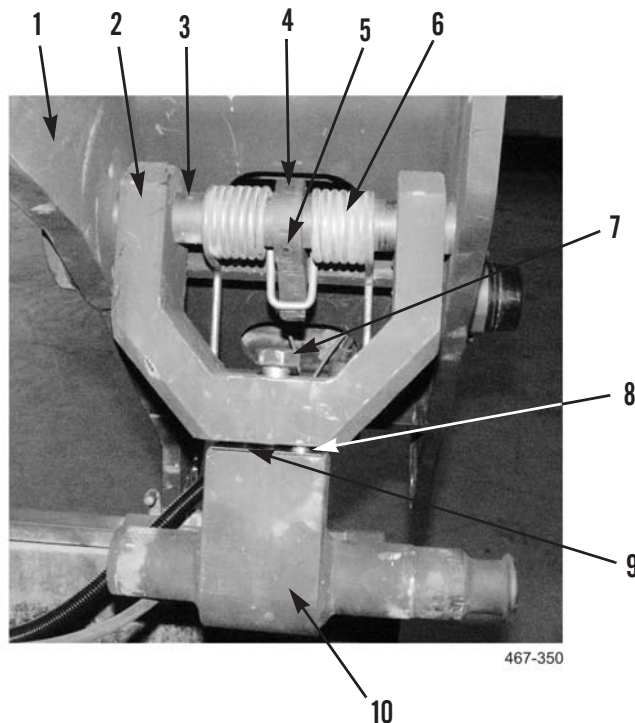


Figure 1. Clamping Device Bolt Removal.

REMOVAL – CONTINUED**NOTE**

- Note number of spacers removed to aid installation.
 - Note position of spring to aid in installation.
5. Remove bolt (Figure 2, Item 7), block (Figure 2, Item 10), and spacers (Figure 2, Item 9) from clamping device (Figure 2, Item 2).
 6. Remove two spring pins (Figure 2, Item 8) from block (Figure 2, Item 10).
 7. Remove spring pin (Figure 2, Item 5) from plate (Figure 2, Item 4). Discard spring pin.
 8. With assistance, while supporting clamping device (Figure 2, Item 2), remove shaft (Figure 2, Item 3), spring (Figure 2, Item 6), plate (Figure 2, Item 4), and clamping device (Figure 2, Item 2) from slider housing (Figure 2, Item 1).

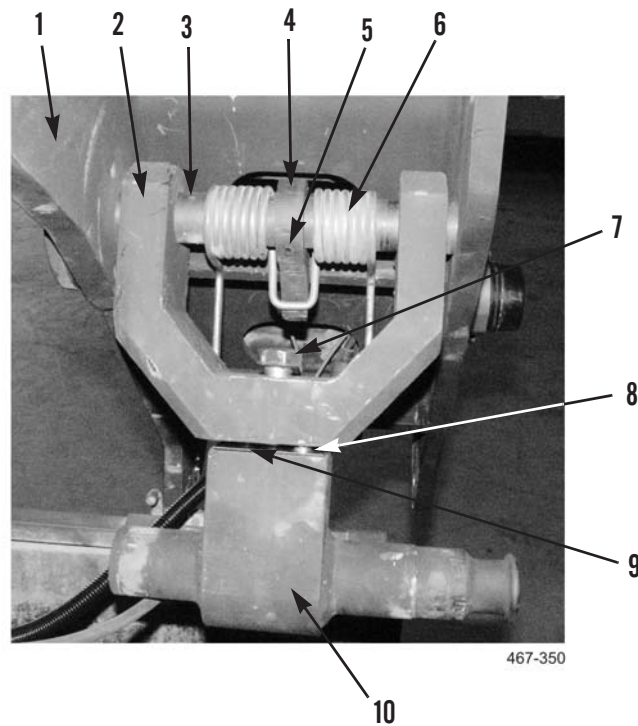
**Figure 2. Clamping Device Removal.****END OF TASK****CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**NOTE**

- Install same number of spacers as removed.
 - Install spring as noted during removal.
1. With assistance, install clamping device (Figure 3, Item 2), plate (Figure 3, Item 4), spring (Figure 3, Item 6), and shaft (Figure 3, Item 3) in slider housing (Figure 3, Item 1).
 2. Install new spring pin (Figure 3, Item 5) in plate (Figure 3, Item 4).
 3. Install two spring pins (Figure 3, Item 8) in block (Figure 3, Item 10).
 4. Install spacers (Figure 3, Item 9), block (Figure 3, Item 10), and bolt (Figure 3, Item 7) in clamping device (Figure 3, Item 2).

**Figure 3. Clamping Device Installation.**

INSTALLATION – CONTINUED

WARNING

Use caution and wear eye protection when installing clamping device. Clamping device is spring loaded and may move erratically during installation. Failure to follow this warning may result in injury to personnel or damage to equipment.

5. With assistance and while supporting clamping device handle (Figure 4, Item 2), apply pressure to plate (Figure 4, Item 3) to position holes as marked during removal, and place punch in one hole to prevent shaft movement.
6. Install three washers (Figure 4, Item 5) and bolts (Figure 4, Item 6) in shaft (Figure 4, Item 4).
7. Install new tiedown straps (Figure 4, Item 1) as required.

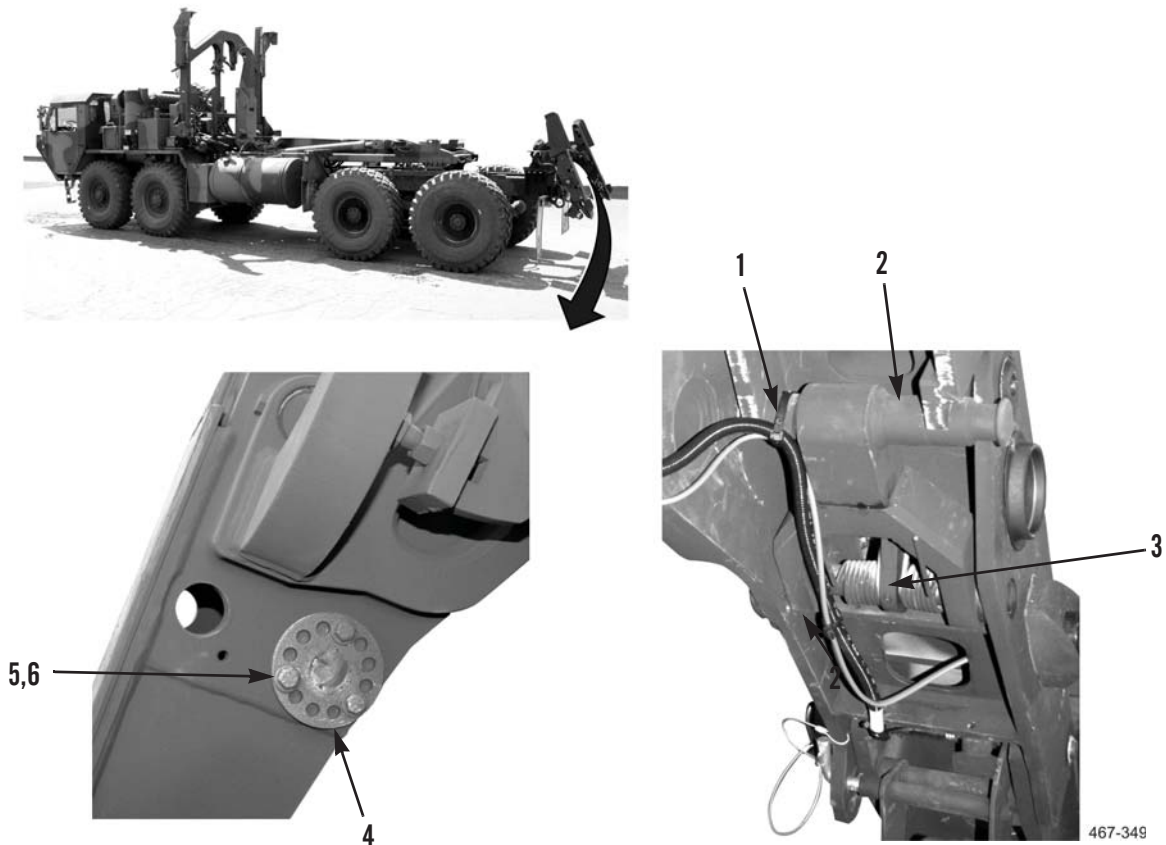


Figure 4. Clamping Device Installation.

END OF TASK

FOLLOW-ON TASKS

Install front slider bed (WP 0038).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
REAR SLIDER BED REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)
Sling, Nylon (WP 0057, Item 1)
Tool Set, SATS Base (WP 0057, Item 3)
Tool Kit, Bearing Removal (WP 0057, Item 4)
Lifting Equipment (500-lb Capacity)

Materials/Parts

Grease, Automotive and Artillery, GAA (WP 0060, Item 8)
Rag, Wiping (WP 0060, Item 10)
Strap, Tiedown, Electrical Components (WP 0060, Item 11)

Personnel Required

2

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-10, HEMTT: TM 9-2320-279-10-1)
Front slider bed removed (WP 0038)
Clamping device removed (WP 0038)
Twistlock module removed (WP 0041)
Twistlock sensor removed (WP 0034)

REMOVAL**NOTE**

Perform steps 1 through 9 for both side right and left sides.

1. Remove and discard tiedown straps (Figure 1, Item 7) as required.
2. Remove two screws (Figure 1, Item 3) and light cover (Figure 1, Item 2) from slider bed (Figure 1, Item 1).
3. Remove two screws (Figure 1, Item 4), ground wires (Figure 1, Item 5), light (Figure 1, Item 6), and light wiring harness (Figure 1, Item 8) from slider bed (Figure 1, Item 1).

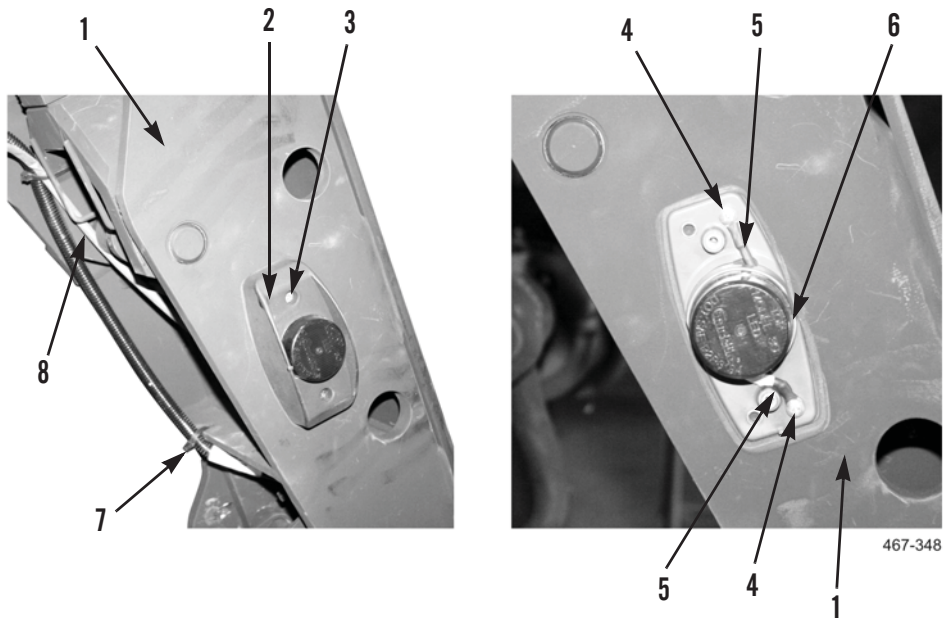
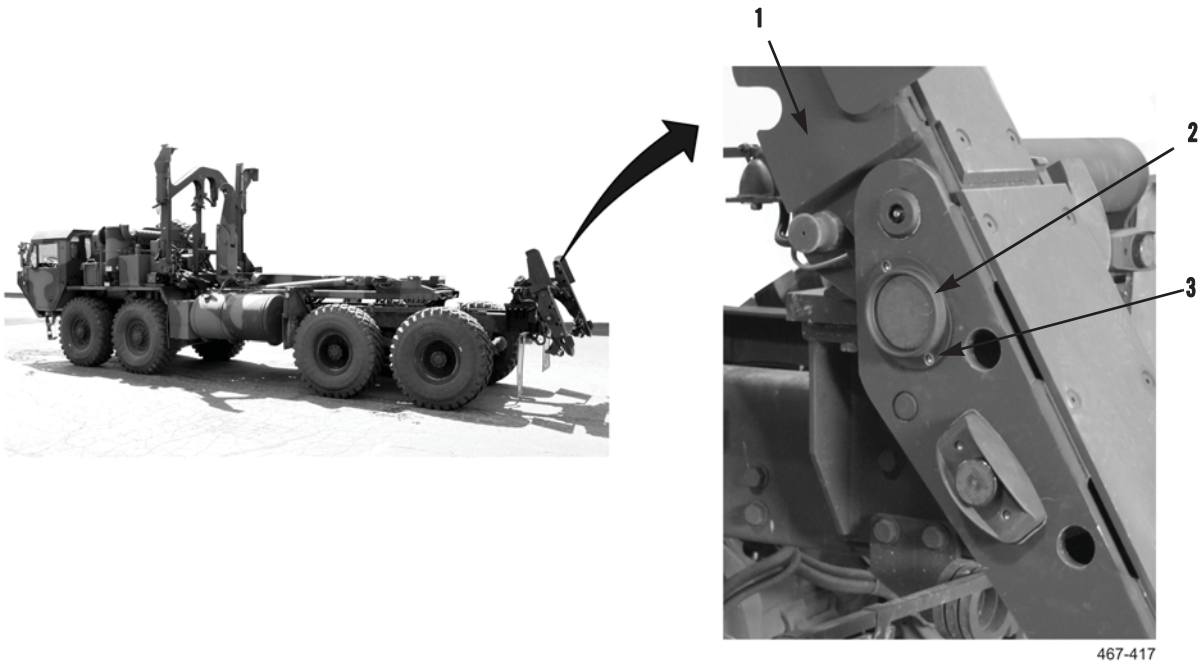


Figure 1. Slider Bed Light Removal.

REMOVAL – CONTINUED

4. Remove two screws (Figure 2, Item 3) and reflector (Figure 2, Item 2) from slider assembly (Figure 2, Item 1).



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Figure 2. Reflector Removal.

REMOVAL – CONTINUED

WARNING

Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

Rear slider bed weighs 190 lb (86 kg).

5. Attach sling and lifting device to rear slider bed (Figure 3, Item 8).
6. Use lifting device to remove slack from sling.
7. Remove two bolts (Figure 3, Item 5), washers (Figure 3, Item 4), end plate (Figure 3, Item 3), and shim (Figure 3, Item 2) from rear frame (Figure 3, Item 1).
8. Use lifting device to remove rear slider bed (Figure 3, Item 8) from rear frame (Figure 3, Item 1) and place on flat surface.
9. Remove two bearings (Figure 3, Item 7) and shim (Figure 3, Item 6) from rear frame (Figure 3, Item 1).

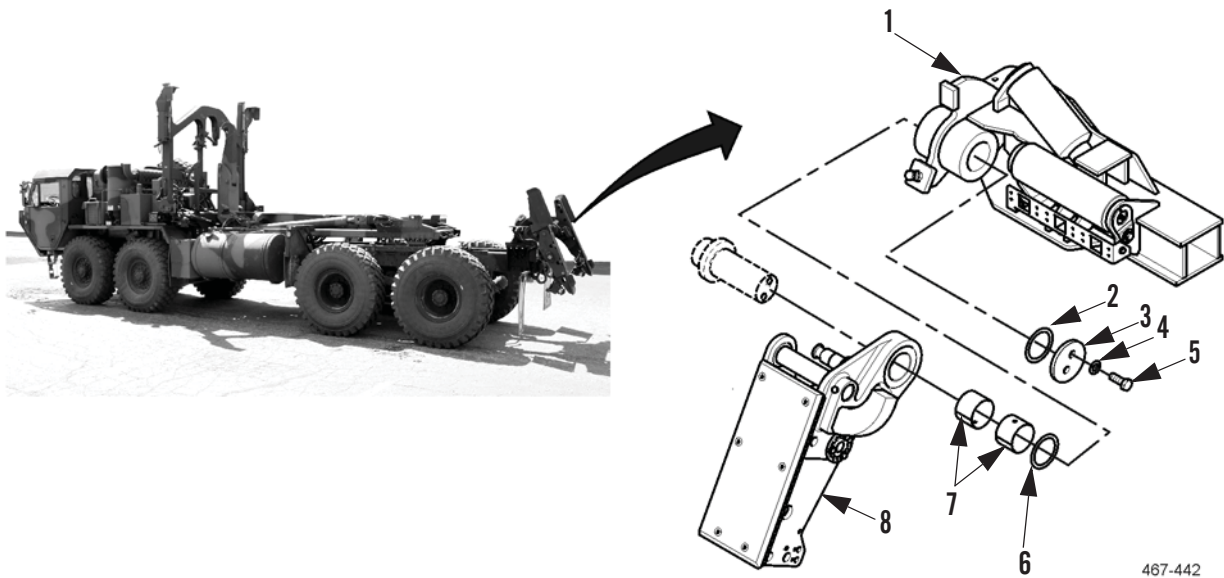


Figure 3. Rear Slider Bed Removal.

467-442

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION

WARNING



Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in injury or death to personnel.

NOTE

- Rear slider bed weighs 190 lb (86 kg).
 - Perform steps 1 through 11 for both side right and left sides.
1. Attach sling and lifting device to rear slider bed (Figure 4, Item 8).
 2. Use lifting device to remove slack from sling.
 3. Install shim (Figure 4, Item 6) and two bearings (Figure 4, Item 7) in rear frame (Figure 4, Item 1).
 4. Use lifting device to install rear slider bed (Figure 4, Item 8) on rear frame (Figure 4, Item 1).
 5. Install shim (Figure 4, Item 2), end plate (Figure 4, Item 3), two washers (Figure 4, Item 4), and bolts (Figure 4, Item 5) on rear frame (Figure 4, Item 1).
 6. Remove lifting device and sling from rear slider bed (Figure 4, Item 8).
 7. Apply grease to fitting (Figure 4, Item 9).

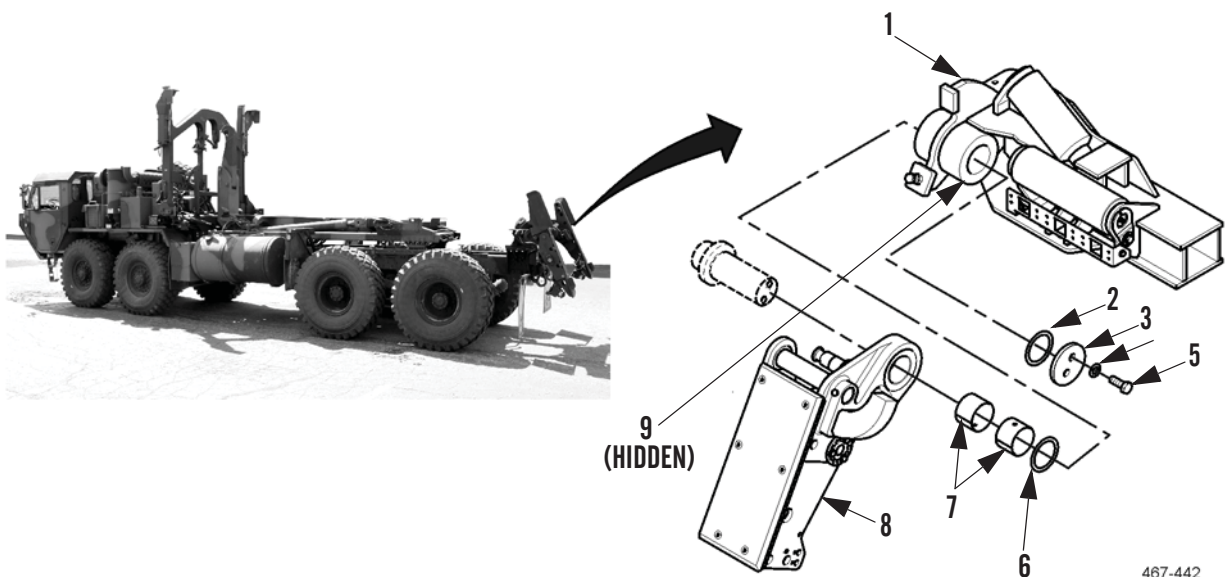


Figure 4. Rear Slider Bed Installation.

467-442

INSTALLATION – CONTINUED

8. Install reflector (Figure 5, Item 2) and two screws (Figure 5, Item 3) on slider assembly (Figure 5, Item 1).

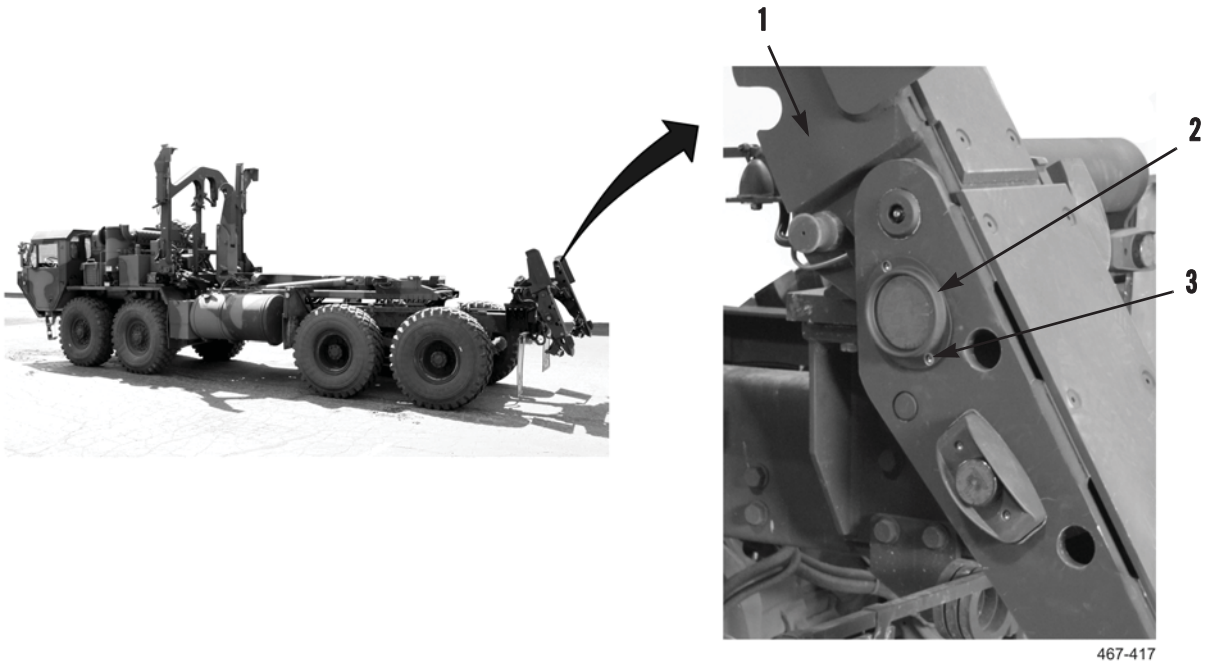


Figure 5. Reflector Installation.

INSTALLATION – CONTINUED

9. Feed wiring harness (Figure 6, Item 8) through slider bed (Figure 6, Item 1) and install light (Figure 6, Item 6), two ground wires (Figure 6, Item 5), and screws (Figure 6, Item 4) on slider bed.
10. Install light cover (Figure 6, Item 2) and two screws (Figure 6, Item 3) on light (Figure 6, Item 6).
11. Install new tiedown straps (Figure 6, Item 7) as required.

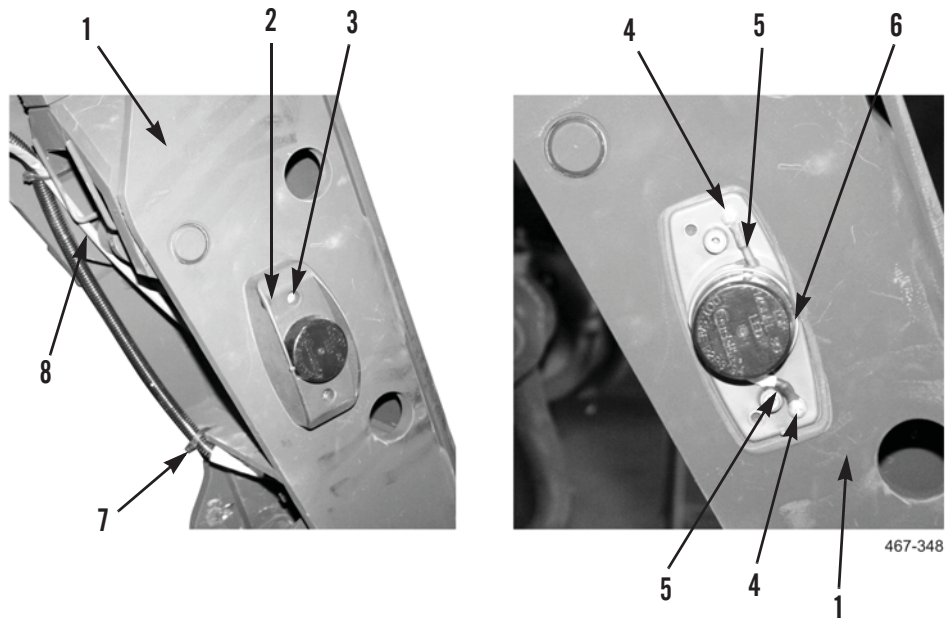


Figure 6. Slider Bed Light Installation.

END OF TASK**FOLLOW-ON TASKS**

1. Install twistlock module (WP 0041).
2. Install clamping device (WP 0038).
3. Install front slider bed (WP 0038).
4. Install sensor (WP 0034).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
TWISTLOCK ASSEMBLY REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Grease, Automotive and Artillery, GAA (WP 0060, Item 8)

Rag, Wiping (WP 0060, Item 10)

Personnel Required

2

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-10, HEMTT: TM 9-2320-279-10-1)

Twistlock housing in container configuration (WP 0006)

REMOVAL**WARNING**

- Twistlock assembly will fall when roller pin is removed. Use caution and support twistlock assembly while removing roller pin.
- Twistlock housing will swing when roller pin is removed. Use caution and support twistlock housing while removing roller pin.
- Failure to follow these warnings may result in injury to personnel.

NOTE

- Perform steps 1 through 4 for both right and left sides.
 - Note location of spacers to aid in installation.
1. Remove locking pin (Figure 1, Item 6) from rear slider bed (Figure 1, Item 1).
 2. With assistance, support twistlock housing (Figure 1, Item 8) and twistlock assembly (Figure 1, Item 7) and remove bolt (Figure 1, Item 2), washer (Figure 1, Item 3), roller pin (Figure 1, Item 4), two spacers (Figure 1, Item 5), and twistlock assembly from rear slider bed (Figure 1, Item 1).
 3. Remove clip (Figure 1, Item 10) from locking pin (Figure 1, Item 9).
 4. While supporting twistlock housing (Figure 1, Item 8), remove locking pin (Figure 1, Item 9) and twistlock housing from rear slider bed (Figure 1, Item 1).

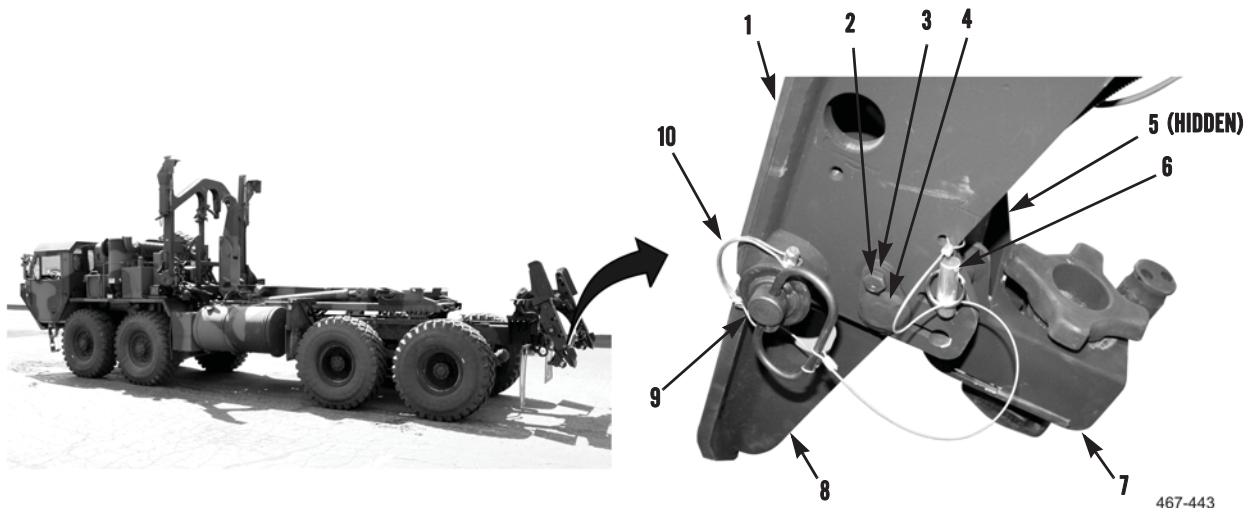


Figure 1. Twistlock Assembly.

467-443

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**NOTE**

- Perform steps 1 through 5 for both right and left sides.
 - Install spacers as noted during removal.
1. Apply grease to roller pin (Figure 1, Item 4).
 2. With assistance, install twistlock housing (Figure 1, Item 8) and locking pin (Figure 1, Item 9) on rear slider bed (Figure 1, Item 1).
 3. With assistance, install twistlock assembly (Figure 1, Item 7) in rear slider bed (Figure 1, Item 1), aligning holes in twistlock housing (Figure 1, Item 8), twistlock assembly, and rear roller bed, install two spacers (Figure 1, Item 5), roller pin (Figure 1, Item 4), washer (Figure 1, Item 3), and bolt (Figure 1, Item 3) in rear slider bed.
 4. Install locking pin (Figure 1, Item 5) on rear slider bed (Figure 1, Item 1).
 5. Install clip (Figure 1, Item 11) in locking pin (Figure 1, Item 9).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
FLATRACK ROLLER REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Grease, Automotive and Artillery, GAA (WP 0060, Item 8)

Rag, Wiping (WP 0060, Item 10)

Star Washer (WP 0059, Item 14) (2)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

REMOVAL

1. With assistance, remove six nuts (Figure 1, Item 2), bolts (Figure 1, Item 3), and bumper stop bracket (Figure 1, Item 1) from frame (Figure 1, Item 4).

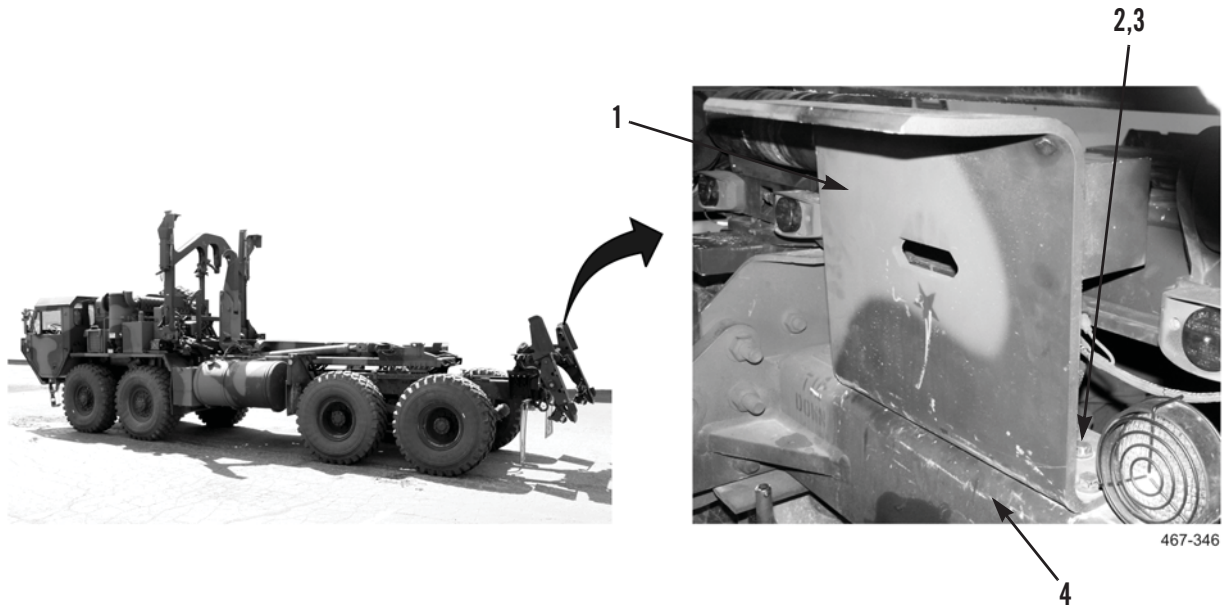


Figure 1. Bumper Stop Removal.

REMOVAL – CONTINUED**NOTE**

Perform steps 2 and 3 on both right and left sides.

2. Remove bolt (Figure 2, Item 5), star washer (Figure 2, Item 4), and washer (Figure 2, Item 3) from rear beam (Figure 2, Item 1). Discard star washer.
3. Remove roller pin (Figure 2, Item 2), two thrust washers (Figure 2, Item 6), and flatrack roller (Figure 2, Item 7) from rear beam (Figure 2, Item 1).

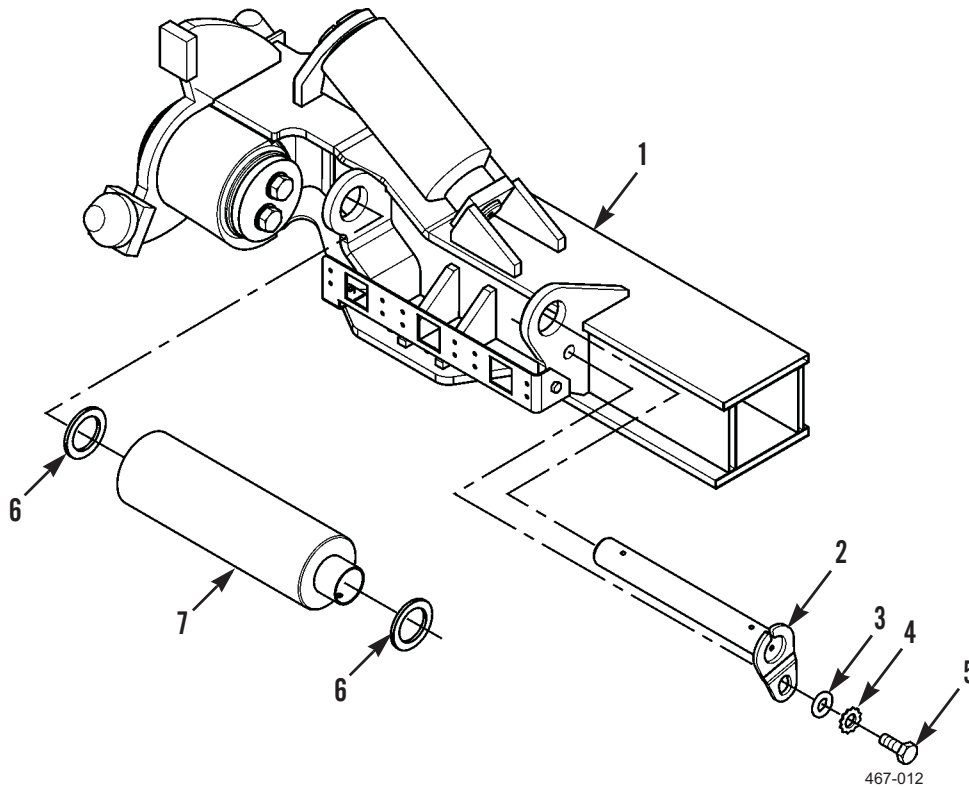


Figure 2. Flatrack Roller.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, General Maintenance Instructions.

END OF TASK

INSTALLATION

1. Apply grease to roller pin (Figure 2, Item 2).
2. Install flatrack roller (Figure 2, Item 7), two thrust washers (Figure 2, Item 6), and roller pin (Figure 2, Item 2) on rear beam (Figure 2, Item 1).
3. Install washer (Figure 2, Item 3), new star washer (Figure 2, Item 4), and bolt (Figure 2, Item 5) on rear beam (Figure 2, Item 1).
4. With assistance, install bumper stop bracket (Figure 3, Item 1), six bolts (Figure 3, Item 2), and nuts (Figure 3, Item 3) on frame (Figure 3, Item 4).

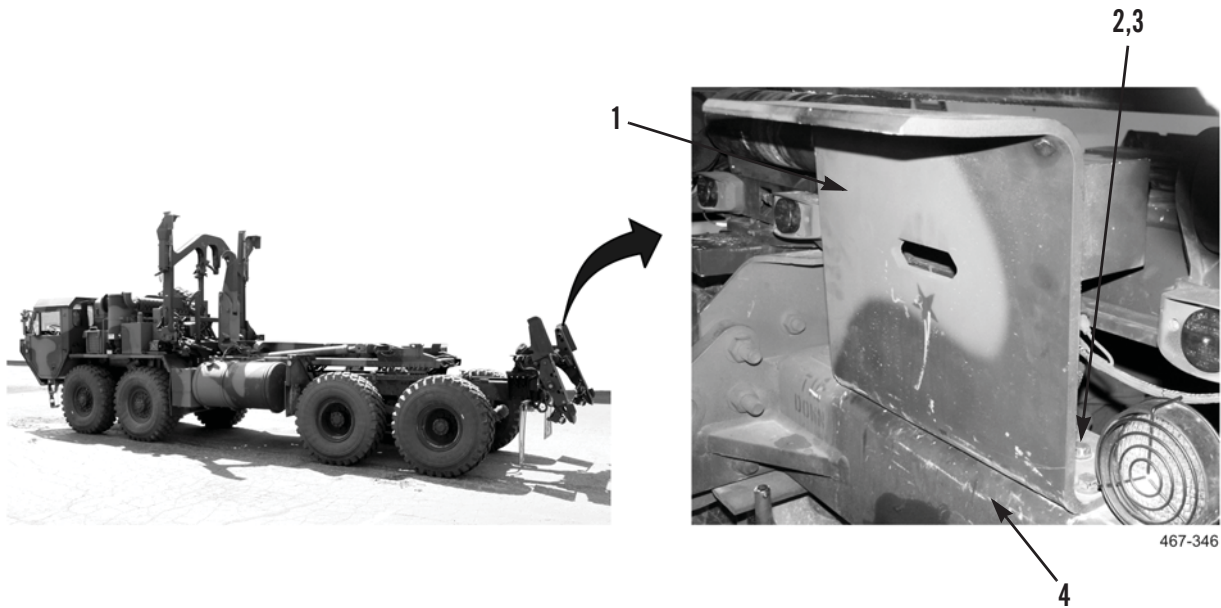


Figure 3. Bumper Stop Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
ANGLED ROLLER REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Grease, Automotive and Artillery, GAA (WP 0060, Item 8)
Rag, Wiping (WP 0060, Item 10)
Star Washer (WP 0059, Item 14) (2)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

REMOVAL**NOTE**

Perform steps 1 through 3 for both right and left sides.

1. Remove two grease fittings (Figure 1, Items 1 and 9) from rear slider assembly (Figure 1, Item 10).
2. Remove bolt (Figure 1, Item 2), star washer (Figure 1, Item 3), and washer (Figure 1, Item 4) from roller pin (Figure 1, Item 5). Discard star washer.
3. Remove roller pin (Figure 1, Item 5), spacer (Figure 1, Item 6), angled roller (Figure 1, Item 7), and spacer ring (Figure 1, Item 8) from rear slider assembly (Figure 1, Item 10).

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK**INSTALLATION****NOTE**

Perform steps 1 through 4 for both right and left sides.

1. Apply grease to roller pin (Figure 1, Item 5).
2. Install spacer ring (Figure 1, Item 8), angled roller (Figure 1, Item 7), spacer (Figure 1, Item 6), and roller pin (Figure 1, Item 5) on slider assembly (Figure 1, Item 10).
3. Install washer (Figure 1, Item 4), new star washer (Figure 1, Item 3), and bolt (Figure 1, Item 2) on roller pin (Figure 1, Item 5).
4. Install two grease fittings (Figure 1, Items 1 and 9) on rear slider assembly (Figure 1, Item 10).

INSTALLATION – CONTINUED

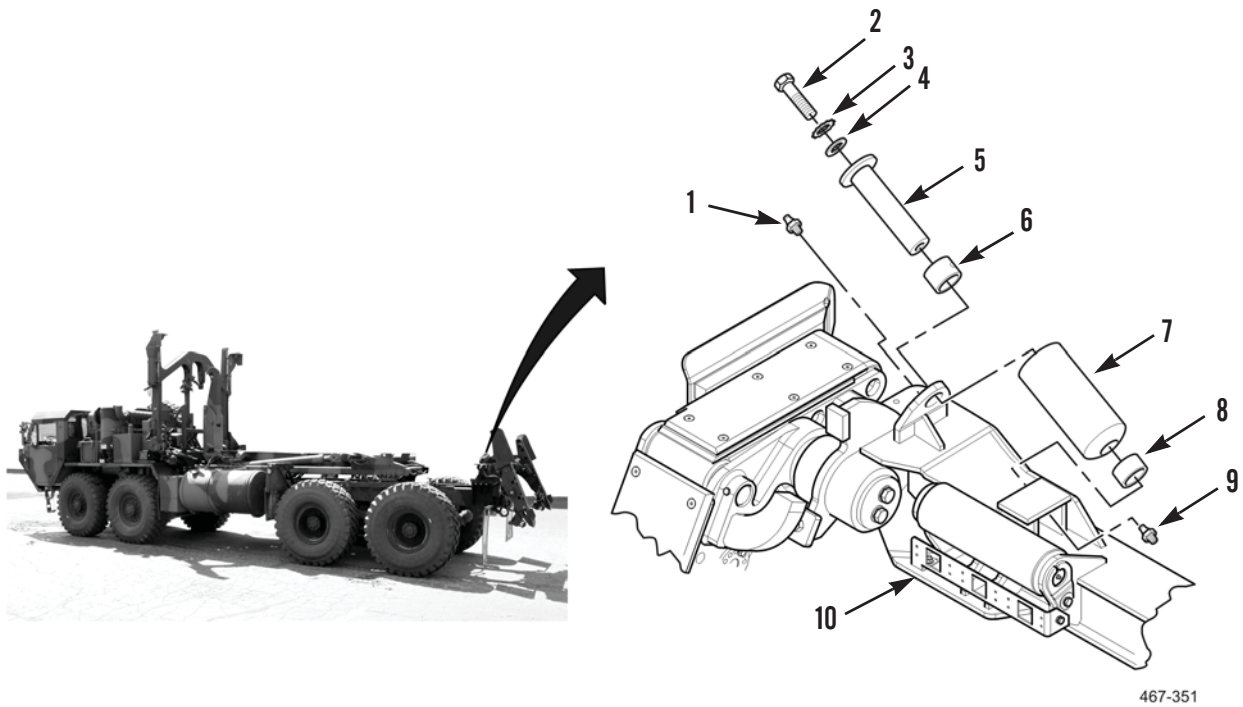


Figure 1. Angled Roller Replacement.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
HYDRAULIC HOSE REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)

Materials/Parts

Cap Set, Protective, Dust and Moisture (WP 0060, Item 3)
Rag, Wiping (WP 0060, Item 10)
Tag, Marker (WP 0060, Item 12)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Lift frame placed on level ground (WP 0007)
Hook arm fully extended (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

REMOVAL

WARNING

- During these procedures, the operator will be required to climb on and around vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses.
- Lift frame must be positioned on solid, level ground with adequate support from stands.
- Failure to follow these warnings may result in death or serious injury to personnel.

NOTE

- Note routing and tag hoses and fittings to aid in installation.
 - Cap hoses and fittings to prevent contamination.
 - Perform steps 1 through 3 to relieve hydraulic system pressure.
1. Start engine and set MODE switch to MAN M.F. position for 30 seconds.
 2. Set MODE switch to MAN H.A. position for 30 seconds.
 3. Set MODE switch to OFF position and turn off engine.
 4. Remove two hydraulic hoses (Figure 1, Item 1) from quick disconnect T-fittings (Figure 1, Item 2).

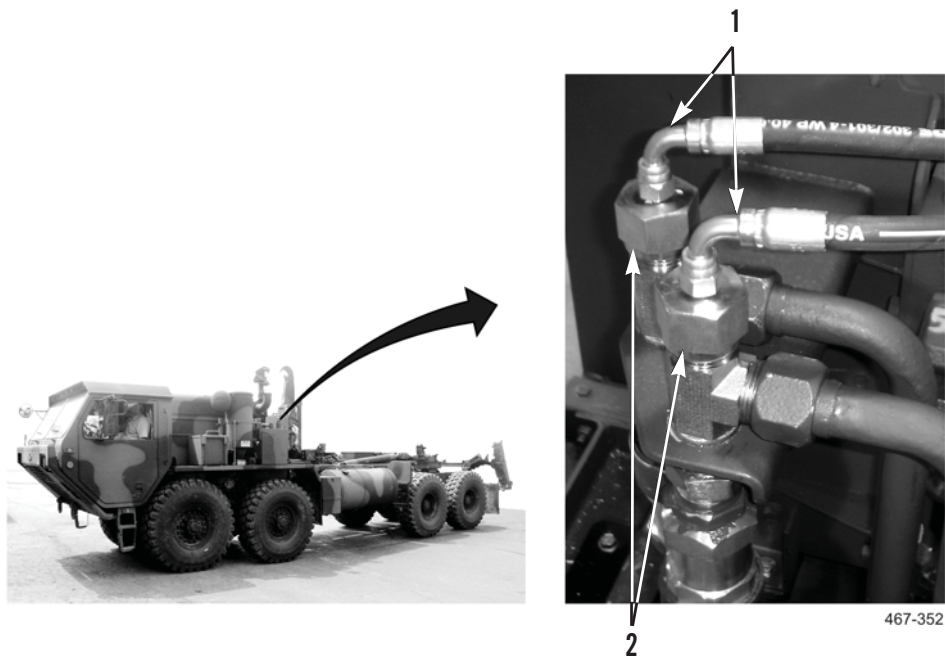


Figure 1. Fitting Hose Removal.

REMOVAL – CONTINUED

5. Remove two hydraulic hoses (Figure 2, Item 2) from stowage guide actuator (Figure 2, Item 1).

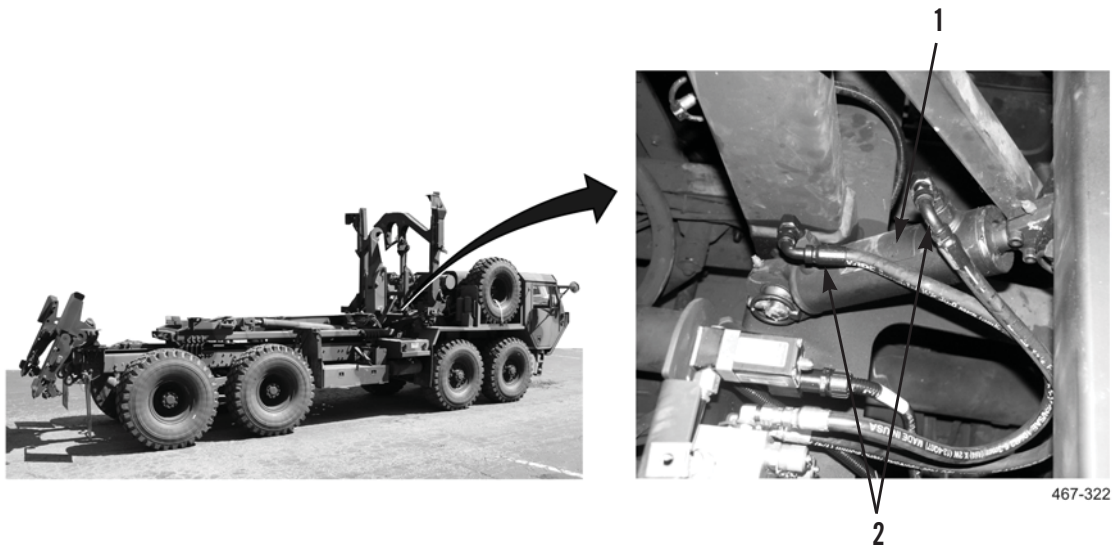


Figure 2. Stowage Guide Actuator Hose Removal.

6. Loosen three locking screws (Figure 3, Item 1) and remove solenoid cover (Figure 3, Item 2) from stowage assembly (Figure 3, Item 5).
7. Remove four hydraulic hoses (Figure 3, Item 4) from solenoid (Figure 3, Item 3).

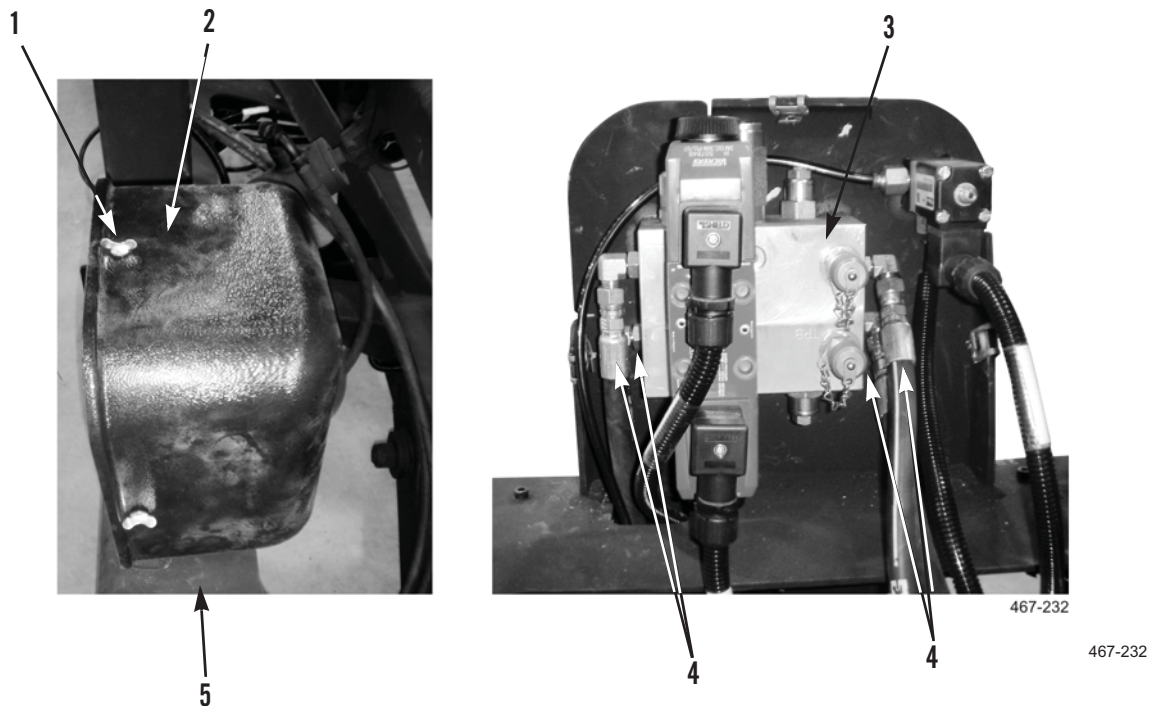


Figure 3. Solenoid Hose Removal.

END OF TASK

CLEANING AND INSPECTION

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK**INSTALLATION****NOTE**

- Route and install hoses as noted and tagged during removal.
 - Remove caps prior to installation.
1. Install four hoses (Figure 4, Item 4) on solenoid (Figure 4, Item 3).
 2. Install solenoid cover (Figure 4, Item 2) on stowage assembly (Figure 4, Item 5) and tighten four locking screws (Figure 4, Item 1).

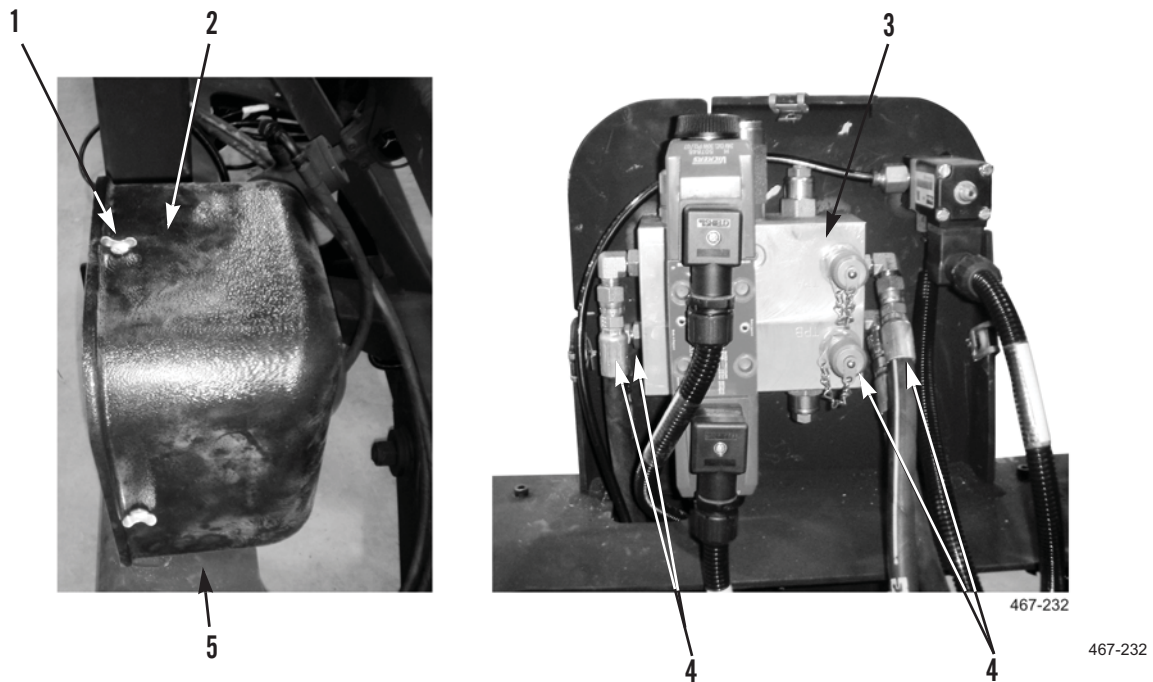


Figure 4. Solenoid Hose Installation.

INSTALLATION – CONTINUED

3. Install two hoses (Figure 5, Item 2) on stowage guide actuator (Figure 5, Item 1).

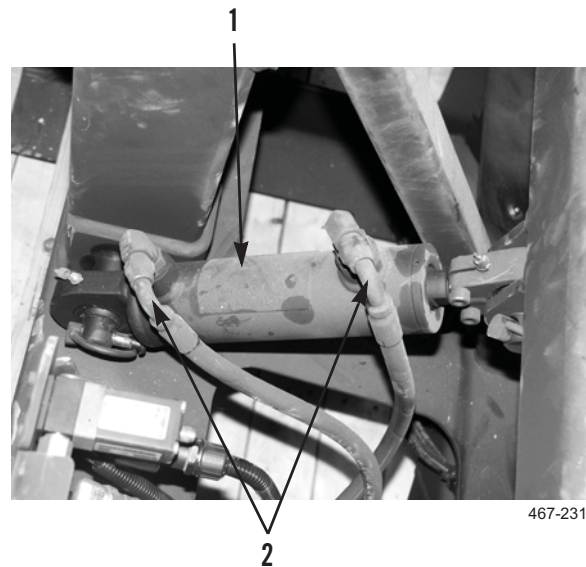


Figure 5. Stowage Guide Actuator Hose Installation.

4. Install two hoses (Figure 6, Item 1) on quick disconnect T-fittings (Figure 6, Item 2).

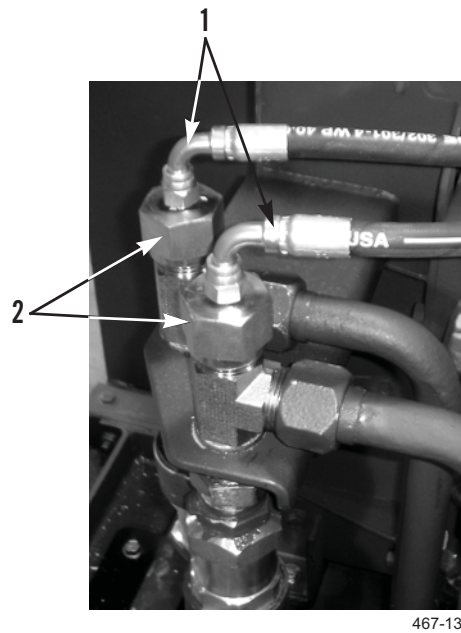


Figure 6. Fitting Hose Installation.

END OF TASK

FOLLOW-ON TASKS

1. Retrieve and stow lift frame (WP 0007).
2. Place hook arm in home position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
PNEUMATIC HOSE REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
 (WP 0057, Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
 Strap, Tiedown, Electrical Components
 (WP 0060, Item 11)
 Tag, Marker (WP 0060, Item 12)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
 with parking brake applied (PLS: TM 9-
 2320-364-14&P, HEMTT: TM 9-2320-326-
 14&P)

Air pressure in pneumatic system relieved
 (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-
 2320-326-14&P)

Lift frame placed on level ground (WP 0007)

Hook arm fully extended (PLS: TM 9-2320-
 364-14&P, HEMTT: TM 9-2320-326-14&P)

WARNING

- Lift frame must be positioned on solid level ground with adequate support from stands.
- Pneumatic hoses are under pressure. Use caution and wear protective goggles or face shield.
- During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Note routing and tag all pneumatic lines to aid in installation.

REMOVAL**Supply Hose Removal**

1. Loosen three locking screws (Figure 1, Item 1) and remove solenoid cover (Figure 1, Item 2) from stowage assembly (Figure 1, Item 5).
2. Remove pneumatic supply hose (Figure 1, Item 3) from solenoid valve (Figure 1, Item 4).

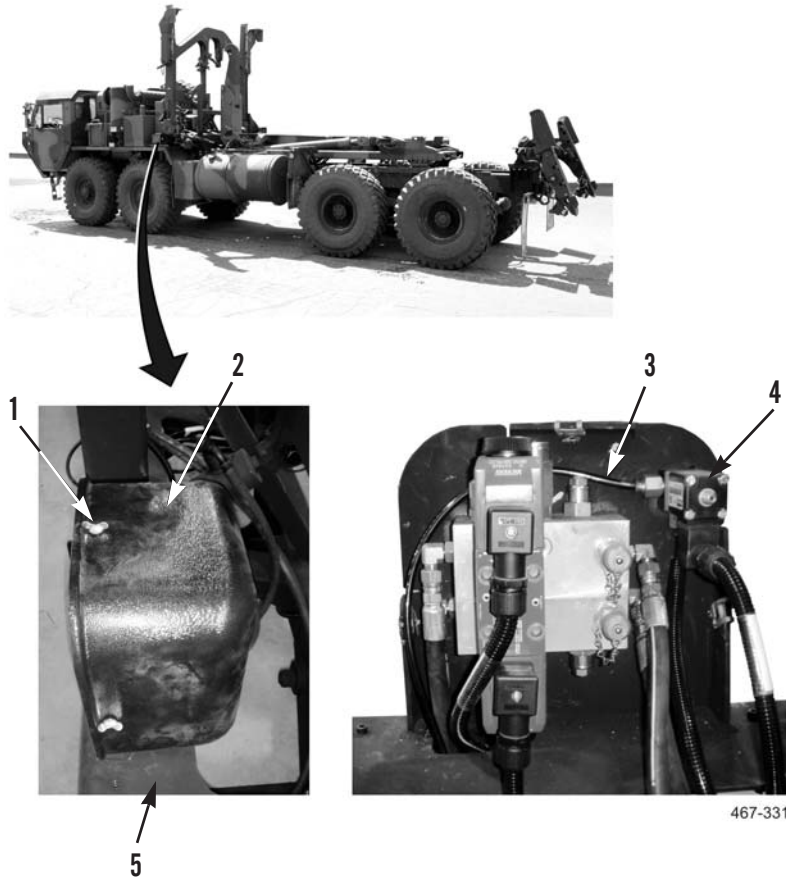


Figure 1. Solenoid Valve Supply Hose Removal.

REMOVAL – CONTINUED

NOTE

Perform step 3 for HEMTT M1120, step 4 for HEMTT M1120A4, and step 5 for PLS.

3. Disconnect pneumatic hose (Figure 2, Item 2) from press-lock fitting (Figure 2, Item 1).

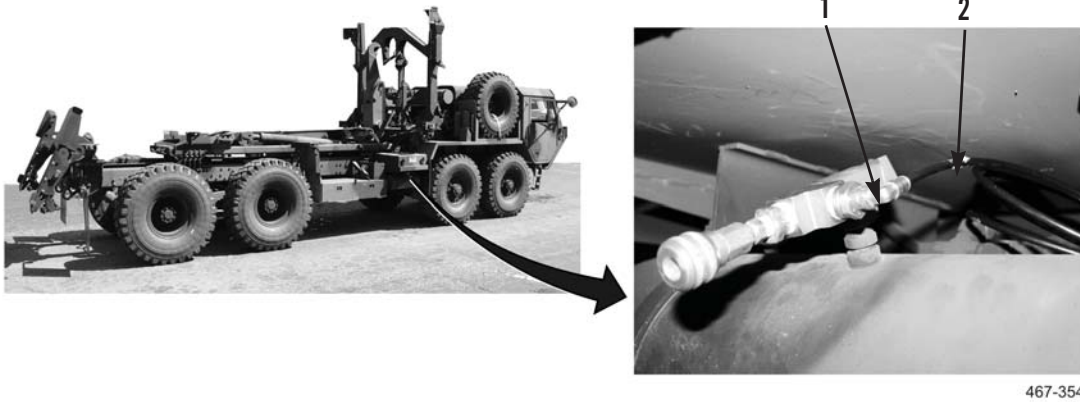


Figure 2. HEMTT M1120 Air Tank Hose Removal.

4. Disconnect pneumatic hose (Figure 3, Item 1) from press-lock fitting (Figure 3, Item 2).

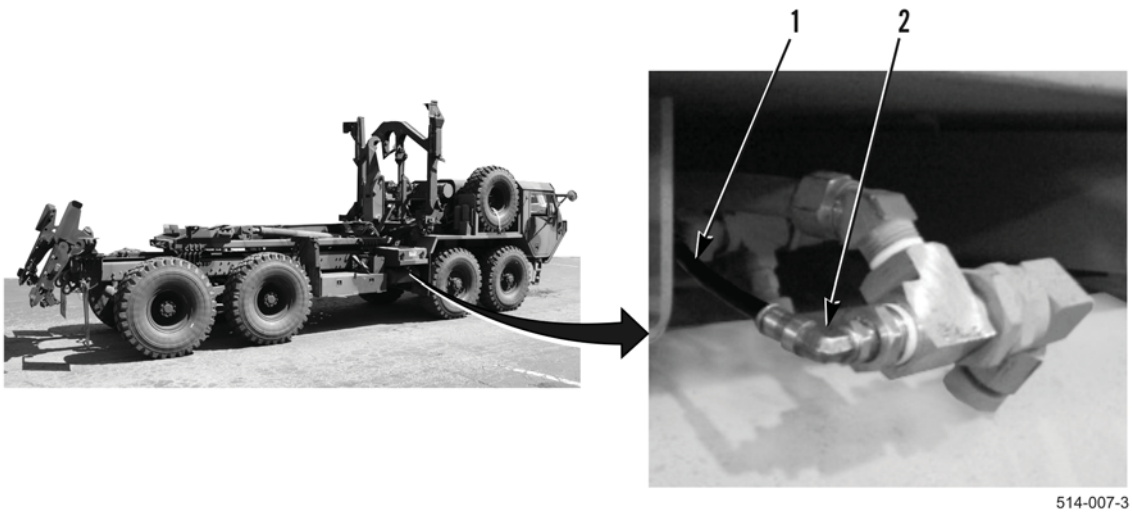


Figure 3. HEMTT M1120A4 Air Tank Hose Removal.

REMOVAL – CONTINUED

5. Disconnect pneumatic hose (Figure 4, Item 1) from press-lock fitting (Figure 4, Item 2).

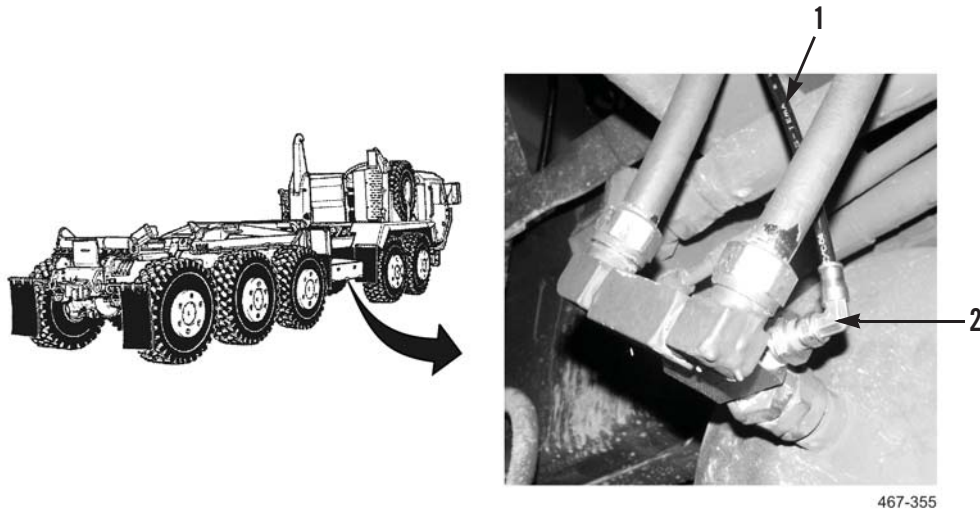


Figure 4. PLS Air Tank Hose Removal.

Latch Actuator Hose Removal

1. Loosen three locking screws (Figure 5, Item 1) and remove solenoid cover (Figure 5, Item 2) from stowage assembly (Figure 5, Item 5).
2. Remove latch actuator hose (Figure 5, Item 4) from solenoid valve (Figure 5, Item 3).

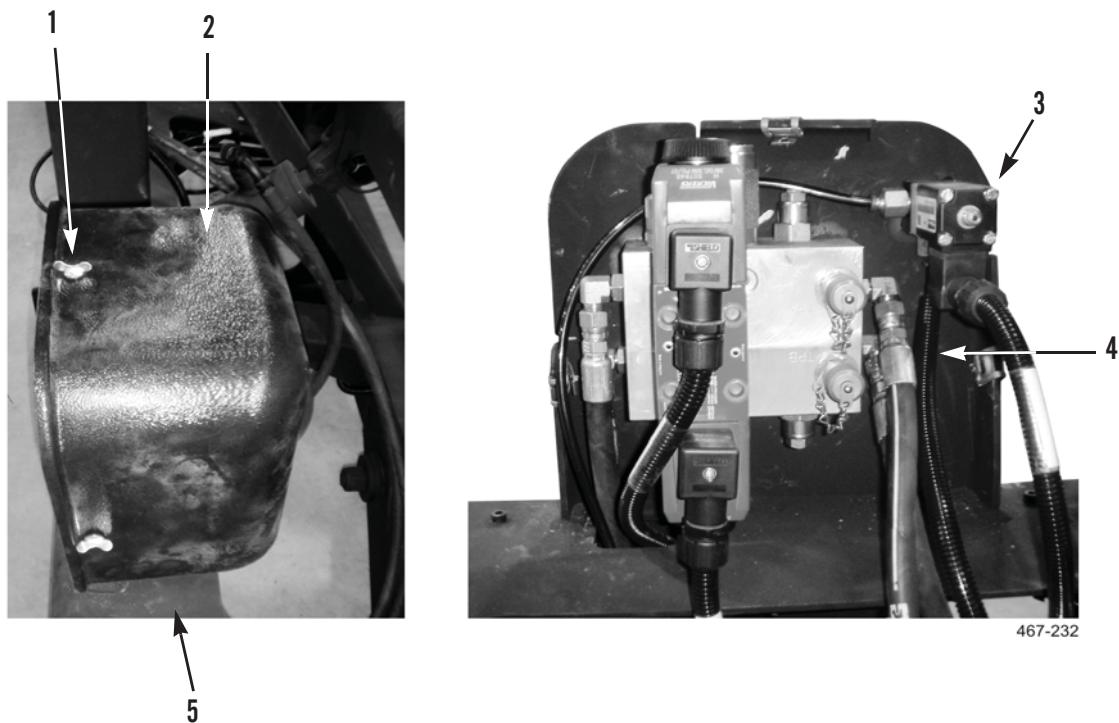


Figure 5. Latch Actuator Hose Removal from Solenoid.

REMOVAL – CONTINUED**Latch Actuator Hose Removal - Continued**

3. Remove latch actuator hose (Figure 6, Item 6) from latch actuator (Figure 6, Item 1).
4. Loosen six screws (Figure 6, Item 5) on three hose clamps (Figure 6, Item 4).
5. Remove latch actuator hose (Figure 6, Item 6) from three hose clamps (Figure 6, Item 4).
6. Under stowage assembly (Figure 6, Item 2) remove and discard tiedown straps (Figure 6, Item 3) as required and remove latch actuator hose (Figure 6, Item 6) from stowage assembly.

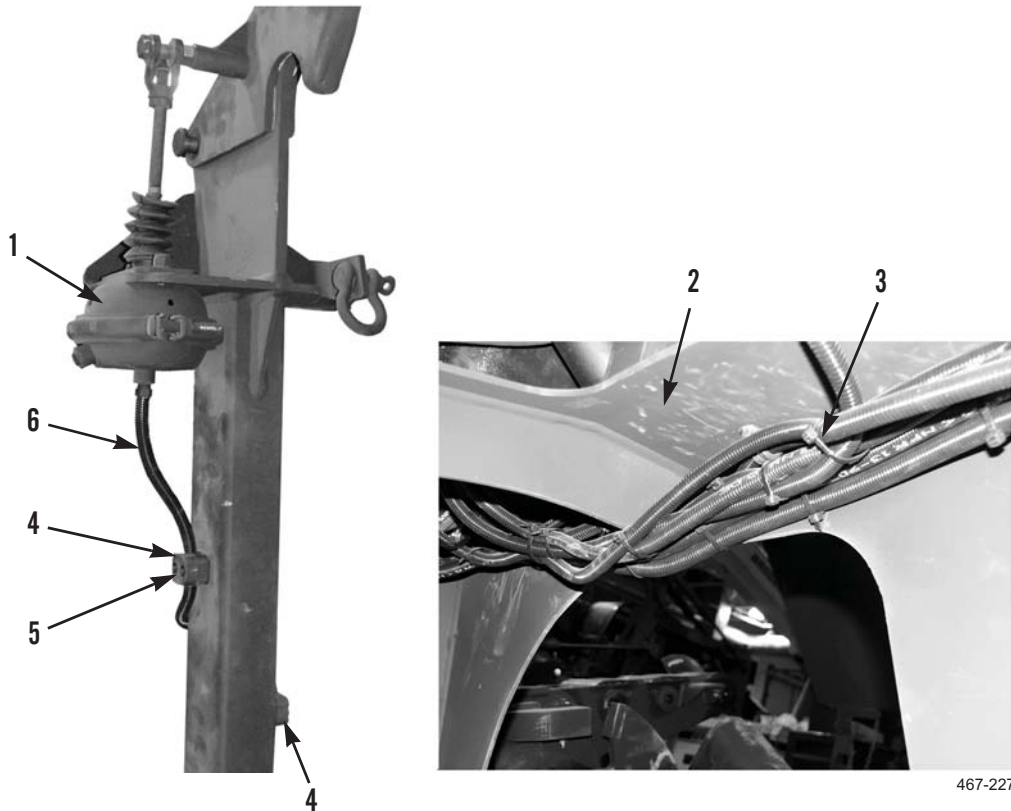


Figure 6. Latch Actuator Hose Removal.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**NOTE**

Route and install pneumatic lines as noted and tagged during removal.

Latch Actuator Hose Installation

1. Route latch actuator hose (Figure 7, Item 6) from under stowage assembly (Figure 7, Item 2) toward latch actuator (Figure 7, Item 1).
2. Install new tiedown straps (Figure 7, Item 3) as required.
3. Install latch actuator hose (Figure 7, Item 6) in three hose clamps (Figure 7, Item 4) and tighten six screws (Figure 7, Item 5).
4. Install latch actuator hose (Figure 7, Item 6) on latch actuator (Figure 7, Item 1).

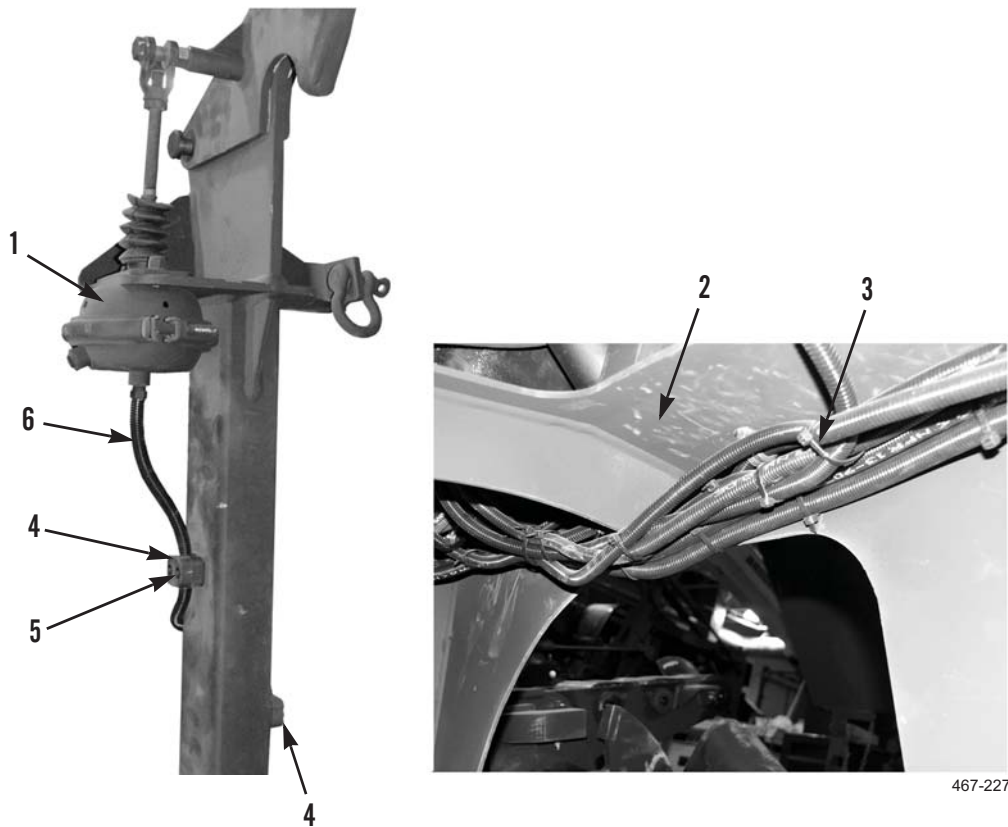


Figure 7. Latch Actuator Hose Installation.

INSTALLATION – CONTINUED

5. Install latch actuator hose (Figure 8, Item 4) on solenoid valve (Figure 8, Item 3).
6. Install solenoid cover (Figure 8, Item 2) on stowage assembly (Figure 8, Item 5) and tighten three locking screws (Figure 8, Item 1).

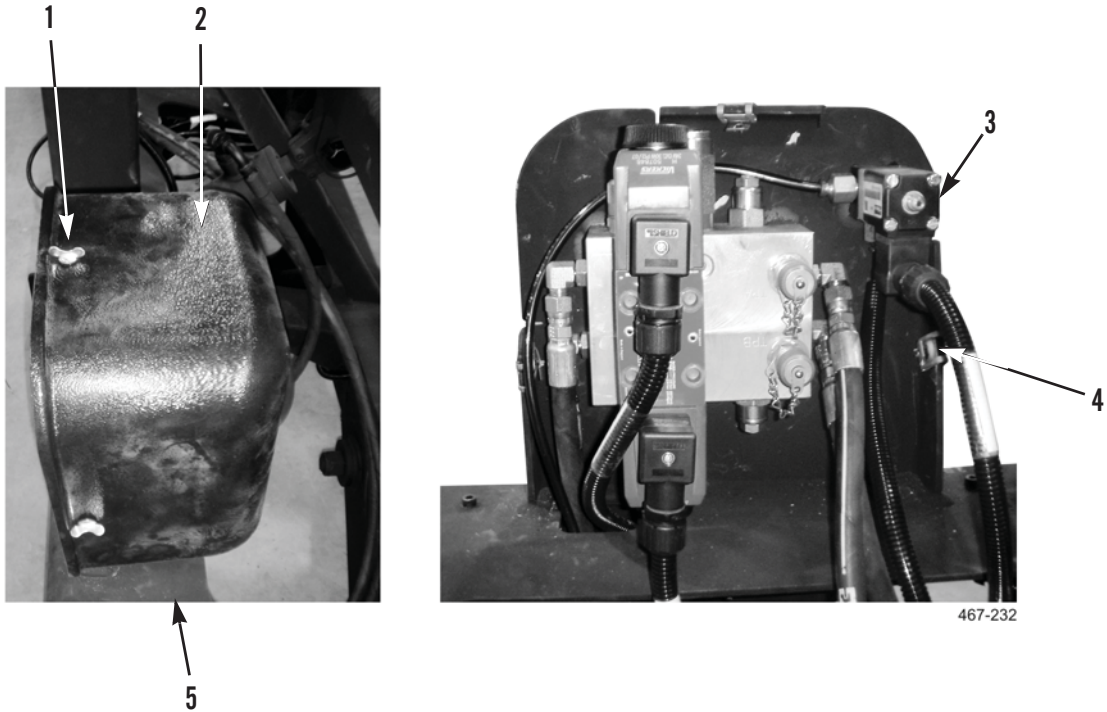


Figure 8. Latch Actuator Hose Installation on Solenoid.

INSTALLATION – CONTINUED**Supply Hose Installation****NOTE**

Perform step 1 for HEMTT M1120, step 2 for HEMTT M1120A4, and step 3 for PLS.

1. Connect pneumatic hose (Figure 9, Item 2) to press-lock fitting (Figure 9, Item 1).

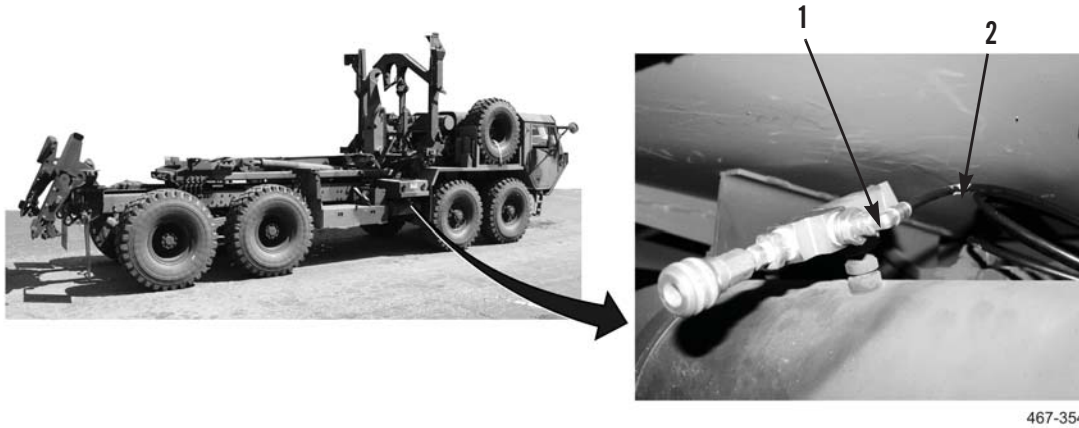


Figure 9. HEMTT M1120 Air Tank Hose Installation.

2. Connect pneumatic hose (Figure 10, Item 1) to press-lock fitting (Figure 10, Item 2).

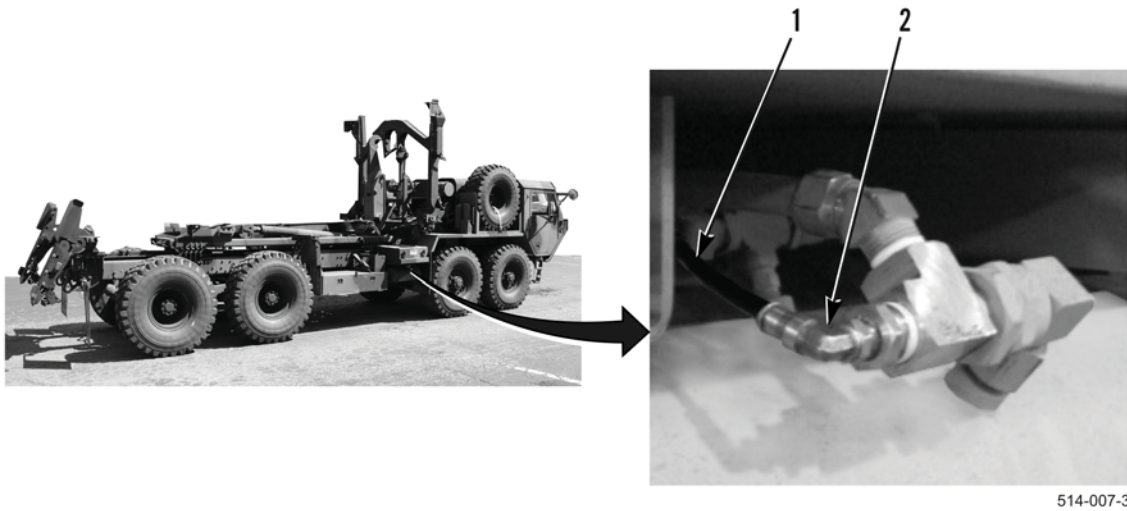


Figure 10. HEMTT M1120A4 Air Tank Hose Installation.

INSTALLATION – CONTINUED

3. Connect pneumatic hose (Figure 11, Item 1) to press-lock fitting (Figure 11, Item 2).

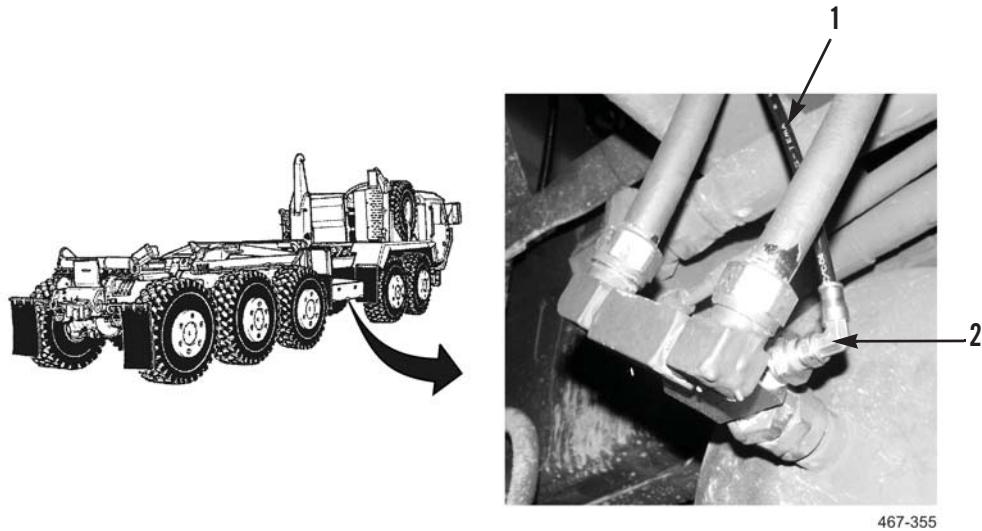


Figure 11. PLS Air Tank Hose Installation

INSTALLATION – CONTINUED**Solenoid Supply Hose Installation**

1. Install pneumatic supply hose (Figure 12, Item 3) on solenoid valve (Figure 12, Item 4).
2. Install solenoid cover (Figure 12, Item 2) on stowage assembly (Figure 12, Item 5) and tighten three locking screws (Figure 12, Item 1).

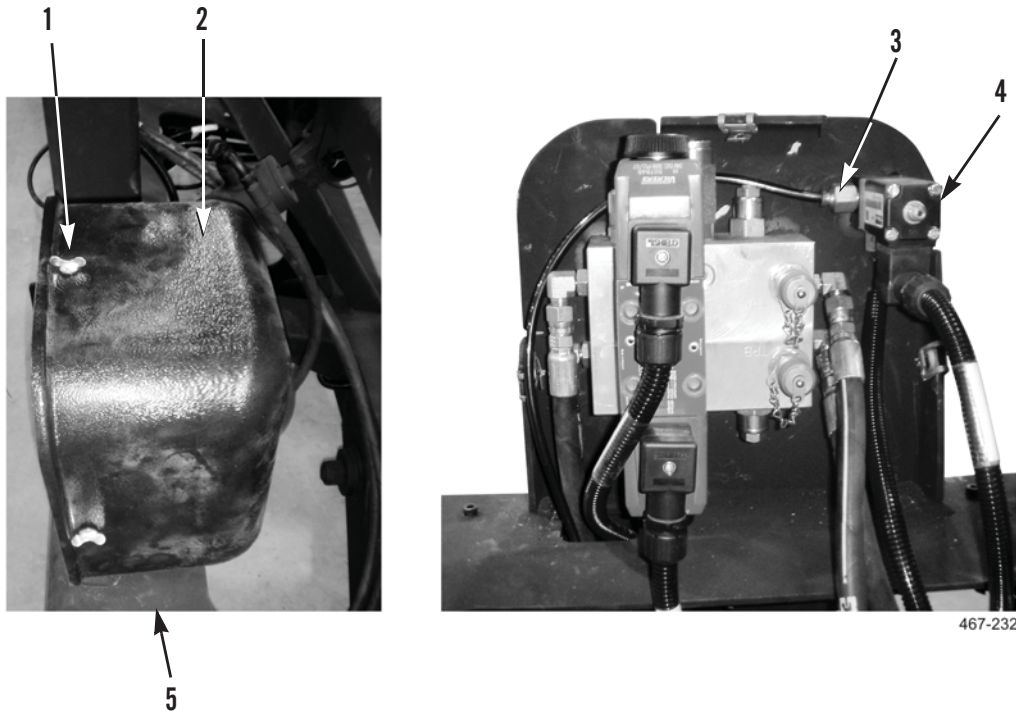


Figure 12. Solenoid Valve Supply Hose Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE CONTROL UNIT REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Strap, Tiedown, Electrical Components
(WP 0060, Item 11)
Tag, Marker (WP 0060, Item 12)
Locknut (WP 0059, Item 12) (2)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Battery disconnect switch set to OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

REMOVAL**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

NOTE

- Tag wires and connectors to aid in installation.
 - Note routing of wires and harnesses to aid in installation.
 - Remove and discard tiedown straps as required.
1. Loosen four bolts (Figure 1, Item 1) and remove cover (Figure 1, Item 2) from stowage control unit (Figure 1, Item 3).
 2. Remove yellow, orange, red, and brown wires (Figure 1, Item 11) from connector P1 (Figure 1, Item 12) in stowage control unit (Figure 1, Item 3).
 3. Remove CAN bus wiring harness (Figure 1, Item 8) from stowage control unit (Figure 1, Item 3).
 4. Remove blue, brown, and black wires (Figure 1, Item 4) from connector P9 (Figure 1, Item 5) in stowage control unit (Figure 1, Item 3).
 5. Remove LH twistlock wiring harness (Figure 1, Item 10) from stowage control unit (Figure 1, Item 3).
 6. Remove blue, brown, and black wires (Figure 1, Item 7) from connector P10 (Figure 1, Item 6) in stowage control unit (Figure 1, Item 3).
 7. Remove RH twistlock wiring harness (Figure 1, Item 9) from stowage control unit (Figure 1, Item 3).

REMOVAL – CONTINUED

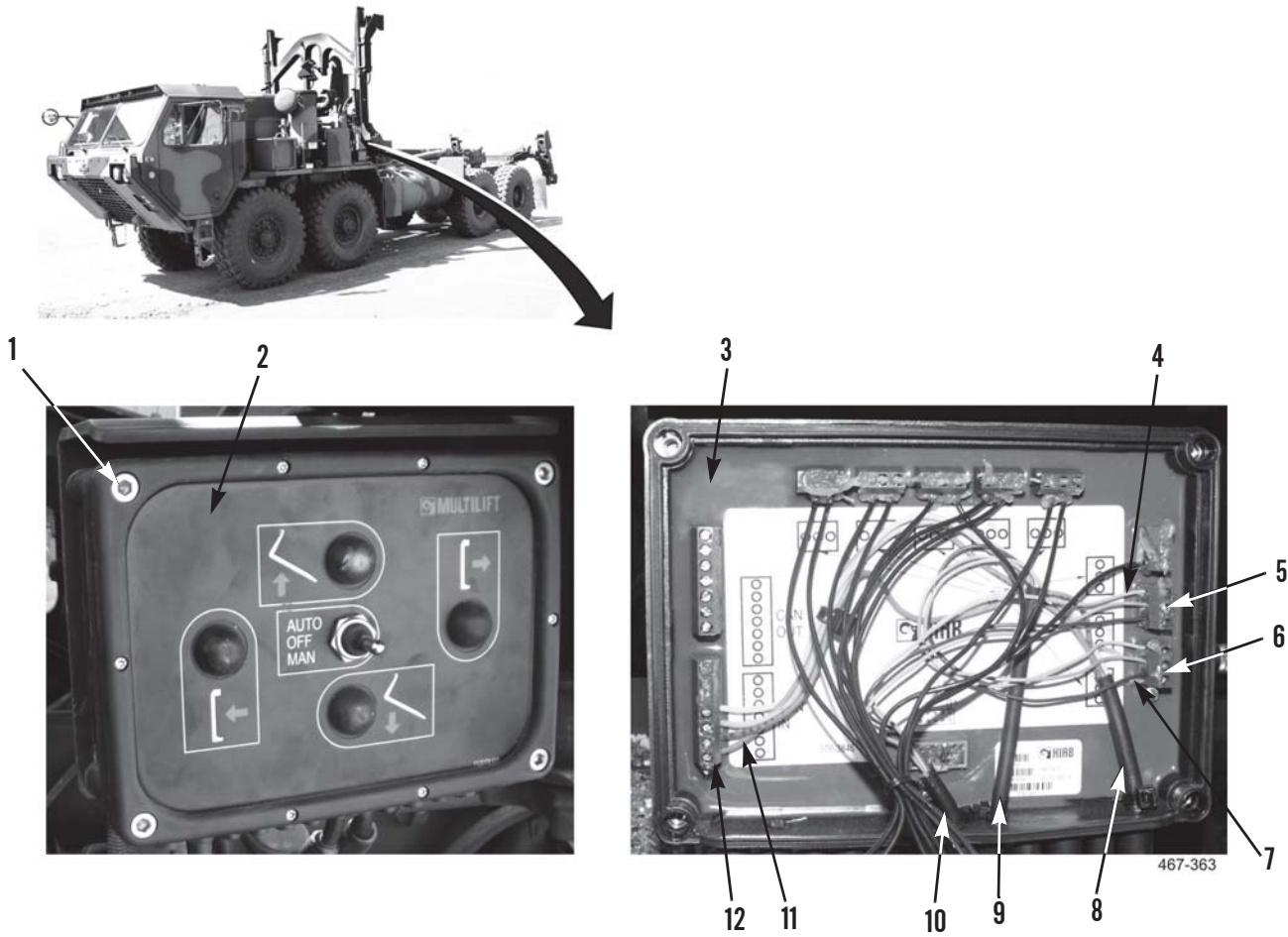


Figure 1. Stowage Control Unit Harness Removal.

REMOVAL – CONTINUED**HEMTT Stowage Control Unit and Bracket Removal**

1. Remove two locknuts (Figure 2, Item 4), washers (Figure 2, Item 3), bolts (Figure 2, Item 1), washers (Figure 2, Item 2), and stowage control unit bracket (Figure 2, Item 7) from hydraulic control bracket (Figure 2, Item 9). Discard locknuts.
2. Remove four bolts (Figure 2, Item 5), washers (Figure 2, Item 6), and stowage control unit (Figure 2, Item 8) from stowage control unit bracket (Figure 2, Item 7).

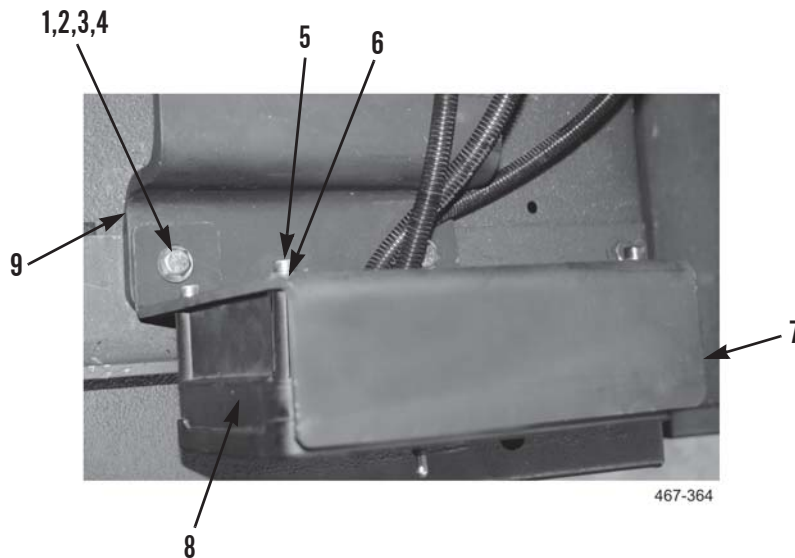


Figure 2. HEMTT Stowage Control Unit Removal.

REMOVAL – CONTINUED**PLS Stowage Control Unit and Bracket Removal****NOTE**

- Perform steps 1 and 2 for PLS M1075 Trucks.
 - Perform steps 3 thru 5 for PLS M1075A1 Trucks.
1. Remove two locknuts (Figure 3, Item 8), washers (Figure 3, Item 7), bolts (Figure 3, Item 5), washers (Figure 3, Item 6), and stowage control unit bracket (Figure 3, Item 1) from platform (Figure 3, Item 9). Discard locknuts.
 2. Remove four bolts (Figure 3, Item 4), washers (Figure 3, Item 3), and stowage control unit (Figure 3, Item 2) from stowage control unit bracket (Figure 3, Item 1).

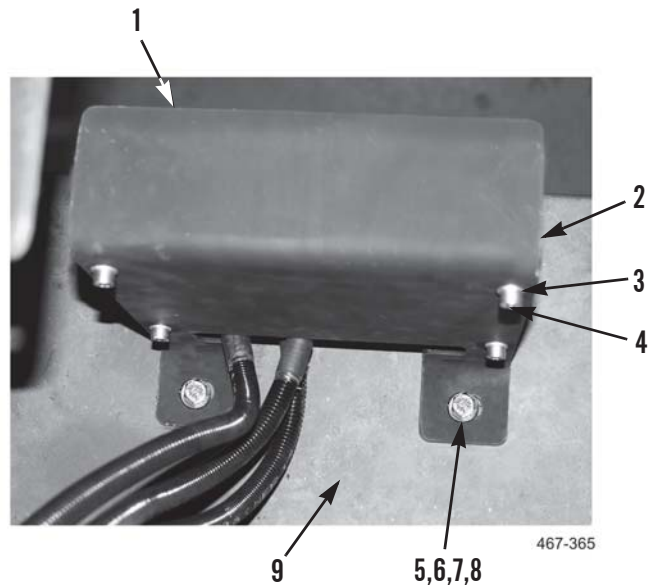


Figure 3. PLS M1075 Stowage Control Unit Removal.

REMOVAL – CONTINUED**PLS Stowage Control Unit and Bracket Removal - Continued**

3. Remove four bolts (Figure 4, Item 13) and stowage control unit (Figure 4, Item 1) from backplate (Figure 4, Item 2).
4. Remove two locknuts (Figure 4, Item 6), washers (Figure 4, Item 5), bolts (Figure 4, Item 3), washers (Figure 4, Item 4), and backplate (Figure 4, Item 2) from bracket (Figure 4, Item 11). Discard locknuts.
5. Remove four locknuts (Figure 4, Item 7), washers (Figure 4, Item 8), bolts (Figure 4, Item 9), washers (Figure 4, Item 10), and bracket (Figure 4, Item 11) from fender (Figure 4, Item 12). Discard locknuts.

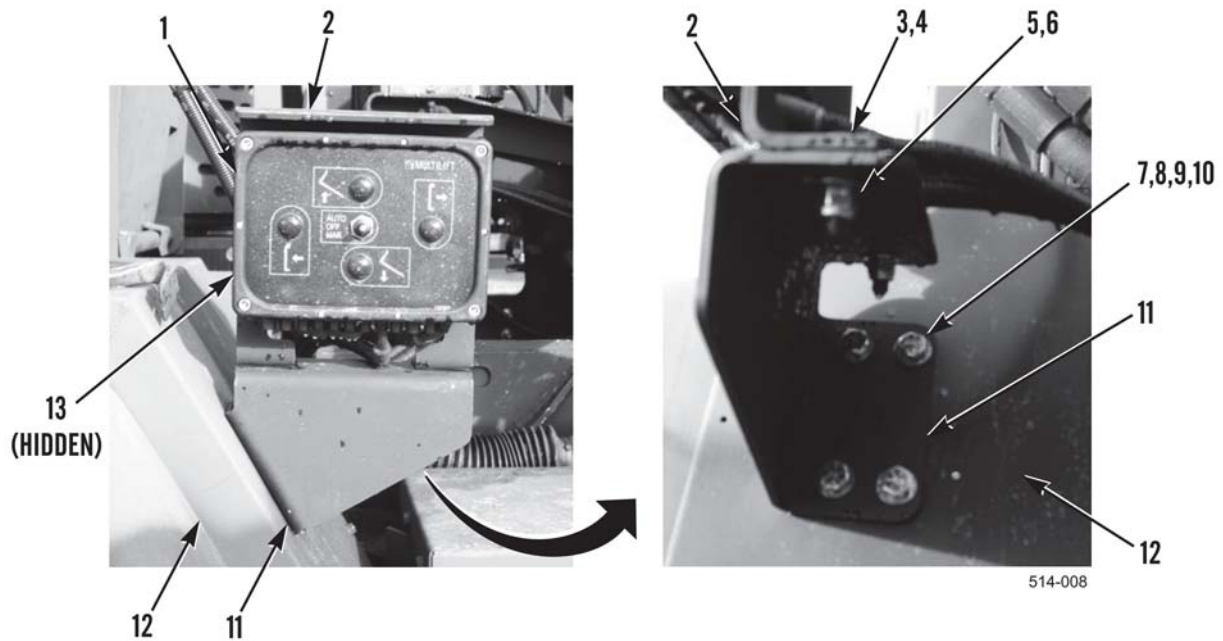


Figure 4. PLS M1075A1 Stowage Control Unit Removal.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION

WARNING



During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

NOTE

- Perform steps 1 and 2 for PLS M1075 trucks.
- Perform steps 3 thru 5 for PLS M1075A1 trucks.

PLS Stowage Control Unit and Bracket Installation

1. Install stowage control unit (Figure 5, Item 2), four washers (Figure 5, Item 3), and bolts (Figure 5, Item 4) on stowage control unit bracket (Figure 5, Item 1).
2. Install stowage control unit bracket (Figure 5, Item 1), two washers (Figure 5, Item 6), bolts (Figure 5, Item 5), washers (Figure 5, Item 7), and new locknuts (Figure 5, Item 8) on platform (Figure 5, Item 9).

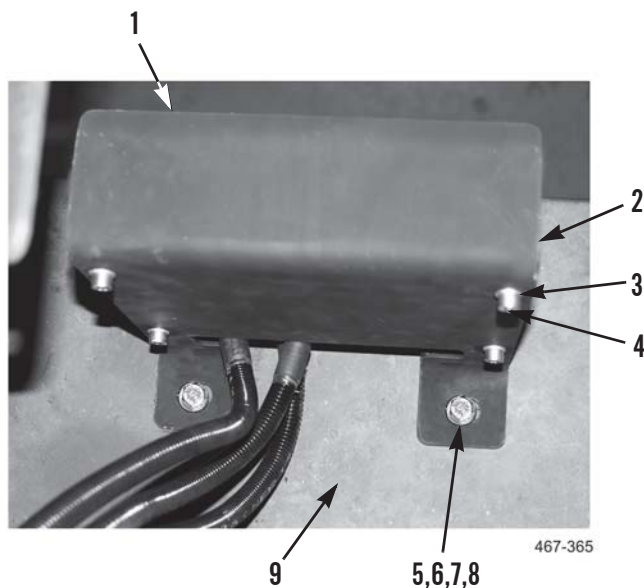


Figure 5. PLS M1075 Stowage Control Unit Installation.

3. Install bracket (Figure 4, Item 11), four washers (Figure 4, Item 10), bolts (Figure 4, Item 9), washers (Figure 4, Item 8), and new locknuts (Figure 4, Item 7) on fender (Figure 4, Item 12).
4. Install backplate (Figure 4, Item 2), two washers (Figure 4, Item 4), bolts (Figure 4, Item 3), washers (Figure 4, Item 5), and new locknuts (Figure 4, Item 6) on bracket (Figure 4, Item 11).
5. Install stowage control unit (Figure 4, Item 1) and four bolts (Figure 4, Item 13) on backplate (Figure 4, Item 2).

INSTALLATION – CONTINUED**HEMTT Stowage Control Unit and Bracket Installation**

1. Install stowage control unit (Figure 6, Item 8), four washers (Figure 6, Item 6), and bolts (Figure 6, Item 5) on stowage control unit bracket (Figure 6, Item 7).
2. Install stowage control unit bracket (Figure 6, Item 7), two washers (Figure 6, Item 2), bolts (Figure 6, Item 1), washers (Figure 6, Item 3), and new locknuts (Figure 6, Item 4) on hydraulic control bracket (Figure 6, Item 9).

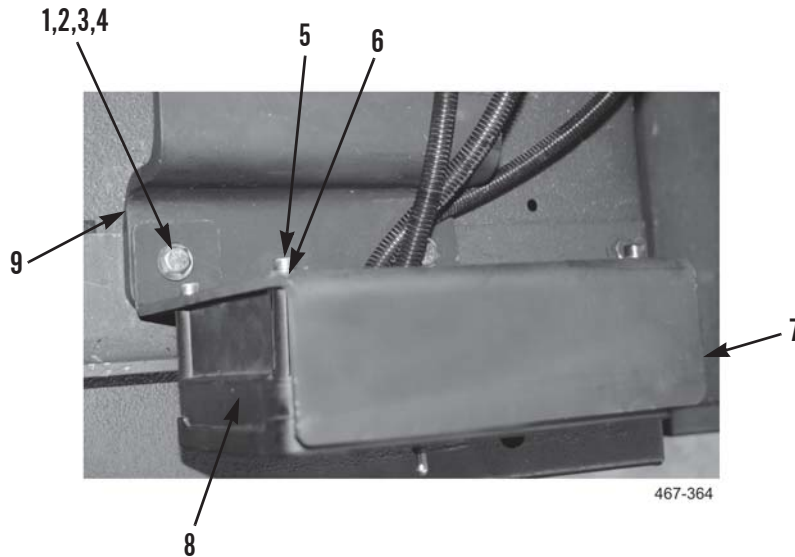


Figure 6. HEMTT Stowage Control Unit Installation.

INSTALLATION – CONTINUED

NOTE

- Route and install wires and harnesses as tagged during removal.
 - Install new tiedown straps as required.
1. Route RH twistlock wiring harness (Figure 7, Item 9) into stowage control unit (Figure 7, Item 3) and install blue, brown, and black wires (Figure 7, Item 7) on connector P10 (Figure 7, Item 6).
 2. Route LH twistlock wiring harness (Figure 7, Item 10) into stowage control unit (Figure 7, Item 3) and install blue, brown, and black wires (Figure 7, Item 4) on connector P9 (Figure 7, Item 5).
 3. Route CAN bus wiring harness (Figure 7, Item 8) into stowage control unit (Figure 7, Item 3) and install yellow, orange, red and brown wires (Figure 7, Item 11) on connector P1 (Figure 7, Item 12).
 4. Install cover (Figure 7, Item 2) on stowage control unit (Figure 7, Item 3) and tighten four bolts (Figure 7, Item 1).

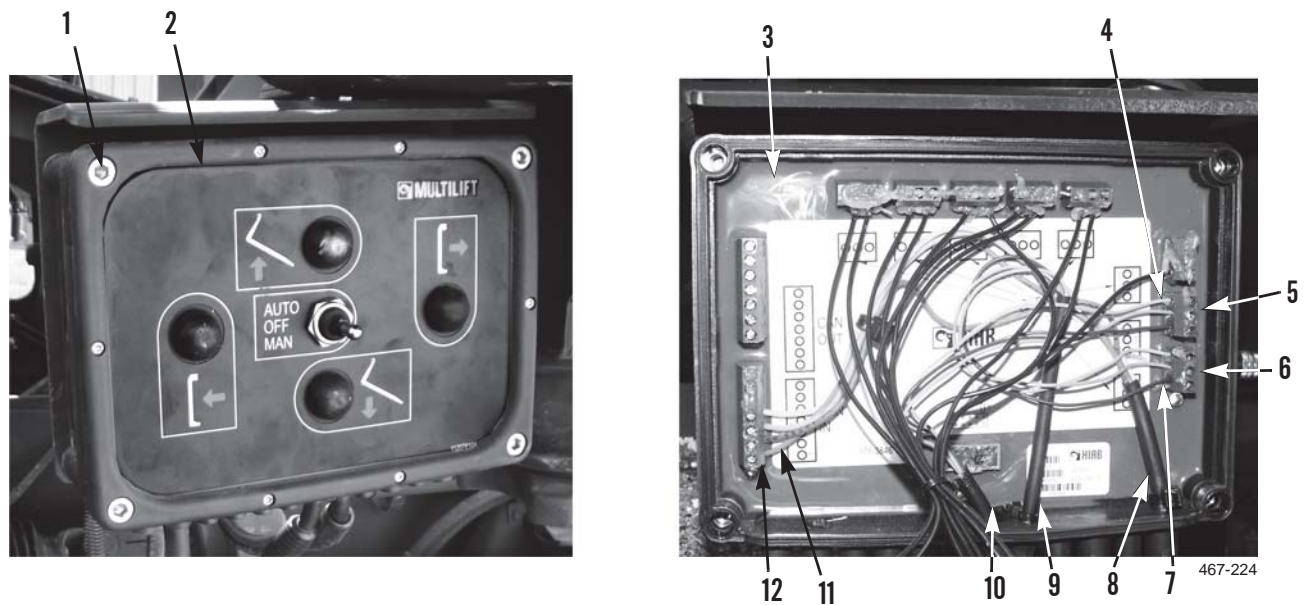


Figure 7. Stowage Control Unit Harness Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE ANGLE SENSOR CALIBRATION

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)

Materials/Parts

Cap Set, Protective, Dust and Moisture (WP 0060, Item 3)
Rag, Wiping (WP 0060, Item 10)
Tag, Marker (WP 0060, Item 12)
Locknut (WP 0060, Item 12) (3)

Personnel Required

Two

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P HEMTT: TM 9-2320-326-14&P)

Lift frame placed on level ground (WP 0007)
Stowage control panel toggle switch set to OFF position (WP 0004)

WARNING

- Lift frame must be placed on solid, level ground with adequate support from stands.
- During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and that no surfaces are slippery. Wear suitable gloves and hard hat.
- Failure to follow these warnings may result in injury or death to personnel.

INTRODUCTION

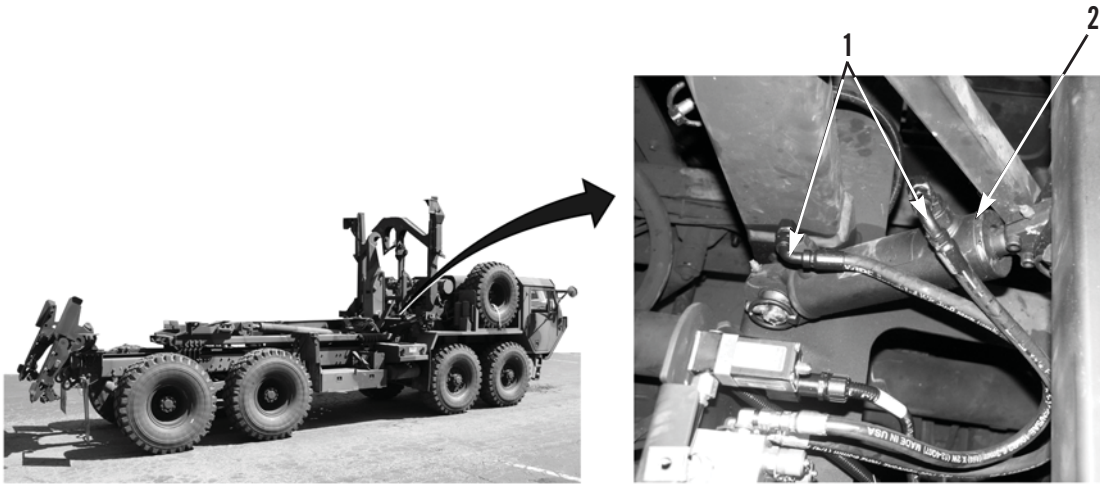
This procedure calibrates the operating range of the stowage angle sensor.

CALIBRATION**WARNING**

- Use extreme caution when disconnecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves, and protective clothing while removing hydraulic hoses.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. DO NOT perform any hydraulic system service without first shutting down the engine to relieve system pressure.
- Failure to follow these warnings may result in death or serious injury to personnel.

NOTE

- Tag hoses on removal to aid in installation.
 - Cap hoses and fittings to prevent contamination.
1. Disconnect two hydraulic hoses (Figure 1, Item 1) from stowage cylinder (Figure 1, Item 2).



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Figure 1. Disconnect Hydraulic Hoses From Cylinder.

CALIBRATION – CONTINUED

- Remove three bolts (Figure 2, Item 5), washers (Figure 2, Item 6), washers (Figure 2, Item 3), locknuts (Figure 2, Item 4), and sensor cover (Figure 2, Item 1) from stowage assembly (Figure 2, Item 2). Discard locknuts.

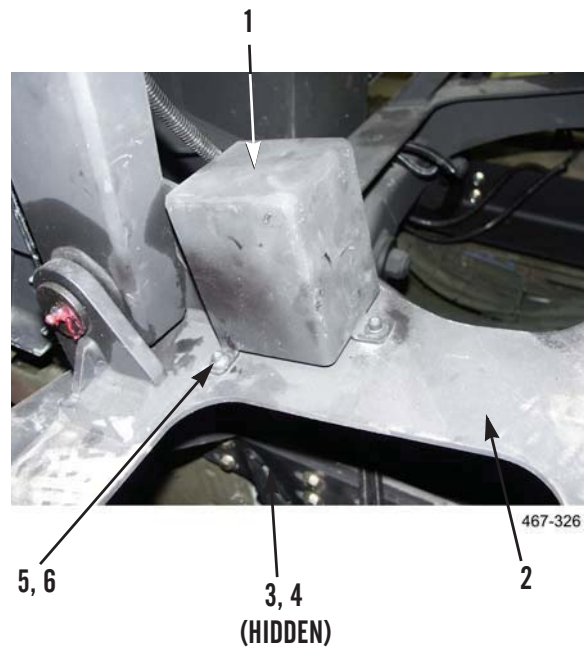


Figure 2. Sensor Cover Installation.

- Loosen four screws (Figure 3, Item 1) and remove cover of Space 4000 ST box (Figure 3, Item 2).

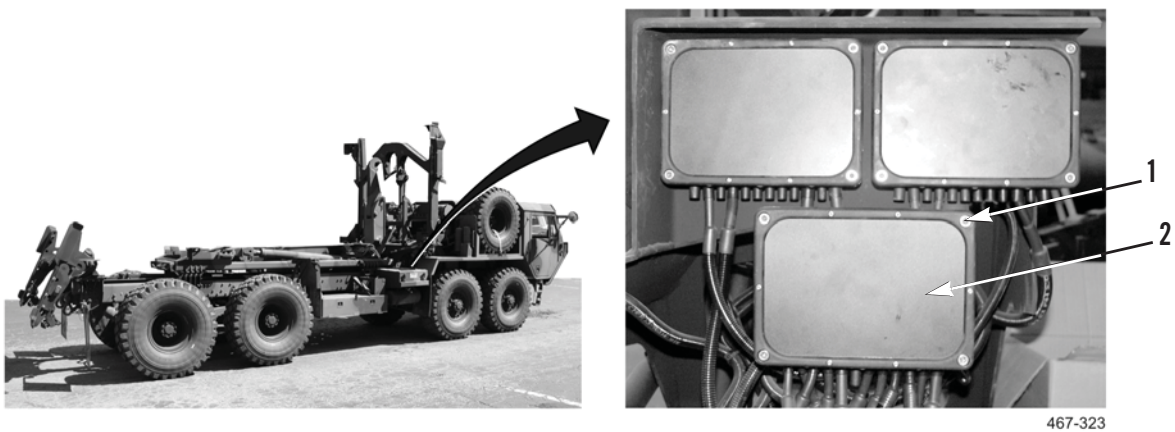
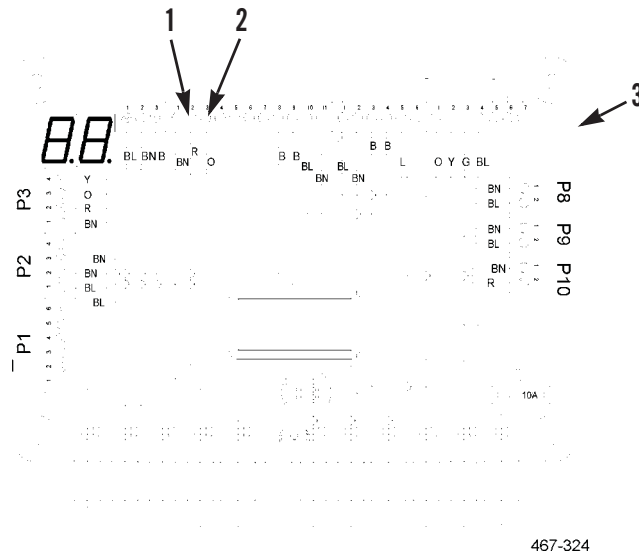


Figure 3. Space 4000 ST Box Cover.

CALIBRATION – CONTINUED

4. Disconnect orange wire from pin location 3 (Figure 4, Item 2) on P5 in Space 4000 ST box (Figure 4, Item 3).
5. Touch negative lead from multimeter to pin location 2 (Figure 4, Item 1) on P5 in Space 4000 ST box (Figure 4, Item 3).
6. Touch positive lead from multimeter to orange wire to measure current.

**Figure 4. Space 4000 ST Box.**

CALIBRATION – CONTINUED

7. Set battery disconnect switch and ignition switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

NOTE

Value should be approximately 15 mA when stowage guide is vertical and approximately 4 mA when guide is tilted fully toward rear.

8. Move stowage guide (Figure 5, Item 1) and watch values on multimeter. Values should range between 4 mA and 15 mA (approximately) as stowage guide is moved.
9. If values are out of range, adjust placement of sensor arm (Figure 5, Item 2) on sensor linkage (Figure 5, Item 4) by installing mounting hardware in different mounting locations (Figure 5, Item 3). Measure current at new location to ensure value is between 4 mA and 15 mA.

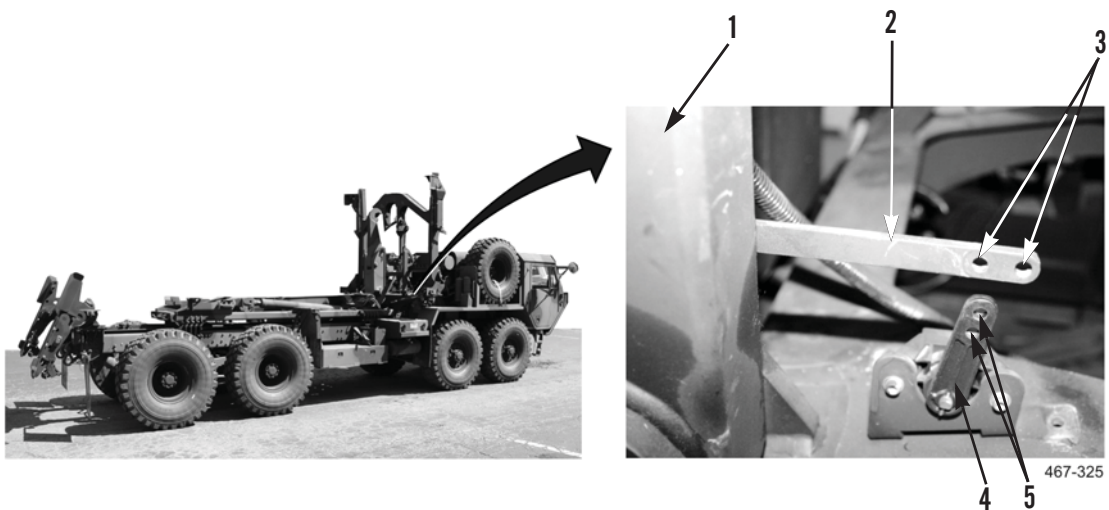


Figure 5. Sensor Arm Placement on Sensor Linkage.

CALIBRATION – CONTINUED

10. When calibration is complete, install sensor cover (Figure 6, Item 1), three bolts (Figure 6, Item 5), washers (Figure 6, Item 6), washers (Figure 6, Item 3), and new locknuts (Figure 6, Item 4) on stowage assembly (Figure 6, Item 2).

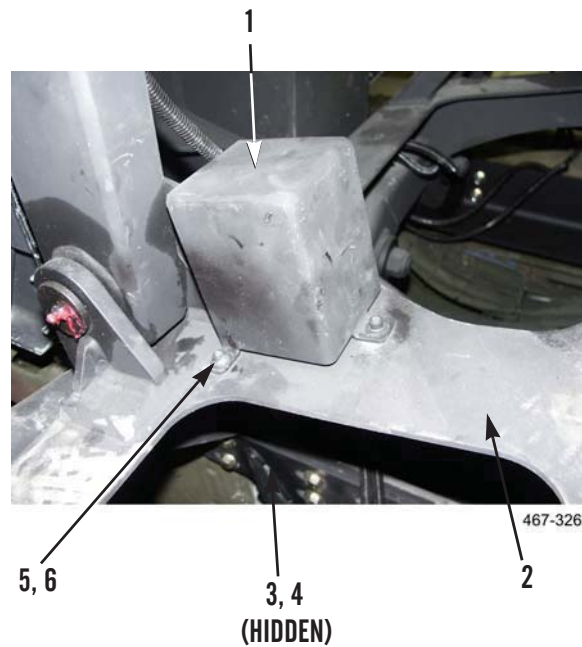


Figure 6. Sensor Cover Installation.

NOTE

- Install hoses as tagged during removal.
- Remove caps prior to installation.

11. Connect two hydraulic hoses (Figure 7, Item 1) to stowage cylinder (Figure 7, Item 2).

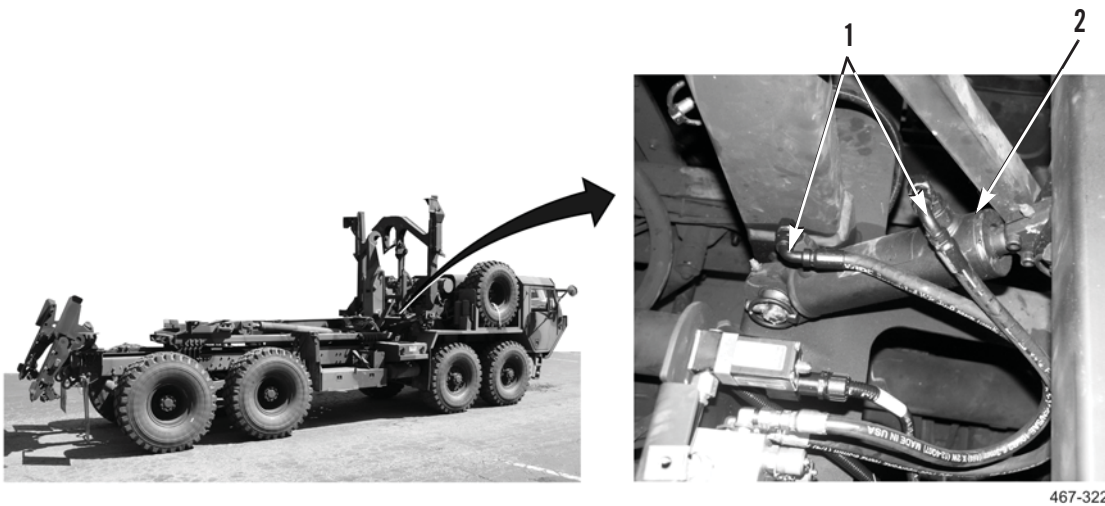


Figure 7. Connect Hydraulic Hoses to Cylinder.

END OF TASK

FOLLOW-ON TASKS

Stow lift frame (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LIFT FRAME STAND REPLACEMENT
Removal, Cleaning and Inspection, Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0057,
Item 2)

Materials/Parts

Rag, Wiping (WP 0060, Item 10)
Locknut (WP 0059, Item 12) (2)

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P, HEMTT: TM 9-2320-326-
14&P)

REMOVAL**NOTE**

Perform steps 1 through 3 for both right and left sides.

1. Remove locknut (Figure 1, Item 3), bolt (Figure 1, Item 10), washer (Figure 1, Item 11), and chain (Figure 1, Item 8) from stand (Figure 1, Item 1). Discard locknut.

WARNING

Component will fall when attaching hardware is removed. Support component while removing attaching hardware. Failure to follow this warning may result in injury to personnel.

2. Remove locking pin (Figure 1, Item 9) with attached chain (Figure 1, Item 8) from lift frame (Figure 1, Item 2).
3. Remove locknut (Figure 1, Item 4), washer (Figure 1, Item 5), bolt (Figure 1, Item 7), washer (Figure 1, Item 6), and stand (Figure 1, Item 1) from lift frame (Figure 1, Item 2). Discard locknut.

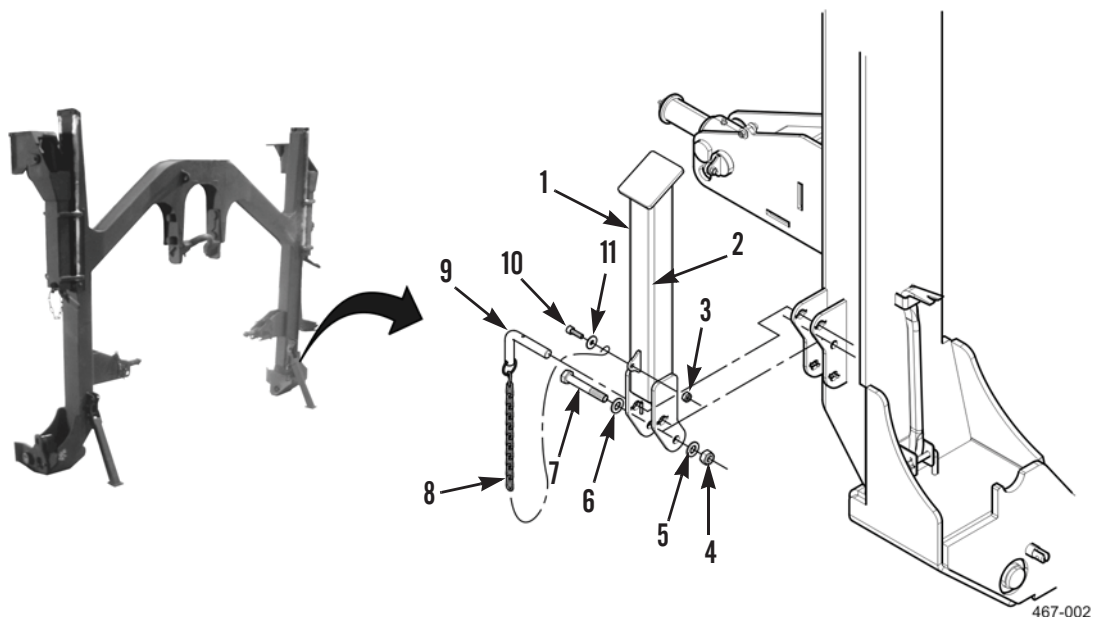


Figure 1. Stand.

END OF TASK**CLEANING AND INSPECTION**

Clean and inspect all parts IAW WP 0020, *General Maintenance Instructions*.

END OF TASK

INSTALLATION**WARNING**

Component will fall when attaching hardware is removed. Support component while installing attaching hardware. Failure to follow this warning may result in injury to personnel.

1. Install stand (Figure 1, Item 1), washer (Figure 1, Item 6), bolt (Figure 1, Item 7), washer (Figure 1, Item 5), and new locknut (Figure 1, Item 4) on lift frame (Figure 1, Item 2). Verify that stand tilts after tightening bolt.
2. Place stand in upright position and install locking pin (Figure 1, Item 9) with attached chain (Figure 1, Item 8) in lift frame (Figure 1, Item 2).
3. Install chain (Figure 1, Item 8), washer (Figure 1, Item 11), bolt (Figure 1, Item 12), and new locknut (Figure 1, Item 3) on stand (Figure 1, Item 1).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
STOWAGE GUIDE POSITION CALIBRATION

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)

Personnel Required

Two

References

WP 0020

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

Lift frame in stowed position (WP 0007)

Stowage control panel toggle switch set to OFF position (WP 0004)

INTRODUCTION

This procedure calibrates the stopping positions of the stowage guide for stowing and unstowing the lift frame during AUTO mode operation. The third (fully extended) position is calibrated first, followed by the second position, then the first position.

CALIBRATION

1. Loosen four screws (Figure 1, Item 1) and remove cover from Space 4000ST box (Figure 1, Item 2). Set aside for reinstallation.

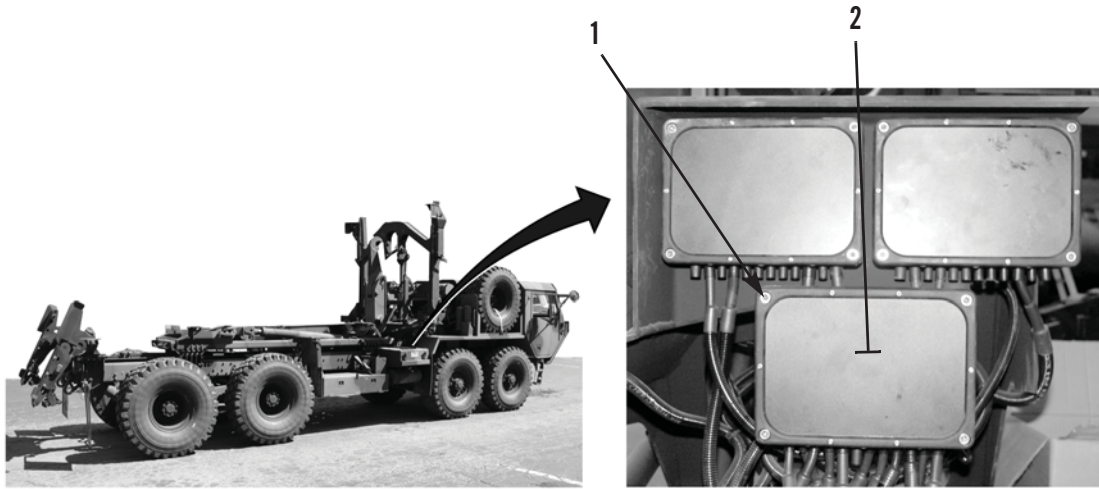


Figure 1. Space 4000ST Box.

2. PLS only: Start engine and set vehicle MODE switch to AUTO position (TM 9-2320-364-14&P).
3. HEMTT only: set PTO switch to ON position and MODE switch to OFF position (TM 9-2320-326-14&P).
4. At stowage control panel (Figure 2, Item 1), set toggle switch (Figure 2, Item 7) to MAN position.
5. Press and hold HOOK UP button (Figure 2, Item 2) until hook raises 4 in. (10 cm). Release HOOK UP button.
6. Press and hold UNSTOW button (Figure 2, Item 3) until bail bar (Figure 2, Item 6) is between hook nose (Figure 2, Item 4) and hook thumb (Figure 2, Item 5). Release UNSTOW button.

CALIBRATION – CONTINUED

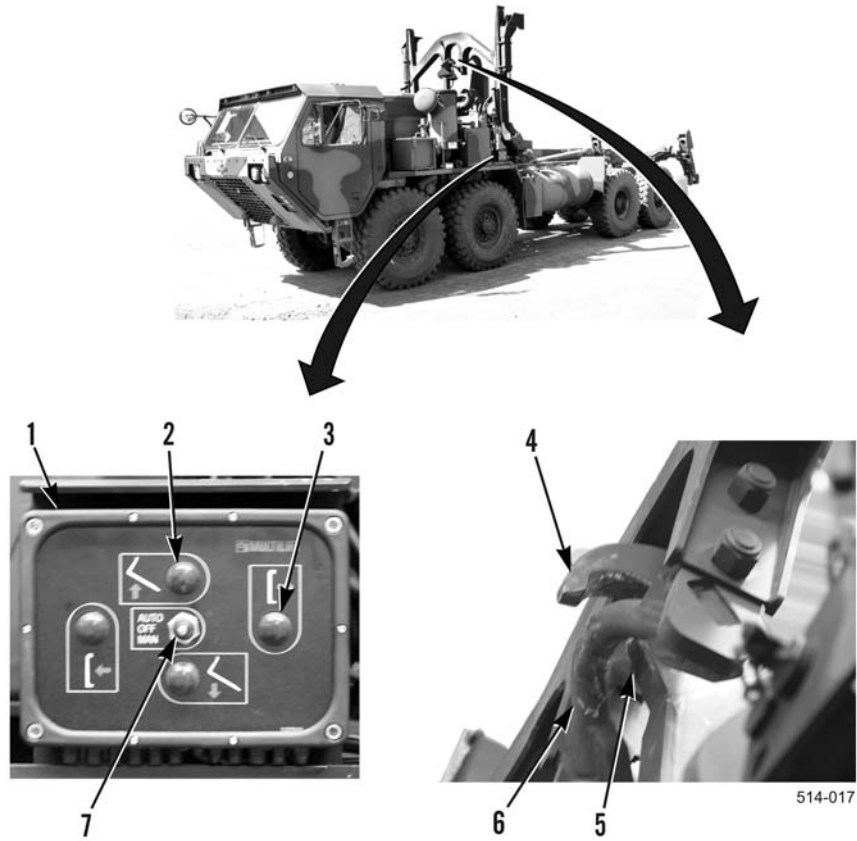


Figure 2. Bail Bar Between Hook Nose and Thumb.

CALIBRATION – CONTINUED

7. Press and hold HOOK DOWN button (Figure 3, Item 3) until inside of hook (Figure 3, Item 1) is just above top of bail bar (Figure 3, Item 2). Release HOOK DOWN button.

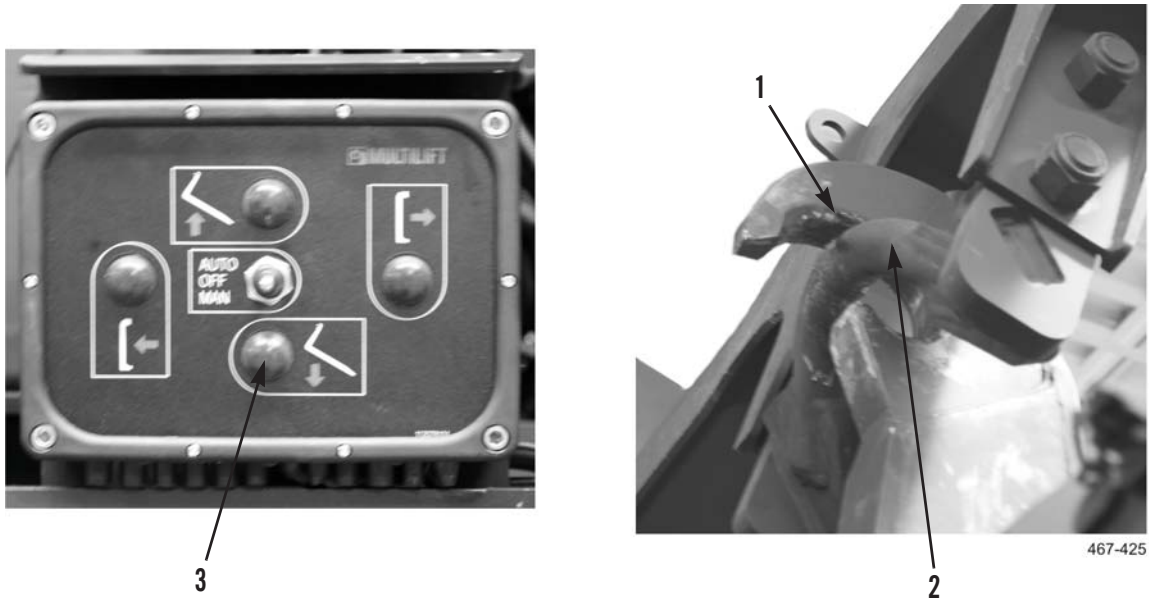


Figure 3. Inside of Hook Above Bail Bar.

8. Press and hold UNSTOW button (Figure 4, Item 1) until bail bar (Figure 4, Item 3) reaches back end of hook (Figure 4, Item 2). Release UNSTOW button. Stowage guide is now in third calibration position.

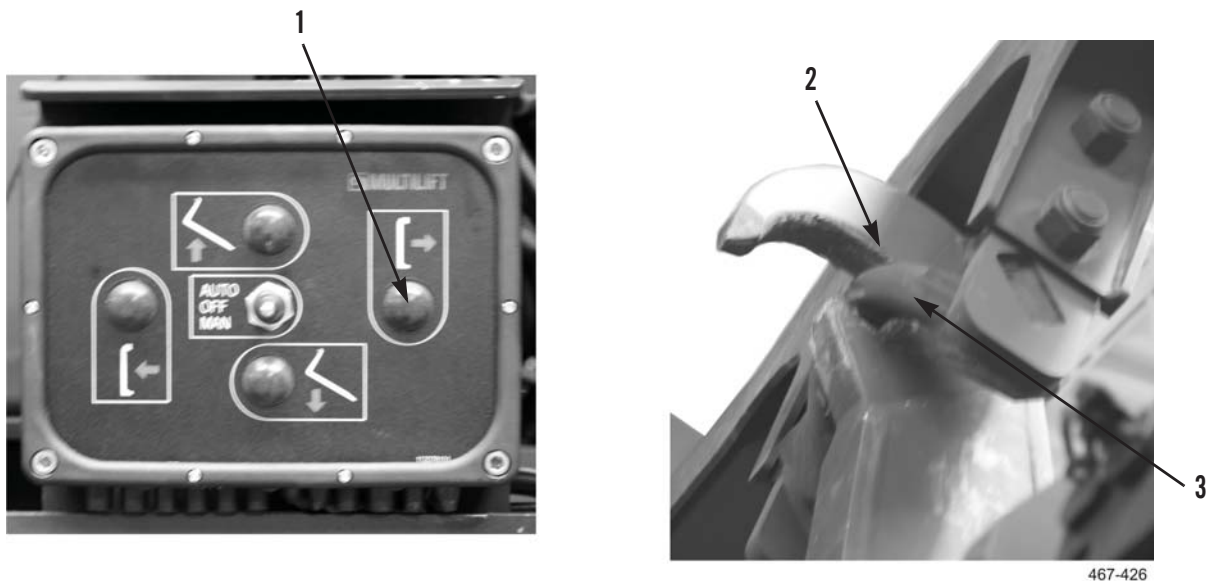


Figure 4. Bail Bar at Back End of Hook.

CALIBRATION – CONTINUED**NOTE**

- Jumper is stored in center cavity of Space 4000 ST box.
 - When in calibration mode, the hook latch will raise up and remain open.
9. At Space 4000 ST box (Figure 5, Item 1), place jumper (Figure 5, Item 2) on position four to enter calibration mode.

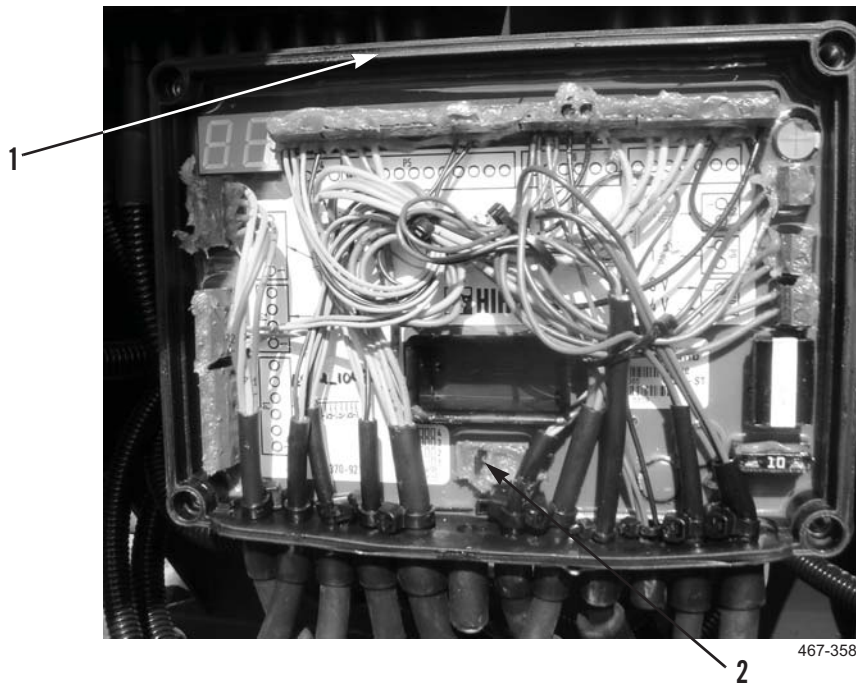


Figure 5. Install Jumper on Position Four.

CALIBRATION – CONTINUED

10. At stowage control panel (Figure 6, Item 1), set toggle switch (Figure 6, Item 2) to OFF position.
11. Simultaneously press and hold UNSTOW (Figure 6, Item 3) and HOOK DOWN (Figure 6, Item 5) buttons for three seconds to store third position (Figure 6, Item 4). LED in Space 4000 ST box will display A3.
12. Set toggle switch (Figure 6, Item 2) to MAN position.

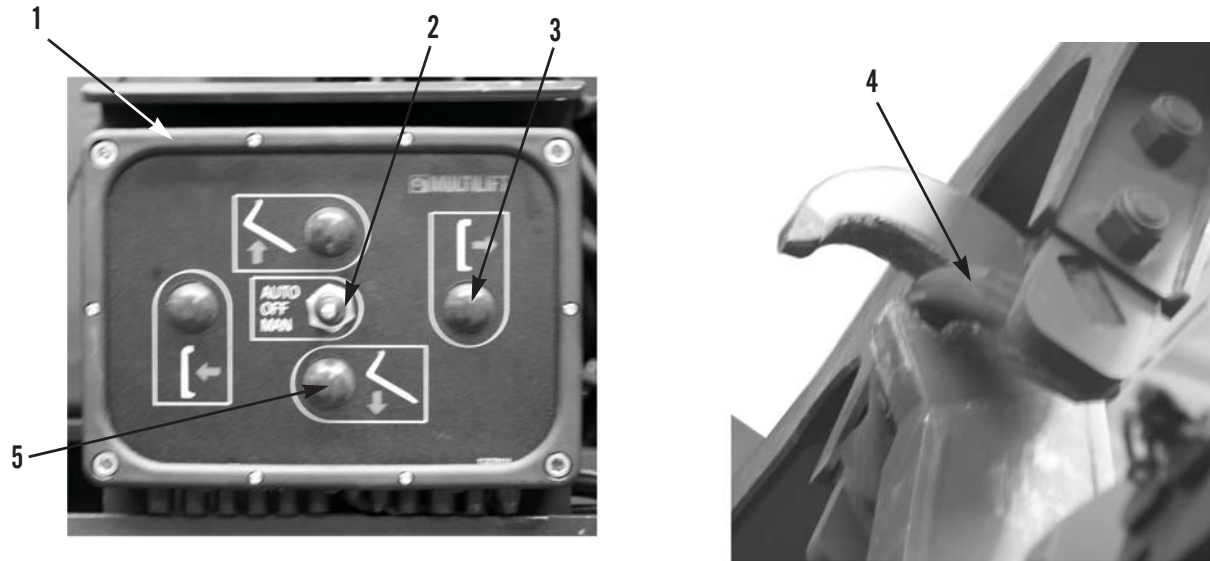


Figure 6. Set Position Three.

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CALIBRATION – CONTINUED

13. Press and hold STOW button (Figure 7, Item 8) until bail bar (Figure 7, Item 5) is between hook nose (Figure 7, Item 4) and hook thumb (Figure 7, Item 6). Release STOW button.
14. Press and hold HOOK UP button (Figure 7, Item 2) until hook nose (Figure 7, Item 4) clears top of bail bar (Figure 7, Item 5). Release HOOK UP button.
15. At stowage control panel (Figure 7, Item 1), set toggle switch (Figure 7, Item 3) to OFF position.
16. Simultaneously press and hold HOOK UP (Figure 7, Item 2) and HOOK DOWN (Figure 7, Item 7) buttons for three seconds to store second position. LED in Space 4000 ST box will display A2.

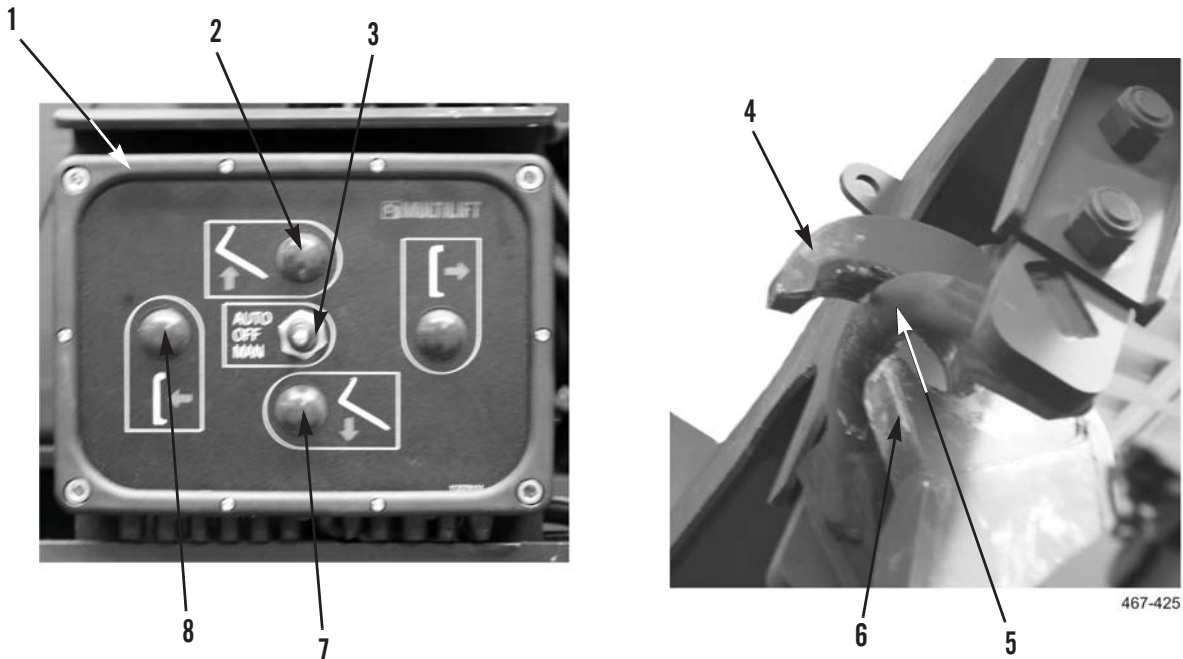
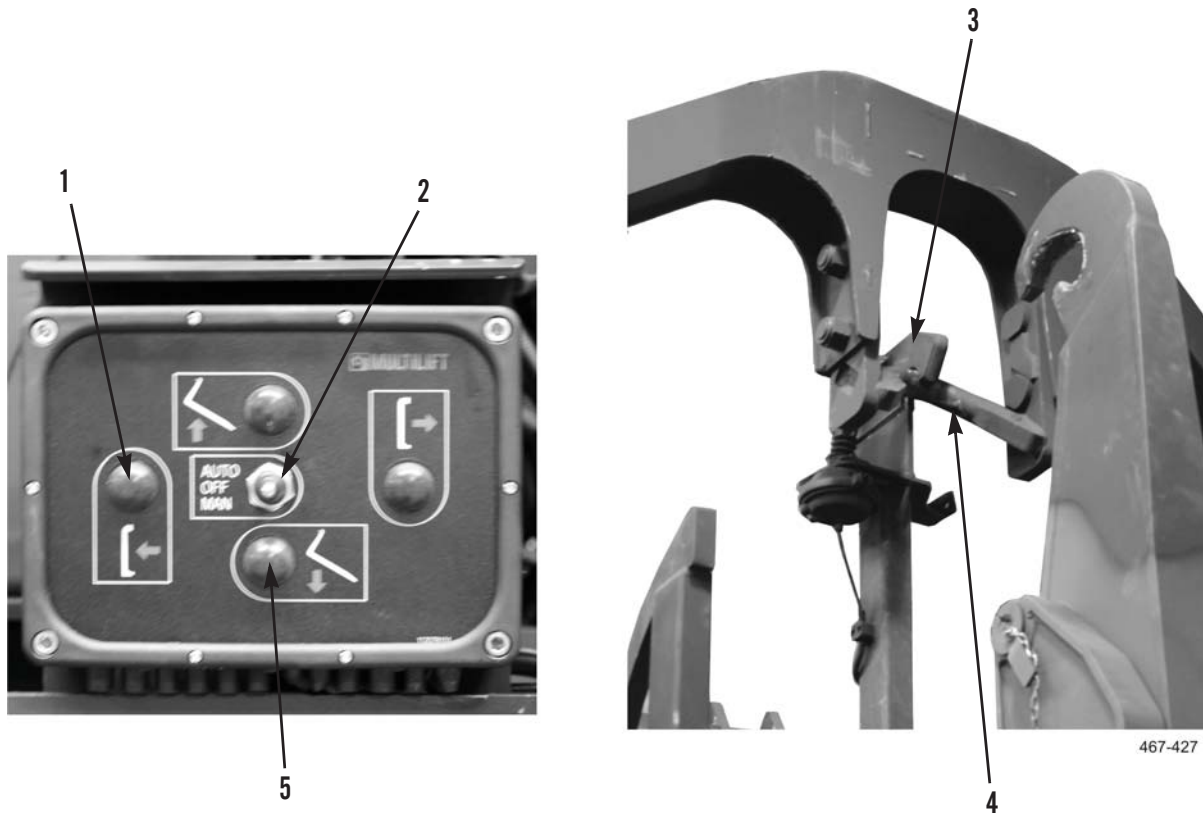


Figure 7. Stoke Second Position Two.

CALIBRATION – CONTINUED

17. Set toggle switch (Figure 8, Item 2) to MAN position.
18. Press and hold STOW button (Figure 8, Item 1) until bail bar (Figure 8, Item 4) reaches hook latch (Figure 8, Item 3). Release STOW button.
19. Set toggle switch (Figure 8, Item 2) to OFF position.
20. Simultaneously press and hold STOW (Figure 8, Item 1) and HOOK DOWN (Figure 8, Item 5) buttons for three seconds to store first position. LED in Space 4000 ST box will display A1.



CALIBRATION – CONTINUED

21. At Space 4000 ST box (Figure 9, Item 1), remove jumper (Figure 9, Item 2) from pin four and store in center cavity of Space 4000 ST box.

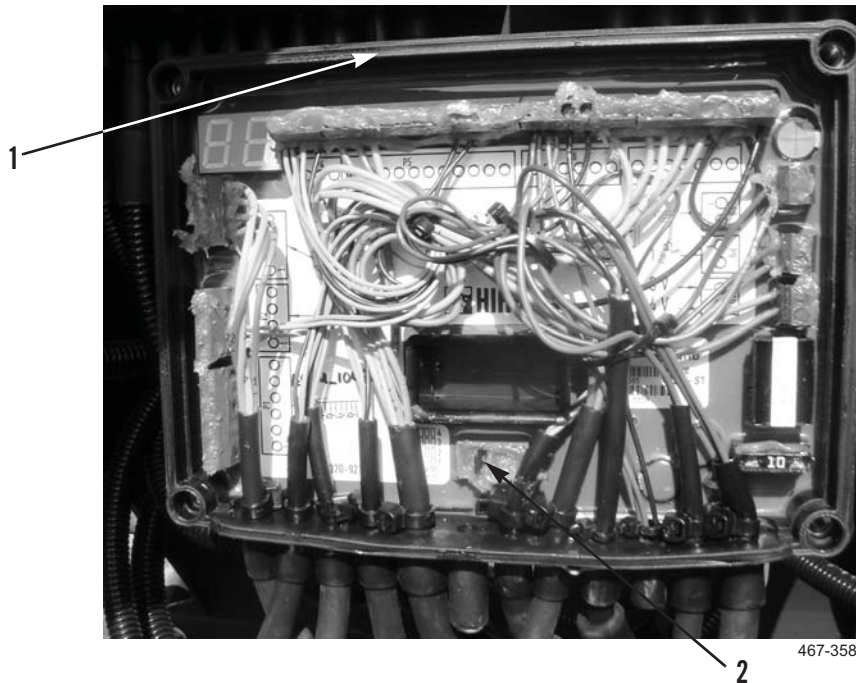


Figure 9. Jumper Removal.

22. Install cover (Figure 10, Item 2) on Space 4000 ST box and tighten four screws (Figure 10, Item 1).

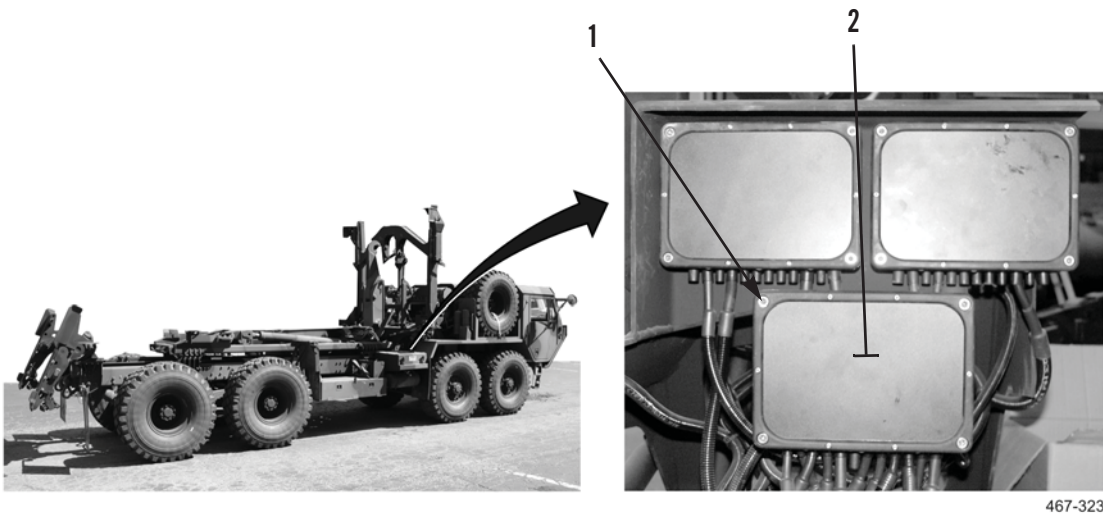


Figure 10. Guide Position Calibration.

23. Set toggle switch to AUTO position and verify operation (WP 0007).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**PREPARATION FOR SHIPMENT****Preparation, Convert to Shipment Configuration, Convert to Standard Configuration**

INTRODUCTION

1. To maintain the vehicle's transportability profile (for rail and air transport), the lift frame and stowage assembly can be lowered to make the overall height of the E-CHU components below the cab height of both the PLS and HEMTT-LHS.
2. This work package contains instructions for preparing the E-CHU for rail/air shipment.

PREPARATION

1. Perform these procedures with vehicle stationary, parking brake applied, neutral gear selected, engine ON, MODE switch set to AUTO, and PTO switch ON (HEMTT only) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

WARNING

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Hook arm weighs 200 lb (91 kg).

PREPARATION – CONTINUED

2. Attach sling and lifting device to hook arm (Figure 1, Item 1).
3. Remove locking pin (Figure 1, Item 4), and hook arm pin (Figure 1, Item 2) from hook arm base (Figure 1, Item 3).
4. Use lifting device to lower hook arm (Figure 1, Item 1) to middle frame.
5. Remove lifting device and sling from hook arm.
6. Install hook arm pin (Figure 1, Item 2), and locking pin (Figure 1, Item 4) in hook arm base (Figure 1, Item 3).

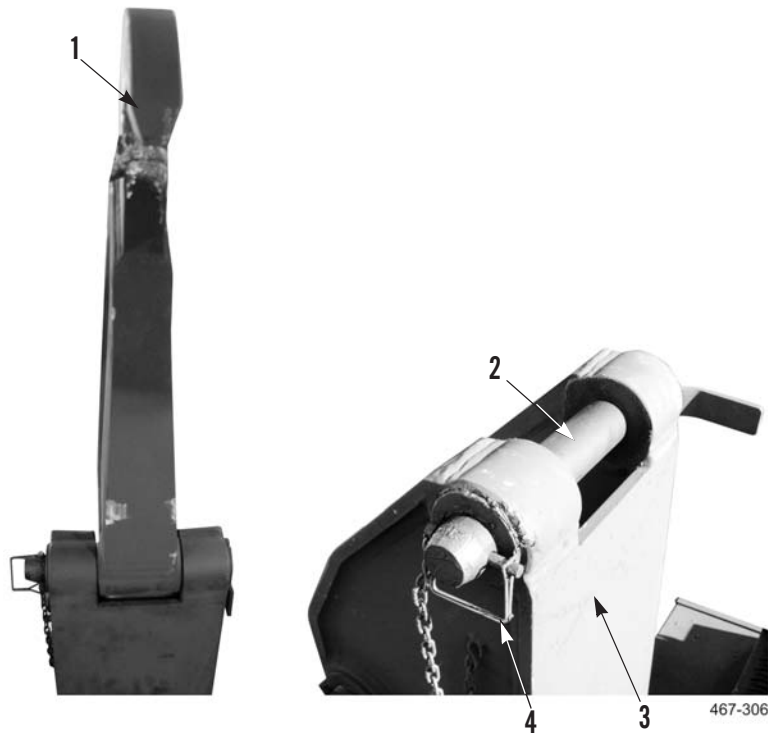


Figure 1. Lower Hook Arm.

PREPARATION – CONTINUED**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury or death to personnel.

7. Remove snap pin (Figure 2, Item 2) from locking bar (Figure 2, Item 3).
8. Remove locking bar (Figure 2, Item 3) and bail bar lock (Figure 2, Item 4) from lift frame (Figure 2, Item 1).

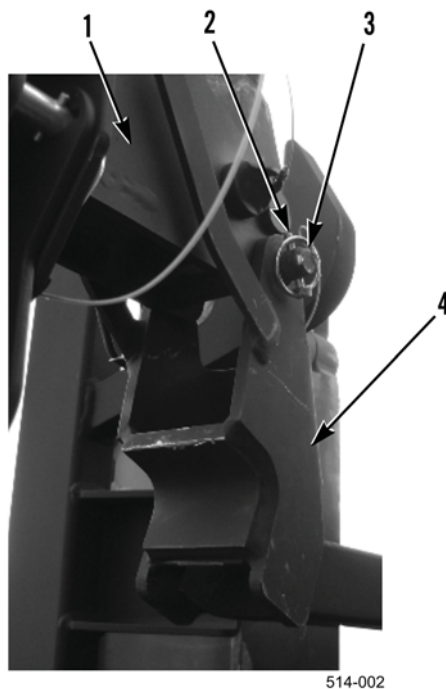


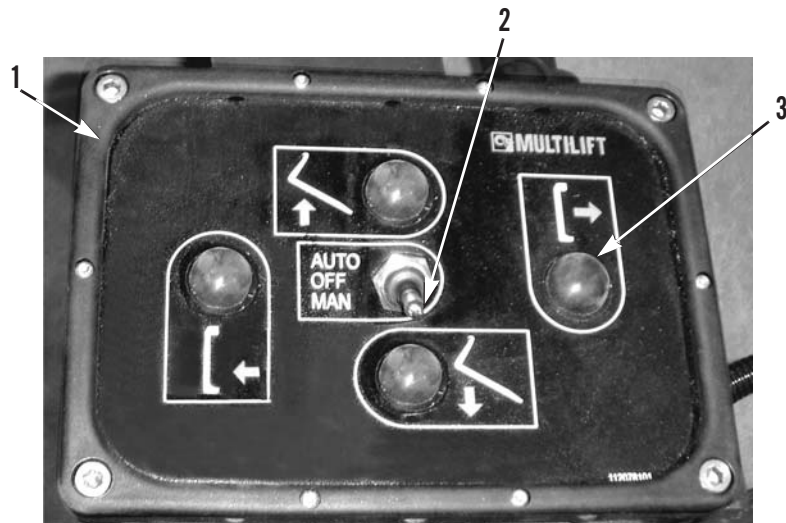
Figure 2. Bail Bar Lock Stowed on Lift Frame.

9. Store bail bar lock in storage compartment of vehicle.

END OF TASK

CONVERT TO SHIPMENT CONFIGURATION

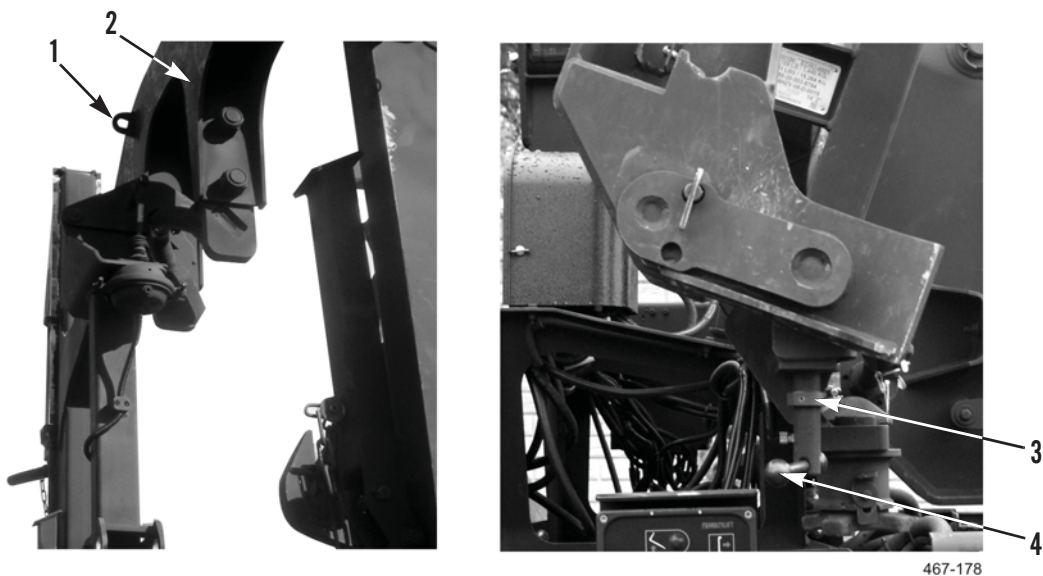
1. With lift frame in stowed position, set stowage toggle switch (Figure 3, Item 2) to MAN position.
2. Press and hold RETRIEVE button (Figure 3, Item 3) on stowage control panel (Figure 3, Item 1) to move stowage guide rearward. When stowage guide stops, release RETRIEVE button.
3. Set toggle switch to OFF position and turn off engine.



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Figure 3. Stowage Control Panel.

4. Attach sling and lifting device to lifting eye (Figure 4, Item 1) on lift frame (Figure 4, Item 2).
5. On each side of stowage unit, turn adjustment levers (Figure 4, Item 4) counterclockwise until collar (Figure 4, Item 3) reaches base of bracket.



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Figure 4. Raise Lift Frame.

CONVERT TO SHIPMENT CONFIGURATION – CONTINUED**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

NOTE

Perform steps 6 through 9 for both right and left sides.

6. Remove clip pin (Figure 5, Item 2) from locking pin (Figure 5, Item 4).
7. Remove locking pin (Figure 5, Item 4) from stowage roller (Figure 5, Item 1) and rotate stowage roller to vertical position.
8. Install locking pin (Figure 5, Item 4) in lower position on locking plate (Figure 5, Item 3).
9. Install clip pin (Figure 5, Item 2) in locking pin (Figure 5, Item 4).

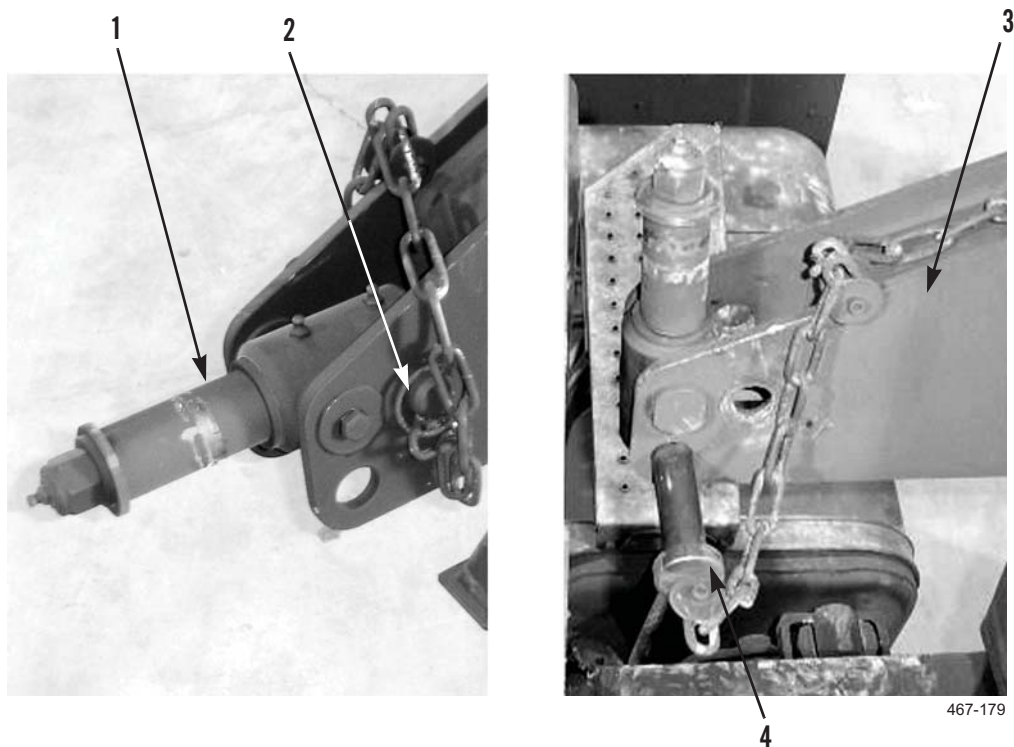


Figure 5. Reposition Stowage Roller Locking Pins.

CONVERT TO SHIPMENT CONFIGURATION – CONTINUED**WARNING**

Ensure that all personnel are off vehicle prior to lowering lift frame. Failure to follow this warning may result in injury or death to personnel.

10. Use lifting device to lower lift frame (Figure 6, Item 2) to middle frame.
11. Remove lifting device and sling from lifting eye at top of lift frame.
12. Secure lift frame (Figure 6, Item 2) to tiedown eyes on truck frame (Figure 6, Item 3) with ratchet strap (Figure 6, Item 1) provided in E-CHU kit.

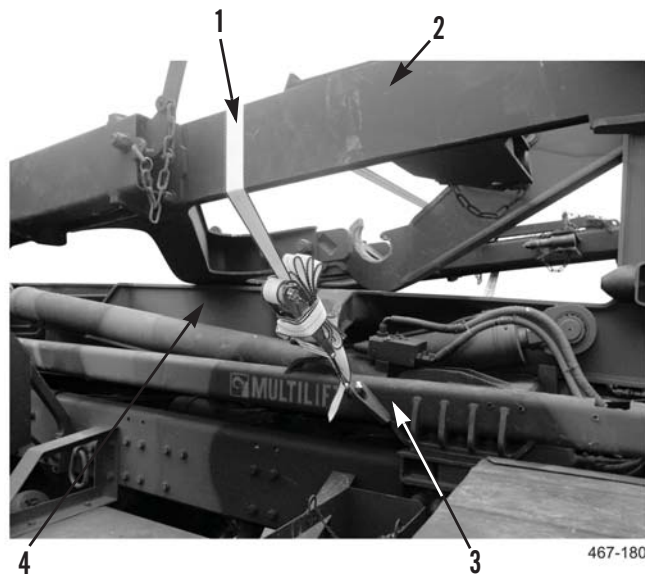


Figure 6. Strap Lift Frame to Truck Bed.

CONVERT TO SHIPMENT CONFIGURATION – CONTINUED**WARNING**

Latch support beam will fall toward the right side of the vehicle when locking pin is removed. Support latch support beam during removal of locking pin. Failure to follow this warning may result in injury or death to personnel.

13. Remove clip pin (Figure 7, Item 1) from locking pin (Figure 7, Item 3).
14. Remove locking pin (Figure 7, Item 3) from latch support bracket (Figure 7, Item 4) and lower latch support beam to horizontal position (Figure 7, Item 2).
15. Install locking pin (Figure 7, Item 3) in upper position on latch support bracket (Figure 7, Item 4).
16. Install clip pin (Figure 7, Item 1) in locking pin (Figure 7, Item 3).

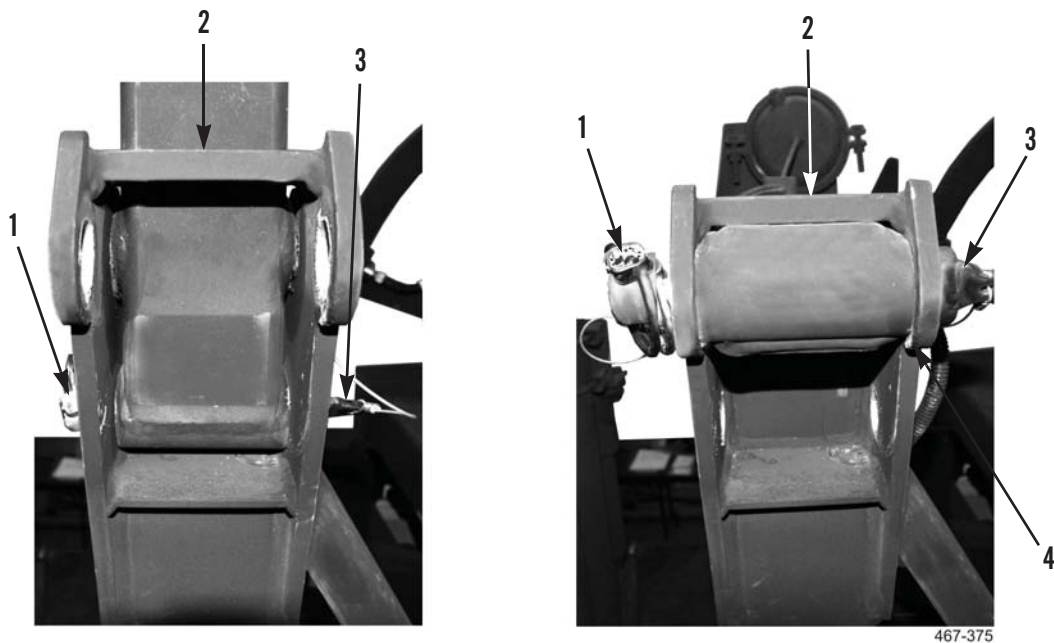
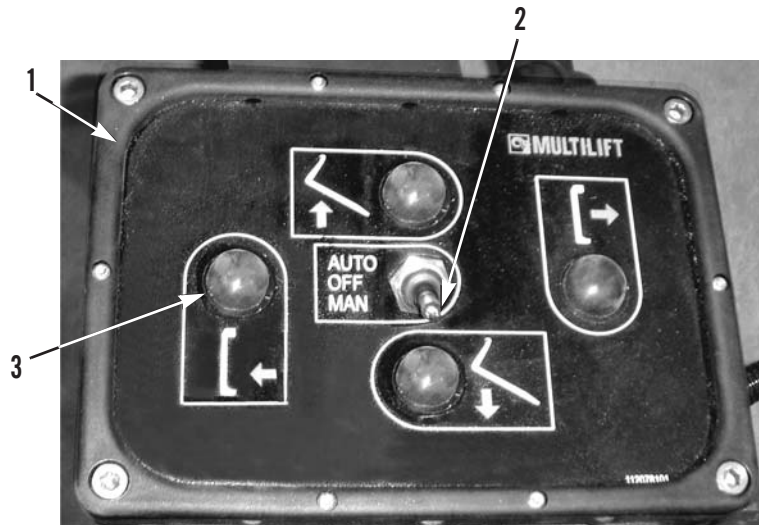


Figure 7. Lower Latch Support Beam.

CONVERT TO SHIPMENT CONFIGURATION – CONTINUED

17. Start engine (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
18. At stowage control panel (Figure 8, Item 1), set stowage toggle switch (Figure 8, Item 2) to MAN position.
19. Press and hold STOW button (Figure 8, Item 3) to return stowage guide to stowed position.
20. Set stowage toggle switch (Figure 8, Item 2) to OFF position and turn off engine.

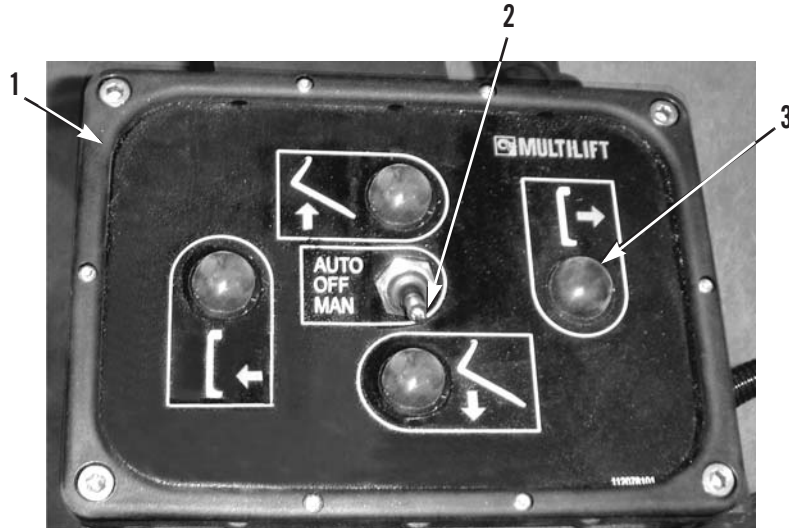


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Figure 8. Stowage Control Panel.**END OF TASK**

CONVERT TO STANDARD CONFIGURATION

1. Perform these procedures with vehicle stationary, parking brake applied, neutral gear selected, engine on, MODE switch set to AUTO, and PTO switch ON (HEMTT only) (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
2. With lift frame in transport position, set stowage toggle switch (Figure 9, Item 2) to MAN position.
3. Press and hold RETRIEVE button (Figure 9, Item 3) on stowage control panel (Figure 9, Item 1) to move stowage guide rearward. When stowage guide stops, release RETRIEVE button.
4. Set stowage toggle switch (Figure 9, Item 2) to OFF position and turn off engine.



467-177

Figure 9. Stowage Control Panel.

CONVERT TO STANDARD CONFIGURATION – CONTINUED**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury to personnel.

5. Remove clip pin (Figure 10, Item 1) from locking pin (Figure 10, Item 3).
6. Remove locking pin (Figure 10, Item 3) from upper position on latch support bracket (Figure 10, Item 4).
7. Raise latch support beam (Figure 10, Item 2) to vertical position and install locking pin (Figure 10, Item 3) in latch support bracket (Figure 10, Item 4).
8. Install clip pin (Figure 10, Item 1) in locking pin (Figure 10, Item 3).

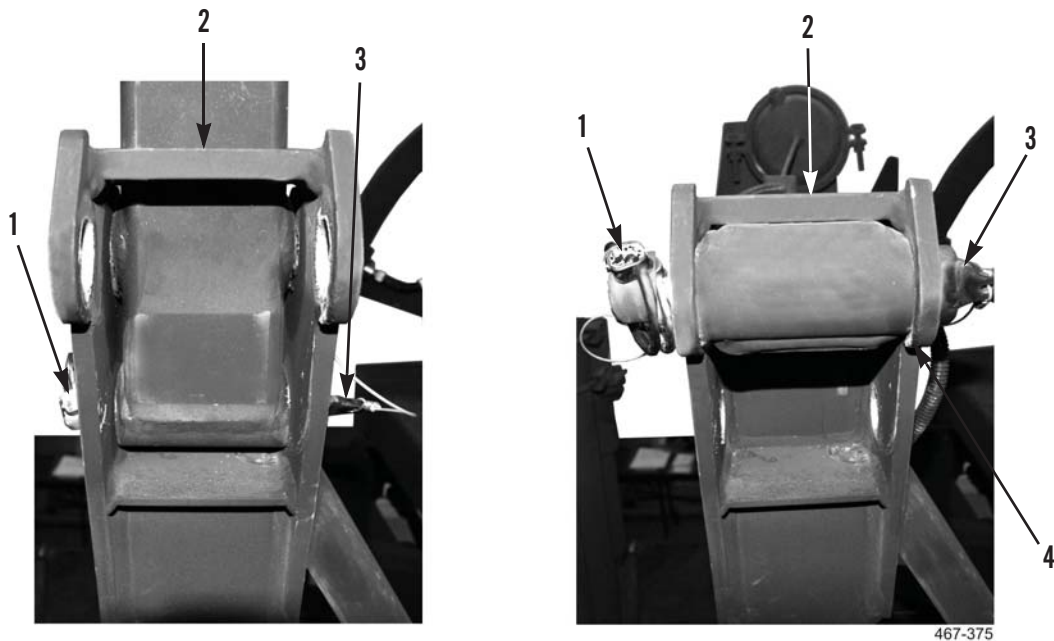


Figure 10. Raise Latch Support Beam.

CONVERT TO STANDARD CONFIGURATION – CONTINUED

9. Remove ratchet strap (Figure 11, Item 1) from lift frame (Figure 11, Item 2) and truck frame (Figure 11, Item 3).
10. Attach sling and lifting device to lifting eye at top of lift frame (Figure 11, Item 2).

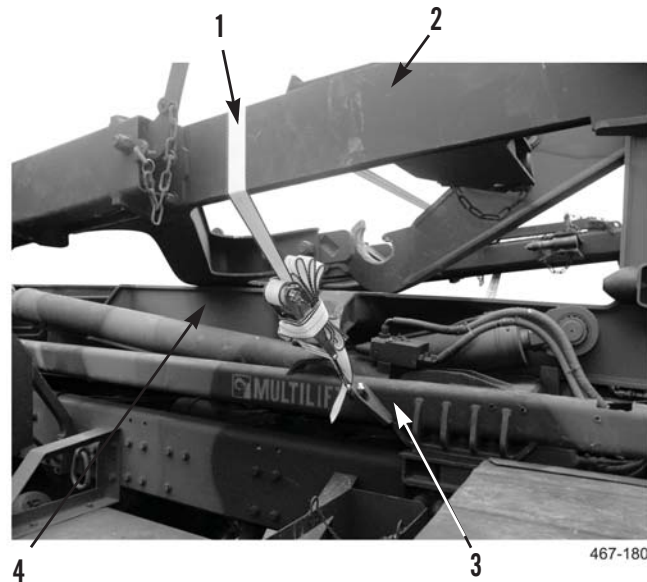


Figure 11. Raise Lift Frame.

11. Use lifting device to raise lift frame (Figure 12, Item 1) until roller pins (Figure 12, Item 2) align with stowage guide (Figure 12, Item 3).

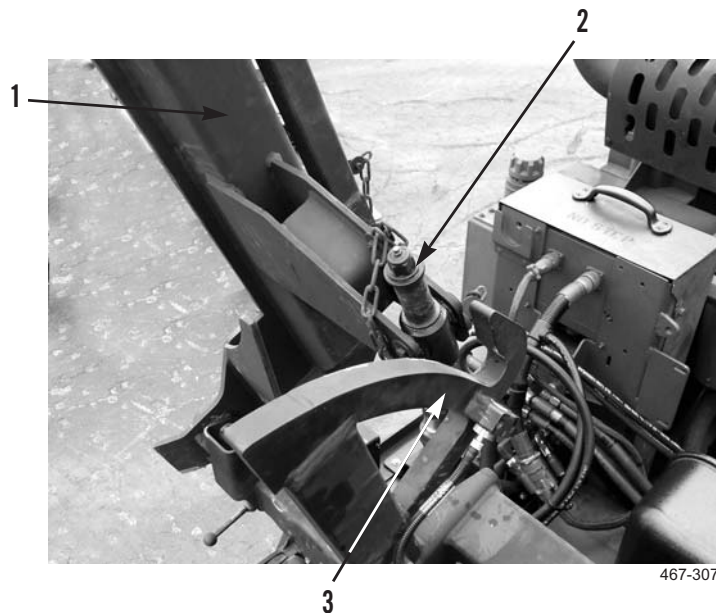


Figure 12. Align Roller Pins With Stowage Guide.

CONVERT TO STANDARD CONFIGURATION – CONTINUED

12. Remove clip pin (Figure 13, Item 2) from locking pin (Figure 13, Item 4).
13. Remove locking pin (Figure 13, Item 4) from stowage roller (Figure 13, Item 1) and rotate stowage roller to horizontal position.
14. Install stowage roller locking pin (Figure 13, Item 4) in outside position on locking plate (Figure 13, Item 3).
15. Install clip pin (Figure 13, Item 2) in locking pin (Figure 13, Item 4).

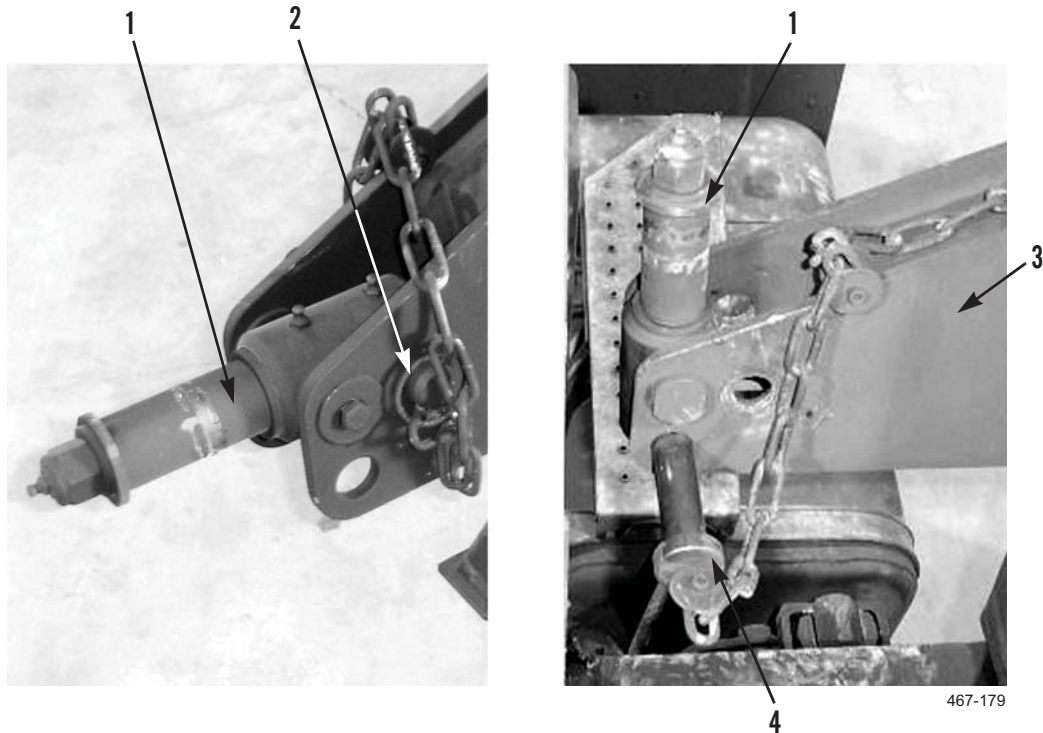


Figure 13. Reposition Stowage Roller Locking Pins.

CONVERT TO STANDARD CONFIGURATION – CONTINUED

16. Remove lifting device and sling from lifting eye (Figure 14, Item 1) at top of lift frame (Figure 14, Item 2).
17. On each side of the stowage unit, turn adjustment levers (Figure 14, Item 3) clockwise to lower lift frame (Figure 14, Item 2).

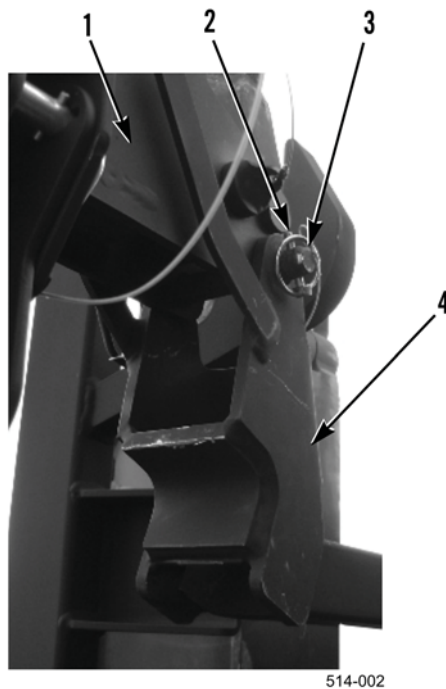


Figure 14. Lower Lift Frame.

CONVERT TO STANDARD CONFIGURATION – CONTINUED**WARNING**

During these procedures, the operator will be required to climb on and around the vehicle. Be sure to wear suitable footwear and ensure no surfaces are slippery. Wear suitable gloves and hard hat. Failure to follow this warning may result in injury or death to personnel.

18. Retrieve bail bar lock from storage compartment of vehicle.
19. Install bail bar lock (Figure 15, Item 4) and locking bar (Figure 15, Item 3), on lift frame (Figure 15, Item 1).
20. Install snap pin (Figure 15, Item 2) in locking bar (Figure 15, Item 3).

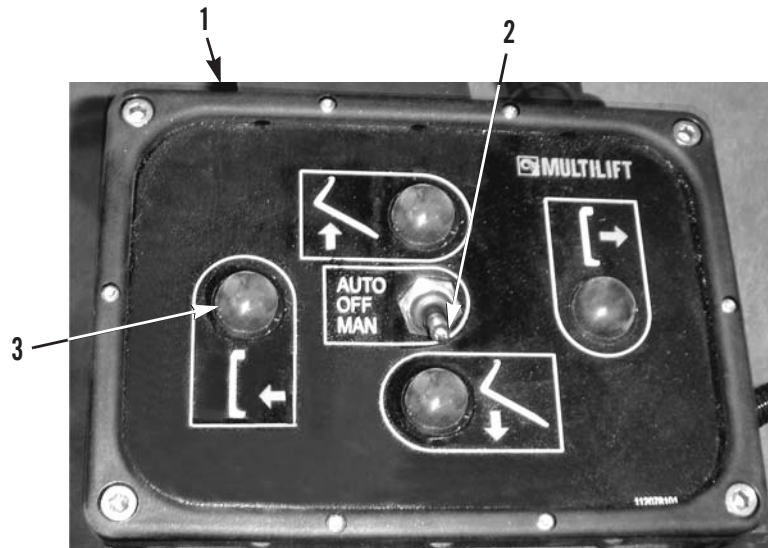


514-002

Figure 15. Bail Bar Lock Stowed on Lift Frame.

CONVERT TO STANDARD CONFIGURATION – CONTINUED

21. Start engine (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).
22. At stowage control panel (Figure 16, Item 1), set stowage toggle switch (Figure 16, Item 2) to MAN position.
23. Press and hold STOW button (Figure 16, Item 3). Release button when stowage guide and lift frame reaches stowed position.
24. Set stowage toggle switch (Figure 16, Item 2) to OFF position and turn off engine.



467-177

Figure 16. Stowage Control Panel.

CONVERT TO STANDARD CONFIGURATION – CONTINUED**WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Hook arm weighs 200 lb (91 kg).

25. Attach sling and lifting device to hook arm (Figure 17, Item 1).
26. Remove locking pin (Figure 17, Item 4) and hook arm pin (Figure 17, Item 2) from hook arm base (Figure 17, Item 3).
27. Use lifting device to raise hook arm (Figure 17, Item 1) until aligned with hook arm base (Figure 17, Item 3).
28. Install hook arm pin (Figure 17, Item 2) and locking pin (Figure 17, Item 4) in hook arm base (Figure 17, Item 3).
29. Remove lifting device and sling from hook arm (Figure 17, Item 1).

CONVERT TO STANDARD CONFIGURATION – CONTINUED

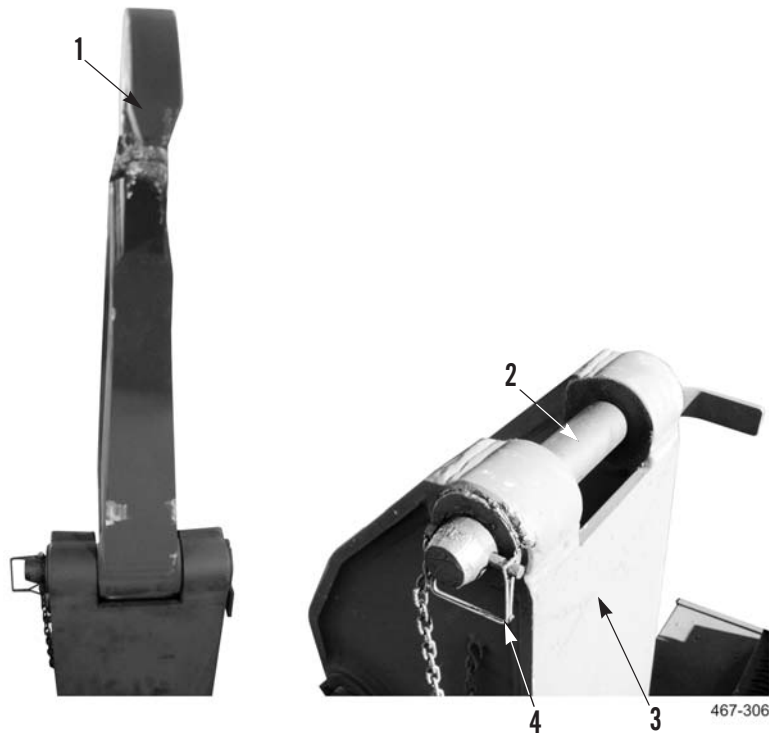


Figure 17. Raise Hook Arm.

END OF TASK

END OF WORK PACKAGE

CHAPTER 7
INSTALLATION INSTRUCTIONS

FIELD MAINTENANCE
INSTALLATION INSTRUCTIONS INTRODUCTION

GENERAL

This chapter contains procedures to prepare HEMTT and PLS vehicles and install the Enhanced Container Handling Unit (E-CHU).

OVERVIEW

1. **Time to Completion.** Approximate time to prepare the machine is 2 hours. Approximate assembly time is 6 hours.
2. **Personnel.** Suggested number of people to assemble the E-CHU is two. This team will require a lifting device (forklift or crane) operator.
3. **Recommended Tool List.**
 - a. Tool Set, SATS Base (WP 0057, Item 3)
 - b. Tool Kit, General Mechanic's (WP 0057, Item 2)
 - c. Sling, Nylon (WP 0057, Item 1)
 - d. Lifting Device (2,000-lb Capacity)
4. **Facilities.** It is recommended that E-CHU is installed at a facility with an overhead crane and a flat work surface, or similar hardened work surface.
5. **Inspection of Machine.** Condition of subject machine should be thoroughly evaluated before E-CHU is installed on it. Machine structure and suspension should be capable of supporting additional weight of E-CHU, 3,336 lb (1,513 kg).
6. **Preparation.** Refer to *Unpacking and Parts List* (WP 0050) and conduct a complete inventory verifying all parts are present. When finished, refer to *Original Equipment Removal* (WP 0051) and follow instructions to remove prescribed components before doing any other work.
7. **Warnings and Cautions.** Refer to *Warning Summary* and observe all WARNINGS and CAUTIONs while completing installation.

END OF WORK PACKAGE

FIELD MAINTENANCE
UNPACKING AND PARTS LIST
Unpacking of Crates, Layout, Installation Parts List

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)
Sling, Nylon (WP 0057, Item 1)
Lifting equipment (2,000-lb capacity)

Equipment Condition

Vehicle parked on level ground, in neutral gear
with parking brake applied (PLS: TM 9-
2320-364-14&P, HEMTT: TM 9-2320-326-
14&P)

Personnel Required

Two (63B - Wheeled Vehicle Mechanic)

UNPACKING OF CRATES

Before opening the crates, inspect their condition. Look for any damage such as dents or scratches on outside of crates. Ensure that the correct ends are up and that the skids of the crate are in good order. If ANY appearance of damage exists, report this immediately to a supervisor or person in charge of the materials. This is imperative to maintaining proper quality control of the Enhanced Container Handling Unit (E-CHU).

Verify that unique kit box strapped to lift frame pallet matches the truck that the kit will be installed on.

LAYOUT

Proper care must be taken to ensure that the items are placed in an open area to take proper inventory. Properly staging the components around the machine will ensure that the parts are present and it will also aid in a speedy installation of the E-CHU.

INSTALLATION PARTS LIST

Table 1. E-CHU Installation Parts List.

PART NO.	QUANTITY	DESCRIPTION	RPSTL Figure #	RPSTL Item #
11156001	1	Stowage Assembly	5	1
111950001	1	Lift Frame Assembly	7	1
111589501	1	Rear Slider Assembly	11	1
112090401	2	Rear Slider Adaptor Plate	16	14
112137701	1	HEMTT Data Plate		
112137601	1	PLS Data Plate		
112091901	1	Air Transport Strap	BII	x
112265401	1	Bail Bar Lock		
112266101	10	8" Tie Straps, Black		
112266102	10	10" Tie Straps, Black		
112265601		Stowage Mounting Hardware Kit		
B1821BH050C150N	12	1/2-13 UNC x 1 1/2 Hex Head Capscrew GR 8, Plated	16	6
M45913/3-8CG8C	12	1/2-13 UNC Nylon Locknut, GR 8, Plated	16	8
MS27183-17	24	1/2 Flat Washer, Plated	16	7
112265501		Rear Slider AdapterPlate Hardware Kit		
B1821BH075C200N	6	3/4-10 UNC x 2 Hex Head Capscrew, GR 8, Plated	16	16
MS27183-23	6	3/4 Flat Washer, Plated	16	15
B1821BH056C200N	8	9/16-12 UNC x 2 Hex Head Capscrew, GR 8, Plated	16	12
MS27183-19	8	9/16 Flat Washer, Plated	16	13
112079403		Hydraulic Installation Kit		
110036205	2	Tube End Reducer		
112082301	2	Run Tee		
112079501		Pneumatic Installation Kit		
112083501	1	Male Swivel Elbow		
112083601	1	Male/Female Bush 1/4 NPFT to 1/2 NPFT		
112083701	1	Male/Female/Female Tee 1/2		
1119540		Middle Frame Sensor Bracket Kit		
111954101	1	Plate	14	1
111954201	1	Mounting Bracket	14	5
111954401	1	Screw	14	8
111954501	1	Mounting Plate	14	7

Table 1. E-CHU Installation Parts List - Continued.

PART NO.	QUANTITY	DESCRIPTION	RPSTL Figure #	RPSTL Item #
90128A301	3	1/4 x 1-3/8 UNC Hex Soc Head Capscrew	14	3
90630A135	1	3/4 UNC Nylon Locknut	14	6
M4591313-4CG8C	3	1/4 UNC Nylon Locknut	14	4
MS27183-9	6	1/4 Flat Washer, Plated	14	2
1119465	Hook Arm Sensor Bracket Kit			
111946101	1	Sensor Plate	15	5
111946401	1	Switch Plate	15	1
112079807	2	1/4 x 1-3/8 UNC Hex Soc Head Capscrew	15	3
97525A515	2	Rivet, Blind	15	4
MS27183-9	4	1/4 Flat Washer, Plated	15	2
112265801	Rear Indicator Light Installation Kit			
112137501	6	#10-24 x 3/8 Cross Recess Machine Screw		
112265901	2	Harness Extension Splice Assembly		
112265902	2	Harness Extension Splice Assembly (LED)		
112266001	Stowage Rack Auto Mode Calibration Kit			
112267601	5	Jumper		
	1	Instructions and Troubleshooting Guide		
	Operator Control Box Mounting Bracket Hardware			
112079732	2	3/8-16 UNC X 2 Hex Head Cap Screw, GR 8, Plated		
112080106	4	3/8 Flat Washer, Plated		
112080002	2	3/8-16 UNC Nylon Lock Nut, GR 8, Plated		
	Components for HEMTT Only			
	Stowage Mounting Brackets and Spacers- HEMTT			
112079301	1	Stowage Mounting Bracket LH	16	10
112079302	1	Stowage Mounting Bracket RH	16	10
112079001	2	Spacer Tube	16	9
112266301	Stowage Mounting Bracket Hardware - HEMTT			
9236A804	4	5/8-11 UNC x 2 1/2 Hex Flanged Capscrew GR 8	16	11

Table 1. E-CHU Installation Parts List - Continued.

PART NO.	QUANTITY	DESCRIPTION	RPSTL Figure #	RPSTL Item #
B1821BH038C400N	4	3/8-16 UNC X 4 Hex Head Capscrew, GR 8, Plated	16	5
M4591313-6CG8C	4	3/8-16 UNC Nylon Locknut, GR 8, Plated	16	4
MS27183-14	8	3/8 Flat Washer, Plated	16	2
112648301	2	5/8-11 UNC x 3 Hex Flanged Capscrew GR 8		
		Manifold Mounting Bracket - HEMTT		
112130301	2	Manifold Mounting Bracket	16	1
112266501		Manifold Mounting Bracket Hardware - HEMTT		
B1821BH038C150N	4	3/8-16 UNC X 1 1/2 Hex Head Capscrew, GR 8, Plated	16	3
MS27183-14	8	3/8 Flat Washer, Plated	16	2
MS45915/3-6CG8C	4	3/8-16 UNC Nylon Locknut, GR 8, Plated	16	4
		Hydraulic Tube Fairlead Kit - HEMTT A4		
GT-23014	1	Fairlead		
112079812	2	3/8-16 UNC X 2" SOC Head Cap Screw, GR 8, Plated		
112080106	2	3/8 Flat Washer, Plated		
112080002	2	3/8-16 UNC Nylon Lock Nut, GR 8, Plated		
		Components for PLS Only		
		Stowage Mounting Brackets - PLS		
112079201	1	Stowage mounting bracket LH	17	19
112079202	1	Stowage mounting bracket RH	17	4
112266701		Stowage Mounting Bracket Hardware - PLS		
91030A035	4	5/8-11 Hex Flange Nut	17	1
92316A843	4	3/4-10 UNC x 2 1/2 Hex Flanged Capscrew, GR 8	17	17
92316A804	4	5/8-11 UNC x 2 Hex Flanged Capscrew, GR 8	17	18
112081104	4	3/4-10 UNC Hex Flange Nut		
		Spacer Kit - PLS		
112452101	2	Stowage Rack Spacer	17	8
91253A718	4	1/2-13 UNC X 1 3/4 Flat Head Cap Screw	17	6
13019969	4	1/2-13 UNC Nylon Lock Nut, GR 8, Plated	17	14
469-21053	4	1/2 Flat Washer, Plated	17	7

Table 1. E-CHU Installation Parts List - Continued.

PART NO.	QUANTITY	DESCRIPTION	RPSTL Figure #	RPSTL Item #
112462201	4	Shims - PLS A1	17	5
		Operator Control Box Fender Mounting Bracket Kit - PLS A1 only		
112525701	1	PLS A1 Oper Control Box Fender Mounting Bracket	5	47
112130201	1	Bracket	5	41
91166A250	4	Washer, Flat	5	42
95263A546	4	Screw	5	43
92620A632	2	3/8-16 Cap Screw	5	44
92620A628	4	3/8-16 UNC X 1 1/2 Hex Head Cap Screw, GR 8, Plated	5	48
98416A012	8	3/8 Flat Washer, Plated	5	45
90630A121	4	3/8-16 UNC Nylon Lock Nut, GR 8, Plated	5	46
Total Pieces	278			

END OF WORK PACKAGE

FIELD MAINTENANCE
ORIGINAL EQUIPMENT REMOVAL
HEMTT Removal, PLS Removal

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)
Lifting Device (2,000 lb capacity)

Materials/Parts

Cap Set, Protective, Dust and Moisture
(WP 0060, Item 3)
Rag, Wiping (WP 0060, Item 10)
Tag, Marker (WP 0060, Item 12)

Personnel Required

Two (63B - Wheeled Vehicle Mechanic)

References

TM 9-2320-304-14&P

Equipment Condition

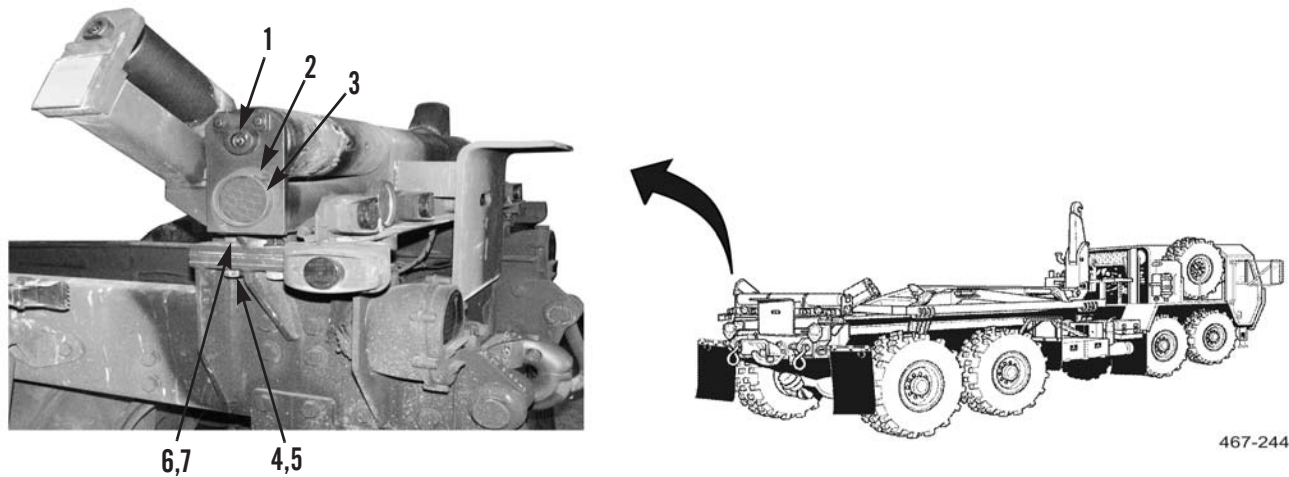
Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Battery disconnect switch in OFF position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Hydraulic system pressure relieved (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)

HEMTT REMOVAL**Remove Rear Roller Assembly****WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may cause injury or death to personnel.

NOTE

- Rear roller assembly weighs 375 lb (170 kg).
 - Set both spacers under roller assembly aside for installation with new roller assembly.
 - Bolts securing light bar will be removed with roller assembly.
1. Attach sling and lifting device to rear roller assembly (Figure 1, Item 1).
 2. Use lifting device to remove slack from sling.
 3. Remove two bolts (Figure 1, Item 3) and reflector (Figure 1, Item 2) from roller assembly (Figure 1, Item 1).
 4. Remove six nuts (Figure 1, Item 7), washers (Figure 1, Item 6), bolts (Figure 1, Item 4), and washers (Figure 1, Item 5) from roller assembly (Figure 1, Item 1).
 5. Use lifting device to remove roller assembly (Figure 1, Item 1) from vehicle.



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Figure 1. Roller Assembly Removal.

HEMTT REMOVAL – CONTINUED**Remove Light Bar and Bumper Stop**

1. Remove bolt (Figure 2, Item 1), nut (Figure 2, Item 2), and ground strap (Figure 2, Item 3) from right side frame (Figure 2, Item 11). Set nut and bolt aside for reinstallation.
2. Disconnect light bar wiring harness (Figure 2, Item 4) from vehicle wiring harness (Figure 2, Item 5).
3. Remove rear light bar (Figure 2, Item 6) from vehicle and set aside for disassembly and reinstallation.
4. With assistance, remove six nuts (Figure 2, Item 8), bolts (Figure 2, Item 9), and bumper stop bracket (Figure 2, Item 7) from frame (Figure 2, Item 10). Set aside for reinstallation.

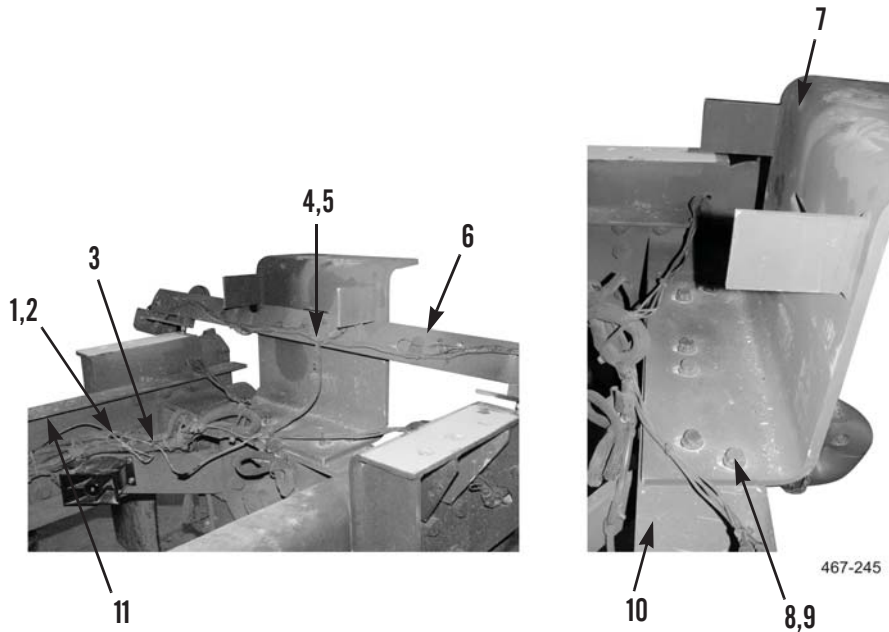


Figure 2. Light Bar and Bumper Stop Removal.

HEMTT REMOVAL – CONTINUED**Remove Stowage Box**

1. Attach sling and lifting device to stowage box (Figure 3, Item 7).
2. Remove nut (Figure 3, Item 6), bolt (Figure 3, Item 4), and washer (Figure 3, Item 5) from mud flap (Figure 3, Item 3). Set aside for reinstallation.
3. Remove four locknuts (Figure 3, Item 2), bolts (Figure 3, Item 1) from stowage box (Figure 3, Item 7) and frame (Figure 3, Item 8). Discard locknuts.
4. Use lifting device to remove stowage box (Figure 3, Item 7) from vehicle and lower onto flat surface. Set aside for reinstallation.

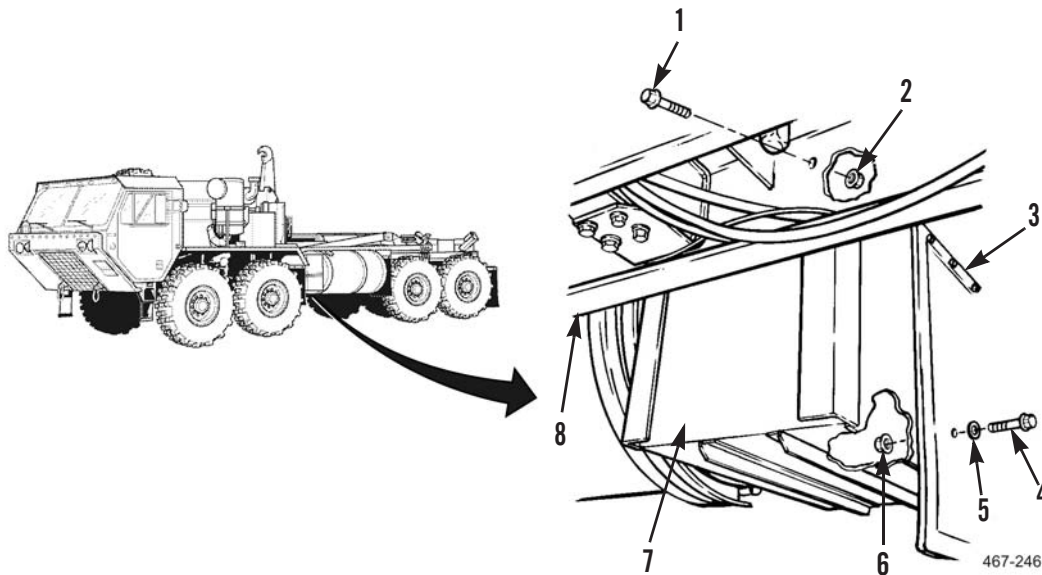


Figure 3. Stowage Box Removal.

5. Fully extend hook arm (TM 9-2320-326-14&P).

NOTE

Perform steps 6 and 7 to relieve hydraulic system pressure.

6. With engine on, set MODE switch to MAN H.A. and let engine idle for 30 seconds.
7. Set MODE switch to MAN M.F. and let engine idle for 30 seconds and turn off engine.

Remove Platform Assembly

1. Remove four nuts (Figure 4, Item 10), washers (Figure 4, Item 9), springs (Figure 4, Item 8), washers (Figure 4, Item 7), bolts (Figure 4, Item 6), and platform (Figure 4, Item 1) from platform stands (Figure 4, Item 2).
2. Remove four nuts (Figure 4, Item 5), bolts (Figure 4, Item 3), and two stands (Figure 4, Item 2) from frame (Figure 4, Item 4). Set bolts and nuts aside for reinstallation.

HEMTT REMOVAL – CONTINUED

Remove Platform Assembly – Continued

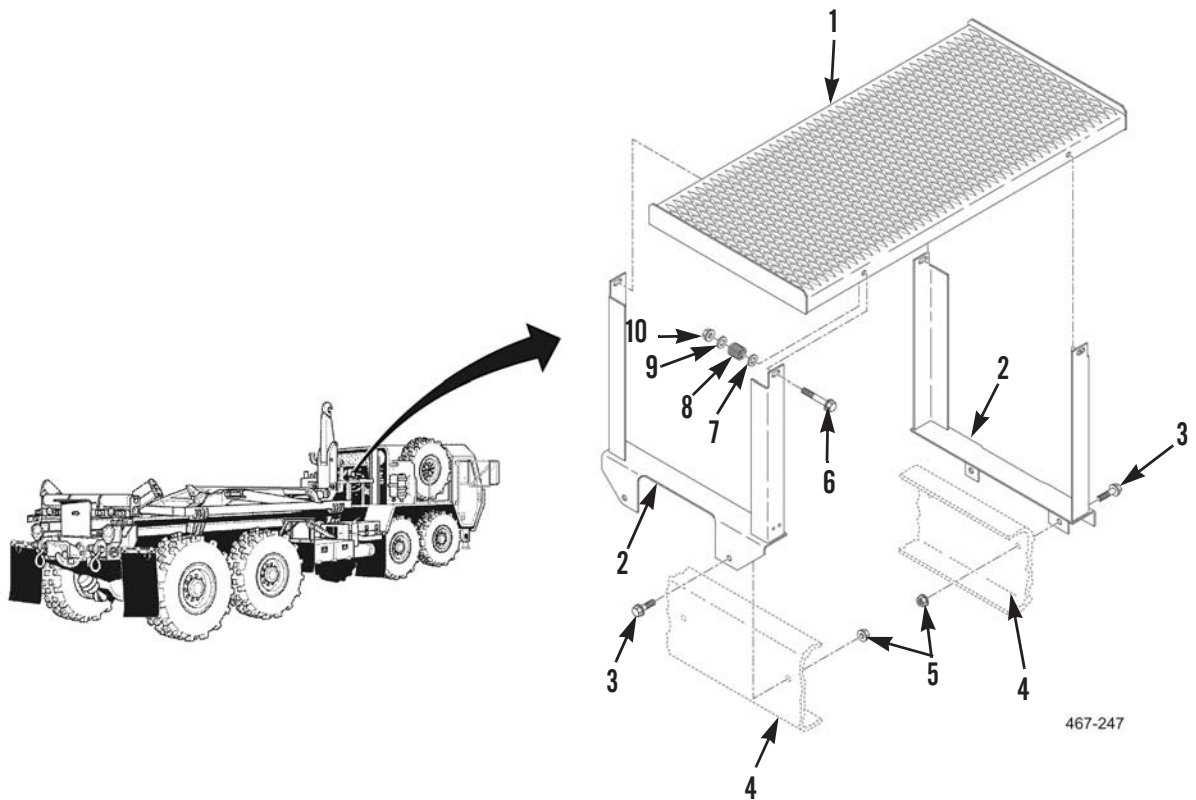


Figure 4. Platform Assembly Removal.

Table 1. Parts List for HEMTT Hydraulic Control Box Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 7, Item 4	2	Tube End Reducer	110036205
Figure 7, Item 3	2	T-Fitting	112082301
Figure 11, Item 2	2	Hydraulic Control Box Bracket	112130301
Figure 11, Item 4	4	3/8-16 x 4 1/2 Bolt	112079721
Figure 11, Item 5	8	3/8 Washer	112080106
Figure 11, Item 7	4	3/8 Locknut	112080002
HEMTT A4 ONLY			
Figure 9, Item 5	1	Fairlead	GT-23014
Figure 9, Item 6	2	3/8 -16 x 2 Bolt	112079812
Figure 9, Item 7	2	3/8 Washer	112080106
Figure 9, Item 8	2	38-16 Locknut	112080002

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued**

1. Remove nut (Figure 5, Item 7), bolt (Figure 5, Item 1), and strap (Figure 5, Item 2) from bracket (Figure 5, Item 8).
2. Remove nut (Figure 5, Item 3), bolt (Figure 5, Item 4), and two clamps (Figure 5, Item 5) from hoses (Figure 5, Item 6).

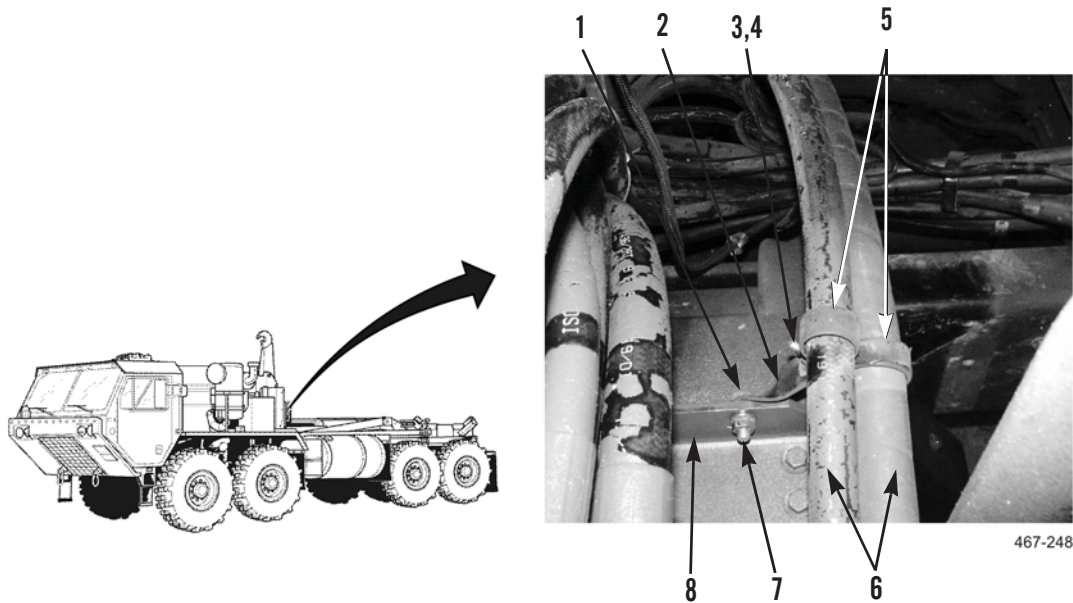


Figure 5. Hose Clamp Removal.

3. Remove two wiring harnesses (Figure 6, Item 2) from hydraulic control box (Figure 6, Item 1).

WARNING

- Disconnecting quick disconnect fittings will not relieve hydraulic system pressure. Failure to follow this warning may result in death or serious injury to personnel.
- Use extreme caution when disconnecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves and protective clothing while removing hydraulic hoses. Failure to follow this warning may result in death or serious injury to personnel.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. **DO NOT** perform any hydraulic system service without first shutting down the engine to relieve system pressure. Failure to follow this warning may result in death or serious injury to personnel.

NOTE

- Tag all hoses and fittings to aid in installation.
- Cap all hoses and fittings on removal to prevent contamination.
- After removal, position hydraulic hoses inside frame, over transmission.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued**

4. Carefully remove eight hydraulic hoses (Figure 6, Item 3) from control box (Figure 6, Item 1).
5. Remove two hydraulic hoses (Figure 6, Item 7) from quick disconnect angle fittings (Figure 6, Item 6).
6. Remove two hydraulic hoses (Figure 6, Item 7) from control box (Figure 6, Item 1).
7. Remove two hydraulic hoses (Figure 6, Item 4) from quick disconnect fittings (Figure 6, Item 5).

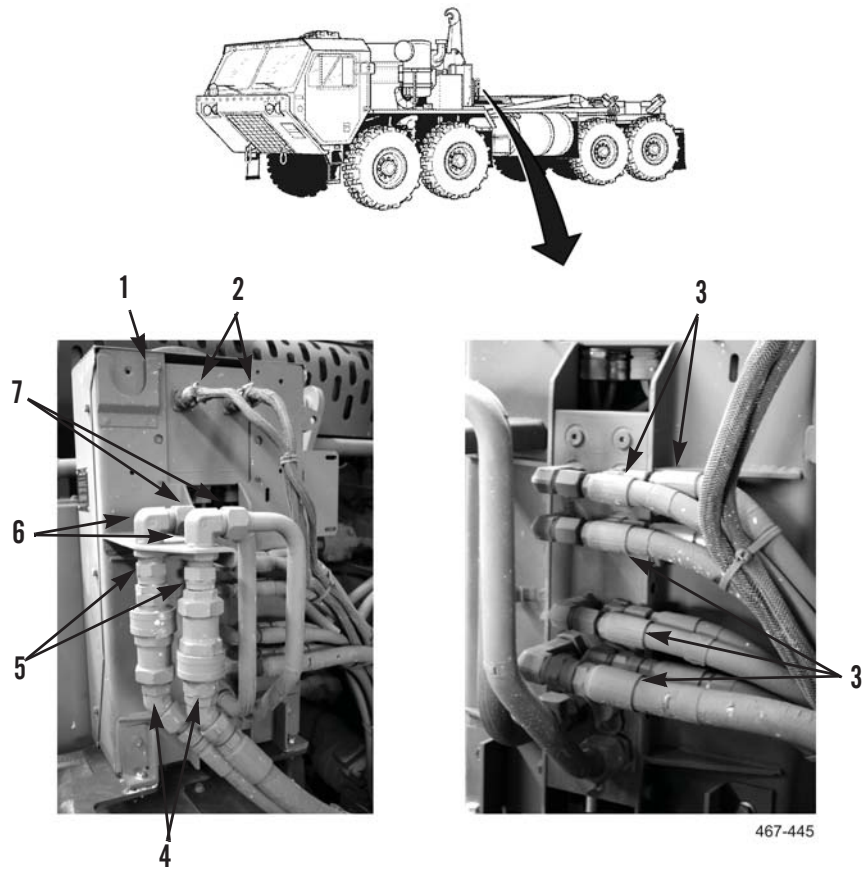


Figure 6. HEMTT Hydraulic Hose Removal.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued**

8. Remove two quick disconnect coupler fittings (Figure 7, Item 7) from elbow fittings (Figure 7, Item 2).
9. Remove two jam nuts (Figure 7, Item 8) and elbow fittings (Figure 7, Item 2) from bracket (Figure 7, Item 1). Discard elbow fittings and jam nuts.

NOTE

- Perform steps 10 through 18 for HEMTT M1120.
 - Perform steps 15 through 19 for HEMTT M1120A4.
 - Install longer end of fitting through bracket.
 - Hand tighten all fittings on installation.
10. Install two T-fittings (Figure 7, Item 3) and jam nuts (Figure 7, Item 6) on bracket (Figure 7, Item 1).
 11. Install two quick disconnect coupler fittings (Figure 7, Item 7) on T-fittings (Figure 7, Item 3).
 12. Install two tube end reducers (Figure 7, Item 4) on T-fittings (Figure 7, Item 3).
 13. Install two hoses (Figure 7, Item 5) on T-fittings (Figure 7, Item 3).
 14. Install two hoses (Figure 7, Item 5) on control box (Figure 7, Item 8).

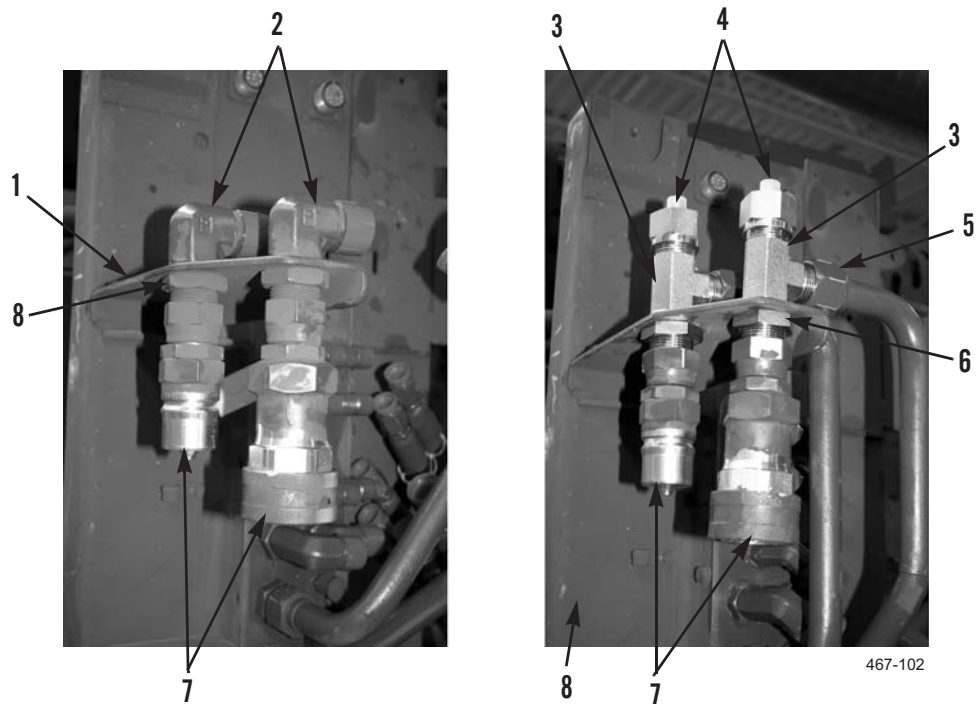


Figure 7. HEMTT Fittings Installation.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued**

15. Loosen four nuts (Figure 8, Item 4) on lower angle fittings (Figure 8, Item 1) and move angle fittings clockwise 45°.
16. If required, remove pressure test port (Figure 8, Item 5) and O-ring (Figure 8, Item 6) from hydraulic control box (Figure 8, Item 7). Discard O-ring.
17. Tighten four nuts (Figure 8, Item 4).
18. If removed, install new O-ring (Figure 8, Item 6) and pressure test port (Figure 8, Item 5) on hydraulic control box (Figure 8, Item 7).
19. Loosen four nuts (Figure 8, Item 3) on upper angle fittings (Figure 8, Item 2) and move angle fittings counter-clockwise 30°. Tighten four nuts.

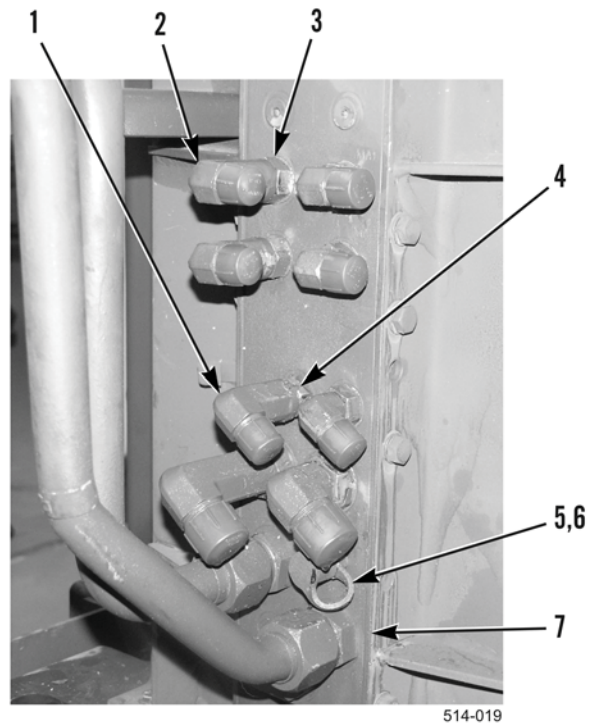


Figure 8. HEMTT Reposition Angle Fittings.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued****WARNING**

- Appropriate safety precautions (including, but not limited to, wearing proper breathing apparatus, hearing protection, safety goggles, etc.) must be observed when working with CARC material.
- All cutting and grinding must be done using an abrasive device only. Use of a cutting torch, plasma cutter, etc., is not permitted.
- Always wear gloves and a face shield or breathing apparatus when grinding painted surfaces. Airborne particles may cause lung irritation or damage to eyes.
- Failure to follow these warnings may cause injury or death to personnel.

NOTE

- Perform steps 20 through 26 for HEMTT M1120 A4, then continue with step 27.
- Proceed to step 27 for HEMTT M1120.

20. Cut bracket (Figure 9, Item 10) from hydraulic control box (Figure 9, Item 1).
21. Install two quick disconnect coupler fittings (Figure 9, Item 9) on T-fittings (Figure 9, Item 2).
22. Install two tube end reducers (Figure 9, Item 3) on T-fittings (Figure 9, Item 2).
23. Install two hoses (Figure 9, Item 4) on T-fittings (Figure 9, Item 2).
24. Loosely install two hoses (Figure 9, Item 4) on control box (Figure 9, Item 1), and rotate hoses approximately 45° clockwise.
25. Install fairlead (Figure 9, Item 5), two bolts (Figure 9, Item 6), washers (Figure 9, Item 7), and locknuts (Figure 9, Item 8) on two hoses (Figure 9, Item 4).
26. Tighten two hoses (Figure 9, Item 4) on hydraulic control box (Figure 9, Item 1).

HEMTT REMOVAL – CONTINUED

Reposition Hydraulic Control Box – Continued

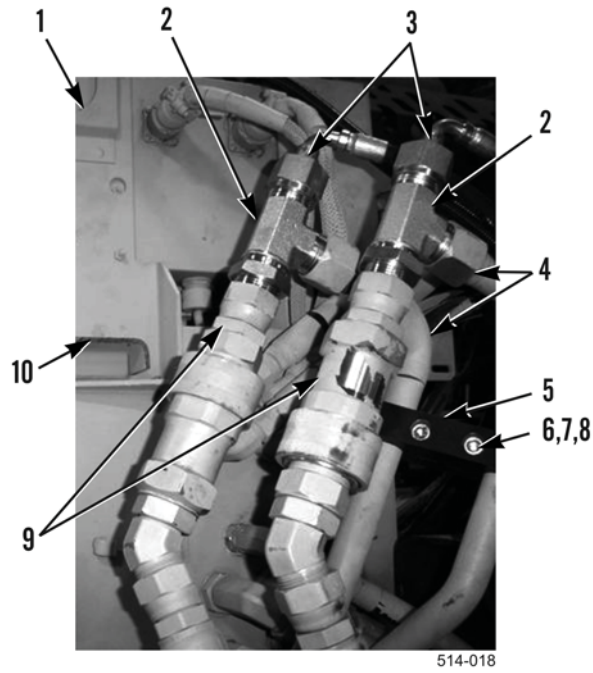


Figure 9. HEMTT A4 Hydraulic Hoses.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued**

27. Remove four bolts (Figure 10, Item 3) and nuts (Figure 10, Item 4) from hydraulic control box (Figure 10, Item 1). Set aside for reinstallation.
28. Attach sling and lifting device to hydraulic control box (Figure 10, Item 1).
29. Use lifting device to remove hydraulic control box (Figure 10, Item 1) from support brackets (Figure 10, Item 2) and temporarily position out of way.

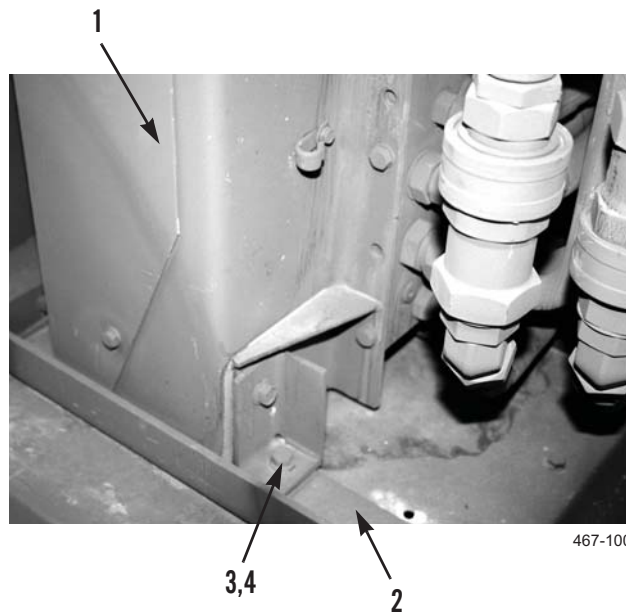


Figure 10. HEMTT Hydraulic Control Box Removal.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued**

30. Install two new brackets (Figure 11, Item 2), four bolts (Figure 11, Item 4), washers (Figure 11, Item 5), washers (Figure 11, Item 6), and locknuts (Figure 11, Item 7) on support brackets (Figure 11, Item 3).

NOTE

Use original bolts and nuts when reinstalling hydraulic control box on new brackets.

31. Use lifting device to position hydraulic control box (Figure 11, Item 1) on new brackets (Figure 11, Item 2) and secure with four bolts (Figure 11, Item 9), and nuts (Figure 11, Item 8).

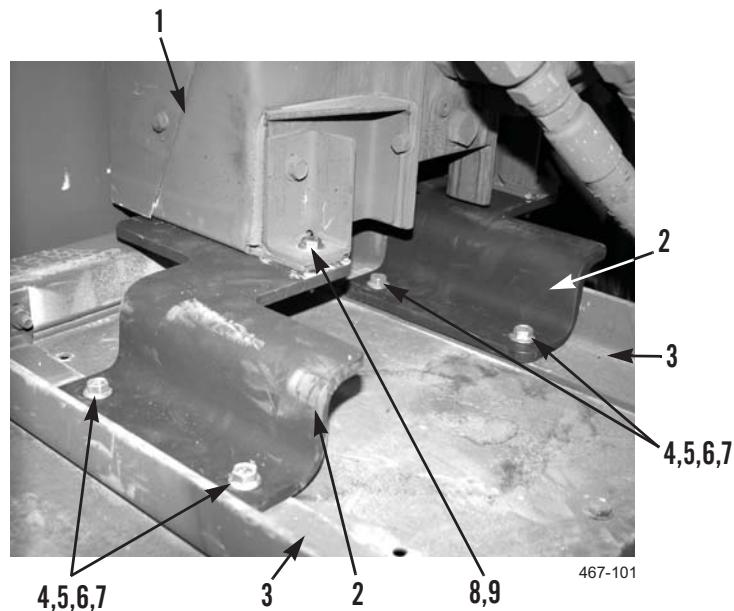


Figure 11. HEMTT Hydraulic Control Box Reinstallation.

HEMTT REMOVAL – CONTINUED**Reposition Hydraulic Control Box – Continued****WARNING**

- Appropriate safety precautions (including, but not limited to, wearing proper breathing apparatus, hearing protection, safety goggles, etc.) must be observed when working with CARC material.
- All cutting and grinding must be done using an abrasive device only. Use of a cutting torch, plasma cutter, etc., is not permitted.
- Always wear gloves and a face shield or breathing apparatus when grinding painted surfaces. Airborne particles may cause lung irritation or damage to eyes.
- Failure to follow these warnings may cause injury or death to personnel.

NOTE

Perform hydraulic cover modification for HEMTT A4 only.

32. At bottom edge of hydraulic cover (Figure 12, Item 2) measure and mark 8.375 in. from inboard edge (Figure 12, Item 1) of hydraulic cover.
33. At marked point, measure and cut a notch (Figure 12, Item 3) that is .5 in. wide and 1.5 in. long as shown in Figure 12.

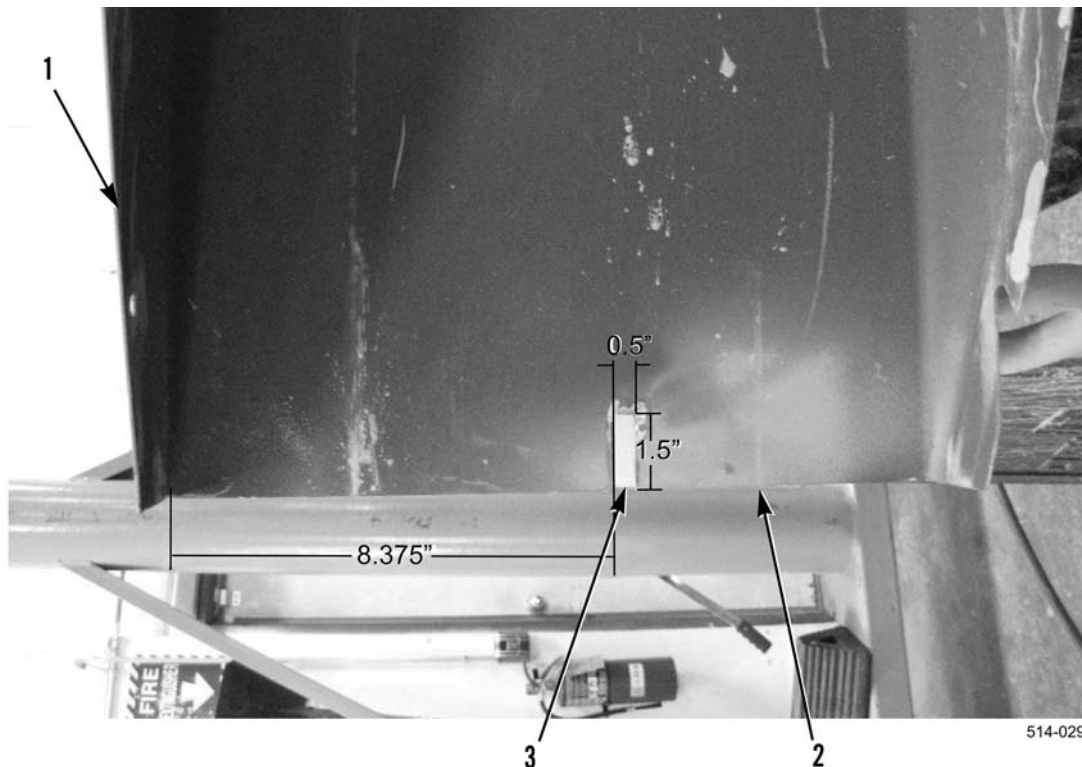


Figure 12. HEMTT A4 Hydraulic Cover Modification.

HEMTT REMOVAL – CONTINUED**Cable Clamp and Bolt Removal**

1. Remove two bolts (Figure 13, Item 2), nuts (Figure 13, Item 3), and cable clamps (Figure 13, Item 1) from right and left side frame (Figure 13, Item 4). Set aside for reinstallation.

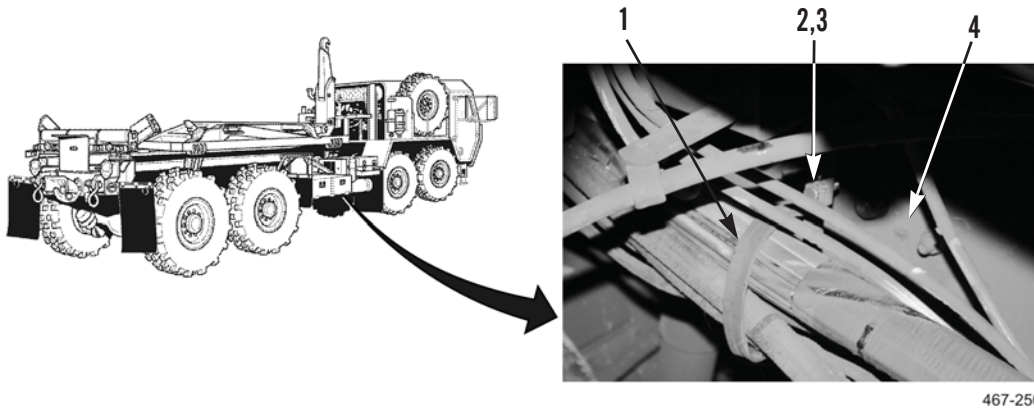


Figure 13. Cable Clamp Removal.

2. Remove two bolts (Figure 14, Item 2) and nuts (Figure 14, Item 3) from right side frame (Figure 14, Item 4) behind battery box (Figure 14, Item 1). Set aside for reinstallation.

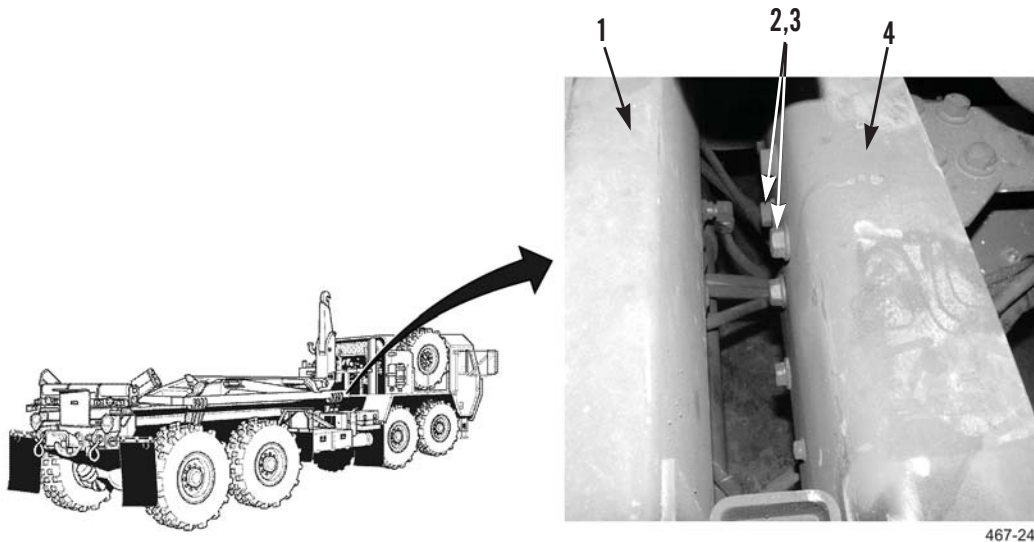


Figure 14. Bolt Removal.

END OF TASK

PLS REMOVAL

Table 2. Parts List for PLS Stowage Assembly Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 20, Item 3	2	Tube End Reducer	110036205
Figure 20, Item 4	2	T-Fitting	112082301

Hard Lift Removal

WARNING

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Hard lift assembly weighs 240 lb (109 kg).

1. Attach sling and lifting device to hard lift (Figure 15, Item 1).
2. Remove six nuts (Figure 15, Item 2), and bolts (Figure 15, Item 3) from hard lift (Figure 15, Item 1).
3. Use lifting device to remove hard lift (Figure 15, Item 1) from vehicle and lower onto flat surface.

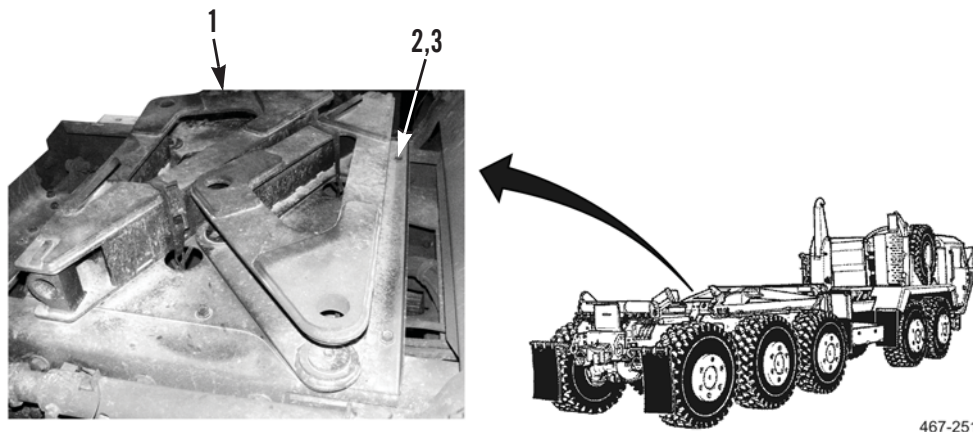


Figure 15. Hard Lift Removal.

PLS REMOVAL – CONTINUED**Rear Roller Assembly Removal****WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

- Rear roller assembly weighs 375 lb (170 kg).
 - Bolts securing light bar will be removed with roller assembly.
1. Attach sling and lifting device to rear roller assembly (Figure 16, Item 1).
 2. Use lifting device to remove slack from sling.
 3. Remove two bolts (Figure 16, Item 2) and reflector (Figure 16, Item 3) from roller assembly (Figure 16, Item 1).
 4. Remove six nuts (Figure 16, Item 7), washers (Figure 16, Item 6), bolts (Figure 16, Item 4), and washers (Figure 16, Item 5) from roller assembly (Figure 16, Item 1).
 5. Use lifting device to remove roller assembly (Figure 16, Item 1) from vehicle.

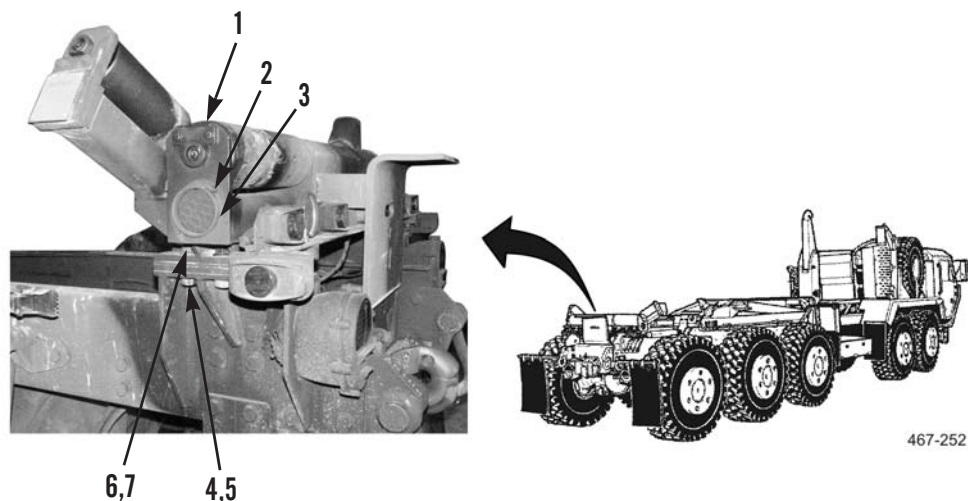


Figure 16. Roller Assembly Removal.

PLS REMOVAL – CONTINUED**Light Bar and Bumper Stop Removal**

1. Disconnect light bar wiring harness (Figure 17, Item 3) from vehicle wiring harness (Figure 17, Item 4).
2. Remove rear light bar (Figure 17, Item 2) from vehicle and set aside for disassembly and reinstallation.
3. With assistance, remove six nuts (Figure 17, Item 6), bolts (Figure 17, Item 7), and bumper stop bracket (Figure 17, Item 1) from frame (Figure 17, Item 5). Set aside for reinstallation.

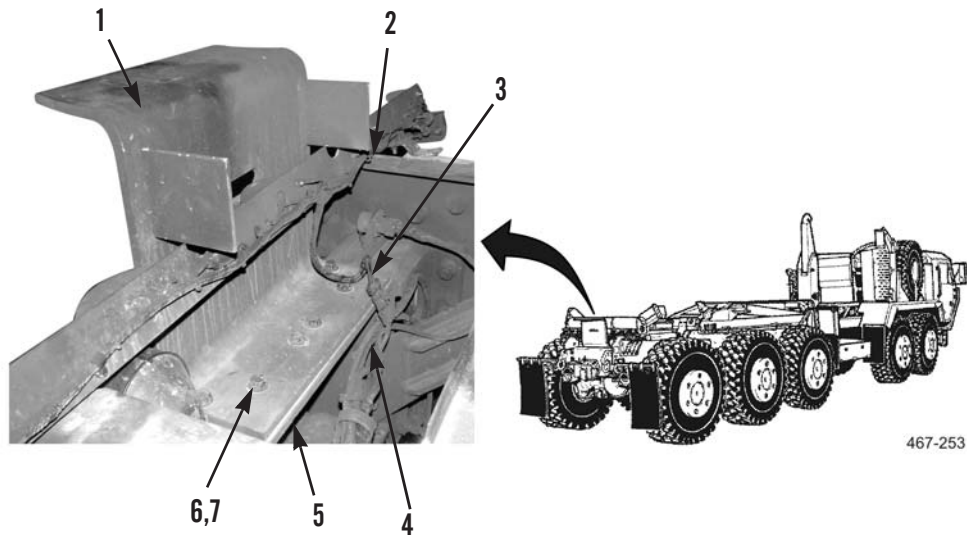


Figure 17. Light Bar and Bumper Stop Removal.

Operator Platform Removal

1. Remove four nuts (Figure 18, Item 10), washers (Figure 18, Item 9), springs (Figure 18, Item 8), washers (Figure 18, Item 7), bolts (Figure 18, Item 6) and platform (Figure 18, Item 1), from platform stands (Figure 18, Item 5).
2. Remove four nuts (Figure 18, Item 3), bolts (Figure 18, Item 4) and two platform stands (Figure 18, Item 5) from right and left frame (Figure 18, Item 2). Set aside bolts and nuts for reinstallation.

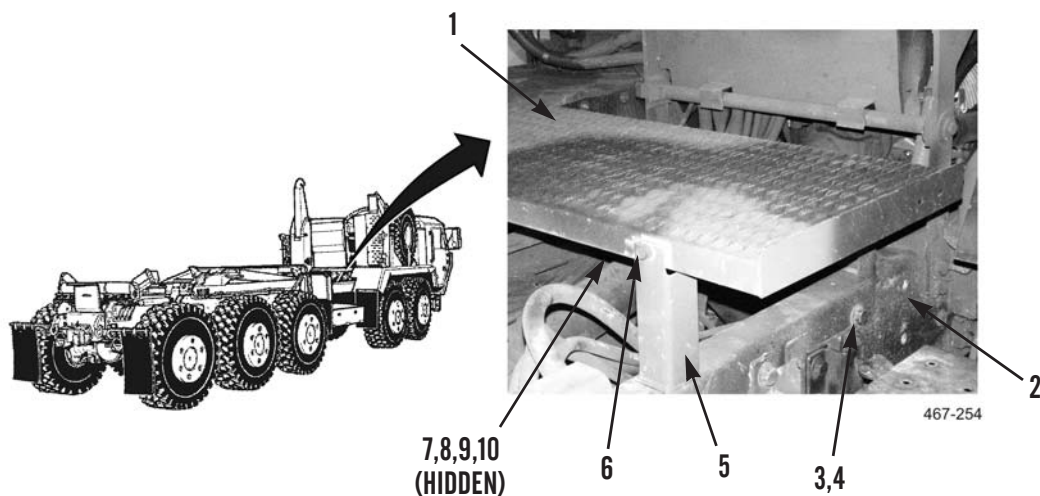


Figure 18. Operator Platform Removal.

PLS REMOVAL – CONTINUED**Hydraulic Fittings Replacement****WARNING**

- Disconnecting quick disconnect fittings will not relieve hydraulic system pressure. Failure to follow this warning may result in death or serious injury to personnel.
- Use extreme caution when disconnecting hydraulic hoses. Contact with hydraulic oil can damage eyes and skin. Wear eye protection, gloves and protective clothing while removing hydraulic hoses. Failure to follow this warning may result in death or serious injury to personnel.
- Hydraulic fluid under pressure can penetrate the skin and cause injury, blindness, or death. Pressure may build up in a hydraulic system. **DO NOT** perform any hydraulic system service without first shutting down the engine to relieve system pressure. Failure to follow this warning may result in death or serious injury to personnel.

NOTE

- Tag all hoses and fittings to aid in installation.
- Cap all hoses and fittings on removal to prevent contamination.
- Hydraulic fluid will drain from hoses upon removal. Use rags or containers to collect fluid.
- Perform steps 1 through 10 for PLS M1075 only. Hydraulic fitting installation for PLS M1075A1 will be covered later.

PLS REMOVAL – CONTINUED**Hydraulic Fittings Replacement – Continued**

1. Disconnect two quick disconnect fittings (Figure 19, Item 6) from male and female couplers (Figure 19, Item 5).
2. Carefully remove two hydraulic hoses (Figure 19, Item 3) from elbow fittings (Figure 19, Item 2), and loosen other end of hoses.
3. Remove male and female coupler fittings (Figure 19, Item 5) from elbow fittings (Figure 19, Item 2).
4. Remove two jam nuts (Figure 19, Item 4) and elbow fittings (Figure 19, Item 2) from bracket (Figure 19, Item 1). Discard elbow fittings and jam nuts.

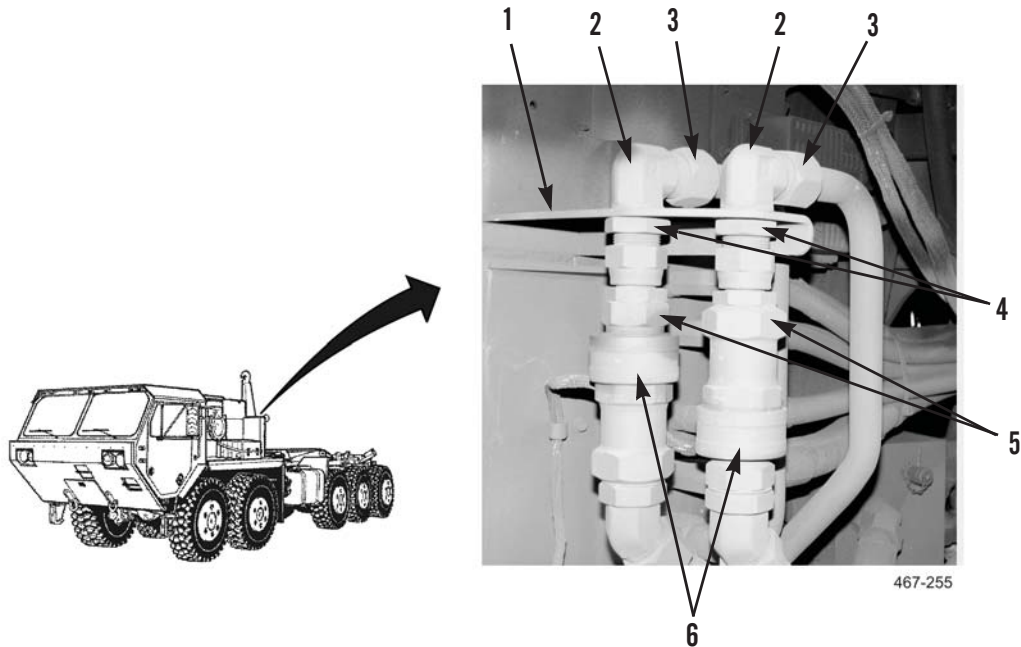
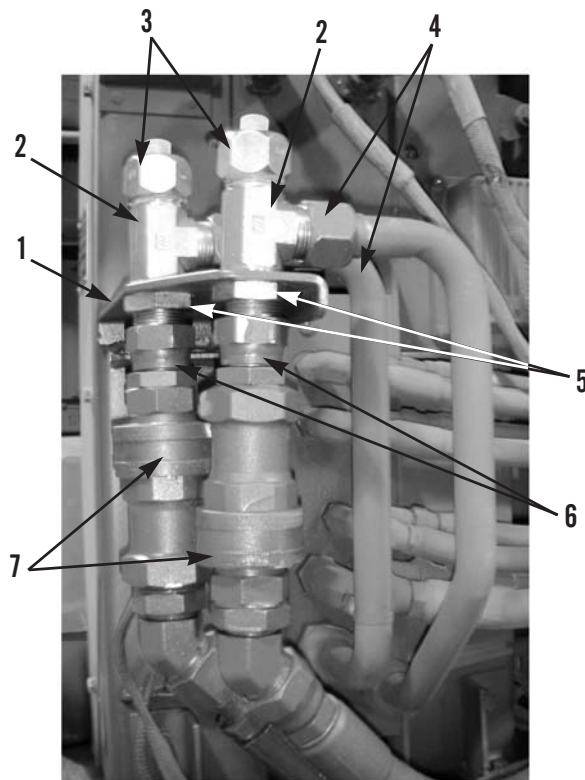


Figure 19. PLS M1075 Hydraulic Hose Removal.

PLS REMOVAL – CONTINUED**Hydraulic Fittings Replacement – Continued****NOTE**

- Hand tighten all hoses and fittings on installation
 - Install longer end of T-fitting through bracket.
5. Install two T-fittings (Figure 20, Item 2) and jam nuts (Figure 20, Item 5) on bracket (Figure 20, Item 1).
 6. Install two tube end reducers (Figure 20, Item 3) on T-fittings (Figure 20, Item 2).
 7. Install two hydraulic hoses (Figure 20, Item 4) on T-fittings (Figure 20, Item 2).
 8. Install male and female coupler fittings (Figure 20, Item 6) on T-fittings (Figure 20, Item 2).
 9. Tighten all hoses and fittings.
 10. Connect two quick disconnect fittings (Figure 20, Item 7) to male and female coupler fittings (Figure 20, Item 6).



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Figure 20. PLS M1075 Hydraulic Fittings Replacement.

PLS REMOVAL – CONTINUED**Hydraulic Fittings Replacement – Continued**

11. On left side of vehicle, remove three bolts (Figure 21, Item 1) and nuts (Figure 21, Item 2) from frame (Figure 21, Item 3).

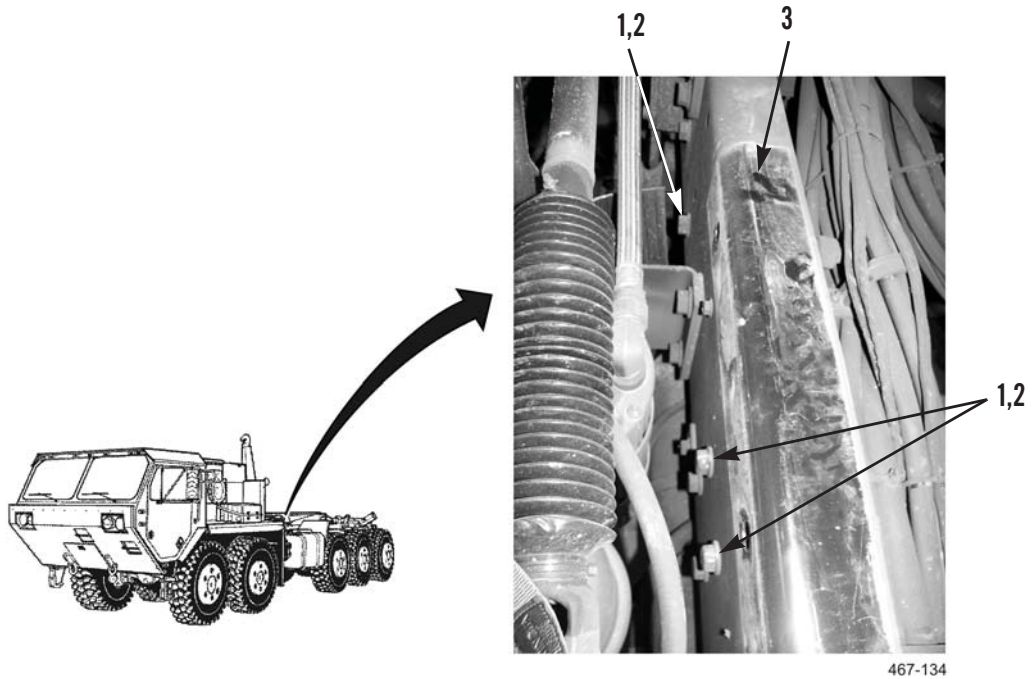


Figure 21. PLS Left-Side Bolt Removal.

PLS REMOVAL – CONTINUED**Hydraulic Fittings Replacement – Continued**

12. On right side of vehicle, remove two nuts (Figure 22, Item 3), bolts (Figure 22, Item 2), and spacers (Figure 22, Item 1) from gas tank bracket (Figure 22, Item 4).
13. Remove bolt (Figure 22, Item 6) and nut (Figure 22, Item 7) from frame (Figure 22, Item 5).

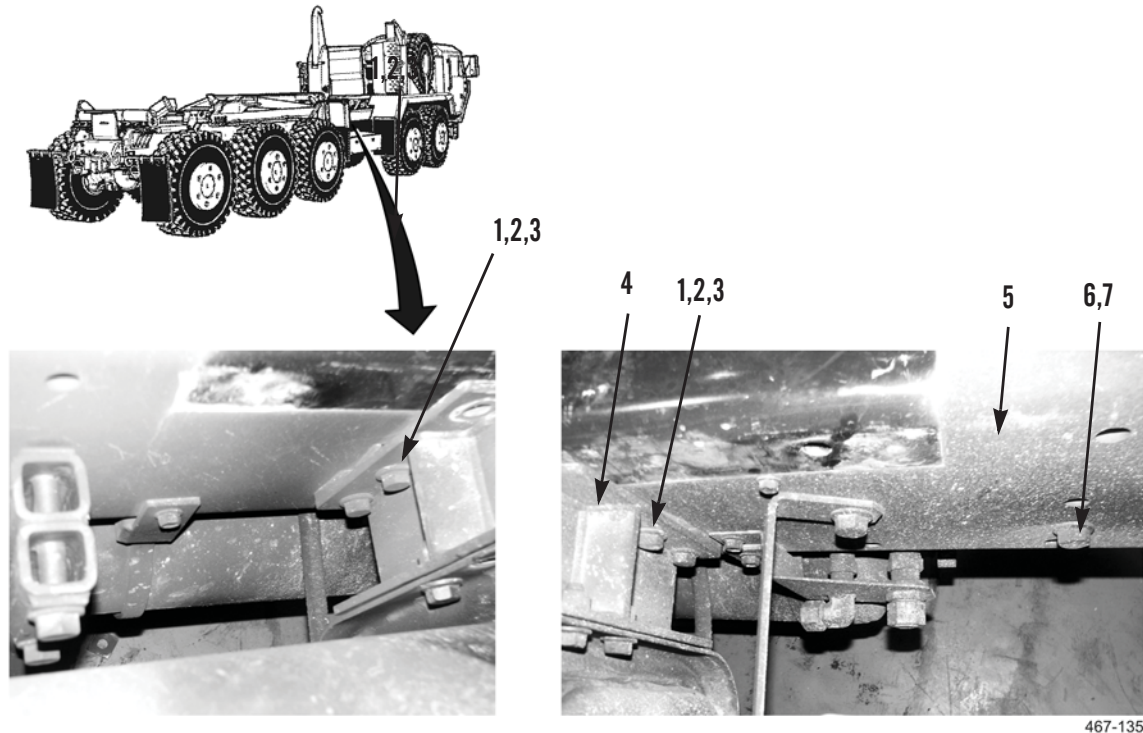


Figure 22. PLS Right-Side Bolt Removal.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**INSTALLATION INSTRUCTIONS**

HEMTT Stowage Assembly Installation, PLS Stowage Assembly Installation, HEMTT Slider Assembly Installation, PLS Slider Assembly Installation, Twistlock Sensor Installation, Middle Frame Sensor Installation, Hook Arm Sensor Installation, Sensor Calibration, Stowage Guide Position Calibration, Light Bar Assembly Installation

INITIAL SETUP**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0057, Item 2)
Tool Set, SATS Base (WP 0057, Item 3)
Sling, Nylon (WP 0057, Item 1)
Lifting equipment (2,000-lb capacity)

Materials/Parts

Adhesive, Thread (WP 0060, Item 1)
Cap Set, Protective, Dust and Moisture
(WP 0060, Item 3)
Strap, Tiedown, Electrical Components
(WP 0060, Item 11)
Tag, Marker (WP 0060, Item 12)
Tape, Thread Teflon (WP 0060, Item 13)

Personnel Required

Two

References

TM 9-2320-364-20
WP 0048

Equipment Condition

Vehicle parked on level ground, in neutral gear with parking brake applied (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Hook arm fully extended (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P)
Original equipment removed (WP 0051)

HEMTT STOWAGE ASSEMBLY INSTALLATION

Table 1. Parts List for HEMTT Stowage Assembly Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 6, Item 1	1	Stowage Assembly	111560101
Figure 2, Item 1	1	Left Support Bracket	112079301
Figure 3, Item 1	1	Right Support Bracket	112079302
Figure 2, Item 2	2	2 5/8 x 3 Bolt	112648301
Figure 2, Item 5	1	5/8 x 2 1/2 Bolt	112079720
Figure 3, Item 3	3	5/8 x 2 1/2 Bolt	112079720
Figure 6, Item 3	12	1/2 x 2 Bolt	112079811
Figure 6, Items 4 and 5	24	1/2 Washer	112080104
Figure 6, Item 6	12	1/2 Locknut	112080004
Figure 4, Item 2	2	Stowage Spacer	112079001
Figure 4, Item 6	4	3/8 x 3 1/2 Bolt (spacer)	112079704
Figure 4, Item 7	8	3/8 Washer (spacer)	112080106
Figure 4, Item 3	4	3/8 Locknut (spacer)	112080002
Figure 15, Item 3	1	Pneumatic T-Fitting	112079501 (kit)

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

Hand tighten all bolts and nuts on installation. Reposition support brackets during stowage assembly installation.

1. Install two bolts and nuts removed from stowage box in two holes (Figure 1, Item 4) on frame (Figure 1, Item 1).
2. Remove two bolts (Figure 1, Item 2) and nuts (Figure 1, Item 3) from frame (Figure 1, Item 1).

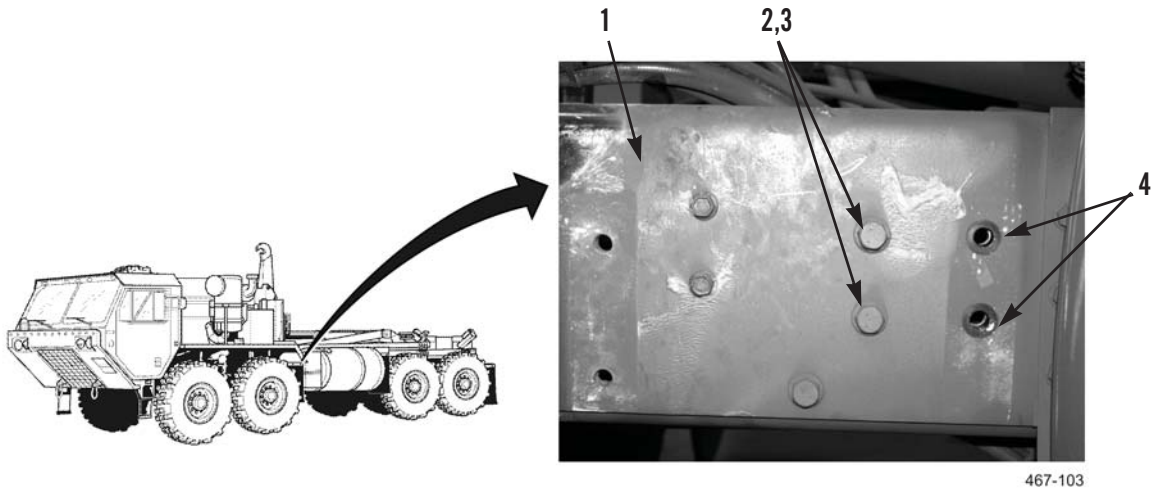


Figure 1. Remove and Replace Frame Bolts.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

NOTE

Use new bolts and original nuts for steps 3 and 4.

3. Install left-side stowage assembly support bracket (Figure 2, Item 1), two bolts (Figure 2, Item 2), and nuts (Figure 2, Item 3) on frame (Figure 2, Item 4).
4. Install bolt (Figure 2, Item 5) and nut (Figure 2, Item 6) on frame (Figure 2, Item 4).

NOTE

Use nuts and bolts removed with tiedown when reinstalling.

5. Install tiedown (Figure 2, Item 9), four bolts (Figure 2, Item 8), and nuts (Figure 2, Item 7) on frame (Figure 2, Item 4).

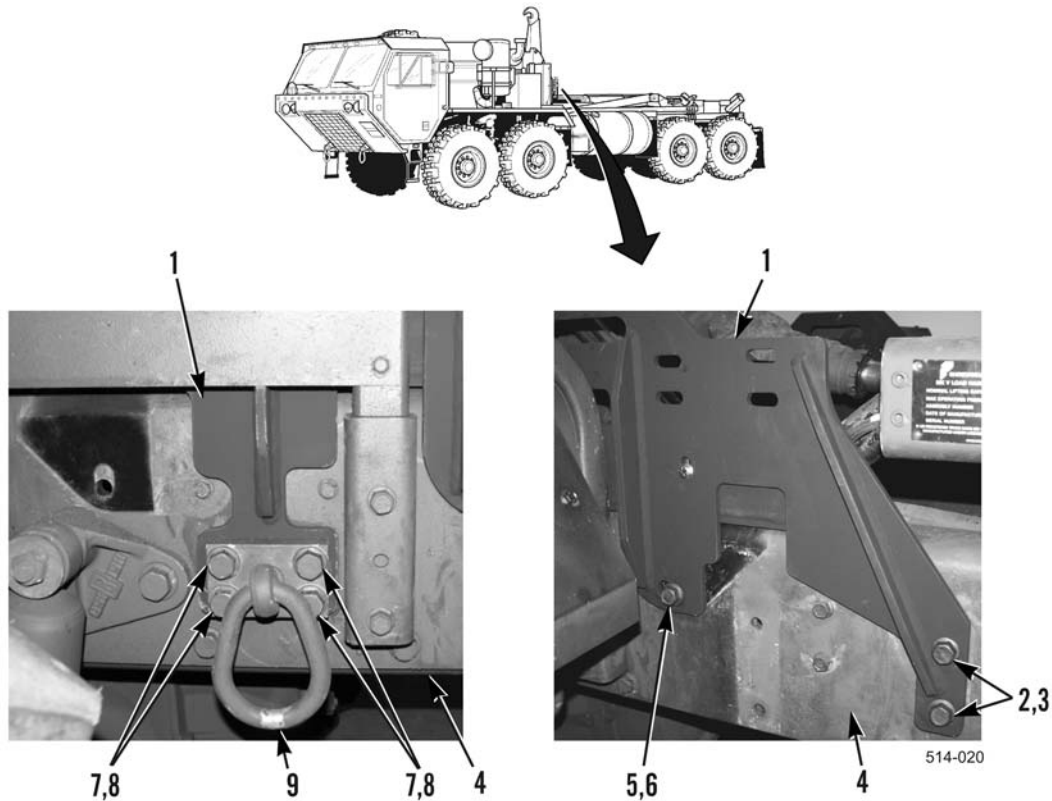


Figure 2. HEMTT Left-Side Stowage Support Bracket.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

Use new bolts and original nuts in step 5.

6. Install right-side stowage assembly support bracket (Figure 3, Item 1), three bolts (Figure 3, Item 3) and nuts (Figure 3, Item 4) on frame (Figure 3, Item 2).

NOTE

Use nuts and bolts removed with tiedown when reinstalling.

7. Install tiedown (Figure 3, Item 7), four bolts (Figure 3, Item 5) and nuts (Figure 3, Item 6) on frame (Figure 3, Item 2).

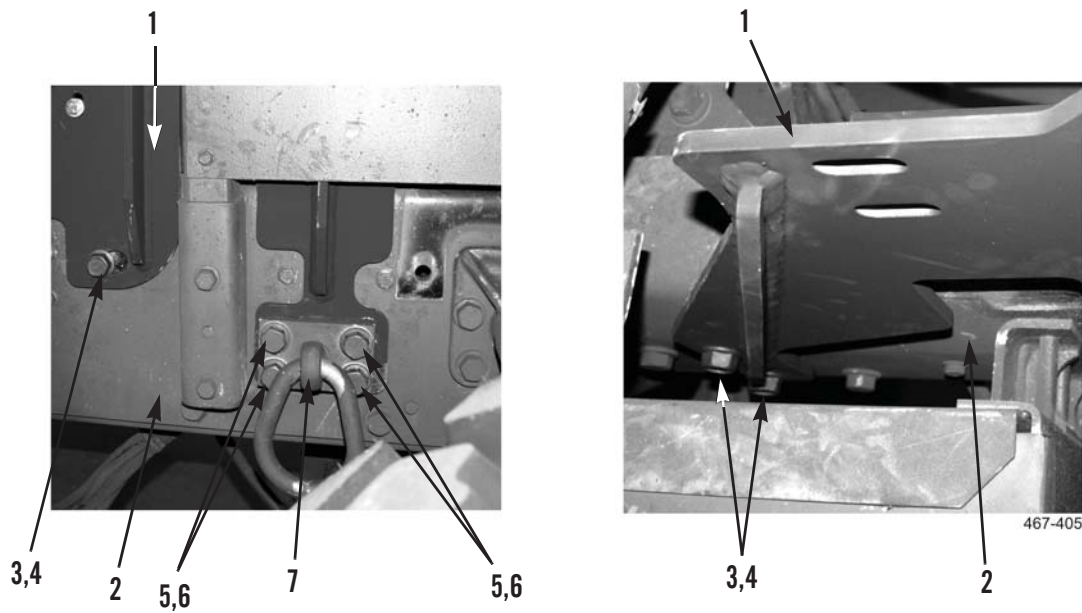


Figure 3. HEMTT Right-Side Stowage Support Bracket.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

Perform steps 7 and 8 for both left and right sides.

8. Place spacer (Figure 4, Item 2) on frame (Figure 4, Item 1) next to stowage assembly support bracket (Figure 4, Item 5), aligning holes in spacer with holes in stowage assembly support bracket.
9. Install two washers (Figure 4, Item 7), bolts (Figure 4, Item 6), washers (Figure 4, Item 4), and locknuts (Figure 4, Item 3) through spacer (Figure 4, Item 2) and stowage assembly support bracket (Figure 4, Item 5).

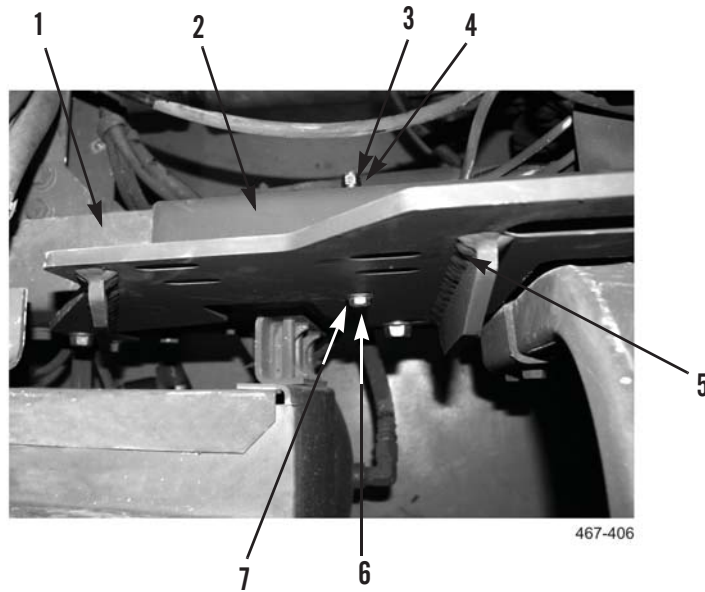


Figure 4. HEMTT Stowage Support Spacer.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may cause injury or death to personnel.

CAUTION

Ensure hydraulic hoses and wiring harnesses are placed out of the way before installing stowage assembly. Failure to follow this caution may result in damage to equipment.

NOTE

Stowage assembly weighs 640 lb (290 kg).

10. Attach sling (Figure 5, Item 1) and lifting device to stowage assembly (Figure 5, Item 2).

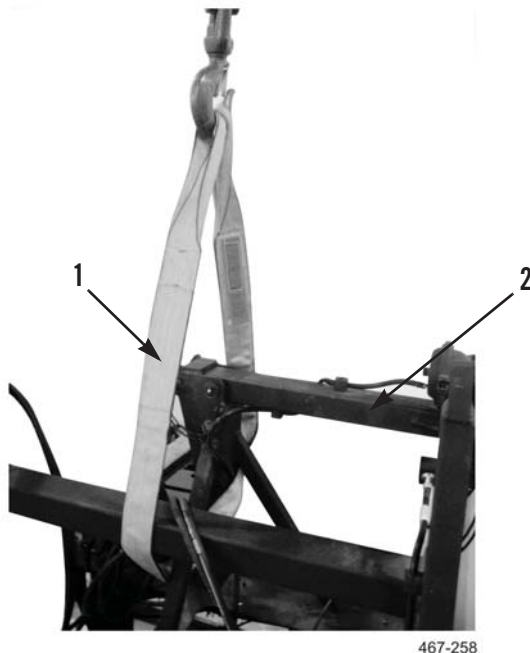


Figure 5. Sling on Stowage Assembly.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

11. Use lifting device to place stowage assembly (Figure 6, Item 1) on frame between support brackets (Figure 6, Item 2). Align holes in stowage assembly with holes in support brackets.

NOTE

- Hand tighten all bolts and nuts on installation. Reposition stowage assembly during installation.
 - Perform step 11 for both left and right sides.
12. Install six washers (Figure 6, Item 4), bolts (Figure 6, Item 3), washers (Figure 6, Item 5), and locknuts (Figure 6, Item 6) on support bracket (Figure 6, Item 2).

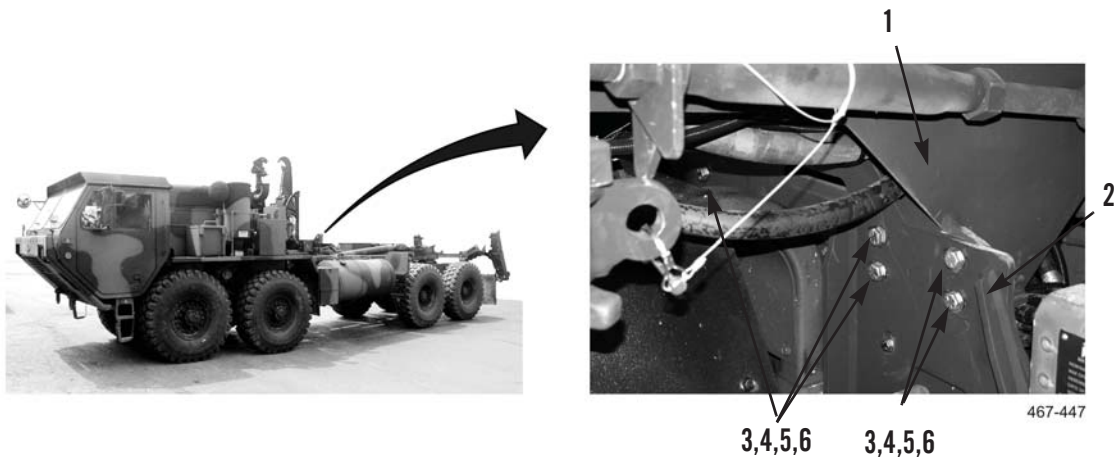


Figure 6. HEMTT Stowage Assembly Installation.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

- Perform steps 13 through 16 for HEMTT M1120.
- Perform steps 17 through 20 for HEMTT M1120A4.
- Install hoses as tagged during removal.
- Remove caps prior to installation of hoses.

13. Route four upper hoses (Figure 7, Item 2) in front of stowage assembly (Figure 7, Item 3) to hydraulic control (Figure 7, Item 6).
14. Install four upper hoses (Figure 7, Item 2) on fittings (Figure 7, Item 1) on hydraulic control (Figure 7, Item 6).
15. Route four lower hoses (Figure 7, Item 4) under stowage assembly (Figure 7, Item 3) to hydraulic control (Figure 7, Item 6).
16. Install four lower hoses (Figure 7, Item 4) on fittings (Figure 7, Item 5) on hydraulic control (Figure 7, Item 6).

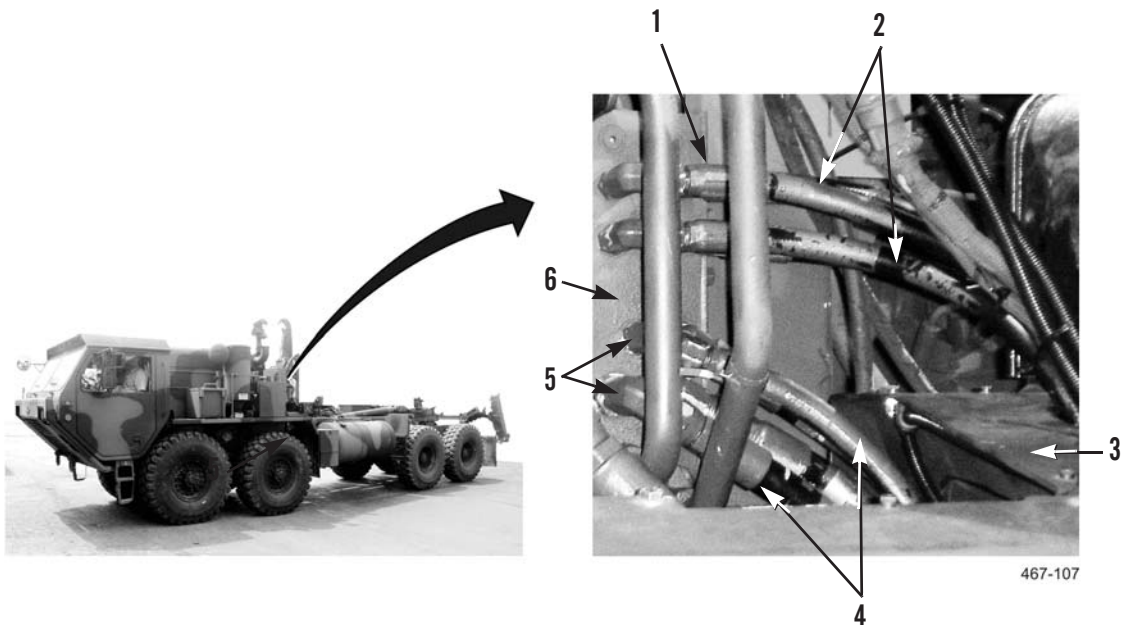


Figure 7. HEMTT M1120 Route and Install Hydraulic Hoses.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

17. Route four upper hoses (Figure 8, Item 2) in front of stowage assembly to hydraulic control box (Figure 8, Item 1).
18. Install four upper hoses (Figure 8, Item 2) on fittings (Figure 8, Item 3) on hydraulic control box (Figure 8, Item 1).
19. Route four lower hoses (Figure 8, Item 4) under stowage assembly to hydraulic control box (Figure 8, Item 1).
20. Install four lower hoses (Figure 8, Item 4) on fittings (Figure 8, Item 5) on hydraulic control box (Figure 8, Item 1).

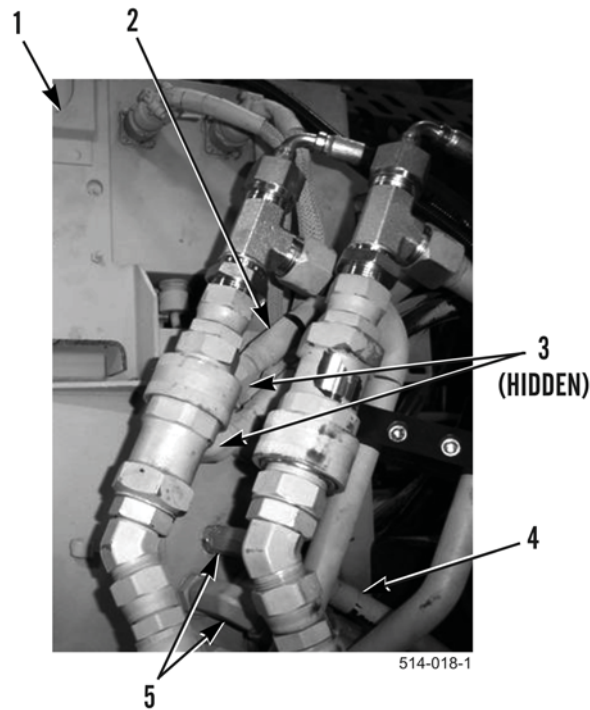


Figure 8. HEMTT M1120A4 Route and Install Hydraulic Hoses.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

21. Loosen three locking pins (Figure 9, Item 1) and remove manifold cover (Figure 9, Item 2) from stowage assembly (Figure 9, Item 6).

NOTE

- Pressure hose is marked with “P” on solenoid.
- Relief hose is marked with “T” on solenoid.

22. Identify pressure hose (Figure 9, Item 4) and relief hose (Figure 9, Item 3) based on markings on manifold (Figure 9, Item 5).

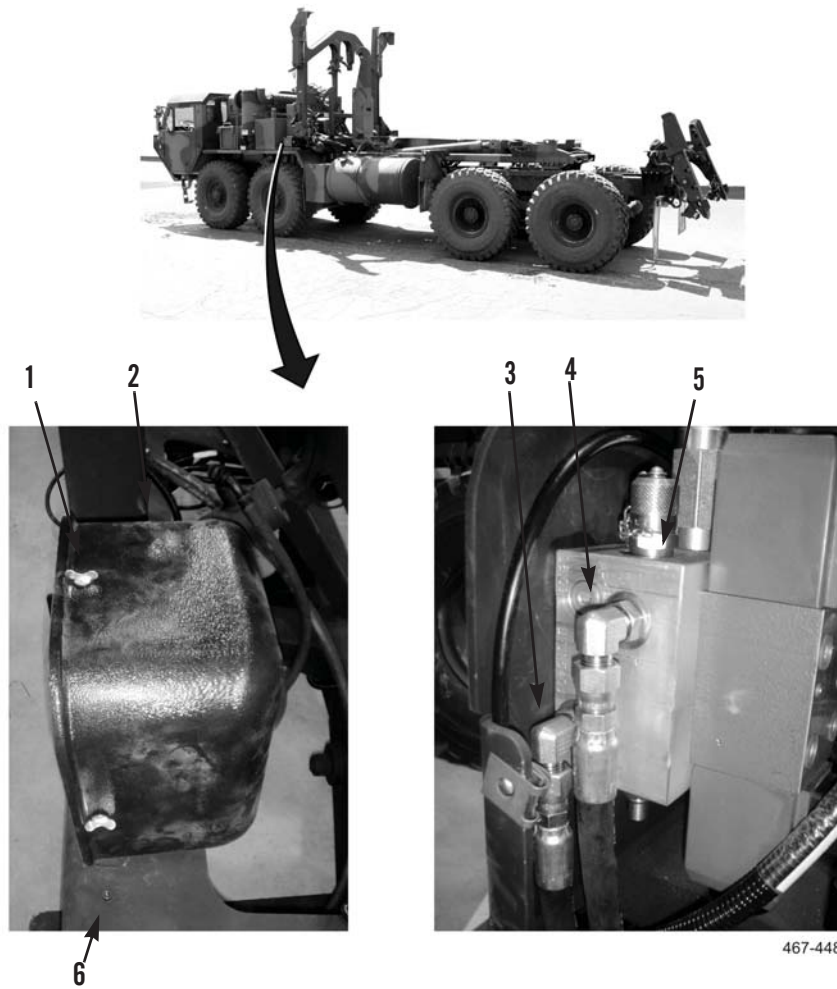


Figure 9. Identify Stowage Hydraulic Hoses.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

- Perform steps 23 through 29 for HEMTT M1120.
- Perform steps 30 through 36 for HEMTT M1120A4.

23. Route pressure hose (Figure 10, Item 2) and relief hose (Figure 10, Item 3) to hydraulic control (Figure 10, Item 1).
24. Install pressure hose (Figure 10, Item 2) from stowage assembly (Figure 10, Item 6) on T-fitting (Figure 10, Item 10) on hydraulic control (Figure 10, Item 1).
25. Install relief hose (Figure 10, Item 3) from stowage assembly (Figure 10, Item 6) on T-fitting (Figure 10, Item 9) on hydraulic control (Figure 10, Item 1).
26. Route male and female quick disconnect hoses (Figure 10, Item 7) from under stowage assembly (Figure 10, Item 6) to hydraulic control (Figure 10, Item 1) and install on hydraulic control quick disconnect fittings (Figure 10, Item 8).

NOTE

Stowage assembly wiring harness will not be installed at this time.

27. Route wiring harness (Figure 10, Item 4) to hydraulic control (Figure 10, Item 1) and install as marked during removal.
28. Route wiring harness (Figure 10, Item 5) to hydraulic control (Figure 10, Item 1) and install as marked during removal.
29. Verify that all loosened, repositioned, or installed hydraulic hoses and fittings are tightened and secure.

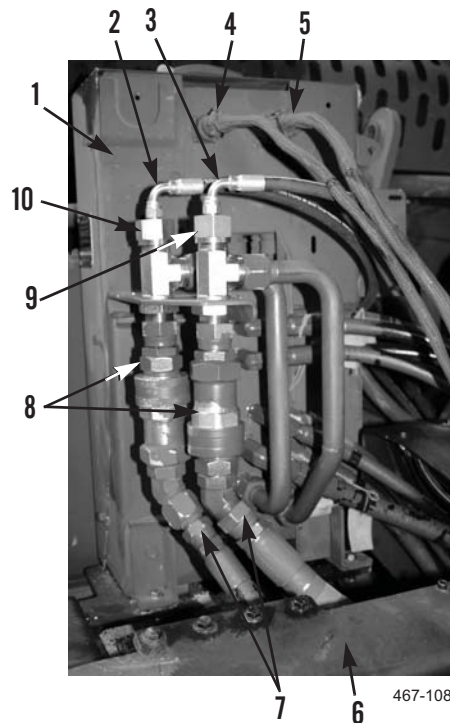


Figure 10. HEMTT M1120 Install Hydraulic Hoses and Wiring Harnesses.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

30. Route pressure hose (Figure 11, Item 4) and relief hose (Figure 11, Item 5) to hydraulic control (Figure 11, Item 1).
31. Install pressure hose (Figure 11, Item 4) on T-fitting (Figure 11, Item 9) on hydraulic control (Figure 11, Item 1).
32. Install relief hose (Figure 11, Item 5) on T-fitting (Figure 11, Item 6) on hydraulic control (Figure 11, Item 1).
33. Route male and female quick disconnect hoses (Figure 11, Item 8) from under stowage assembly to hydraulic control (Figure 11, Item 1) and install on hydraulic control quick disconnect fittings (Figure 11, Item 7).

NOTE

Stowage assembly wiring harness will not be installed at this time.

34. Route wiring harness (Figure 11, Item 2) to hydraulic control (Figure 11, Item 1) and install as marked during removal.
35. Route wiring harness (Figure 11, Item 3) to hydraulic control (Figure 11, Item 1) and install as marked during removal.
36. Verify that all loosened, repositioned, or installed hydraulic hoses and fittings are tightened and secure.

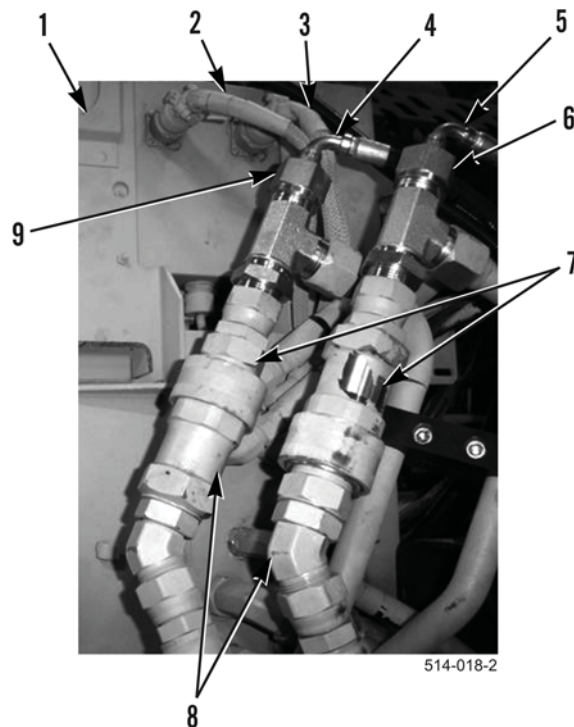


Figure 11. HEMTT M1120A4 Install Hydraulic Hoses and Wiring Harnesses.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**CAUTION**

Use caution when handling sensor harness. Sensors are easily damaged if mishandled. Failure to follow this caution may cause damage to equipment.

NOTE

Middle frame sensor harness and hook arm sensor harness are on right side of stowage assembly.

37. Route middle frame sensor and hook arm sensor harnesses (Figure 12, Item 1) from stowage assembly (Figure 12, Item 2), along inside of right side of frame (Figure 12, Item 4) to rear of main frame.
38. Install new tiedown straps (Figure 12, Item 3) as required to attach middle frame and hook arm sensor harnesses (Figure 12, Item 1) to existing hoses along frame.

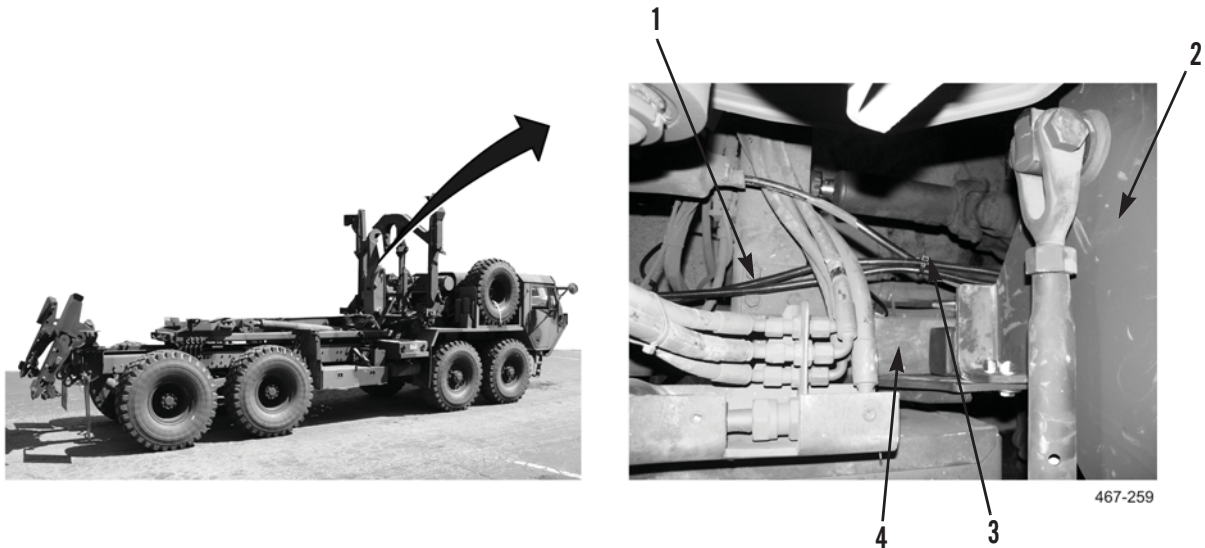


Figure 12. Middle Frame and Hook Arm Harness Installation.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED**CAUTION**

Use caution when handling sensor harness. Sensors are easily damaged if mishandled. Failure to follow this caution may cause damage to equipment.

NOTE

RH and LH twistlock sensor harness are on left side of stowage assembly.

39. Route RH and LH twistlock sensor harnesses (Figure 13, Item 1) from stowage assembly (Figure 13, Item 2), along interior of left side of frame (Figure 13, Item 4) to rear of vehicle. Route each sensor harness to rear of vehicle.
40. Install new tiedown straps (Figure 13, Item 3) as required to attach twistlock sensor harnesses (Figure 13, Item 1) to existing hoses along frame (Figure 13, Item 4).

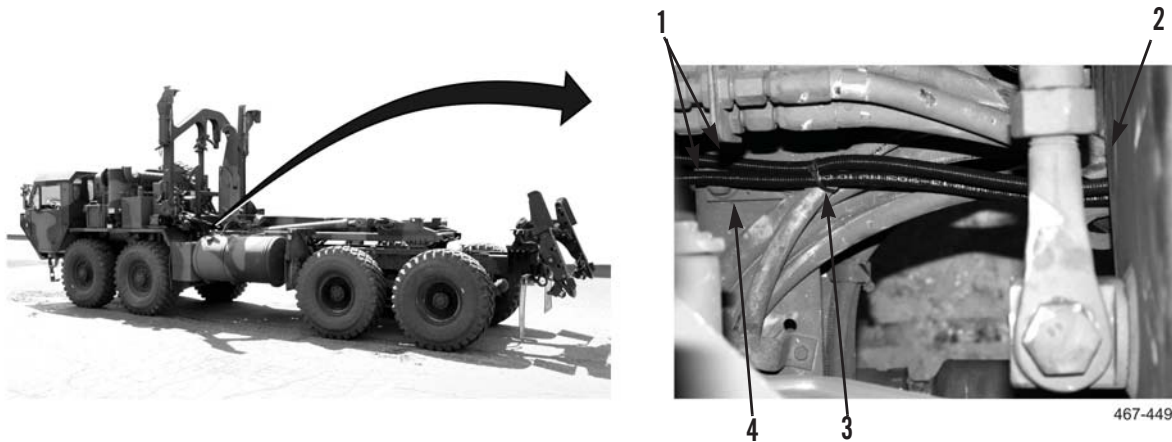


Figure 13. Twistlock Sensor Harness Installation.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

41. Route air hose (Figure 14, Item 3) from solenoid valve (Figure 14, Item 4) on stowage assembly (Figure 14, Item 5) to air tank on right side of vehicle.
42. Install manifold cover (Figure 14, Item 2) in stowage assembly (Figure 14, Item 5) and secure three locking pins (Figure 14, Item 1).

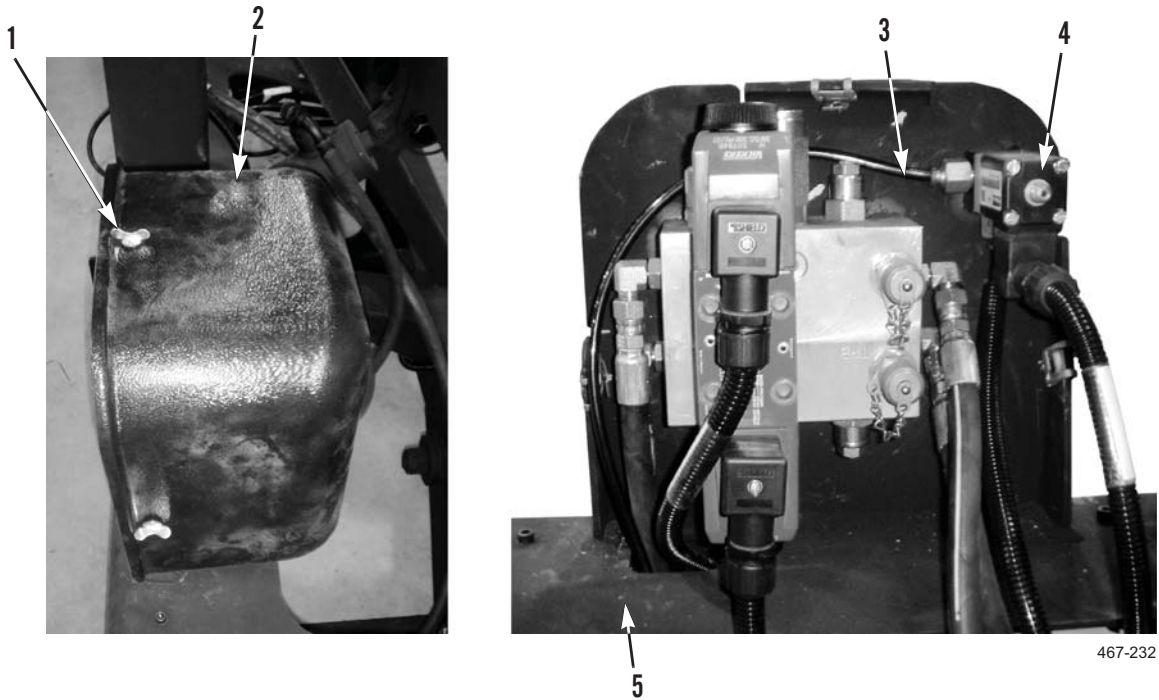


Figure 14. Routing Stowage Assembly Air Hose.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

NOTE

- After relieving air pressure from system ensure relief valve is closed.
- Perform steps 43 through 47 for HEMTT M1120.
- Perform steps 48 through 51 for HEMTT M1120A4.

43. Release air pressure from system (TM 9-2320-326-14&P).

44. Remove quick disconnect air fitting (Figure 15, Item 1) from air tank fitting (Figure 15, Item 2).

45. Apply thread tape on pneumatic T-fitting (Figure 15, Item 3) and install pneumatic T-fitting on air tank fitting (Figure 15, Item 2).

46. Apply thread tape on quick disconnect air fitting (Figure 15, Item 1) and install quick disconnect air fitting on pneumatic T-fitting (Figure 15, Item 2).

47. Cut air hose (Figure 15, Item 4) to fit, and install on pneumatic fitting (Figure 15, Item 3).

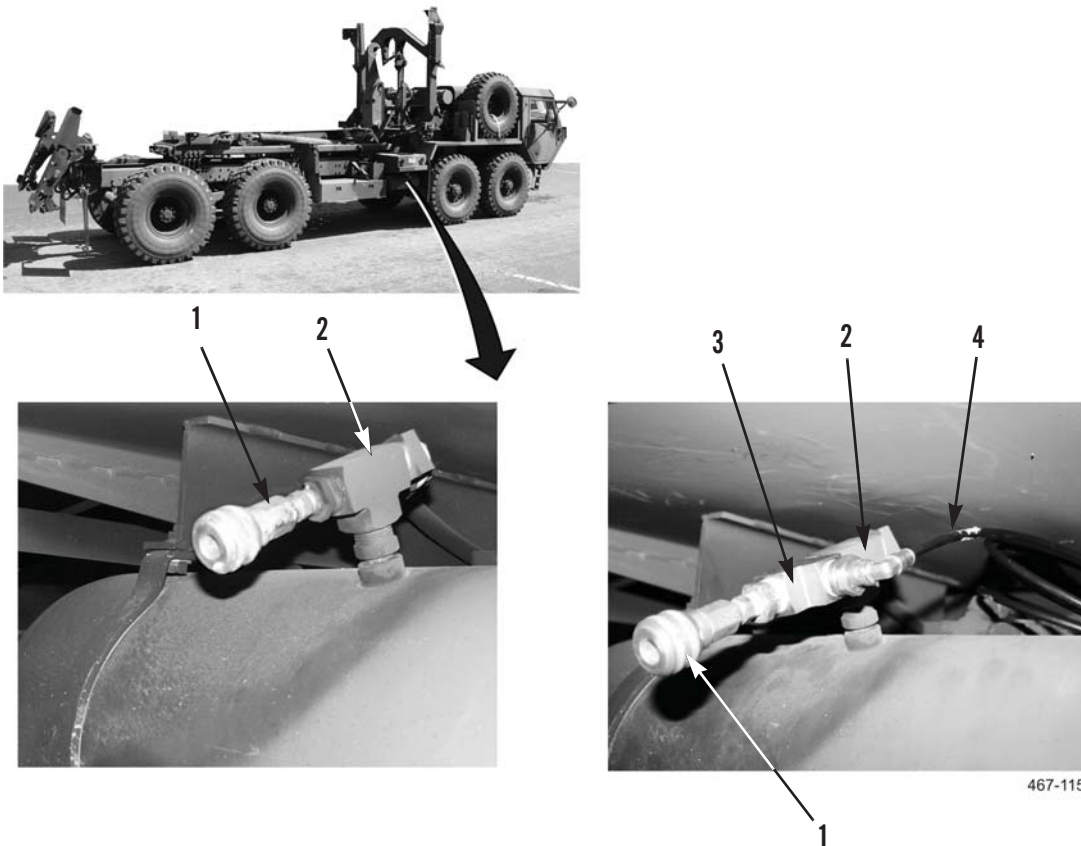


Figure 15. HEMTT M1120 Pneumatic Fitting and Hose Installation.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

48. Remove hose fitting (Figure 16, Item 3) from tank fitting (Figure 16, Item 4).
49. Apply thread tape on T-fitting (Figure 16, Item 5) and install T-fitting on tank fitting (Figure 16, Item 4).
50. Apply thread tape on hose fitting (Figure 16, Item 3) and install hose fitting on T-fitting (Figure 16, Item 5).
51. Cut air hose (Figure 16, Item 1) to fit and install on pneumatic fitting (Figure 16, Item 2).

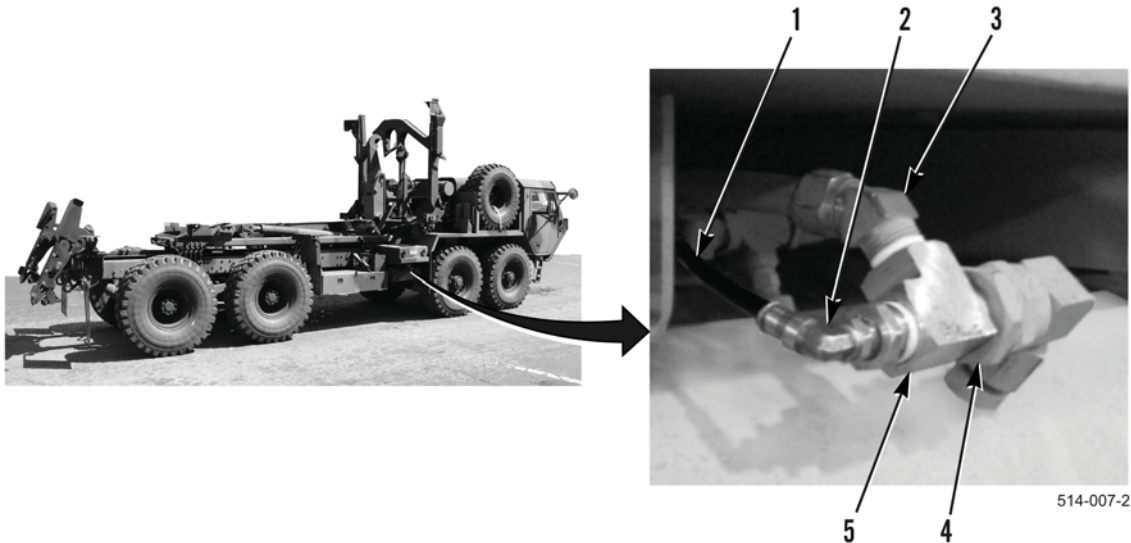


Figure 16. HEMTT M1120A4 Pneumatic Fitting and Hose Installation.

52. Move hook arm to stowed position (TM 9-2320-326-14&P).

NOTE

Rear edge of stowage assembly must be positioned 3 1/8 in. (80 mm) from front edge of stowed hook arm. Measure distance on right and left sides of hook arm for accurate placement of stowage assembly.

53. Adjust placement of stowage assembly (Figure 17, Item 1) on frame until distance between stowage assembly and front edge of hook arm (Figure 17, Item 2) measures 3 1/8 in. (80 mm).

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

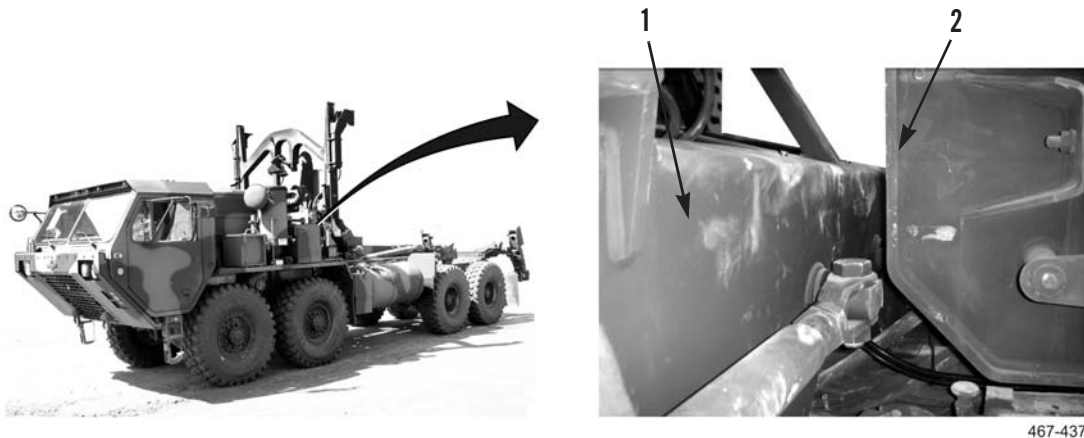


Figure 17. Distance Between Stowage Assembly and Hook Arm.

54. Tighten 12 bolts (Figure 18, Item 1) and nuts (Figure 18, Item 2) securing stowage assembly (Figure 18, Item 4) to right and left support brackets (Figure 18, Item 3).
55. Tighten four bolts (Figure 18, Item 8) and nuts (Figure 18, Item 9) securing right and left brackets to spacers.
56. Tighten six bolts (Figure 18, Item 10) and nuts (Figure 18, Item 11) securing right and left brackets to frame.
57. Tighten eight bolts (Figure 18, Item 5) and nuts (Figure 18, Item 6) securing right and left tiedown rings (Figure 18, Item 7) to frame.

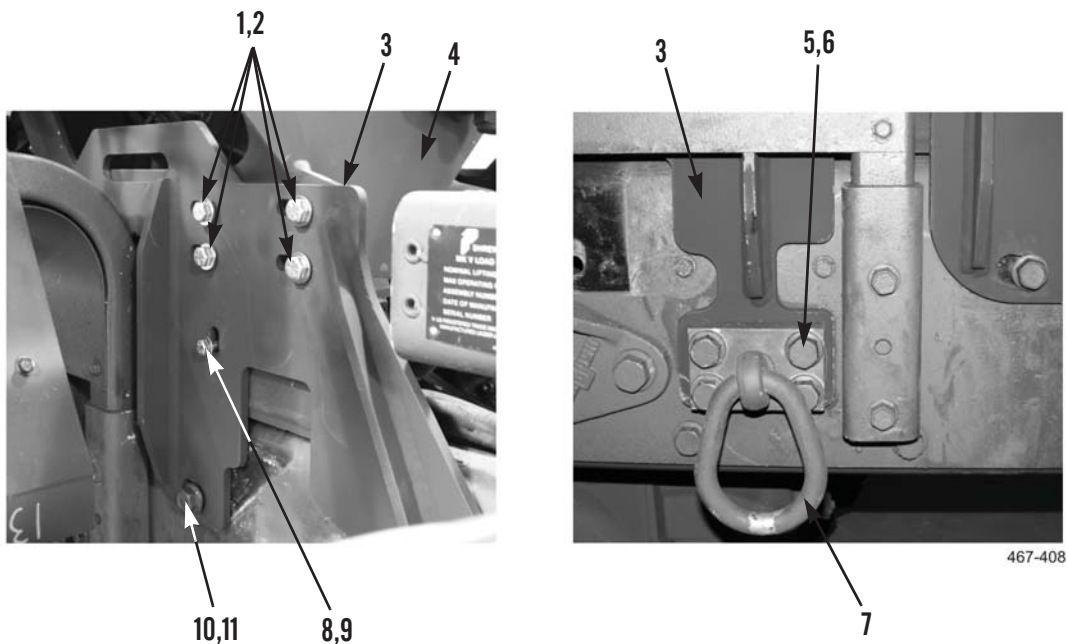


Figure 18. Secure HEMTT Stowage Assembly.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

58. Attach sling and lifting device to stowage box (Figure 19, Item 7).
59. Use lifting device to position stowage box (Figure 19, Item 7) on frame (Figure 19, Item 8).
60. Install four bolts (Figure 19, Item 1), and nuts (Figure 19, Item 2), securing stowage box (Figure 19, Item 7) to frame (Figure 19, Item 8).
61. Install washer (Figure 19, Item 5), bolt (Figure 19, Item 4) and nut (Figure 19, Item 6) securing mudflap (Figure 19, Item 3) to stowage box (Figure 19, Item 7).

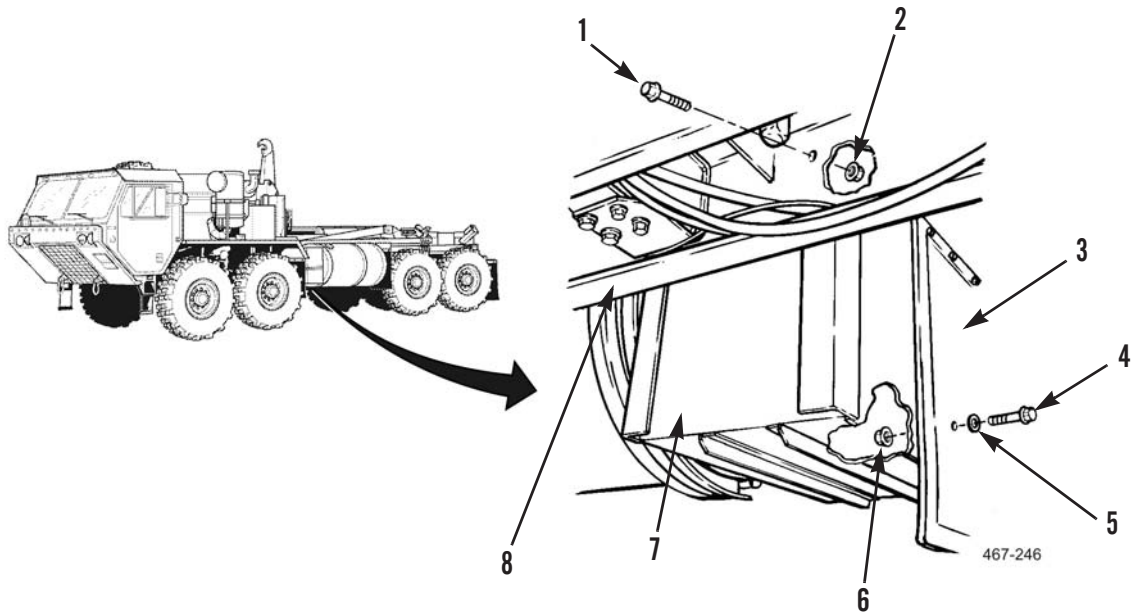


Figure 19. Stowage Box Installation.

HEMTT STOWAGE ASSEMBLY INSTALLATION – CONTINUED

62. Remove two nuts (Figure 20, Item 1) washers (Figure 20, Item 2), washers (Figure 20, item 3), and bolts (Figure 20, Item 4) from hydraulic control mounting bracket (Figure 20, Item 5).
63. Install control panel (Figure 20, Item 8), and four bolts (Figure 20, Item 6) on stowage control panel bracket (Figure 20, Item 7).
64. Install stowage control panel bracket (Figure 20, Item 7), two washers (Figure 20, Item 3), bolts (Figure 20, item 4), washers (Figure 20, Item 2), and nuts (Figure 20, Item 1) on hydraulic control mounting bracket (Figure 20, item 5).

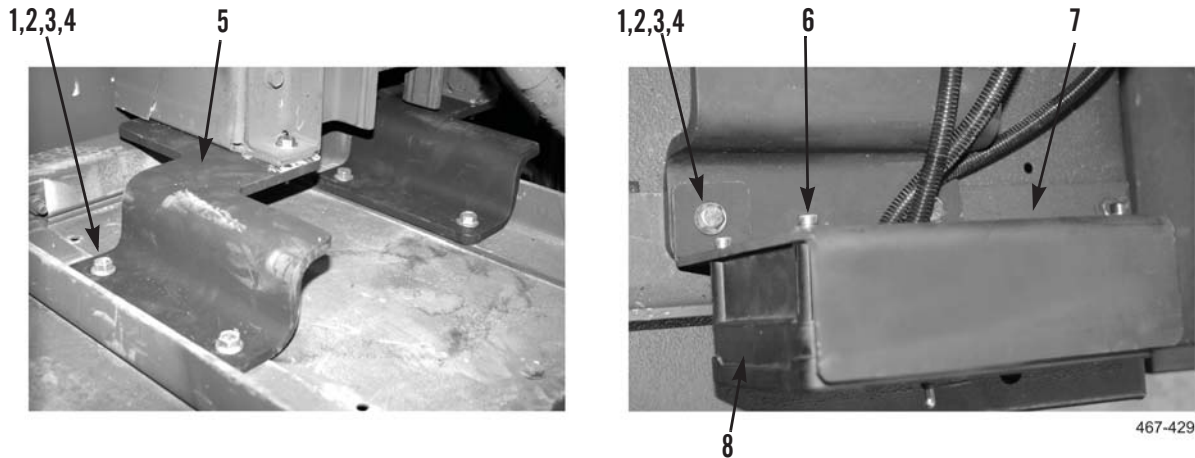


Figure 20. Control Panel Installation.

END OF TASK

PLS STOWAGE ASSEMBLY INSTALLATION

Table 2. Parts List for PLS Stowage Assembly Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 25, Item 1	1	Stowage Assembly	111560101
Figure 21, Item 1	1	Left Support Bracket	112079201
Figure 22, Item 1	1	Right Support Bracket	112079202
Figure 21, Item 3	4	5/8 x 2 Bolt	112079725
Figure 21, Item 4	4	5/8 Nut	112081103
Figure 21, Item 7	4	3/4 x 3 Bolt	112079726
Figure 22, Item 5			
Figure 25, Item 3	12	1/2 x 2 Bolt	112079811
Figure 25, Items 4 and 5	24	1/2 Washer	112080104
Figure 25, Item 6	12	1/2 Locknut	112080004
Figure 32, Item 6		Pneumatic Fitting	112079501 (KIT)
Figure 23, Item 5	2	Spacer	112462101
Figure 23, Item 2	4	1/2-13 Bolt	112079905
Figure 23, Item 3	4	1/2-13 Locknut	112080004
Figure 23, Item 4	4	1/2 Washer	112080104
Figure 22, Item 10	1	PLS A1 Shim	112462201
Figure 28, Item 3	2	Fitting	4XHL6-S
Figure 28, Item 4	2	Fitting	6-4HX6-S
Figure 35, Item 11	1	Control Panel Mounting Bracket	112525701
Figure 35, Item 7	4	3/8 x 1 1/2 Bolt	112079722
Figure 35, Items 8 and 9	4	3/8 Washer	112080106
Figure 35, Item 10	4	3/8 Locknut	112080002
Figure 35, Item 3	2	3/8 x 2 Bolt	112079732
Figure 35, Items 4 and 5	4	3/8 Washer	112080106
Figure 35, Item 6	2	3/8 Locknut	112080002

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

NOTE

- Hand tighten all bolts and nuts on installation. Reposition support brackets during stowage assembly installation.
 - Use original bolts and nuts for step 1.
1. Install left-side stowage assembly support bracket (Figure 21, Item 1), three bolts (Figure 21, Item 3), and nuts (Figure 21, Item 4) on frame (Figure 21, Item 2).

NOTE

Use new bolts and original nuts for step 2.

2. Install two bolts (Figure 21, Item 5) and nuts (Figure 21, Item 6) on frame (Figure 21, Item 2).

NOTE

Use new bolts and nuts for step 3.

3. Install two bolts (Figure 21, Item 7) and nuts (Figure 21, Item 8) on frame (Figure 21, Item 2).

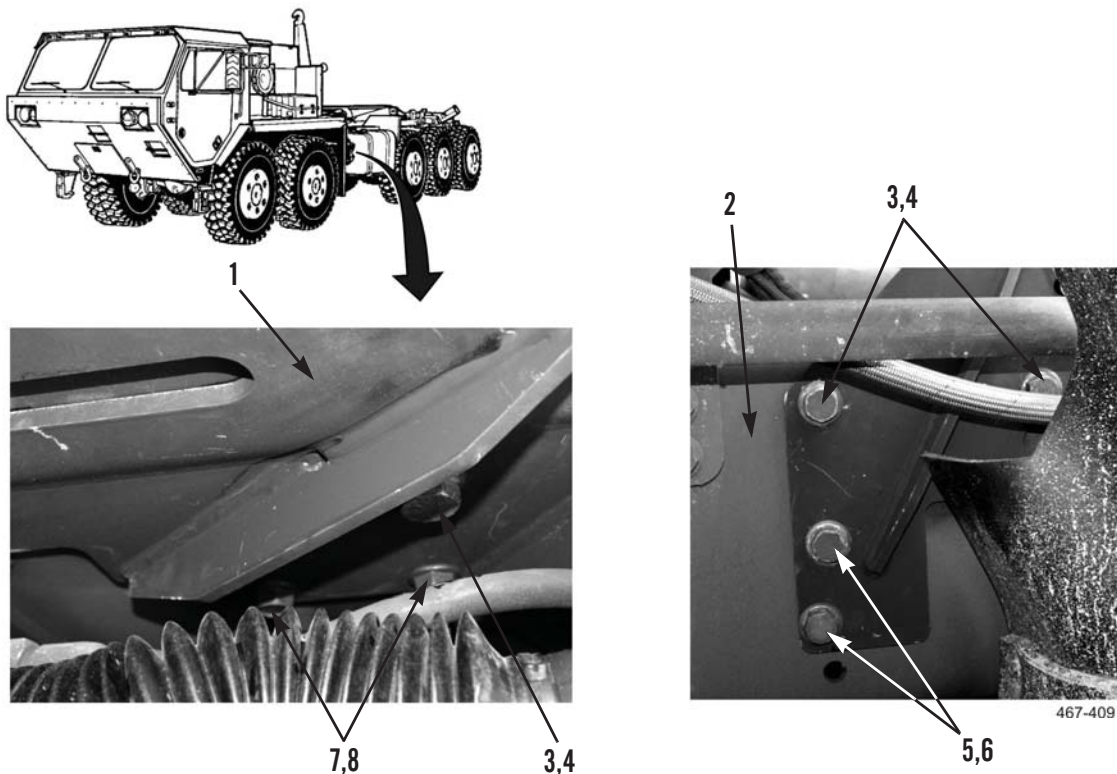


Figure 21. PLS Left-Side Stowage Bracket Information.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

NOTE

- Use original bolts and nuts for step 4.
 - The middle of the bolt holes should be approximately 2 3/8" off of the frame rail.
4. Install right-side stowage support bracket (Figure 22, Item 1), three bolts (Figure 22, Item 2), and nuts (Figure 22, Item 3) on frame (Figure 22, Item 4).

NOTE

Use new bolts and original nuts for step 5.

5. Install two bolts (Figure 22, Item 5) and nuts (Figure 22, Item 6) on frame (Figure 22, Item 4).

NOTE

Use new bolts and nuts for step 6.

6. Install shims as necessary (Figure 22, Item 10), two bolts (Figure 22, Item 7), and nuts (Figure 22, Item 8) on gas tank bracket (Figure 22, Item 9).

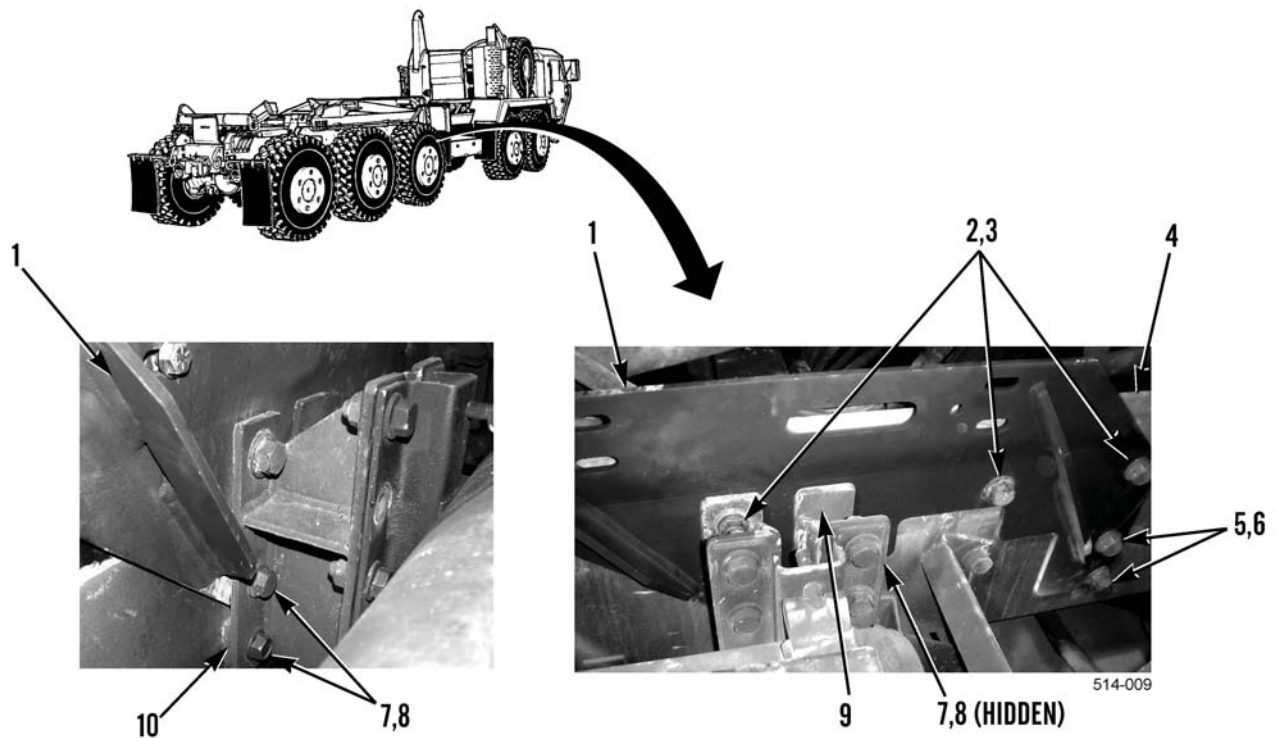


Figure 22. PLS Right-Side Stowage Bracket Information.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

7. Install two spacers (Figure 23, Item 5), four bolts (Figure 23, Item 2), washers (Figure 23, Item 4), and locknuts (Figure 23, Item 3) on legs of stowage assembly (Figure 23, Item 1).

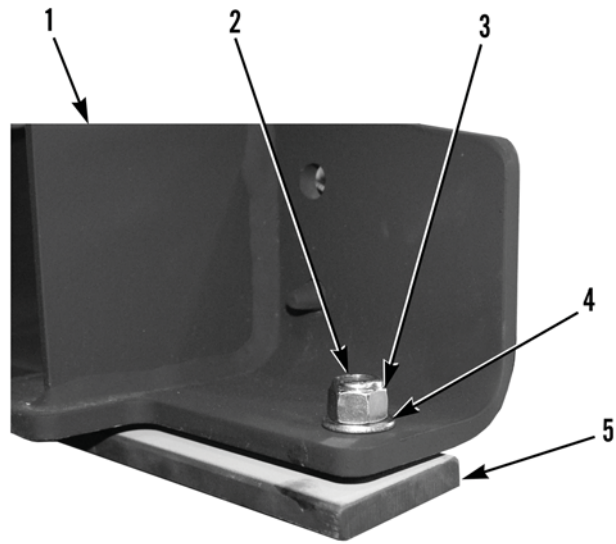


Figure 23. PLS Stowage Assembly Spacers.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED**WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Stowage assembly weighs 640 lb (290 kg).

8. Attach sling (Figure 24, Item 1) and lifting device to stowage assembly (Figure 24, Item 2).

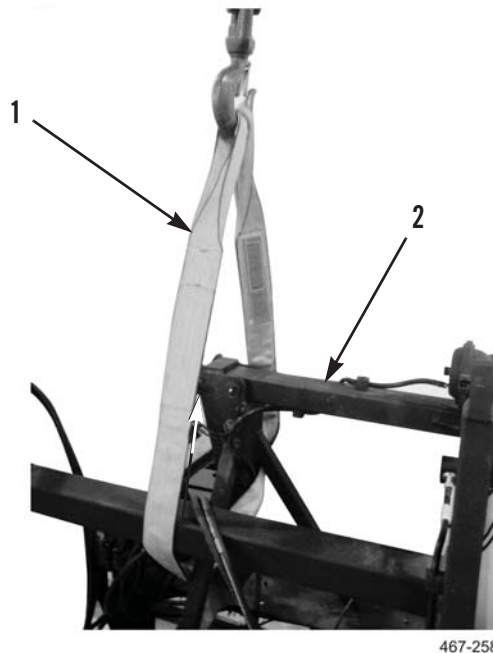


Figure 24. Sling on Stowage Assembly

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

9. Use lifting device to place stowage assembly (Figure 25, Item 1) on frame between support brackets (Figure 25, Items 2). Align holes in stowage assembly with holes in support brackets.

NOTE

- Hand tighten all bolts and nuts on installation. Reposition stowage assembly during installation.
 - Perform step 9 for both left and right sides.
10. Install six washers (Figure 25, Item 4), bolts (Figure 25, Item 3), washers (Figure 25, Item 5), and locknuts (Figure 25, Item 6) on support bracket (Figure 25, Item 2).

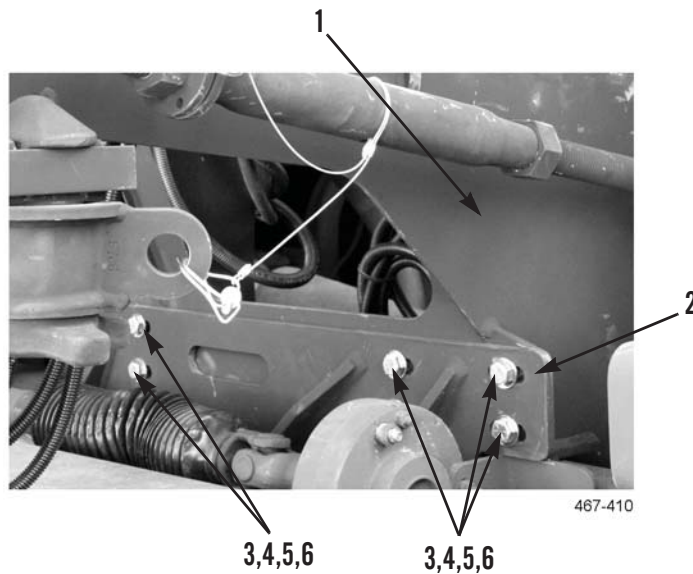


Figure 25. PLS Stowage Assembly Installation.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

11. Loosen three locking pins (Figure 26, Item 1) and remove manifold cover (Figure 26, Item 2) from stowage assembly (Figure 26, Item 6).

NOTE

- Pressure hose is marked with “P” on manifold.
- Relief hose is marked with “T” on manifold.

12. Identify pressure hose (Figure 26, Item 4) and relief hose (Figure 26, Item 3) based on markings on manifold (Figure 26, Item 5).

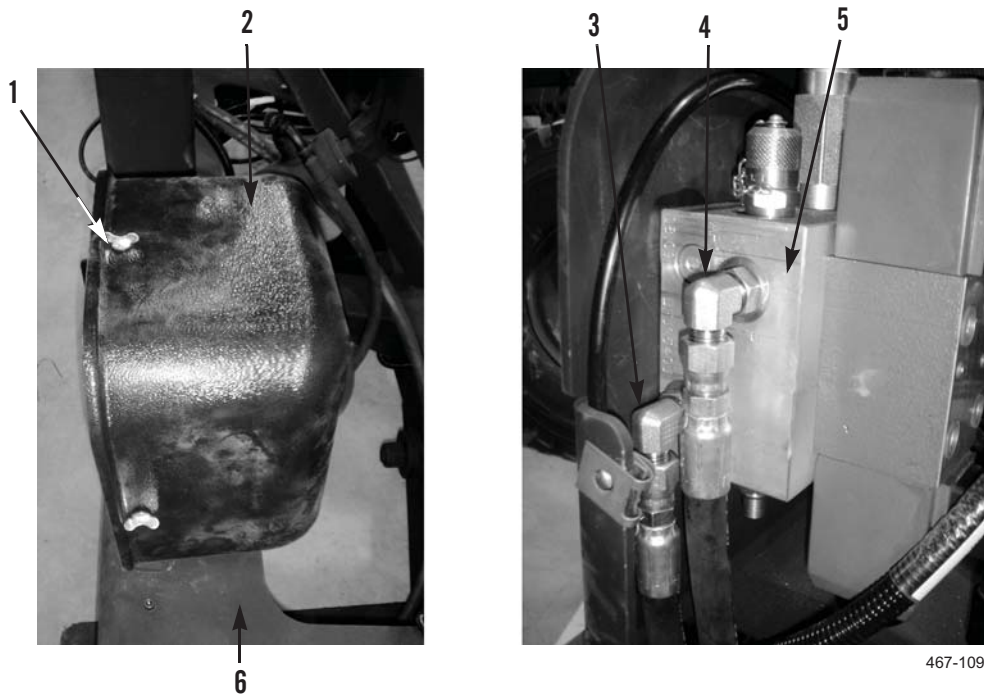


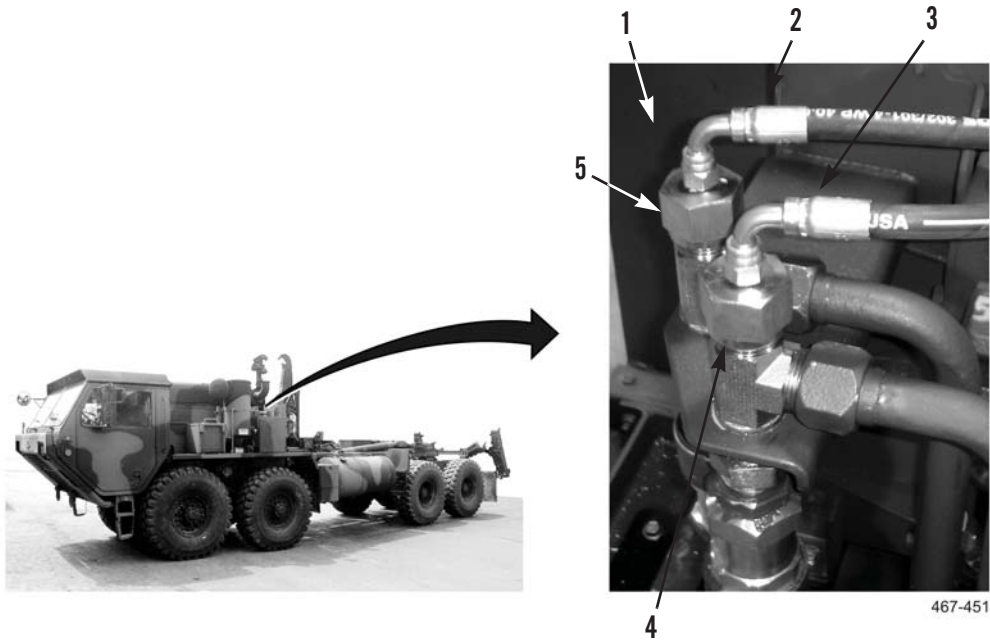
Figure 26. Identify Stowage Hydraulic Hoses.

NOTE

- Perform steps 13 through 15 for PLS M1075 and continue with step 19.
- For PLS M1075A1 proceed to step 16.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

13. Route pressure hose (Figure 27, Item 2) and relief hose (Figure 27, Item 3) to hydraulic control (Figure 27, Item 1).
14. Install pressure hose (Figure 27, Item 2) on T-fitting (Figure 27, Item 5).
15. Install relief hose (Figure 27, Item 3) on T-fitting (Figure 27, Item 4).



PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

Install longer fitting on hose and shorter fitting on hydraulic control.

16. Route pressure hose (Figure 28, Item 5) and relief hose (Figure 28, Item 1) to hydraulic control (Figure 28, Item 6).
17. Install two fittings (Figure 28, Items 3 and 4) on hydraulic control fitting (Figure 28, Item 2), and pressure hose (Figure 28, Item 5).
18. Install two fittings (Figure 28, Items 3 and 4) on hydraulic control fitting (Figure 28, Item 7), and relief hose (Figure 28, Item 1).

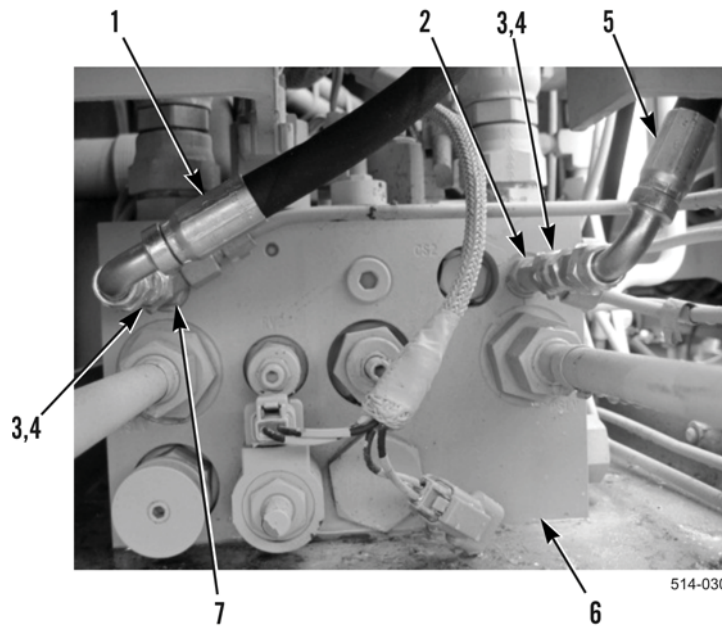


Figure 28. PLS M1075A1 Hydraulic Hose Installation.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED**CAUTION**

Use caution when handling sensor harness. Sensors are easily damaged if mishandled. Failure to follow this caution may cause damage to equipment.

NOTE

Middle frame sensor harness and hook arm sensor harness are on right side of stowage assembly.

19. Route middle frame sensor and hook arm sensor harnesses (Figure 29, Item 1) from stowage assembly (Figure 29, Item 2), along inside of right side of frame (Figure 29, Item 4) to rear of main frame.
20. Install new tiedown straps (Figure 29, Item 3) as required to attach middle frame and hook arm sensor harnesses (Figure 29, Item 1) to existing hoses along frame.

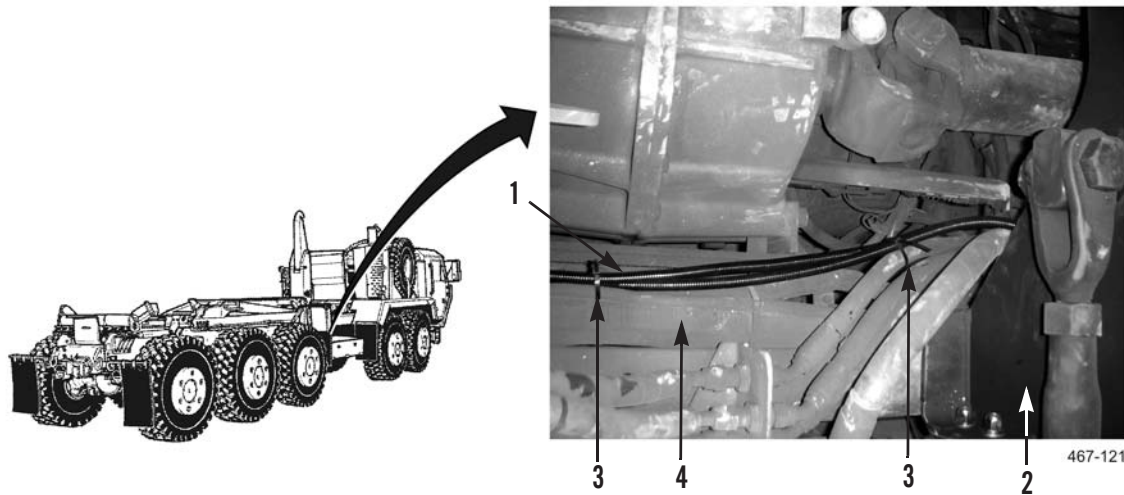


Figure 29. Middle Frame and Hook Arm Harness Installation.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED**CAUTION**

Use caution when handling sensor harness. Sensors are easily damaged if mishandled. Failure to follow this caution may cause damage to equipment.

NOTE

RH and LH twistlock sensor harnesses are on left side of stowage assembly.

21. Route RH and LH twistlock sensor harnesses (Figure 30, Item 1) from stowage assembly (Figure 30, Item 2), along interior of left side of frame (Figure 30, Item 4) to rear of vehicle. Route each sensor harness to rear of vehicle.
22. Install new tiedown straps (Figure 30, Item 3) as required to attach twistlock sensor harnesses (Figure 30, Item 1) to existing hoses along frame (Figure 30, Item 4).

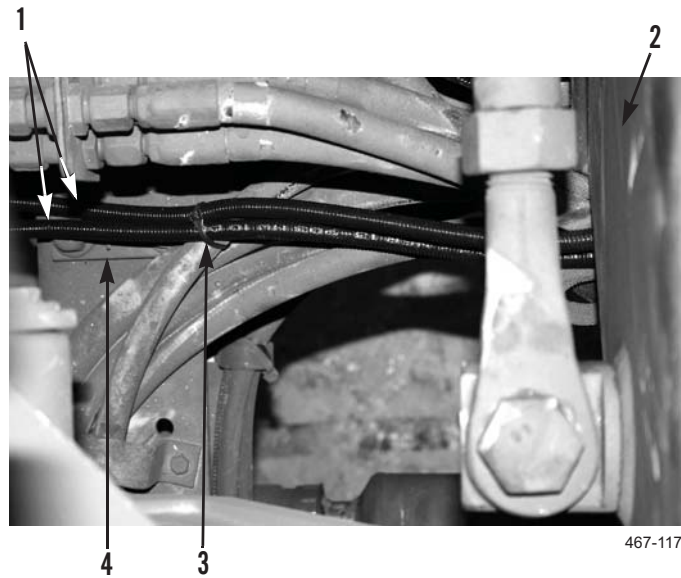


Figure 30. Twistlock Sensor Harness Installation.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

23. Route air hose (Figure 31, Item 3) from solenoid valve (Figure 31, Item 4) on stowage assembly (Figure 31, Item 5) to air tank underneath vehicle.
24. Install manifold cover (Figure 31, Item 2) on stowage assembly (Figure 31, Item 5) and secure three locking pins (Figure 31, Item 1).

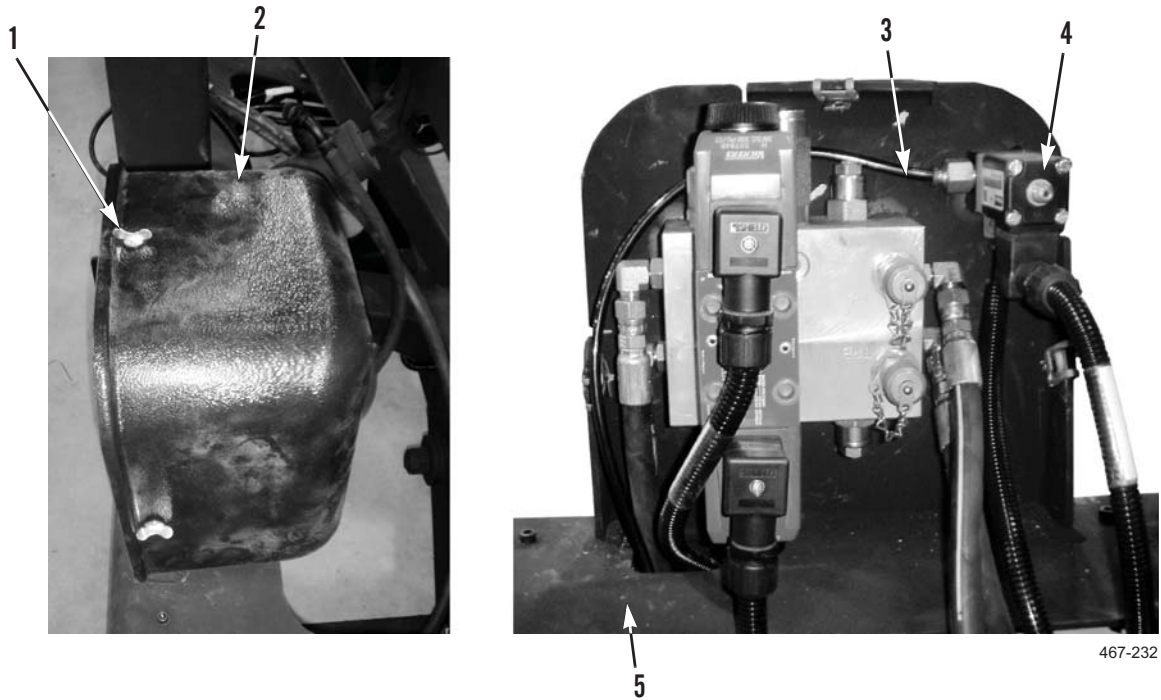


Figure 31. Routing Stowage Assembly Air Hose.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

25. Release air pressure from system (TM 9-2320-364-14&P).
26. Remove two hoses (Figure 32, Item 1) from original fitting (Figure 32, Item 6).
27. Remove original fitting (Figure 32, Item 6) from tank (Figure 32, Item 2).
28. Apply thread tape to new fitting (Figure 32, Item 5) and install on tank (Figure 32, Item 2).
29. Apply thread tape to original fitting (Figure 32, Item 6) and install on new fitting (Figure 32, Item 5).
30. Apply thread tape to presslock fitting (Figure 32, Item 4) and install on new fitting (Figure 32, Item 5).
31. Cut air hose (Figure 32, Item 3) to fit and install in presslock fitting (Figure 32, Item 4).
32. Install two hoses (Figure 32, Item 1) on original fitting (Figure 32, Item 6).

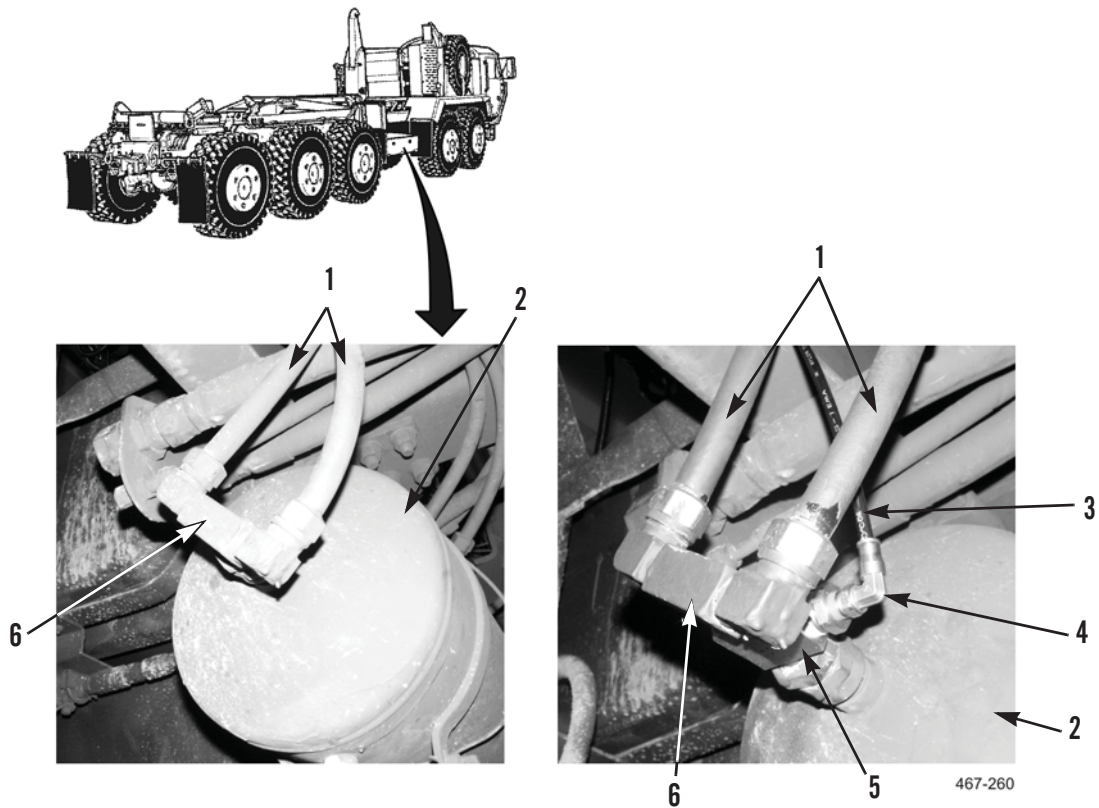


Figure 32. PLS Pneumatic Fitting and Hose Installation.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED**NOTE**

Rear edge of stowage assembly must be positioned 3 1/8 in. (80 mm) from front edge of stowed hook arm. Measure distance on right and left sides of hook arm for accurate placement of stowage assembly.

33. Adjust placement of stowage assembly (Figure 33, Item 1) on frame until distance between stowage assembly and front edge of hook arm (Figure 33, Item 2) measures 3 1/8 in. (80 mm).

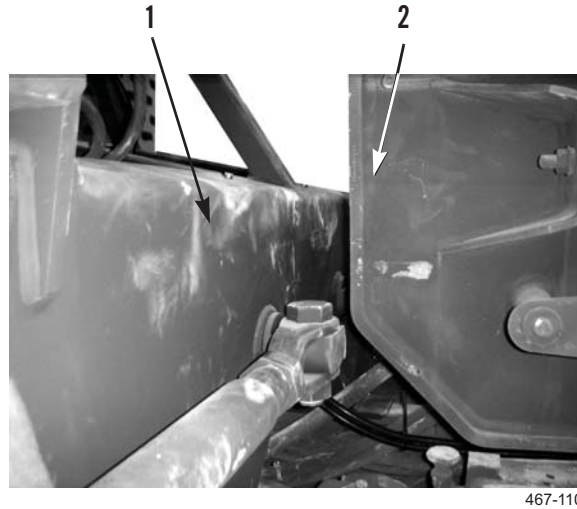


Figure 33. Distance Between Stowage Assembly and Hook Arm.

34. Tighten 12 bolts and nuts securing stowage assembly to right and left support brackets.
35. Tighten 14 bolts and nuts securing right and left support brackets to frame.
36. Return hook arm to home position (TM 9-2320-364-14&P).

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

37. At left-side fender (Figure 34, Item 1), remove bolt (Figure 34, Item 2), washer (Figure 34, Item 3), and nut (Figure 34, Item 4) from fender.

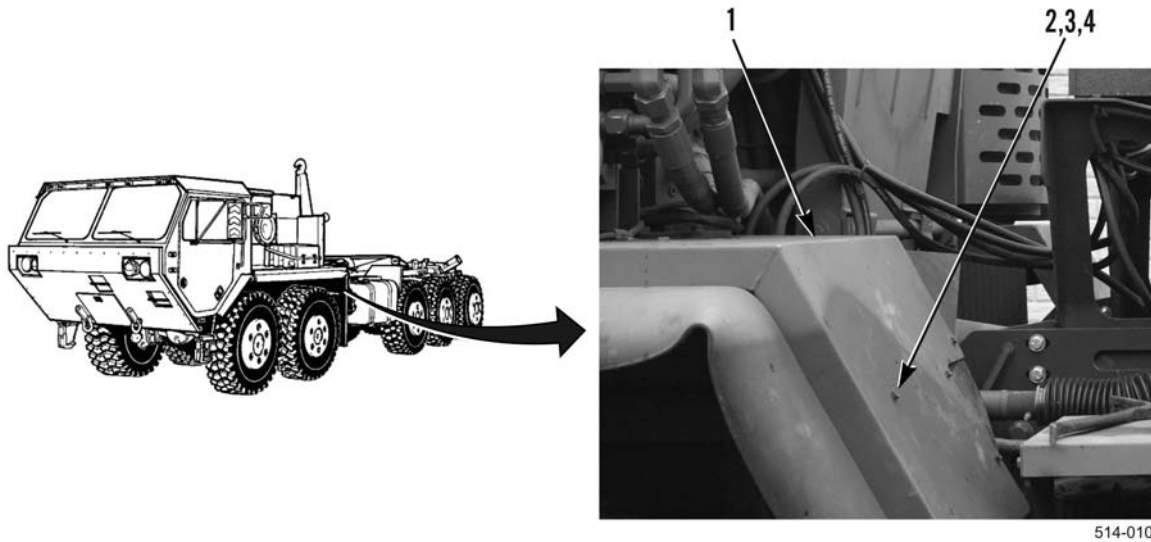


Figure 34. PLS Left-Side Fender.

PLS STOWAGE ASSEMBLY INSTALLATION – CONTINUED

38. Place stowage control bracket (Figure 35, Item 11) on left-side fender (Figure 35, Item 12) aligning bottom left hole in bracket with hole in fender.

WARNING

- Appropriate safety precautions (including, but not limited to, wearing proper breathing apparatus, hearing protection, safety goggles, etc.) must be observed when working with CARC material.
- Always wear gloves and a face shield or breathing apparatus when drilling painted surfaces. Airborne particles may cause lung irritation or damage to eyes.
- Failure to follow these warnings may cause injury or death to personnel.

39. Mark location of remaining three holes in bracket (Figure 35, Item 11) on fender (Figure 35, Item 12). Drill three 0.5 in. holes at marked locations.

40. Install stowage control panel bracket (Figure 35, Item 11), four bolts (Figure 35, Item 7), washers (Figure 35, Item 8), washers (Figure 35, Item 9), and locknuts (Figure 35, Item 10) on fender (Figure 35, Item 12).

41. Install stowage control backplate (Figure 35, Item 2) and four bolts (Figure 35, Item 13) on stowage control panel (Figure 35, Item 1).

42. Install stowage control panel backplate (Figure 35, Item 2), two bolts (Figure 35, Item 3), washers (Figure 35, Item 4), washers (Figure 35, Item 5), and locknuts (Figure 35, Item 6) on stowage control panel bracket (Figure 35, Item 11).

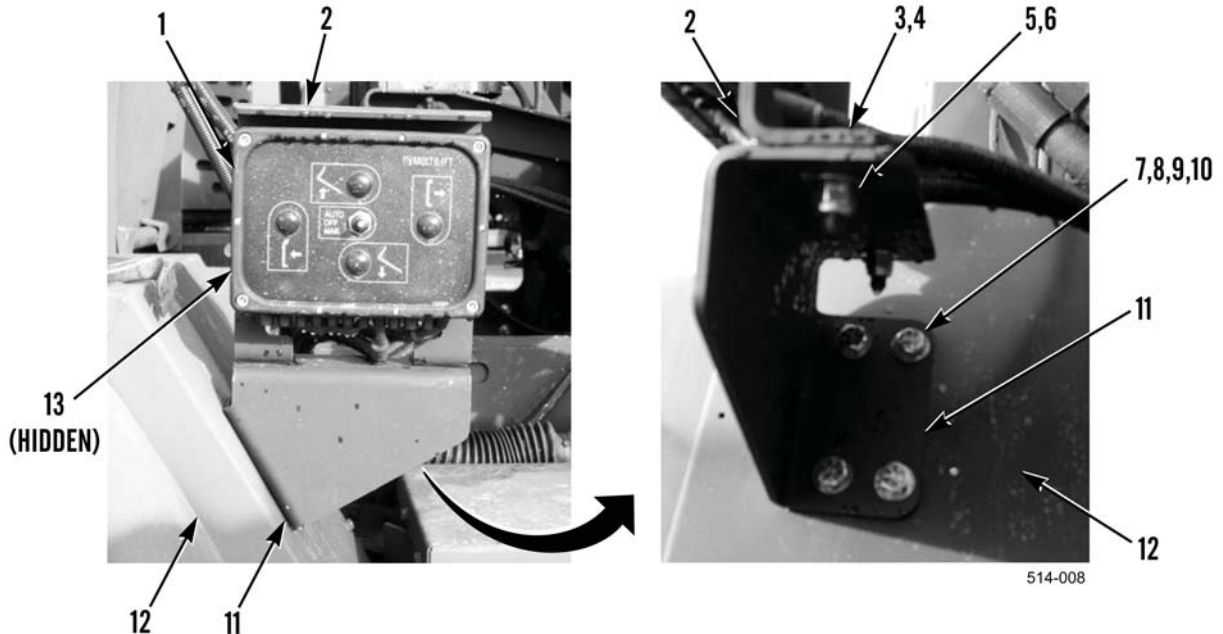


Figure 35. Stowage Control Panel and Bracket.

END OF TASK

HEMTT SLIDER ASSEMBLY INSTALLATION

Table 3. Parts List for HEMTT Slider Assembly Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 36, Item 1	2	Mounting Block	112090401
Figure 36, Item 2	6	3/4 Washer	112080102
Figure 36, Item 3	6	3/4-10 x 2 Bolt	112079703
Figure 38, Item 1	1	Slider Assembly	111589501
Figure 38, Item 4	8	9/16 Washer	112080109
Figure 38, Item 5	8	9/16-12 x 2 Bolt	112079719

NOTE

- Hand tighten all bolts on installation. Reposition mounting blocks during slider assembly installation.
 - Use original 1/4 in. and 1/2 in. spacers previously removed when installing new slider assembly.
 - Perform steps 1 through 4 for both right and left sides.
1. Place 1/2 in. spacer (Figure 36, Item 5) and 1/4 in. spacer (Figure 36, Item 6) on slider support bracket (Figure 36, Item 4).
 2. Place mounting block (Figure 36, Item 1) on slider support bracket (Figure 36, Item 4) with holes offset to outside of vehicle, aligning holes in spacers and mounting block with holes in slider support bracket.
 3. Apply thread adhesive to three bolts.
 4. Install three washers (Figure 36, Item 2) and bolts (Figure 36, Item 3) in slider support bracket (Figure 36, Item 4).

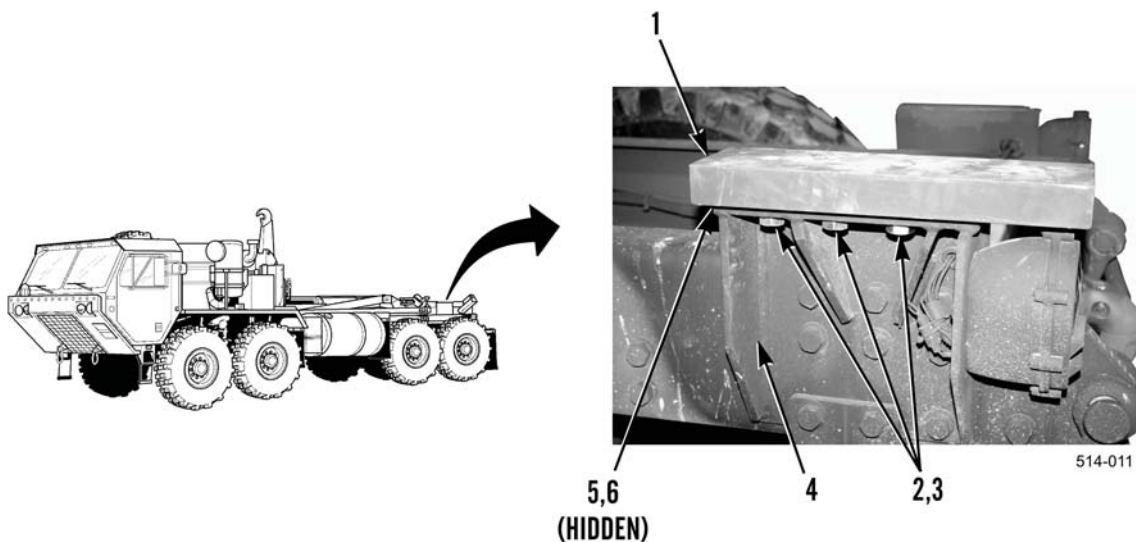


Figure 36. HEMTT Slider Mounting Block Installation.

HEMTT SLIDER ASSEMBLY INSTALLATION – CONTINUED

WARNING

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Slider assembly weighs 1,400 lb (635 kg).

5. Attach sling and lifting device to slider assembly. Loop one strap (Figure 37, Item 4) around center of beam (Figure 37, Item 3) and two straps (Figure 37, Item 1) around right and left twistlocks (Figure 37, Item 2). Adjust placement of straps until slider assembly is level when raised.

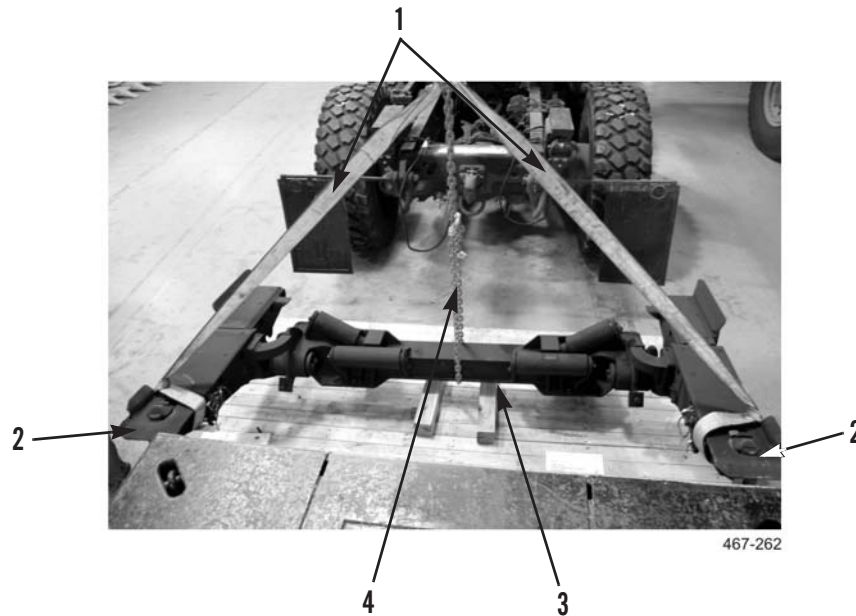


Figure 37. Slider Assembly With Straps

HEMTT SLIDER ASSEMBLY INSTALLATION – CONTINUED

6. Use lifting device to place slider assembly (Figure 38, Item 1) on mounting blocks (Figure 38, Item 2), aligning holes in slider assembly with rear holes in mounting block.

NOTE

Perform steps 7 through 10 for both right and left sides.

7. Apply thread adhesive to four bolts.
8. Install four washers (Figure 38, Item 4) and bolts (Figure 38, Item 5) in slider assembly (Figure 38, Item 1).
9. Remove lifting device and sling from slider assembly.
10. Tighten three bolts (Figure 38, Item 3) securing mounting blocks to frame, and four bolts (Figure 38, Item 5) securing slider assembly to mounting blocks.

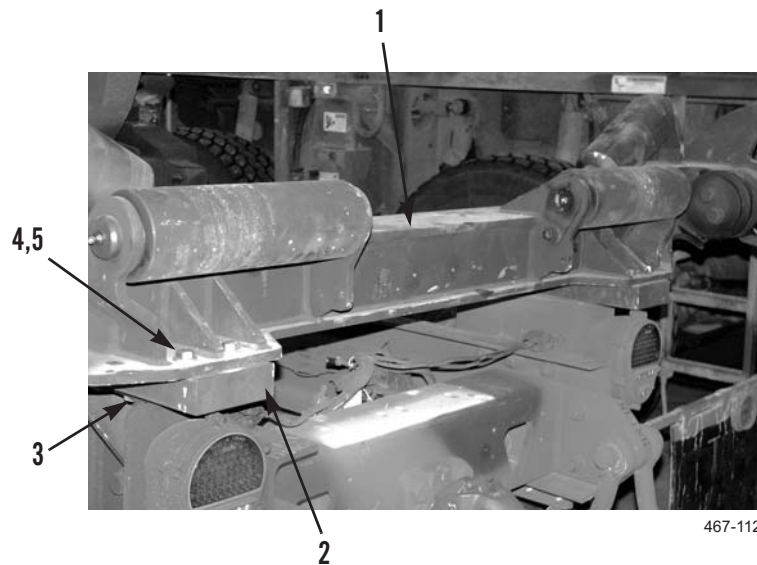


Figure 38. HEMTT Slider Assembly Installation.

END OF TASK

PLS SLIDER ASSEMBLY INSTALLATION

Table 4. Parts List for PLS Slider Assembly Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 39, Item 1	2	Mounting Block	112090401
Figure 39, Item 4	6	3/4 Washer	112080102
Figure 39, Item 5	6	3/4-10 x 2 Bolt	112079703
Figure 41, Item 1	1	slider assembly	111589501
Figure 41, Item 3	8	9/16 Washer	112080109
Figure 41, Item 4	8	9/16-12 x 2 Bolt	112079719

NOTE

- Hand tighten all bolts on installation. Reposition mounting blocks during slider assembly installation.
 - Perform steps 1 through 3 for both right and left sides.
1. Place mounting block (Figure 39, Item 1) on slider support bracket (Figure 39, Item 3) with holes (Figure 39, Item 2) offset to outside of vehicle, aligning holes in mounting block with holes in slider support bracket.
 2. Apply thread adhesive to three bolts.
 3. Install three washers (Figure 39, Item 4) and bolts (Figure 39, Item 5) in slider support bracket (Figure 39, Item 3).

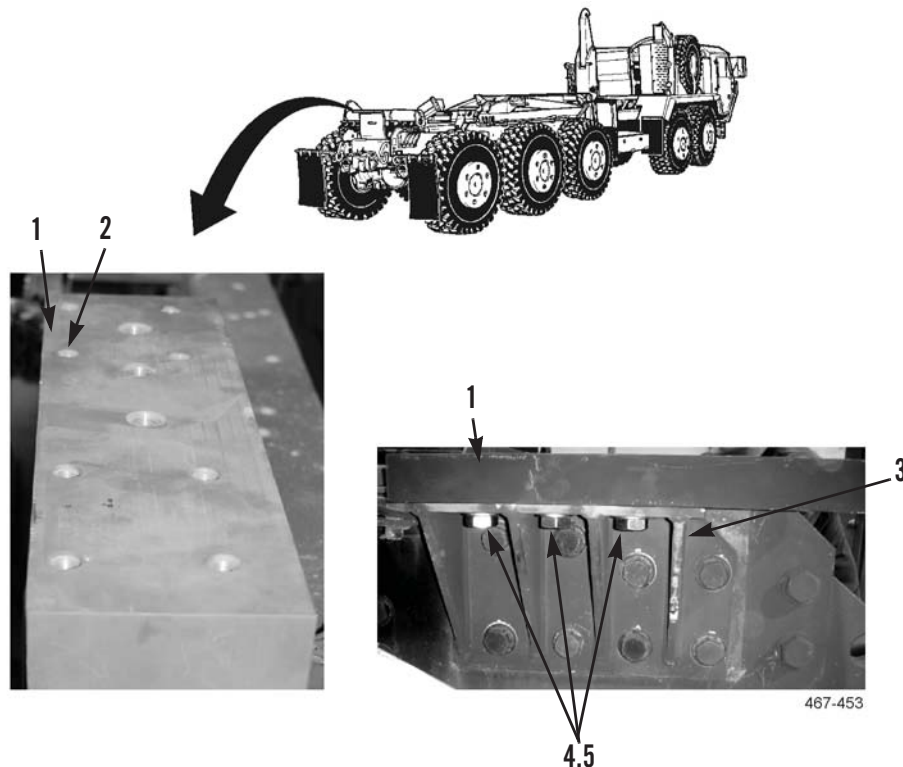


Figure 39. PLS Slider Mounting Block Installation.

PLS SLIDER ASSEMBLY INSTALLATION – CONTINUED

WARNING

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Slider assembly weighs 1,400 lb (635 kg).

4. Attach sling and lifting device to slider assembly. Loop one strap (Figure 40, Item 4) around center of beam (Figure 40, Item 3) and two straps (Figure 40, Item 1) around right and left twistlocks (Figure 40, Item 2). Adjust placement of straps until slider assembly is level when raised.

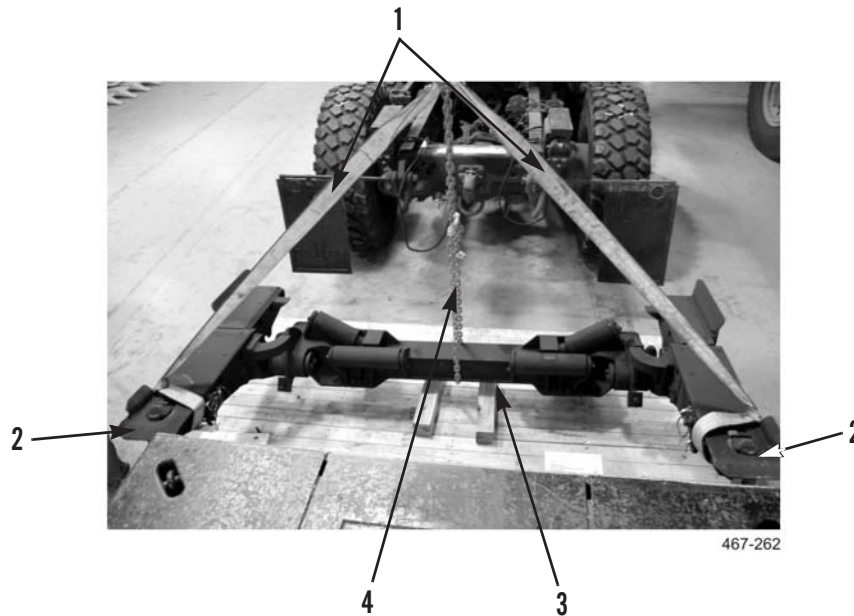


Figure 40. Slider Assembly With Straps

PLS SLIDER ASSEMBLY INSTALLATION – CONTINUED

5. Use lifting device to place slider assembly (Figure 41, Item 1) on mounting blocks (Figure 41, Item 2), aligning holes in slider assembly with front holes in mounting block.

NOTE

Perform steps 6 through 8 for both right and left sides.

6. Apply thread adhesive to four bolts.
7. Install four washers (Figure 41, Item 3) and bolts (Figure 41, Item 4) in slider assembly (Figure 41, Item 1).
8. Tighten six bolts securing mounting blocks to frame and eight bolts securing slider assembly to mounting blocks.
9. Remove lifting device and sling from slider assembly.

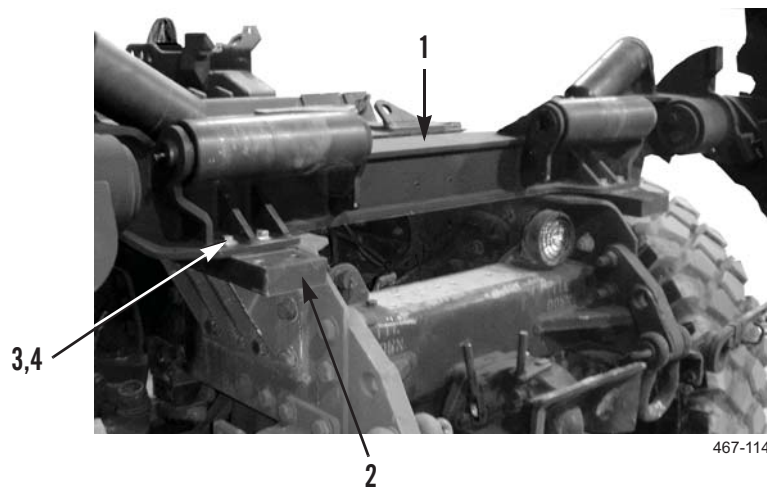


Figure 41. Slider Assembly Installation.

END OF TASK

TWISTLOCK SENSOR INSTALLATION**NOTE**

- Twistlock sensor installation is the same for both HEMTT and PLS.
 - Perform steps 1 through 4 for both right and left sides.
1. Remove locking pin (Figure 42, Item 2) from twistlock housing (Figure 42, Item 1).
 2. If required, pull down twistlock locking pin (Figure 42, Item 4) and rotate locking pin to allow movement of twistlock handle (Figure 42, Item 5).
 3. Loosen twistlock handle (Figure 42, Item 5) until anvil (Figure 42, Item 6) can be positioned for removal from twistlock housing (Figure 42, Item 1), and allow twistlock assembly to swing out of twistlock housing.
 4. Align locking tube (Figure 42, Item 3) with hole in twistlock housing (Figure 42, Item 1) and insert locking pin (Figure 42, Item 2) through twistlock housing into locking tube.

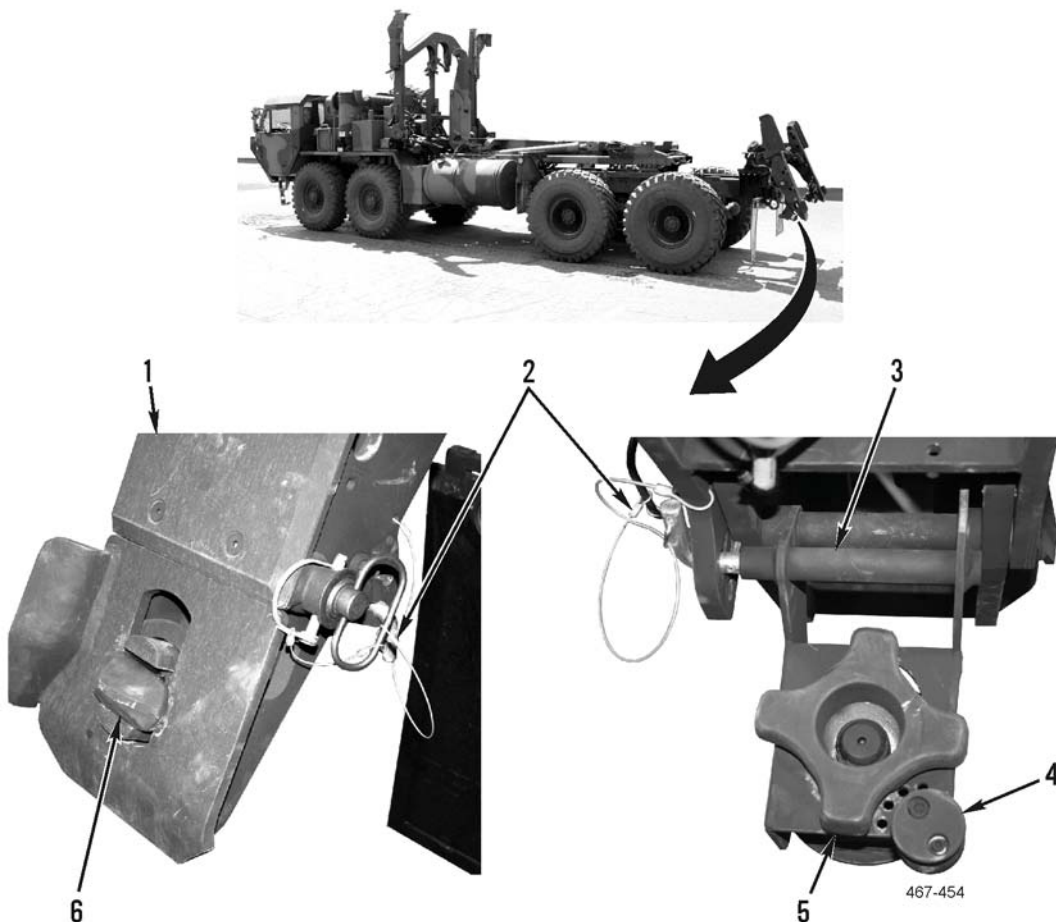


Figure 42. Release Twistlock from Housing.

TWISTLOCK SENSOR INSTALLATION – CONTINUED

5. Route LH twistlock sensor harness to left-side twistlock assembly (Figure 43, Item 3).
6. Remove two nuts (Figure 43, Item 2) from twistlock sensor (Figure 43, Item 1). Discard nuts.
7. Loosen two bolts (Figure 43, Item 6) in cable clamp (Figure 43, Item 4) and insert twistlock sensor (Figure 43, Item 1) into clamp.
8. Adjust twistlock sensor placement until end of sensor is .0625 to .1875 in. (2 to 3 mm) from twistlock plate (Figure 43, Item 5) and tighten two bolts (Figure 43, Item 6) in cable clamp (Figure 43, Item 4).

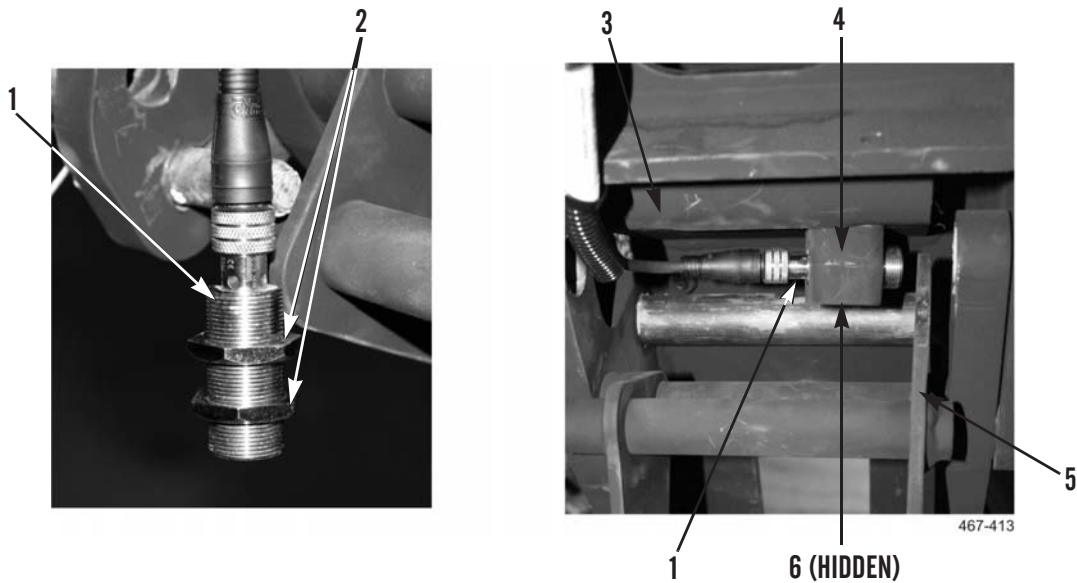


Figure 43. Adjust Twistlock Sensor.

9. Install new tiedown straps (Figure 44, Item 3) securing twistlock harnesses (Figure 44, Item 2) to slider assembly (Figure 44, Item 1). Roll any excess harness and secure to frame with tiedown straps.

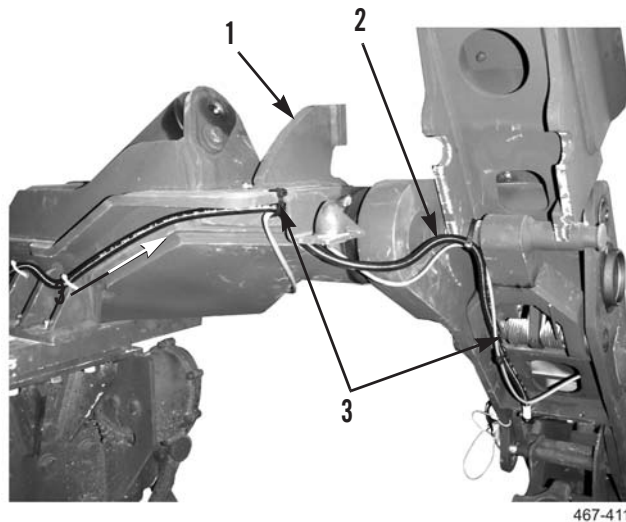


Figure 44. Secure Harnesses to Slider Assembly.

END OF TASK

MIDDLE FRAME SENSOR INSTALLATION
NOTE

Middle frame sensor installation is the same for both PLS and HEMTT.

Table 5. Parts List for Middle Frame Sensor Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 45, Item 2	1	Screw	1119544
Figure 45, Item 3	1	Sensor Plate	1119545
Figure 45, Item 4	1	3/4 Locknut	112080003
Figure 46, Item 2	1	Upper Sensor Bracket	1119541
Figure 46, Item 3	1	Lower Sensor Bracket	1119542
Figure 46, Item 4	3	1/4 x 1-3/8 Bolt	112079807
Figure 46, Items 5 and 6	6	1/4 Washer	112080105
Figure 46, Item 7	3	1/4 Locknut	112080005

MIDDLE FRAME SENSOR INSTALLATION – CONTINUED

1. Install screw (Figure 45, Item 2) in pivot cylinder (Figure 45, Item 1).

NOTE

Position sensor plate as shown in Figure 45.

2. Install sensor plate (Figure 45, Item 3) and locknut (Figure 45, Item 4) on screw (Figure 45, Item 2).

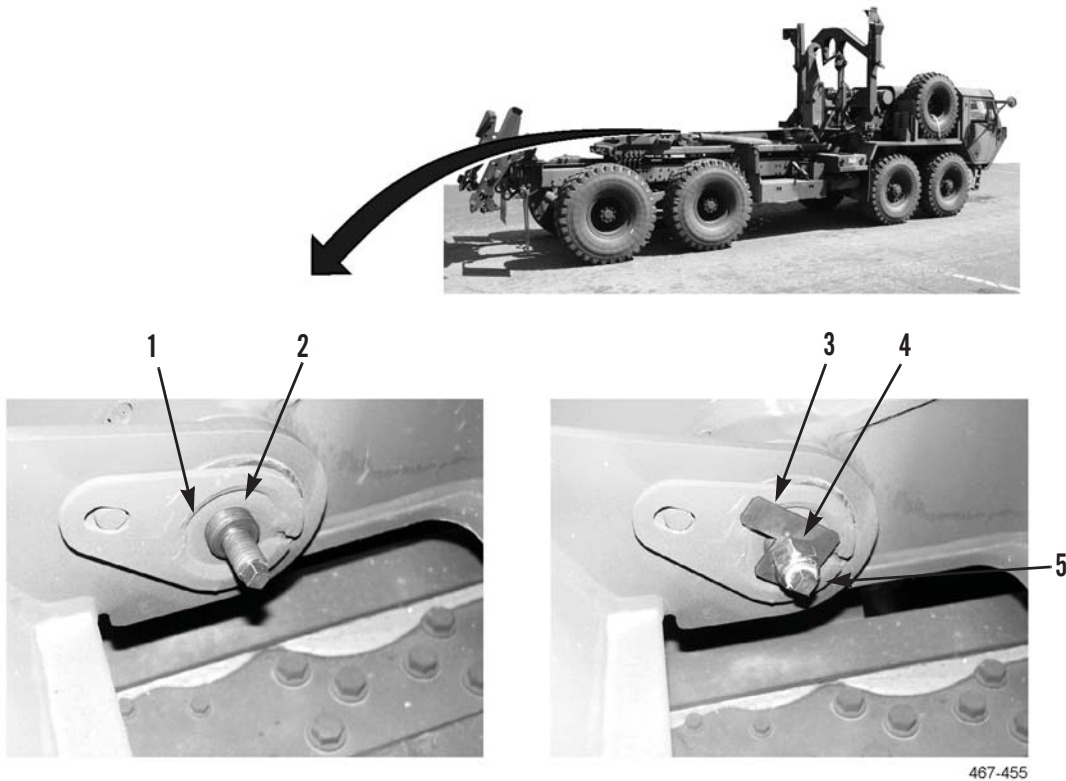


Figure 45. Middle Frame Sensor Plate Installation.

3. Measure and mark 5 1/4 in. from left edge of middle frame (Figure 46, Item 1).
4. Install upper sensor bracket (Figure 46, Item 2), lower sensor bracket (Figure 46, Item 3), three washers (Figure 46, Item 5), bolts (Figure 46, Item 4), washers (Figure 46, Item 6), and locknuts (Figure 46, Item 7) on middle frame (Figure 46, Item 1), aligning left edge of sensor bracket with 5 1/4 in. mark.

MIDDLE FRAME SENSOR INSTALLATION – CONTINUED

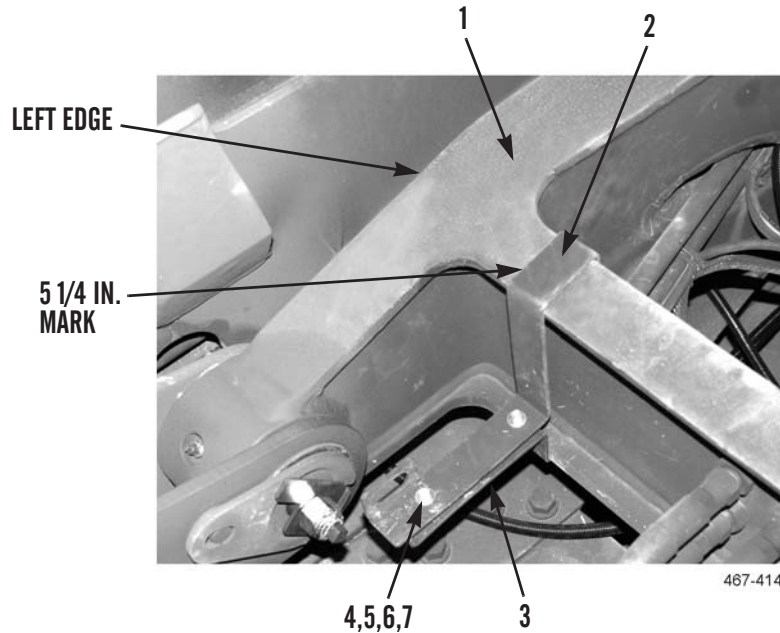


Figure 46. Middle Frame Sensor Bracket Installation.

- Route middle frame sensor harness (Figure 47, Item 1) as shown.

NOTE

Sensor position in bracket will be calibrated later in this work package.

- Remove nut (Figure 47, Item 3) from sensor (Figure 47, Item 2) and install sensor and nut on bracket (Figure 47, Item 4).
- Install new tiedown straps (Figure 47, Item 5) as required.

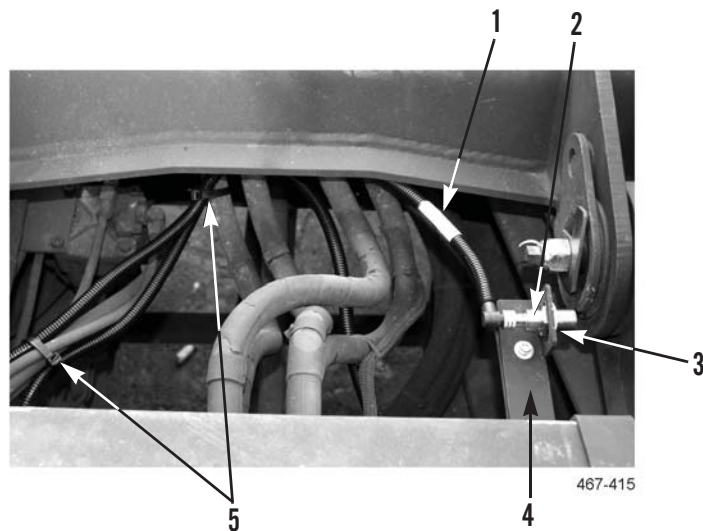


Figure 47. Middle Frame Sensor Installation.

END OF TASK

HOOK ARM SENSOR INSTALLATION

Table 6. Parts List for Hook Arm Sensor Installation.

ITEM NO.	QTY	DESCRIPTION	PART NUMBER
Figure 48, Item 3	4	1/4 Washer	112080105
Figure 48, Item 5	2	1/4 x 1 3/8 Bolt	112079807
Figure 48, Item 6	1	Sensor Plate	1119464
Figure 49, Item 4	1	Switch Plate	1119461

1. Remove two bolts (Figure 48, Item 2), washers (Figure 48, Item 3), and plate (Figure 48, Item 7) from sensor (Figure 48, Item 1). Discard all hardware.
2. Install sensor plate (Figure 48, Item 6), two washers (Figure 48, Item 4), and bolts (Figure 48, Item 5) on sensor (Figure 48, Item 1).

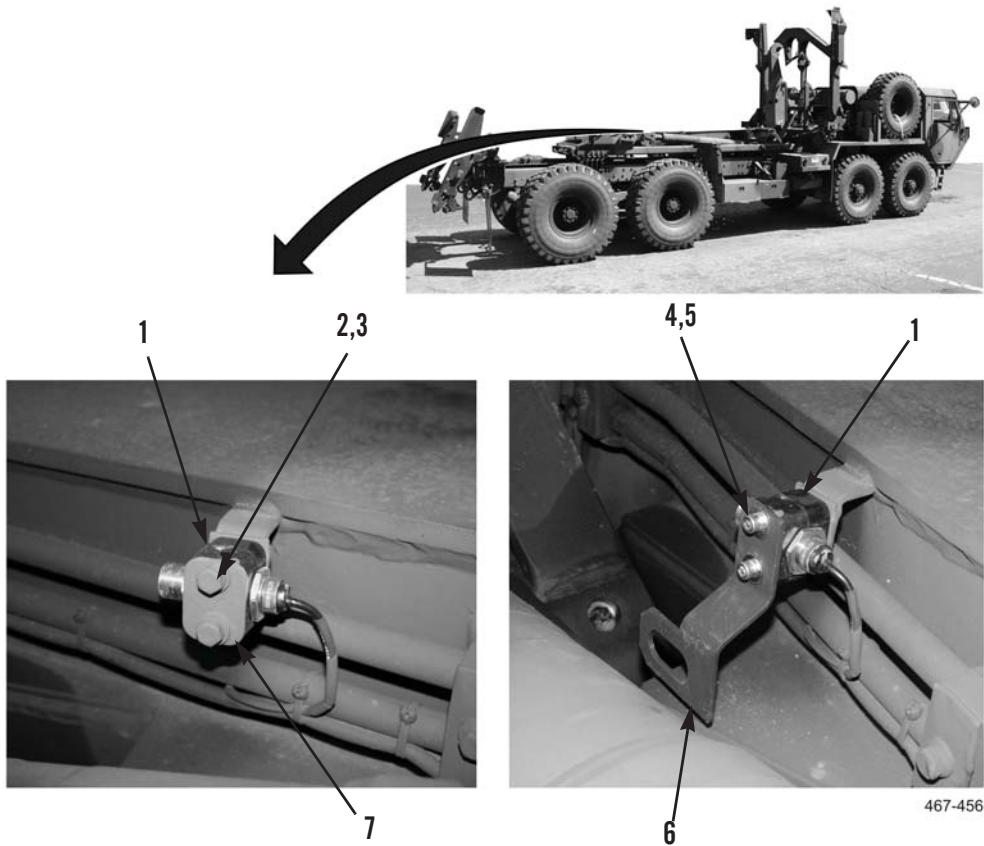


Figure 48. Hook Arm Sensor Bracket Installation.

HOOK ARM SENSOR INSTALLATION – CONTINUED

3. Place a straight measurement aid (Figure 49, Item 1) on flat surface of hook arm (Figure 49, Item 2) where it angles down.
4. Place hook arm switch plate (Figure 49, Item 4) on angled edge of hook arm (Figure 49, Item 2) where distance between bottom of measurement aid (Figure 49, Item 1) and top angled edge of hook arm switch plate is 1/4 in.
5. Mark edge of hook arm (Figure 49, Item 2) to identify point of placement of switch plate (Figure 49, Item 4) on hook arm.

WARNING

- Appropriate safety precautions (including, but not limited to, wearing proper breathing apparatus, hearing protection, safety goggles, etc.) must be observed when working with CARC material.
 - Always wear gloves and a face shield or breathing apparatus when drilling painted surfaces. Airborne particles may cause lung irritation or damage to eyes.
 - Failure to follow these warnings may cause injury or death to personnel.
6. Place switch plate (Figure 49, Item 4) 1 1/4 in. from edge and mark pilot holes. Drill two 1/4 in. holes in hook arm (Figure 49, Item 2).
 7. Install switch plate (Figure 49, Item 4) and two rivets (Figure 49, Item 3) on hook arm (Figure 49, Item 2).

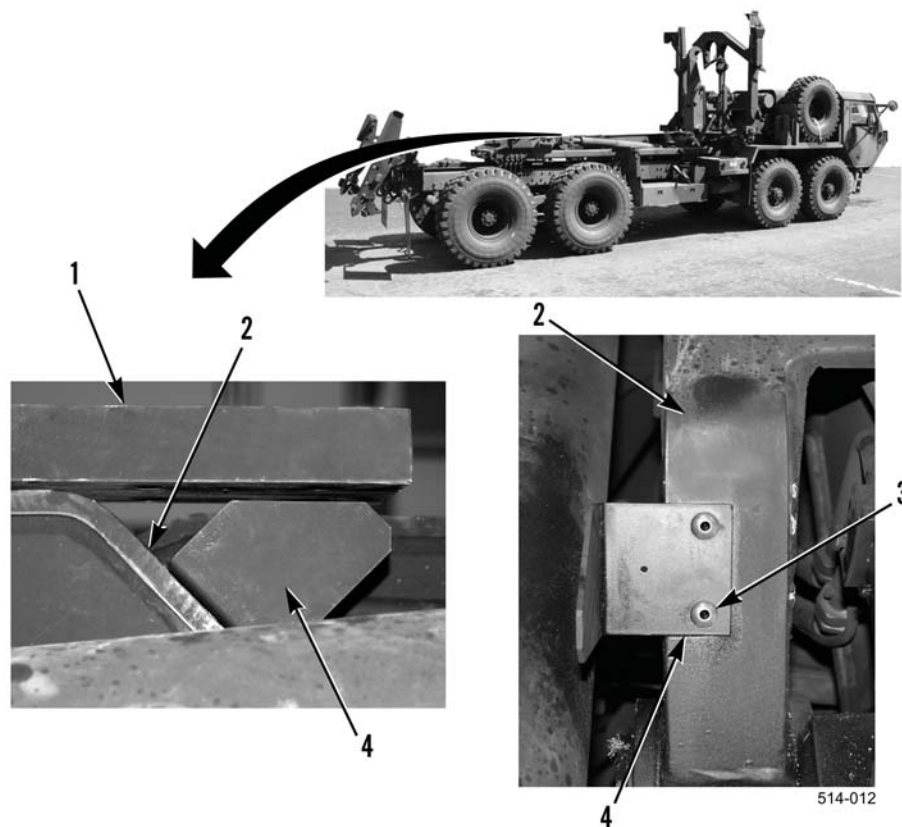


Figure 49. Hook Arm Sensor Plate Installation.

HOOK ARM SENSOR INSTALLATION – CONTINUED

- Route hook arm wiring harness (Figure 50, Item 3) through opening in hook arm (Figure 50, Item 1) to hook arm sensor bracket (Figure 50, Item 5).

CAUTION

Install sensor so that face is flush with outer nut. Failure to follow this caution may result in damage to equipment.

NOTE

Sensor position in bracket will be calibrated later in this work package.

- Remove nut (Figure 50, Item 6) from hook arm sensor (Figure 50, Item 2) and install hook arm sensor and nut in hook arm sensor bracket (Figure 50, Item 5), so that face of sensor is flush with nut.
- Install new tiedown straps (Figure 50, Item 4) as required.

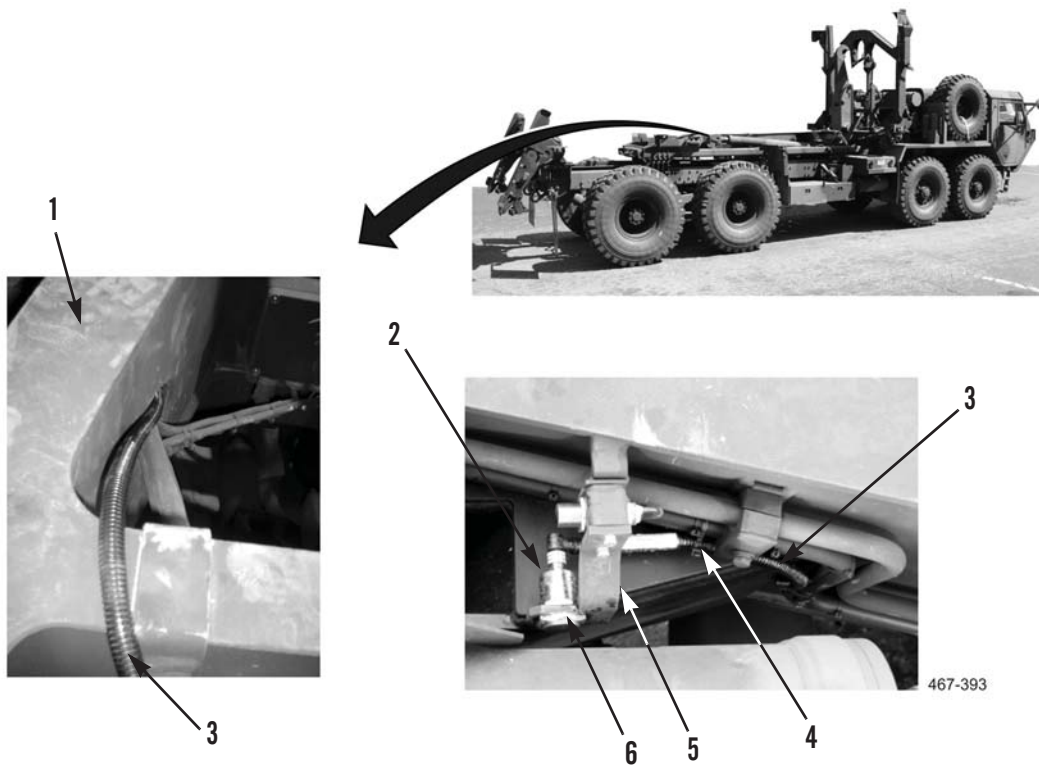


Figure 50. Hook Arm Sensor Installation.

HOOK ARM SENSOR INSTALLATION – CONTINUED**Stowage Wiring Harness Installation**

1. Remove truck wiring harness connector (Figure 51, Item 2) from control box (Figure 51, Item 1).
2. Install stowage wiring harness (Figure 51, Item 3) on control box (Figure 51, Item 1).
3. Install truck wiring harness connector (Figure 51, Item 2) on stowage wiring harness (Figure 51, Item 3).

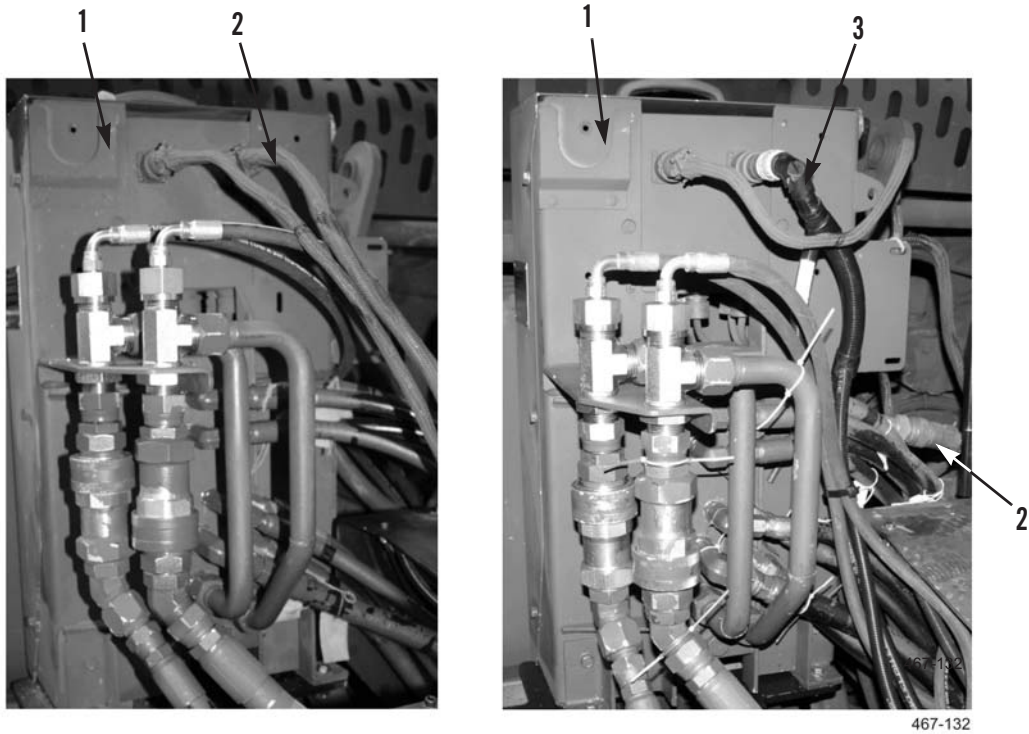


Figure 51. Stowage Wiring Harness Installation.

END OF TASK

SENSOR CALIBRATION**WARNING**

Do not stand on vehicle while operating LHS. Failure to follow this warning may result in injury or death to personnel.

1. With MODE switch set to AUTO position, partially extend hook arm (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) until cylinder arm (Figure 52, Item 1) is extended 28 in. (750 mm) measured from base of cylinder arm cap (Figure 52, Item 2) to top of cylinder casing (Figure 52, Item 3).

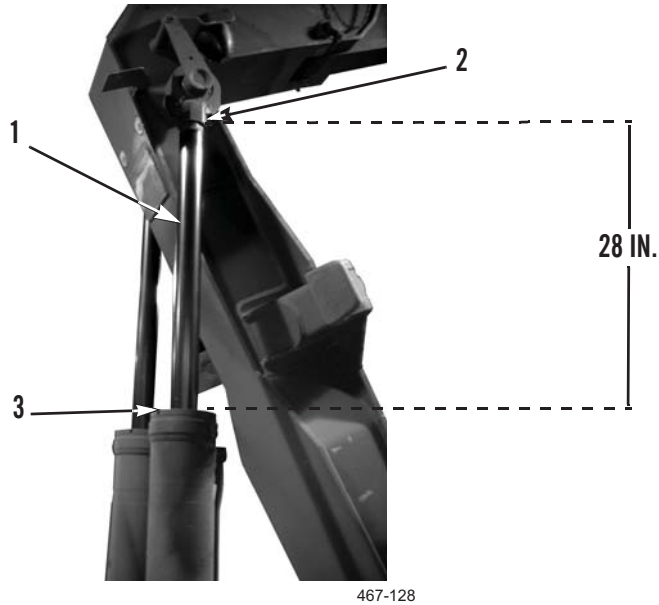


Figure 52. Hook Arm Cylinder Extension.

2. Shut off vehicle and set ignition switch to ON position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

NOTE

Ensure that stowage control toggle switch is set to OFF position.

3. Loosen nut (Figure 53, Item 5) on hook arm sensor (Figure 53, Item 2) and adjust nut (Figure 53, Item 4) until face of sensor is .375 to 0.5 in. (2 to 3 mm) from sensor plate (Figure 53, Item 6).
4. Slide hook arm sensor (Figure 53, Item 2) on bracket (Figure 53, Item 3) toward sensor plate (Figure 53, Item 6) and identify position where sensor light (Figure 53, Item 1) turns on. Tighten nut (Figure 53, Item 5) at that position.

SENSOR CALIBRATION – CONTINUED

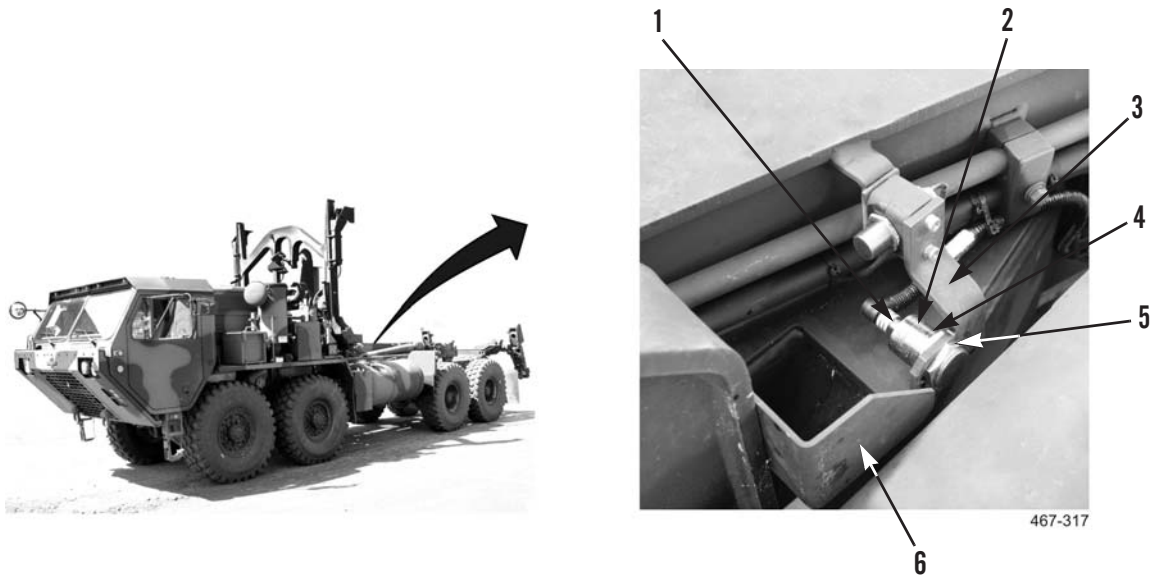


Figure 53. Hook Arm Sensor Calibration.

5. Start engine and continue extending hook arm (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P) until bottom of hook (Figure 54, Item 1) is 62 in. (1,574 mm) from ground.

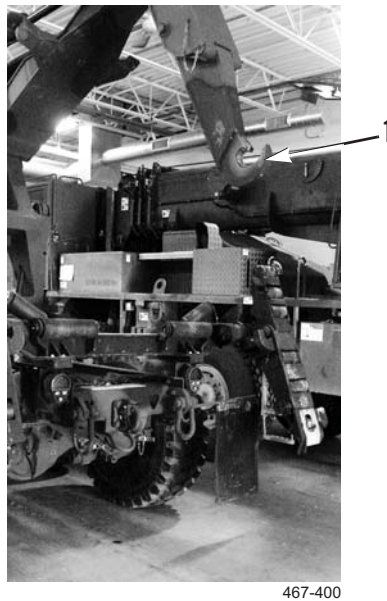


Figure 54. Hook Position from Ground.

SENSOR CALIBRATION – CONTINUED**NOTE**

It may be necessary to adjust position of sensor plate in order to activate sensor light.

6. Loosen nut (Figure 55, Item 2) on middle frame sensor (Figure 55, Item 1) and adjust nut (Figure 55, Item 4) until face of sensor (Figure 55, Item 1) is 1/16 to 3/16 in (2 to 3 mm) from sensor plate (Figure 55, Item 6).
7. Slide middle frame sensor (Figure 55, Item 1) on bracket (Figure 55, Item 3) toward sensor plate (Figure 55, Item 6) and identify position where sensor light (Figure 55, Item 5) turns on. Tighten nut (Figure 55, Item 2) at that position.
8. Return hook arm to stowed position (PLS: TM 9-2320-364-14&P, HEMTT: TM 9-2320-326-14&P).

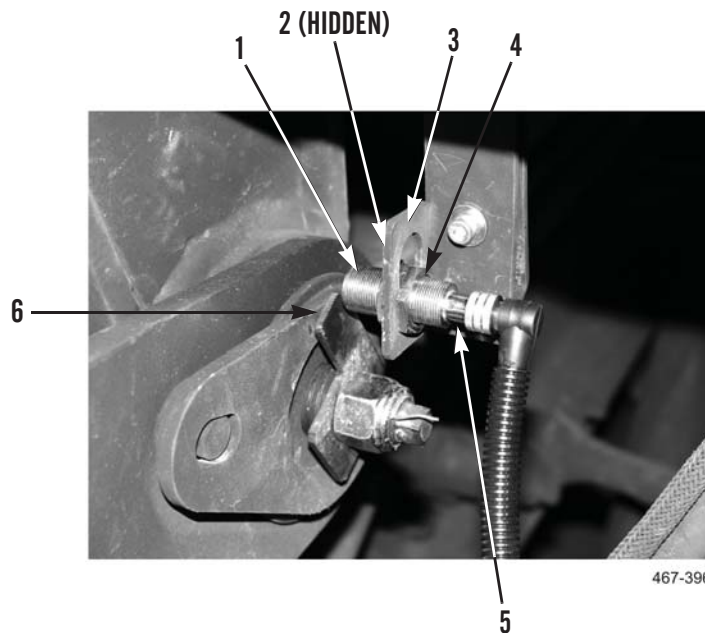


Figure 55. Middle Frame Sensor Calibration.

END OF TASK**STOWAGE GUIDE POSITION CALIBRATION**

Calibrate stowage guide positions (WP 0048).

END OF TASK

LIGHT BAR ASSEMBLY INSTALLATION

1. Place original wiring harness (Figure 56, Item 1), left light bracket (Figure 56, Item 4) and right light bracket (Figure 56, Item 3) on flat work surface.
2. Place tab (Figure 56, Item 2) at outer end of original wiring harness (Figure 56, Item 1) as shown.

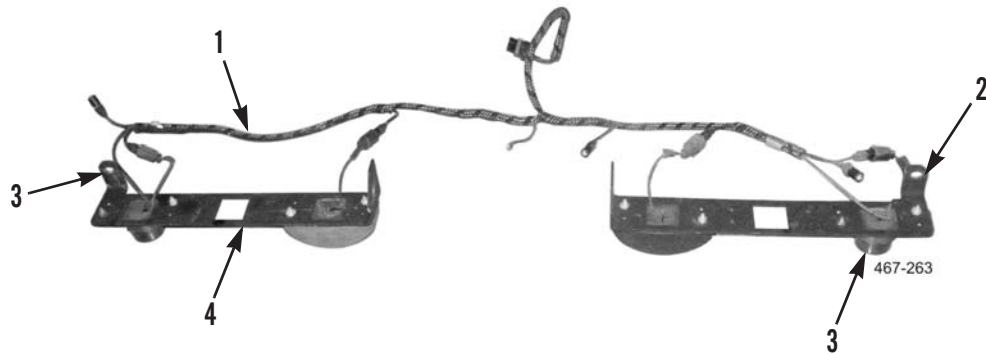


Figure 56. Light Brackets and Original Harness.

NOTE

Perform steps 4 through 7 for both left and right side brackets.

3. On both sides of bracket (Figure 57, Item 1) scrape or grind away paint surrounding ground mounting holes (Figure 57, Item 2).

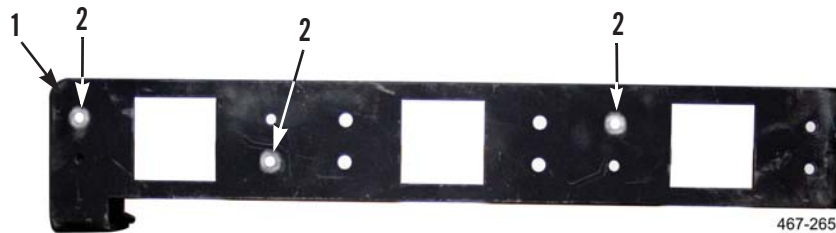


Figure 57. Grind Paint from Grounding Holes.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED

NOTE

Ground wire is on PLS only.

4. At inside light location of bracket (Figure 58, Item 1), feed light wire (Figure 58, Item 5) through bracket and connect to original wiring harness connector (Figure 58, Item 4).
5. Install light (Figure 58, Item 7), two screws (Figure 58, Item 2), ground wire (Figure 58, Item 3) and two nuts (Figure 58, Item 6) on bracket (Figure 58, Item 1).

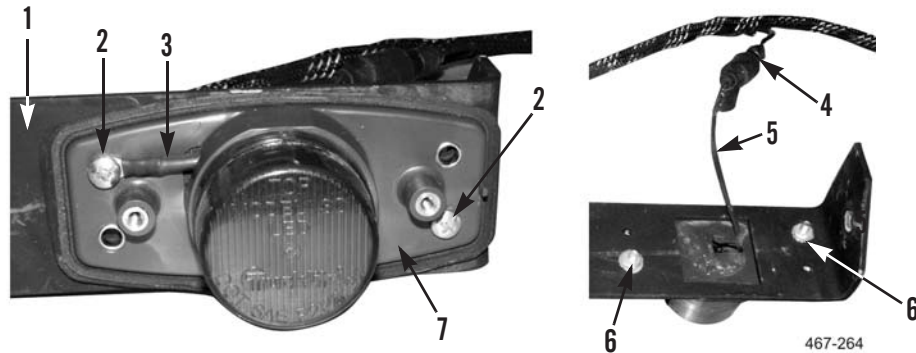


Figure 58. Inside Light Installation.

6. At outside light location of bracket (Figure 59, Item 1), feed light wire (Figure 59, Item 6) through bracket and connect to original wiring harness connector (Figure 59, Item 5).
7. Feed ground wire (Figure 59, Item 4) from harness (Figure 59, Item 7) through back of bracket (Figure 59, Item 1) and back of light (Figure 59, Item 10), out through access hole (Figure 59, Item 9).
8. Install light (Figure 59, Item 10), two screws (Figure 59, Item 2), ground wires (Figure 59, Items 3 and 4), and nuts (Figure 59, Item 8) on light bracket (Figure 59, Item 1).
9. Paint exposed metal surfaces.

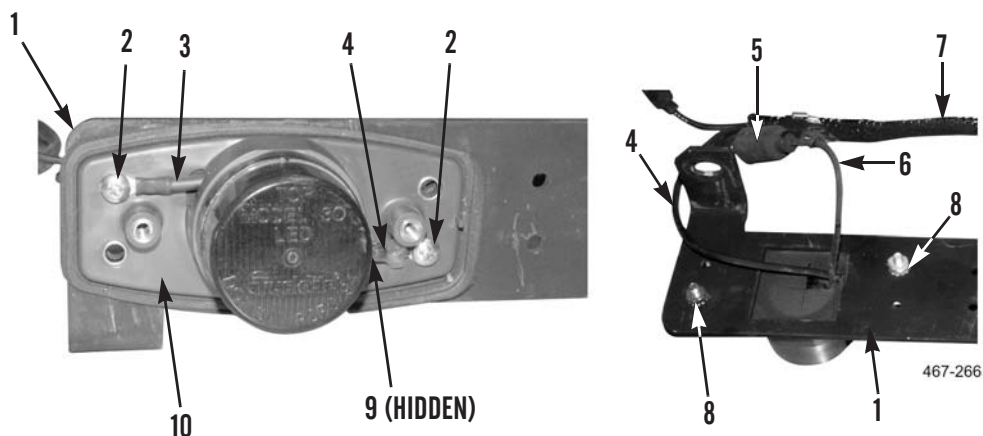


Figure 59. Outside Light Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED**NOTE**

On trucks with standard lights, perform steps 10 through 12 for two lights and wire extensions.

10. Place light (Figure 60, Item 1) and wire extension (Figure 60, Item 3) on flat work surface.
11. Feed small connector (Figure 60, Item 6) on ground wire (Figure 60, Item 2) through back of light (Figure 60, Item 1) out through access hole (Figure 60, Item 7).
12. Connect light wire (Figure 60, Item 5) to extension wire connector (Figure 60, Item 4).

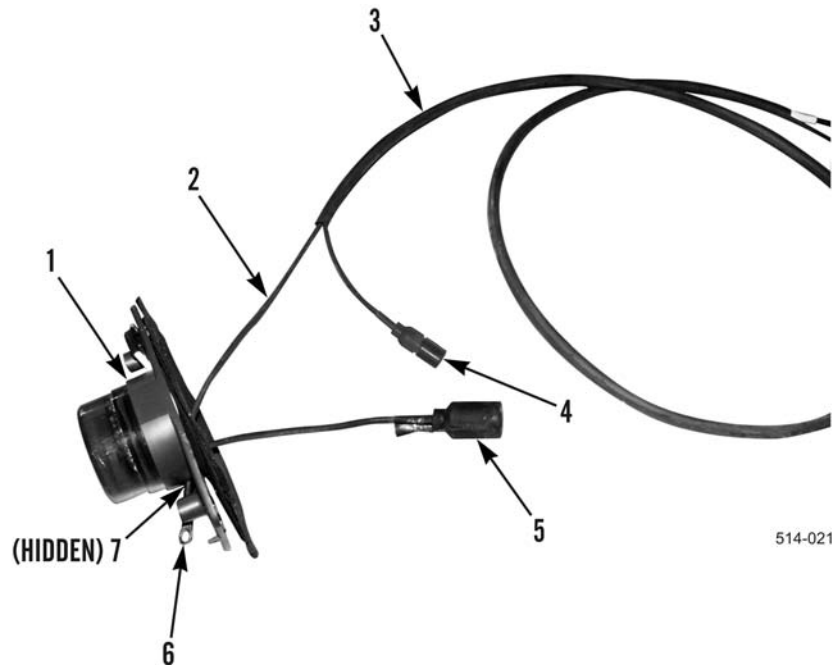


Figure 60. Slider Light Extension Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED**NOTE**

- On trucks with standard lights, perform steps 13 and 14 for lights on right and left slider beds.
- On trucks with LED lights, perform steps 15 and 16 for lights on right and left slider beds.

13. At rear slider bed (Figure 61, Item 1), feed extension wire (Figure 61, Item 2) through hole in side of slider bed.

14. Install light (Figure 61, Item 3), two ground wires (Figure 61, Item 5), and screws (Figure 61, Item 4) on slider bed (Figure 61, Item 1).

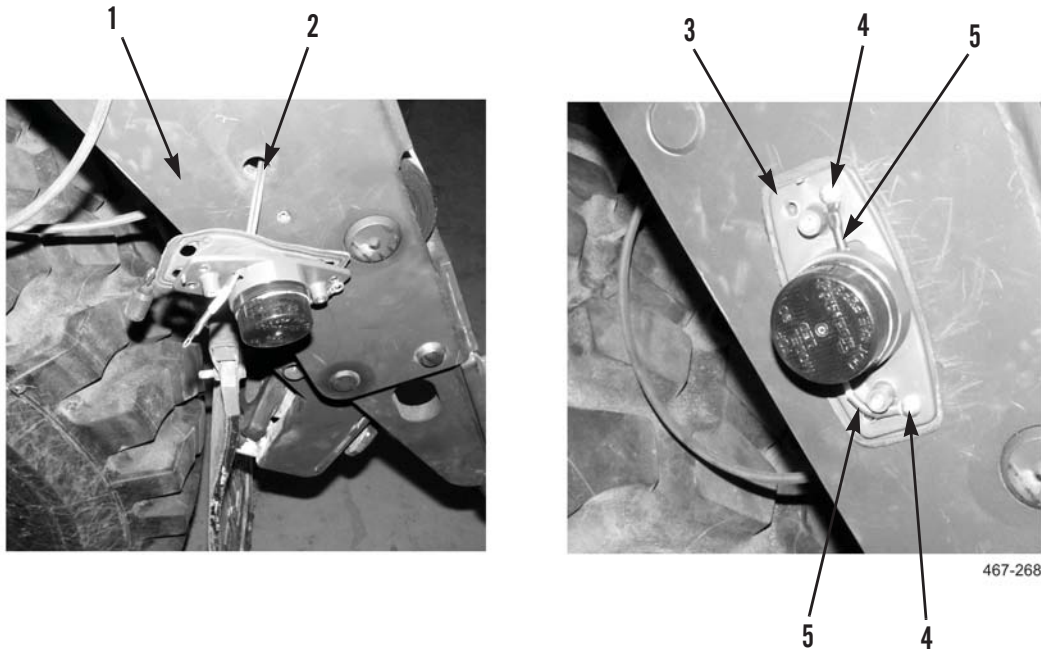


Figure 61. Slider Light Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED

15. Position light (Figure 62, Item 1) next to slider bed, feed light connector (Figure 62, Item 3) through hole in side of slider bed, and connect extension wire connector (Figure 62, Item 2) to light connector.
16. Install light (Figure 62, Item 3) and two screws (Figure 62, Item 4) on slider bed.

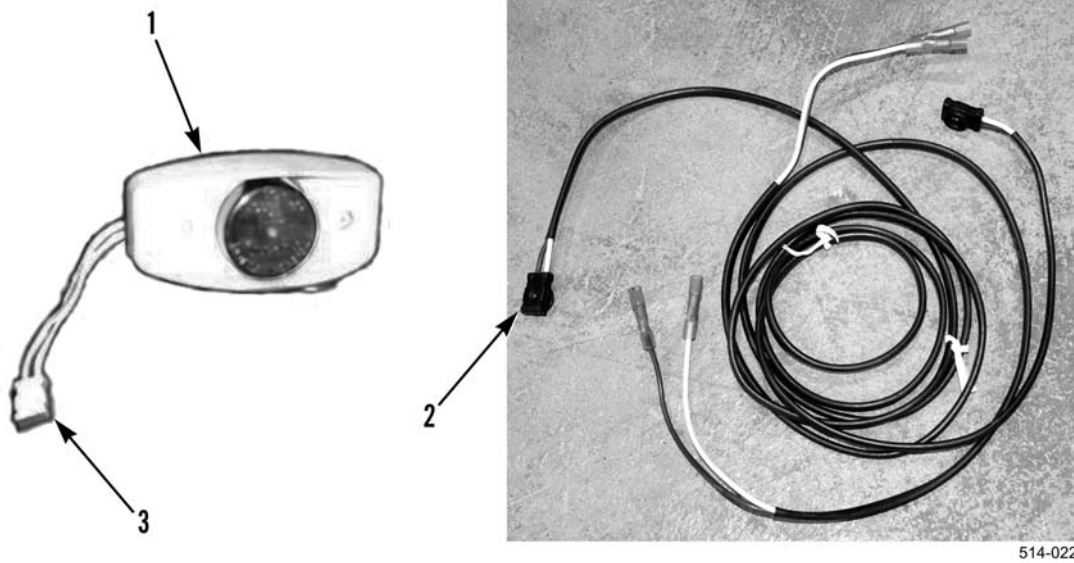


Figure 62. LED Light Extension.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED**NOTE**

- Install mounting plate as shown for PLS. When installing on HEMTT, flip mounting plate horizontally.
 - Ground wire is on PLS only.
17. At center of rear slider beam (Figure 63, Item 1), install mounting plate (Figure 63, Item 2), and two screws (Figure 63, Item 11) on slider beam.
 18. Route light wire (Figure 63, Item 6) along slot on mounting plate (Figure 63, Item 2) while installing light.
 19. Install light (Figure 63, Item 10), ground wire (Figure 63, Item 4), and screw (Figure 63, Item 3) on mounting plate (Figure 63, Item 2).
 20. Install ground wire (Figure 63, Item 9) from vehicle wiring harness (Figure 63, Item 8), and screw (Figure 63, Item 5) on mounting plate (Figure 63, Item 2).
 21. Connect light wire (Figure 63, Item 6) to vehicle wiring harness connector (Figure 63, Item 7).

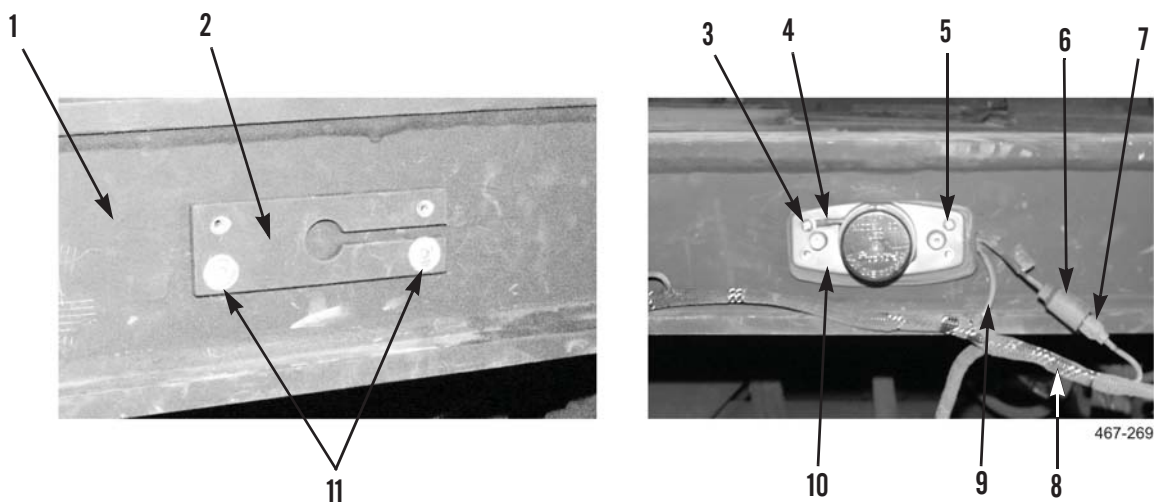


Figure 63. Slider Beam Light Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED

NOTE

- On trucks with standard lights, perform steps 22 through 26 for lights on right and left side of slider beam.
 - On trucks with LED lights, perform steps 27 through 31 for lights on right and left side of slider beam.
22. Install light bracket (Figure 64, Item 6), washer (Figure 64, Item 9), bolt (Figure 64, Item 10), washer (Figure 64, Item 7), and nut (Figure 64, Item 8) on slider beam (Figure 64, Item 2).
 23. Scrape or grind away paint surrounding mounting hole on underside of slider base (Figure 64, Item 11).
 24. Install bolt (Figure 64, Item 16), washer (Figure 64, Item 15), ground wire (Figure 64, Item 14), washer (Figure 64, Item 12), and locknut (Figure 64, Item 13) on slider base (Figure 64, Item 11).
 25. Insert wire (Figure 64, Item 5) from vehicle wiring harness into solderless connector (Figure 64, Item 4) and crimp securely.
 26. Slide shrink wrap tube (Figure 64, Item 3) from extension wire (Figure 64, Item 1) over solderless connector (Figure 64, Item 4) and apply heat until shrink wrap tightly encloses connector.
 27. Install light bracket (Figure 64, Item 6), washer (Figure 64, Item 9), bolt (Figure 64, Item 10), washer (Figure 64, Item 7), and nut (Figure 64, Item 8) on slider beam (Figure 64, Item 2).
 28. Install bolt (Figure 64, Item 16), washer (Figure 64, Item 15), washer (Figure 64, Item 12), and locknut (Figure 64, Item 13) on slider base (Figure 65, Item 11).

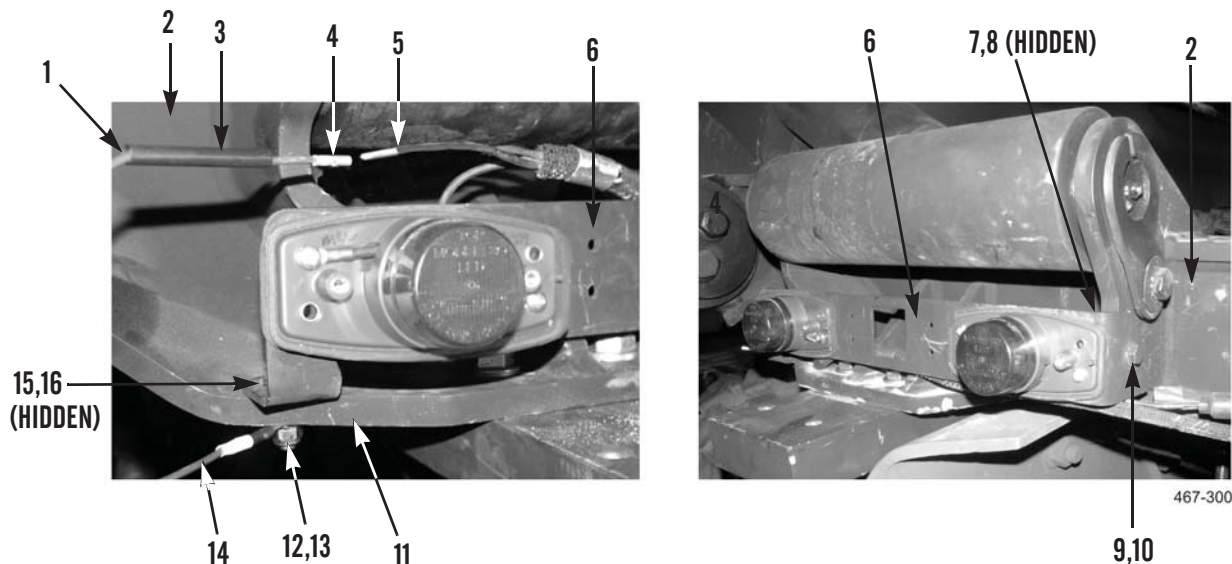


Figure 64. Light Bracket Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED

29. Cut connector (Figure 65, Item 5) and strip 1/4 in. insulation from two light wires (Figure 65, Item 1).
30. Insert two light wires (Figure 65, Item 1) into solderless connectors (Figure 65, Item 4) at end of light extension wires (Figure 65, Item 2), and crimp securely.
31. Apply heat to two shrink wrap tubes (Figure 65, Item 3) until shrink wrap tightly encloses connectors.

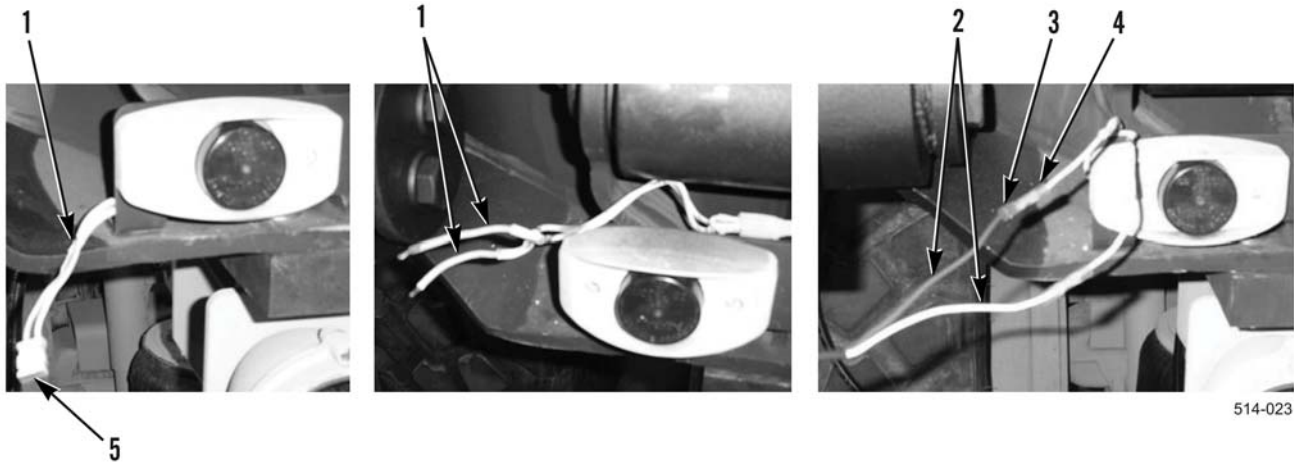


Figure 65. Light Wires and Light Extension Wires.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED

32. Route wire extension (Figure 66, Item 1) along sensor harness (Figure 66, Item 2) and install new tiedown straps (Figure 66, Item 3) as required.

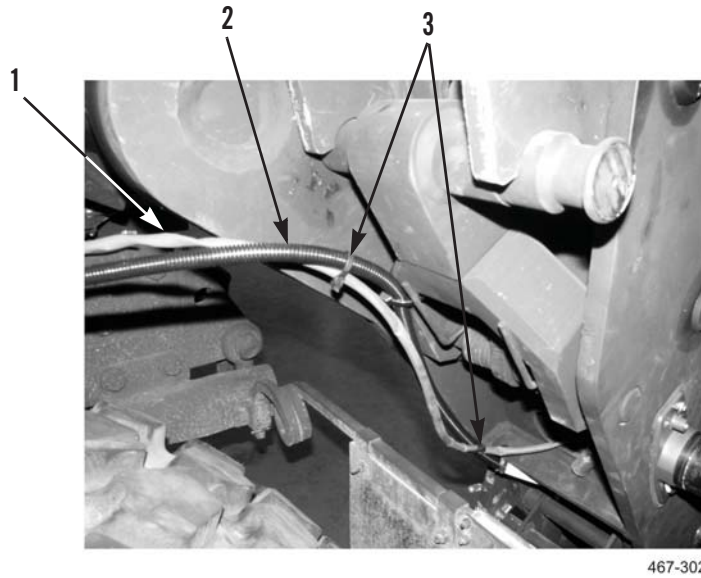


Figure 66. Tiedown Strap Installation.

NOTE

- Install light covers in positions noted during removal.
- Perform step 33 for seven light covers.

33. Install light cover (Figure 67, Item 1) and two screws (Figure 67, Item 2) on light (Figure 67, Item 3).

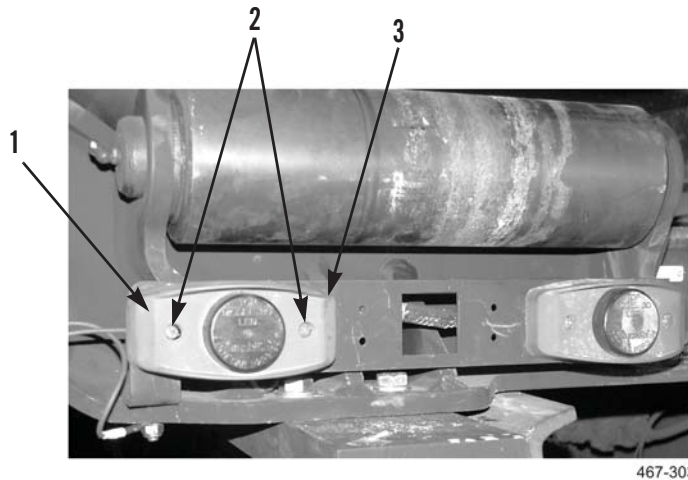
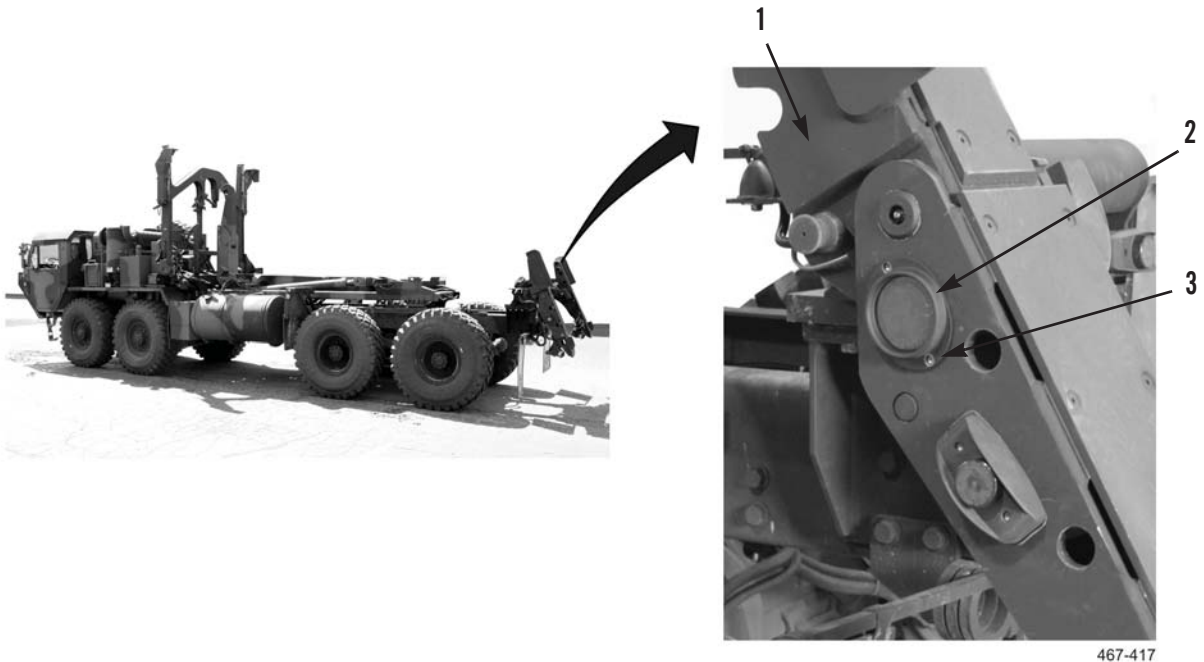


Figure 67. Light Cover Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED**NOTE**

Perform step 34 for reflectors on right and left sides of slider assembly.

34. Install reflector (Figure 68, Item 2) and two screws (Figure 68, Item 3) on slider assembly (Figure 68, Item 1).

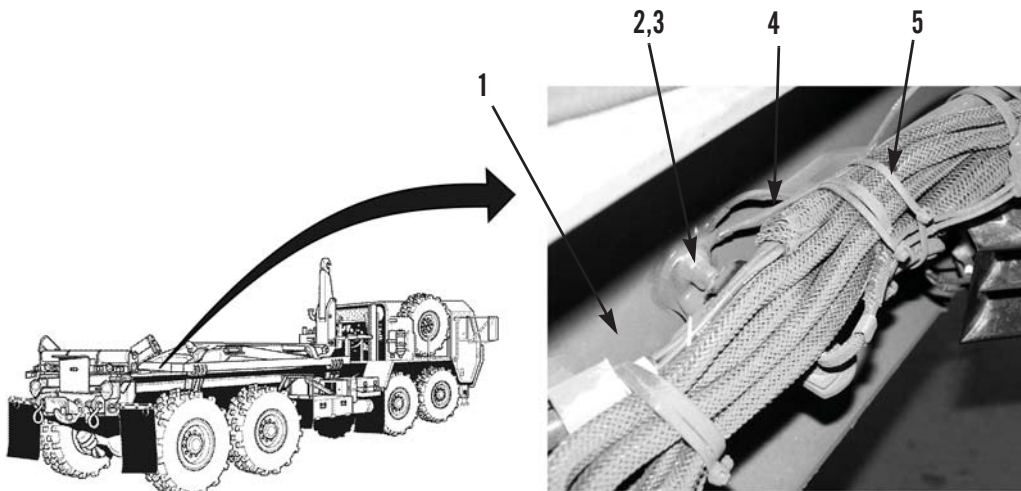


467-417

Figure 68. Reflector Installation.

Ground Wire Installation - HEMTT Only

1. Route ground wire (Figure 69, Item 4) from wiring harness to right side of frame (Figure 69, Item 1) and install ground wire, bolt (Figure 69, Item 2), and nut (Figure 69, Item 3) on frame.
2. Install tiedown straps (Figure 69, Item 5) as required.



467-301

Figure 69. HEMTT Ground Wire Installation.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED

Bumper Stop Modification - HEMTT Only

WARNING

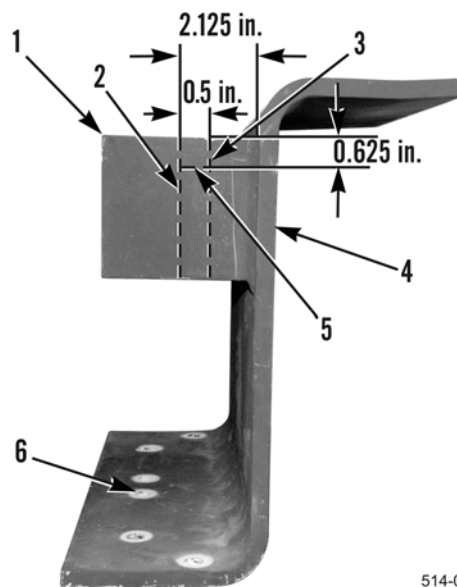


- Appropriate safety precautions (including, but not limited to, wearing proper breathing apparatus, hearing protection, safety goggles, etc.) must be observed when working with CARC material.
- All cutting and grinding must be done using an abrasive device only. Use of a cutting torch, plasma cutter, etc., is not permitted.
- Always wear gloves and a face shield or breathing apparatus when grinding painted surfaces. Airborne particles may cause lung irritation or damage to eyes.
- Failure to follow these warnings may cause injury or death to personnel.

NOTE

- For the HEMTT only, the flanges on the bumper stop bracket must be modified prior to re-installation.
- Perform steps 1-4 for both flanges on HEMTT bumper stop bracket.

1. Measure and mark a vertical line (Figure 70, Item 2) 2 1/8 in. from inner face of bracket (Figure 70, Item 4).
2. Measure and mark a vertical line (Figure 70, Item 3) 0.5 in. toward bracket from first line.
3. Measure and mark a horizontal line (Figure 70, Item 5) 0.625 in. down from top of flange (Figure 70, Item 1).
4. Cut or grind on marked lines to remove flange (Figure 70, Item 1).
5. Increase length of bolt holes (Figure 70, Item 6) by 1/8 in. toward front of vehicle.
6. Paint exposed metal surfaces.



514-013

Figure 70. HEMTT Bumper Stop Modification.

LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED**Bumper Stop Installation**

Install bumper stop (Figure 71, Item 1), six bolts (Figure 71, Item 2), and nuts (Figure 71, Item 3) on frame (Figure 71, Item 4).

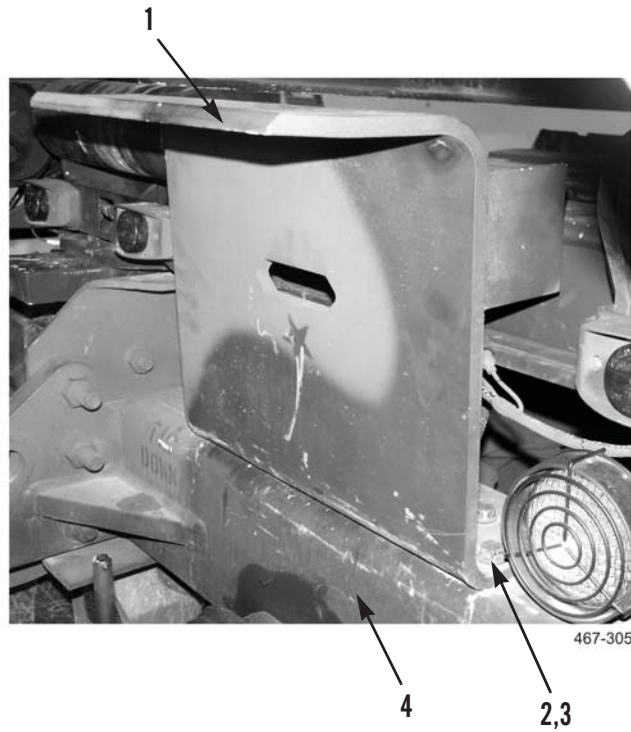


Figure 71. Bumper Stop Installation.

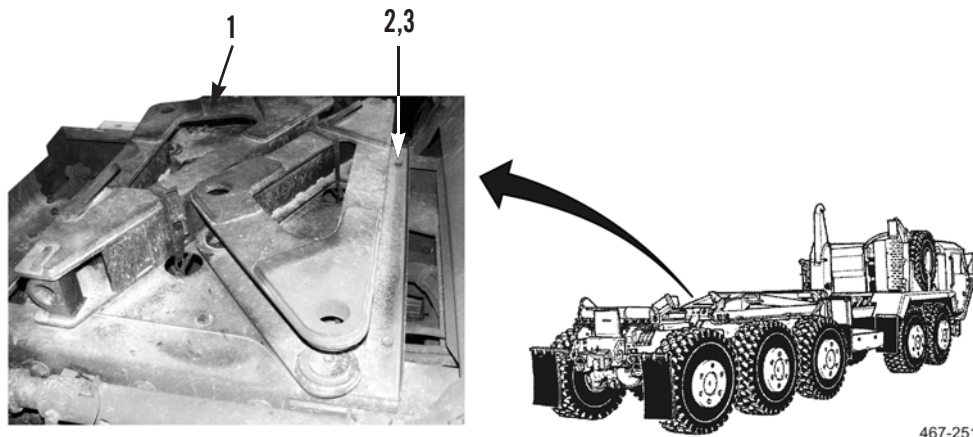
LIGHT BAR ASSEMBLY INSTALLATION – CONTINUED**Hard Lift Installation - PLS Only****WARNING**

- Lifting cables, chains, hooks, and slings used for lifting must be in good condition and of suitable capacity.
- Improper use of lifting equipment and improper attachment of cables may cause injury to personnel and damage to equipment. Observe all standard rules of safety.
- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device.
- Failure to follow these warnings may result in injury or death to personnel.

NOTE

Hard lift assembly weighs 240 lb (109 kg).

1. Attach sling and lifting device to hard lift (Figure 72, Item 1).
2. Use lifting device to install hard lift (Figure 72, Item 1) on vehicle.
3. Install six bolts (Figure 72, Item 3), and nuts (Figure 72, Item 2) on hard lift (Figure 72, Item 1).



467-251

Figure 72. PLS Hard Lift Installation.

END OF TASK

END OF WORK PACKAGE

CHAPTER 8
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

OPERATOR AND FIELD MAINTENANCE

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION

SCOPE

This RPSTL lists and authorizes spares and repair parts for performance of Field level maintenance of the E-CHU. It authorizes the requisitioning, issue, and disposition of spares and repair parts as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to this work package, this RPSTL is divided into the following work packages:

- a. **Repair Parts Lists Work Package.** Work package containing lists of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. This work package also includes parts which 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. Repair parts kits are listed separately in their own functional group. Items listed are shown on the associated illustrations.
- b. **Special Tools List Work Package.** There are no special tools for the E-CHU.
- c. **Cross-Reference Indexes Work Package.** There are two cross-reference indexes in this RPSTL: National Stock Number Index and Part Number Index.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LISTS

- 1. **Item No. (Column 1).** Indicates the number used to identify items called out in the illustration.
- 2. **SMR Code (Column 2).** The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout:

SOURCE CODE	MAINTENANCE CODE		RECOVERABILITY CODE
XXxxx 1st two positions How you get an item.	xxXXx 3rd position Who can install, replace, or use the item.	4th position Who can do complete repair* on the item.	xxxxX 5th position 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.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LISTS – CONTINUED

- a. **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	<p>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.</p> <p style="text-align: center;"><i>Items coded PC are subject to deterioration.</i></p> <p>.....</p>
KD KF KB	<p>Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.</p> <p>.....</p>
MO - Made at Unit/ AVUM level MF - Made at DS/AVIM Level MH - Made at GS Level ML - Made at SRA MD - Made at Depot	<p>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 work package of the 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.</p> <p>.....</p>
AO-Assembled by Unit/ AVUM level AF-Assembled by DS/ AVIM level AH-Assembled by GS level AL-Assembled by SRA AD-Assembled by Depot	<p>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 of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.</p>
XA	<p>Do not requisition an "XA" coded item. Order the next higher assembly (refer to NOTE below).</p>
XB	<p>If an item is not available from salvage, order it using the CAGEC and P/N.</p>
XC	<p>Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's P/N.</p>
XD	<p>Item is not stocked. Order an XD-coded item through normal supply channels using the CAGEC and P/N given, if no NSN is available.</p>

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LISTS – CONTINUED

b. **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) Third Position. 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	Crew or Operator maintenance done within Field/AVUM maintenance.
O	Unit Level/AVUM maintenance can remove, replace, and use the item.
F	Direct Support/AVIM 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.

(b) Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

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.

Code	Application/Explanation
O	Unit/AVUM is the lowest level that can do complete repair of the item.
F	Direct Support/AVIM is the lowest level that can do complete repair of the item.
H	General Support 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 is the lowest level that can do complete repair of the item.
Z	Nonrepairable. 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.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LISTS – CONTINUED

- c. **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	Nonrepairable 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 repairable, condemn and dispose of the item at the Unit level maintenance.
F	Reparable item. When uneconomically repairable, condemn and dispose of the item at Direct Support level.
H	Reparable item. When uneconomically repairable, condemn and dispose of the item at General Support level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
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.

- 3. **NSN - (Column 3).** The NSN for the item is listed in this column.
- 4. **CAGEC (Column 4).** The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.
- 5. **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.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered.

- 6. **DESCRIPTION AND USABLE ON CODE (UOC) (Column 6).** This column includes the following information:
 - a. The Federal item name and, when required, a minimum description to identify the item.
 - b. P/Ns of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.
 - c. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
 - d. The statement END OF FIGURE appears just below the last item description in column (6) for a given figure in both the repair parts list and special tools list work packages.
- 7. **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.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGE FORMAT AND COLUMNS

1. **National Stock Number (NSN) Index Work Package.**
 - a. **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.
 - b. **FIG. Column.** This column lists the number of the figure where the item is identified/located. The figures are in numerical order in WP 0054.
 - c. **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.
2. **Part Number (P/N) Index Work Package.** Part numbers in this index are listed 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).
 - a. **PART NUMBER Column.** Indicates the P/N assigned to the item.
 - b. **FIG. Column.** This column lists the number of the figure where the item is identified/located in WP 0054.
 - c. **ITEM Column.** The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

Associated Publications. The publication(s) listed below pertain to the E-CHU and its components:

Publication	Short Title
TM 9-2320-364-14&P Series . . . . .	.PLS
TM 9-2320-326-14&P Series . . . . .	.HEMTT

HOW TO LOCATE REPAIR PARTS

1. **When National Stock Number is Known.**
 - a. **First.** If you have the NSN, look in the STOCK NUMBER column of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.
 - b. **Second.** Turn to the figure and locate the item number. Verify that the item is the one you are looking for.
2. **When Part Number is Known.**
 - a. **First.** If you have the P/N and not the NSN, look in the PART NUMBER column of the P/N index work package. Identify the figure and item number.
 - b. **Second.** Look up the item on the figure in the applicable repair parts list work package.

ABBREVIATIONS

For standard abbreviations see ASME Y14.38-2007, *Abbreviations and Acronyms*.

Abbreviation	Explanation
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN)
RPSTL	Repair Parts and Special Tools Lists
SMR	Source, Maintenance, and Recoverability Code
TMDE	Test, Measurement, and Diagnostic Equipment

END OF WORK PACKAGE

FIELD MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

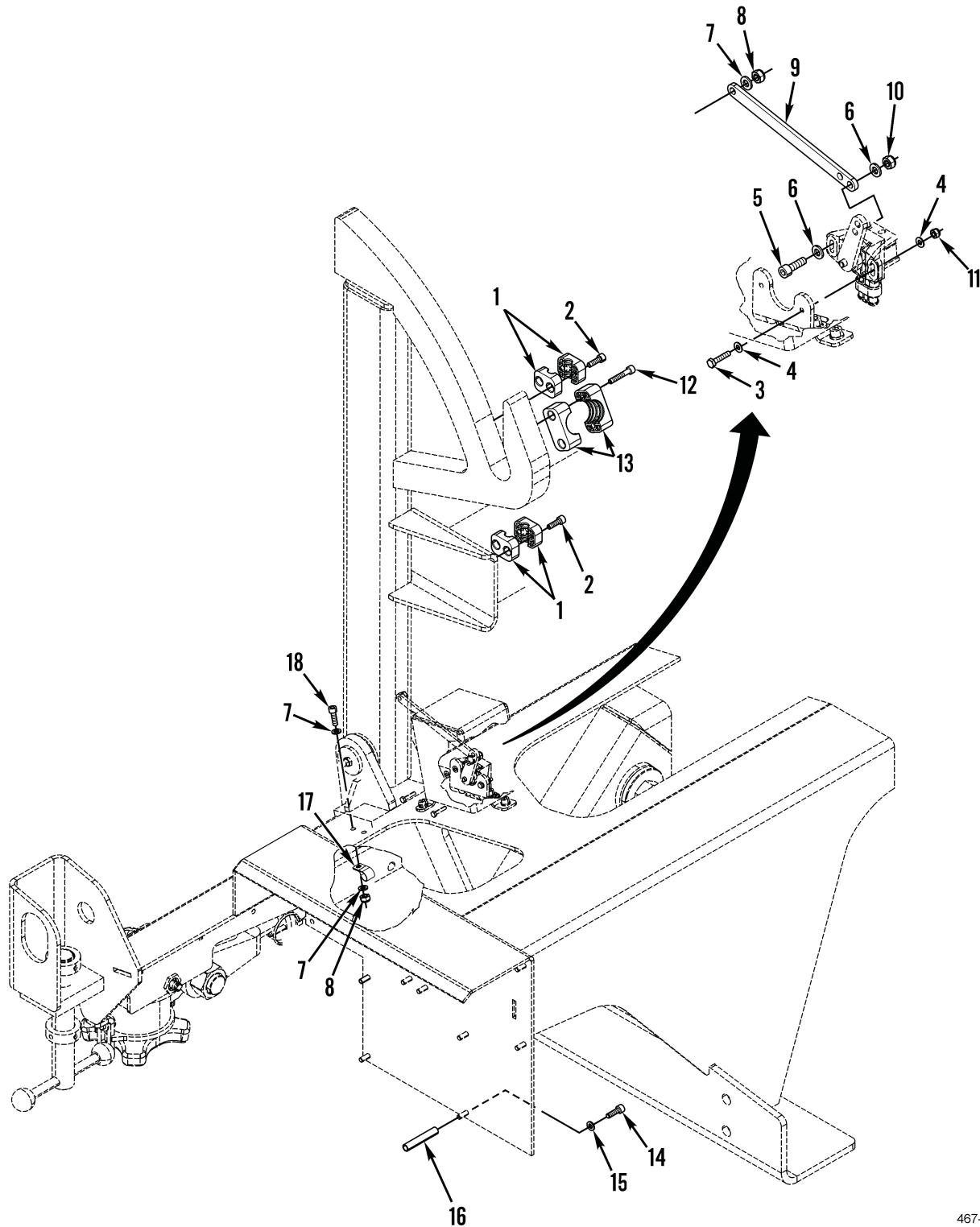


Figure 1. Pneumatic, Hydraulic and Electrical Attaching Hardware (Sheet 1 of 2).

467-1006-1

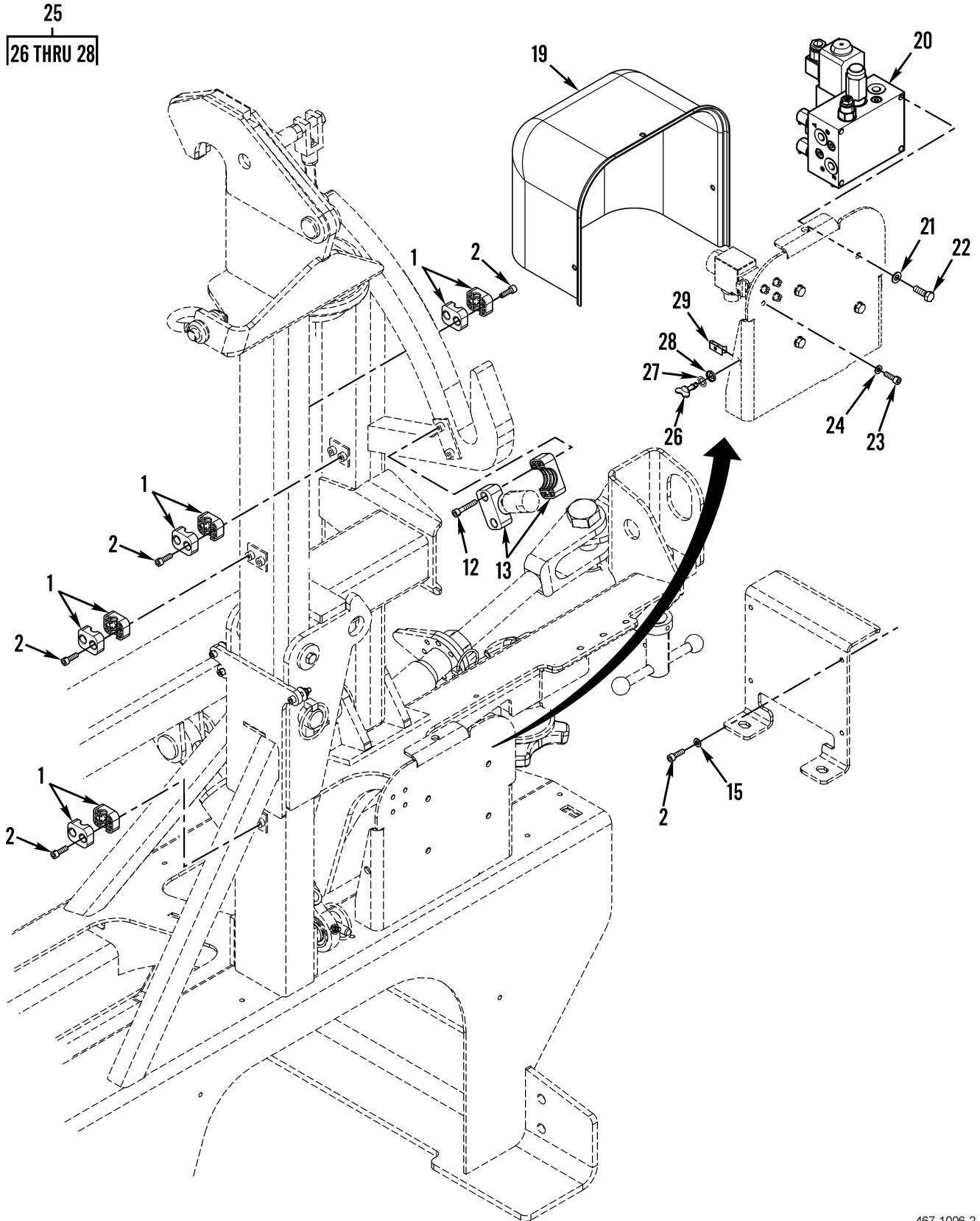


Figure 1. Pneumatic, Hydraulic and Electrical Attaching Hardware (Sheet 2 of 2).

467-1006-2

(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. 1 PNEUMATIC, HYDRAULIC AND ELECTRICAL ATTACHING HARDWARE							
1	PAFZZ	4730015650249	53790	112APP	.CLAMP,HOSE 12MM FOR ONE PIPE.....	7	
2	PAFZZ	5305015661762	39428	95263A546	.SCREW,CAP,SOCKET HE M6X20.....	26	
3	PAFZZ	5305009887604	80205	MS16995-28	.SCREW,CAP,SOCKET HE #8X3/4"UNC....	2	
4	PAFZZ	5310007653197	96906	MS27183-41	.WASHER,FLAT #8.....	4	
5	PAFZZ	5305015663425	39428	91251A454	.SCREW,CAP,SOCKET HE #12X1"UNC.....	1	
6	PAFZZ	5310015666785	39428	90126A013	.WASHER,FLAT #12.....	2	
7	PAFZZ	5310008238804	96906	MS27183-9	.WASHER,FLAT 1/4".....	39	
8	PAFZZ	5310000614650	81349	M45913/3-4CG8C	.NUT,SELF-LOCKING,HE 1/4".....	20	
*	9	PAFZZ	5340015736463	34914	111565301	.BRACKET,LEVER.....	1
10	PAFZZ	5310015671382	39428	94831A615	.NUT,PLAIN,EXTENDED #12UNC.....	1	
11	PAFZZ	5310014573244	39428	90631A009	.NUT,SELF-LOCKING,HE #8UNC.....	2	
12	PAFZZ	5305015661072	39428	91296A334	.SCREW,CAP,SOCKET HE 1/4"X1-3/8"...	4	
13	PAFZZ	5340015650933	53790	430PP	.CLAMP,LOOP 30MM FOR ONE PIPE.....	2	
14	PAFZZ	5305015661079	39428	91296A334	.SCREW,CAP,SOCKET HE M6X75.....	4	
15	PAFZZ	5310013978096	39428	91166A250	.WASHER,FLAT M6.....	16	
*	16	PAFZZ	5365015735801	34914	111931701	.SPACER,SLEEVE.....	4
17	PAFZZ	5340015185127	39428	3225T5	.CLAMP,LOOP.....	19	
18	PAFZZ	5305002253843	80204	B1821BH025C100N	.SCREW,CAP,HEXAGON H 1/4"X1"UNC....	19	
19	PAFZZ	4810015735800	34914	111932101	.COVER PLATE,VALVE.....	1	
*	20	PAFZZ		34914	111574801	.HYDRAULIC MANIFOLD.....	1
21	PAFZZ	5310014829266	39428	93475A270	.WASHER,FLAT M8.....	4	
22	PAFZZ	5305015744238	39428	91280A249	.SCREW,CAP,HEXAGON H M8X25.....	4	
23	PAFZZ	5305015596861	39428	91280A222	.SCREW,CAP,HEXAGON H M5X10.....	2	
24	PAFZZ	5310014727792	39428	91166A240	.WASHER,FLAT M5.....	2	
*	25	PAFZZ	5340015737685	34914	GT-1119321-1-4TR	.LATCH,THUMB.....	3
				N			
*	26	XAFZZ		34914	110324301	..SCREW WING HEAD.....	3
*	27	XAFZZ		34914	110324401	..WASHER,WEAR.....	3
*	28	XAFZZ		34914	110324501	..RETAINER.....	3
*	29	PAFZZ	5340015734796	34914	110324701	.CLIP.....	3

END OF FIGURE

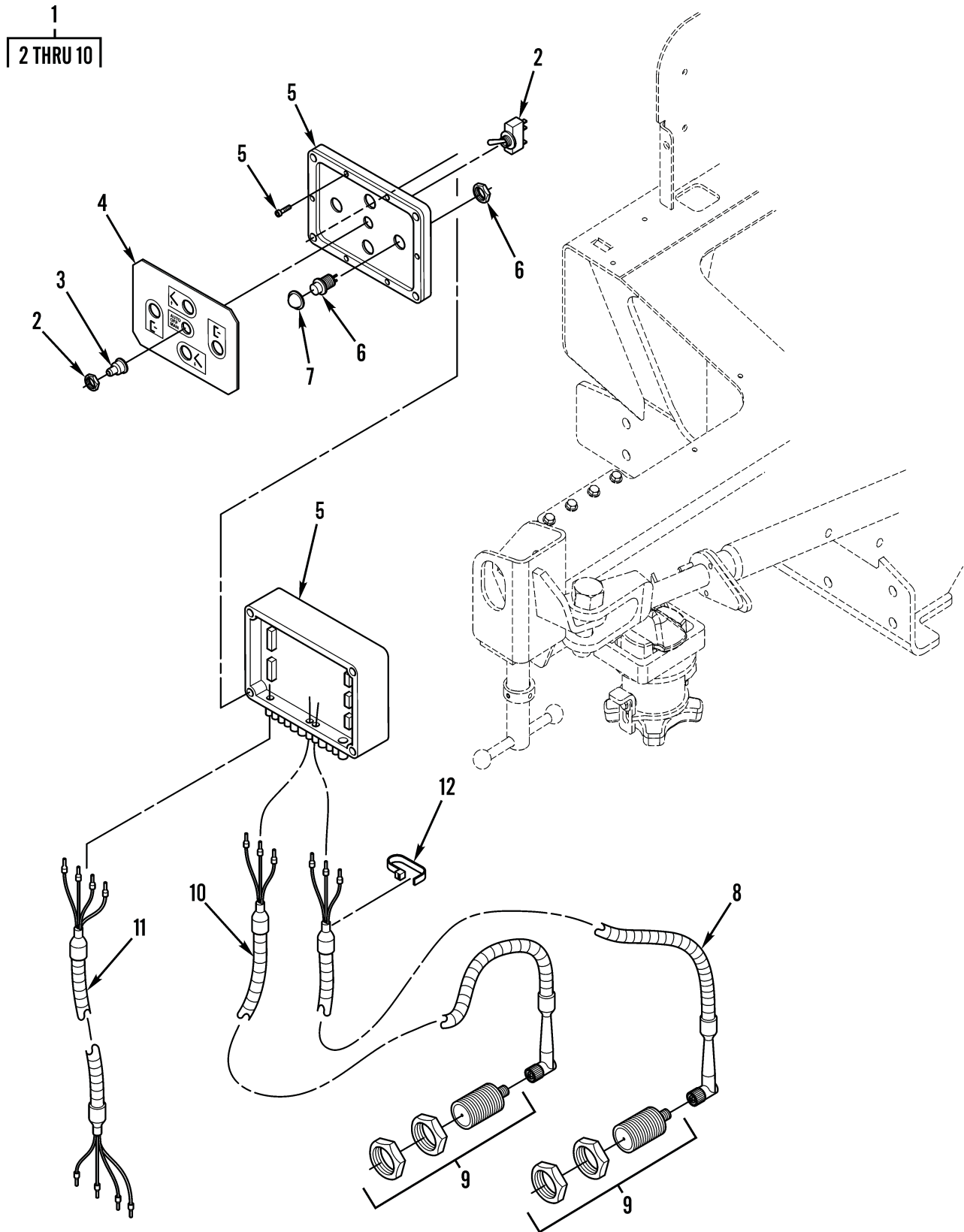


Figure 2. Electric Box Component (Sheet 1 of 5).

467-1015-1

13
14 THRU 16

17
18 AND 19

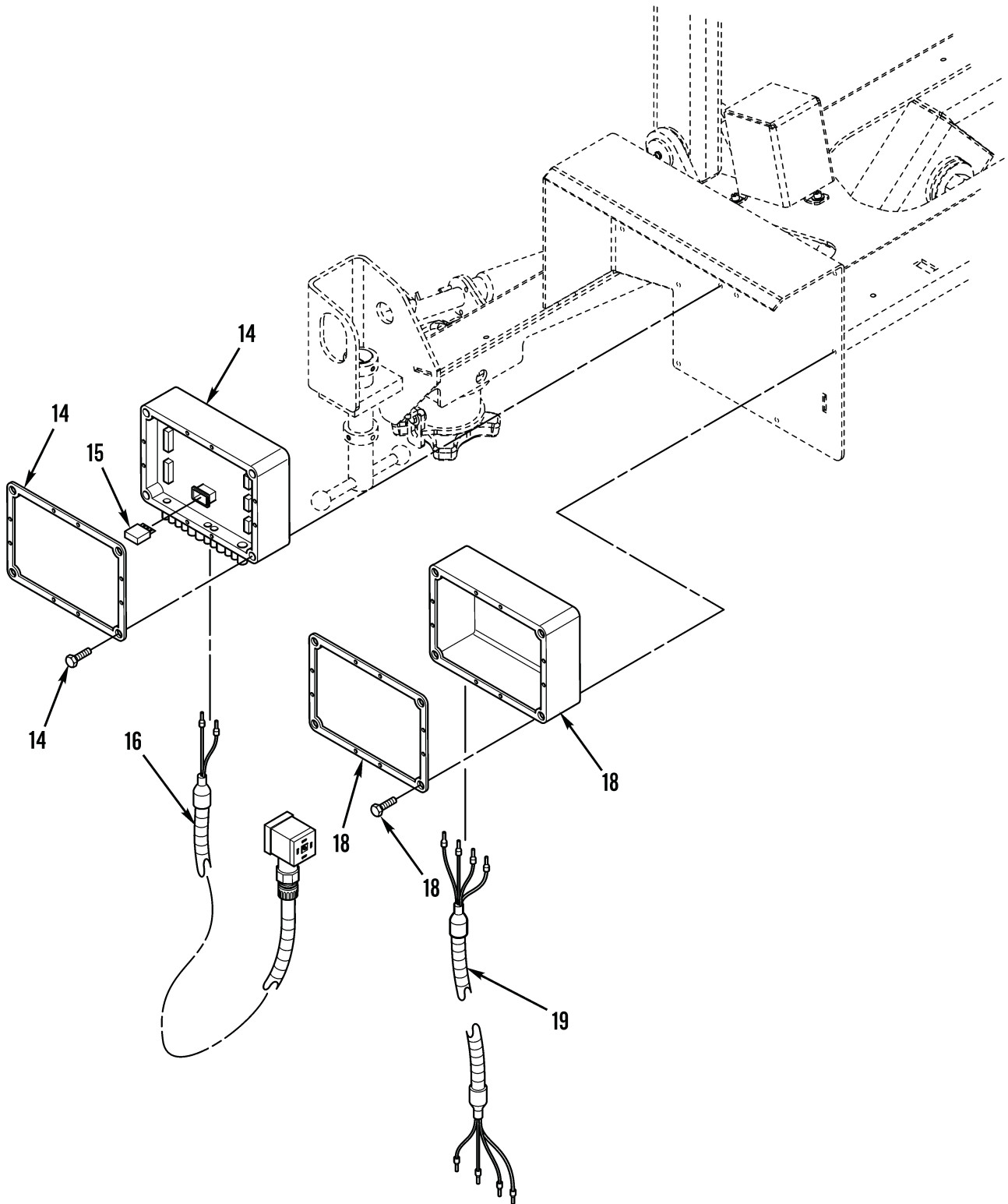


Figure 2. Electric Box Component (Sheet 2 of 5).

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20
21 THRU 36

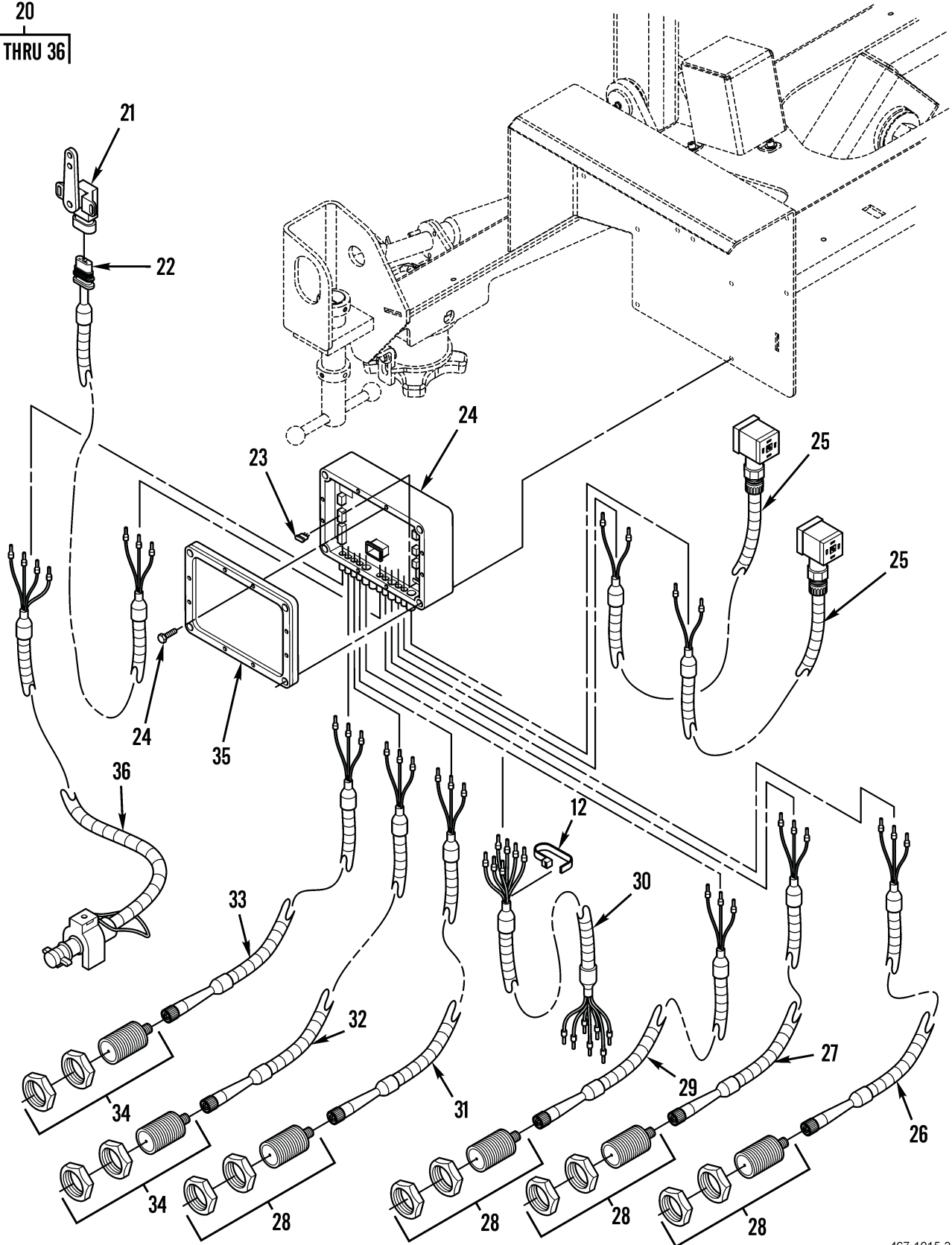


Figure 2. Electric Box Component (Sheet 3 of 5).

467-1015-3

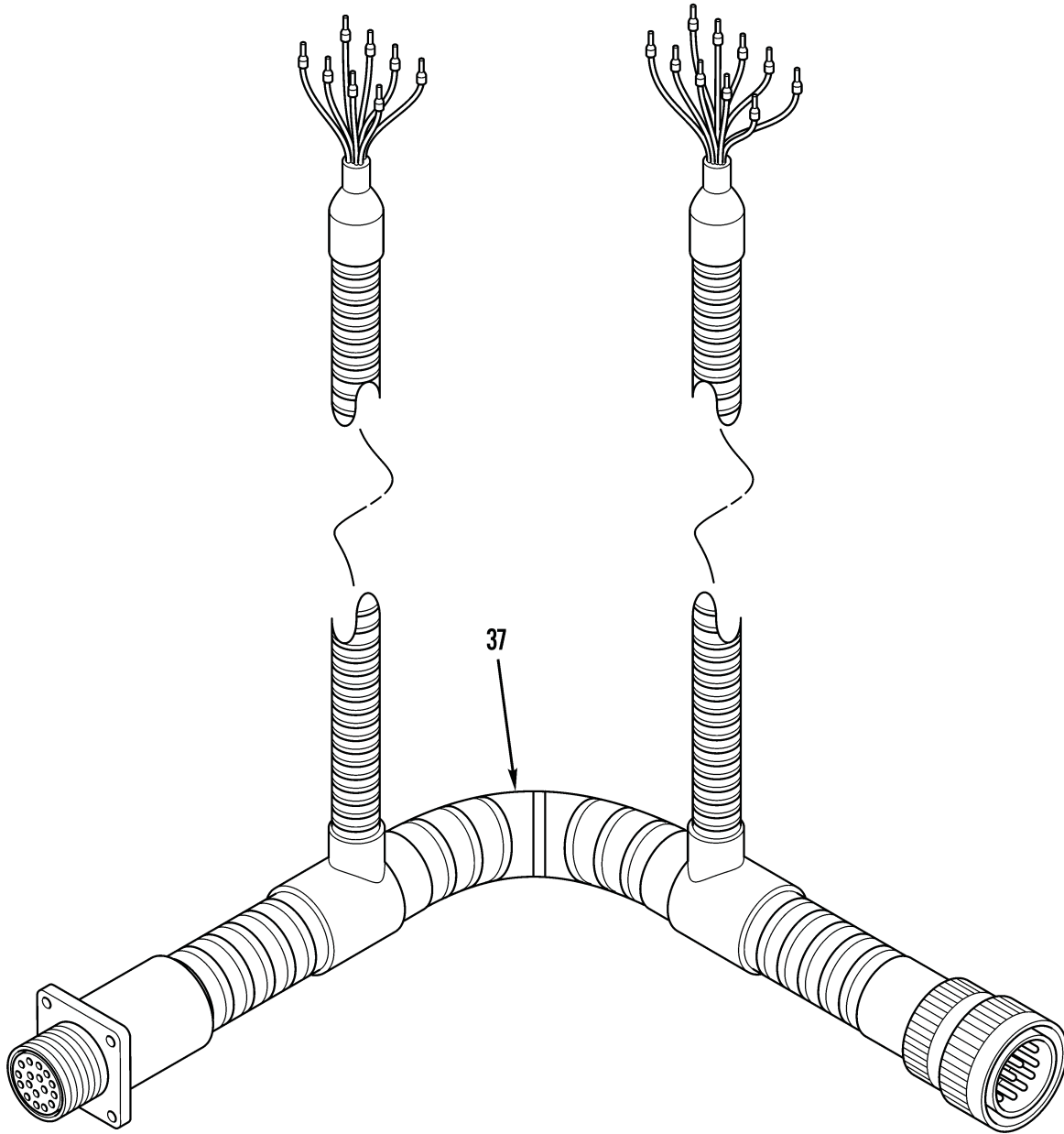
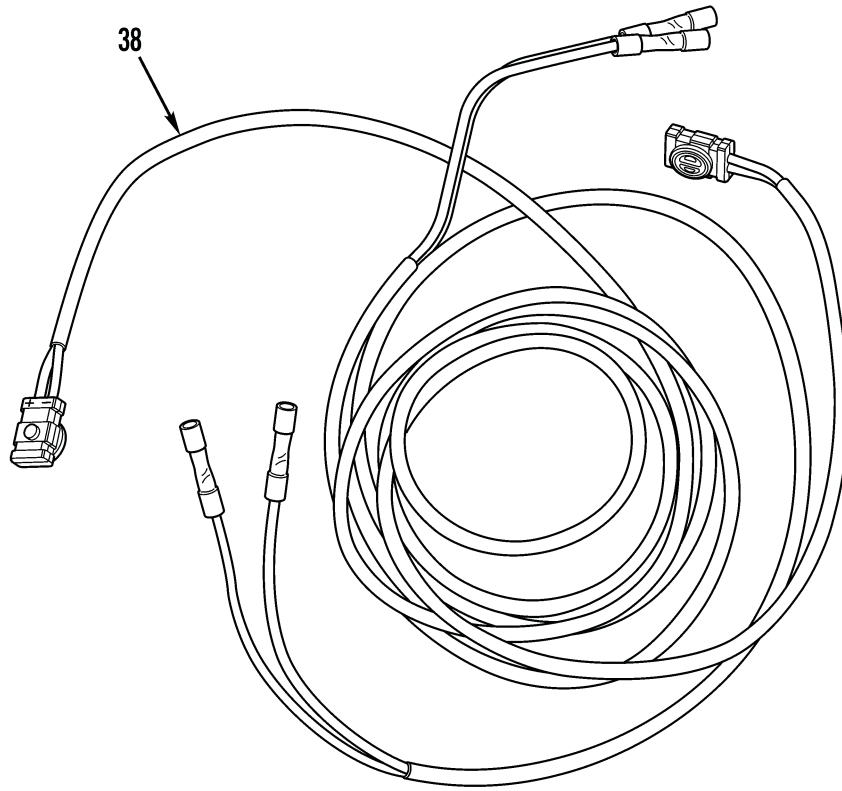


Figure 2. Electric Box Component (Sheet 4 of 5).

467-1015-4

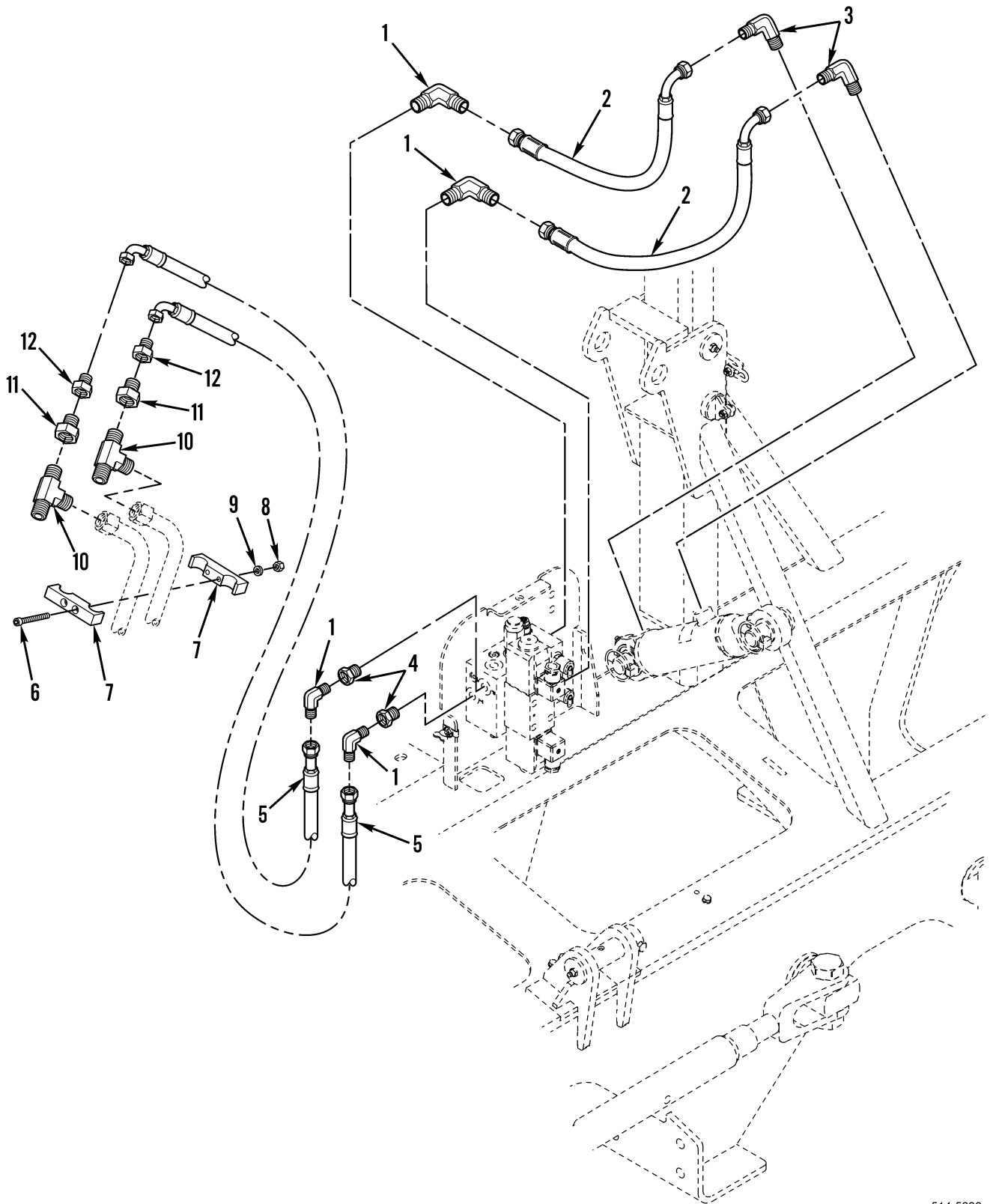


514-5005-5

Figure 2. Electric Box Component (Sheet 5 of 5).

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 2 ELECTRIC BOX COMPONENT						
1	PAFZZ	2540200042501	3AR59	112076901	BOX,ACCESSORIES STOWAGE.....	1
*	2	PAFZZ	5930015737943	34914 112078001	.SWITCH,TOGGLE.....	1
*	3	PAFZZ	5930015735688	34914 APEM U598	.SWITCH,TOGGLE,BOOT.....	1
*	4	PAFZZ	7690015735680	34914 112078101	.LABEL.....	1
*	5	PAFZZ	5975015691768	34914 3763820	.JUNCTION BOX.....	1
*	6	PAFZZ	5930015737958	34914 0701-075	.PUSH BUTTON.....	4
*	7	PAFZZ	5930015737962	34914 0701-076	.BOOT,DUST AND MOISTURE SEAL.....	4
	8	PAFZZ	6150015691722	34914 112077604	.WIRING HARNESS,BRAN.....	1
	9	PAFZZ	5930015660282	61964 E2A-M18KS08-M1-B	.SWITCH,PROXIMITY.....	2
				1		
*	10	PAFZZ	6150015692132	34914 112077603	.WIRING HARNESS,BRAN.....	1
*	11	PAFZZ	6150015691725	34914 112077502	WIRING HARNESS,BRAN.....	1
*	12	PAFZZ	5975015093916	34914 7130K59	STRAP,TIEDOWN,ELECT.....	5
*	13	PAFZZ	2540015736403	34914 112077001	BOX,ACCESSORIES STOWAGE.....	1
*	14	PAFZZ	5975015691768	34914 3763820	.JUNCTION BOX.....	1
	15	PAFZZ	5920011496952	58536 AA55569/01-008	.FUSE,INCLOSED LINK 15 AMP.....	1
*	16	PAFZZ	6150015691785	34914 112077701	.WIRING HARNESS,BRAN.....	1
*	17	PAFZZ	5945015735690	34914 112077101	COVER,ELECTRICAL RELAY.....	1
*	18	PAFZZ	5975015737955	34914 3760154	.SUPPLEMENTARY EQUIPMENT,JOINT BOX..	1
*	19	PAFZZ	6150015744491	34914 987 7625	.WIRING HARNESS.....	1
*	20	PAFZZ	2540015735789	34914 112077201	BOX,ACCESSORIES STOWAGE.....	1
	21	PAFZZ	6695015663416	4P9L5 424A01A030B	.TRANSDUCER,MOTIONAL PICKUP.....	1
*	22	PAFZZ	6150015691715	34914 112077801	.WIRING HARNESS,BRAN.....	1
	23	PAFZZ	5920011235211	58536 AA55569/01-007	.FUSE,INCLOSED LINK 10 AMP.....	1
*	24	PAFZZ	5975015737948	34914 3805859	.ELECTRICAL KIT,SHOP SET.....	1
*	25	PAFZZ	6150015691732	34914 112077702	.WIRING HARNESS,BRAN.....	2
*	26	PAFZZ	6150015691761	34914 112077608	.WIRING HARNESS,BRAN.....	1
*	27	PAFZZ	6150015691717	34914 112077607	.WIRING HARNESS,BRAN.....	1
	28	PAFZZ	5930015660282	61964 E2A-M18KS08-M1-B	.SWITCH,PROXIMITY.....	4
				1		
*	29	PAFZZ	6150015691804	34914 112077602	.WIRING HARNESS,BRAN.....	1
*	30	PAFZZ	6150015691740	34914 112077401	.WIRING HARNESS,BRAN.....	1
*	31	PAFZZ	6150015691729	34914 112077601	.WIRING HARNESS,BRAN.....	1
	32	PAFZZ	6150015692158	3AR59 112077606	.WIRING HARNESS,BRAN.....	1
*	33	PAFZZ	6150015691814	34914 112077605	.WIRING HARNESS,BRAN.....	1
	34	PAFZZ	5930015660269	61964 E2A-M30KS15-M1-B	.SWITCH,PROXIMITY.....	2
				1		
*	35	PAFZZ	5340015735286	34914 3750981	.COVER,ACCESS.....	1
*	36	PAFZZ	6150015691724	34914 112077901	.WIRING HARNESS,BRAN.....	1
*	37	PAFZZ	6150015692147	34914 112077301	WIRING HARNESS,BRAN.....	1
*	38	PAFZZ		3AR59 112265902	HARNESS EXT ASSEMBLY.....	2

END OF FIGURE



514-5000

Figure 3. Hydraulic Assembly.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 3 HYDRAULIC ASSEMBLY						
1	PAFZZ	4730005746579	96906	MS51527A5	ELBOW,TUBE TO BOSS.....	4
*	2	PAFZZ	4720015737736	34914 112082001	HOSE ASSEMBLY,NONMETALLIC.....	2
*	3	PAFZZ	4730015734888	34914 110035714	ELBOW,HOSE TO BOSS.....	2
	4	PAFZZ	4730010116003	30780 5FNTX-5	CAP,TUBE.....	2
*	5	PAFZZ	4720015735299	34914 112082002	HOSE ASSEMBLY,NONMETALLIC.....	2
*	6	PAFZZ	5305014759857	53711 6931056ITEM6	SCREW,CAP,SOCKET HE HEMTT A4,3/8-16 UNC X 2,GR8,PLATED.....	2
*	7	PAFZZ		3AR59 1123781	CLAMP HEMTT A4.....	2
*	8	PAFZZ	5310015652727	07070 90630A121	NUT,SELF-LOCKING HE HEMTT A4,3/8-16	2
*	9	PAFZZ	5310015057694	39428 90126A031	WASHER,FLAT HEMTT A4,3/8,PLATED....	2
*	10	PAFZZ	4730015178526	93061 16WJTX-WLN-S	TEE,TUBE.....	2
*	11	PAFZZ	4730015740140	34914 110036205	REDUCER,TUBE HEMTT A4.....	2
*	11	PAFZZ		30780 4 XHL6-S	ADAPTOR PLS A1.....	2
*	12	PAFZZ	4730015767965	34914 10036209	REDUCER,TUBE HEMTT A4.....	2
*	12	PAFZZ		30780 6-4 XHX6-S	ADAPTOR PLS A1.....	2

END OF FIGURE

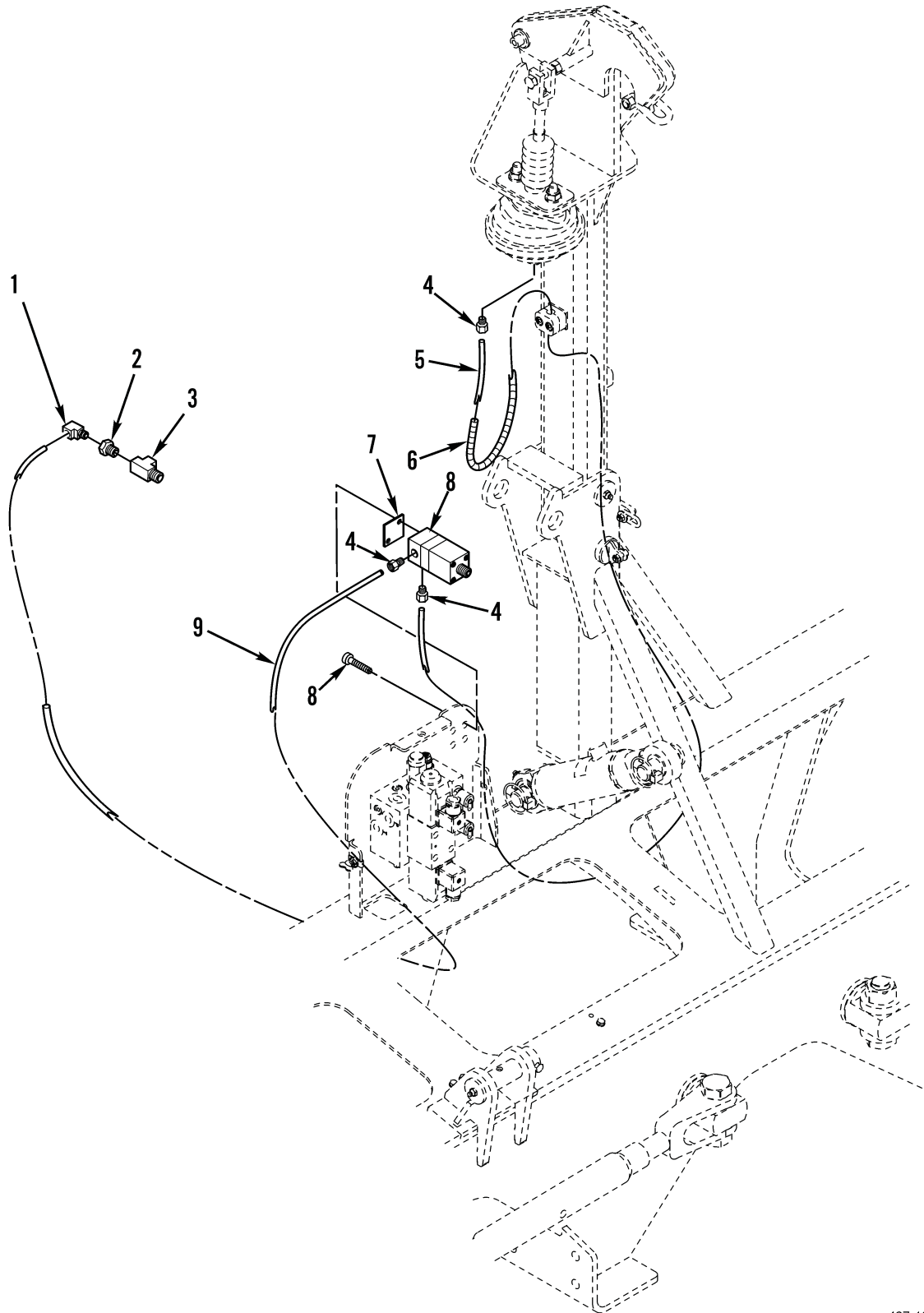


Figure 4. Pneumatic Assembly.

467-1005

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 4 PNEUMATIC ASSEMBLY						
* 1	PAFZZ	4730014813811	39428	112083501	ELBOW,SWIVEL,FLANGE TO HOSE.....	1
2	PAFZZ	4730013486542	93061	209P-8-4	BUSHING,PIPE.....	1
* 3	PAFZZ	4730010952034	81343	J530 8-8-8 13042	TEE,PIPE.....	1
4B						
* 4	PAFZZ	4730015735715	34914	112083001	ADAPTER,STRAIGHT,FLANGE TO PIPE 1/4" NPT TO 1/8".....	3
* 5	MOFZZ		34914	112083901-85	TUBING MAKE FROM NBR-4-035 85".....	1
* 6	PAFZZ	4720015735669	34914	112084001	TUBING,NONMETALLIC.....	1
* 7	PAFZZ	5365015737722	34914	112130001	SHIM.....	1
8	PAFZZ	4810015700818	88233	VE13ESC042C2	VALVE,SOLENOID.....	1
* 9	MOFZZ		34914	112083902-200	TUBING MAKE FROM NBR-4-035 200".....	1

END OF FIGURE

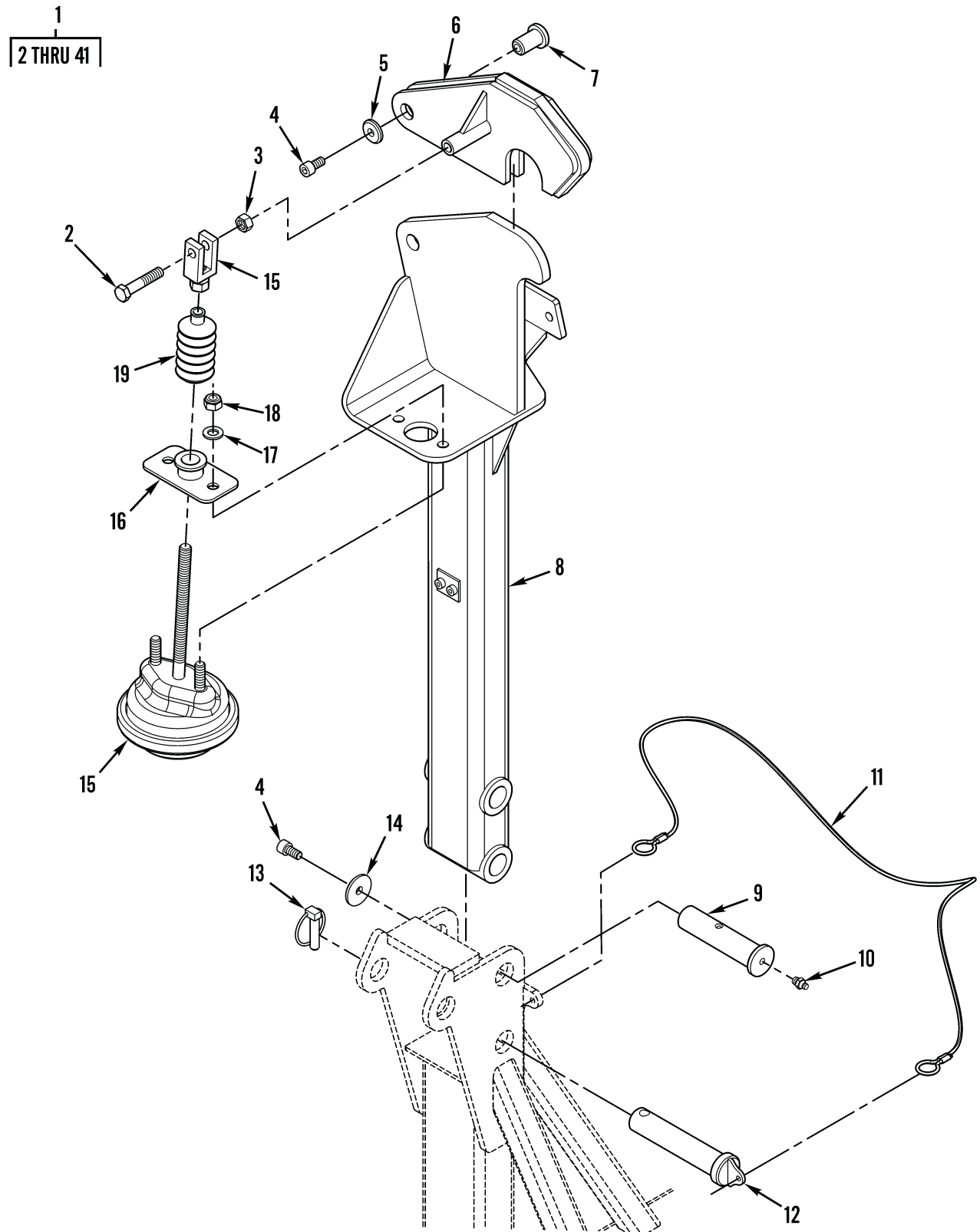
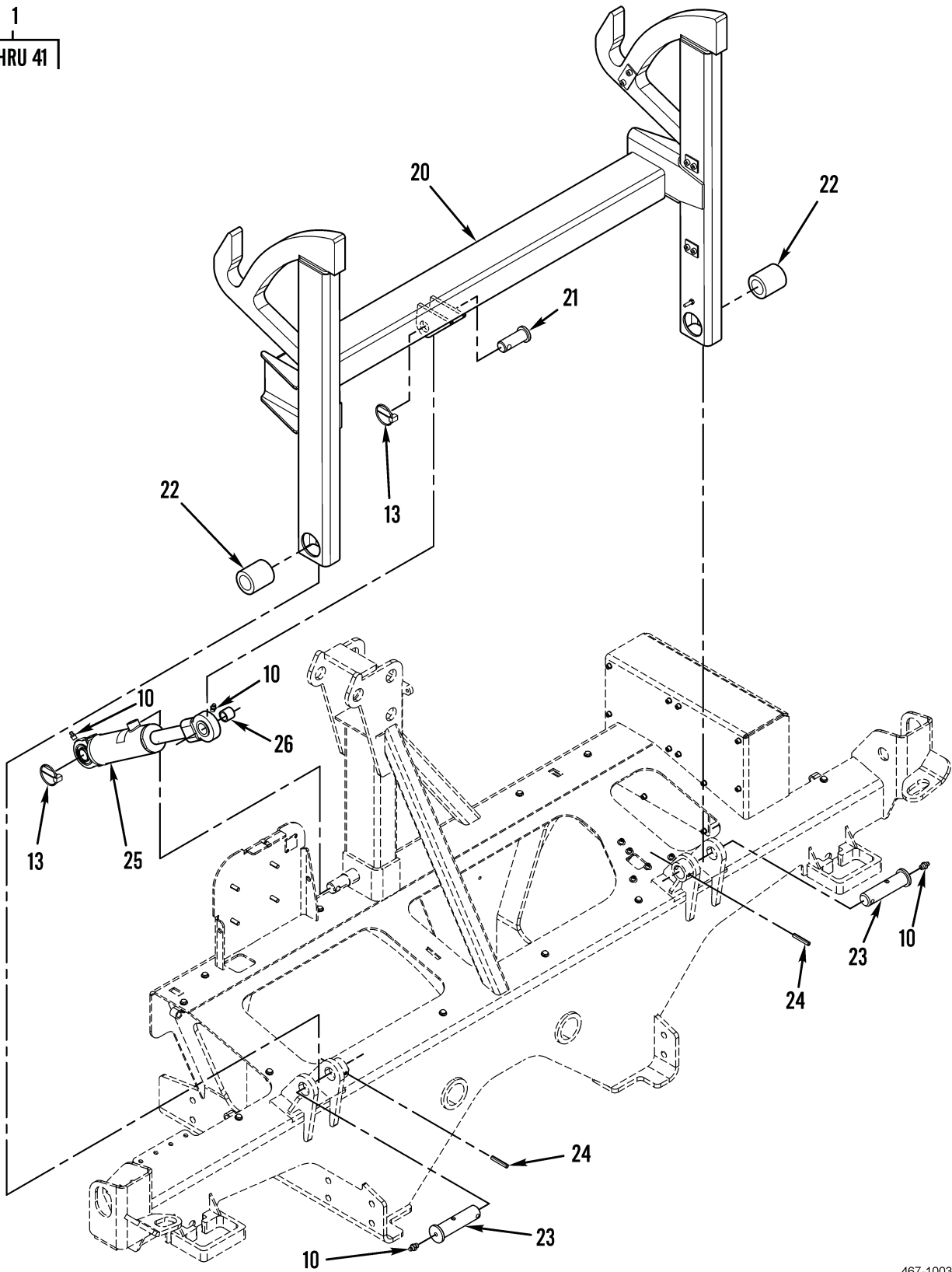


Figure 5. Stowage Mechanical Assembly (Sheet 1 of 3).

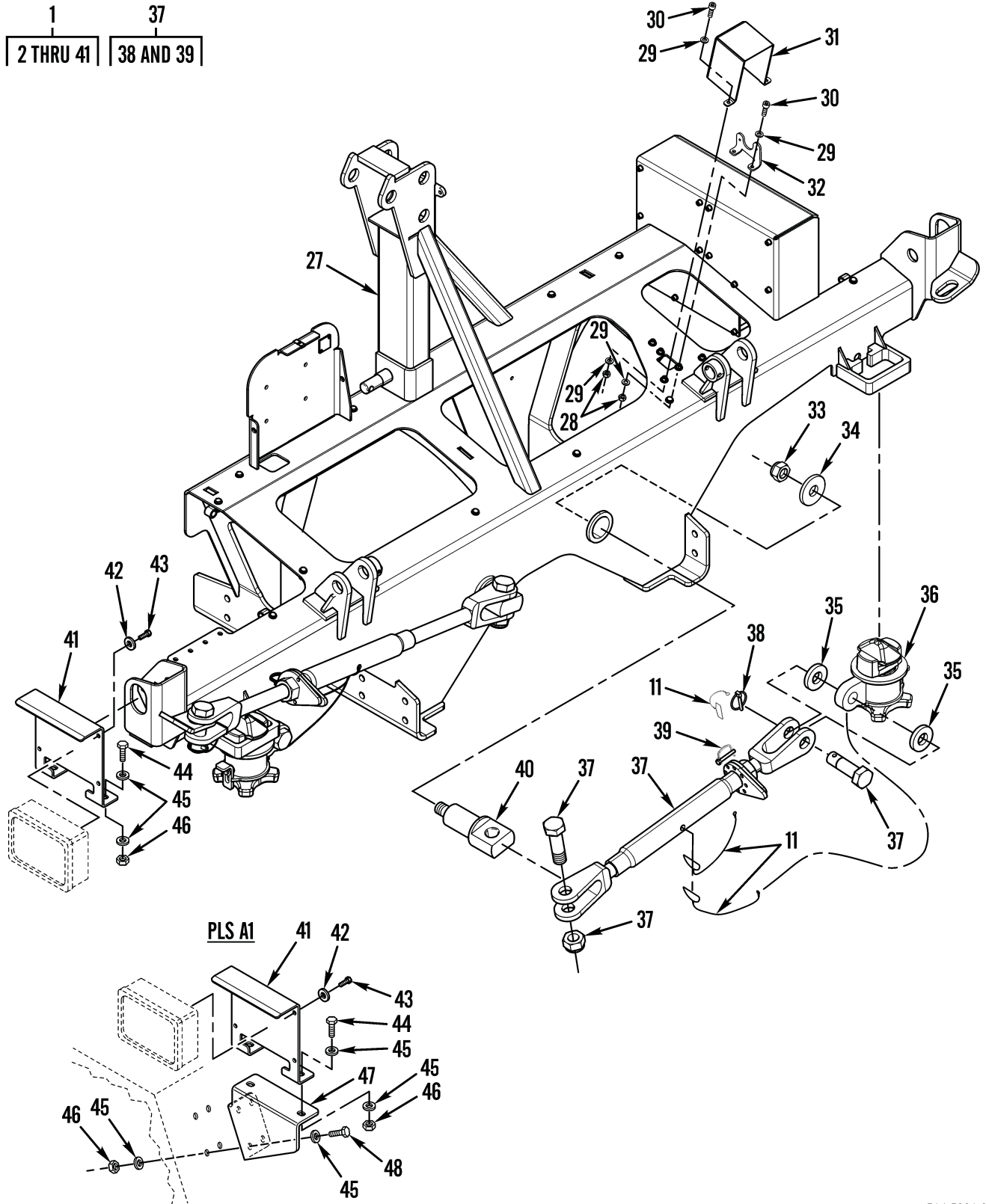
467-1003-1

1
2 THRU 41



467-1003-2

Figure 5. Stowage Mechanical Assembly (Sheet 2 of 3).



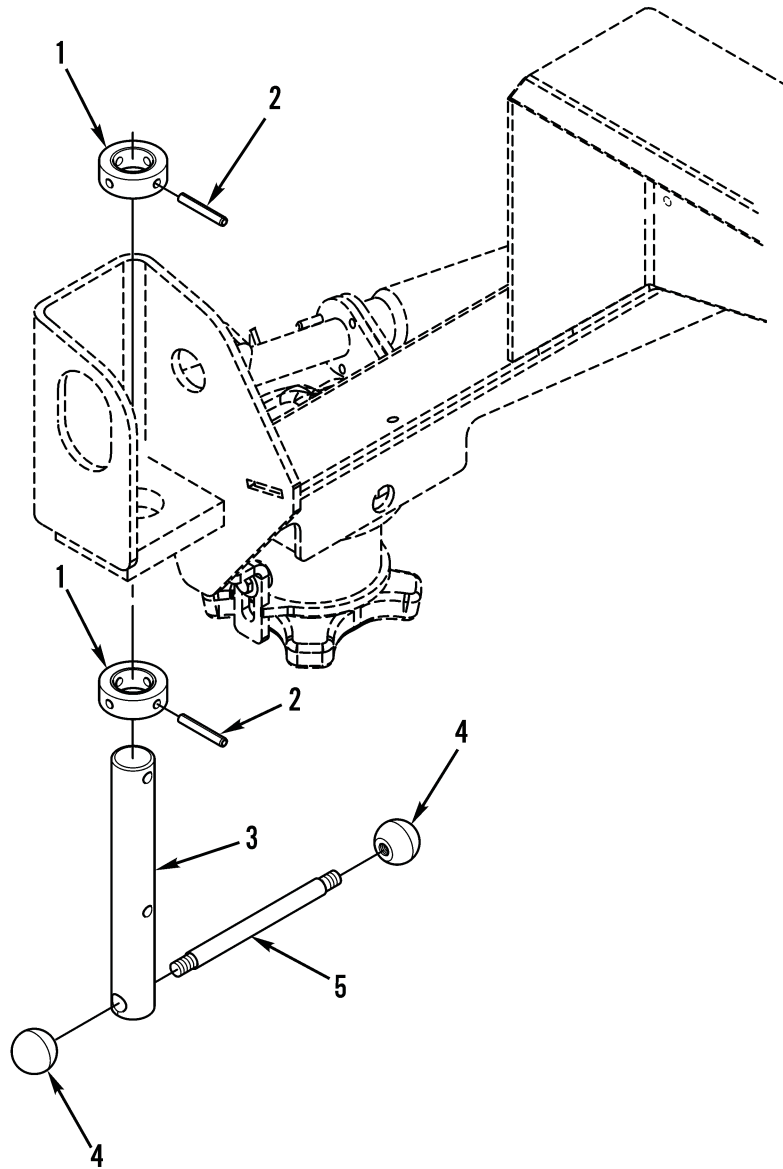
514-5001-3

Figure 5. Stowage Mechanical Assembly (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 3307 SPECIAL PURPOSE KITS						
FIG. 5 STOWAGE MECHANICAL ASSEMBLY						
*	1	PAHZZ	5340015735826	34914 111560001	BRACKET,MULTIPLE ANGLE.....	1
*	2	PAFZZ	5305015737692	34914 112079713	.SCREW,CAP,HEXAGON H 1/2"X2-3/8"...	1
	3	PAFZZ	5310007320560	96906 MS51968-14	.NUT,PLAIN,HEXAGON 1/2"UNC.....	1
	4	PAFZZ	5305007215492	80204 B1821BH038C063N	.SCREW,CAP,HEXAGON H 3/8"X5/8"UNC..	2
*	5	PAFZZ	5310015737831	34914 112081501	.WASHER,KEY.....	2
*	6	PAFZZ	5340015737700	34914 111930701	.PLATE,MOUNTING.....	1
*	7	PAFZZ	5315015735718	34914 112081401	.PIN,SHOULDER HEADLESS.....	1
	8	PAFZZ	5340200042328	3AR59 111930101	.LATCH ASSEMBLY,SPECIAL.....	1
*	9	PAFZZ	5315015737664	34914 111931201	.PIN,STRAIGHT,HEADER.....	1
	10	PAFZZ	4730001720010	17576 AN944-101	.FITTING,LUBRICATION M8X1.25.....	3
	11	MFFZZ		39428 97840A86-AR	.WIRE ROPE ASSEMBLY USE KIT 97840A86 TO REPAIR.....	V
*	12	PAFZZ	5315015737670	34914 111932501	.PIN,STRAIGHT,HEADED.....	1
	13	PAFZZ	5315015657206	39428 90170A222	.PIN,QUICK RELEASE 7/16"X1-31/32"..	3
*	14	PAFZZ	5310015737831	34914 112081501	.WASHER,KEY.....	2
	15	PBFZZ	3040015741618	3AR59 5007117	.CYLINDER,ASSEMBLY,ACTUATING TYPE 12 BENDIX 5007117.....	1
*	16	PAFZZ	5340015737497	34914 112081601	.PLATE,MOUNTING.....	1
	17	PAFZZ	531008095997	96906 MS27183-17	.WASHER,FLAT 1/2".....	2
*	18	PAFZZ	5310004883889	81349 M45913/3-8CG8C	.NUT,SELF-LOCKING,HE 1/2"-201UNF...	2
*	19	PAFZZ	5340015734908	34914 112083101	.BELLOWS,PROTECTION.....	1
*	20	PBFZZ	3950015737388	34914 111929101	.CAPTURE FRAME,BRACK.....	2
*	21	PAFZZ	5315015735679	34914 111590201	.PIN,STRAIGHT,HEADED.....	1
*	22	PAFZZ	3110015735793	34914 235140	.BEARING,ROLLER,CYLINDRICAL.....	4
*	23	PAFZZ	5315015737659	34914 111930001	.PIN,STRAIGHT,HEADED.....	2
	24	PAFZZ	5315000589812	80205 MS16562-255	.PIN,SPRING 1/4"X1-3/4".....	6
*	25	PAFZZ	3040015740083	34914 0505007	.CYLINDER ASSEMBLY,ACTUATING 50X281100.....	1
*	26	PAFZZ	3120015736633	34914 0505008	.BEARING,SLEEVE.....	1
	27	PAHZZ	5340200042301	3AR59 111560301	.BRACKET,MOUNTING.....	1
	28	PAFZZ	5310000614650	81349 M45913/3-4CG8C	.NUT,SELF-LOCKING,HE 1/4"UNC.....	8
	29	PAFZZ	5310008238804	96906 MS27183-9	.WASHER,FLAT 1/4".....	10
	30	PAFZZ	5305009887614	80205 MS16995-50	.SCREW,CAP,SOCKET HE 1/4"X3/4".....	6
*	31	PAFZZ	5340015736005	34914 111931601	.COVER,ACCESS.....	1
*	32	PAFZZ	5340015734798	34914 111931501	.PLATE,MOUNTING.....	1
	33	PAFZZ	5310013054341	96906 MS51943-49	.NUT,SELF-LOCKING,HE 1"UNC.....	2
	34	PAFZZ	5310015735728	34914 111566701	.WASHER,FLAT.....	2
*	35	PAFZZ	5365015734906	34914 111573501	.SHIM.....	4
*	36	PAFZZ	5340015737397	34914 111570201	.TWISTLOCK,SHIPPING AND STORAGE.....	2
*	37	PAFZZ	5340015735252	34914 111574901	TURNBUCKLE.....	2
	38	PAFZZ	5315013986605	39428 90170A212	.PIN,QUICK RELEASE 1/4"X1-9/16" ZN1.....	1
	39	PAFZZ	5315015346779	39428 98416A012	.PIN,STRAIGHT,HEADED 2-5/16X1/4"...	1
*	40	PAFZZ	5315015736110	34914 111931301	.PIN,SHOULDER,HEADED.....	2
*	41	PAFZZ	5340015740194	34914 112130201	.BRACKET,DOUBLE ANGLE.....	1
	42	PAFZZ	5310013978096	39428 91166A250	WASHER,FLAT.....	4
	43	PAFZZ	5305015661762	39428 95263A546	SCREW,CAP,SOCKET HEAD.....	4

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
* 44	PAFZZ	5305015175470	39428	92620A632	SCREW,CAP,HEX HEAD 3/8-16".....	2
* 45	PAFZZ	5310015057694	39428	90126A013	WASHER,FLAT 3/8",PLATED.....	12
* 46	PAFZZ	5310015652727	07070	90630A121	NUT,SELF-LOCKING HE 3/8-16".....	6
* 47	PAFZZ		3AR59	112525701	BRACKET,MOUNTING PLS A1,FENDER MNT.	1
* 48	PAFZZ	5305015395409	39428	92620A628	SCREW,CAP,HEX HEAD PLS A1,3/8-16" UNCX1.5",GR8,PLATED.....	4

END OF FIGURE



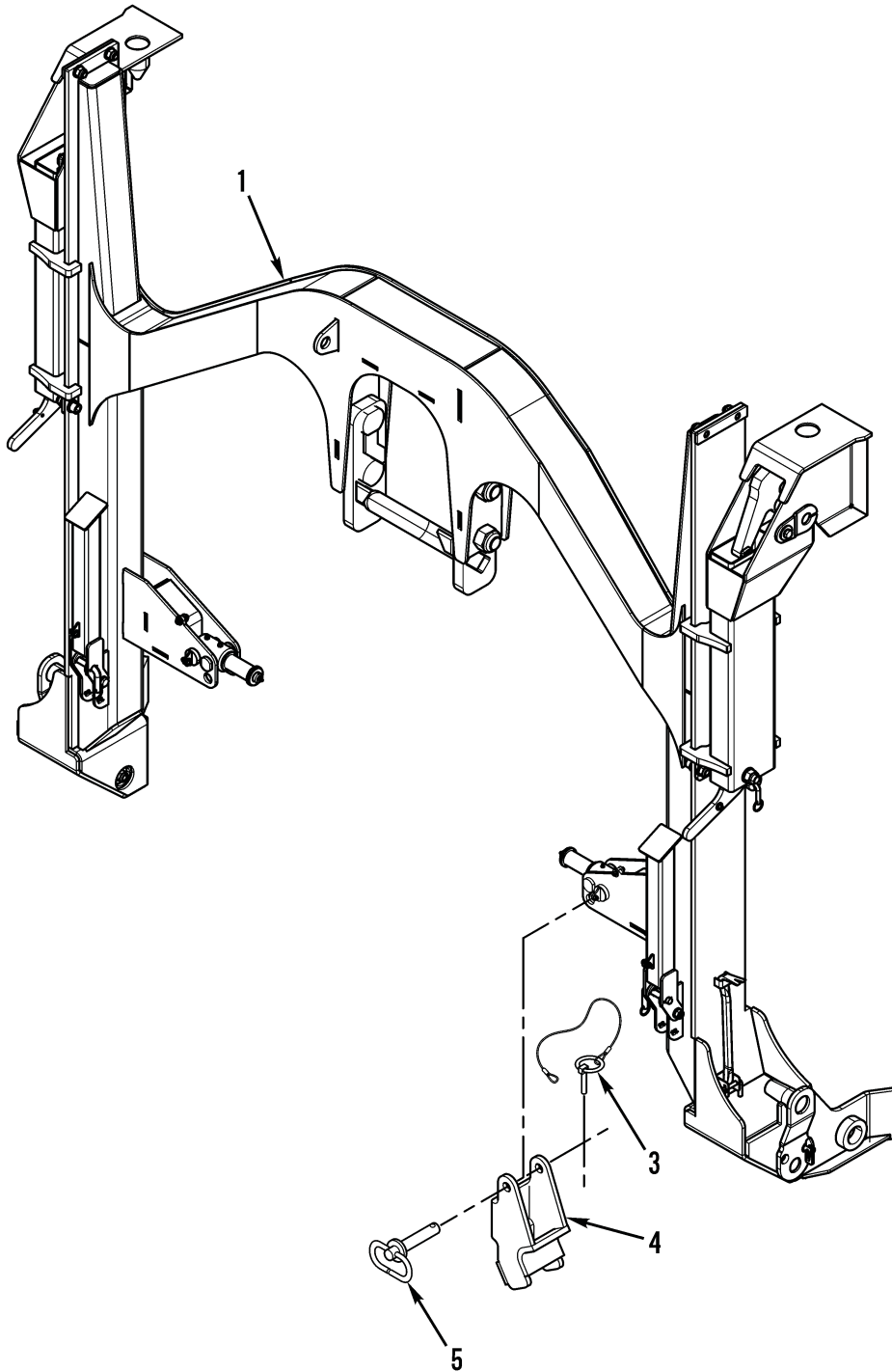
467-1008

Figure 6. Lifting Pins For Air Transport.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
					GROUP 3307 SPECIAL PURPOSE KITS	
					FIG. 6 LIFTING PINS FOR AIR TRANSPORT	
*	1	PAFZZ 3040015737785	34914	111932301	COLLAR, SHAFT.....	4
	2	PAFZZ 5315000589812	80205	MS16562-255	PIN, SPRING 1/4"X1-3/4".....	4
*	3	PAFZZ 3040015735242	34914	111932201	SHAFT, STRAIGHT.....	2
*	4	PAFZZ 5355015737502	34914	112091401	KNOB.....	4
*	5	PAFZZ 5340015737887	34914	112081901	GRIP, HANDLE.....	2

END OF FIGURE

2
3 THRU 5

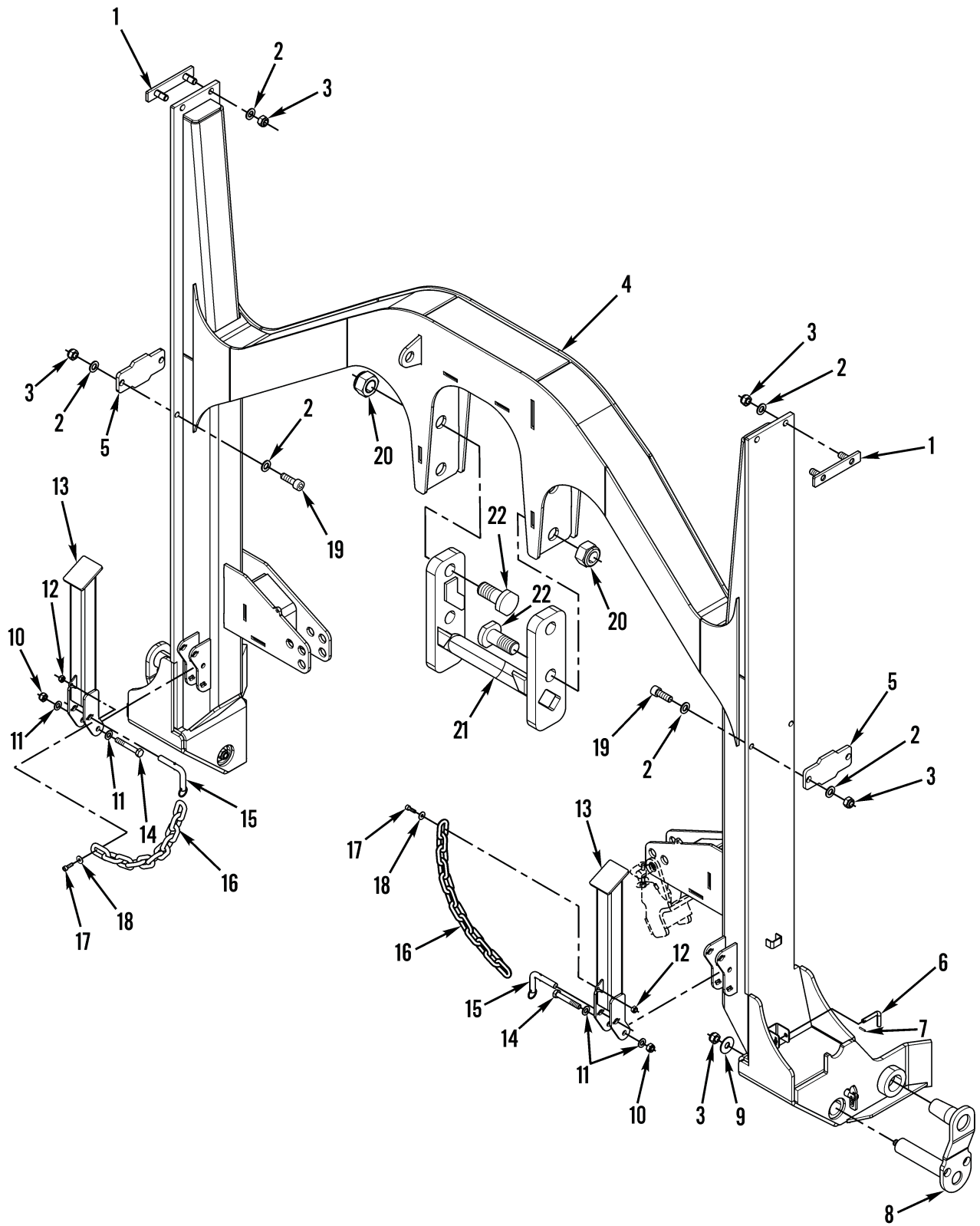


514-5002

Figure 7. Lift Frame Assembly and Bail Bar Lock.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
					GROUP 3307 SPECIAL PURPOSE KITS	
					FIG. 7 LIFT FRAME ASSEMBLY AND BAIL BAR LOCK	
*	1	PAFZZ	3950015735565	34914	111950001	FRAME,HOIST..... 1
*	2	PAFFF	4030015734773	3AR59	1122654-01	LATCH,SAFETY,HOOK..... 1
*	3	PAFZZ		3AR59	112081301	.RING,COTTER PIN..... 1
*	4	MFFZZ		3AR59	112268101	.HOOK LOCK..... 1
*	5	PAFZZ		3AR59	112268501	.HOOK,LOCK PIN..... 1

END OF FIGURE

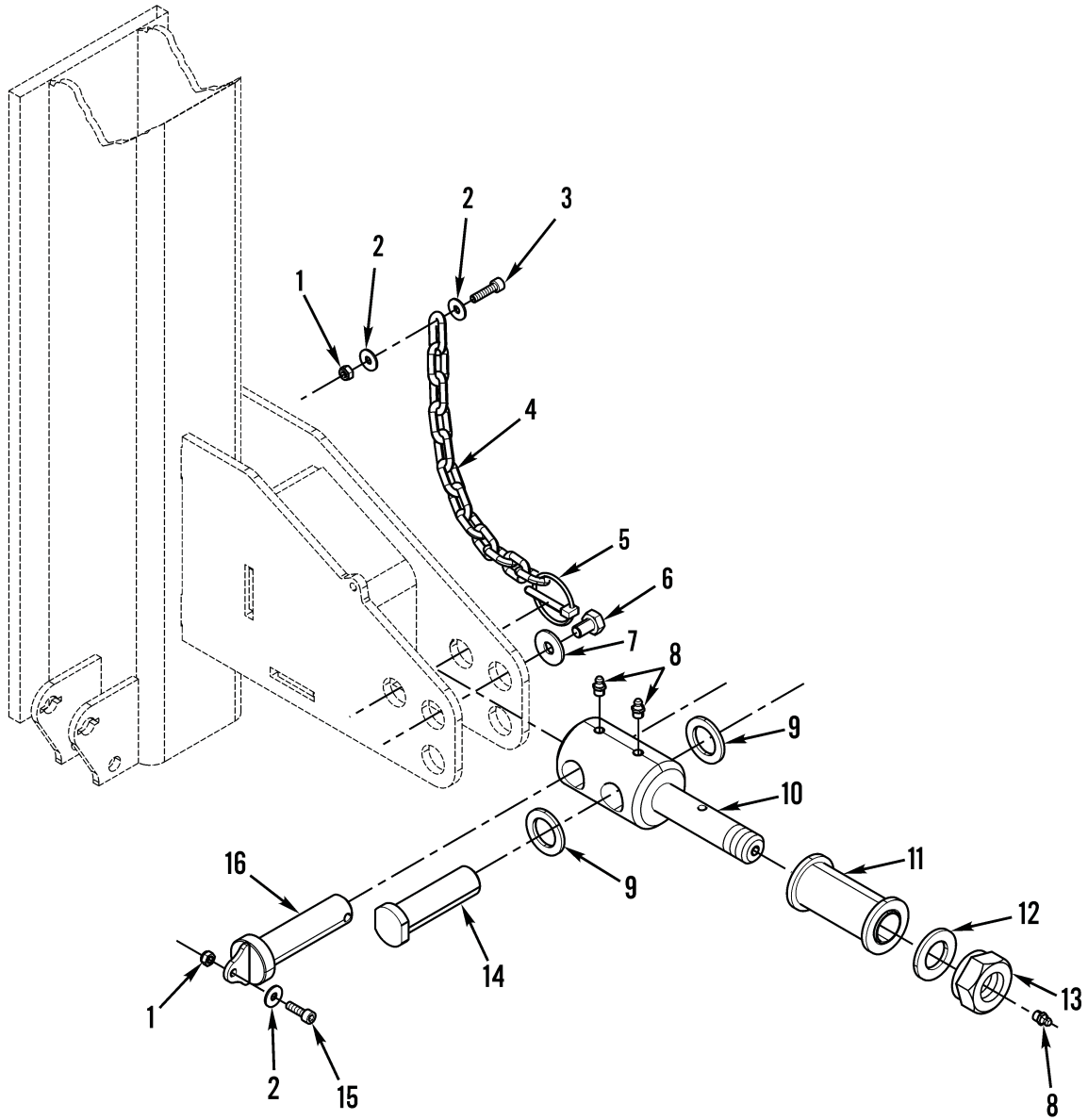


467-1002

Figure 8. Lift Frame Attaching Hardware.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 8 LIFT FRAME ATTACHING HARDWARE						
*	1	PAFZZ 5340015736075	34914	111958901	STOP,MECHANICAL.....	2
	2	PAFZZ 5310008238803	96906	MS27183-21	WASHER,FLAT 5/8".....	12
	3	PAFZZ 5310000614651	81349	M45913/1-10CG8C	NUT,SELF-LOCKING,HE 5/8" UNC.....	10
	4	PAFZZ 2510200042497	3AR59	111949401	FRAME,STRUCTURAL,VEHICULAR.....	1
	5	PAFZZ 5340200042304	3AR59	111958801	PLATE,MOUNTING.....	2
*	6	PAFZZ 2540015738378	34914	111960001	PIN,PINTLE.....	1
*	7	PAFZZ 5315015735230	34914	2810023	PIN,STRAIGHHEAD,HEADLESS 4X20.....	1
*	8	PAFZZ 5340015739841	34914	111959201	BRACKET,MOUNTING CONTAINER.....	2
*	9	PAFZZ 5310015736014	34914	111959601	WASHER,FLAT.....	2
*	10	PAFZZ 5310004883889	96906	M45913/3-8CG8C	NUT,SELF-LOCKING,HE 1/2"UNC.....	2
	11	PAFZZ 5310008095997	96906	MS27183-17	WASHER,FLAT 1/2".....	4
	12	PAFZZ 5310000614650	81349	M45913/3-4CG8C	NUT,SELF-LOCKING,HE 1/4"UNC.....	2
	13	PAFZZ 4910015737392	3AR59	111958001	STAND,VEHICLE SUPPORT.....	2
	14	PAFZZ 5305000712077	80204	B1821BH050C350N	SCREW,CAP,HEXAGON H 1/2"X3-1/2"....	2
*	15	PAFFF 5315015734770	34914	111958501	PIN,LOCK,DETENT.....	2
	16	PAFZZ 4010013208238	53711	701-6117288	PIEC CHAIN,WELDED.....	2
				E 42		
	17	PAFZZ 5305009887614	80205	MS16995-50	SCREW,CAP,SOCKET HE 1/4"X3/4"UNC...	2
*	18	PAFZZ 5310015734972	34914	112080202	WASHER,FLAT 1/4".....	2
	19	PAFZZ 5305000685414	80205	MS16995-11	SCREW,CAP,SOCKET HE 5/8"X2"UNC.....	4
*	20	PAFZZ 5310015734936	34914	112080006	NUT,SELF-LOCKING,HE 1-3/8"UNC ASTM B117.....	4
*	21	PAFZZ 5340015735988	34914	111957501	BRACKET,MULTIPLE ANGLE.....	1
*	22	PAFZZ 5306015740144	34914	111958701	BOLT,SHOULDER.....	4

END OF FIGURE



467-1009

Figure 9. Roller Pin Assembly.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 9 ROLLER PIN ASSEMBLY						
1	PAFZZ	5310000614650	81349	M45913/3-4CG8C	NUT, SELF-LOCKING, HE 1/4".....	4
*	2	PAFZZ	5310015734972	34914 112080202	WASHER, FLAT 1/4".....	6
	3	PAFZZ	5305009887834	80205 MS16995-53	SCREW, CAP, SOCKET HE 1/4"X1-1/4"....	2
	4	PAFZZ	4010013208238	53711 701-6117288PIEC E 42	CHAIN, WELDED.....	2
	5	PAFZZ	5315013986605	39428 90170A212	PIN, QUICK RELEASE 1/4"X1-9/16".....	2
	6	PAFZZ	5305007215492	80204 B1821BH038C063N	SCREW, CAP, HEXAGON H 3/8"X5/8"UNC...	2
*	7	PAFZZ	5310015735785	34914 112080203	WASHER, FLAT 3/8".....	2
	8	PAFZZ	4730001720010	17576 AN944-101	FITTING, LUBRICATION M8X1.25.....	6
*	9	PAFZZ	5310015735238	34914 111957401	WASHER, FLAT.....	4
*	10	PAFZZ	3040015735758	34914 111956701	SHAFT, SHOULDERED.....	2
	11	PAFZZ	3990200042308	3AR59 111957101	ROLLER, MATERIAL HANDLING.....	2
	12	PAFZZ	5310008098533	96906 MS27183-23	WASHER, FLAT 3/4".....	2
	13	PAFZZ	5310004093333	81349 M45913/3-12CG8C	NUT, SELF-LOCKING, HE 3/4".....	2
	14	PAFZZ		34914 111957301	PIN, PIVOT.....	2
	15	PAFZZ	5305009887614	80205 MS16995-50	SCREW, CAP, SOCKET HE 1/4"X3/4".....	4
*	16	PAFZZ	5315015736623	34914 111956801	PIN, STRAIGHT, HEADED.....	2

END OF FIGURE

2 THRU 27 | 12 THRU 14

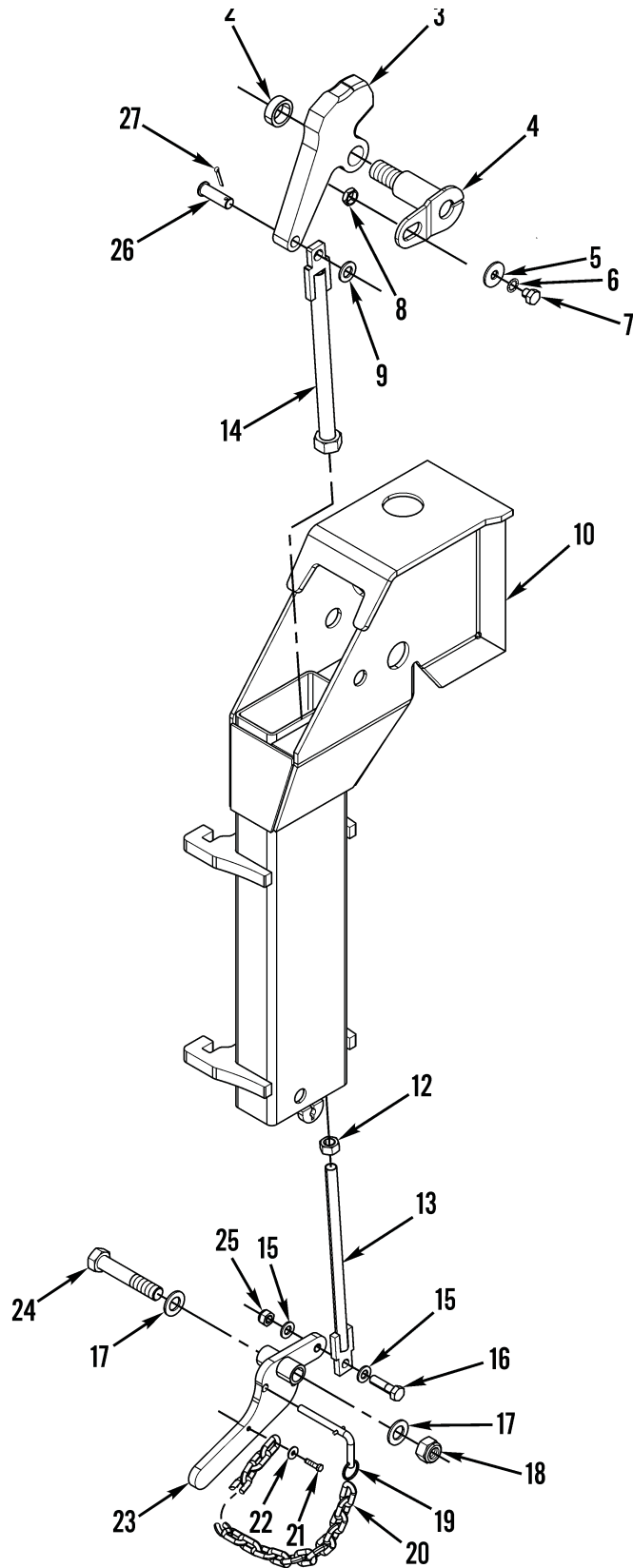


Figure 10. Upper Locking Assemblies.

467-1000

(1)	(2)	(3)	(4)	(5)	(6)	(7)	
ITEM	SMR			PART			
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY	
GROUP 3307 SPECIAL PURPOSE KITS							
FIG. 10 UPPER LOCKING ASSEMBLIES							
1	PAFFF	2590200042110	3AR59	111953001	UPPER LOCK ASSEMBLY LH SHOWN.....	1	
*	1	PAFFF	5340015740893	34914	111953002	LOCK BAR RH.....	1
*	2	PAFZZ	3120015735781	34914	111956301	.BUSHING,SLEEVE.....	1
*	3	PAFZZ		34914	111954901	.PLATE.....	1
*	4	PAFZZ	3040015739911	34914	111956001	.SHAFT,SHOULDERED.....	1
*	5	PAFZZ		34914	112080201	.WASHER,FENDER 1/2".....	1
	6	PAFZZ	5310001941483	80205	MS35333-44	.WASHER,LOCK 1/2".....	1
	7	PAFZZ	5305009381556	80204	B1821BH050C050N	.SCREW,CAP,HEXAGON H 1/2"X1/2" UNC.	1
	8	PAFZZ	5365015740305	3AR59	110041001	.SPACER,SLEEVE.....	1
	9	PAFZZ	5310008238803	96906	MS27183-21	.WASHER,FLAT 5/8".....	1
*	10	PAFZZ	5340015737444	34914	111953101	.BRACKET,MOUNTING RH.....	1
	10	PAFZZ	5340200042307	3AR59	111953102	.BRACKET,SPECIAL LH SHOWN.....	1
*	11	PAFZZ	5410015739917	34914	111955001	.ROD ASSEMBLY,ADJUSTABLE.....	1
	12	PAFZZ	5310007638920	96906	MS51967-20	..NUT,PLAIN,HEXAGON 5/8".....	1
*	13	PAFZZ	5315015739909	34914	111955401	..PIN,SPRING.....	1
*	14	PAFZZ	5410015739833	34914	111955101	..ROD ASSEMBLY,ADJUSTABLE.....	1
	15	PAFZZ	5310008095997	96906	MS27183-17	.WASHER,FLAT 1/2".....	2
	16	PAFZZ	5305000712070	80204	B1821BH050C175N	.SCREW,CAP,HEXAGON H 1/2"X1-3/4"...	1
	17	PAFZZ	5310008098533	96906	MS27183-23	.WASHER,FLAT 3/4".....	2
	18	PAFZZ	5310004093333	81349	M45913/3-12CG8C	.NUT,SELF-LOCKING,HE 3/4".....	1
	19	PAFFF	2540200042496	3AR59	111956401	.PIN,PINTLE.....	1
	21	PAFZZ	5305009887614	80205	MS16995-50	.SCREW,CAP,SOCKET HE 1/4"X3/4".....	1
*	22	PAFZZ	5310015734972	34914	112080202	.WASHER,FLAT 1/4".....	1
*	23	PAFZZ	5340015735847	34914	111955701	.LEVER,MANUAL CONTROL.....	1
	24	PAFZZ	5305009474359	80204	B1821BH075C425N	.SCREW,CAP,HEXAGON H 3/4"X4-1/4"...	1
*	25	PAFZZ	5310004883889	96906	M45913/3-8CG8C	.NUT,SELF-LOCKING,HE 1/2".....	1
*	26	PAFZZ	5315015735829	34914	111959701	.PIN,STRAIGHT,HEADED 16X45X40.....	1
	27	PAFZZ	5315008556803	80205	MS24665-375	.PIN,COTTER 1/8"X1-1/2".....	1

END OF FIGURE

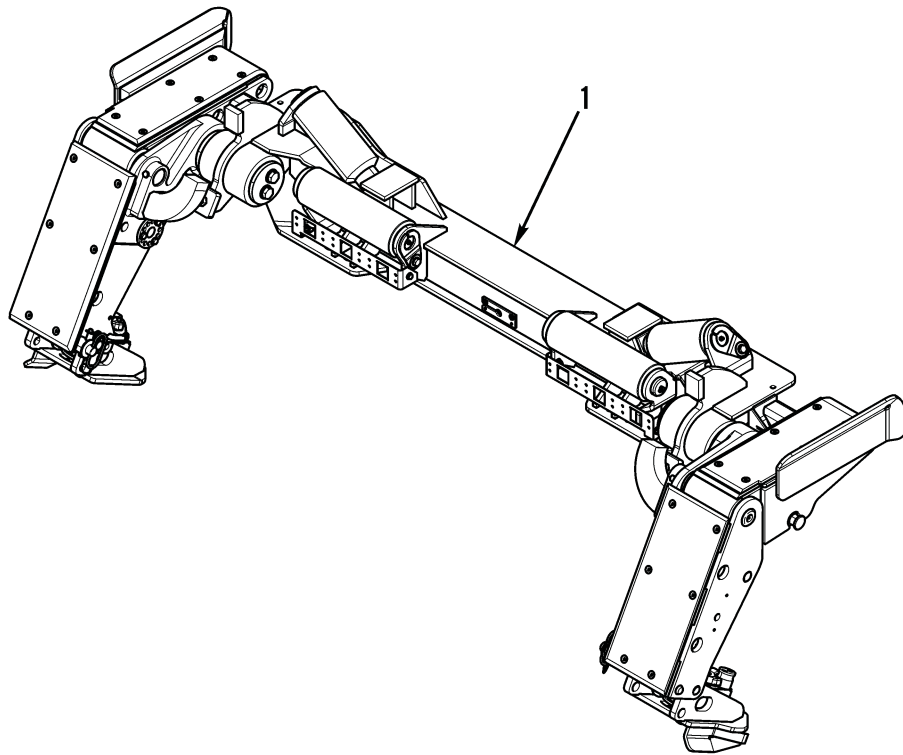


Figure 11. Rear Roller/Slider.

467-1010

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
					GROUP 3307 SPECIAL PURPOSE KITS	
					FIG. 11 REAR ROLLER/SLIDER	
*	1 PBFFF	3990015736697	34914	111589501	ROLLER,MATERIAL HANDLING.....	1
					END OF FIGURE	

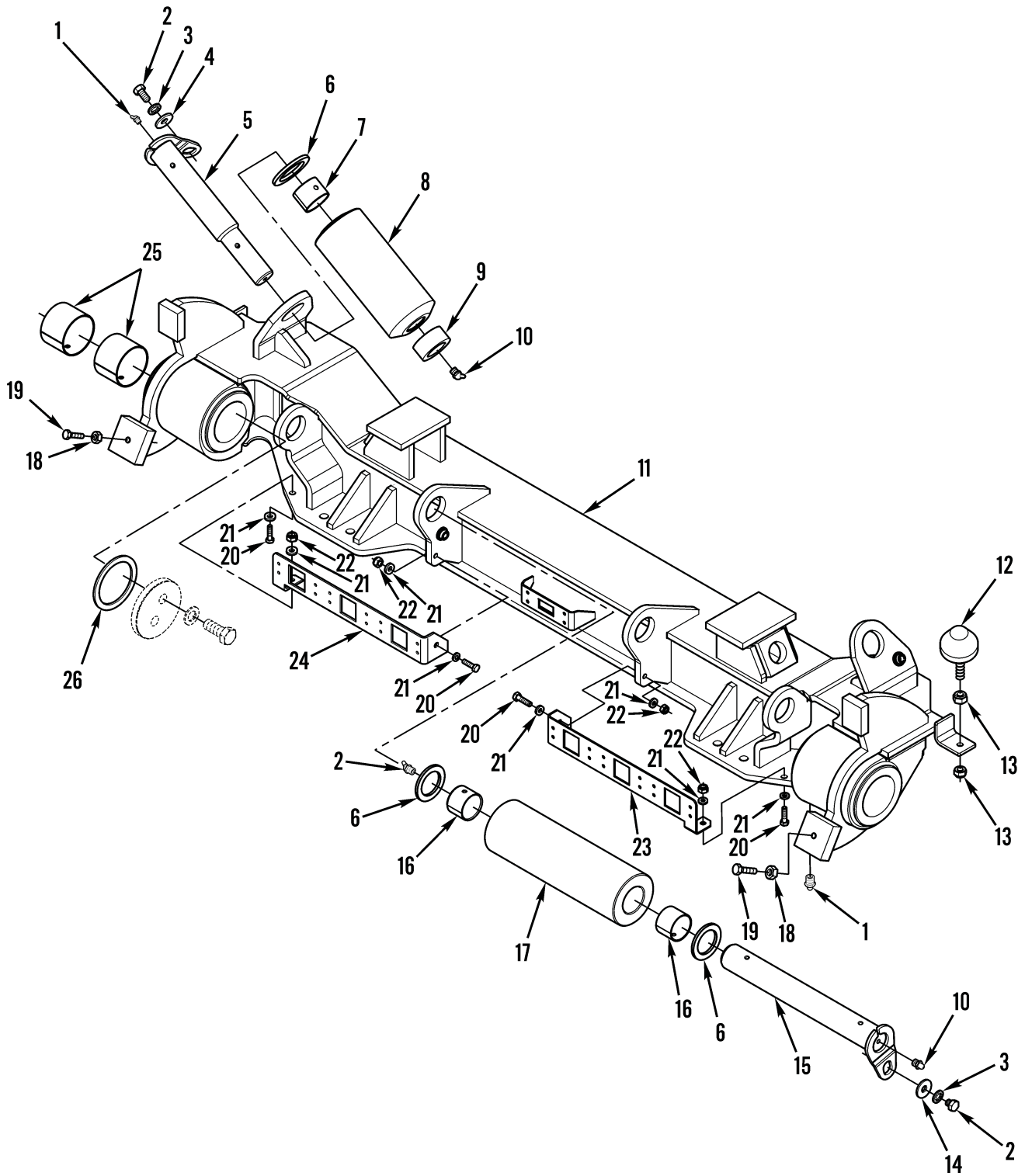


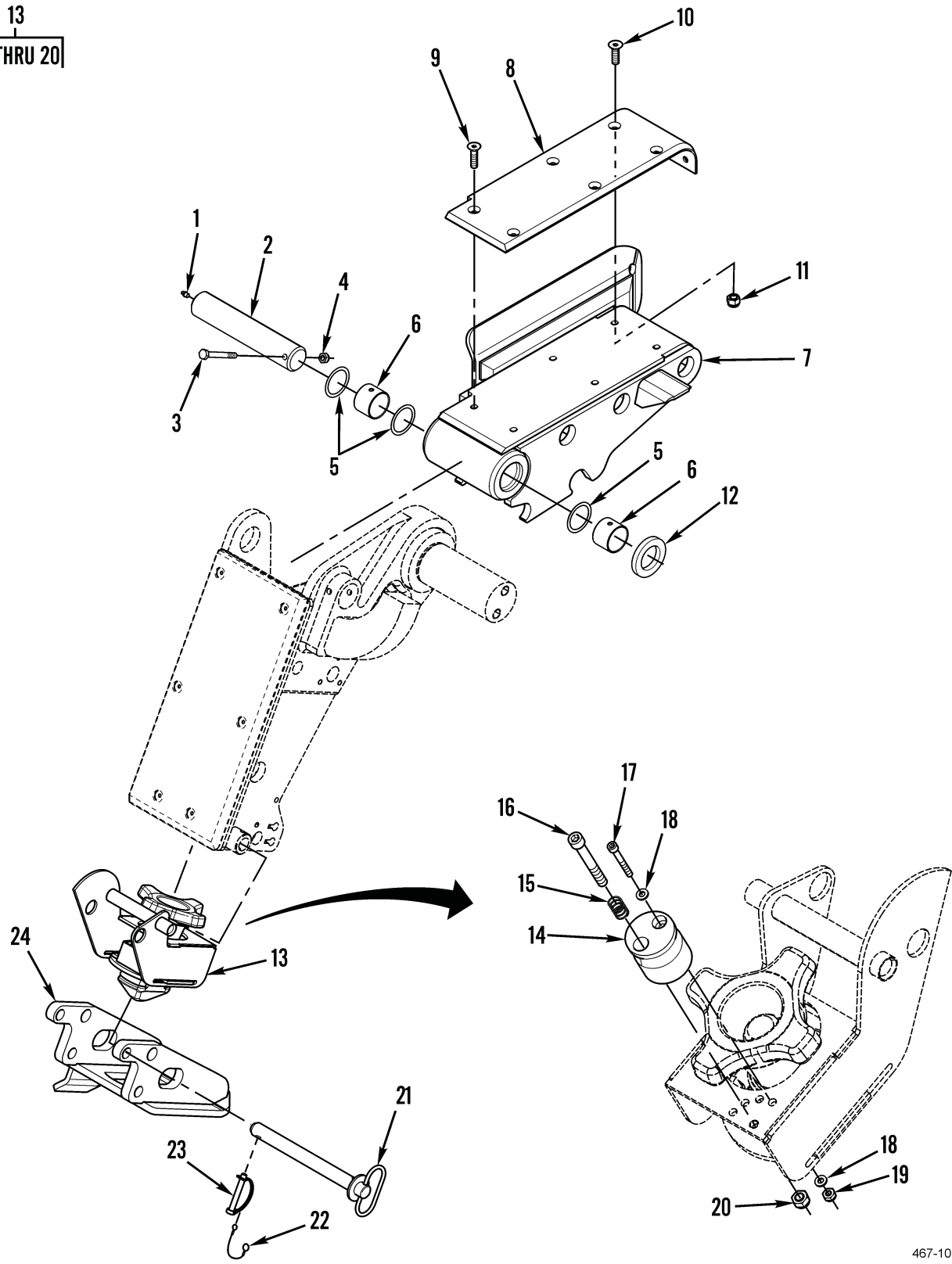
Figure 12. Roller Beam and Attaching Hardware.

467-1011

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 12 ROLLER BEAM AND ATTACHING HARDWARE						
1	PAFZZ	4730001720010	17576	AN944-101	FITTING,LUBRICATION M8X1.25.....	6
2	PAFZZ	5305009381556	80204	B1821BH050C050N	SCREW,CAP,HEXAGON H 1/2"X1/2".....	4
3	PAFZZ	5310001941483	80205	MS35333-44	WASHER,LOCK 1/2".....	4
*	4	PAFZZ	34914	112080201	WASHER,FENDER 1/2".....	4
*	5	PAFZZ	34914	111555201	PIN,HOLLOW.....	2
*	6	PAFZZ	34914	111555001	WASHER,FLAT.....	6
*	7	PAFZZ	34914	230205	BEARING,ROLLER,NEEDLE.....	2
*	8	PAFZZ	34914	111535001	ROLLER,MATERIAL HANDLING.....	2
*	9	PAFZZ	34914	111554901	SPACER RING.....	2
10	PAFZZ	4730001720015	17576	AN944-201A	FITTING,LUBRICATION M8X1.25.....	4
*	11	PBFZZ	34914	111534901	FRAME ROLLER BED.....	1
*	12	PAFZZ	34914	111960801	STOP,MECHANICAL.....	2
*	13	PAFZZ	81349	M45913/3-8CG8C	NUT,SELF-LOCKING,HE 1/2"UNC.....	2
*	14	PAFZZ	34914	110041001	SPACER,SLEEVE.....	4
*	15	PAFZZ	34914	111555401	PIN,SPRING.....	2
*	16	PAFZZ	34914	230270	BEARING,SLEEVE.....	6
*	17	PAFZZ	34914	111535901	ROLLER,MATERIAL HANDLING.....	2
18	PAFZZ	5310007638920	96906	MS51967-20	NUT,PLAIN,HEXAGON 5/8".....	2
19	PAFZZ	5305007247222	80204	B1821BH063C200N	SCREW,CAP,HEXAGON H 5/8"X2".....	2
20	PAFZZ	5306002264829	80204	B1821BH031C125N	BOLT,MACHINE.....	4
21	PAFZZ	5310000814219	96906	MS27183-12	WASHER,FLAT.....	8
*	22	PAFZZ	81349	M45913/3-5CG8C	NUT,SELF-LOCKING,HE.....	4
*	23	PAFZZ	34914	111537401	PLATE,MOUNTING.....	1
24	PAFZZ	5340200042322	3AR59	111537402	BRACKET MOUNTING.....	1
*	25	PAFZZ	34914	235378	BEARING,SLEEVE.....	4
*	26	PAFZZ	34914	110013119	SHIM 80X100X2.0.....	V

END OF FIGURE

13
14 THRU 20



467-1012-1

Figure 13. Slider Bed Assembly (Sheet 1 of 2).

25	31
26 THRU 30	32 THRU 34

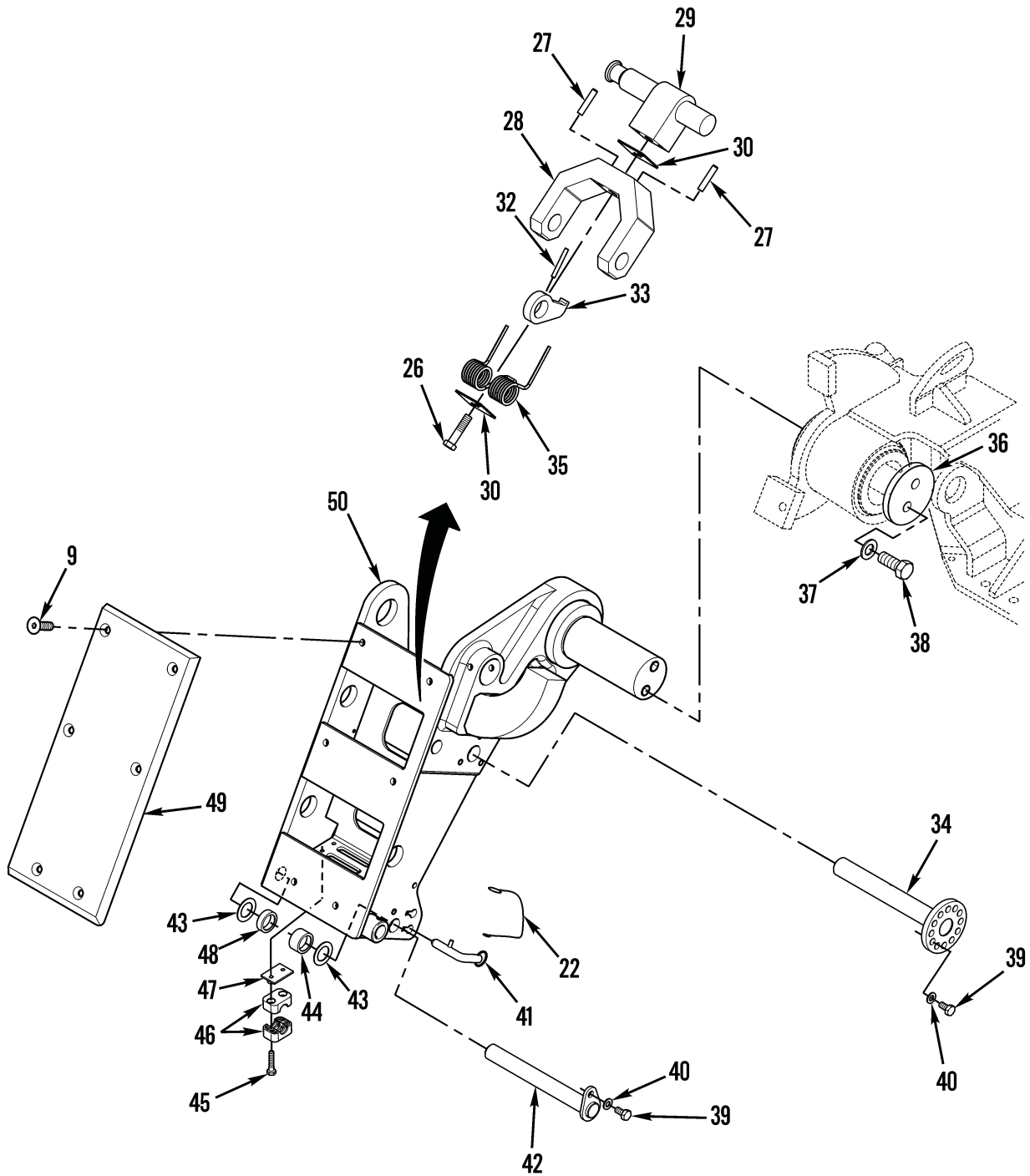


Figure 13. Slider Bed Assembly (Sheet 2 of 2).

467-1012-2

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 13 SLIDER BED ASSEMBLY						
1	PAFZZ	4730001720010	17576	AN944-101	FITTING,LUBRICATION M8X1.25.....	1
*	2	PAFZZ	34914	111964001	PIN,ROLLER FRONT.....	1
	3	PAFZZ	5305007813927	80204 B1821BH038C350N	SCREW,CAP,HEXAGON H 3/8"X 3-1/2"...	1
*	4	PAFZZ	5310015092488	81349 M45913/3-6CG8C	NUT,SELF-LOCKING,HE 3/8".....	1
*	5	PAFZZ	5365015735733	34914 112132101	SHIM 2"X2-3/4"X.04.....	3
*	6	PAFZZ	3120015736635	34914 230270	BEARING,SLEEVE.....	2
*	7	PAFZZ	5340015734981	34914 111588201	HOLDER,ROLLER RH.....	1
*	7	PAFZZ	5340015736586	34914 111588202	HOLDER,ROLLER LH SHOWN.....	1
*	8	PAFZZ	5340015735856	34914 112227401	BRACKET,ANGLE RH.....	1
*	8	PAFZZ	5340015736003	34914 112227402	LH SHOWN BRACKET,ANGLE.....	1
	9	PAFZZ	5305015633101	39428 91253A357	SCREW,CAP,SOCKET HE 3/8"-24X1-1/4"..	12
*	10	PAFZZ	5305015747148	39428 91253A359	SCREW,CAP,SOCKET HE 3/8"-24X1-1/2"..	2
	11	PAFZZ	5310015555301	39428 97135A235	NUT,SELF-LOCKING,HE 3/8"-24.....	14
	12	PAFZZ		3AR59 111964801	SHIM.....	1
	13	PAFZZ	5340200042302	3AR59 111962401	ROLLER BED BRACKET,REAR RH.....	1
	13	PAFZZ	5340200042241	3AR59 111962402	TWISTLOCK MODULE LH SHOWN.....	1
	14	PAFZZ	5365015735864	3AR59 111963901	.SPACER,SLEEVE.....	1
	15	PAFZZ	5360015737726	39428 9435K116	.SPRING,HELICAL,COMPRESSION.....	1
	16	PAFZZ	5305011087471	80205 MS16995-72	.SCREW,CAP,SOCKET HE 5/16"X2-1/2"..	1
	17	PAFZZ	5305015552870	39428 92196A292	.SCREW,CAP,SOCKET HE #10X1-5/8"....	1
	18	PAFZZ	5310008098544	96906 MS27183-7	.WASHER,FLAT.....	1
	19	PAFZZ	5310015273369	2V507 90631A411	.NUT,SELF-LOCKING,HE #10.....	1
	20	PAFZZ	5310008140673	81349 M45913/3-5CG8C	.NUT,SELF-LOCKING,HE 5/16".....	1
	21	PAFZZ	5315015735194	3AR59 111963501	PIN STRAIGHT,HEADED.....	1
	22	MFFZZ		39428 97840A86-AR	WIRE ROPE ASSEMBLY USE KIT 97840A86 TO REPAIR.....	V
	23	PAFZZ	5315015736099	3AR59 112081303	PIN,STRAIGHT,HEADED 3/8"X3-1/16"....	1
	24	PAFZZ	5340200042303	3AR59 111964601	BRACKET,SPECIAL RH.....	1
	24	PAFZZ	2590015735776	3AR59 111964602	BRACKET,VEHICULAR COMPONENTS LH SHOWN.....	1
	25	PAFHH	3040015734777	3AR59 111558501	CLAMPING,HUB.....	1
	26	PAFZZ	5305007247225	80204 B1821BH063C275N	.SCREW,CAP,HEXAGON H 5/8"X2-3/4"	1
	27	PAFZZ	5315008445833	80205 MS16562-81	.PIN,SPRING 3/8"X2".....	2
*	28	PAFZZ	5340015737683	34914 111558601	.BRACKET,MOUNTING.....	1
*	29	PAFHZ	5315015735831	34914 111556201	.PIN,STRAIGHT,HEADED.....	1
	30	PAFZZ	5365015734765	3AR59 111569001	.SPACER,PLATE.....	5
*	31	PAFZZ	3040015739921	34914 111557301	BRACKET,EYE,NONROTATING SHAFT RH...	1
*	31	PAFZZ		34914 111557302	CLAMPING DEVICE SHA LH SHOWN.....	1
	32	PAFZZ	5315015661758	39428 91611A415	.PIN,SPRING 6X50.....	1
*	33	PAFZZ	5340015737717	34914 111558101	.PLATE,MOUNTING.....	1
*	34	PAFHH	3040015739846	34914 111570001	.SHAFT,STRAIGHT.....	1
*	35	PAFZZ	5360015735683	34914 111558401	SPRING,HELICAL,COMPRESSION.....	1
*	36	PAFZZ	2590015735269	34914 111589401	BRACKET,VEHICULAR COMPONENTS.....	1
	37	PAFZZ	5310008098533	96906 MS27183-23	WASHER,FLAT 3/4".....	2
	38	PAFZZ	5305009381539	80204 B1821HB075C200N	SCREW,CAP,HEXAGON H 3/4"X2".....	2
	39	PAFZZ	5305005434372	80204 B1821BH038C075N	SCREW,CAP,HEXAGON H 3/8"X3/4".....	6
	40	PAFZZ	5310000806004	96906 MS27183-14	WASHER,FLAT 3/8".....	6
*	41	PAFZZ	5315015740496	34914 111964201	PIN,LOCK,DETENT.....	1
*	42	PAFZZ	5315015737679	34914 111962901	PIN,STRAIGHT,HEADED.....	1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
*	43	PAFZZ	5310015737756	34914	111963801	WASHER,FLAT..... 1
*	44	PAFZZ	3120015735696	34914	111963301	BUSHING,SLEEVE..... 1
	45	PAFZZ	5305015661072	39428	91290A334	SCREW,CAP,SOCKET HE M6X35..... 2
*	46	PAFZZ	4730015736645	34914	110040804	COUPLING,CLAMP,PIPE 18MM FOR ONE PIPE..... 1
	47	PAFZZ	5340200042309	3AR59	110035212	PLATE,MOUNTING 3X30X42 FOR ONE PIPE 1
*	48	PAFZZ	3120015735526	34914	111963201	BUSHING,SLEEVE..... 1
*	49	PAFZZ	5340015762905	34914	112227301	COVER,ACCESS RH..... 1
*	49	PAFZZ	5340015734975	34914	112227302	COVER,ACCESS LH SHOWN..... 1
*	50	PAFZZ	5340015735842	34914	111557801	HOLDER,ROLLER RH..... 1
	50	PAFZZ	3990200042329	3AR59	111557802	BED REAR ROLLER LH SHOWN..... 1

END OF FIGURE

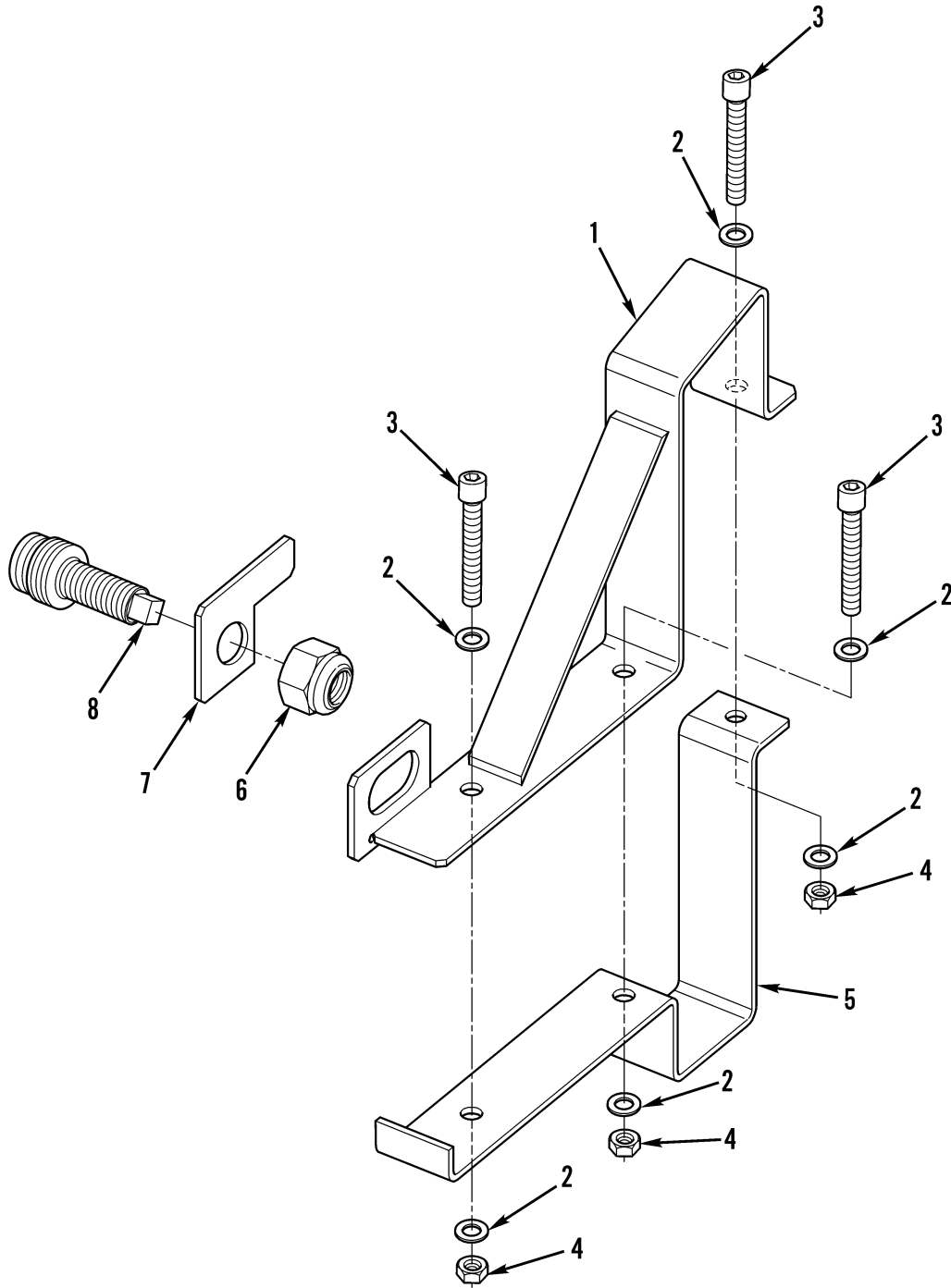
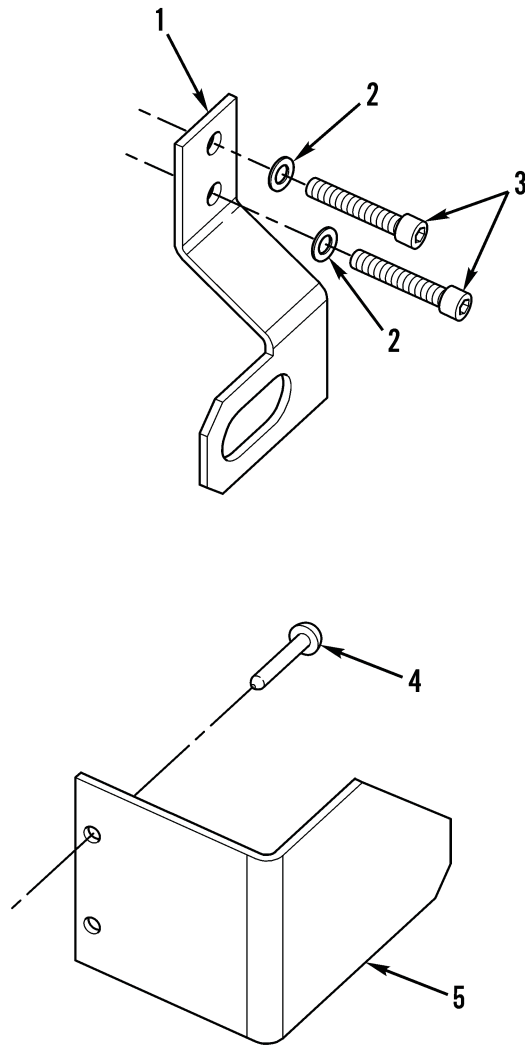


Figure 14. Middle Frame Sensor Bracket Assembly.

467-1014

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 14 MIDDLE FRAME SENSOR BRACKET ASSEMBLY						
* 1	PAFZZ		34914	111954101	PLATE.....	1
2	PAFZZ	5310008238804	96906	MS27183-9	WASHER,FLAT 1/4".....	6
* 3	PAFZZ	5305015745353	39428	90128A301	SCREW,CAP,SOCKET HE 1/4"X1-3/8"....	3
4	PAFZZ	5310000614650	81349	M45913/3-4CG8C	NUT,SELF-LOCKING,HE 1/4".....	3
* 5	PAFZZ	5340015735020	34914	111954201	BRACKET,MOUNTING.....	1
6	PAFZZ	5310015661975	39428	90630A135	NUT,SELF-LOCKING,SI 3/4"-10.....	1
* 7	PAFZZ	5340015737368	34914	111954501	PLATE,MOUNTING.....	1
* 8	PAFZZ	5305015735226	34914	111954401	SETSCREW.....	1

END OF FIGURE

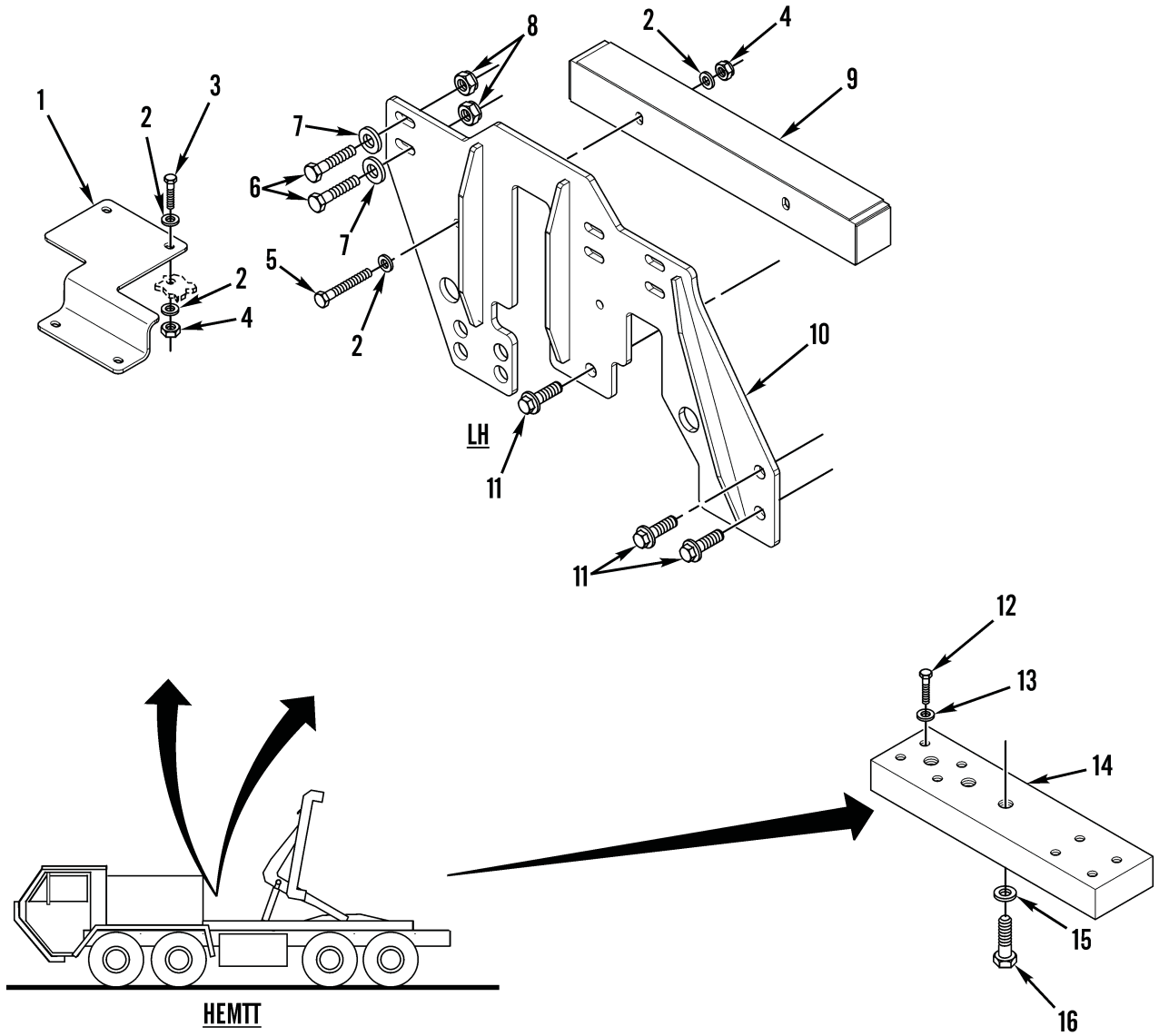


514-5003

Figure 15. Hook Arm Sensor Bracket Assembly.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
					GROUP 3307 SPECIAL PURPOSE KITS	
					FIG. 15 HOOK ARM SENSOR BRACKET ASSEMBLY	
*	1	PAFZZ 2590015735302	34914	111946401	SWITCH PLATE SENSOR.....	1
*	2	PAFZZ 5310008238804	96906	MS27183-9	WASHER,FLAT 1/4".....	2
*	3	PAFZZ 5305015735737	34914	112079807	SCREW,CAP,SOCKET HE 1/4"X1-3/8"....	2
*	4	XDFZZ	39428	97525A515	RIVET 3/16",BLIND.....	1
*	5	PAFZZ 5340015736603	34914	111946101	BRACKET MOUNTING.....	1

END OF FIGURE

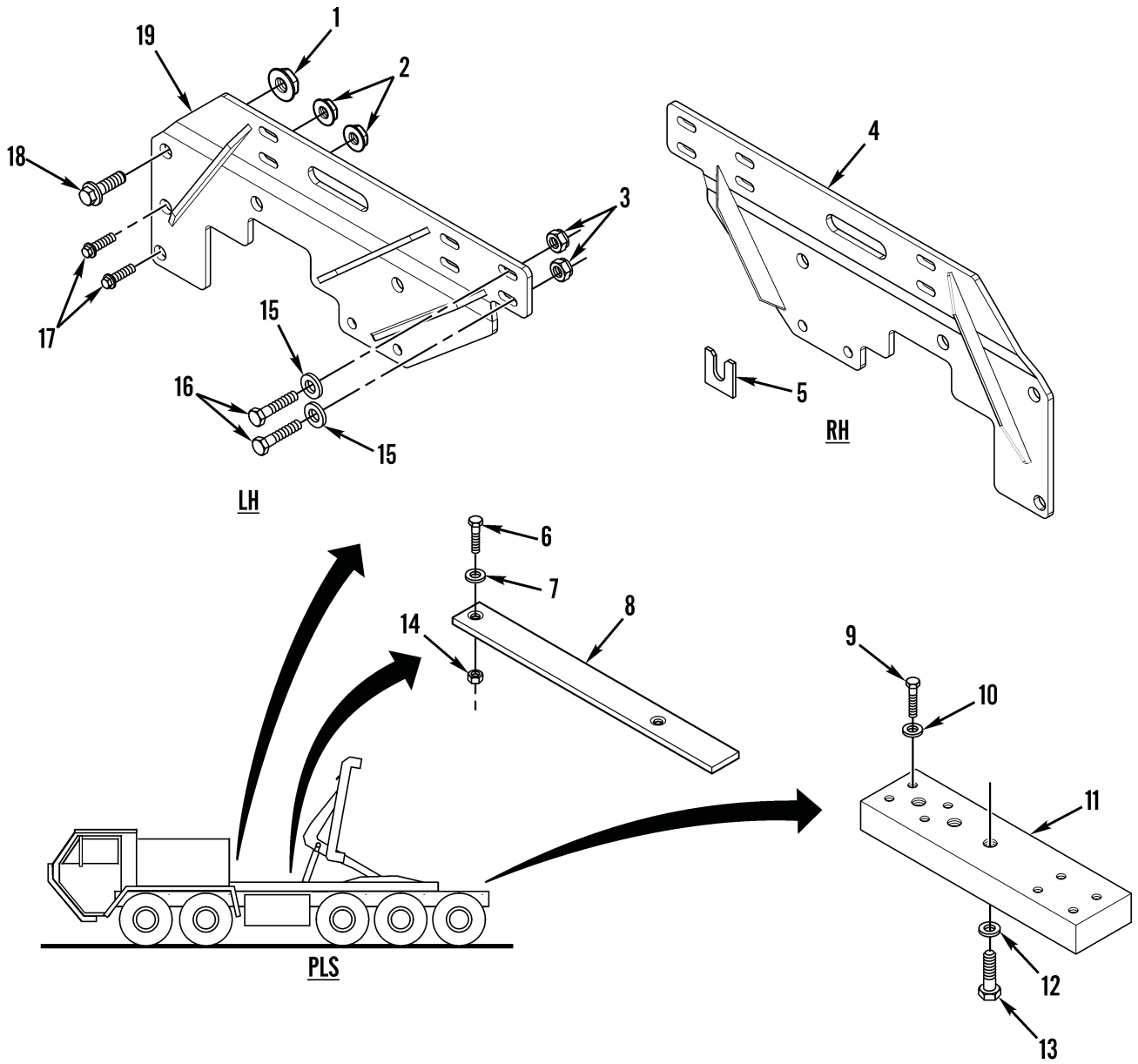


514-5018

Figure 16. E-CHU Mounting Hardware and Brackets for HEMTT.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 16 E-CHU MOUNTING HARDWARE AND BRACKETS FOR HEMTT						
* 1	PAFZZ		34914	112130301	BRACKET,MANIFOLD MO.....	2
2	PAFZZ	5310000806004	96906	MS27183-14	WASHER,FLAT 3/8".....	16
3	PAFZZ	5305007252317	80204	B1821BH038C150N	SCREW,CAP,HEXAGON H 3/8"X1-1/2"....	4
* 4	PAFZZ	5310015092488	81349	M45913/3-6CG8C	NUT,SELF-LOCKING,HE 3/8".....	4
5	PAFZZ	5305007813928	80204	B1821BH038C400N	SCREW,CAP,HEXAGON H 3/8"X4".....	4
6	PAFZZ	5305000712069	80204	B1821BH050C150N	SCREW,CAP,HEXAGON H 1/2"X1-1/2"....	12
7	PAFZZ	5310008095997	96906	MS27183-17	WASHER,FLAT 1/2".....	24
* 8	PAFZZ	5310004883889	81349	M45913/3-8CG8C	NUT,SELF-LOCKING,HE 1/2"UNC.....	12
* 9	PAFZZ	2590015735292	34914	112079001	BRACKET,VEHICULAR,COMPONENTS.....	2
* 10	PAFZZ	5340015737843	34914	112079301	BRACKET,MOUNTING LT HEMTT SHOWN....	1
* 10	PAFZZ	5340015735709	34914	112079302	BRACKET,MOUNTING RT HEMTT MIRRORED.	1
11	PAFZZ	5305015663202	39428	92316A804	SCREW,SHOULDER 5/8"X2-1/2".....	6
12	PAFZZ	5305007167606	80204	B1821BH056C200N	SCREW,CAP,HEXAGON H 9/16"X2".....	8
13	PAFZZ	5310008093079	96906	MS27183-19	WASHER,FLAT 9/16".....	8
* 14	PAFZZ	5340015737769	34914	112090401	BRACKET,MOUNTING.....	1
15	PAFZZ	5310008098533	96906	MS27183-23	WASHER,FLAT 3/4".....	6
16	PAFZZ	5305009381539	80204	B1821BH075C200N	SCREW,CAP,HEXAGON H 3/4"X2".....	6

END OF FIGURE



514-5004-2

Figure 17. E-CHU Mounting Hardware and Brackets for PLS.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM	SMR			PART		
NO	CODE	NSN	CAGEC	NUMBER	DESCRIPTION AND USABLE ON CODES(UOC)	QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 17 E-CHU MOUNTING HARDWARE AND BRACKETS FOR PLS						
*	1	PAFZZ 5310015339625	39428	91030A035	NUT,PLAIN,EXTENDED 5/8".....	4
*	2	PAFZZ 5310004093333	81349	M45913/3-12CG8C	NUT,SELF-LOCKING,HE 3/4".....	4
*	3	PAFZZ 5310004883889	81349	M45913/3-88/CG8C	NUT,SELF-LOCKING,HE.....	6
*	4	PAFZZ 5340015736426	34914	112079202	BRACKET,MOUNTING,ST MOUNTING CPLTRK RIGHT HAND.....	1
*	5	PAFZZ	3AR59	112462201	SHIM PLS,A1,THICKNESS .06MM.....	4
*	6	PAFZZ 5305013233781	39428	91253A718	SCREW,CAP,COCKET HE PLS,A1,1/2-13".	4
*	7	PAFZZ 5310013517793	10988	469-21053	WASHER,FLAT PLS,A1,1/2",PLATED.....	4
*	8	PAFZZ	3AR59	112462101	SPACER PLS A1,STOWAGE RACK.....	2
*	9	PAFZZ 5305007167606	80204	B1821BH056C200N	SCREW,CAP,HEXAGON H.....	8
*	10	PAFZZ 5310008093079	96906	MS27183-19	WASHER,FLAT.....	8
*	11	PAFZZ 5340015737769	34914	112090401	BRACKET,MOUNTING.....	1
*	12	PAFZZ 5310008098533	96906	MS27183-23	WASHER,FLAT.....	3
*	13	PAFZZ 5305009381539	80204	B1821BH075C200N	SCREW,CAP,HEXAGON H.....	3
*	14	PAFZZ 5310015330511	19200	13019969	NUT,SELF-LOCKING HE PLS,A1,1/2-13".	4
*	15	PAFZZ 5310008095997	96906	MS27183-17	WASHER,FLAT.....	12
*	16	PAFZZ 5305000712069	80204	B1821BH050C150N	SCREW,CAP,HEXAGON H.....	6
*	17	PAFZZ 5305015661086	39428	92316A843	SCREW,CAP,HEXAGON H 3/4"X2-1/2"....	4
*	18	PAFZZ 5305015663202	39428	92316A804	SCREW,SHOULDER.....	6
*	19	PAFZZ 5340015737788	34914	112079201	BRACKET,MOUNTING,ST MOUNTING CPLTRK LEFT HAND.....	1

END OF FIGURE

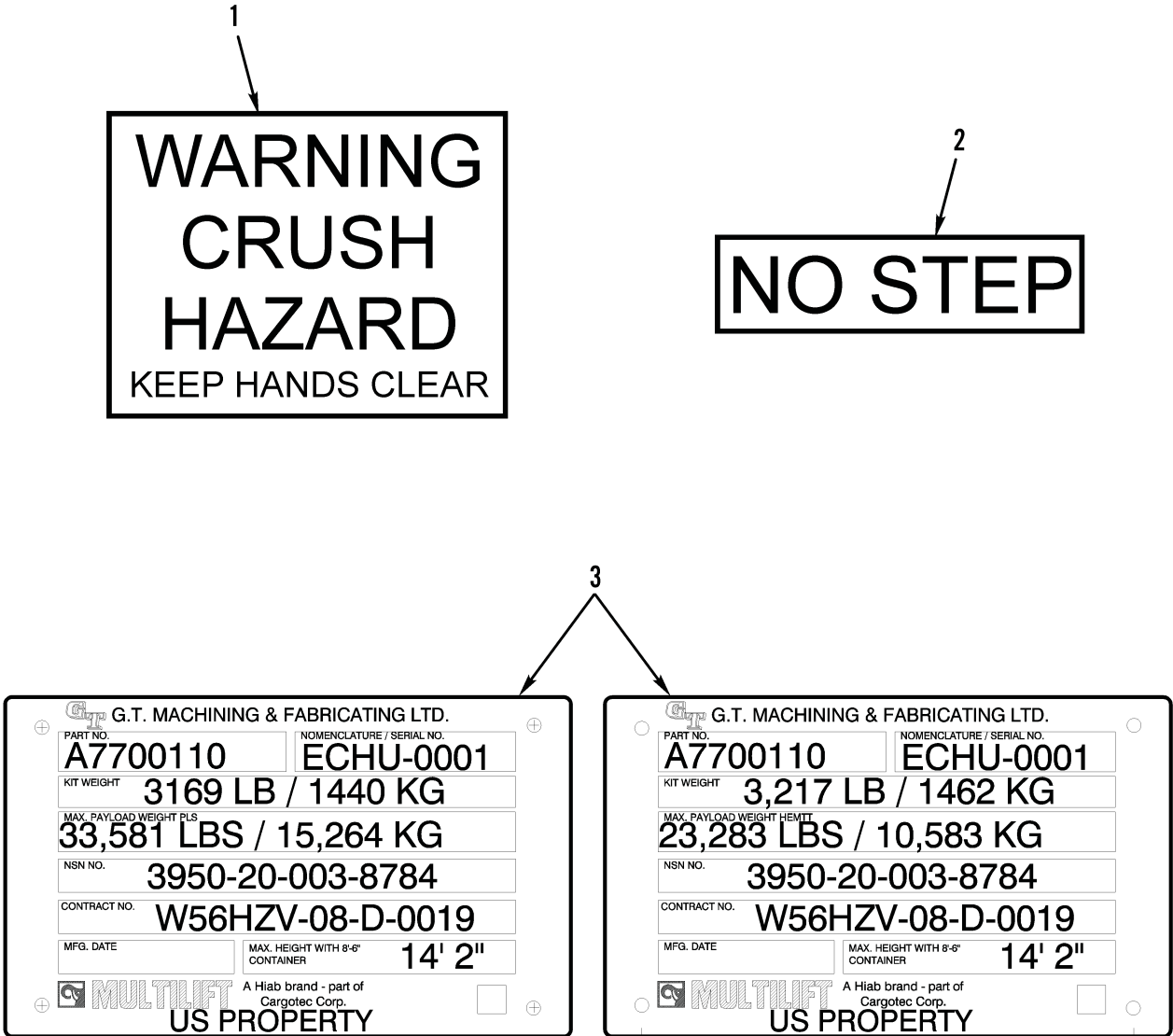
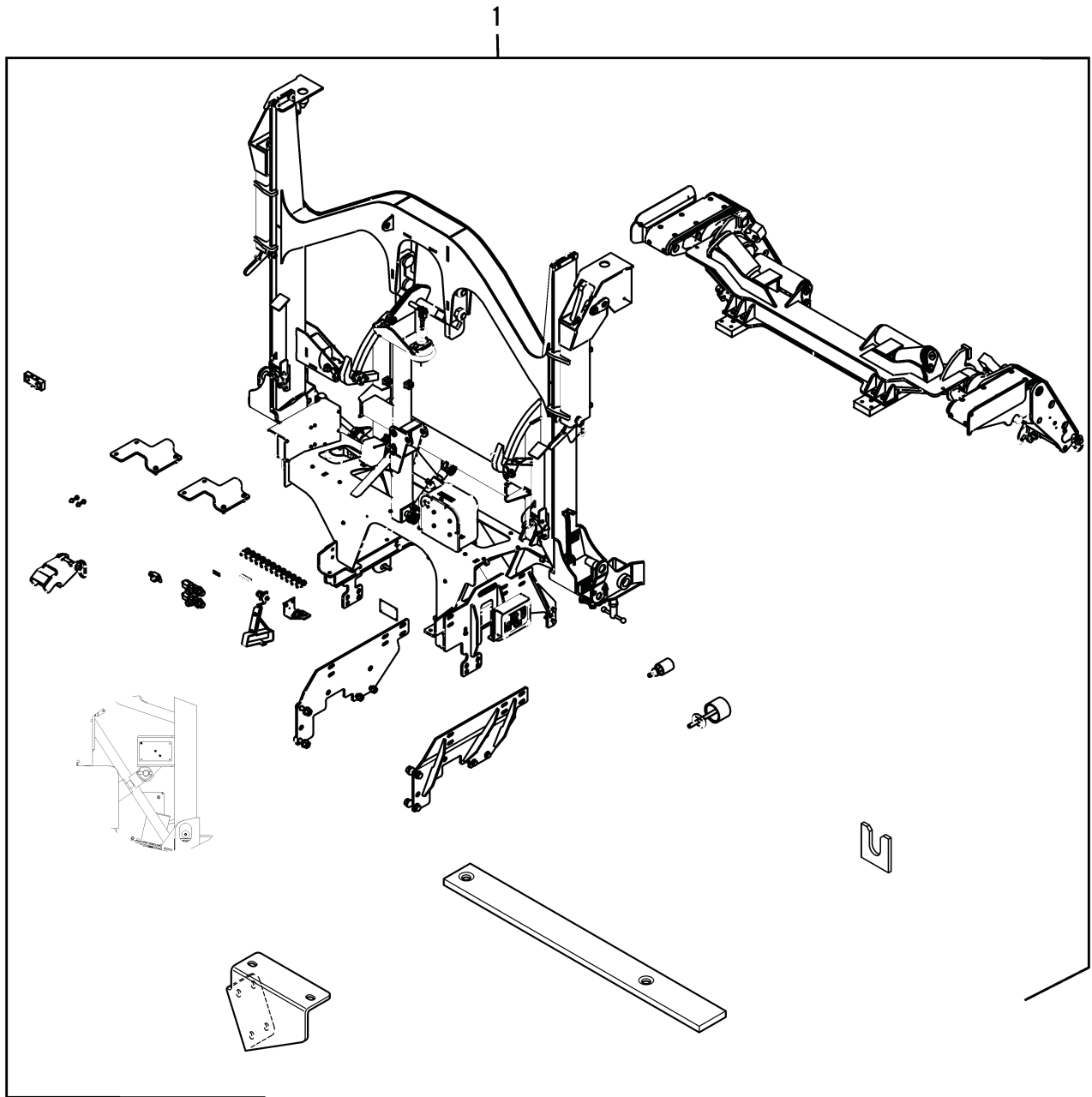


Figure 18. Decals and Data Plates.

514-5016

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
GROUP 3307 SPECIAL PURPOSE KITS						
FIG. 18 DECALS AND DATA PLATES						
*	1	PAFZZ 7690015736218	34914	112224701	DECAL WARNING CRUSH HAZARD.....	2
*	2	PAFZZ 7690015736212	34914	112224801	DECAL NO STEP.....	1
*	3	XDFZZ	34914	1121377	DATA PLATE WHEN ORDERING SPECIFY PLS OR HEMTT.....	1

END OF FIGURE



514-5019

Figure 19. E-CHU Kit.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 3307 SPECIAL PURPOSE KITS	
					FIG. 19 E-CHU KIT	
*	1 PAFFF	3950200038784	34914	A7700110	E-CHU KIT INCLUDES ALL PARTS FROM FIGURES 1 THROUGH 18.....	1

END OF FIGURE

1
2 AND 3

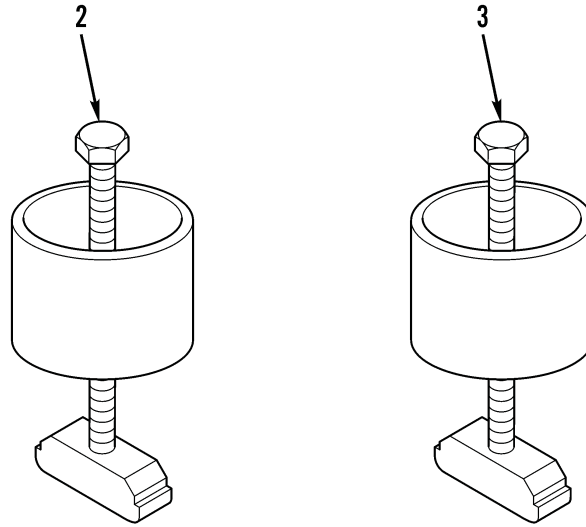


Figure 20. Special Tools.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES(UOC)	(7) QTY
					GROUP 26 TOOLS AND TEST EQUIPMENT	
					GROUP 2604 SPECIAL TOOLS	
					FIG. 20 SPECIAL TOOLS	
1	PAFZZ	5120200049873	3AR59	GT-ECHU-BP-01	REMOVER, BEARING AAO.....	1
2	XAFZZ		3AR59	GT-0403038-1	.TOOL, BEARING, REMOVAL.....	1
3	XAFZZ		3AR59	GT-110035026-1	.TOOL, BEARING, REMOVAL.....	1

END OF FIGURE

CROSS-REFERENCE INDEXES

STOCK NUMBER	NATIONAL STOCK NUMBER INDEX		STOCK NUMBER	FIG.	ITEM
	FIG.	ITEM			
5315-00-058-9812	5	24		13	37
	6	2	5310-00-809-8544	16	15
5310-00-061-4650	1	8		13	18
	5	28	5310-00-823-8803	13	20
	8	12		8	2
	9	1	5310-00-823-8804	10	9
	14	4		1	7
	15	8		5	29
5310-00-061-4651	8	3		14	2
5305-00-068-5414	8	19	5315-00-844-5833	15	1
5305-00-071-2069	16	6	5315-00-855-6803	13	27
5305-00-071-2070	10	16	5310-00-935-9021	10	27
5305-00-071-2077	8	14		13	4
5310-00-080-6004	13	40	5305-00-938-1539	16	4
	16	2		13	38
5310-00-081-4219	12	21	5305-00-938-1556	16	16
4730-00-172-0010	5	10		10	7
	9	8	5305-00-947-4359	12	2
	12	1	5305-00-988-7604	10	24
	13	1	5305-00-988-7614	1	3
4730-00-172-0015	12	10		5	30
5310-00-194-1483	10	6		8	17
	12	3		9	15
5305-00-225-3843	1	18	5305-00-988-7834	10	21
5306-00-226-4829	12	20		9	3
5310-00-409-3333	9	13	4730-01-011-6003	3	4
	10	18	4730-01-095-2034	4	3
	16	21	5920-01-123-5211	2	23
5310-00-488-3889	5	18	5920-01-149-6952	2	15
	8	10	5310-01-305-4341	5	33
	10	25	4010-01-320-8238	8	16
	12	13	4010-01-320-8238	8	16
	16	8	4730-01-348-6542	9	4
5305-00-543-4372	13	39		4	2
4730-00-574-6579	3	1	5310-01-397-8096	1	15
5305-00-716-7606	16	12	5315-01-398-6605	5	38
5305-00-721-5492	5	4		9	5
	9	6	5310-01-457-3244	1	11
5305-00-724-7222	12	19	5310-01-472-7792	1	24
5305-00-724-7225	13	26	5310-01-482-9266	1	21
5305-00-725-2317	16	3	5975-01-509-3916	2	12
5310-00-732-0560	5	3	5340-01-518-5127	1	17
5310-00-763-8920	10	12	5310-01-527-3369	13	19
	12	18	5310-01-533-9625	16	20
5310-00-765-3197	1	4	5315-01-534-6779	5	39
5305-00-781-3927	13	3	5305-01-539-5409	5	48
5305-00-781-3928	16	5	5305-01-555-2870	13	17
5310-00-809-3079	16	13	5310-01-555-5301	13	11
5310-00-809-5997	5	17	5305-01-559-6861	1	23
	8	11	5305-01-563-3101	13	9
5310-00-809-5997	10	15	4730-01-565-0249	1	1
	16	7	5340-01-565-0933	1	13
5310-00-809-5997	10	15	5310-01-565-2727	5	46
5310-00-809-8533	9	12	5315-01-565-7206	5	13
	10	17	5930-01-566-0269	2	34
			5930-01-566-0282	2	9

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STOCK NUMBER	NATIONAL STOCK NUMBER INDEX		STOCK NUMBER	FIG.	ITEM
	FIG.	ITEM			
	2	28	2590-01-573-5292	16	9
5305-01-566-1044	15	2	4720-01-573-5299	3	5
5305-01-566-1072	13	45	2590-01-573-5302	15	3
5305-01-566-1086	16	19	3120-01-573-5526	13	48
5305-01-566-1079	1	14	4720-01-573-5669	4	6
5305-01-566-1086	16	19	5315-01-573-5679	5	21
5315-01-566-1758	13	32	7690-01-573-5680	2	4
5305-01-566-1762	1	2	5360-01-573-5683	13	35
5310-01-566-1975	14	6	5930-01-573-5688	2	3
5305-01-566-3202	16	11	5945-01-573-5690	2	17
5305-01-566-3425	1	5	3120-01-573-5696	13	44
5310-01-567-1382	1	10	3990-01-573-5705	12	8
6150-01-569-1715	2	22	5340-01-573-5709	16	10
6150-01-569-1717	2	27	4730-01-573-5715	4	4
6150-01-569-1722	2	8	5315-01-573-5718	5	7
6150-01-569-1724	2	36	5310-01-573-5728	5	34
6150-01-569-1725	2	11	5365-01-573-5733	13	5
6150-01-569-1729	2	31	5305-01-573-5737	15	4
6150-01-569-1732	2	25	3040-01-573-5758	9	10
6150-01-569-1740	2	30	2590-01-573-5776	13	24
6150-01-569-1761	2	26	3120-01-573-5781	10	2
5975-01-569-1768	2	5	5310-01-573-5785	9	7
	2	14	2540-01-573-5789	2	20
6150-01-569-1785	2	16	3110-01-573-5793	5	22
6150-01-569-1804	2	29	4810-01-573-5800	1	19
6150-01-569-1814	2	33	5365-01-573-5801	1	16
6150-01-569-2132	2	10	5365-01-573-5819	12	9
6150-01-569-2147	2	37	5340-01-573-5826	5	1
6150-01-569-2158	2	32	5315-01-573-5829	10	26
4810-01-570-0818	4	8	5315-01-573-5831	13	29
5365-01-573-4664	12	26	5340-01-573-5834	13	
2590-01-573-4750	15	6	5340-01-573-5842	13	50
5365-01-573-4765	13	30	5340-01-573-5847	10	23
5315-01-573-4770	8	15	5340-01-573-5856	13	8
3040-01-573-4777	13	25	5365-01-573-5864	13	14
5340-01-573-4796	1	29	5340-01-573-5988	8	21
5340-01-573-4798	5	32	5340-01-573-6003	13	8
4730-01-573-4888	3	3	5340-01-573-6005	5	31
5365-01-573-4906	5	35	5310-01-573-6014	8	9
5340-01-573-4908	5	19	5340-01-573-6075	8	1
5310-01-573-4936	8	20	5340-01-573-6083	15	7
3110-01-573-4960	12	7	5315-01-573-6099	13	23
5310-01-573-4972	8	18	5315-01-573-6110	5	40
5310-01-573-4972	9	2	7690-01-573-6212	17	2
	10	22	7690-01-573-6218	17	1
5340-01-573-4975	13	49	2540-01-573-6403	2	13
5340-01-573-4981	13	7	3990-01-573-6423	12	17
5340-01-573-5020	14	5	5340-01-573-6426	16	18
5315-01-573-5194	13	21	3120-01-573-6432	12	25
5305-01-573-5226	14	8	5340-01-573-6463	1	9
5315-01-573-5230	8	7	5340-01-573-6586	13	7
5310-01-573-5238	9	9	5340-01-573-6603	15	5
3040-01-573-5242	6	3	5315-01-573-6623	9	16
5340-01-573-5252	5	37	5310-01-573-6631	12	6
2590-01-573-5269	13	36	3120-01-573-6633	5	26
5340-01-573-5286	2	35	3120-01-573-6635	12	16

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STOCK NUMBER	NATIONAL STOCK NUMBER INDEX		FIG.	ITEM
	FIG.	ITEM		
	13	6		
4730-01-573-6645	13	46		
3990-01-573-6697	11	1		
3990-01-573-7334	12	11		
5340-01-573-7368	14	7		
3950-01-573-7388	5	20		
4910-01-573-7392	8	13		
5340-01-573-7397	5	36		
5340-01-573-7444	10	10		
5340-01-573-7497	5	16		
5355-01-573-7502	6	4		
5340-01-573-7512	12	12		
5340-01-573-7685	1	25		
5930-01-573-7943	2	2		
5306-01-574-0144	8	22		
5340-01-574-0165	12	23		
5340-01-574-0194	5	41		
5365-01-574-0305	10	8		
	12	14		
5315-01-574-0496	13	41		
5340-01-574-0893	10	1		
3040-01-574-1618	5	15		
5305-01-574-4238	1	22		
6150-01-574-4491	2	19		
5305-01-574-7148	13	10		
5305-01-576-2905	13	49		
5305-01-576-7507	1	12		
3950-20-003-8784	19	1		
2590-20-004-2110	10	1		
5340-20-004-2241	13	13		
5340-20-004-2301	13	24		
5340-20-004-2302	13	13		
5340-20-004-2304	8	5		
5340-20-004-2307	10	10		
3990-20-004-2308	9	11		
5340-20-004-2309	13	47		
5340-20-004-2322	12	24		
5340-20-004-2328	5	8		
3990-20-004-2329	13	50		
2540-20-004-2496	10	19		
2510-20-004-2497	8	4		
2540-20-004-2501	2	1		
5120-20-004-9873	20	1		

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CAGEC	PART NUMBER	PART NUMBER INDEX		FIG.	ITEM
			STOCK NUMBER		
58536	AA55569/01-007		5920-01-123-5211	2	23
58536	AA55569/01-008		5920-01-149-6952	2	15
17576	AN944-101		4730-00-172-0010	5	10
				9	8
				12	1
				13	1
17576	AN944-201A		4730-00-172-0015	12	10
3AR59	APEM U598		5930-01-573-5688	2	3
34914	A7700110		3950-20-003-8784	19	1
80204	B1821BH025C100N		5305-00-225-3843	1	18
80204	B1821BH031C125N		5306-00-226-4829	12	20
80204	B1821BH038C063N		5305-00-721-5492	5	4
				9	6
80204	B1821BH038C075N		5305-00-543-4372	13	39
80204	B1821BH038C150N		5305-00-725-2317	16	3
80204	B1821BH038C350N		5305-00-781-3927	13	3
80204	B1821BH038C400N		5305-00-781-3928	16	5
80204	B1821BH050C050N		5305-00-938-1556	10	7
				12	2
80204	B1821BH050C150N		5305-00-071-2069	16	6
				17	16
80204	B1821BH050C175N		5305-00-071-2070	10	16
80204	B1821BH050C350N		5305-00-071-2077	8	14
80204	B1821BH056C200N		5305-00-716-7606	16	12
				17	9
80204	B1821BH063C200N		5305-00-724-7222	12	19
80204	B1821BH063C275N		5305-00-724-7225	13	26
80204	B1821BH075C200N		5305-00-938-1539	16	16
80204	B1821BH075C425N		5305-00-947-4359	10	24
80204	B1821HB075C200N		5305-00-938-1539	13	38
				17	13
61964	E2A-M18KS08-M1-B1		5930-01-566-0282	2	9
				2	28
61964	E2A-M30KS15-M1-B1		5930-01-566-0269	2	34
34914	GT-1119321-1-4TRN		5340-01-573-7685	1	25
3AR59	GT-ECHU-BP-01		5120-20-004-9873	20	1
3AR59	GT-0403038-A			20	2
3AR59	GT-110035026-1			20	3
81343	J530 8-8-8 13042 4B		4730-01-095-2034	4	3
80205	MS16562-255		5315-00-058-9812	5	24
				6	2
80205	MS16562-81		5315-00-844-5833	13	27
80205	MS16995-11		5305-00-068-5414	8	19
80205	MS16995-28		5305-00-988-7604	1	3
80205	MS16995-50		5305-00-988-7614	5	30
				8	17
				9	15
				10	21
80205	MS16995-53		5305-00-988-7834	9	3
80205	MS16995-72		5305-01-108-7471	13	16
80205	MS24665-375		5315-00-855-6803	10	27
96906	MS27183-12		5310-00-081-4219	12	21
96906	MS27183-14		5310-00-080-6004	13	40
				16	2
96906	MS27183-17		5310-00-809-5997	5	17

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CAGEC	PART NUMBER	PART NUMBER INDEX STOCK NUMBER	FIG.	ITEM
			8	11
96906	MS27183-17	5310-00-809-5997	10	15
			16	7
			17	15
96906	MS27183-19	5310-00-809-3079	16	13
			17	10
96906	MS27183-21	5310-00-823-8803	8	2
			10	9
96906	MS27183-23	5310-00-809-8533	9	12
			10	17
			13	37
			16	15
			17	12
96906	MS27183-41	5310-00-765-3197	1	4
96906	MS27183-7	5310-00-809-8544	13	18
96906	MS27183-9	5310-00-823-8804	1	7
			5	29
			14	2
			15	1
80205	MS35333-44	5310-00-194-1483	10	6
			12	3
96906	MS51527A5	4730-00-574-6579	3	1
96906	MS51943-49	5310-01-305-4341	5	33
96906	MS51967-20	5310-00-763-8920	10	12
			12	18
96906	MS51968-14	5310-00-732-0560	5	3
81349	M45913/1-10CG8C	5310-00-061-4651	8	3
81349	M45913/3-6CG83	5310-01-509-2488	13	4
			16	4
81349	M45913/3-8CG8C	5310-00-488-3889	5	18
			8	10
			10	25
			12	13
			16	8
			17	3
81349	M45913/3-12CG8C	5310-00-409-3333	9	13
			10	18
			17	2
81349	M45913/3-4CG8C	5310-00-061-4650	1	8
			5	28
			8	12
			9	1
			14	4
81349	M45913/3-5CG8C	5310-00-814-0673	12	23
			13	20
88233	VE13ESC042C2	4810-01-570-0818	4	8
34914	0505007	3040-01-574-0083	5	25
34914	0505008	3120-01-573-6633	5	26
34914	0701-075	5930-01-573-7985	2	6
34914	0701-076	5930-01-573-7962	2	7
34914	10036209	4730-01-576-7965	3	12
3AR59	110013119	5365-01-573-4664	12	26
3AR59	110035212	5340-20-004-2309	13	47
3AR59	110035714	4730-01-573-4888	3	3
34914	110036205	4730-01-574-0140	3	11

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CAGEC	PART NUMBER	PART NUMBER INDEX STOCK NUMBER	FIG.	ITEM
3AR59	110040801	4730-01-573-6645	13	46
3AR59	110041001	5365-01-574-0305	10	8
			12	14
34914	110324301		1	26
34914	110324401		1	27
34914	110324501		1	28
3AR59	110324701	5340-01-573-4796	1	29
3AR59	111534901	3990-01-573-7334	12	11
3AR59	111535001	3990-01-573-5705	12	8
3AR59	111535901	3990-01-573-6423	12	17
3AR59	111537401	5340-01-574-0165	12	23
3AR59	111537402	5340-20-004-2322	12	24
3AR59	111554901	5365-01-573-5819	12	9
3AR59	111555001	5310-01-573-6631	12	6
34914	111555201	5315-01-573-9900	12	5
34914	111555401	5315-01-573-9986	12	15
34914	111556201	5315-01-573-5831	13	29
34914	111557301	3040-01-573-9921	13	31
34914	111557302		13	31
34914	111557801	5340-01-573-5842	13	50
3AR59	111557802	3990-20-004-2329	13	50
34914	111558101	5340-01-573-7717	13	33
34914	111558401	5360-01-573-5683	13	35
3AR59	111558501	3040-01-573-4777	13	25
34914	111558601	5340-01-573-7683	13	28
3AR59	111560001	5340-01-573-5826	5	1
3AR59	111560301	5340-20-004-2301	5	27
3AR59	111565301	5340-01-573-6463	1	9
3AR59	111566701	5310-01-573-5728	5	34
3AR59	111569001	5365-01-573-4765	13	30
34914	111570001	3040-01-573-9846	13	34
3AR59	111570201	5340-01-573-7397	5	36
3AR59	111573501	5365-01-573-4906	5	35
3AR59	111574801		1	20
3AR59	111574901	5340-01-573-5252	5	37
3AR59	111588201	5340-01-573-4981	13	7
3AR59	111588202	5340-01-573-6586	13	7
3AR59	111589401	2590-01-573-5269	13	36
3AR59	111589501	3990-01-573-6697	11	1
3AR59	111590201	5315-01-573-5679	5	21
3AR59	111929101	3950-01-573-7388	5	20
34914	111930001	5315-01-573-7659	5	23
3AR59	111930101	5340-20-004-2328	5	8
34914	111930701	5340-01-573-7700	5	6
34914	111931201	5315-01-573-7664	5	9
34914	111931301	5315-01-573-6110	5	40
34914	111931501	5340-01-573-4798	5	32
34914	111931601	5340-01-573-6005	5	31
34914	111931701	5365-01-573-5801	1	16
34914	111932101	4810-01-573-5800	1	19
34914	111932201	3040-01-573-5242	6	3
34914	111932301	3040-01-573-7785	6	1
34914	111932501	5315-01-573-7670	5	12
3AR59	111946101	5340-01-573-6603	15	5
3AR59	111946401	2590-01-573-5302	15	1

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CAGEC	PART NUMBER	PART NUMBER INDEX		FIG.	ITEM
			STOCK NUMBER		
3AR59	111949401		2510-20-004-2497	8	4
34914	111950001		3950-01-573-5565	7	1
3AR59	111953001		2590-20-004-2110	10	1
3AR59	111953002		5340-01-574-0893	10	1
3AR59	111953101		5340-01-573-7444	10	10
3AR59	111953102		5340-20-004-2307	10	10
34914	111954101			14	1
3AR59	111954201		5340-01-573-5020	14	5
3AR59	111954401		5305-01-573-5226	14	8
3AR59	111954501		5340-01-573-7368	14	7
3AR59	111954901			10	3
34914	111955001		5410-01-573-9917	10	11
34914	111955101		5410-01-573-9833	10	14
34914	111955401		5315-01-573-9909	10	13
34914	111955701		5340-01-573-5847	10	23
34914	111956001		3040-01-573-9911	10	4
34914	111956301		3120-01-573-5781	10	2
3AR59	111956401		2540-20-004-2496	10	19
34914	111956701		3040-01-573-5758	9	10
34914	111956801		5315-01-573-6623	9	16
3AR59	111957101		3990-20-004-2308	9	11
34914	111957301			9	14
34914	111957401		5310-01-573-5238	9	9
34914	111957501		5340-01-573-5988	8	21
3AR59	111958001		4910-01-573-7392	8	13
34914	111958501		5315-01-573-4770	8	15
34914	111958701		5306-01-574-0144	8	22
3AR59	111958801		5340-20-004-2304	8	5
34914	111958901		5340-01-573-6075	8	1
34914	111959201		5340-01-573-9841	8	8
34914	111959601		5310-01-573-6014	8	9
34914	111959701		5315-01-573-5829	10	26
34914	111960001		2540-01-573-8378	8	6
34914	111960801		5340-01-573-7512	12	12
3AR59	111962401		5340-20-004-2302	13	13
3AR59	111962402		5340-20-004-2241	13	13
34914	111962901		5315-01-573-7679	13	42
34914	111963201		3120-01-573-5526	13	48
34914	111963301		3120-01-573-5696	13	44
3AR59	111963501		5315-01-573-5194	13	21
34914	111963801		5310-01-573-7756	13	43
3AR59	111963901		5365-01-573-5864	13	14
34914	111964001			13	2
34914	111964201		5315-01-574-0496	13	41
3AR59	111964601		5340-20-004-2303	13	24
3AR59	111964602		2590-01-573-5776	13	24
3AR59	111964801			13	12
53790	112APP		4730-01-565-0249	1	1
3AR59	112076901		2540-20-004-2501	2	1
34914	112077001		2540-01-573-6403	2	13
34914	112077101		5945-01-573-5690	2	17
34914	112077201		2540-01-573-5789	2	20
34914	112077301		6150-01-569-2147	2	37
34914	112077401		6150-01-569-1740	2	30
34914	112077502		6150-01-569-1725	2	11

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CAGEC	PART NUMBER	PART NUMBER INDEX		FIG.	ITEM
			STOCK NUMBER		
3AR59	112077601	6150-01-569-1729		2	31
3AR59	112077602	6150-01-569-1804		2	29
3AR59	112077603	6150-01-569-2132		2	10
3AR59	112077604	6150-01-569-1722		2	8
3AR59	112077605	6150-01-569-1814		2	33
3AR59	112077606	6150-01-569-2158		2	32
3AR59	112077607	6150-01-569-1717		2	27
3AR59	112077608	6150-01-569-1761		2	26
3AR59	112077701	6150-01-569-1785		2	16
3AR59	112077702	6150-01-569-1732		2	25
3AR59	112077801	6150-01-569-1715		2	22
3AR59	112077901	6150-01-569-1724		2	36
34914	112078001	5930-01-573-7943		2	2
34914	112078101	7690-01-573-5680		2	4
3AR59	112079001	2590-01-573-5292		16	9
3AR59	112079201	5340-01-573-7788		17	19
34914	112079202	5340-01-573-6426		17	4
34914	112079301	5340-01-573-7843		16	10
34914	112079302	5340-01-573-5709		16	10
34914	112079713	5305-01-573-7692		5	2
3AR59	112079807	5305-01-573-5737		15	3
3AR59	112080006	5310-01-573-4936		8	20
34914	112080201			10	5
				12	4
3AR59	112080202	5310-01-573-4972		8	18
				9	2
				10	22
3AR59	112080203	5310-01-573-5785		9	7
3AR59	112081301			7	3
3AR59	112081303	5315-01-573-6099		13	23
3AR59	112081401	5315-01-573-5718		5	7
34914	112081501	5310-01-573-7831		5	5
				5	14
3AR59	112081601	5340-01-573-7497		5	16
34914	112081901	5340-01-573-7887		6	5
34914	112082001	4730-01-573-4888		3	2
3AR59	112082002	4720-01-573-5299		3	5
3AR59	112083001	4730-01-573-5715		4	4
3AR59	112083101	5340-01-573-4908		5	19
39428	112083501	4730-01-481-3811		4	1
34914	112083901-85			4	5
34914	112083902-200			4	9
3AR59	112084001	4720-01-573-5669		4	6
34914	112090401	5340-01-573-7769		16	14
				17	11
3AR59	112091401	5355-01-573-7502		6	4
34914	112130001	5365-01-573-7722		4	7
3AR59	112130201	5340-01-574-0194		5	41
34914	112130301			16	1
3AR59	112132101	5365-01-573-5733		13	5
34914	1121377			18	3
3AR59	112224701	7690-01-573-6218		18	1
3AR59	112224801	7690-01-573-6212		18	2
3AR59	112227301	5340-01-576-2905		13	49
3AR59	112227302	5340-01-573-4975		13	49

CROSS-REFERENCE INDEXES

CAGEC	PART NUMBER	PART NUMBER INDEX		FIG.	ITEM
			STOCK NUMBER		
3AR59	112227401		5340-01-573-5856	13	8
3AR59	112227402		5340-01-573-6003	13	8
34914	1122654-01		4030-01-573-4773	7	2
3AR59	112265902			2	38
3AR59	112268101			7	4
3AR59	112268501			7	5
3AR59	1123781			3	7
3AR59	112462101			17	8
3AR59	112462201			17	5
3AR59	112525701			5	47
19200	13019969		5310-01-533-0511	17	14
93061	16 WJTX-WLN-S		4730-01-517-8526	3	10
3AR59	209P-8-4		4730-01-348-6542	4	2
3AR59	230205		3110-01-573-4960	12	7
3AR59	230270		3120-01-573-6635	12	16
				13	6
3AR59	235140		3110-01-573-5793	5	22
3AR59	235378		3120-01-573-6432	12	25
3AR59	2810023		5315-01-573-5230	8	7
3AR59	3225T5		5340-01-518-5127	1	17
3AR59	3750981		5340-01-573-5286	2	35
34914	3760154		5975-01-573-7955	2	18
34914	3763820		5975-01-569-1768	2	5
				2	14
34914	3805859		5975-01-573-7948	2	24
30780	4 XHL6-S			3	11
4P9L5	424A01A030B		6695-01-566-3416	2	21
53790	430PP		5340-01-565-0933	1	13
10988	469-21053		5310-01-351-7793	17	7
30780	5FNTX-5		4730-01-011-6003	3	4
34914	5007117		3040-01-574-1618	5	15
30780	6-4 XHX6-S			3	12
53711	6931056ITEM6		5305-01-475-9852	3	6
53711	701-6117288 PIECE 42		4010-01-320-8238	8	16
				9	4
39428	7130K59		5975-01-509-3916	2	12
39428	90126A013		5310-01-566-6785	1	6
39428	90126A031		5310-01-505-7694	3	9
				5	45
39428	90128A301		5305-01-574-5353	14	3
39428	90128A560		5305-01-566-1044	15	2
39428	90170A212		5315-01-398-6605	5	38
				9	5
39428	90170A222		5315-01-565-7206	5	13
07070	90630A121		5310-01-565-2727	3	8
				5	46
39428	90630A135		5310-01-566-1975	14	6
39428	90631A009		5310-01-457-3244	1	11
2V507	90631A411		5310-01-527-3369	13	19
39428	91030A035		5310-01-533-9625	17	1
39428	91166A240		5310-01-472-7792	1	24
39428	91166A250		5310-01-397-8096	1	15
				5	42
39428	91251A454		5305-01-566-3425	1	5
39428	91253A357		5305-01-563-3101	13	9

CROSS-REFERENCE INDEXES

CAGEC	PART NUMBER	PART NUMBER INDEX		FIG.	ITEM
			STOCK NUMBER		
39428	91253A359		5305-01-574-7148	13	10
39428	91253A718		5305-01-323-3781	17	6
39428	91280A222		5305-01-559-6861	1	23
39428	91280A249		5305-01-574-4238	1	22
39428	91290A334		5305-01-566-1072	13	45
39428	91290A349		5305-01-566-1079	1	14
39428	91611A415		5315-01-566-1758	13	32
39428	92196A292		5305-01-555-2870	13	17
39428	92196A334		5305-01-576-7507	1	12
39428	92316A804		5305-01-566-3202	16	11
				17	18
39428	92316A843		5305-01-566-1086	17	17
39428	92620A628		5305-01-539-5409	5	48
39428	92620A632		5305-01-517-5470	5	44
39428	93475A270		5310-01-482-9266	1	21
39428	9435K116		5360-01-573-7726	13	15
39428	94831A615		5310-01-567-1382	1	10
39428	95263A546		5305-01-566-1762	1	2
				5	43
39428	97135A235		5310-01-555-5301	13	11
39428	97525A515			15	4
39428	97840A86-AR			5	11
				13	22
34914	982 7625		6150-01-574-4491	2	19
39428	98416A012		5315-01-534-6779	5	39

CHAPTER 9
SUPPORTING INFORMATION

SUPPORTING INFORMATION
REFERENCES

SCOPE

This work package lists all forms, field manuals, technical bulletins, technical manuals, and miscellaneous publications referenced in this bulletin.

FORMS

Equipment Inspection and Maintenance Worksheet	DA Form 2404
Equipment Inspection Maintenance Worksheet (EGA)	DA Form 5988-E
Preventive Maintenance Schedule and Record	DD Form 314
Product Quality Deficiency Report	SF Form 368
Recommended Changes to Publications and Blank Forms	DA Form 2028
Recommended Changes to Publications and Blank Forms (EGA)	DA Form 2028-E
Transportation Discrepancy Report (TDR)	DD Form 361

FIELD MANUALS

Manual for the Wheeled Vehicle Driver	FM 21-305
Multiservice Helicopter Sling Load: Basic Operations and Equipment	FM 4-20.197
Operation and Maintenance of Ordnance Materiel in Cold Weather	FM 9-207

TECHNICAL BULLETINS

Color, Marking, and Camouflage Painting of Military Vehicles	TB 43-0209
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TECHNICAL MANUALS

Heavy Expanded Mobility Tactical Manual (HEMTT A2)	TM 9-2320-325-14&P
Interactive Electronic Technical Manual (IETM) for Operator and Field Level Support for Heavy Expanded Mobility Tactical Truck (HEMTT)	TM 9-2320-326-14&P
Interactive Technical Manual for the Palletized Load System (PLS)	TM 9-2320-364-14&P
Interactive Electronic Manual for Palletized Load System (PLS A1)	TM 9-2320-319-13&P
Interactive Electronic Technical Manual for Heavy Expanded Mobility Tactical Truck (HEMTT Base/A1)	TM 9-2320-279-14&P
Materials Used for Cleaning, Preserving, Abrading and Cementing Ordnance Materiel and Related Materials Including Chemicals	TM 9-247
Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)	TM 750-244-3

MISCELLANEOUS PUBLICATIONS

Abbreviations and Acronyms	ASME Y14.38-2007
Army Medical Department Expendable/Durable Items	CTA 8-100
Department of Defense Interface Standard for Lifting and Tiedown Provisions	MIL-STD-209K
Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)	CTA 50-970
First Aid	FM 4-25.11
Military Specification for Lubricating Oil, Preservative, Type I, Grade 10, 30, 50	MIL-L-21260B
Operator's Circular, Welding Theory and Application	TC 9-237
The Army Maintenance Management System (TAMMS) User's Manual	PAM 750-8
Treatment and Painting of Materiel	MIL-T-704

END OF WORK PACKAGE

SUPPORTING INFORMATION**MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION**

THE ARMY MAINTENANCE SYSTEM MAC

1. This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.
2. The 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 shall be consistent with the capacities of the designated maintenance levels, which are shown in the MAC (in column (4) as:

Field - includes subcolumns:

- C - Crew
- O - Service
- F - Field

Sustainment - includes subcolumns:

- H - Below Depot
- D - Depot

3. The Tools and Test Equipment Requirements list the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.
4. The Remarks column contains supplemental instructions and explanatory notes for a particular maintenance function.

MAINTENANCE FUNCTIONS

Maintenance functions are limited to and defined as follows:

1. **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).
2. **Test.** To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift equipment.
3. **Service.** Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. The following are examples of service functions:
 - a. **Unpack.** To remove from packing box for service or when required for the performance of maintenance operations.
 - b. **Repack.** To return item to packing box after service and other maintenance operations.
 - c. **Clean.** To rid of the item of contamination.
 - d. **Touch up.** To spot paint scratched or blistered surfaces.
 - e. **Mark.** To restore obliterated identification.
4. **Adjust.** To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. **Align.** To adjust specified variable elements of an item to bring about optimum or desired performance.

MAINTENANCE FUNCTIONS – CONTINUED

6. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. **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.
8. **Paint (ammunition only).** To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
9. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance, and Recoverability (SMR) code.
10. **Repair.** The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

- Services - Inspect, test, service, adjust, align, calibrate, and/or replace.
 - Fault location/troubleshooting - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).
 - Disassembly/assembly - The step-by-step breakdown (taking apart) of a spare/functional group coded item and to the level of its least component, that is assigned a SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).
 - Actions - Weld, grind, rivet, straighten, face, machine, and/or resurface.
11. **Overhaul.** That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
 12. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

EXPLANATION OF COLUMNS IN THE MAC, TABLE 1

1. **Column (1) - Group Number.** Column (1) lists Functional Group Code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).
2. **Column (2) - Component/Assembly.** Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.
3. **Column (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 *Maintenance Functions* outlined above).

EXPLANATION OF COLUMNS IN THE MAC, TABLE 1 – CONTINUED

4. **Column (4) - Maintenance Level.** Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work time 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 are to 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 any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance 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 - includes subcolumns:

- C - Crew maintenance
- O - Service maintenance
- F - Field maintenance

Sustainment - includes subcolumns:

- H - Below depot maintenance
- D - Depot maintenance

5. **Column (5) - Tools and Equipment Reference Code.** Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement, and Diagnostic Equipment (TMDE), special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.
6. **Column (6) - Remarks Code.** When applicable, this column contains a letter code, in alphabetical order, which is keyed to the Remarks table entries (Table 3).

EXPLANATION OF COLUMNS IN TOOLS AND TEST EQUIPMENT REQUIREMENTS, TABLE 2

1. **Column (1) - Tool or Test Equipment Reference Code.** The tool and test equipment reference code correlates with a code used in column (5) of the MAC.
2. **Column (2) - Maintenance Level.** The lowest level of maintenance authorized to use the tool or test equipment.
3. **Column (3) - Nomenclature.** Name or identification of the tool or test equipment.
4. **Column (4) - National Stock Number (NSN).** The NSN of the tool or test equipment.
5. **Column (5) - Tool Number.** The manufacturer's part number, model number, or type number.

END OF WORK PACKAGE

SUPPORTING INFORMATION
MAINTENANCE ALLOCATION CHART (MAC)

Table 1. MAC for the E-CHU.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS/ EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD			SUSTAINMENT			
			CREW	SERVICE	FIELD	BELOW DEPOT	DEPOT		
			C	O	F	H	D		
33	SPECIAL PURPOSE KITS								
3307	Special Purpose Kits								
	Stowage Assembly	Inspect Service Install Replace	0.2	1.0	2.0 2.0			1,2,3 1,2,3 1,2,3	
	Stowage Latch and Actuator	Inspect Service Replace	0.2	1.0 1.5				2,3 2,3	
	Stowage Actuator	Inspect Service Replace	0.2	0.5 0.5				2 2	
	Stowage Guide	Inspect Service Replace	0.2	0.5 1.0				1,2,3 1,2,3,4	
	Stowage Angle Sensor	Inspect Replace Repair	0.2	1.0 1.0				2 2	
	Stowage Manifold and Solenoid Valve	Inspect Replace	0.2	1.0				2	
	Stowage Transport Lock	Inspect Replace Repair	0.2	1.0 1.5				2,3 2,3	
	Stowage Transport Lock Cylinder	Inspect Service Replace	0.2	1.0 1.0				2,3 2,3	
	Stowage Adjustment Lever	Inspect Service Replace	0.2	0.5 1.0				2,3 2,3	

Table 1. MAC for the E-CHU - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS/ EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD			SUSTAINMENT			
			CREW	SERVICE	FIELD	BELOW DEPOT	DEPOT		
			C	O	F	H	D		
	Lift Frame Upper Lock	Inspect	0.2						
Service			1.0						
Replace			0.5			2			
	Stowage Electric Kit	Repair		1.0			2		
Inspect		0.2							
Test			0.5						
	Lift Frame Bail Bar	Replace		1.0			2		
Repair			1.0			2			
Inspect		0.2							
	Lift Frame Stand	Replace		0.5			2,3		
Inspect		0.2					2,3		
	LiftFrame Roller and Roller Pin	Replace		0.5			3		
Inspect		0.2							
Service			1.0			2			
	Lift Frame Container Pin	Replace		1.0			2		
Inspect		0.2							
Service			1.0			2			
	Sensor Replacement	Replace		1.0			2		
Inspect		0.2							
Test			0.5						
Adjust			0.5			2			
Replace			1.0			2			
	Rear Slider Assembly	Repair		1.0			2		
Inspect		0.2							
Service			1.0						
	Front Slider Bed	Install			2.0		1,2,3		
Replace				2.0			1,2,3		
Inspect		0.2							
Service			1.0			1,2,3			
Replace			1.0			1,2,3			
	Clamping Device	Repair		1.0			1,2,3		
Inspect		0.2							
Replace			1.0			2,3			
Repair			1.0			2,3			

Table 1. MAC for the E-CHU - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS/ EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD			SUSTAINMENT			
			CREW	SERVICE	FIELD	BELOW DEPOT	DEPOT		
			C	O	F	H	D		
	Rear Slider Bed	Inspect	0.2						
		Service		1.0				1,2,3	
		Replace		1.0				1,2,3	
		Repair		1.0				1,2,3	
	Twistlock Assembly	Inspect	0.2						
		Replace		1.0				2	
		Repair		1.0				2	
	Flatrack Roller	Inspect	0.2						
		Service		0.5					
		Replace		0.5				2	
		Repair		1.0				2	
	Angled Roller	Inspect	0.2						
		Service		0.5				2	
		Replace		0.5				2	
		Repair		1.0				2	
	Hydraulic Hoses and Fittings	Inspect	0.2						
		Replace		0.5				2	
		Repair		1.0				2	
	Pneumatic Hoses and Fittings	Inspect	0.2						
		Replace		0.5				2	
Repair			1.0				2		
Stowage Control Unit	Inspect	0.2							
	Test		0.5						
	Install		1.0				2		
	Replace		1.0				2		
		Repair		1.0			2		

Table 2. Tools and Test Equipment for the E-CHU.

(1)	(2)	(3)	(4)	(5)
TOOLS/TEST EQUIP. REF. CODE	MAINTENANCE LEVEL	NOMENCLATURE	NSN	TOOL NUMBER
1	F	Sling, Nylon	2835-01-078-2081	4-8FTX2IN (91796)
2	F	Tool Kit, General Mechanic's Automotive	5180-01-483-0249	SC 9999-01-SKO LIN: T28688
3	F	Tool Set, SATS Base	4910-01-490-6453	SC 9999-01-SKO LIN: S25885
4	F	Tool Kit, Bearing Removal		GT-ECHU-BP-01

END OF WORK PACKAGE

SUPPORTING INFORMATION
BASIC ISSUE ITEMS (BII) LIST

SCOPE

This work package lists Basic Issue Items (BII) for the Enhanced Container Handling Unit (E-CHU) to help you inventory items for safe and efficient operation of the equipment.

GENERAL

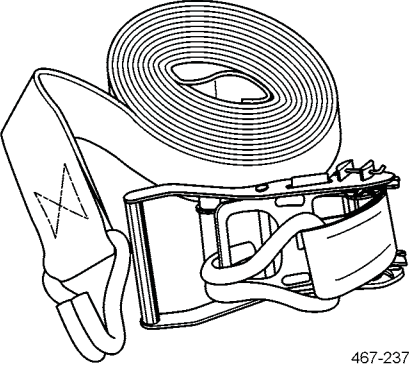
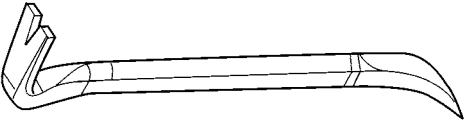
BII are required to place the E-CHU in operation, operate it, and do emergency repairs. Although shipped separately packaged, BII must be with the E-CHU during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the Table of Organization and Equipment (TOE)/Modified Table of Organization and Equipment (MTOE).

EXPLANATION OF COLUMNS

1. **Column (1), Illustration Number (Illus No.).** Indicates the number of the item illustrated.
2. **Column (2) - National Stock Number (NSN).** Identifies the stock number of the item to be used for requisitioning purposes.
3. **Column (3) - Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N).** Identifies the Federal item name followed by a minimum description when needed. The line below the name and description is the CAGEC (in parentheses), the part number and manufacturer.
4. **Column (4) - Unit of Measure (U/M).** Indicates how the item is issued for the NSN shown in column 2.
5. **Column (5) - Quantity Required (Qty Rqr).** Indicates the quantity of the item authorized to be used with/on the equipment.

EXPLANATION OF COLUMNS – CONTINUED

Table 1. Basic Issue Items (BI) List for the E-CHU.

(1) ILLUS NO.	(2) NSN	(3) DESCRIPTION, CAGEC, P/N	(4) U/M	(5) QTY RQR
1	1670-00-725-1437	Tiedown, Cargo, Aircraft (01276) (3114100C240)  467-237	EA	1
2		Crow Bar (3AR59) (111851901)  467-357	EA	1

END OF WORK PACKAGE

FIELD MAINTENANCE
MANDATORY REPLACEMENT PARTS LIST

MANDATORY REPLACEMENT PARTS LIST

This work package includes a list of all mandatory replacement parts referenced in the task initial setups and procedures. These are items that must be replaced during maintenance whether they have failed or not.

(1) ITEM NO.	(2) PART NUMBER/ CAGEC	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME	(5) QTY.
1	90631A009 39428	5310-01-457-3244	Locknut	2
2	91611A415 39428	5315-01-566-1758	Spring Pin	2
3	94831A615 39428	5310-01-567-1382	Locknut	1
4	97135A235 39428	5310-01-555-5301	Locknut	28
5	M45913/3-12CG8C 81349	5310-00-409-3333	Locknut	7
6	M45913/3-4GC8C 81349	5310-00-061-4650	Locknut	43
7	M45913/1-10G8C 81349	5310-00-061-4651	Locknut	10
8	MS16562-255 80205	5315-00-058-9812	Spring Pin	12
9	MS24665-375 80205	5315-00-855-6803	Cotter Pin	1
10	MS27183-9 96906	5310-00-823-8804	Locknut	3
11	MS51943-35 96906	5310-00-935-9021	Locknut	4
12	MS51943-39 96906	5310-00-488-3889	Locknut	23
13	MS51943-49 96906	5310-01-305-4341	Locknut	2
14	MS35333-44 80205	5310-00-194-1483	Star Washer	5

END OF WORK PACKAGE

SUPPORTING INFORMATION
EXPENDABLE AND DURABLE ITEMS LIST

SCOPE

1. This work package lists expendable and durable items you will need to operate and maintain the E-CHU.
2. 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, *Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items)*, or CTA 8-100, *Army Medical Department Expendable/Durable Items*.

EXPLANATION OF COLUMNS

1. **Column (1) - Item Number.** This number is assigned to each item in the listing and is used in the narrative instructions to identify the material, (e.g., use Cleaning Compound, Solvent, Type III (WP 0060, Item 4).
2. **Column (2) - Level.** This column identifies the lowest level of maintenance that requires the listed item.
C - Operator/Crew
F - Field Maintenance
3. **Column (3) - National Stock Number.** This is the National Stock Number assigned to the item. Use it to request or requisition the item.
4. **Column (4) - Description, CAGEC, and Part Number.** Indicates 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.
5. **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 (e.g., EA, GAL.). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Table 1. Expendable and Durable Items List for the E-CHU.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/M
1	F	8040-01-250-3969	Adhesive, Thread (05972) 242	BT
		8040-01-250-3969	50 Milliliter Bottle	
2	F	8030-00-251-3980	Antiseize Compound (26916) 034-000750	TU or CN
		8030-00-251-3980	1 Pound Tube or Can	
3	F	5340-00-450-5718	Cap Set, Protective, Dust and Moisture (19207) 10935405	EA
4	C		Cleaning Compound, Solvent, Type III (81349) MIL-PRF-680	GAL. GAL. GAL.
		6850-01-474-2318	1 Gallon Can	
		6850-01-474-2320	5 Gallon Can	
		6850-01-474-2321	55 Gallon Drum	
5	F		Cloth, Abrasive (80204) ANSI B74.18	PG
		5350-00-584-4654	50 Sheet Package	
6	C		Detergent, General Purpose, Liquid (83421) 7930-00-282-9699	GAL.
		7930-00-282-9699	1 Gallon Can	
7		9620-01-053-4312	Graphite, Dry (81349) MIL-G-155	LB
8	C		Grease, Automotive and Artillery, GAA	OZ OZ LB LB
		9150-01-197-7688	(81349) M-10924-A 2-1/4 Ounce Tube	
		9150-01-197-7693	(81349) M-10924-B 14 Ounce Cartridge	
		9150-01-197-7690	(81349) M-10924-C 1-3/4 Pound Can	
9	C		Oil, Lubricating, OE/HDO-10 (81349) MIL-PRF-2104	CN CN DR
		9150-00-189-6727	1 Quart Can	
		9150-00-186-6668	5 Gallon Can	
		9150-00-191-2772	55 Gallon Drum	

Table 1. Expendable and Durable Items List for the E-CHU - Continued.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION, CAGEC, AND PART NUMBER	(5) U/M
10	C	7290-00-205-1711	Rag, Wiping (80244) 7920-00-205-1711 50 Pound Bale	LB
11	F	5975-01-526-8849	Strap, Tiedown, Electrical Components (81343)MS3367-4-0 2.72 Inch Length, Package of 100	HD
		5975-00-984-6582	(96906) MS3367-1-0 6 Inch Length, Package of 100	HD
		5975-00-935-5946	(96906) MS3367-2-1 13.35 Inch Minimum Length, Package of 100	HD
12	F	9905-00-537-8954	Tag, Marker (64067) 9905-00-537-8954 50 Each	EA
13		3930-01-513-8761	Tape, Thread Teflon (1YHH8) 8526053	

END OF WORK PACKAGE

FIELD MAINTENANCE

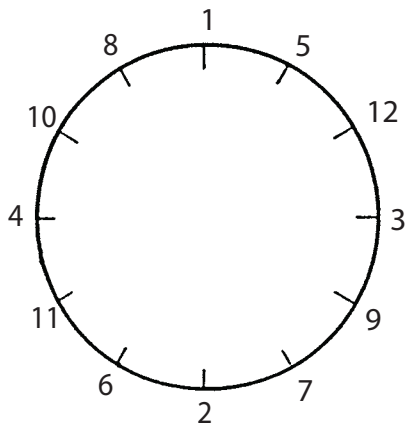
TORQUE LIMITS

SCOPE

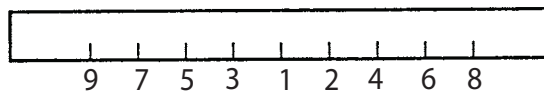
This work package lists standard torque values and provides general information for applying torque. Special torque values and tightening sequences are indicated in the maintenance procedures for applicable components.

GENERAL

1. Always use torque values listed in Tables 1 and 2 when a maintenance procedure does not give a specific torque value.
 - a. Table 1 provides torque limits for SAE standard fasteners.
 - b. Table 2 provides torque limits for metric fasteners.
2. Unless otherwise indicated, standard torque tolerance shall be ± 10 percent.
3. Torque values listed are based on clean, dry threads. Reduce torque by 10 percent when engine oil is used as a lubricant. Reduce torque by 20 percent if new plated capscrews are used.
4. If the maintenance procedures do not specify a tightening order, use the following guides:
 - a. Unless otherwise specified, lubricate threads of fasteners with OE/HDO-10 lubricating oil (WP 0057, Item 8).
 - b. When tightening fasteners above 30 lb-ft (41 Nm), use the torque pattern but only tighten to 70 percent of nominal value (multiply nominal value by 0.7). Repeat pattern until nominal value is reached.
 - c. Tighten circular patterns using circular torque pattern and tighten straight patterns using straight torque pattern.



CIRCULAR TORQUE PATTERN



STRAIGHT TORQUE PATTERN

CAUTION

If replacement capscrews are of higher grade than originally supplied, use torque specifications for the original. This will prevent equipment damage due to overtorquing.

Table 1. Torque Limits - SAE Standard Fasteners.

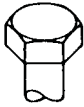


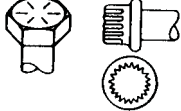

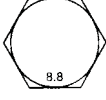

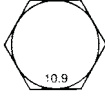
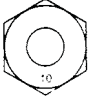
Current Usage	Much Used	Much Used	Used at Times	Used at Times
QUALITY OF MATERIAL	INDETERMINATE	MINIMUM COMMERCIAL	MEDIUM COMMERCIAL	BEST COMMERCIAL
SAE Grade Number	1 or 2	5	6 or 7	8
Capscrew Head Markings				
Manufacturer's marks may vary				
These are all SAE Grade 5 (3 line)				
				
CAPSCREW BODY SIZE IN. - THREAD	TORQUE LB-FT (NM)	TORQUE LB-FT (NM)	TORQUE LB-FT (NM)	TORQUE LB-FT (NM)
1/4 20 28	5 (7) 6 (8)	8 (11) 10 (14)	10 (14)	12 (16) 14 (19)
5/16 18 24	11 (15) 13 (18)	17 (23) 19 (26)	19 (26)	24 (33) 27 (37)
3/8 16 24	18 (24) 20 (27)	31 (42) 35 (47)	34 (46)	44 (60) 49 (66)
7/16 14 20	28 (38) 30 (41)	49 (66) 55 (75)	55 (75)	70 (95) 78 (106)
1/2 13 20	39 (53) 41 (56)	75 (102) 85 (115)	85 (115)	105 (142) 120 (163)
9/16 12 18	51 (69) 55 (75)	110 (149) 120 (163)	120 (163)	155 (210) 170 (231)
5/8 11 18	83 (113) 95 (129)	150 (203) 170 (231)	167 (226)	210 (285) 240 (325)
3/4 10 16	105 (142) 115 (156)	270 (366) 295 (400)	280 (380)	375 (508) 420 (569)
7/8 9 14	160 (217) 175 (237)	395 (536) 435 (590)	440 (597)	605 (820) 675 (915)
1 8 14	235 (319) 250 (339)	590 (800) 660 (895)	660 (895)	910 (1,234) 990 (1,342)

Table 2. Torque Limits - Metric Fasteners.

Torque values for metric thread fasteners with lubricated* or plated threads†				
THREAD DIAMETER-PITCH				
	Class 8.8 Bolt	Class 8 Nut	Class 10.9 Bolt	Class 10 Nut
	TORQUE LB-FT (NM)		TORQUE LB-FT (NM)	
M6	5	(7)	7	(9)
M8	12	(16)	17	(23)
M8 x 1	13	(18)	18	(24)
M10	24	(33)	34	(46)
M10 x 1.25	27	(37)	38	(52)
M12	42	(57)	60	(81)
M12 x 1.5	43	(58)	62	(84)
M14	66	(89)	95	(129)
M14 x 1.5	72	(98)	103	(140)
M16	103	(140)	148	(201)
M16 x 1.5	110	(149)	157	(213)
M18	147	(199)	203	(275)
M18 x 1.5	165	(224)	229	(310)
M20	208	(282)	288	(390)
M20 x 1.5	213	(313)	320	(434)
M22	283	(384)	392	(531)
M22 x 1.5	315	(427)	431	(584)
M24	360	(488)	498	(675)
M24 x 2	392	(531)	542	(735)
M27	527	(715)	729	(988)
M27 x 2	569	(771)	788	(1,068)
M30	715	(969)	990	(1,342)
M30 x 2	792	(1,074)	1,096	(1,486)

* All plated and unplated fasteners should be coated with oil before installation.

† Use these torque values if either the bolt or nut is lubricated or plated (zinc-phosphate conversion-coated, cadmium-plated, or waxed).

END OF WORK PACKAGE

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For use of this form, see AR 25-30; the proponent agency is OAASA.							
TO (Forward to proponent of publication or form) (Include ZIP Code) U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000						FROM (Activity and location) (Include ZIP Code) <i>Your mailing address</i>	
PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER TB 9-3950-253-13&P						DATE 30 July 2009	TITLE Installation Instructions and RPSTL for Enhanced Container Handling Unit (E-CHU)
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)	
	0007-3					Figure 2, Item 9 should show a lockwasher. Currently shows a flat washer.	
	0018-2					Cleaning and inspection, Step 6, reference to governor support pin (14) is wrong reference. Reference should be change to (12).	
<h1>SAMPLE</h1>							
TYPED NAME, GRADE OR TITLE <i>Your Name</i>						TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <i>Your Phone Number</i>	SIGNATURE <i>Your Signature</i>

TO (Forward direct to addressee listed in publication) U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000	FROM (Activity and location) (Include ZIP Code) <i>Your Address</i>	DATE <i>Date you filled out this form</i>
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PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER TB 9-3950-253-13&P	DATE 30 July 2009	TITLE Installation Instructions and RPSTL for Enhanced Container Handling Unit (E-CHU)
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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION
<h1>SAMPLE</h1>								

PART III – REMARKS (Any general remarks, or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)

TYPED NAME, GRADE OR TITLE <i>Your Name</i>	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <i>Your Phone Number</i>	SIGNATURE <i>Your Signature</i>
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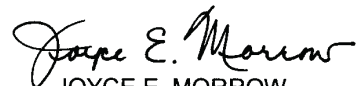
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TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

Official:

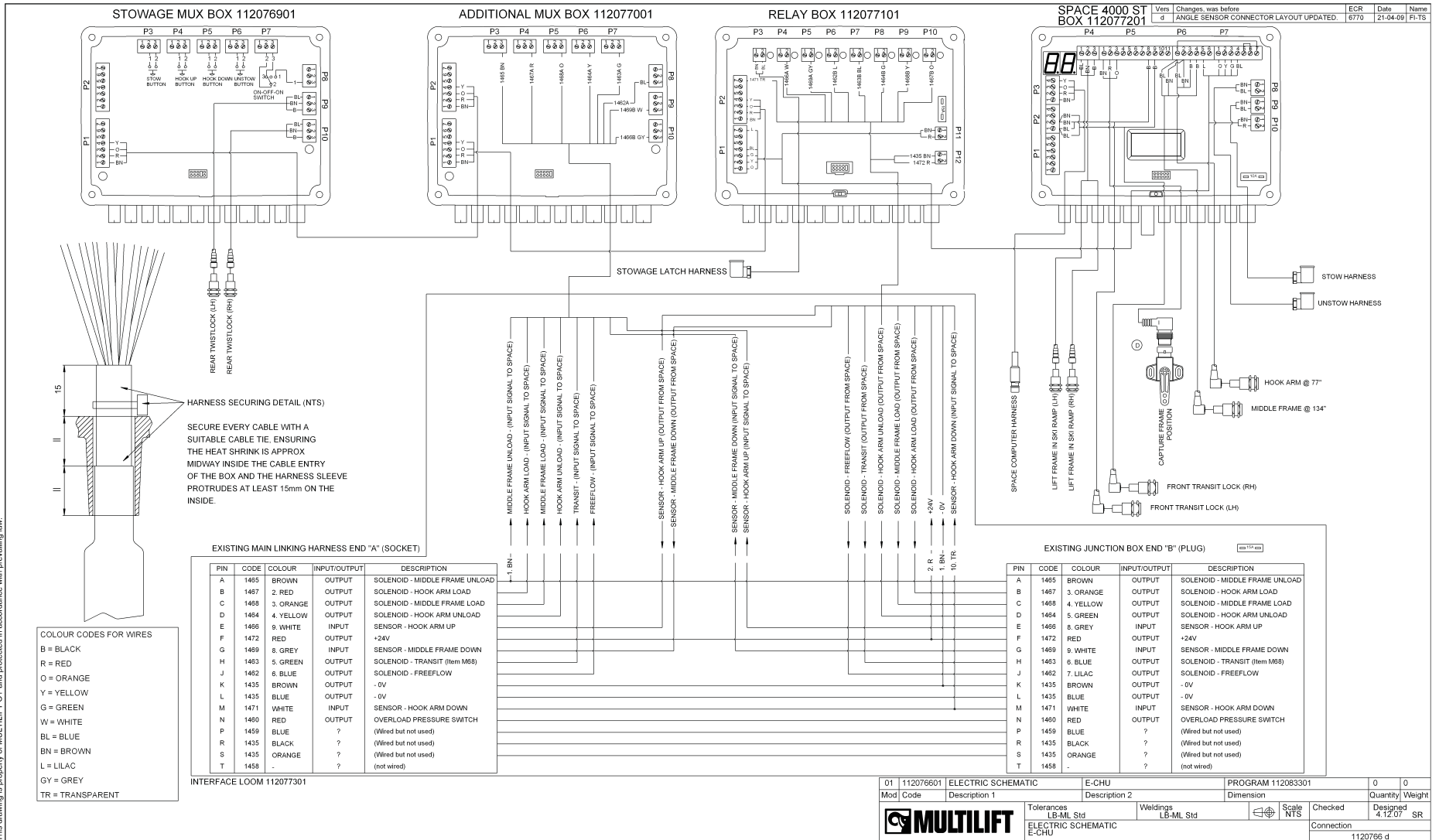


JOYCE E. MORROW

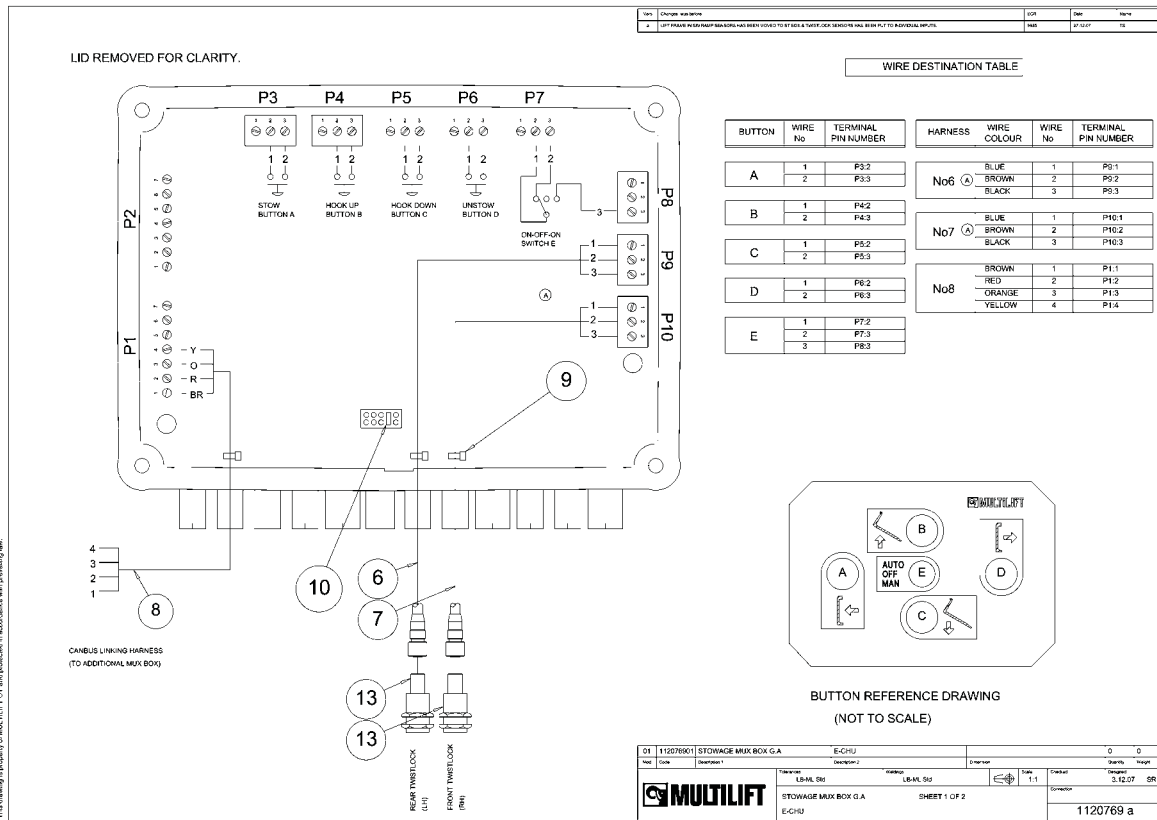
Administrative Assistant to the
Secretary of the Army

0912502

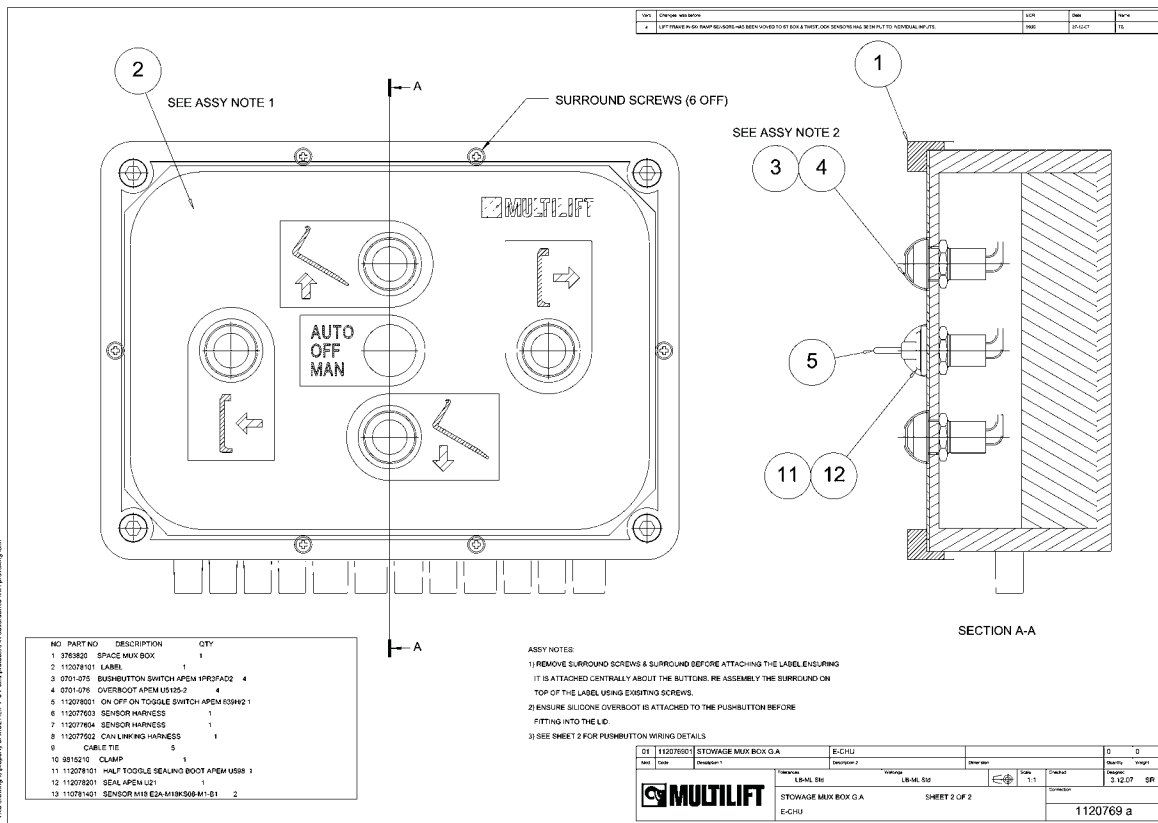
DISTRIBUTION: To be distributed in accordance with the initial distribution requirements for IDN: 345002 requirements for TM 9-3950-253-13&P.



TB 9-3950-253-13&P

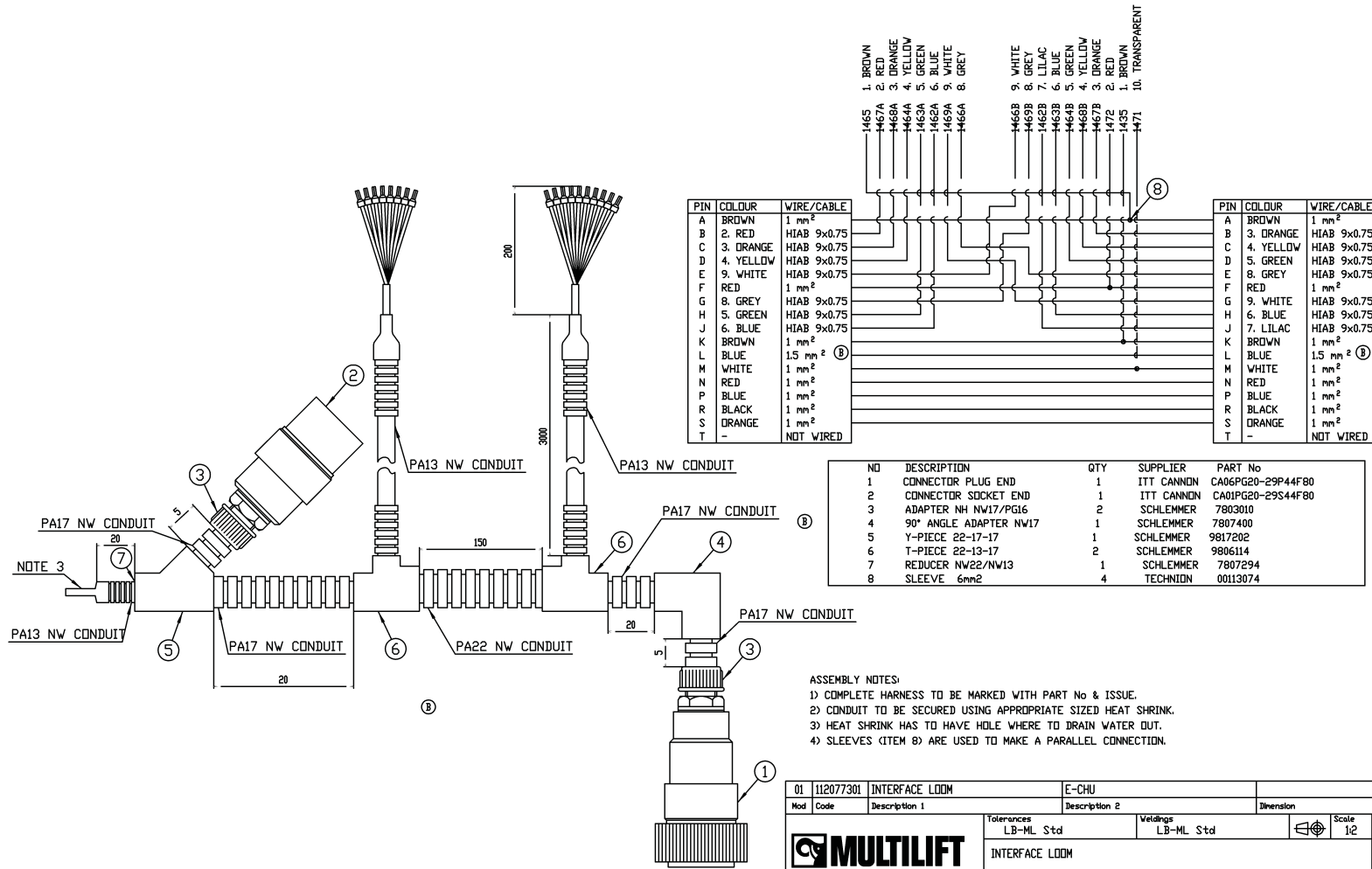


TB 9-3950-253-13&P

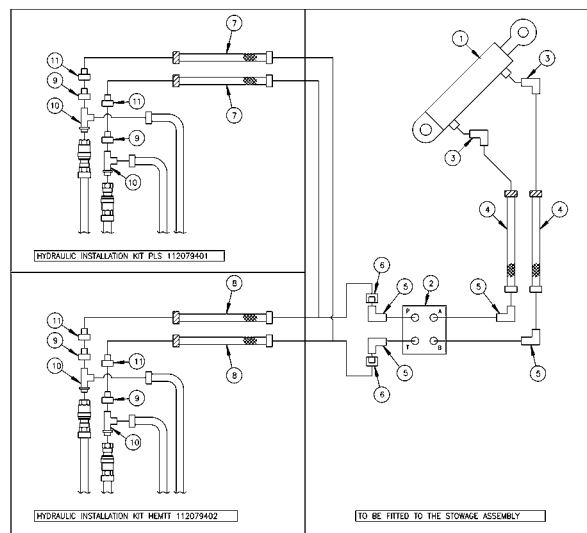


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Vers	Changes, was before	ECR	Date	Name
b	MANY CHANGES.	6097	28-04-08	TS



TB 9-3950-253-13&P

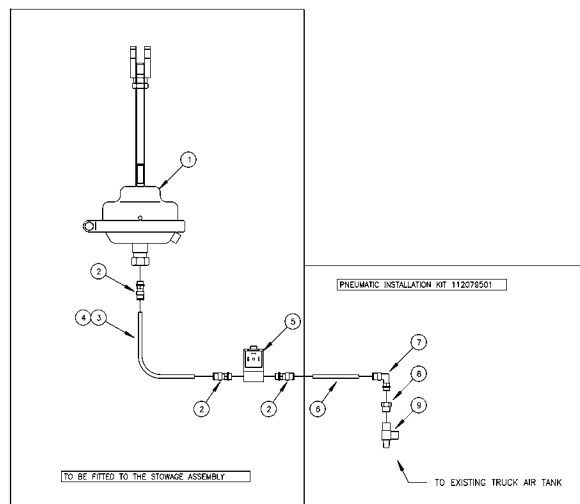


NO	DESCRIPTION	PART NO	QTY
1	STOWAGE CYLINDER	0505-007	1
2	STOWAGE MANIFOLD	111574801	1
3	MALE STUD ELBOW 5-6C40MKS	110035714	2
4	HOSE ASSY F302-06-39-5-5-4-24"	112082001	2
5	MALE STUD ELBOW 5C50MKS	110035715	4
6	BLANKING CAP 5FNMTXS	110036707	2
7	HOSE ASSY F302-06-39-5-5-4-100"	112082002	2
8	HOSE ASSY F302-06-39-5-5-4-74"	112082003	2
9	TUBE END REDUCER 16-8TRTXS	110036205	2
10	RUN TEE 16WUTXWLS	112082301	2
11	TUBE END REDUCER 8-5TRTXS	110036209	2

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FO-4. Hydraulic Schematic.
FP-9/(FP-10 Blank)

TB 9-3950-253-13&P



NO	DESCRIPTION	PART NO	QTY
1	DIAPHRAGM CYLINDER TYPE 12 BENDIX 5007117	112082901	1
2	MALE CONNECTOR 1/8" BSP TO 1/4" TUBE	112083401	3
3	NYLON AIR TUBE PARKER PARFLEX NBR-4-035 L=85"	112083601	1
4	TUBE COVER FOR 1/4" TUBE L=85"	112084001	1
5	SOLENOID VALVE PARKER VE13-ESC 042C2 + BASE PLATE	0604-009	1
6	NYLON AIR TUBE PARKER PARFLEX NBR-4-035 L=200"	112083602	1
7	MALE SWIVEL ELBOW W/69PL-4-4	112083501	1
8	MALE/FEMALE BUSH 1/4"NPTF TO 1/2"NPTF 209P-8-4	112083601	1
9	MALE/FEMALE/FEMALE TEE 1/2" 2225P-8	112083701	1

467-368

THE METRIC SYSTEM AND EQUIVALENTS

<p>Linear Measure</p> <p>1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches 1 Kilometer = 1000 Meters = 0.621 Miles</p> <p>Weights</p> <p>1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces 1 Kilogram = 1000 Grams = 2.2 Pounds 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons</p> <p>Liquid Measure</p> <p>1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces</p>	<p>Square Measure</p> <p>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</p> <p>Cubic Measure</p> <p>1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet</p> <p>Temperature</p> <p>$5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$ 212° Fahrenheit is equivalent to 100° Celsius 90° Fahrenheit is equivalent to 32.2° Celsius 32° Fahrenheit is equivalent to 0° Celsius $9/5 \text{ C}^{\circ} + 32 = \text{F}^{\circ}$</p>
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APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq 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 Sq 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
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq 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 Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

