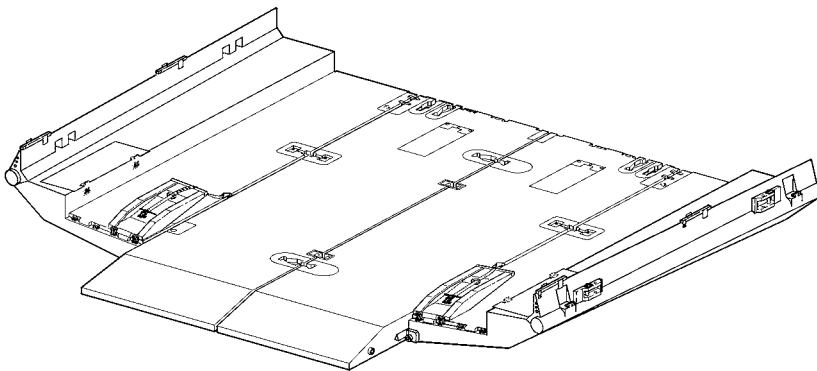
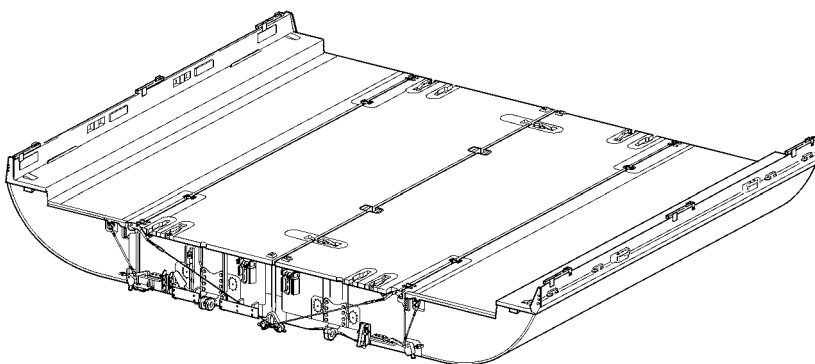


**UNIT, DIRECT SUPPORT, AND
GENERAL SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS
AND SPECIAL TOOLS LIST)**

**FOR
IMPROVED RIBBON BRIDGE (IRB)**



**RAMP BAY M16
NSN 5420-01-470-5825
P/N 12478918 EIC: XMT**



**INTERIOR BAY M17
NSN 5420-01-470-5824
P/N 12478919 EIC: XMS**

HOW TO USE THIS MANUAL

GENERAL INFORMATION

CHAPTER 1
DESCRIPTION AND THEORY
OF OPERATION

CHAPTER 2
UNIT TROUBLESHOOTING

CHAPTER 3
UNIT MAINTENANCE
INSTRUCTIONS

CHAPTER 4
DIRECT SUPPORT
TROUBLESHOOTING

CHAPTER 5
DIRECT SUPPORT MAINTENANCE
INSTRUCTIONS

CHAPTER 6
GENERAL SUPPORT
MAINTENANCE INSTRUCTIONS

CHAPTER 7
GENERAL MAINTENANCE

CHAPTER 8
SHIPMENT AND LIMITED STORAGE

CHAPTER 9
SUPPORTING INFORMATION

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

WARNING SUMMARY

Compressed air source will not exceed 30 psi (207 kPa). When cleaning with compressed air, eyeshields must be worn. Failure to comply may result in injury to personnel.

Improper cleaning methods and use of unauthorized cleaning solvents may result in injury to personnel.

Skysol-100 cleaning solvent is combustible. Use mechanical ventilation whenever product is used in a confined space, is heated above ambient temperatures, or is agitated. DO NOT use or store near heat, sparks, flame, or other ignition sources. Keep container sealed when not in use.

Contact with Skysol-100 cleaning solvent may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least fifteen (15) minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity.

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to Army POL (WP 0001 00) for information concerning storage, use, and disposal of these liquids. Failure to comply may result in damage to environment and health of personnel.

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in injury to personnel or damage to equipment.

Operation of a deadlined IRB bay without preliminary inspection prior to performing troubleshooting procedures may result in damage to equipment or injury to personnel.

When the cylinder is extended to the stop point, the piston rod on the pump must be completely extended and the handle must point towards the open cover before control lever is operated. Failure to do so may result in injury or death.

Wear leather gloves when mixing or coating KS 55. Skin irritation may occur if procedure is performed without leather gloves. Ensure proper ventilation in workshops. Injury to personnel may occur if used in a confined area. Wash hands and wrists with skin protectant and rub with skin protectant ointment before and after performing task. Skin irritation may occur if hands and wrists are not properly cleaned and protected.

Relieve residual pressure on fluid system before disconnecting lines by moving control valve lever to all positions and then placing lever in TRANSPORT/CROSSING position. Failure to do so may result in injury or death to personnel.

Failure to ensure residual fluid pressure is relieved may result in injury to personnel.

Ensure tag lines are held tight to prevent outer ponton from swinging, or injury to personnel or damage to equipment may result.

Connecting link will drop down suddenly once pin is removed. Ensure connecting link is held or secured, or injury to personnel may result.

Ramp plates are heavy. Use three personnel when removing ramp plate. Failure to comply may result in damage to equipment or injury to personnel.

If trunnion is bent or severely worn, it must be completely replaced. Failure to comply may result in injury to personnel.

Eyeshields must be worn when cleaning with a wire brush. Flying rust and metal particles may result in injury to personnel.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: The portion of text affected by the changes is indicated by a vertical line in the outer margins of the page.

Dates of issue for original and changed pages/work packages are:

Original ..0 ..8 April 2003
 Change ..1 ..30 December 2003

THE TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 31 AND TOTAL NUMBER OF WORK PACKAGES IS 135 CONSISTING OF THE FOLLOWING:

Page/WP No.	*Change No.	Page/WP No.	*Change No.	Page/WP No.	*Change No.
Front Cover	0	WP 0060 00–WP 0065 00	0	WP 0115 00	1
a	1	WP 0066 00	1	WP 0116 00–0117 00	0
A	1	CHAPTER 5 PAGE	0	WP 0118 00	1
B blank	0	WP 0067 00	0	WP 0119 00	0
i-ii	0	WP 0068 00–0069 00	1	WP 0120 00–0121 00	1
iii-iv	1	CHAPTER 6 PAGE	0	WP 0122 00	0
v-vi	0	WP 0070 00	0	WP 0123 00–0125 00	1
WP 0001 00	1	WP 0071 00–0072 00	1	WP 0126 00–0127 00	0
CHAPTER 1 PAGE	0	CHAPTER 7 PAGE	1	WP 0128 00–0129 00	1
WP 0002 00	0	WP 0073 00	0	WP 0130 00	0
WP 0003 00	1	WP 0074 00	1	WP 0131 00	1
WP 0004 00	0	WP 0075 00	0	WP 0131 01 Added	1
WP 0005 00	1	WP 0076 00	1	WP 0132 00–WP 0135 00	1
CHAPTER 2 PAGE	0	WP 0077 00–0078 00	0	Glossary-1	1
WP 0006 00–0011 00	0	CHAPTER 8 PAGE	0	Glossary-2	1
WP 0012 00	1	WP 0079 00–0081 00	0	INDEX-1–INDEX-7	1
CHAPTER 3 PAGE	0	CHAPTER 9 PAGE	0	INDEX-8 blank	0
WP 0013 00	0	WP 0082 00–0084 00	1		
WP 0014 00	1	WP 0085 00	0		
WP 0015 00	0	WP 0085 01 Added	1		
WP 0016 00	1	WP 0086 00	1		
WP 0017 00	0	WP 0087 00	0		
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WP 0033 00–0038 00	1	WP 0093 00	1		
WP 0039 00	0	WP 0094 00–0095 00	0		
WP 0040 00–0043 00	1	WP 0096 00	1		
WP 0044 00	0	WP 0097 00–0098 00	0		
WP 0045 00	1	WP 0099 00–0101 00	1		
WP 0046 00	0	WP 0102 00–0107 00	0		
WP 0047 00–0058 00	1	WP 0108 00–0109 00	1		
WP 0059 00	0	WP 0110 00–0111 00	0		
WP 0059 01 Added	1	WP 0112 00–0114 00	1		
CHAPTER 4 PAGE	0	WP 0114 01 Added	1		

*Zero in this column indicates an original page or work package.

CHANGE
NO. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
Washington, D.C., 30 DECEMBER 2003

TECHNICAL MANUAL
UNIT, DIRECT SUPPORT, AND GENERAL
SUPPORT MAINTENANCE
FOR
IMPROVED RIBBON BRIDGE (IRB)

IRB	MODEL	NSN	P/N	EIC
Ramp Bay	M16	5420-01-470-5825	12478918	XMT
Interior Bay	M17	5420-01-470-5824	12478919	XMS

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TM 5-5420-278-24&P, 8 April 2003, is updated as follows:

1. File this sheet in front of the manual for reference.
2. This change is a result of equipment improvements and new updated materials.
3. New or updated text and illustrations are indicated by a vertical bar in the outer margin of the page.
4. Each change to RPSTL shall have an asterisk placed to the outer edge of page indicating that an update has been made to item and is reflected in illustration, P/N index, or reference designator index.
5. Remove old pages and insert new pages as indicated below.

Remove pages

Warning a/b blank
A/B blank
iii-iv
Chapter 7 page
Glossary 1 and 2
INDEX 1 through INDEX 7/8 blank

Insert pages

Warning a/b blank
A/B blank
iii-iv
Chapter 7 page
Glossary 1 and 2
INDEX 1 through INDEX 7/8 blank

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

<u>Work package number</u>	<u>Work package number</u>	<u>Work package number</u>	<u>Work package number</u>
WP 0001 00	WP 0021 00	WP 0030 00	WP 0042 00
WP 0003 00	WP 0022 00	WP 0033 00	WP 0043 00
WP 0005 00	WP 0023 00	WP 0034 00	WP 0045 00
WP 0012 00	WP 0024 00	WP 0035 00	WP 0047 00
WP 0014 00	WP 0025 00	WP 0036 00	WP 0048 00
WP 0016 00	WP 0026 00	WP 0037 00	WP 0049 00
WP 0018 00	WP 0027 00	WP 0038 00	WP 0050 00
WP 0019 00	WP 0028 00	WP 0040 00	WP 0051 00
WP 0020 00	WP 0029 00	WP 0041 00	WP 0052 00

Work package number

WP 0053 00
WP 0054 00
WP 0055 00
WP 0056 00
WP 0057 00
WP 0058 00
WP 0066 00
WP 0068 00
WP 0069 00
WP 0071 00
WP 0072 00
WP 0074 00

Work package number

WP 0076 00
WP 0082 00
WP 0083 00
WP 0084 00
WP 0086 00
WP 0088 00
WP 0089 00
WP 0090 00
WP 0091 00
WP 0093 00
WP 0096 00
WP 0099 00

Work package number

WP 0100 00
WP 0101 00
WP 0108 00
WP 0109 00
WP 0112 00
WP 0113 00
WP 0114 00
WP 0115 00
WP 0118 00
WP 0120 00
WP 0121 00
WP 0123 00

Work package number

WP 0124 00
WP 0125 00
WP 0128 00
WP 0129 00
WP 0131 00
WP 0132 00
WP 0133 00
WP 0134 00
WP 0135 00

7. Add the following new work packages.

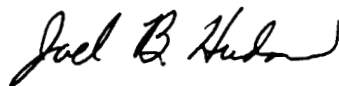
Work package number

WP 0059 01
WP 0085 01
WP 0114 01
WP 0131 01

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0406102

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 256763, requirements for TM 5-5420-278-24&P.

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 8 April 2003

TECHNICAL MANUAL
UNIT, DIRECT SUPPORT, AND GENERAL
SUPPORT MAINTENANCE
FOR
IMPROVED RIBBON BRIDGE (IRB)

IRB	MODEL	NSN	P/N	EIC
Ramp Bay	M16	5420-01-470-5825	12478918	XMT
Interior Bay	M17	5420-01-470-5824	12478919	XMS

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <http://aeprs.ria.army.mil>. If you need a password, scroll down and click on "ACCESS REQUEST FORM." The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or E-mail your letter or DA Form 2028 direct to: AMSTA-LC-CI Tech Pubs, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The E-mail address is TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.(Marine Corps) Submit NAVMC 10722 to Commander Code 835-2, Marine Corps Logistic Base, 814 Radford Boulevard, Albany, GA 31704-1128.

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HOW TO USE THIS MANUAL

ABOUT YOUR MANUAL

Maintenance personnel shall familiarize themselves with the format and use of this Technical Manual (TM) prior to performing equipment maintenance and repair. Learning how to use this manual will enable personnel to quickly locate information, gain proper knowledge of the equipment and shorten the time necessary to complete the required procedure.

The basic features of this TM are:

- a. **Work Package Format** – This TM is organized in Work Packages (WP). Each WP is an independent, stand alone data unit. The subject title of each WP is assigned a six digit sequence number. The first four digits of the sequence number identify the WP, and WPs are positioned in the TM in numerical order using the same four digits. The fifth and sixth digits of the sequence number are reserved for numbering WPs added to the TM as part of a future revision. Each WP is page numbered consecutively, after the sequence number, at the bottom of each page. A WP may contain as many as thirty pages.
- b. **Text Design** – WP titles and sequence numbers are listed in the Table of Contents, at the beginning of each chapter and section, and in the index. The index is organized by subject, in alphabetical order, with WP sequence and page numbers provided. Task steps and figure(s) are located side-by-side on facing pages. Lubrication instructions are included with operator's Preventive Maintenance Checks and Services (PMCS).
- c. **Use of Illustrations** – Illustrations are presented with exploded views, cut-away views, and individual callouts for identification of components and parts. Callouts are numbered in clockwise order starting at the 11 o'clock position.

HOW TO USE YOUR MANUAL

The format of this manual is designed to make accessing information quick and easy. The following example is intended as a guide and should be reviewed and put to memory before attempting to use this manual. If you have any questions after reviewing the following example, don't hesitate to ask your supervisor.

PROBLEM: You receive a report that states the IRB-I inner ponton leaks water.

SOLUTION: You must find information on ponton leaks in the IRB manual and perform the necessary troubleshooting and maintenance tasks to solve the problem.

NOTE

If you're trying to find information by subject, a subject index can be found at the back of the book.

1. Go to Table of Contents and find Chapter 2. You will find two sections in Chapter 2. Turn to WP 0006 00, Section I. Introduction to Troubleshooting Table of Contents first, then proceed to WP 0007 00 and read the information under "General" in Introduction to Troubleshooting.
2. Go to WP 0008 00, Section II, Unit Troubleshooting Procedures Table of Contents to find the work package number for the appropriate symptom index. In this case, you have a mechanical problem. Turn to WP 0009 00, Mechanical Troubleshooting Symptom Index, and look down the list of malfunctions until you identify the heading for ponton leaking.
3. Go to malfunction no. 4, WP 0010 00-2, Inner or Outer Ponton Leaking, and follow the steps and substeps listed. As you perform step 1a, you discover there are no seals on the bilge plugs. Now you must go to WP 0053 00 as referenced in step 1b.
4. Before beginning WP 0053 00, Bilge/Drain Plug and Inserts Replacement, you must review the entire

HOW TO USE THIS MANUAL (Contd)

procedure starting with the INITIAL SETUP. The first page of the work package contains the INITIAL SETUP and is always located on the right-hand page. The INITIAL SETUP provides the maintenance technician with the requirements to perform and complete all tasks included in the work package as follows:

- a. **Test Equipment:** All test equipment required to perform the procedure.
 - b. **Tools and Special Tools:** Those tools required to perform the procedure.
 - c. **Materials/Parts:** All expendable items, support materials, and mandatory replacement parts required to perform the procedure.
 - d. **Personnel Required:** The number of personnel required for the procedure if more than one is required.
 - e. **References:** TMs and other work packages required to complete the procedure that are not listed in the Equipment Condition.
 - f. **Equipment Condition:** Any special conditions required before the procedure can be started.
 - g. **Special Environmental Conditions:** Any special environment conditions required.
5. Complete the INITIAL SETUP requirements by going to the appropriate work package references and gathering all information, tools, and parts that are required. Complete all equipment condition requirements as references.
 6. Review the entire task prior to performing it. Perform the steps in the order they are listed. Notice that text and illustrations are used together on facing pages, and the exploded views show part location by number as called out in the text.
 7. Follow all warnings, cautions, and notes; they provide supplemental information as follows:
 - a. **WARNINGS:** Indicate conditions, practices, or procedures which must be observed to avoid personnel injury, loss of life, or long-term health hazards.
 - b. **CAUTIONS:** Indicate conditions, practices, or procedures which must be observed to avoid damage to equipment or destruction of equipment.
 - c. **NOTES:** Include essential information of special importance, interest, or aid in job performance, which should be remembered and would be otherwise difficult to find or incorporate into the text.
 8. Once you have completed bilge plug replacement, return to WP 0010 00, Inner or Outer Ponton Leaking and check for leaks by performing a ponton leak test as noted in step 2b. You may discover there still is a leak in the inner ponton due to structural damage. If this is determined to be the case, step 2a tells you to notify direct support maintenance. This means the repair cannot be performed by unit level maintenance, and you must inform your supervisor of the diagnosis.

**GENERAL INFORMATION
FOR
IMPROVED RIBBON BRIDGE (IRB)**

General Information WP 0001 00-1

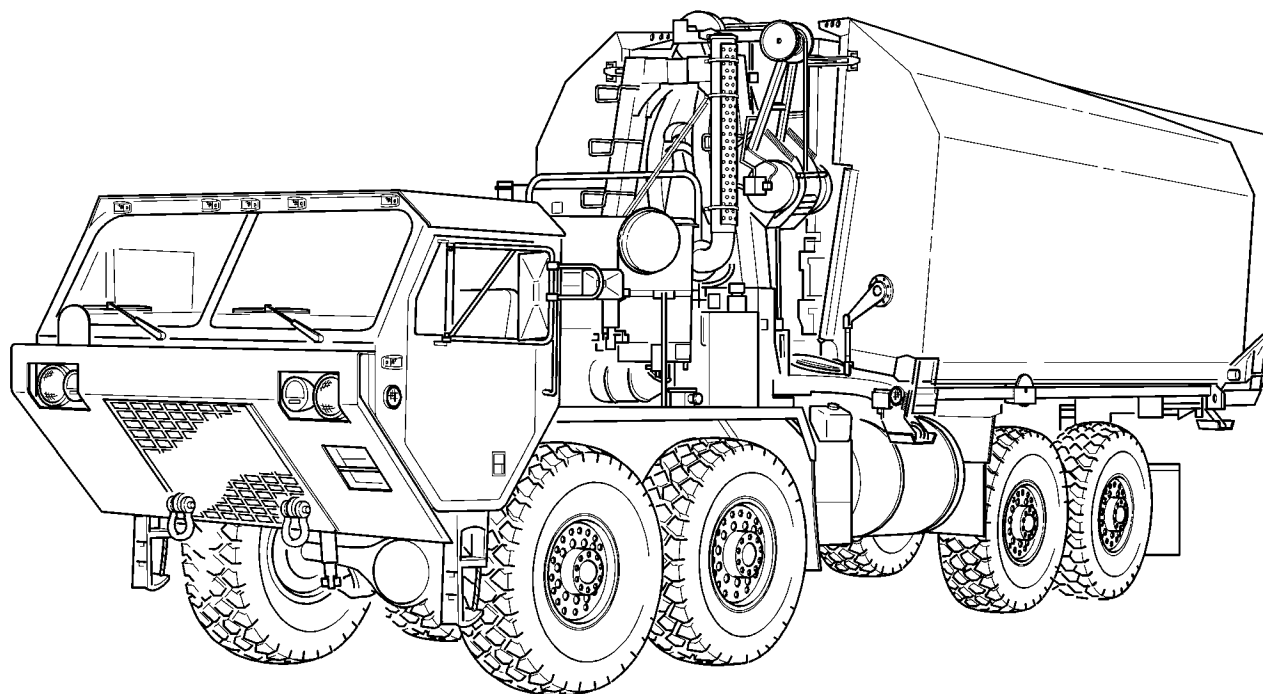
GENERAL INFORMATION

THIS WORK PACKAGE SUPERSEDES WP 0001 00, DATED 8 APRIL 2003

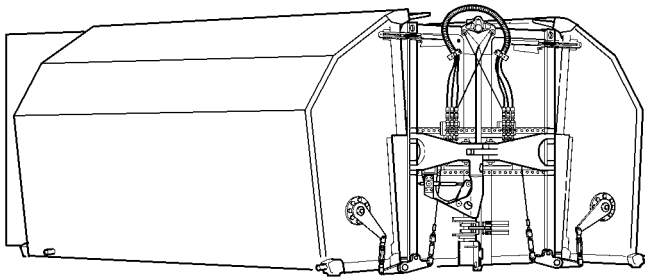
SCOPE

This TM contains instructions for the maintenance and repair of the Improved Ribbon Bridge (IRB). This includes all troubleshooting, maintenance, and repair of components as allocated by the Maintenance Allocation Chart (MAC). This TM does not cover maintenance and repair of M1977 HEMTT Common Bridge Transporter (CBT), Bridge Adapter Pallet (BAP), Improved Boat Cradle (IBC), or Bridge Erection Boat (BEB). Operation and servicing of the IRB and CBT is covered in TM 5-5420-278-10.

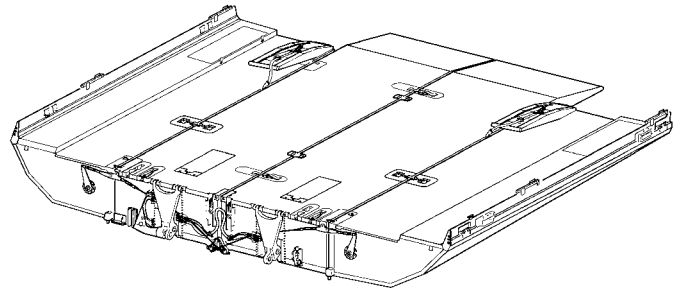
- a. **Type of Manual:** Unit, Direct Support, and General Support Maintenance.
- b. **Model Number and Equipment Names:** The IRB consists of two major components: the Ramp Bay M16 and the Interior Bay M17.
- c. **Purpose of Equipment:** To provide a means to carry military vehicles, equipment, and personnel across a moving body of water in a minimum amount of time, thereby increasing the strategic options for a military convoy. The IRB facilitates U.S. Army task force defensive and offensive maneuvers by supporting operations across wet gap barriers to rapidly cross tactical vehicles.
- d. **Special Inclusions:** For operation and maintenance of the basic M977 HEMTT truck chassis, refer to TM 9-2320-279-10, -12, and -20. For maintenance and repair of the CBT and the BAP, refer to TM 5-5420-234-14&P. For operation of the Bridge Erection Boat (BEB), refer to TM 5-1940-277-10. For operation of the Improved Boat Cradle (IBC), refer to TM 5-5420-277-14&P. For training instructions, refer to TC 5-210, Military Float Bridging Equipment and Field Manual 5-34, Engineer Field Data, chapter 7, Bridging. For river crossing instructions, refer to FM 90-13, River Crossing Operations.



RAMP BAY M16 ON CBT, TYPICAL

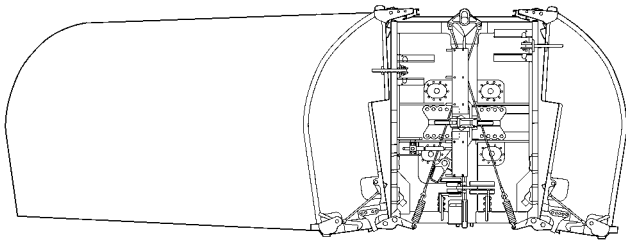


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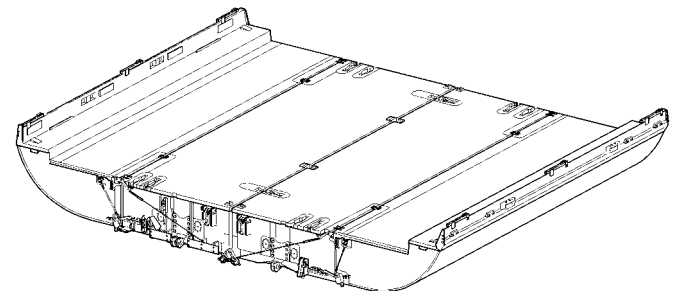


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M16 RAMP BAY



FOLDED



UNFOLDED

M17 INTERIOR BAY

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, The Army Maintenance Management System (TAMMS).

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your vehicle needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. The preferred method for submitting QDRs is through the Army Electronic Product Support (AEPS) website under the Electronic Deficiency Reporting System (EDRS). The web address is: <https://aeps.ria.army.mil>. This is a secured site requiring a password which can be applied for on the front page of the website. If the above method is not available to you, put it on an SF 368, Product Quality Deficiency Report (PQDR), and mail it to us at: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/PQDR MS 267, 6501 E. 11 Mile Road, Warren, MI 48397-5000. We'll send you a reply. (Marine Corps) Submit QDRs per MCO 4855-10.

HAND RECEIPT

There is not a separate Hand Receipt for the IRB. For a complete list of end item related equipment (i.e., COEI, BII, AAL) that must be accounted for, refer to TM 5-5420-278-10.

CORROSION PREVENTION AND CONTROL (CPC)

NOTE

Many of the metal fasteners, fittings, and tubing susceptible to corrosion have been coated with an anti-corrosive chemical nickel-plating called "DURNI-COAT," and are marked "duricoatent" or "DNC 450 IOMY."

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problem(s) be reported so corrections and/or improvements can be made to future items.

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

If a corrosion problem is identified, it should be reported using Standard Form 368, Product Quality Deficiency Report. Use of key words such as corrosion, rust deterioration, or cracking will ensure that the information is identified as a CPC problem.

The form should be submitted to the address specified in DA Pam 738-750, The Army Maintenance Management System (TAMMS).

OZONE DEPLETING SUBSTANCES (ODS)

The continued use of ODS has been prohibited by Executive Order 12856 of 3 August 1993. The use of ODS in Army IETMs is prohibited.

ARMY PETROLEUM, OIL, AND LUBRICANTS (POL)

Proper disposal of hazardous waste material is vital to protecting the environment and providing a safe work environment. Materials such as batteries, oils, and antifreeze must be disposed of in a safe and efficient manner.

The following references are provided as a means to ensure that proper disposal methods are followed:

- Technical Guide No. 126 (from the U.S. Army Environmental Hygiene Agency (USAEHA))
- National Environmental Policy Act of 1969 (NEPA)
- Clean Air Act (CAA)
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Emergency Planning and Community Right to Know Act (EPCRA)
- Toxic Substances Control Act (TSCA)
- Occupational Safety and Health Act (OSHA)

The disposal of Army Petroleum, Oils, and Lubricants (POL) products are affected by some of these regulations. State regulations may also apply to POL.

If you are unsure of which legislation affects you, contact state or local agencies for regulations regarding proper disposal of Army POL.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

The recommended method of rendering the IRB useless is to puncture holes in the pontoons using heavy tools, weapons fire, or explosive charges. Procedures for destruction of Army materiel to prevent enemy use can be found in TM 750-244-6, Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use.

PREPARATION FOR STORAGE OR SHIPMENT

Refer to chapter 8 for storage and shipment instructions. Additional information can be found in TM 746-10, Marking, Packing, and Shipment of Supplies and Equipment.

WARRANTY INFORMATION

The Improved Ribbon Bridge (IRB) bays are covered by a warranty. All US Army IRB customers requiring warranty assistance will initiate direct contact through respective unit Warranty Coordinators (WARCOs). WARCOs will submit all warranty claims for non-consumable items, greater than one hundred dollars, to the General Dynamics Santa Bárbara Sistemas (GDSBS) Point of Contact (POC) identified below. Request all claims be submitted both electronically and telephonically.

IRB warranty coverage applies to the following end items:

M16 RAMP BAY 5420-01-470-5825

M17 INTERIOR BAY 5420-01-470-5824

The IRB warranty period of performance provides complete “bumper to bumper” coverage for a period of 13 months. Prior to unit handoff, the IRB bays can be placed into storage for up to 9 months without a negative impact to the warranty period. The warranty start date begins at customer handoff, upon the acceptance and signing for the IRB bays. GDSBS POC is:

General Dynamics Santa Bárbara Sistemas GmbH

Customer Service Department

Barbarossastrasse 30

67655 Kaiserslautern, Germany

Phone: +49 (0) 631 3616 309

Fax: +49 (0) 631 3616 396

E-Mail: service@gdsbs.de

For warranty information covering the CBT, refer to TM 5-5420-234-15, Warranty Program for the Common Bridge Transporter (CBT). There is no warranty for the BAP.

NOMENCLATURE CROSS-REFERENCE LIST

Refer to the Glossary in the back of this TM for a list of TM nomenclature and common nomenclature.

LIST OF ABBREVIATIONS/ACRONYMS

Refer to the Glossary in the back of this manual for a list of abbreviations/acronyms that appear in this TM. For a list of standard abbreviations, refer to MIL-STD-12.

SAFETY, CARE, AND HANDLING

Observe all warnings, cautions, and notes prior to performing a maintenance task. If uncertain how to perform any part of a given task, ask the maintenance supervisor for assistance.

METRIC SYSTEM

All hardware on the IRB bays is metric and will require the use of metric tools.

END OF WORK PACKAGE

CHAPTER 1

DESCRIPTION AND THEORY OF OPERATION FOR IMPROVED RIBBON BRIDGE (IRB)

Section I.	Equipment Description and Data	WP 0002 00
Section II.	Theory of Operation	WP 0004 00

DESCRIPTION AND THEORY OF OPERATION

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

Section I. EQUIPMENT DESCRIPTION AND DATA
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Equipment Characteristics, Capabilities, and Features	0003 00-1
Location and Description of Major Components	0003 00-2
Differences Between Models	0003 00-6
Differences Between IRB and IFB	0003 00-6
Equipment Data	0003 00-9
Equipment Configuration	0003 00-10
Location and Description of Data Plates	0003 00-12

END OF WORK PACKAGE

DESCRIPTION AND THEORY OF OPERATION

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16
(NSN 5420-01-470-5825) (P/N 12478918);

INTERIOR BAY M17
(NSN 5420-01-470-5824) (P/N 12478919).

Section I. EQUIPMENT DESCRIPTION AND DATA

THIS WORK PACKAGE SUPERSEDES WP 0003 00, DATED 8 APRIL 2003

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The **Improved Ribbon Bridge (IRB)** is a modular bridge having a roadway surface supported by a floating integral superstructure made of aluminum that functions as a ponton. A complete ribbon bridge consists of a ramp bay at each bank and the required number of longitudinally connected interior bays spanning between them. The IRB has a roadway width of 22 ft (6.7 m). Adjacent to the roadway is a 2 ft 5 in. (0.8 m) walkway on the outer pontons. IRB crossing weight capacities are listed in TM 5-5420-278-10. The IRB can be used for rafting operations by using one or more interior bays joined with a ramp bay at each end. The IRB-R and IRB-I can be individually assembled longitudinally by the bridge crew, with the assistance of bridge erection boats (BEB), at a rate of one bay per minute. In addition, IRB-R and IRB-I can be assembled with Improved Float Bridge (IFB) ramp and interior bays at a rate of one bay every two minutes or less. An IRB bay is retrievable in five minutes or less. Each bay is transported, launched, and retrieved in a folded condition on a ribbon bridge transporter.

IRB Interior Bay (IRB-I). The IRB-I is a four-ponton folding module consisting of two inner pontons and two outer pontons. Each inner ponton is divided into two watertight compartments. The IRB-I unfolds automatically once released and afloat. IRB-Is are connected to each other by first manually engaging four upper couplings, followed by two lockpins on the inner pontons. The lockpins act as bearing points between consecutively joined bays, thus allowing the entire bridge to hinge with the weight of a moving vehicle and uneven water conditions.

IRB Ramp Bay (IRB-R). The IRB-R is a four-ponton module that functions similar to the IRB-I, but differs substantially in design. The ramp end of the inner pontons extends lengthwise, beyond the outer pontons, and slopes down, forming the ramp edge. The sides of the outer pontons are slightly tapered toward the ramp end, and attaching ramp plates are provided. The IRB-R contains a manually controlled raising mechanism that is utilized when joined to an IRB-I. The angle or height of the IRB-R can be adjusted to meet various bank conditions. The IRB-R also contains two lockable, self-draining stowage boxes recessed in the outer pontons.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

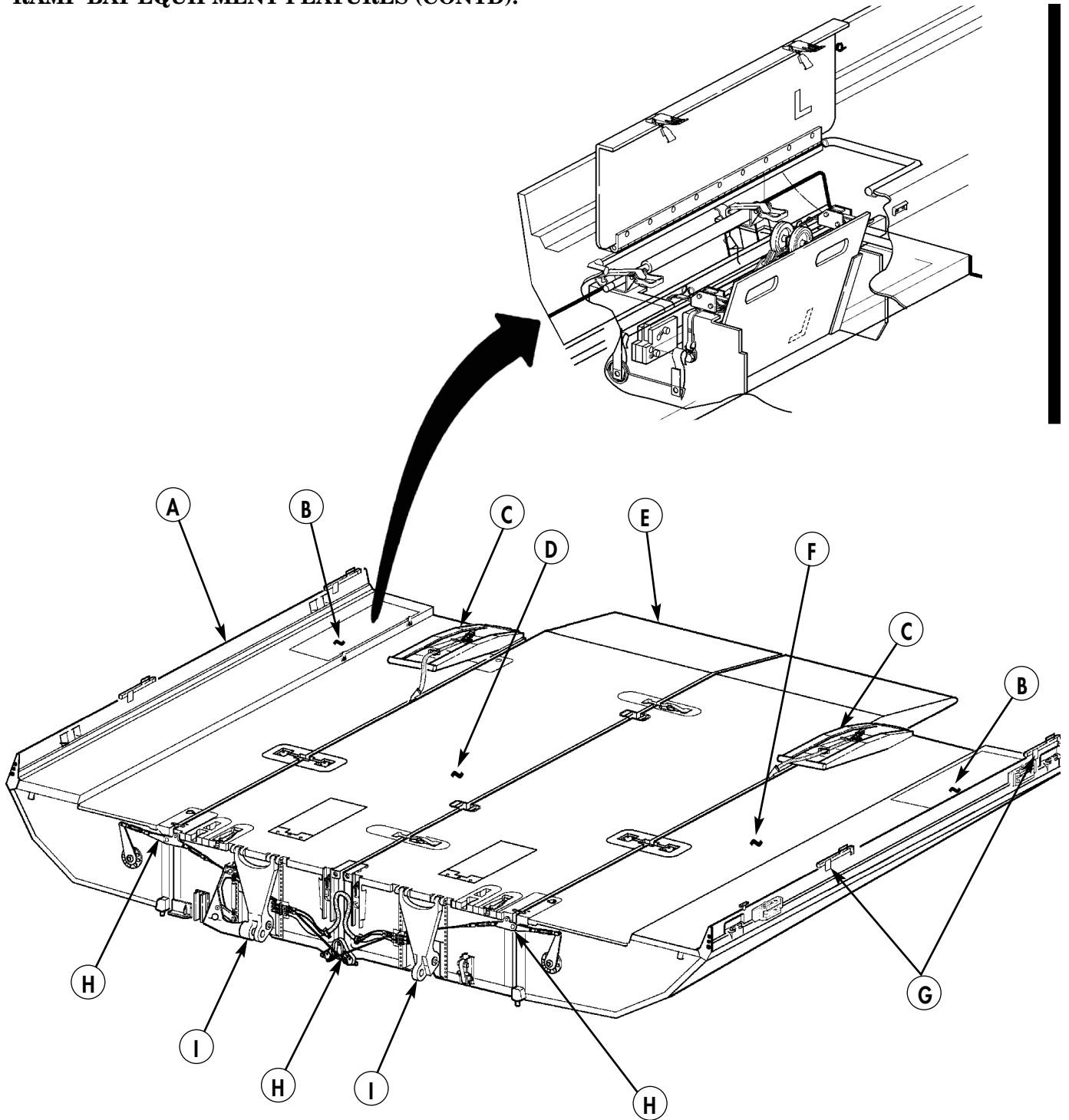
Major components and equipment features of the IRB-R and IRB-I are identified and described below. Locate the desired component by matching its description callout with the corresponding illustration callout on the opposite page.

RAMP BAY EQUIPMENT FEATURES:

- (A) OUTER PONTON** – A non-compartmentalized structure that functions as a float to support loads placed on its top (walkway) surface, and provides additional bouyancy to the inner ponton. The outer ponton contains a stowage compartment for equipment and tools. Left and right outer pontons are not interchangeable.
- (B) STOWAGE COMPARTMENT** – A compartment in each outer ponton (ramp bay only) between the walkway and splash plate for holding the Basic Issue Items (BII) necessary for IRB operation. For installation and operation of (BII) equipment refer to TM 5-5420-278-10. The following items and BII items can be stowed on the ramp bay:
 - (1) Two ropes for securing bay.
 - (2) Two hand levers for operation of pumps.
 - (3) IRB hoisting gear (lifting sling) for high-bank launch.
 - (4) Spare Chem-lite tubes.
 - (5) Roadway tool for closing gap between inner-to-inner pontons.
 - (6) 19-mm wrench for removing ponton drain plugs.
 - (7) Coupling device for bay-to-bay connection.
 - (8) Two cover plates for preventing debris from entering hinge points on IRB-R.
 - (9) Two cleaning hooks for removing debris jammed in hinge points.
- (C) RAMP PLATES** – The two plates mounted on the outer pontons used to increase the width of the roadway approach ramp.
- (D) ROADWAY** – The top road surface of two adjoining inner and outer pontons having a 22 ft (6.7 m) wide load bearing area for vehicles and cargo.
- (E) INNER PONTON** – A non-compartmentalized structure that functions as a float to support loads placed on its top (roadway) surface. The inner ponton contains a pump and cylinder. Left and right inner pontons are not interchangeable.
- (F) WALKWAY** – The 2 ft 5 in. (0.8 m) wide top surface of the outer ponton for personnel crossing.
- (G) HANDRAIL** – A retractable railing, extending the full length of the bay, consisting of two stanchions and a cable mounted on each outer ponton splash plate.
- (H) UNFOLDING MECHANISM** – A system of cables, levers, and torsion bars located at the rear of the IRB-R, that automatically control the unfolding of the inner and outer pontons once the bay is launched. During retrieval, this mechanism works in reverse by pulling the outer pontons up into the folded position simultaneously, as the entire bay is lifted from the water via the transporter.
- (I) RAISING MECHANISM** – The pump, cylinder, and yoke assembly, contained on each of the two inner pontons, used for raising and lowering the ramp bay.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

RAMP BAY EQUIPMENT FEATURES (CONTD):



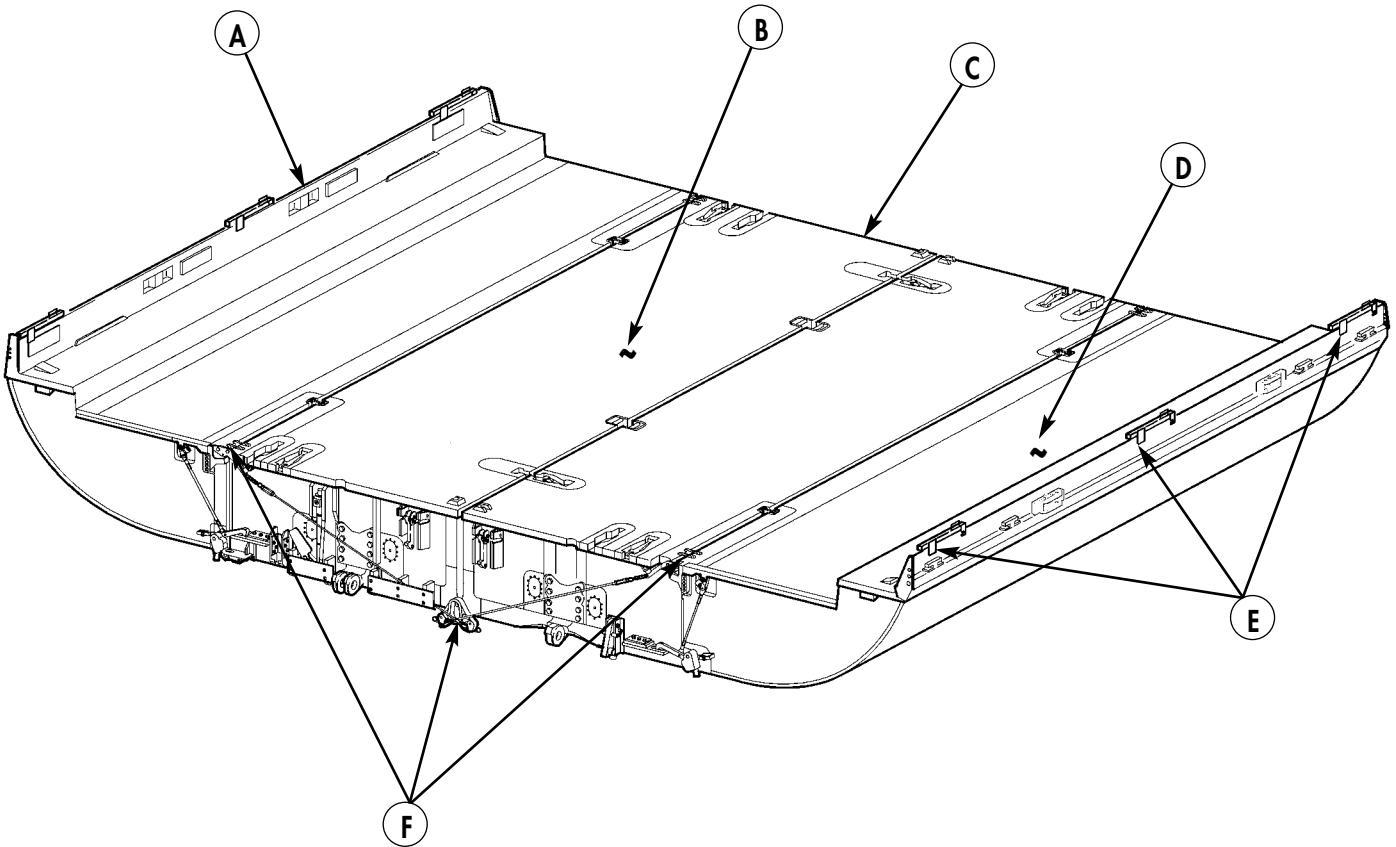
RAMP BAY (UNFOLDED)

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)**INTERIOR BAY EQUIPMENT FEATURES:**

- (A) OUTER PONTON** – A non-compartmentalized structure that functions as a float to support loads placed on its top (walkway) surface, and provides additional bouyancy to the inner ponton. Left and right outer pontons are interchangeable.
- (B) ROADWAY** – The top road surface of two adjoining inner and outer pontons having a 22 ft (6.7 m) wide load bearing area for vehicles and cargo.
- (C) INNER PONTON** – A non-compartmentalized structure that functions as a float to support loads placed on its top (roadway) surface. Left and right inner pontons are interchangeable.
- (D) WALKWAY** – The 2 ft 5 in. (0.8 m) wide top surface of the outer ponton for personnel crossing.
- (E) HANDRAIL** – A retractable railing, extending the full length of the bay, consisting of three stanchions and a rope mounted on each outer ponton splash plate.
- (F) UNFOLDING MECHANISM** – A system of cables, springs, and levers, located on both ends of the IRB-I, that automatically control the unfolding of the inner and outer pontons once the bay is launched. During retrieval, this mechanism works in reverse by pulling the outer pontons up into the folded position simultaneously, as the entire bay is lifted from the water via the transporter.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

INTERIOR BAY EQUIPMENT FEATURES (CONTD):



INTERIOR BAY (UNFOLDED)

DIFFERENCES BETWEEN MODELS

There are no differences between models for individual units of the IRB interior or ramp bays. The IRB is a redesigned and improved bridge that functions similar to its older Improved Float Bridge (IFB) counterpart. The IRB's interior and ramp bays can be interconnected with IFB bays.

DIFFERENCES BETWEEN IRB AND IFB

The IRB has been designed to connect with IFB bays interchangeably, but there are many significant differences in its appearance and operation. The following list is provided to assist maintenance personnel in identifying IRB design features that differ from the IFB. Refer to TM 5-5420-278-10 for operation of IRB. Refer to TM 5-5420-209-12 for operation of IFB.

Table 1. Differences Between IRB and IFB.

IRB ASSEMBLY	DIFFERENCE IN CONFIGURATION FROM IFB
RAMP BAY	
Inner ponton	New structural design; ramp end is contiguous; no folding ramp plates
Outer ponton	<ol style="list-style-type: none"> 1. Redesigned; revised bow shape 2. Raised splash plate 3. Redesigned cleats 4. Reinforced deck 5. Redesigned load receiving recesses for redesigned rafting brackets, air-transport, and load-retaining system. 6. No retaining cable fixing strut 7. No unfolding mechanism lever box 8. No ramp plate lifting device fixing points or poles
Lower lock-drive	Metric jackscrew
Upper coupling, longitudinal	Locking recesses removable and made of steel
Upper coupling, transverse	None
Travel latch	None
Foldlock	None
Outer ponton lock	New design; swivel hook actuated from deck
Unfolding mechanism	<ol style="list-style-type: none"> 1. New design: torsion bar in outer ponton 2. Redesigned unfolding lever/stabilizer
Lifting lug, front and rear	Both fixed
Bilge outlets	<ol style="list-style-type: none"> 1. Redesigned outlets for draining folded bay 2. Redesigned outlets for pumping out unfolded bay

DIFFERENCES BETWEEN IRB AND IFB (Contd)

Table 1. Differences Between IRB and IFB (Contd).

IRB ASSEMBLY	DIFFERENCE IN CONFIGURATION FROM IFB
Railing	New design
Stowage box and lid	Integrated in outer ponton; lid even with top of deck
Walkway ramp plates	<ol style="list-style-type: none"> 1. New design including fixing and securing on ponton 2. Provision for installation of one additional ramp plate on each ponton
PUMP SYSTEM	
Cylinder	<ol style="list-style-type: none"> 1. New design having increased stroke and modified bearing 2. Modified pin for cylinder
Pump	<ol style="list-style-type: none"> 1. New internal design 2. Larger fluid reservoir 3. Redesigned hydraulic controls 4. Modified access cover and revised operating instructions data plate 5. Compensation line between fluid reservoirs 6. Redesigned hose guides including protection loom
INTERIOR BAY	
Inner ponton	<ol style="list-style-type: none"> 1. Redesigned ends having integrated access holes for main couplings 2. Steel main couplings
Outer ponton	<ol style="list-style-type: none"> 1. Redesigned; revised bow shape 2. Raised splash plate 3. Redesigned cleats 4. Reinforced deck 5. Redesigned load receiving recesses for redesigned rafting brackets, air-transport, and load-retaining system 6. No unfolding mechanism lever box 7. No retaining cable fixing strut
Lower lock-drive	Metric jackscrew
Upper coupling, longitudinal	Locking recesses removable and made of steel
Upper coupling, transverse	None
Travel latch	None
Foldlock	None
Outer ponton lock	New design; lock is engaged/disengaged from deck

DIFFERENCES BETWEEN IRB AND IFB (Contd)

Table 1. Differences Between IRB and IFB (Contd).

IRB ASSEMBLY	DIFFERENCE IN CONFIGURATION FROM IFB
Unfolding mechanism	<ol style="list-style-type: none"> 1. Redesigned unfolding lever/stabilizer and new double hinge connector 2. Rigid lifting lug; two per bay
Bilge outlets	<ol style="list-style-type: none"> 1. Redesigned outlets for draining folded bay 2. Redesigned outlets for pumping out unfolded bay
Lifting lugs	Cables at both ends of bay
Handrail	New design

EQUIPMENT DATA

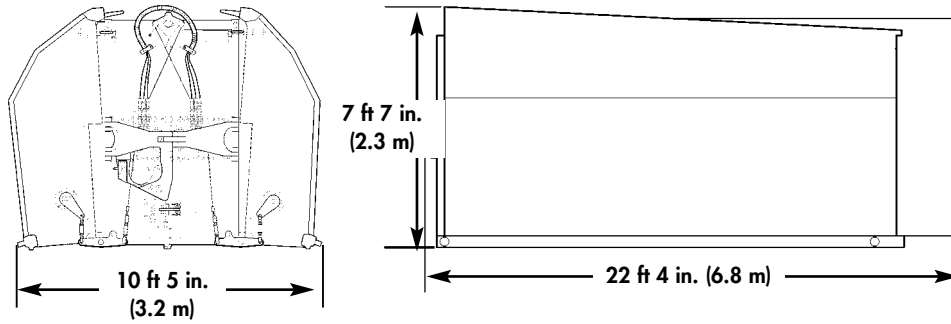
The following table has been prepared to assist in referencing equipment data.

Table 2. IRB Equipment Data.

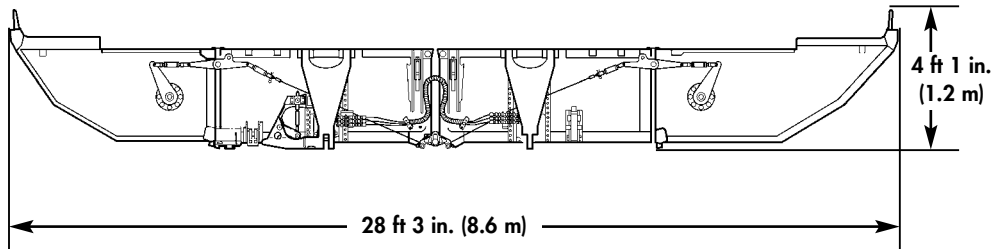
	STANDARD	METRIC
1. CAPACITIES		
Ramp Bay Pump		
Reservoir ULTRA-SAFE 271 (P/N 29102714)	0.8 gal.	3.03L
Ramp Bay Cylinder	2 gal.	7.72L
2. RAMP BAY		
Length	22 ft 4 in.	6.8 m
Width		
Folded	10 ft 5 in.	3.2 m
Unfolded	28 ft 3 in.	8.6 m
Roadway Width	22 ft	6.7 m
Single-Lane Traffic	14 ft 9 in.	4.5 m
Two-Lane Traffic	11 ft	3.4 m
Walkway Width	2 ft 5 in.	0.8 m
Height		
Folded	7 ft 7 in.	2.3 m
Unfolded	4 ft 1 in.	1.2 m
Stowage Compartment Opening		
Length	3 ft 6 in.	1.1 m
Width	1 ft 1 in.	33.5 cm
Depth	1 ft 6 in.	45.7 cm
Weight	14,000 lb	6350 kg
Pump, Weight	53 lb	24 kg
Cylinder, Weight	342 lb	155.3 kg
Center of Gravity (inboard of connecting lock pin)	8 ft 8 in.	2.7 m
Cubage	806.6 ft ³	22.8 m ³
3. INTERIOR BAY		
Length	22 ft 7 in.	6.9 m
Width		
Folded	10 ft 10 in.	3.3 m
Unfolded	28 ft 2 in.	8.6 m
Roadway Width	22 ft	6.7 m
Single-Lane Traffic	14 ft 9 in.	4.5 m
Two-Lane Traffic	11 ft	3.4 m
Walkway Width	2 ft 5 in.	0.8 m
Height		
Folded	7 ft 8 in.	2.3 m
Unfolded	4 ft 5 in.	1.3 m
Weight	14,000 lb	6350 kg
Center of Gravity (inboard of connecting lock pin)	11 ft 5 in.	3.5 m
Cubage	1412.6 ft ³	40.00 m ³

EQUIPMENT CONFIGURATION

The IRB model ramp bay M16 and model interior bay M17 dimensions are detailed below.

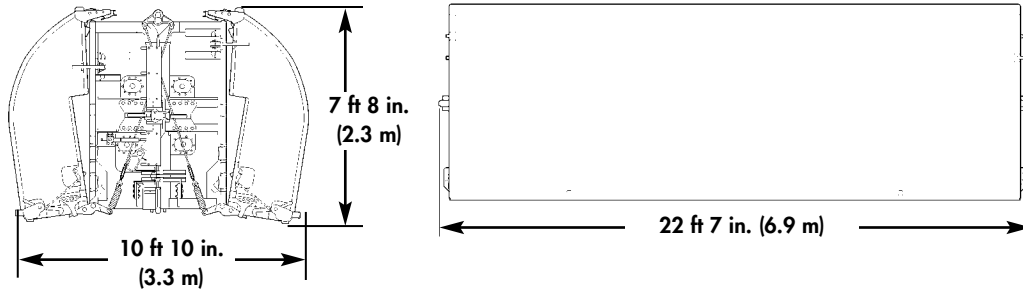


RAMP BAY M16, FOLDED

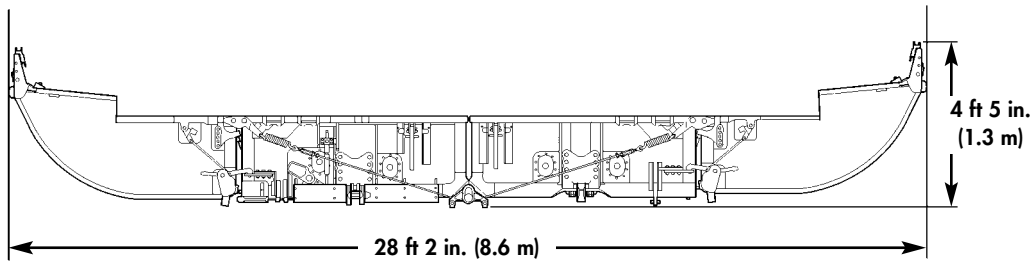


RAMP BAY M16, UNFOLDED

EQUIPMENT CONFIGURATION (Contd)



INTERIOR BAY M17, FOLDED

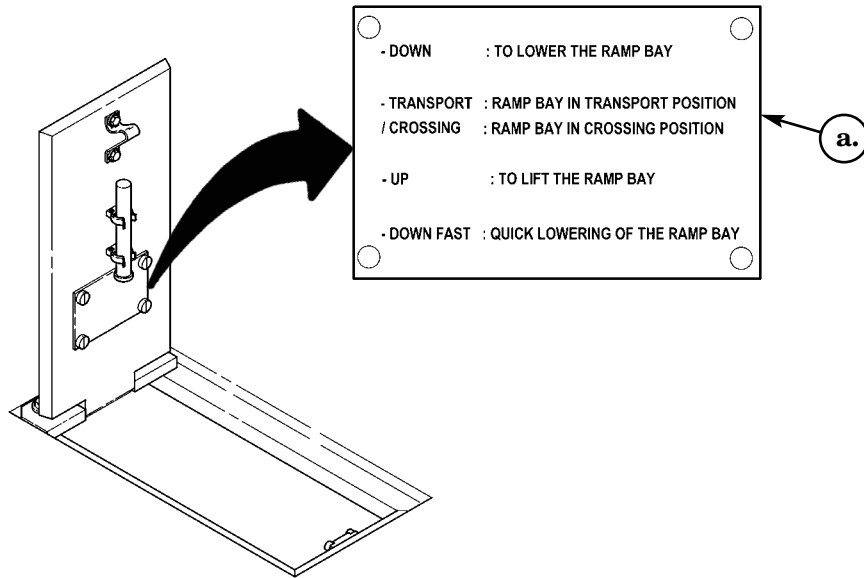


INTERIOR BAY M17, UNFOLDED

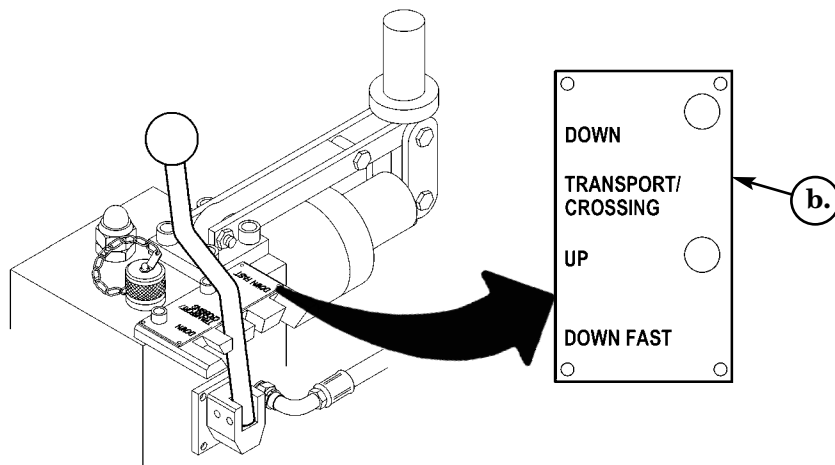
LOCATION AND DESCRIPTION OF DATA PLATES

All data plates and mounting screws can be found in the RPSTL, WP 0085 00. If any plate is worn, broken, painted over, missing, or unreadable, it must be replaced.

- a. **PUMP OPERATION** — This data plate, located on the back side of both pump access covers, identifies the four pump control valve positions for operation of the ramp bay.



- b. **PUMP CONTROL VALVE** — The data plate, located on the pump reservoir adjacent to the control valve lever, identifies the four control lever positions.

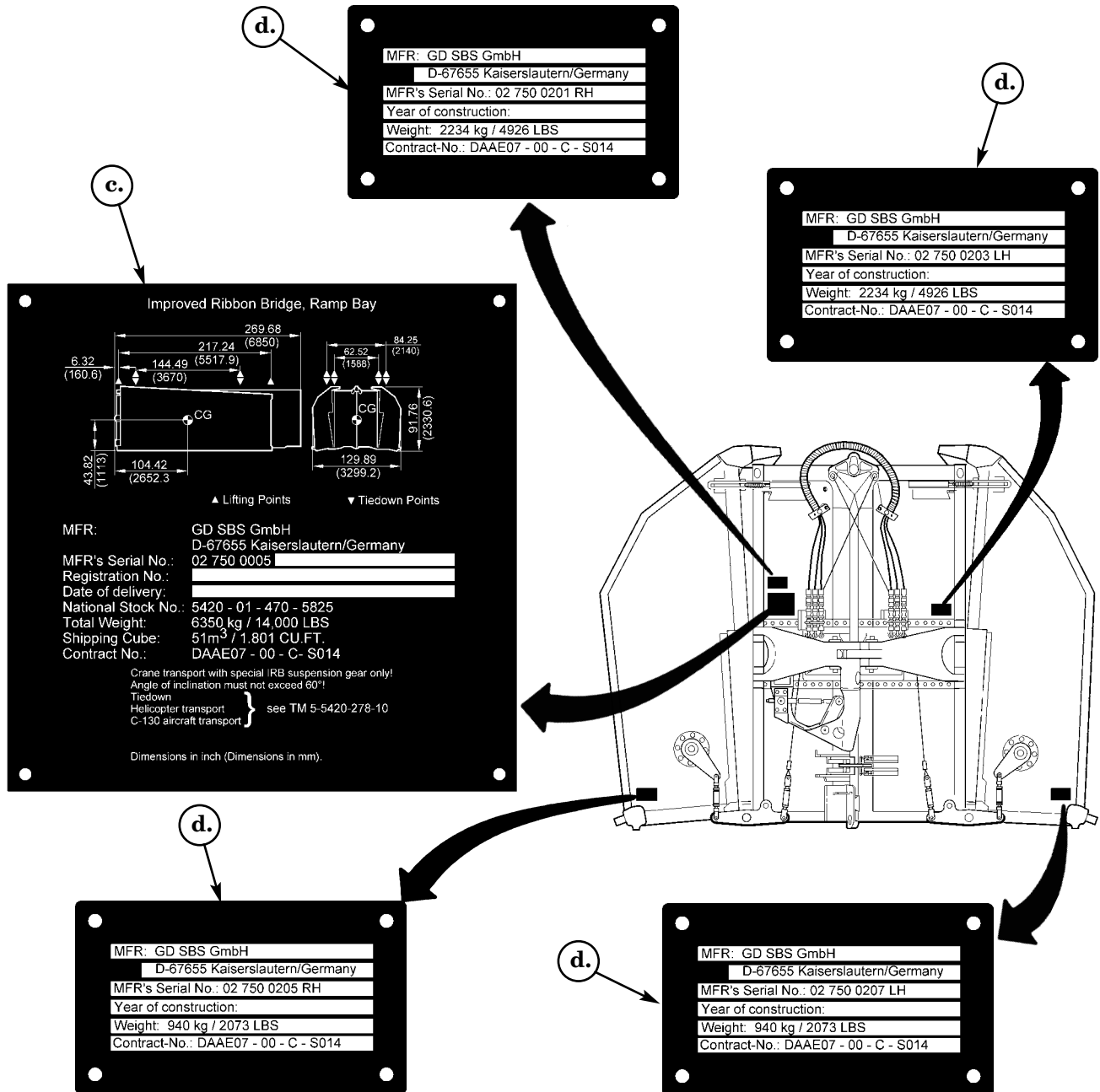


LOCATION AND DESCRIPTION OF DATA PLATES (Contd)

NOTE

GD SBS, formally EWK, is the manufacturer of the IRB. Due to the company name change, IRB bays may contain data plates having GD SBS or EWK listed as the manufacturer.

- c. **IMPROVED RIBBON BRIDGE, RAMP BAY** – This data plate, located on the left-hand inner ponton at the connecting end (front), is the manufacturer’s identification and shipping data plate for the IRB-R.
- d. **MFR** – This data plate, located on each inner and outer ponton at the connecting end (front) of the ramp bay, is the manufacturer’s identification data plate for each ponton.

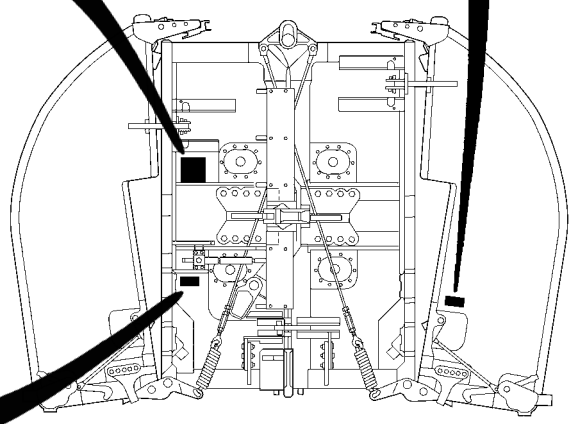
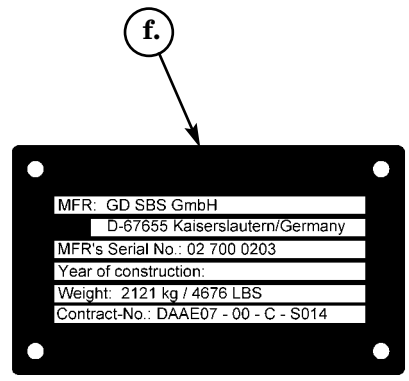
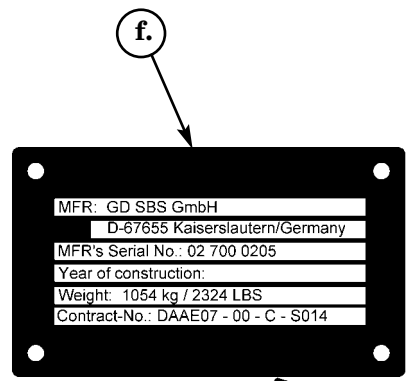
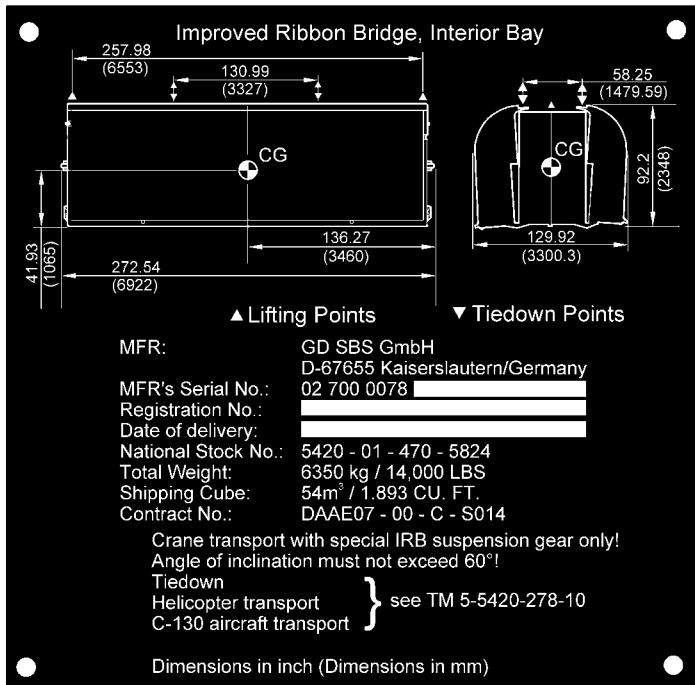


LOCATION AND DESCRIPTION OF DATA PLATES (Contd)

NOTE

GD SBS, formally EWK, is the manufacturer of the IRB. Due to the company name change, IRB bays may contain data plates having GD SBS or EWK listed as the manufacturer.

- e. **IMPROVED RIBBON BRIDGE, INTERIOR BAY** – This data plate, located on the left-hand inner ponton at one of the connecting ends, is the manufacturer’s identification and shipping data plate for the IRB-I.
- f. **MFR** – This data plate, located on each inner and outer ponton at the connecting end (front) of the ramp bay, is the manufacturer’s identification data plate for each ponton.



END OF WORK PACKAGE

DESCRIPTION AND THEORY OF OPERATION

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

Section II. THEORY OF OPERATION

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Function of the Ponton Locks	0005 00-1
Function of the Ponton Couplings	0005 00-1
Function of the Pump System	0005 00-2

END OF WORK PACKAGE

DESCRIPTION AND THEORY OF OPERATION

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

Section II. THEORY OF OPERATION

THIS WORK PACKAGE SUPERSEDES WP 0005 00, DATED 8 APRIL 2003

GENERAL

This section explains how components of the IRB-I and IRB-R work. A functional description of the IRB components and their operation is covered in the following paragraphs.

HOW THE BRIDGE IS LAUNCHED

Unfolding and folding operations involve the action of the bay's two inner and outer pontoons and the cables, levers, and springs or torsion bars that make up the unfolding/folding mechanism. Once the bay is launched, the actual movement or unfolding is caused by the forces of gravity and buoyancy generated as the bay is released and begins to float. The unfolding mechanism's function is to assist and dampen the movement of the pontoons about their hinged joints. The unfolding of the bay is automatic, whereas, to fold the bay it must be lifted from the end at the center. The lifting force (provided by the transporter) causes the inner pontoons to move about their hinged joints, and their movement forces the unfolding/folding mechanism's cables, levers, and springs (IRB-I) or torsion bars (IRB-R) to simultaneously pull the outer pontoons up, about their hinged joints, thus folding the bay.

FUNCTION OF THE LOCKS

The ponton locks are designed to hold the bay in the folded or unfolded position. When an IRB-R or IRB-I is placed in the folded position, its inner and outer pontoons are held by foldlocks and travel latches. These locks are manually engaged or disengaged during a controlled launch, retrieval, transport, and ground storage of the bay, but are not engaged when the bay will be used in the unfolded position. To secure the IRB-R or IRB-I in the unfolded position, the bay's inner pontoons are locked by two manually engaged couplings. The bay's outer pontoons are then secured by manually engaging two swivel hooks and two swivel plates on the IRB-R or four outer ponton locks on the IRB-I. Once secured in the unfolded position, the bay is ready for bridge or raft construction.

FUNCTION OF THE COUPLINGS

The ponton couplings are the connection points for locating and holding IRB bays together in the construction of a bridge or raft. The upper couplings are designed to secure the bay to another bay until the lower lock pins can be engaged. The lower main coupling at each end of the inner ponton receives the lower lock pin. The lower main coupling is designed as a connecting eye, is made of steel, and is bolted to the inner ponton and a steel tie. The steel tie extends longitudinally the full length of the inner ponton. In a bridge or raft configuration, the loads placed on the adjoining bays are carried by the steel tie rather than the aluminum structure of the inner ponton itself. The upper coupling is made of high-tensile steel and utilizes steel insert blocks bolted to the inner pontoons. During bridging operations, the longitudinal upper couplings, except for those on the ramp bay, are opened to allow the bays to hinge at the lower main couplings. During rafting operations, the longitudinal upper couplings are closed for adequate rigidity.

FUNCTION OF THE PUMP SYSTEM

The pump system provides the mechanical means to change the angle of the entire ramp bay longitudinally, when connected to an interior bay, by raising or lowering the height of the ramp end of the roadway to meet a given river bank elevation. In operation, two manually operated pumps supply pressure to two cylinders, each connected to a yoke on the inner pontoons. The cylinders act to push the yokes out simultaneously at the bottom, and as the yokes are extended, the IRB-R hinges upward against the weight of the adjoining IRB-I.

END OF WORK PACKAGE

CHAPTER 2

UNIT TROUBLESHOOTING FOR IMPROVED RIBBON BRIDGE (IRB)

Section I.	Introduction to Troubleshooting Table of Contents	WP 0006 00
Section II.	Unit Troubleshooting Procedures Table of Contents	WP 0008 00

UNIT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

Section I. INTRODUCTION TO TROUBLESHOOTING

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UNIT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

INTRODUCTION TO TROUBLESHOOTING

GENERAL

WARNING

Operation of a deadlined IRB without preliminary inspection prior to performing troubleshooting procedures may result in damage to equipment or injury to personnel.

- a. This chapter provides the necessary troubleshooting procedures to diagnose mechanical, electrical, and hydraulic system malfunctions of the IRB.
- b. The symptom index has its own work package number and is used to identify the malfunction and locate the troubleshooting procedure to diagnose the problem.
- c. Each troubleshooting procedure lists a description of the malfunction followed by a step or sequence of steps to check the operation of a component. Then, in the order of probability, substeps instruct the user to determine if a condition exists through a check, inspection, or test, followed by the corrective action required to solve the malfunction.
- d. Prior to performing any troubleshooting procedure, the following recommendations should be observed:
 - (1) Check the Equipment Inspection and Maintenance Worksheet, DA Form 2404, and Maintenance Request Form, DA Form 5504, to find out why the equipment has been deadlined. Note the operator's written description of the problem and, whenever possible, ask the operator; this can save time and effort in diagnosing the malfunction.
 - (2) It is best not to assume the operator's diagnosis is correct even if it sounds accurate. Always perform the appropriate troubleshooting procedure(s) to verify the cause of the problem. Performing a corrective action without proof of a fault wastes time and increases the maintainability of the equipment.
 - (3) Always first isolate the system where the malfunction occurs, then locate the component and perform corrective action in the order listed.
 - (4) Use approved mechanical, electrical, and hydraulic system repair practices provided in technical manuals, field manuals, and technical bulletins listed in WP 0082 00 of this manual.
 - (5) Use the approved special tools and test equipment to determine the known parameters for isolating a fault.
 - (6) Fill out and attach an Exchange Tag, DA Form 2402, to any component that will be exchanged as a core and turned in for repair or rebuilding at the direct support or general support maintenance level.
- e. This chapter lists the most common malfunctions that may occur. When a malfunction occurs that is not listed in the Mechanical Troubleshooting Symptom Index, WP 0009 00, or Pump System Troubleshooting Symptom Index, WP 0011 00, notify direct support maintenance.

END OF WORK PACKAGE

UNIT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

Section II. UNIT TROUBLESHOOTING PROCEDURES
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WP Title	WP Sequence No.-Page No.
Mechanical Troubleshooting Symptom Index	0009 00-1
Mechanical Troubleshooting	0010 00-1
Pump System Troubleshooting Symptom Index	0011 00-1
Pump System Troubleshooting	0012 00-1

END OF WORK PACKAGE

UNIT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16
 NSN 5420-01-470-5825 P/N 12478918;
 INTERIOR BAY M17
 NSN 5420-01-470-5824 P/N 12478919.

MECHANICAL TROUBLESHOOTING SYMPTOM INDEX

MALFUNCTION NO.	MALFUNCTION	TROUBLESHOOTING WP-PAGE
1.	Bay will not unfold automatically when launched.	0010 00-1
2.	Bay will not fold automatically during retrieval.	0010 00-2
3.	Foldlock will not engage or hold when engaged	0010 00-2
4.	Inner or outer ponton leaking	0010 00-2
5.	Outer ponton lock will not engage or hold when engaged (interior bay only)	0010 00-3
6.	Handrail stanchion does not hold when set	0010 00-3
7.	Lower lock-drive will not engage	0010 00-3
8.	Swivel hook will not engage or hold when engaged (ramp bay only) . .	0010 00-3
9.	Travel latch will not release.	0010 00-4
10.	Upper coupling will not engage in receptacle block.	0010 00-4
11.	Upper coupling will not release from receptacle block.	0010 00-4
12.	Lower coupling jammed and will not line up	0010 00-4

END OF WORK PACKAGE

UNIT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

MECHANICAL TROUBLESHOOTING

NOTE

Refer to the general instructions in Introduction to Troubleshooting, WP 0007 00, prior to performing mechanical troubleshooting.

Unit Mechanical Troubleshooting

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

1. BAY WILL NOT UNFOLD AUTOMATICALLY WHEN LAUNCHED

Step 1. Check for loose or broken cable assemblies.

Step 2. Check to see all foldlocks and travel latches are unlatched.

Unlatch foldlock and/or travel latch levers (TM 5-5420-278-10).

Step 3. Check travel latch for damage (malfunction 9).

Step 4. Check for obstructions or jamming caused by rocks or debris.

Step 5. Check unfolding stabilizers for damage (WP 0024 00 or WP 0043 00).

a. If inner ponton rail brackets or connecting links are bent or damaged, replace damaged parts (WP 0024 00). If link hinges (interior bay only) are damaged, replace damaged parts (WP 0043 00).

b. If stabilizer bar, levers, or straight pins are bent or broken, straighten or replace damaged parts (WP 0024 00 or WP 0043 00).

Step 6. Check for broken torsion bar.

If torsion bar lever turnbuckle is loose or torsion bar lever can be moved by hand, torsion bar is broken.

Repair or replace broken torsion bar (WP 0022 00).

END OF TESTING

Unit Mechanical Troubleshooting (Contd)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

2. BAY WILL NOT FOLD AUTOMATICALLY DURING RETRIEVAL

- Step 1. Check to see inner-to-inner ponton upper couplings are unlatched.
Unlatch upper couplings (TM 5-5420-278-10).
- Step 2. Check to see ponton swivel hooks are disengaged (ramp bay only).
Disengage swivel hooks (TM 5-5420-278-10).
- Step 3. Check to see outer ponton locks are released (interior bay only).
Release outer ponton locks (TM 5-5420-278-10).
- Step 4. Check for loose or broken cable assembly.
 - a. If loose, adjust cable (WP 0020 00 or WP 0040 00).
 - b. If broken or stretched, replace cable (WP 0020 00 or WP 0040 00).
- Step 5. Check for obstructions or jamming caused by rocks or debris.
Free and remove obstruction.
- Step 6. Check for broken torsion bar turnbuckle (ramp bay only).
If broken or damaged, replace torsion bar turnbuckle (WP 0022 00).
- Step 7. Check for water in outer pontoons.
If outer pontoons have water, pump out pontoons (TM 5-5420-278-10).

END OF TESTING

3. FOLDLOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED

- Step 1. Check for bent foldlock spring holder or damaged springs (ramp bay only).
Straighten foldlock spring holder if bent, and replace springs if damaged (WP 0029 00).
- Step 2. Check for missing or damaged foldlock springs (interior bay only).
Replace missing or damaged springs (WP 0026 00).
- Step 3. Check for bent foldlock lever and support brackets.
Straighten support brackets if bent or binding, and replace bent lever (WP 0029 00 or WP 0046 00).
- Step 4. Check foldlock catch on outer ponton for wear, or if bent or damaged.
Repair or replace catch if worn or damaged. Notify direct support maintenance.

END OF TESTING

4. INNER OR OUTER PONTON LEAKING

- Step 1. Check for loose, damaged, or missing bilge plugs and bilge plug seals.
 - a. Tighten loose bilge plugs (TM 5-5420-278-10).
 - b. Replace missing or damaged bilge plugs and seals (WP 0053 00).
- Step 2. Inspect ponton for structural damage such as cracks, broken welds, or holes.
 - a. Repair visible structural damage by welding; notify direct support maintenance.
 - b. If no visible structural damage can be found, perform ponton leak test (WP 0059 00).

END OF TESTING

Unit Mechanical Troubleshooting (Contd)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

5. OUTER PONTON LOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED (INTERIOR BAY ONLY)

Step 1. Check for bent or damaged outer ponton lock/release lever, receiver plate, or turnbuckle.

If bent or damaged, straighten or replace lock/release lever, receiver plate, or turnbuckle (WP 0045 00).

Step 2. Check for correct outer ponton lock adjustment.

Perform outer ponton lock adjustment (WP 0045 00).

END OF TESTING

6. HANDRAIL STANCHION DOES NOT HOLD WHEN SET

Step 1. Check handrail stanchion and support brackets for obstructions or debris lodged at base.

Free and remove debris.

Step 2. Check for broken tension spring and bent stanchion or support brackets.

Straighten or replace bent or broken support brackets, stanchion, or spring (WP 0052 00).

END OF TESTING

7. LOWER LOCK-DRIVE WILL NOT ENGAGE

Step 1. Check for possible misalignment of ponton connecting eyes.

Align bay connecting eyes (malfunction 12).

Step 2. Check for seized jackscrew at upper and lower trunnion nuts.

Lubricate jackscrew.

Step 3. Check for bent jackscrew or damaged threads.

If threads are damaged or jackscrew is bent, replace (WP 0030 00 or WP 0050 00).

Step 4. Check lower lock-drive assembly for jamming due to debris or damage resulting in misalignment.

Remove debris or replace damaged parts (WP 0030 00 or WP 0050 00).

Step 5. Check for bent or damaged connecting eyes on yokes (ramp bay only).

Replace yoke if bent or damaged (WP 0030 00).

Step 6. Check for bent or damaged connecting eyes on inner ponton main lower coupling (interior bay only).

If damaged, notify support maintenance for repair, or replace main lower coupling (WP 0048 00).

END OF TESTING

8. SWIVEL HOOK WILL NOT ENGAGE OR HOLD WHEN ENGAGED (RAMP BAY ONLY)

Step 1. Check for obstructions such as rocks or debris in swivel hook or retainer pin cavities.

Remove debris from swivel hook or retainer pin.

Step 2. Check retainer pin for proper adjustment.

Adjust retainer pin (WP 0027 00).

Step 3. Check for bent or damaged tension spring assembly.

If bent or damaged, straighten or replace tension spring assembly (WP 0026 00 or WP 0027 00).

END OF TESTING

Unit Mechanical Troubleshooting (Contd)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

9. TRAVEL LATCH WILL NOT RELEASE

Step 1. Check for bent or damaged upper and lower striker receptacles, latch bar, mounting brackets, or missing springs.

Straighten or replace bent or damaged parts (WP 0056 00).

Step 2. Check for clearance between pins on latch bar and upper and lower striker receptacles.

Adjust travel latch clearance (WP 0056 00).

END OF TESTING

10. UPPER COUPLING WILL NOT ENGAGE IN RECEPTACLE BLOCK

Step 1. Check for obstructions such as rocks or debris lodged in receptacle blocks.

Free and remove debris from area.

Step 2. Check gap between inner-to-inner pontons.

Close gap using connecting strip and crowbar until inner-to-inner ponton upper couplings can be engaged.

Step 3. Check alignment during bay-to-bay connection.

a. Level top surface of adjoining roadways using coupling tool.

b. Draw adjoining bays closer together using grip hoist (TM 5-5420-278-10).

Step 4. Check for bent or heavily worn lever or receptacle block.

a. Replace bent or worn lever or removable receptacle block (WP 0057 00).

b. If transverse receptacle block is worn or damaged, notify supervisor.

END OF TESTING

11. UPPER COUPLING WILL NOT RELEASE FROM RECEPTACLE BLOCK

Step 1. Check to see if lower lock-drive pins were inadvertently disengaged before the upper couplings.

Use grip hoist and pull bays together until bay-to-bay upper couplings can be released (TM 5-5420-278-10).

Step 2. Check for obstructions between inner-to-inner pontons.

Remove obstructions and close gap using connecting strip and crowbar until inner-to-inner ponton upper couplings can be released (TM 5-5420-278-10).

END OF TESTING

12. LOWER COUPLING JAMMED AND WILL NOT LINE UP

Step 1. Check for obstruction between bays.

Remove obstruction from between bays using crowbar.

Step 2. Check alignment of top surface of adjoining roadways.

a. Level top surface of roadways using coupling tool.

b. Draw adjoining bays closer together using grip hoist (TM 5-5420-278-10).

c. Extend yokes (ramp bay only) until lower lock drive pins can be engaged (TM 5-5420-278-10).

d. If lower lock-drive pins still will not engage, check lower lock-drive for damage (malfunction 7).

END OF TESTING

END OF WORK PACKAGE

0010 00-4

UNIT TROUBLESHOOTING
RAPIDLY EMPLACED BRIDGE (REB)

HYDRAULIC SYSTEM TROUBLESHOOTING SYMPTOM INDEX

MALFUNCTION NO.	MALFUNCTION	TROUBLESHOOTING WP-PAGE
----------------------------	--------------------	------------------------------------

- | | | |
|----|---|-----------|
| 1. | Pump system will not raise bay (ramp bay only) | 0012 00-1 |
| 2. | Pump system will not hold bay in raised position
(ramp bay only) | 0012 00-2 |

END OF WORK PACKAGE

UNIT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

PUMP SYSTEM TROUBESHOOTING

THIS WORK PACKAGE SUPERSEDES WP 0012 00, DATED 8 APRIL 2003

NOTE

Refer to the general instructions in Introduction to Troubleshooting, WP 0007 00, prior to performing pump system troubleshooting.

Unit Pump System Troubleshooting

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

1. PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY)

Step 1. Check hose connections for proper installation.

Observe color coding on hose connections.

Step 2. Check for disconnected quick-disconnect couplings (WP 0078 00).

Connect quick-disconnect couplings.

Step 3. Check to see that both pump control levers are set to the UP position.

Set pump control valve to UP position (TM 5-5420-278-10) and raise bay.

Step 4. Check pump reservoir for low fluid level.

a. If empty or low, fill reservoir to correct level (TM 5-5420-278-10).

b. Bleed pump system of air (WP 0038 00).

Step 5. Check pump tubes and hoses for leaks.

a. If leak is found, repair or replace damaged tube or hose (WP 0037 00).
Bleed pump system (WP 0038 00).

b. If no leaks can be found, check hoses for correct installation (WP 0037 00).

Step 6. Check cylinder for external leak.

Repair cylinder if leaking; notify general support maintenance.

Step 7. Check pump for external leaks.

Repair pump if leaking; notify general support maintenance.

Step 8. Check pump control valves for leaks.

Replace pump control valves if leaking; notify general support maintenance.

Step 9. Check cylinder valve block for leaks.

Replace cylinder valve if leaking; notify general support maintenance.

END OF TESTING

*Unit Pump System Troubleshooting (Contd)***MALFUNCTION****TEST OR INSPECTION****CORRECTIVE ACTION****2. PUMP SYSTEM WILL NOT HOLD BAY IN RAISED POSITION (RAMP BAY ONLY)**

Step 1. Check hose connections for proper installation.

Observe color coding on hose connections.

Step 2. Check for disconnected quick-disconnect couplings (WP 0078 00).

Connect quick-disconnect couplings.

Step 3. Check position of both control valve levers.

Ensure both levers have been moved to the TRANSPORT/CROSSING position and are fully engaged in slot on selector (TM 5-5420-278-10).

Step 4. Check pump tubes and hoses for leaks.

If leak is found, repair or replace damaged tube or hose (WP 0037 00).
Bleed pump system (WP 0038 00).

Step 5. Check pump control valves for leaks.

Replace pump control valves if leaking; notify general support maintenance.

Step 6. Check cylinder valve block for leaks.

Replace cylinder block if leaking; notify general support maintenance.

Step 7. Check cylinder for internal leak.

Repair cylinder if leaking; notify general support maintenance.

END OF TESTING

END OF WORK PACKAGE

CHAPTER 3

UNIT MAINTENANCE INSTRUCTIONS FOR IMPROVED RIBBON BRIDGE (IRB)

Section I.	Service Upon Receipt	WP 0013 00
Section II.	Preventive Maintenance Checks and Services	WP 0015 00
Section III.	Ramp Bay Maintenance	WP 0019 00
Section IV.	Ramp Bay Pump System Maintenance	WP 0031 00
Section V.	Interior Bay Maintenance	WP 0039 00
Section VI.	General Maintenance, Ramp and Interior Bays	WP 0051 00

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

Section I. SERVICE UPON RECEIPT TABLE OF CONTENTS

WP Title	WP Sequence No.-Page No.
Service Upon Receipt of Material	0014 00-1
Installation Instructions	0014 00-1
Preliminary Servicing of Equipment	0014 00-1

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

SERVICE UPON RECEIPT

SERVICE UPON RECEIPT OF MATERIAL

When an IRB bay is first received by the using organization, it is the responsibility of the officer-in-charge to determine if it has been properly prepared for service by the supplier. It is also the responsibility of the officer-in-charge to ensure the bay is in operating condition. The operator will assist when performing service upon receipt inspections. Refer to TM 5-5420-278-10 when testing equipment for proper operation.

Upon receipt of a new or used IRB bay, the following procedure is to be followed:

1. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 361, Transportation Discrepancy Report.
2. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies per applicable service instructions (refer to DA PAM 738-750).
3. Check to see whether the equipment has been modified.

INSTALLATION INSTRUCTIONS

Prepare IRB bay(s) for use by performing the following installation procedures.

1. Install ramp plates and straps (ramp bay only) (refer to TM 5-5420-278-10).
2. Install handrails on bay (if removed) (refer to WP 0052 00).
3. Install bilge plugs on bay (if removed) (refer to TM 5-5420-278-10).
4. Add pump fluid to pumps as required (ramp bay only) (refer to TM 5-5420-278-10).
5. Install BII items on ramp bay in storage boxes (refer to TM 5-5420-278-10).

PRELIMINARY SERVICING OF EQUIPMENT

Perform the following tasks prior to releasing the equipment for use:

1. Perform preventive maintenance checks and services (PMCS) (refer to WP 0015 00).
2. Check all exterior surfaces of equipment for dirt, grease, oil, or any other existing debris. Refer to WP 0073 00 and clean as necessary.
3. Check all basic issue items (BII) (refer to TM 5-5420-278-10) to ensure they are present, in good condition, and properly mounted or stowed.
4. Check maintenance schedule for transporter and perform PMCS and lubrication on transporter and truck chassis as required (refer to TM 5-5420-278-10 and WP 0015 00).

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

TABLE OF CONTENTS

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Lubrication Instructions	0016 00-1
Preventive Maintenance Checks and Services (PMCS) Introduction	0017 00-1
Preventive Maintenance Checks and Services (PMCS)	0018 00-1

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LUBRICATION INSTRUCTIONS

THIS WORK PACKAGE SUPERSEDES WP 0016 00, DATED 8 APRIL 2003

GENERAL

This lubrication instruction is for unit maintenance and provides the lubrication requirements needed to support the Improved Ribbon Bridge (IRB). Included are Fluid Capacities, Lubricant Requirements, Lubrication Intervals, and Locations for lubricating the bridge.

SERVICE INTERVALS

Service intervals are for normal operation of the bridge in moderate temperatures, humidity, and atmospheric conditions. The intervals are hard-time intervals which are performed in accordance with the bridge's age, calendar time, or usage. The hard-time intervals are based on months of calendar times. An example of calendar intervals is: semiannually (every 6 months), annually (every 12 months), or biannually (every 24 months). The lubrication for the bridge is to be performed at whichever interval occurs.

For equipment under manufacturer's warranty, hard-time fluid service intervals shall be followed. Hard-time intervals may be shortened if lubricants are used under adverse conditions, including longer-than-usual operation. Hard-time intervals may be extended during periods of low activity, although adequate preservation precautions must be taken.

Lubricants are shown in table 3, and intervals and locations are shown in tables 1, 2, 4, and 5.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion prevention and control (CPC) of Army materiel is a continuing concern. It is important that corrosion problems are reported so they can be corrected and improvements can be made to prevent future problems.

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

If a corrosion problem is identified, it can be reported using Standard Form 368, Product Quality Deficiency Report. Use of key words such as corrosion, rust, deterioration, or cracking will ensure that the information is identified as a CPC problem.

The form should be submitted to the address specified in DA Pam 738-750.

FILTERS

Filters shall be changed as applicable, when:

1. They are known to be contaminated or clogged.
2. Prescribed hard-time intervals are reached.

LUBRICATION INSTRUCTIONS (Contd)

CLEANING

WARNING

Skysol-100 cleaning solvent is combustible. Use mechanical ventilation whenever product is used in a confined space, is heated above ambient temperatures, or is agitated. DO NOT use or store near heat, sparks, flame, or other ignition sources. Keep container sealed when not in use.

Contact with Skysol-100 cleaning solvent may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least fifteen (15) minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity.

CAUTION

Keep container covers clean and allow no dust, dirt, or other foreign material to mix with lubricants. Keep all lubrication equipment clean and ready to use.

1. Keep all external parts of equipment not requiring lubrication free of lubricants.
2. Before lubricating equipment, clean fittings. Use Skysol-100 to wipe all lubrication points free of dirt and grease and dry before lubricating. After servicing lubrication points, wipe off excess lubricants to prevent accumulation of foreign matter.

LUBRICATION NOTES

1. Pump system: Drain and refill system (WP 0032 00) every 24 months.
2. Pump filter element: Change filter element (WP 0034 00) every 24 months.
3. Bleed pump system (WP 0038 00).

Table 1. Ramp Bay Intervals.

LOCATION	INTERVAL	LUBRICANT
Pump reservoirs (2) Drain and fill	24 months	Pump fluid ULTRA-SAFE 271 (P/N 29102714)
Torsion bars (2) Lube fittings (2)	6 months	Grease MIL-PRF-10924
Hinge point (1)	6 months	AeroShell grease 17
Cable connections (2)	6 months	SRB type MIL-G-10924
Lower lock connecting pin lever (1) Lube fitting	6 months	Grease MIL-PRF-10924
Jackscrew (1) Apply to threads	After operation or 6 months	Oil MIL-PRF-2104

LUBRICATION INSTRUCTIONS (Contd)

Table 2. Interior Bay Intervals.

LOCATION	INTERVAL	LUBRICANT
Lower lock-drive pin levers (2) Lube fittings	6 months	Grease MIL-PRF-10924
Jackscrews (2) Apply to threads	After operation or 6 months	Oil MIL-PRF-2104
Hinge point	6 months	Molybdenum grease MIL-G-21164
Cable connections (2)	6 months	Molybdenum grease MIL-G-21164
Straight pin	6 months	Molybdenum grease MIL-G-21164
Lock-release lever pin	6 months	Molybdenum grease MIL-G-21164
Spring retainer pin	6 months	Molybdenum grease MIL-G-21164
Lock-release lever	6 months	Molybdenum grease MIL-G-21164
Rod end connectors (2)	6 months	Molybdenum grease MIL-G-21164
Remote control lever pins (2)	6 months	Molybdenum grease MIL-G-21164
Spring end connections (2)	6 months	GAA MIL-PRF-10924
Manual control lever pins (2)	6 months	GAA MIL-PRF-10924

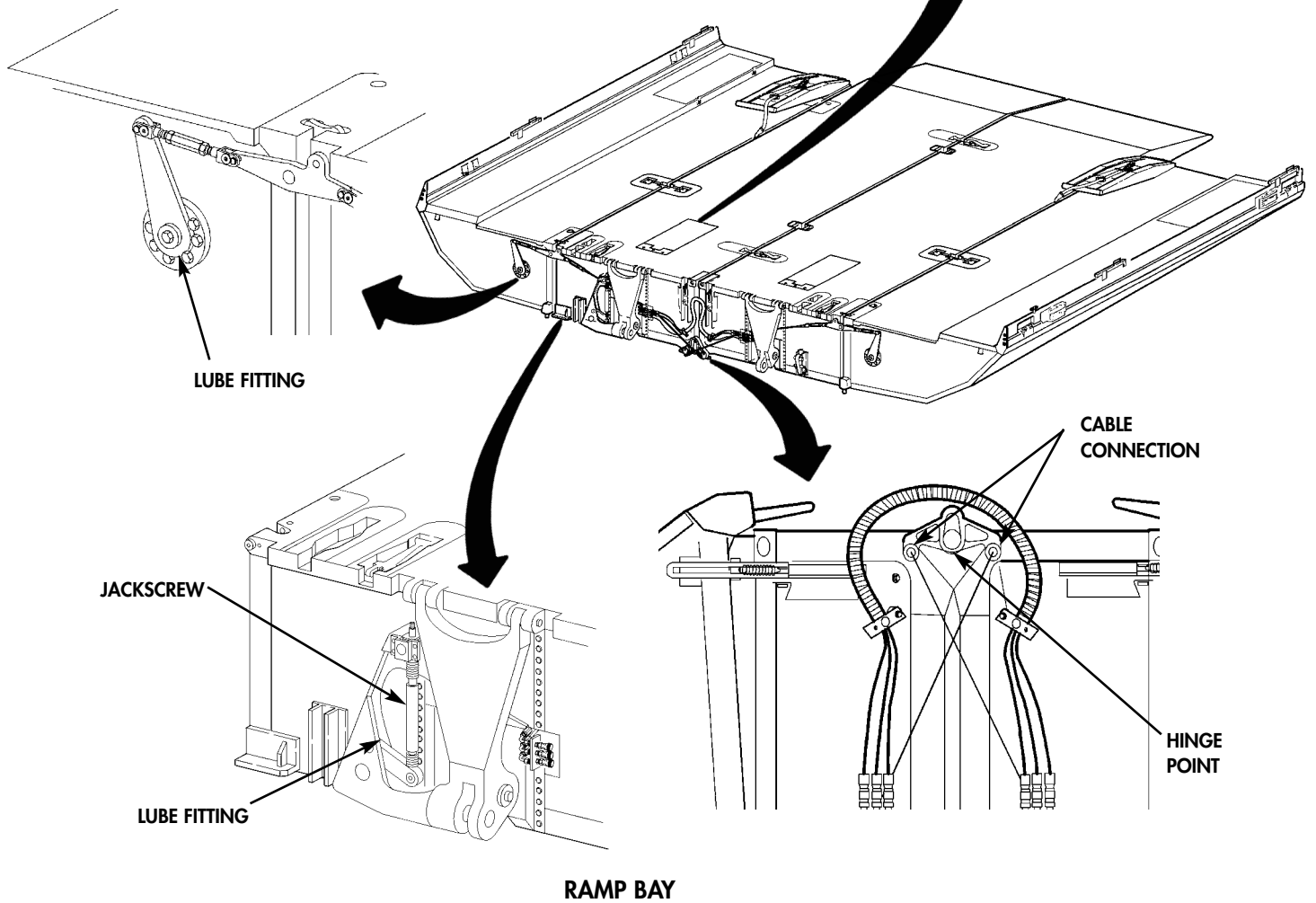
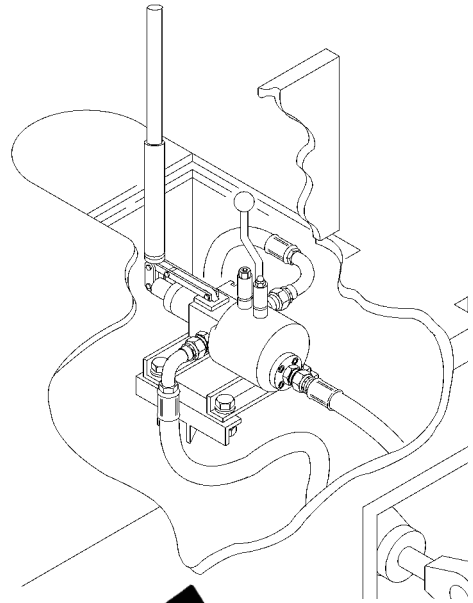
Table 3. Lubricants.

SPECIFICATIONS	LUBRICANT	TEMPERATURE ABOVE +32°F (ABOVE 0°C)
CW-II (VV-L-751)	Lubricating oil, exposed wire	ALL TEMPERATURES
GAA (MIL-PRF-10924)	Grease auto and artillery	
Spray lube (1347K11)	Corrosion preventive compound (WD-40)	
Molybdenum grease (MIL-G-21164)	Grease heavily-loaded sliding steel surfaces	

LUBRICATION INSTRUCTIONS (Contd)

Table 4. Intervals and Locations — Ramp Bay.

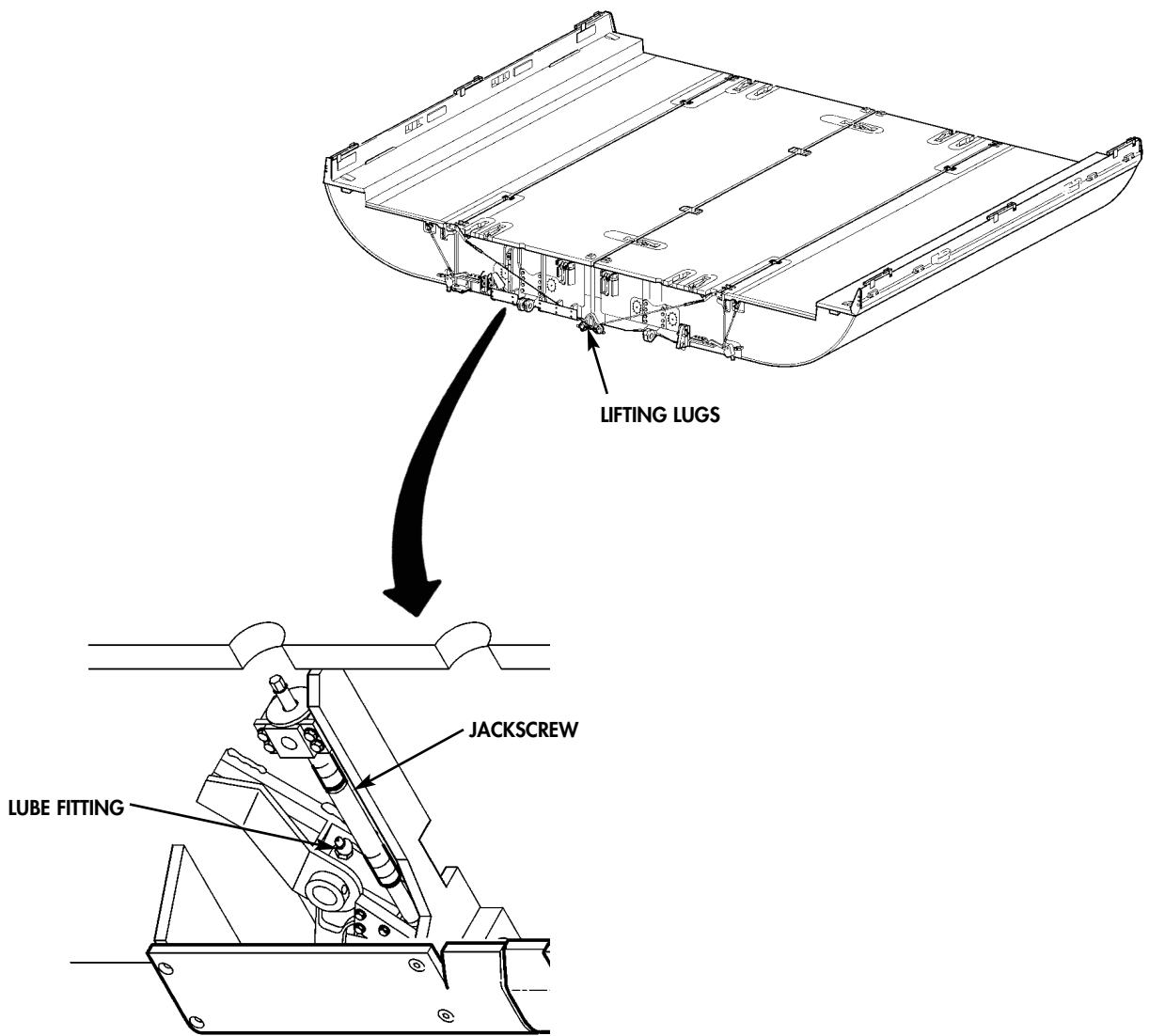
LOCATION		INTERVAL
Pump reservoirs, cylinders, and filter elements (drain and refill) (see Lubrication Notes 1, 2, and 3)	ULTRA-SAFE 271 (P/N 29102714)	24 months
Torsion bars 2 fittings	GAA	6 months
Lower lock connecting pin lever	GAA	6 months
Jackscrew	Oil	After operation or 6 months
Hinge point (1)	AeroShell grease 17	6 months
Cable connections (2)	SRB type MIL-G-10924	6 months



LUBRICATION INSTRUCTIONS (Contd)

Table 5. Intervals and Locations — Interior Bay.

LOCATION		INTERVAL
Lifting lug (2)	Spray lube 1347K11	6 months
Jackscrews (2)	Oil MIL-PRF-2104	After operation or 6 months
Lower lock connecting pin levers (2 fittings)	GAA MIL-PRF-10924	6 months

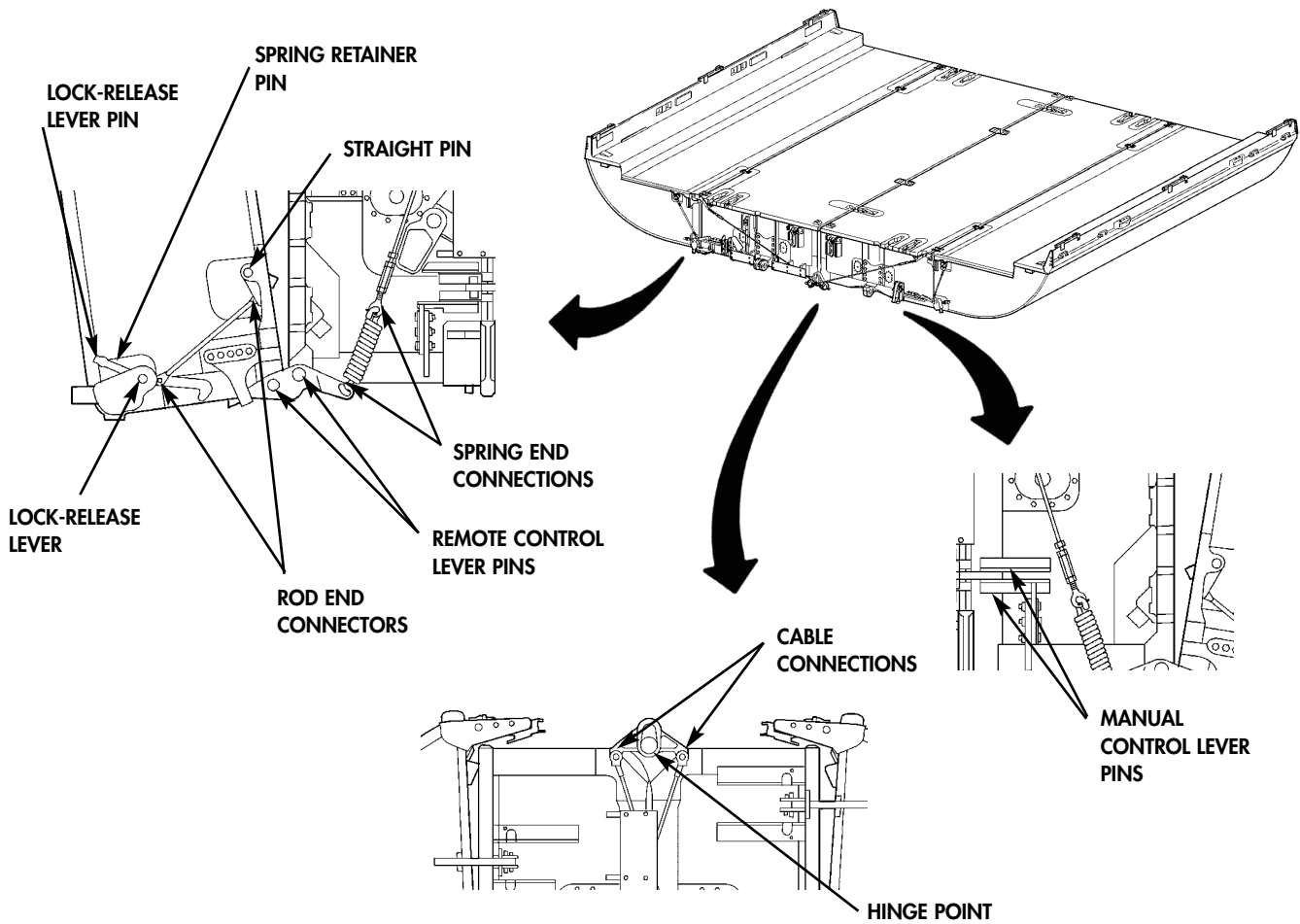


INTERIOR BAY

LUBRICATION INSTRUCTIONS (Contd)

Table 5. Intervals and Locations — Interior Bay (Contd).

LOCATION		INTERVAL
Hinge point	Molybdenum grease MIL-G-21164	6 months
Cable connection (2)	Molybdenum grease MIL-G-21164	6 months
Straight pin	Molybdenum grease MIL-G-21164	6 months
Lock-release lever pin	Molybdenum grease MIL-G-21164	6 months
Spring retainer pin	Molybdenum grease MIL-G-21164	6 months
Lock-release lever	Molybdenum grease MIL-G-21164	6 months
Rod end connectors (2)	Molybdenum grease MIL-G-21164	6 months
Remote control lever pins (2)	Molybdenum grease MIL-G-21164	6 months
Spring end connections (2)	GAA MIL-PRF-10924	6 months
Manual control lever pins (2)	GAA MIL-PRF-10924	6 months



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INTRODUCTION

GENERAL

Unit PMCS are performed at regular intervals to ensure the equipment is fully operational and ready at all times. Maintaining the IRB-R and IRB-I requires inspection on a regular basis so minor damage or faults can be discovered and corrected. Performing PMCS is essential to the reliability and expected longevity of the equipment. Failing to correct a minor problem may result in major damage or a failure which could compromise the mission or cause injury to personnel.

PURPOSE OF PMCS TABLES

The purpose of the PMCS tables is to provide a systematic method of inspecting and servicing the equipment. In this way, small defects can be detected early and corrected before they become a major problem causing the equipment to fail. The PMCS tables are arranged with the individual PMCS procedures listed in sequence under assigned intervals. The most logical time (before or after mission) to perform each procedure determines the interval to which it is assigned. Make a habit of performing the checks in the same order each time; anything wrong will be seen quickly. Refer to WP 0018 00 for PMCS instructions in tables 1 and 2.

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

THIS WORK PACKAGE SUPERSEDES WP 0018 00, DATED 8 APRIL 2003

SPECIFIC PMCS PROCEDURES

NOTE

Designated PMCS intervals are to be followed under usual operating conditions. PMCS must be performed more frequently when operating under unusual conditions.

Perform all checks and services per the designated intervals specified in the PMCS tables. Service intervals are for normal operation of the bridge in moderate temperatures, humidity, and atmospheric conditions. The intervals are hard-time intervals which are performed per the bridge's age or calendar time. The hard-time intervals are based on calendar time. An example of a calendar interval is semiannually (every six months).

SPECIFIC PMCS PROCEDURES

The following is a list of the PMCS table column headings with a description of the information found in each column.

a. Item Number. This column shows the sequence in which the checks and services are to be performed, and is used to identify the equipment area on the Equipment Inspection and Maintenance Worksheet, DA Form 2404/5988-E.

b. Interval. This column shows when each check is to be performed.

c. Location/Item To Check/Service. This column lists the location of the item to be inspected by part, component, or assembly name.

d. Item to be Inspected/Procedures. This column identifies the general area or specific part where the check or service is to be done and explains how to do it.

NOTE

The terms *ready/available* and *mission capable* refer to the same status: equipment is on hand and is able to perform its combat mission. Refer to DA Pam 738-750.

e. Equipment Not Ready/Available If. This column lists conditions that make the equipment unavailable for use because it is unable to perform its mission, or because it would represent a safety hazard. Do not accept or operate equipment with a condition in the "Equipment Is Not Ready/Available If" column.

REPORTING DEFICIENCIES

If any problem with the equipment is discovered during PMCS or while it is being operated that cannot be corrected at the unit maintenance level, it must be reported. Refer to DA Pam 738-750 and report the deficiency on Equipment Inspection and Maintenance Worksheet, DA Form 2404.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Contd)

CORROSION PREVENTION AND CONTROL (CPC)

a. Corrosion prevention and control (CPC) of Army materiel is a continuing concern. It is important that corrosion problems are reported so they can be corrected and improvements can be made to prevent future problems.

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

c. If a corrosion problem is identified, it can be reported using Standard Form 368, Product Quality Deficiency Report. Use of key words such as *corrosion*, *rust*, *deterioration*, or *cracking* will ensure that the information is identified as a CPC problem.

d. The form should be submitted to the address specified in DA Pam 738-750.

SPECIAL INSTRUCTIONS

Preventive maintenance is not limited to performing the checks and services listed in the PMCS table.

a. Keep it clean. Dirt, grease, oil, and debris get in the way and may cover up a serious problem. Clean work area as needed. Use Skysol-100 on all metal surfaces. Use soap and water to clean rubber or plastic material.

b. Bolts, nuts, and screws. Check them all for obvious loose, missing, bent, or broken condition. Look for chipped paint, bare metal, or rust around bolt heads; check and tighten where necessary.

c. Fluid lines. Look for wear, damage, and leaks. Make sure clamps and fittings are tight. Wet spots and stains around a fitting or connector can mean a leak. If a leak comes from a loose connector, tighten it. If something is broken or worn out, refer to the appropriate maintenance work package (WP) task and repair or replace it.

d. Data plates. Check all data plates. If any plate is worn, broken, painted over, missing hardware, or unreadable, it must be replaced. (Refer to WP 0085 00.)

LEAKS

a. It is necessary to know how fluid leaks affect equipment operation and readiness. The following definitions for types/classes of leakage shall be observed.

- 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/inspected.
- Class III Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

b. Identify and report any sign of leakage, and perform all maintenance and repair; refer to Ramp Bay Pump System Maintenance (WP 0031 00).

c. Under emergency conditions where use of the IRB pump system is necessary to complete the mission, consideration must be given to the fluid capacity and the leak classification. Class III leaks must be reported to the maintenance supervisor immediately.

PAINTING

Paint touch-up of the IRB should be performed as needed during PMCS. Refer to painting instructions (WP 0076 00).

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Contd)

UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR RAMP BAY

This PMCS uses the one-look format. With bay on the transporter, start at the front (connecting end) of bay ponton, proceeding counterclockwise. Refer to figure 1.

During PMCS, ensure that components and assemblies are *correctly installed*. Incorrect installation may cause equipment damage or failure.

When checking or inspecting an item, ensure that all attaching/mounting hardware is properly secured. Loose, cracked, broken, or missing hardware may cause equipment failure or injury to personnel.

Remove rust and accumulated corrosion during PMCS. Corrosion not removed promptly will degrade equipment performance.

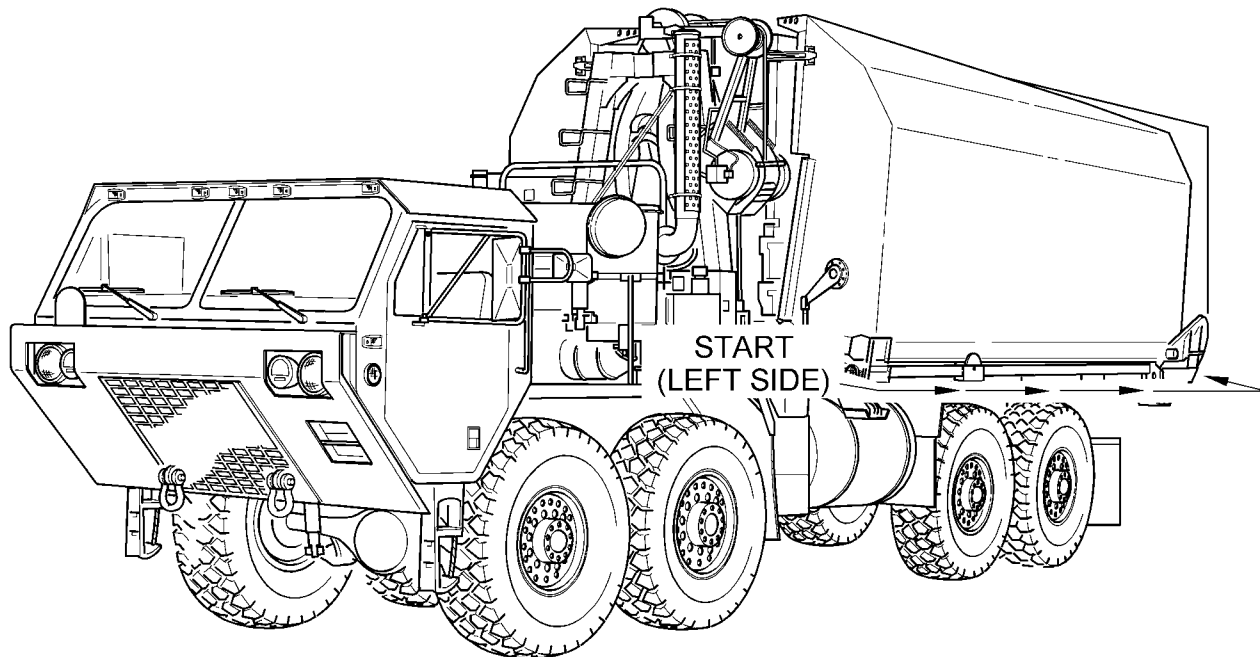


Figure 1. PMCS for Ramp Bay.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay.

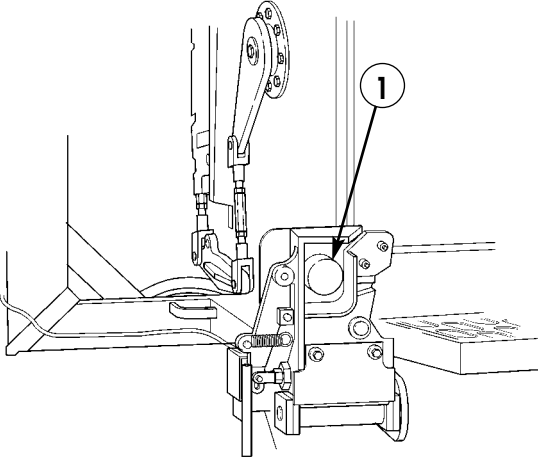
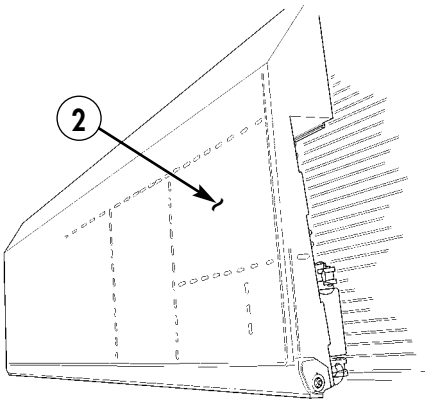
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
1	Semi-annually	Left front trunnion (1)	<p>a. Inspect trunnion for cracks or broken welds.</p> <p>b. Ensure trunnion will properly secure in lock.</p> 	<p>a. Cracked or broken welds noted. Any visible hole will deadline bay.</p> <p>b. Trunnion will not properly secure in lock.</p>
2	Semi-annually	Left outer ponton skin surface along side (2)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.6 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

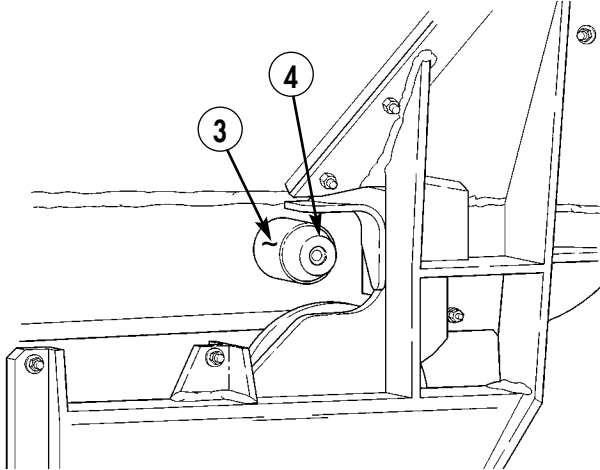
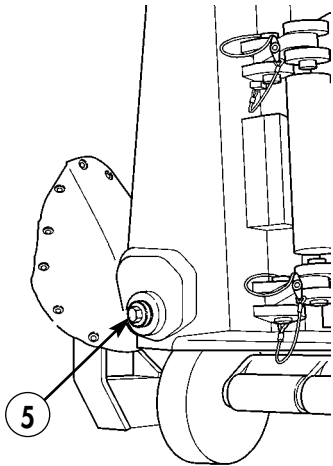
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
3	Semi-annually	Left rear trunnion (4) and wear cap (3)	<p>Inspect left rear trunnion and wear cap for cracks, broken welds, or missing wear cap.</p> 	Cracked, broken welds, or missing wear cap noted. Any visible hole will deadline bay.
4	Semi-annually	Left drain plug (5)	<p>Inspect drain plugs for cracks or broken welds.</p> 	Cracked or broken welds noted.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

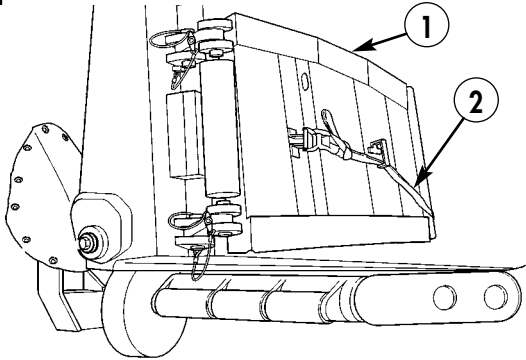
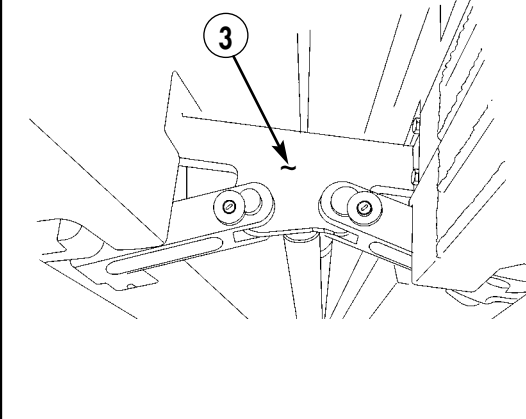
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
5	Semi-annually	Left ramp plate (1) and strap (2)	<p>a. Inspect ramp plate for cracks, broken welds, and condition of non-skid coating. Refer to WP 0076 00 for application of non-skid coating.</p> <p>b. Inspect pins and hinges for cracks, broken welds, or deformation of pin mounting holes.</p> <p>c. Inspect strap for tears or missing hook.</p> <p>d. Inspect ratchet for proper operation.</p> 	<p>a. Cracked or broken welds noted.</p> <p>b. Pins and hinges are cracked, broken welds are noted, or hole deformation greater than 50% hole diameter noted.</p> <p>c. Missing hook or torn strap.</p> <p>d. Damaged ratchet.</p>
6	Semi-annually	Left stabilizer assembly (3)	<p>Inspect left stabilizer assembly for cracks, if bent, or if pins are loose or missing</p> 	<p>Stabilizer is cracked or bent, or pins are loose or missing.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

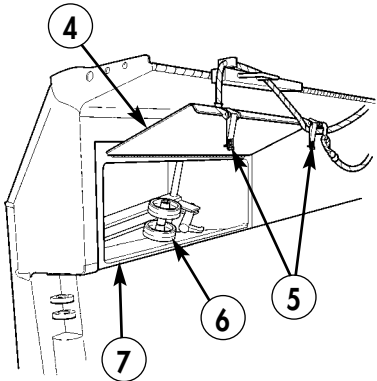
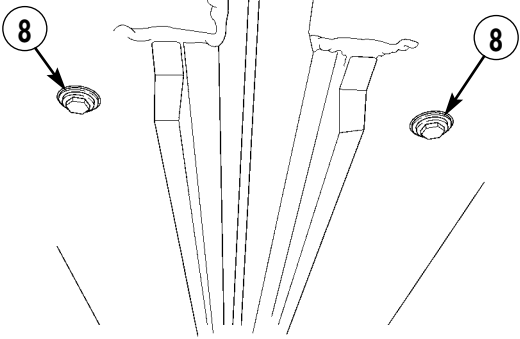
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
7	Semi-annually	Left stowage compartment latches (5), lid (4), compartment seal (7), and BII (6)	<p>Inspect for loose or damaged seal, or missing mounting hardware, latches, and BII. (Refer to TM 5-5420-278-10 for Basic Issue Items required in ramp bay stowage compartments.)</p> 	Lid and latches are loose, will not close, or are missing. BII are missing.
8	Semi-annually	Left and right lower roadway ponton drain plugs (8)	<p>Inspect drain plugs for cracks or broken welds.</p> 	Cracked or broken welds noted.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

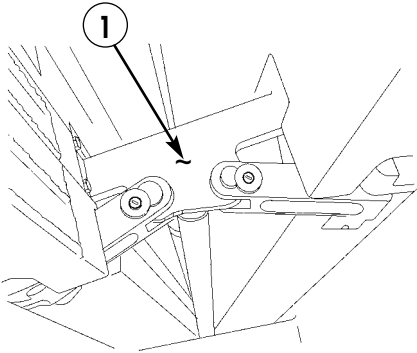
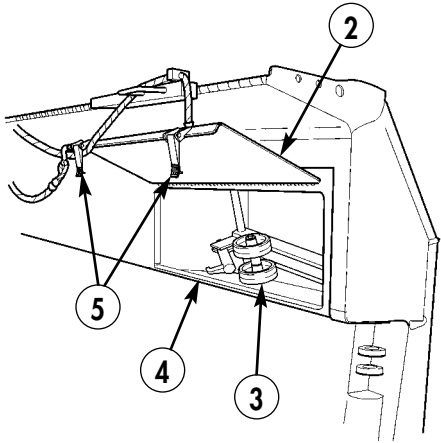
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
9	Semi-annually	Right stabilizer assembly (1)	<p>Inspect right stabilizer assembly for cracks, if bent, or if pins are loose or missing.</p> 	Stabilizer is cracked or bent, or pins are loose or missing.
10	Semi-annually	Right stowage compartment latches (5), lid (2), compartment seal (4), and BII (3)	<p>Inspect for loose or damaged seal, or missing mounting hardware, latches, and BII. (Refer to TM 5-5420-278-10 for Basic Issue Items required in ramp bay stowage compartments.)</p> 	Lid and latches are loose, will not close, or are missing. BII are missing.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

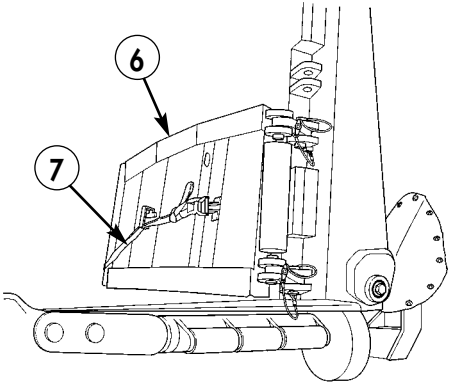
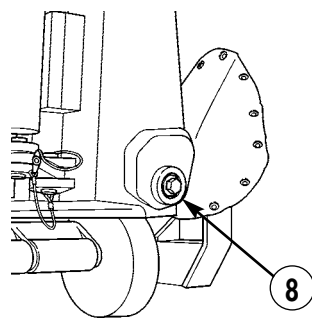
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
11	Semi-annually	Right ramp plate (6) and strap (7)	<p>a. Inspect ramp plate for cracks, broken welds, and condition of non-skid coating. Refer to WP 0076 00 for application of non-skid coating.</p> <p>b. Inspect pins and hinges for cracks, broken welds, or deformation of pin mounting holes.</p> <p>c. Inspect strap for tears or missing hook.</p> <p>d. Inspect ratchet for proper operation.</p> 	<p>a. Cracked or broken welds noted.</p> <p>b. Pins and hinges are cracked, broken welds are noted, or hole deformation of greater than 50% hole diameter noted.</p> <p>c. Missing hook or torn strap.</p> <p>d. Damaged ratchet.</p>
12	Semi-annually	Right drain plug (8)	<p>Inspect drain plug for cracks or broken welds.</p> 	Cracks or broken welds noted.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

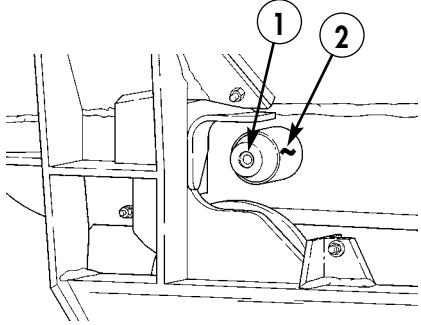
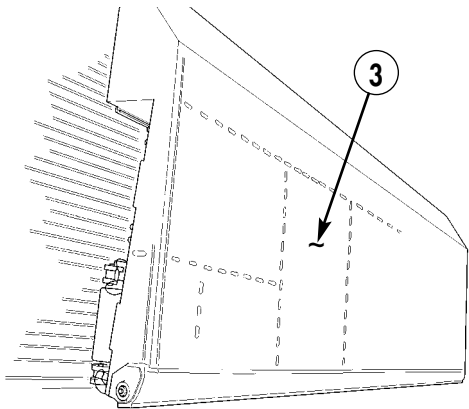
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
13	Semi-annually	Right rear trunnion (1) and wear cap (2)	<p>Inspect right rear trunnion and wear cap for cracks, broken welds, or missing wear cap.</p> 	Cracked, broken welds, or missing wear cap noted. Any visible hole will deadline bay.
14	Semi-annually	Right outer ponton skin surface along side (3)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

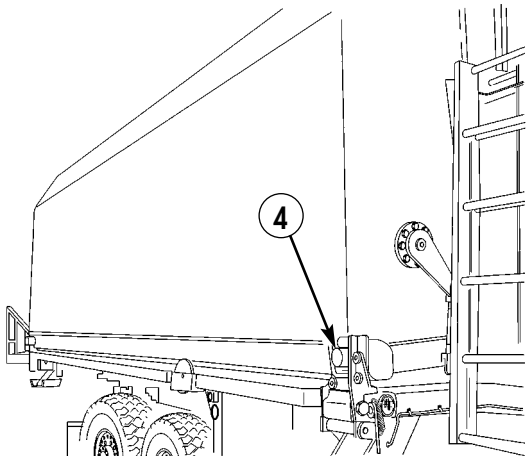
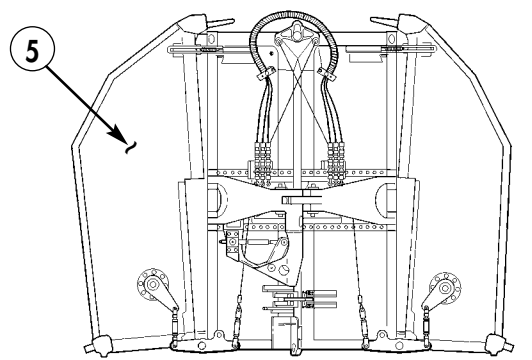
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
15	Semi-annually	Right front trunnion (4)	<p>a. Inspect trunnion for cracks or broken welds.</p> <p>b. Ensure trunnion will properly secure in lock.</p> 	<p>a. Cracked or broken welds noted. Any visible hole will deadline bay.</p> <p>b. Trunnion will not properly secure in lock.</p>
16	Semi-annually	Right outer ponton skin surface (5) at end	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

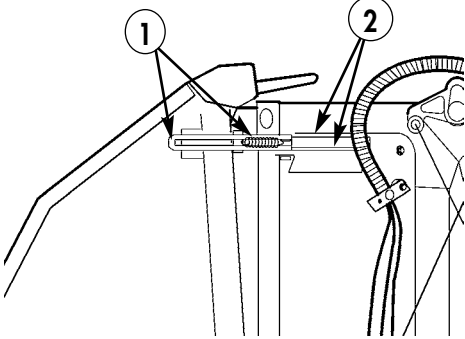
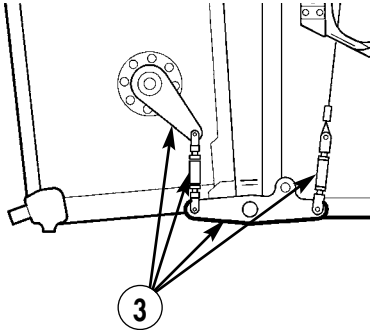
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
17	Semi-annually	Right foldlock assembly (1) and brackets (2)	<p>Inspect right foldlock assembly for structural damage and proper movement.</p>  <p>The diagram shows a side view of the right foldlock assembly. Callout 1 points to the main foldlock mechanism, and callout 2 points to the brackets supporting it.</p>	Damage prevents foldlock from securing ponton.
18	Semi-annually	Right unfolding mechanism (3) and torsion bar	<p>Inspect torsion bar, stabilizer lever, retaining pins, and turnbuckle for structural damage or missing or loose mounting hardware.</p>  <p>The diagram shows the right unfolding mechanism, including the torsion bar, stabilizer lever, and turnbuckle. Callout 3 points to the stabilizer lever area.</p>	Turnbuckle is binding, cracked, or deformation is noted, or mounting hardware is missing or loose.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
19	Semi-annually	Right double eye yoke (5), cylinder, and lower lock-drive assembly (4)	<p>a. Inspect jackscrew threads for cracks, burrs, nicks, and deformation.</p> <p>b. Inspect trunnions and pin for cracks.</p> <p>c. Inspect cylinders for leaks.</p> <p>d. Inspect hoses and fittings for cracks, compression, and leakage.</p> <p>e. Ensure cylinder functions properly in conjunction with hand pump.</p> <p>f. Inspect for cracks, deformation, and elongation of eye.</p>	<p>a. Jackscrew will not extend or retract pin properly.</p> <p>b. Cracks or broken welds noted.</p> <p>c. Any Class III fluid leak noted.</p> <p>d. Any Class III fluid leak noted.</p> <p>e. Cylinder does not function properly.</p> <p>f. Cracks noted or deformation prevents proper operation. Hole elongation greater than 50% of hole diameter noted.</p>

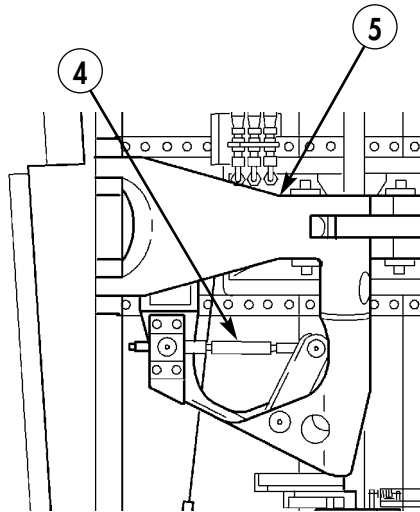


Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

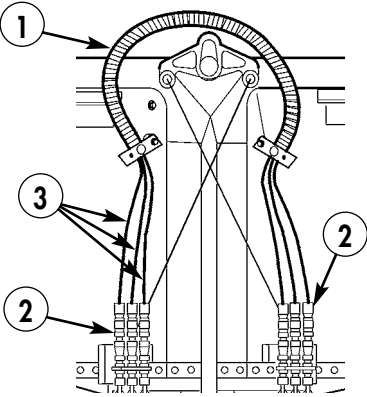
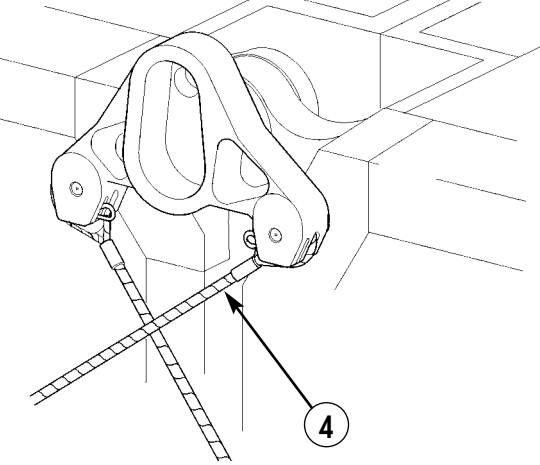
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
20	Semi-annually	Right hydraulic hoses (3), loom (1), and connectors (2)	<p>a. Inspect for proper seating of connectors.</p> <p>b. Inspect hoses for fluid leaks or physical damage.</p> <p>c. Inspect loom for physical damage.</p> 	<p>a. Connectors are not seated properly.</p> <p>b. Any Class III fluid leak is noted.</p>
21	Semi-annually	Right unfolding cable assemblies (4)	<p>a. Inspect for kinks, compression, flat surfaces, and broken or frayed strands.</p> <p>b. Inspect turnbuckle for binding, loose, or missing hardware.</p> 	<p>a. Cable kinked, compressed, flattened, or any strands broken.</p> <p>b. Turnbuckle binding, loose, or missing hardware.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

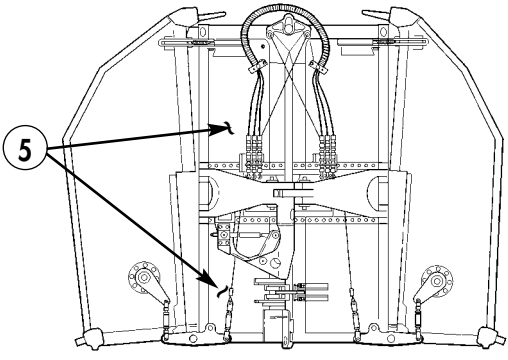
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
22	Semi-annually	Right inner ponton skin surface (5)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

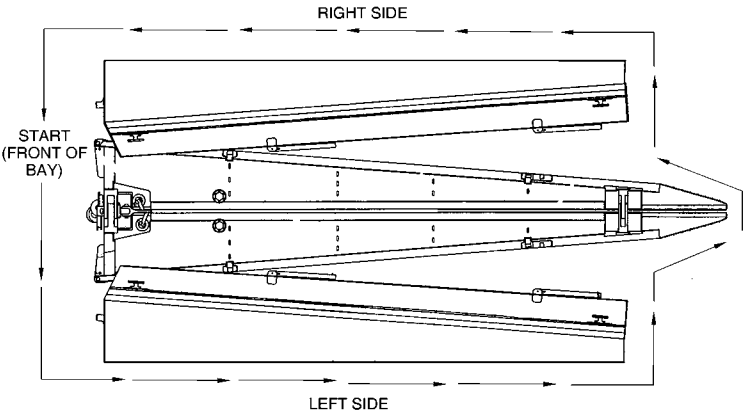
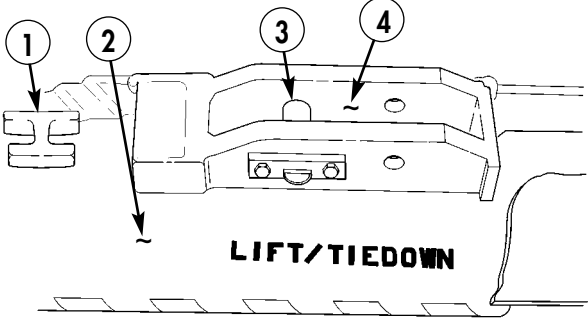
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			<p style="text-align: center;">NOTE</p> <p>Perform items 23 through 27 from top of ramp bay, starting at front (connecting end), proceeding counterclockwise. (Refer to figure 2.)</p>  <p style="text-align: center;"><i>Figure 2. PMCS for Ramp Bay.</i></p>	
23	Semi-annually	Left and right front load receiving pin (3), recess (4), cleat (1), and splash plate (2)	<p>a. Inspect pin and mounting hardware for cracks or if missing.</p> <p>b. Inspect recess for cracks and broken welds.</p> <p>c. Inspect cleat for broken welds or if missing.</p> 	<p>a. Pin is missing or damage prevents use.</p> <p>b. Cracks or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

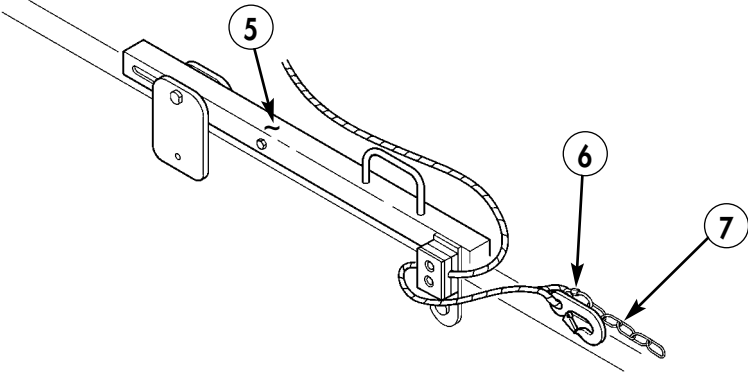
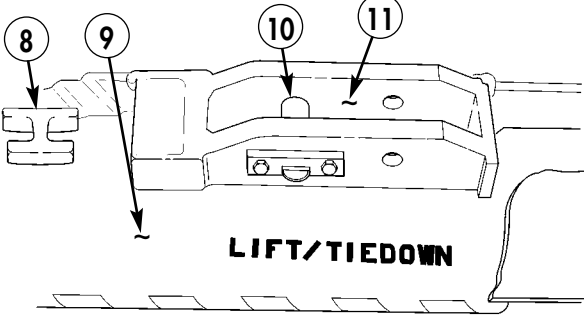
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
24	Semi-annually	Left and right handrail assemblies (5), chain extension (7), and chain linker (6)	<p>Inspect handrail assembly for missing or damaged mounting hardware, rope and deterioration of rope, snaphooks, chain extensions, chain linkers, and if stanchion will lock in stowed and set positions.</p> 	Missing or damaged parts are found or stanchion is not operational.
25	Semi-annually	Left and right rear load receiving pin (10), recess (11), cleat (8), and splash plate (9)	<p>a. Inspect pin and mounting hardware for cracks or if missing.</p> <p>b. Inspect recess for cracks and broken welds.</p> <p>c. Inspect cleat for broken welds or if missing.</p> 	<p>a. Pin is missing or damage prevents use.</p> <p>b. Cracks or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

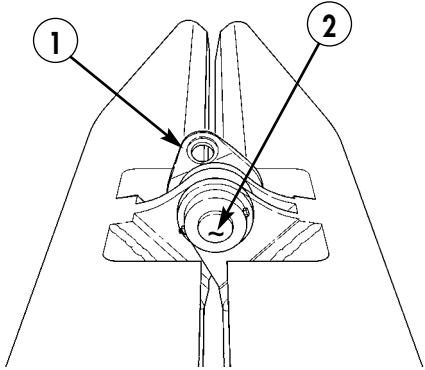
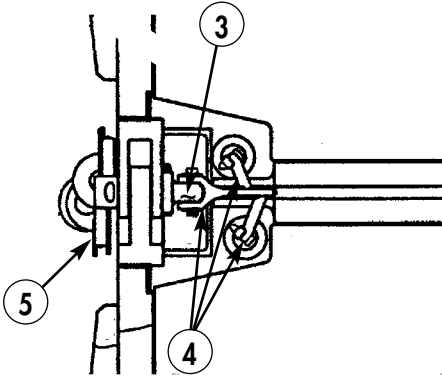
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
26	Semi-annually	Rear lifting lug (1) and eyebolt (2)	<p>Inspect for cracks, deformation of eyebolt, and proper assembly.</p> 	Any cracks noted or eyebolt elongation of more than 0.50 in. (12.7 mm), or not assembled properly.
27	Semi-annually	Front lifting lug (5), eyebolt (3), and lever assembly (4)	<p>a. Inspect for damaged, loose, or missing parts.</p> <p>b. Inspect for cracks, deformation of eyebolt, and proper shim assembly.</p> 	<p>a. Any damaged, loose, or missing parts.</p> <p>b. Any cracks noted or eyebolt elongation of more than 50% of hole diameter noted. Shims are not assembled properly.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

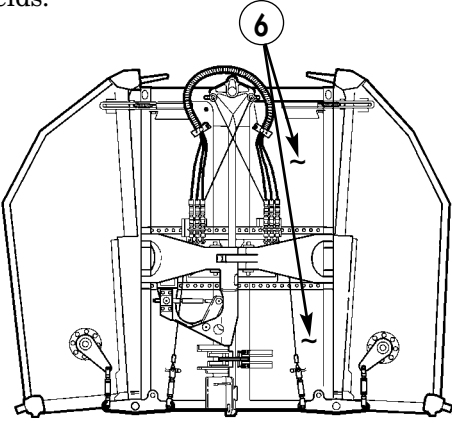
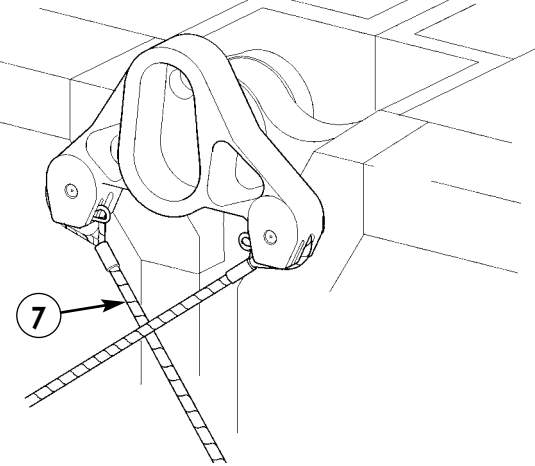
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
28	Semi-annually	Left inner ponton skin surface (6)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>
29	Semi-annually	Left unfolding cable assemblies (7)	<p>a. Inspect for kinks, compression, flat surfaces, and broken or frayed strands.</p> <p>b. Inspect turnbuckle for binding, loose, or missing hardware.</p> 	<p>a. Cable kinked, compressed, flattened, or any strands broken.</p> <p>b. Turnbuckle binding, loose, or missing hardware.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
30	Semi-annually	Left single yoke (1) and cylinder	<p>a. Inspect trunnions and pin for cracks.</p> <p>b. Inspect cylinders for leaks.</p> <p>c. Inspect hoses and fittings for cracks, compression, and leakage.</p> <p>d. Ensure cylinder functions properly in conjunction with hand pump.</p> <p>e. Inspect for cracks, deformation, and elongation of eye.</p>	<p>a. Cracks or broken welds noted.</p> <p>b. Any Class III fluid leak noted.</p> <p>c. Any Class III fluid leak noted.</p> <p>d. Cylinder does not function properly.</p> <p>e. Cracks noted or deformation prevents proper operation. Hole elongation greater than 50% of hole diameter noted.</p>
31	Semi-annually	Travel latch (2), receptacle (4), and cable guide (3)	<p>a. Ensure travel latch is adjusted properly.</p> <p>b. Inspect brackets, shims, and strike catches for cracks, broken welds, binding, and deformation.</p>	<p>a. Latch does not engage.</p> <p>b. Cracks, broken welds, binding, or deformation noted.</p>

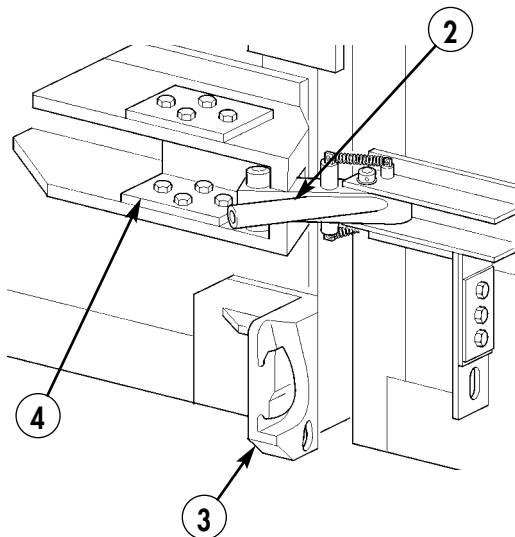
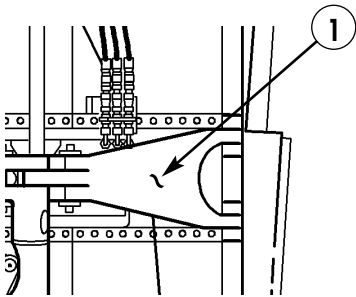


Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

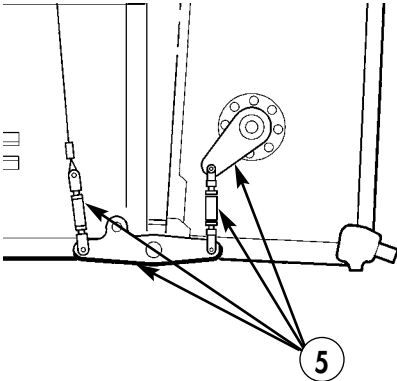
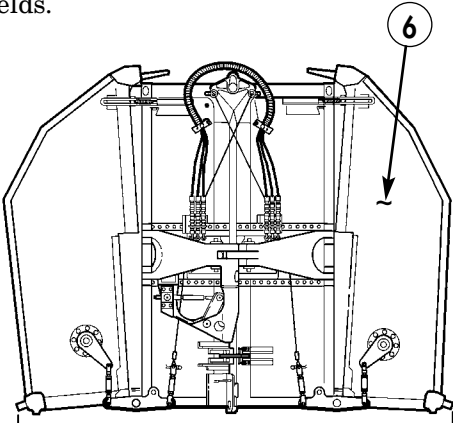
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
32	Semi-annually	Left unfolding mechanism (5) and torsion bar	<p>Inspect torsion bar, stabilizer lever, retaining pins, and turnbuckle for structural damage or missing or loose mounting hardware.</p> 	Turnbuckle is binding, cracked, or deformation is noted, or mounting hardware is missing or loose.
33	Semi-annually	Left outer ponton skin surface (6) at end	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

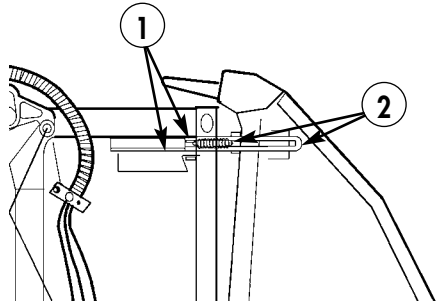
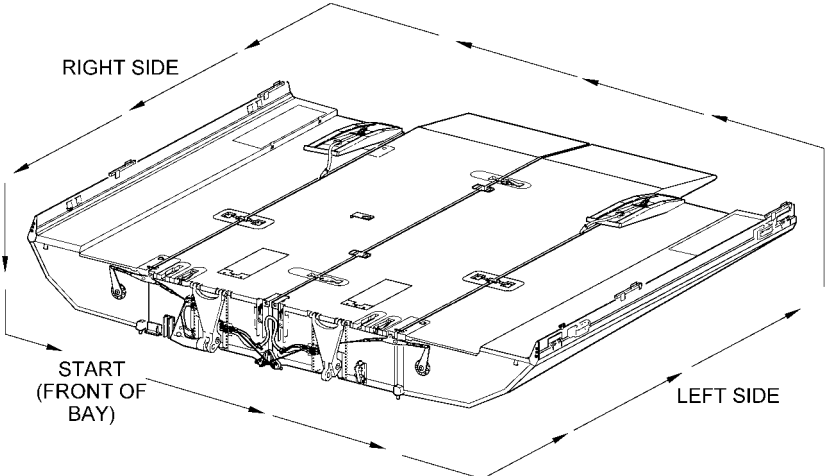
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
34	Semi-annually	Left foldlock assembly (2) and brackets (1)	<p>Inspect left foldlock assembly for structural damage and proper movement.</p>  <p>CAUTION Ensure longitudinal and transverse couplings and swivel hooks are engaged before performing inspection.</p> <p>NOTE Perform items 35 through 47 with ramp bay unfolded and secured, starting at front (connecting end), proceeding counterclockwise. (Refer to figure 3.)</p> 	Damage prevents foldlock from securing ponton.

Figure 3. PMCS, Ramp Bay Unfolded.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
35	Semi-annually	Right front swivel hook assembly (3), indicator (5), and bilge plugs (4)	<p>a. Inspect hook for structural damage.</p> <p>b. Inspect to see if indicator is present.</p> <p>c. Ensure bilge plugs are secured and not cracked or broken.</p>	<p>a. Damage prevents proper hook operation.</p> <p>c. Any plug is missing, cracked, or broken.</p>

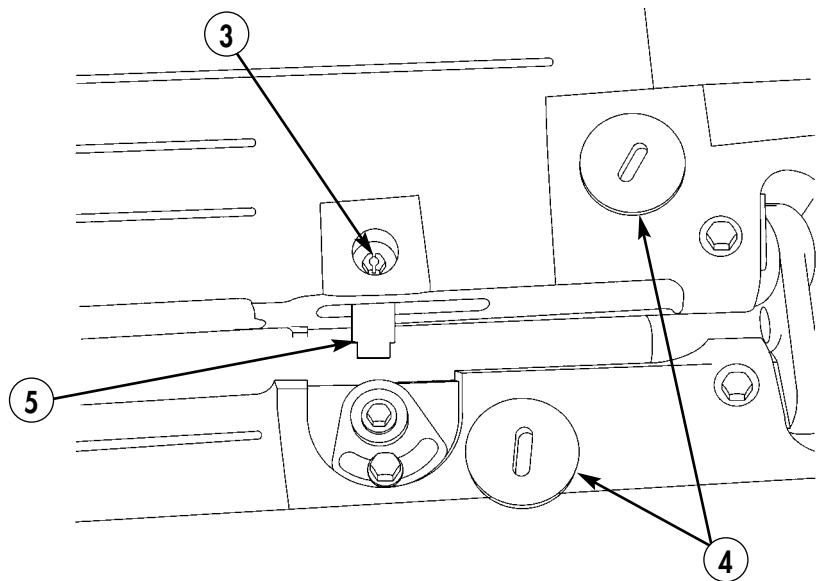


Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

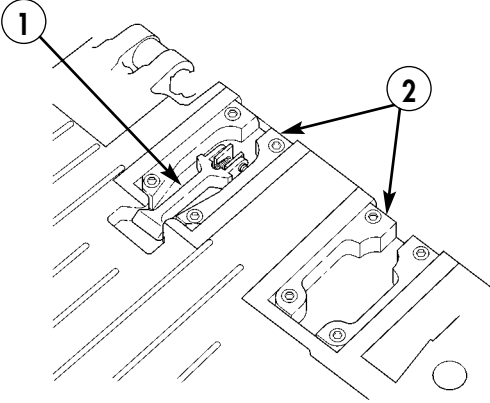
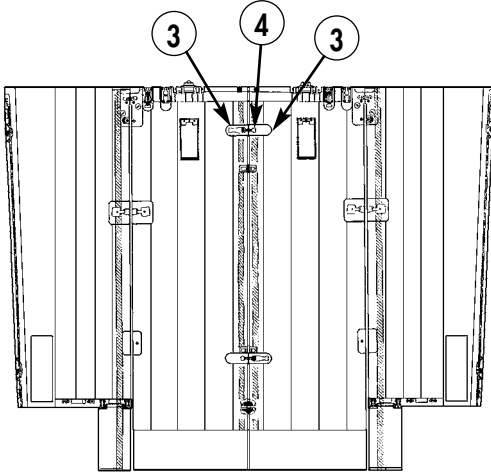
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
36	Semi-annually	Right front longitudinal upper coupling (1) and receptacle blocks (2)	<p style="text-align: center;">NOTE</p> <p>Receptacle consists of entire housing (block) in which connector is seated.</p> <p>a. Inspect seams on welded insert blocks for cracks or broken welds.</p> <p>b. Inspect receptacle area for cracks, broken welds, elongation, and deformation.</p> 	<p>a. Cracks or broken welds noted.</p> <p>b. Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>
37	Semi-annually	Front transverse upper coupling (4) and receptacle blocks (3)	<p>Inspect receptacle area for cracks, broken welds, elongation, and deformation.</p> 	<p>Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
38	Semi-annually	Right fluid pump cover (5), pump (7), and hoses (6)	<p style="text-align: center;">NOTE</p> <p>PMCS for right and left fluid pump assemblies is the same. Right pump is shown.</p> <p>a. Inspect for structural damage.</p> <p>b. Inspect pump for proper fluid level and leaks. Fill as required.</p> <p>c. Inspect pump for proper operation.</p> <p>d. Inspect all hoses for leaks.</p> <p>e. Ensure direction lever and air vent function properly.</p>	<p>a. Pump cover is missing.</p> <p>b. Any Class III fluid leak is noted.</p> <p>c. Pump is not operational.</p> <p>d. Any Class III fluid leak is noted.</p> <p>e. Vent or lever does not function properly.</p>
39	Semi-annually	Left fluid pump cover (5), pump (7), and hoses (6)	<p>a. Inspect for structural damage.</p> <p>b. Inspect pump for proper fluid level and leaks. Fill as required.</p> <p>c. Inspect pump for proper operation.</p> <p>d. Inspect all hoses for leaks.</p> <p>e. Ensure direction lever and air vent function properly.</p>	<p>a. Pump cover is missing.</p> <p>b. Any Class III fluid leak is noted.</p> <p>c. Pump is not operational.</p> <p>d. Any Class III fluid leak is noted.</p> <p>e. Vent or lever does not function properly.</p>

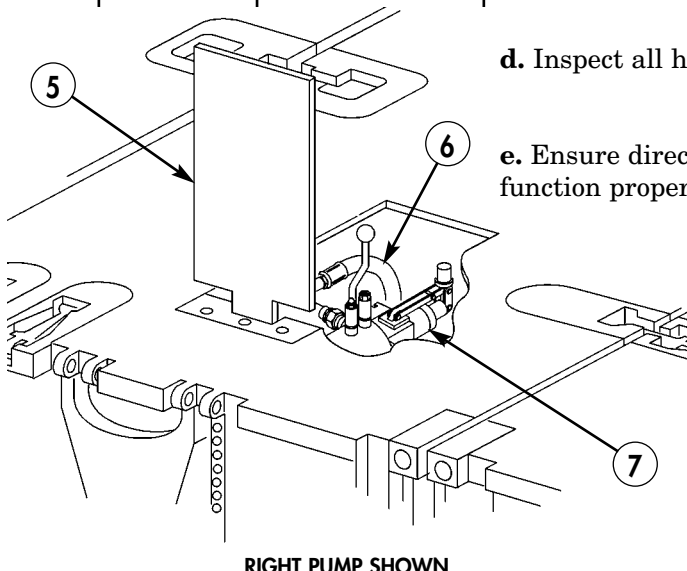


Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

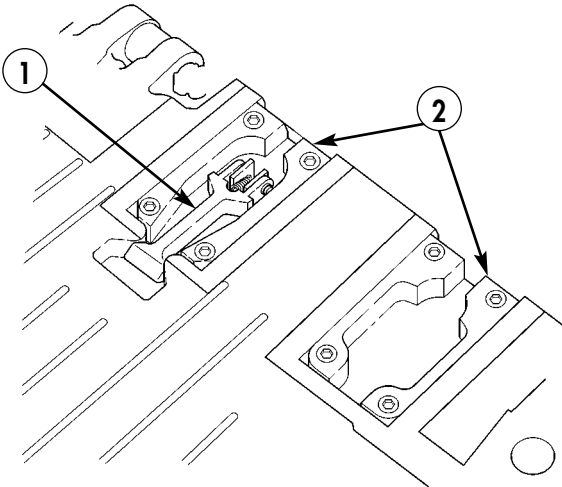
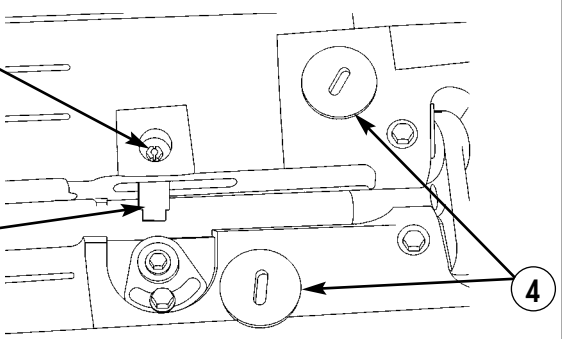
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
40	Semi-annually	Left front longitudinal upper coupling (1) and receptacle blocks (2)	<p style="text-align: center;">NOTE</p> <p>Receptacle consists of entire housing (block) in which connector is seated.</p> <p>a. Inspect seams on welded insert blocks for cracks or broken welds.</p> <p>b. Inspect receptacle area for cracks, broken welds, elongation, and deformation.</p> 	<p>a. Cracks or broken welds noted.</p> <p>b. Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>
41	Semi-annually	Left front swivel hook assembly (3), indicator (5), and bilge plugs (4)	<p>a. Inspect hook for structural damage.</p> <p>b. Inspect to see if indicator is present.</p> <p>c. Ensure bilge plugs are secured and not cracked or broken.</p> 	<p>a. Damage prevents proper hook operation.</p> <p>c. Any plug is missing, cracked, or broken.</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

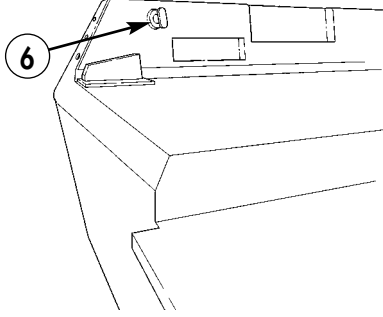
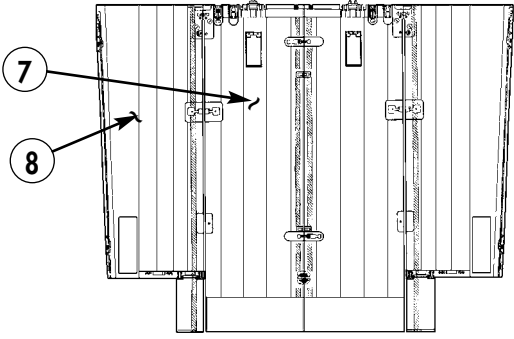
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
42	Semi-annually	Left belay cleat (6)	<p>Inspect cleat for damage, cracked welds, or if missing.</p> 	
43	Semi-annually	Left personnel walkway (8) and roadway (7) surfaces	<p>a. Inspect for structural damage, deformity, holes, and tears.</p> <p>b. Inspect for punctures, cracks, tears, dents, holes, and broken welds.</p> <p>c. Ensure that non-skid coating adequately covers walkways. Refer to WP 0076 00 for application of non-skid coating.</p> 	<p>a. Damage prevents safe traffic crossing or causes personnel safety hazard.</p> <p>b. Damage which punctures the entire deck (both top and bottom deck skins) and cumulatively adds up to a hole approximately 6 in. (15.5 cm) in diameter).</p>

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

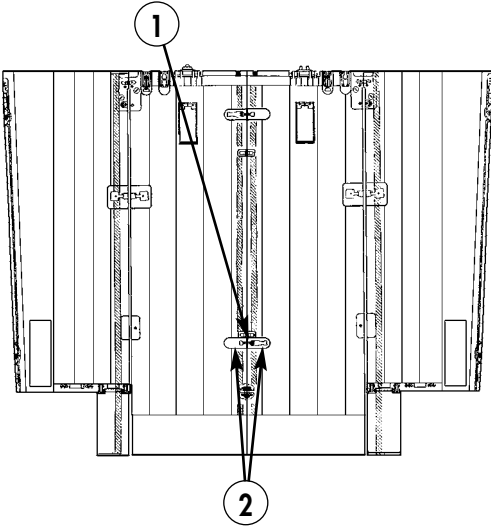
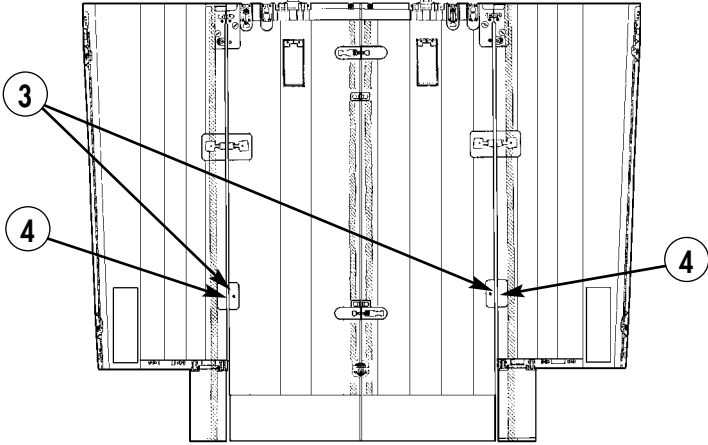
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
44	Semi-annually	Rear transverse upper coupling (1) and receptacle blocks (2)	Inspect receptacle area for cracks, broken welds, elongation, and deformation. 	Cracks, broken welds, elongation, or deformation prevents proper seating of connector.
45	Semi-annually	Left and right rear swivel plates (3) and indicators (4)	a. Inspect hook for structural damage. b. Inspect that indicator is present. 	a. Damage prevents proper hook operation.

Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
46	Semi-annually	Right roadway (5) and walkway (6) surfaces	<p>a. Inspect for structural damage, deformity, holes, and tears.</p> <p>b. Inspect for punctures, cracks, tears, dents, holes, and broken welds.</p> <p>c. Ensure that non-skid coating adequately covers walkways. Refer to WP 0076 00 for application of non-skid coating.</p>	<p>a. Damage prevents safe traffic crossing or causes personnel safety hazard.</p> <p>b. Damage which punctures the entire deck (both top and bottom deck skins) and cumulatively adds up to a hole approximately 6 in. (15.5 cm) in diameter).</p>

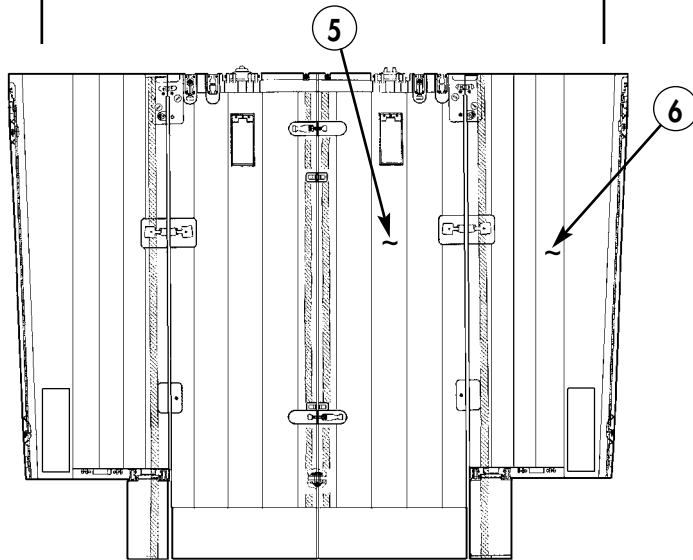
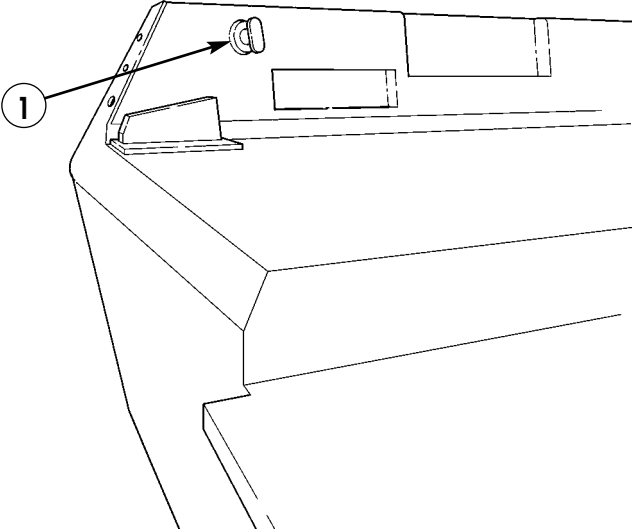


Table 1. Unit Preventive Maintenance Checks and Services for the Ramp Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
47	Semi-annually	Right belay cleat (1)	<p>Inspect cleat for damage, cracked welds, or if missing.</p> 	

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Contd)

UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR INTERIOR BAY

This PMCS uses the one-look format. With bay on the transporter, start at the left outer ponton nearest the driver's side of cab, proceeding counterclockwise. (Refer to figure 4.)

During PMCS, ensure that components and assemblies are *correctly installed*. Incorrect installation may cause equipment damage or failure.

When checking or inspecting an item, ensure that all attaching/mounting hardware is properly secured. Loose, cracked, broken, or missing hardware may cause equipment failure or injury to personnel.

Remove rust and accumulated corrosion during PMCS. Corrosion not removed promptly will degrade equipment performance.

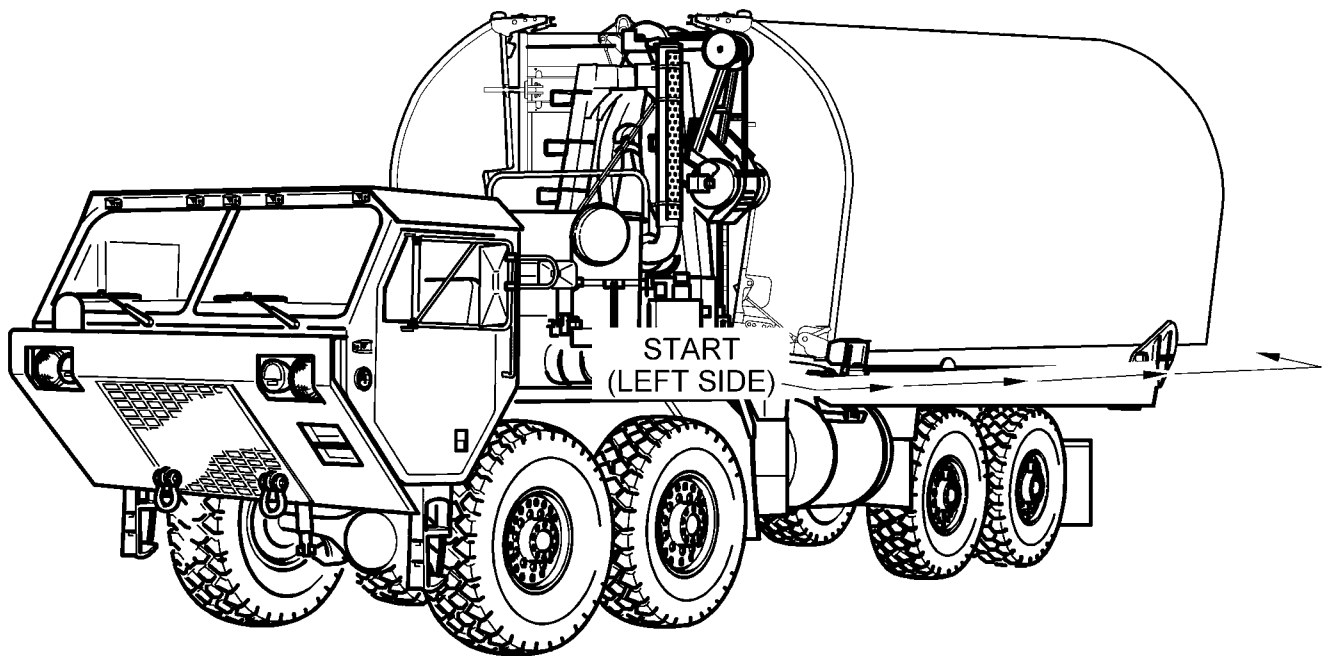


Figure 4. PMCS for Interior Bay.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay.

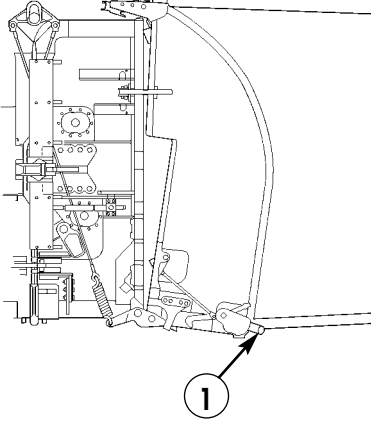
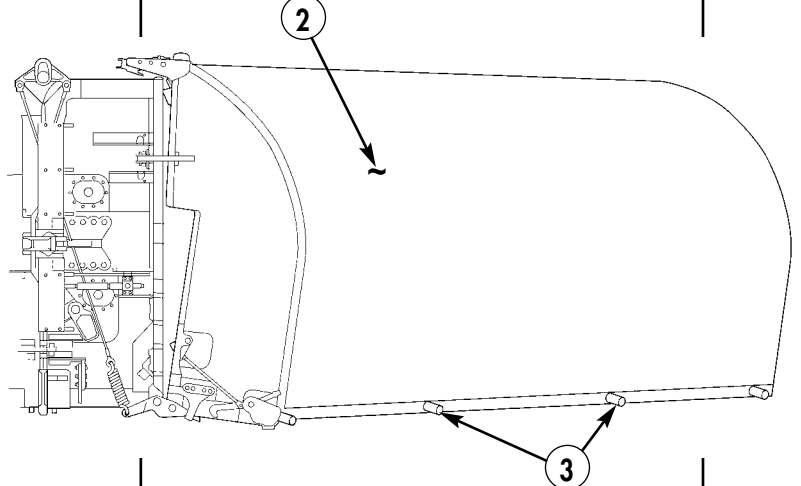
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
1	Semi-annually	Left front trunnions (1) on left outer ponton	Inspect for cracks or broken welds, or if bent. 	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.
2	Semi-annually	Left outer ponton skin surface (2) and trunnions (3) along side	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

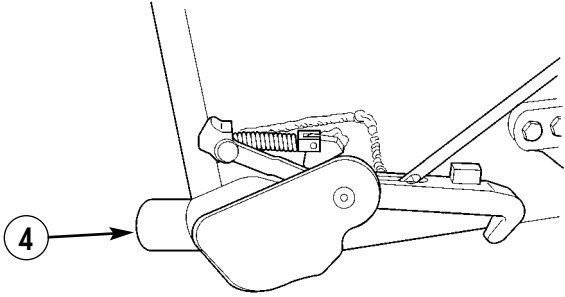
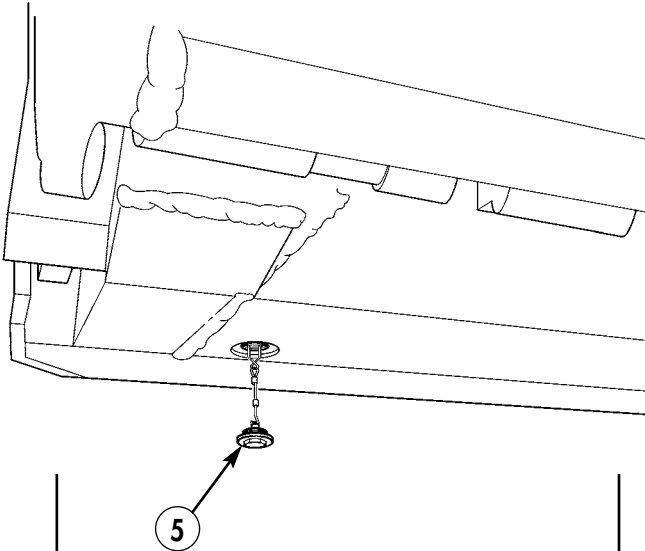
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
3	Semi-annually	Left rear trunnion (4) on left outer ponton	Inspect for cracks or broken welds, or if bent. 	Cracked or broken welds are found or if bent enough to prevent securing bay to transporter.
4	Semi-annually	Left drain plug (5)	Inspect drain plug for cracked or broken welds. 	Cracked or broken welds noted.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

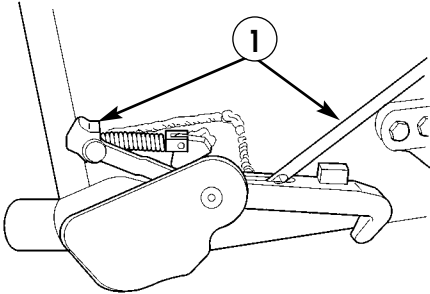
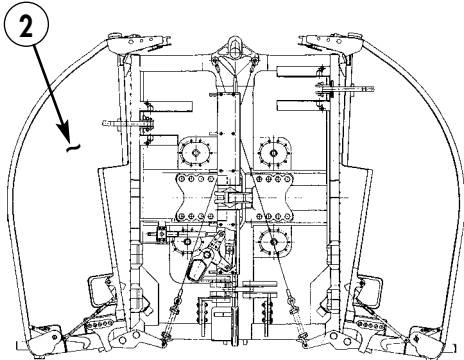
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
5	Semi-annually	Left outer ponton lock (1) assembly and brackets	<p>a. Ensure outer ponton lock is assembled properly.</p> <p>b. Inspect brackets, spring pins, pins, spacers, lever, and connecting link for cracks, broken welds, binding, and deformation.</p> 	<p>a. Outer ponton lock not functioning properly.</p> <p>b. Broken welds or deformation noted.</p>
6	Semi-annually	Left outer ponton skin surface (2) at end	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

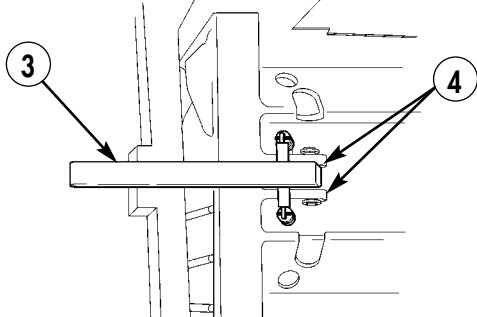
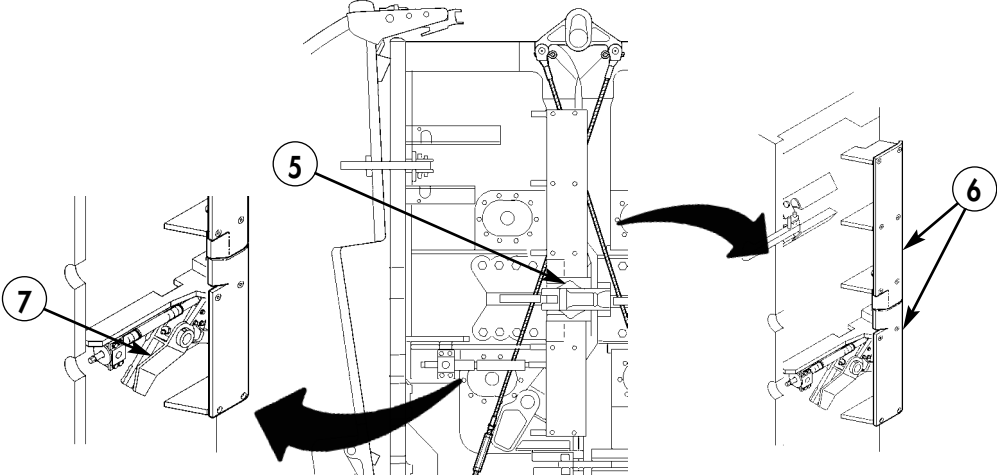
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
7	Semi-annually	Left foldlock assembly (3) and brackets (4)	<p>Inspect right foldlock assembly for structural damage and proper movement.</p> 	<p>Damage prevents foldlock from securing ponton.</p>
8	Semi-annually	Left double-eye yoke (5), lower lock-drive assembly (7), and bumpers (6)	<p>a. Inspect main lower coupling for cracks or broken welds. b. Inspect for loose or missing hardware. c. Inspect jackscrew threads for cracks, burrs, nicks, and deformation. d. Inspect trunnions and pin for cracks. e. Inspect bumpers and support brackets for cracks, broken welds, and deformation. f. Inspect for structural damage or missing or loose mounting hardware.</p> 	<p>a. Cracks or broken welds noted. b. Loose or missing hardware. c. Jackscrew will not extend or retract pin properly. d. Cracks or broken welds noted. e. Cracks, broken welds, or deformation noted. f. Missing or loose mounting hardware preventing use of lock-drive.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

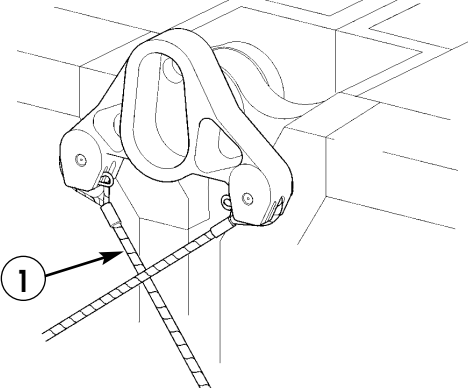
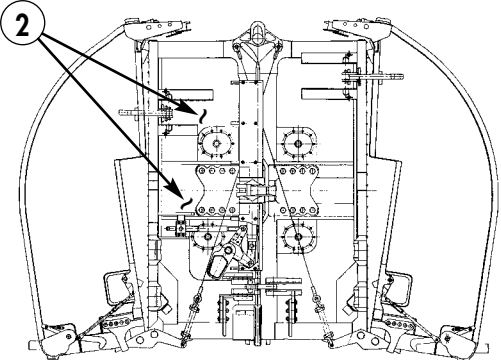
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
9	Semi-annually	Left unfolding cable assembly (1)	<p>a. Inspect cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension.</p> <p>b. Inspect spring for deformation.</p> <p>c. Inspect turnbuckle for binding and loose or missing hardware.</p> 	<p>a. Cable kinked, compressed, flattened, or any strands broken.</p> <p>b. Spring stretched.</p> <p>c. Turnbuckle binding or loose, or hardware missing.</p>
10	Semi-annually	Left inner ponton skin surface (2)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

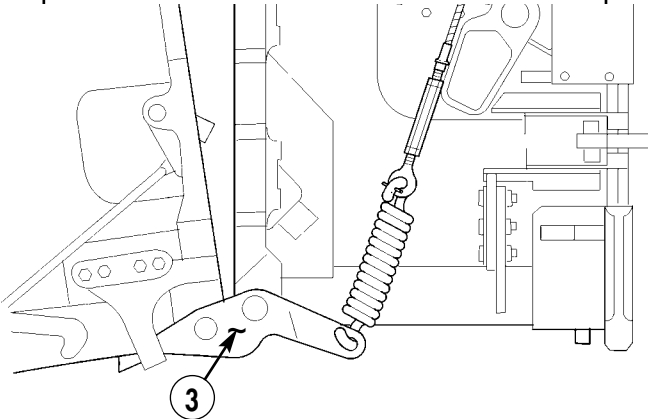
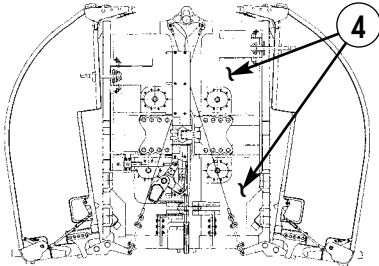
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
11	Semi-annually	Left unfolding mechanism (3)	<p>a. Inspect bracket, stabilizer lever, rubber bumper, spring, and turnbuckle for cracks, broken welds, or missing hardware.</p> <p>b. Inspect cable for looseness, kinks, broken strands, or compression.</p> 	<p>a. Cracks, broken welds, or missing hardware preventing proper unfolding operation.</p> <p>b. Cable is loose, kinked, or compressed, or broken strands are noted.</p>
12	Semi-annually	Right inner ponton skin surface (4)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

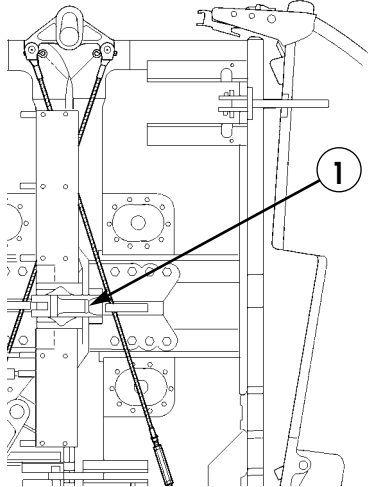
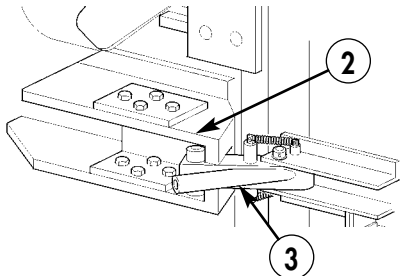
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
13	Semi-annually	Right single-eye yoke (1)	<p>a. Inspect single-eye yoke for cracks or broken welds.</p> <p>b. Inspect for loose or missing hardware.</p> 	<p>a. Cracked or broken welds noted.</p> <p>b. Loose or missing hardware.</p>
14	Semi-annually	Travel latch (3) and receptacle (2)	<p>NOTE Receptacle, when properly adjusted, will allow latch to seat snugly in strike catches.</p> <p>Inspect brackets, shims, and strike catches for cracks, broken welds, binding, and deformation.</p> 	Cracks, broken welds, binding, or deformation prevents engaging latch.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

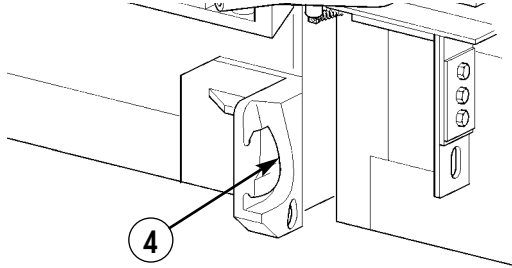
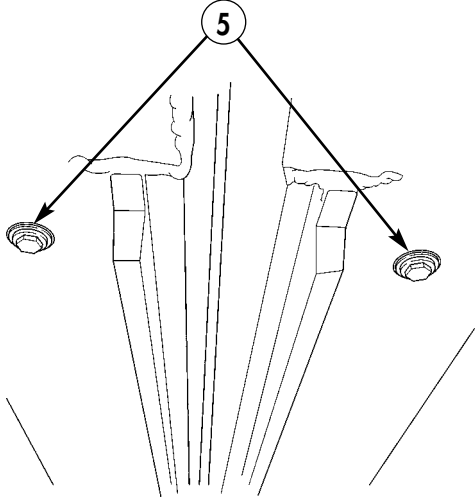
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
15	Semi-annually	Cable guide (4)	<p>Inspect for structural damage, cracked welds, or missing guide.</p> 	Cracked welds noted or damage prevents using guide.
16	Semi-annually	Left and right roadway ponton drain plugs (5)	<p>Inspect drain plugs for cracked or broken welds.</p> 	Cracked or broken welds noted.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

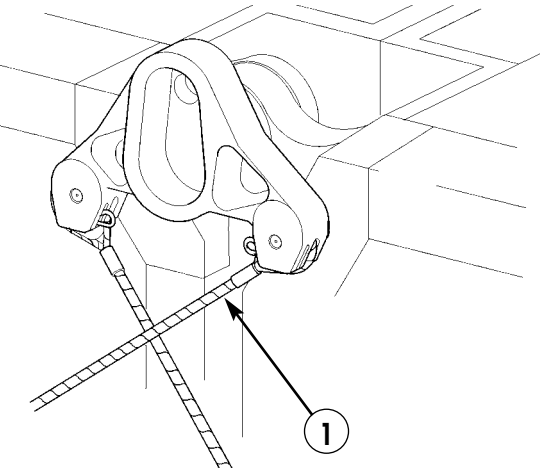
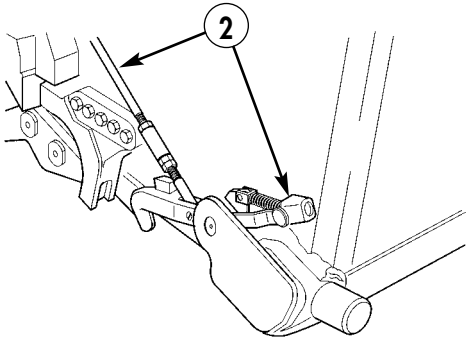
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
17	Semi-annually	Right unfolding cable assembly (1)	<p>a. Inspect cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension.</p> <p>b. Inspect spring for deformation.</p> <p>c. Inspect turnbuckle for binding and loose or missing hardware.</p> 	<p>a. Cable kinked, compressed, flattened, or any strands broken.</p> <p>b. Spring stretched.</p> <p>c. Turnbuckle binding or loose, or hardware missing.</p>
18	Semi-annually	Right outer ponton lock assembly (2) and brackets	<p>a. Ensure outer ponton lock is assembled properly.</p> <p>b. Inspect brackets, spring pins, pins, spacers, lever, and connecting link for cracks, broken welds, binding, and deformation.</p> 	<p>a. Outer ponton lock not functioning properly.</p> <p>b. Broken welds or deformation noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

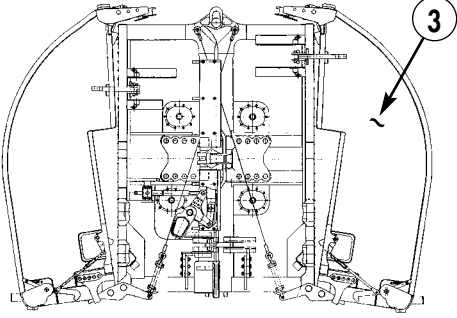
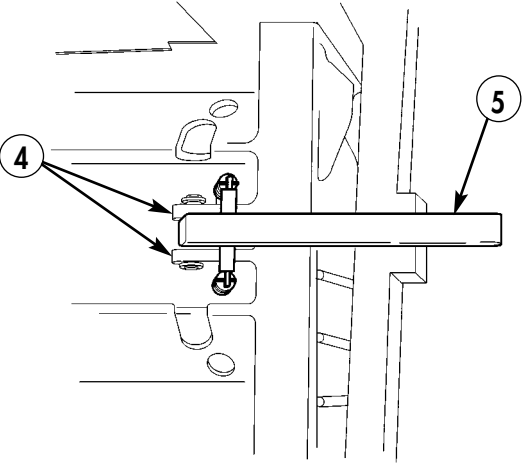
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
19	Semi-annually	Right outer ponton skin surface (3) at end	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>
20	Semi-annually	Right foldlock assembly (5) and brackets (4)	<p>Inspect right foldlock assembly for structural damage and proper movement.</p> 	<p>Damage prevents foldlock from securing ponton.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

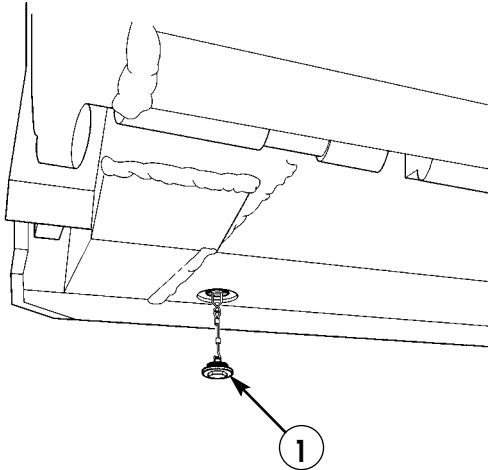
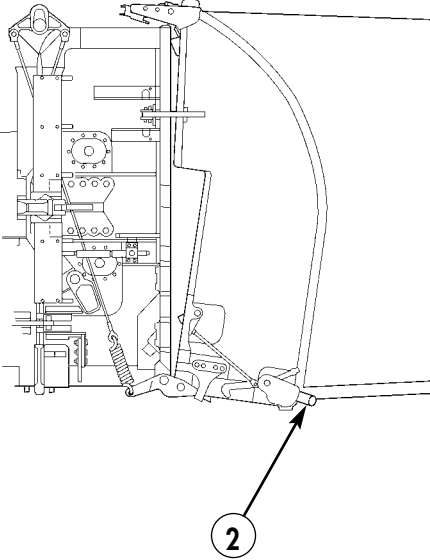
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
21	Semi-annually	Right drain plug (1)	<p>Inspect drain plug for cracked or broken welds.</p> 	Cracked or broken welds noted.
22	Semi-annually	Right rear trunnions (2) on right outer ponton	<p>Inspect for cracks or broken welds, or if bent.</p> 	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

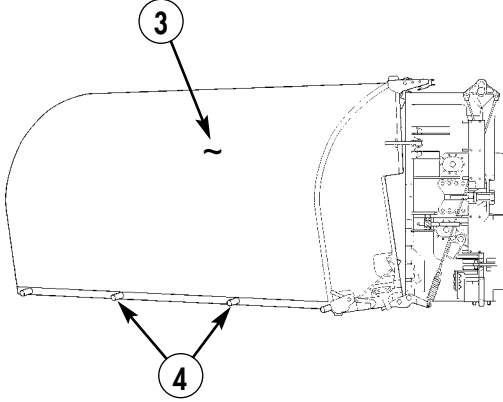
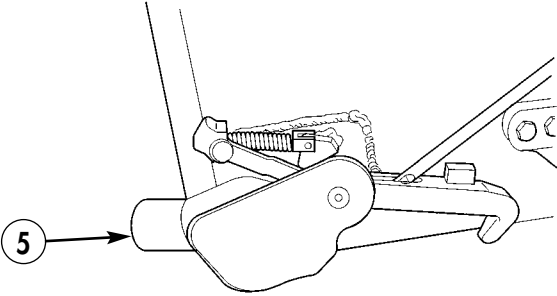
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
23	Semi-annually	Right outer ponton skin surface (3) and trunnions (4) along side	Inspect for cracks or broken welds, or if bent. 	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.
24	Semi-annually	Right front trunnion (5) on right outer ponton	Inspect for cracks or broken welds, or if bent. 	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

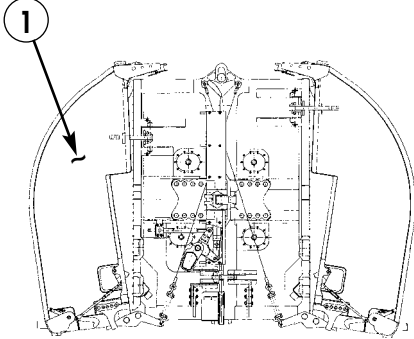
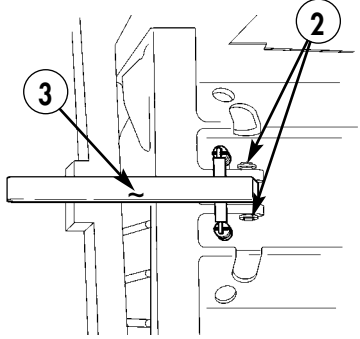
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
25	Semi-annually	Right outer ponton skin surface (1) at end	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>
26	Semi-annually	Right foldlock assembly (3) and brackets (2)	<p>Inspect right foldlock assembly for structural damage and proper movement.</p> 	Damage prevents foldlock from securing ponton.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
27	Semi-annually	Right double-eye yoke (5), lower lock-drive assembly (4), and bumpers (6)	<p>a. Inspect main lower coupling for cracks or broken welds.</p> <p>b. Inspect for loose or missing hardware.</p> <p>c. Inspect jackscrew threads for cracks, burrs, nicks, and deformation.</p> <p>d. Inspect trunnions and pin for cracks.</p> <p>e. Inspect bumpers and support brackets for cracks, broken welds, and deformation.</p> <p>f. Inspect for structural damage or missing or loose mounting hardware.</p>	<p>a. Cracks or broken welds noted.</p> <p>b. Loose or missing hardware.</p> <p>c. Jackscrew will not extend or retract pin properly.</p> <p>d. Cracks or broken welds noted.</p> <p>e. Cracks, broken welds, or deformation noted.</p> <p>f. Missing or loose mounting hardware preventing use of lock-drive.</p>

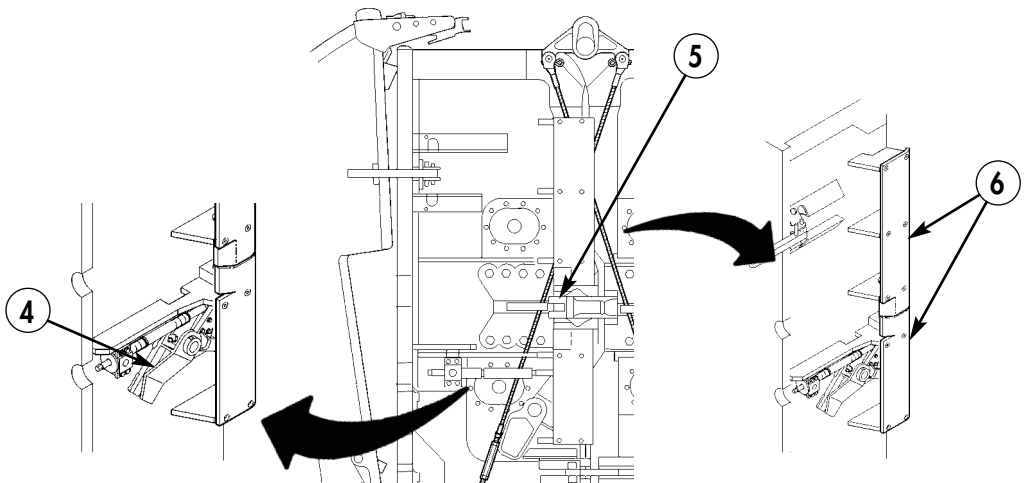


Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

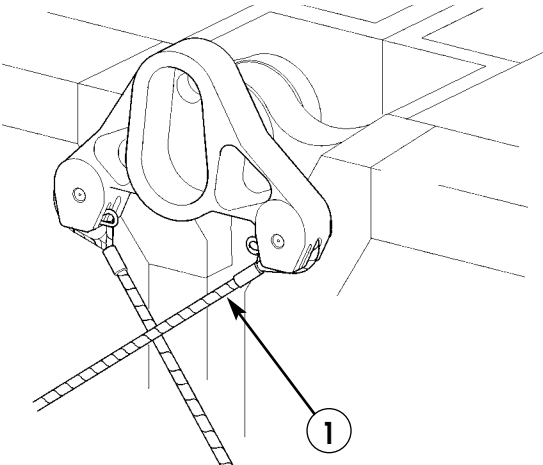
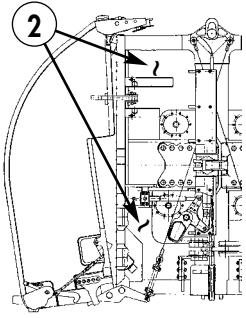
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
28	Semi-annually	Right unfolding cable assembly (1)	<p>a. Inspect cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension.</p> <p>b. Inspect spring for deformation.</p> <p>c. Inspect turnbuckle for binding and loose or missing hardware.</p> 	<p>a. Cable kinked, compressed, flattened, or any strands broken.</p> <p>b. Spring stretched.</p> <p>c. Turnbuckle binding or loose, or hardware missing.</p>
29	Semi-annually	Right inner ponton skin surface (2)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

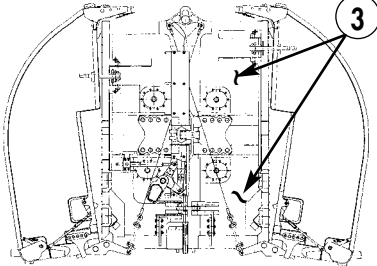
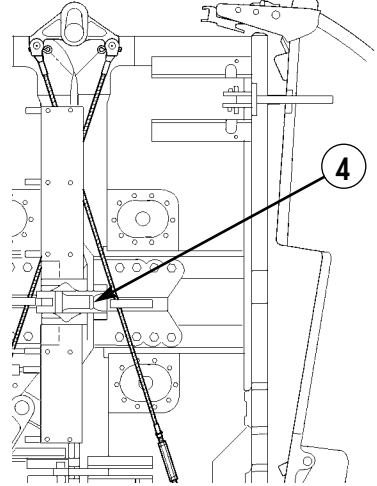
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
30	Semi-annually	Left inner ponton skin surface (3)	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>
31	Semi-annually	Left single-eye yoke (4)	<p>a. Inspect single-eye yoke for cracks or broken welds.</p> <p>b. Inspect for loose or missing hardware.</p> 	<p>a. Cracked or broken welds noted.</p> <p>b. Loose or missing hardware.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

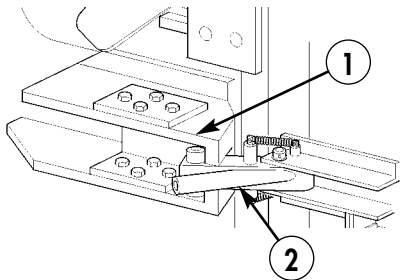
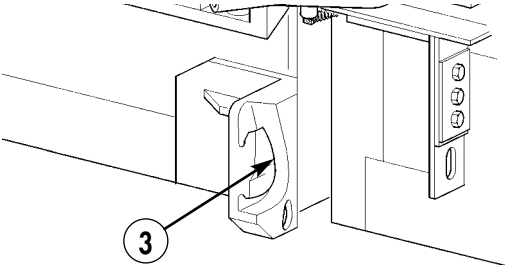
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
32	Semi-annually	Travel latch (2) and receptacle (1)	<p style="text-align: center;">NOTE</p> <p>Receptacle, when properly adjusted, will allow latch to seat snugly in strike catches.</p> <p>Inspect brackets, shims, and strike catches for cracks, broken welds, binding, and deformation.</p> 	Cracks, broken welds, binding, or deformation prevents engaging latch.
33	Semi-annually	Cable guide (3)	<p>Inspect for structural damage, cracked welds, or missing guide.</p> 	Cracked welds noted or damage prevents using guide.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

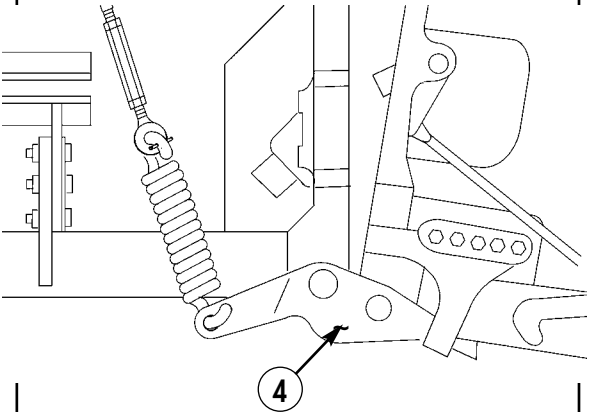
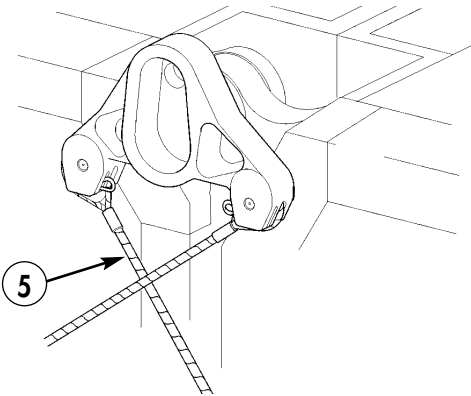
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
34	Semi-annually	Left unfolding mechanism (4)	<p>a. Inspect bracket, stabilizer lever, rubber bumper, spring, and turnbuckle for cracks, broken welds, or missing hardware.</p> <p>b. Inspect cable for looseness, kinks, broken strands, or compression.</p> 	<p>a. Cracks, broken welds, or missing hardware preventing proper unfolding operation.</p> <p>b. Cable is loose, kinked, or compressed, or broken strands are noted.</p>
35	Semi-annually	Left unfolding cable assembly (5)	<p>a. Inspect cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension.</p> <p>b. Inspect spring for deformation.</p> <p>c. Inspect turnbuckle for binding and loose or missing hardware.</p> 	<p>a. Cable kinked, compressed, flattened, or any strands broken.</p> <p>b. Spring stretched.</p> <p>c. Turnbuckle binding or loose, or hardware missing.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

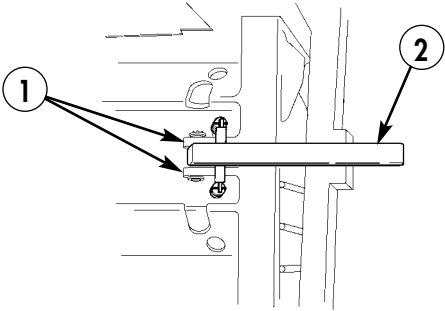
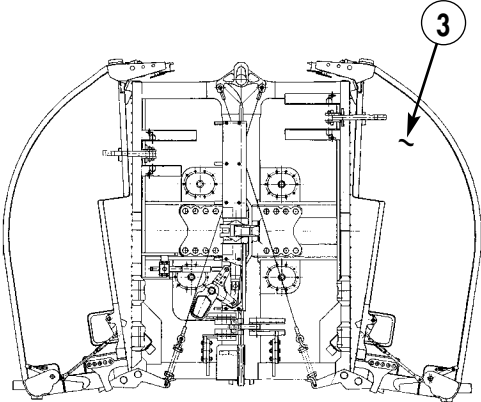
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
36	Semi-annually	Left foldlock assembly (2) and brackets (1)	<p>Inspect right foldlock assembly for structural damage and proper movement.</p> 	Damage prevents foldlock from securing ponton.
37	Semi-annually	Left outer ponton skin surface (3) at end	<p>a. Inspect surface area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>b. Inspect seams for cracked or broken welds.</p> 	<p>a. Damage which cumulatively adds up to a hole approximately .26 in. (.66 cm) in diameter (the size of a typical pen or pencil).</p> <p>b. Cracked or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

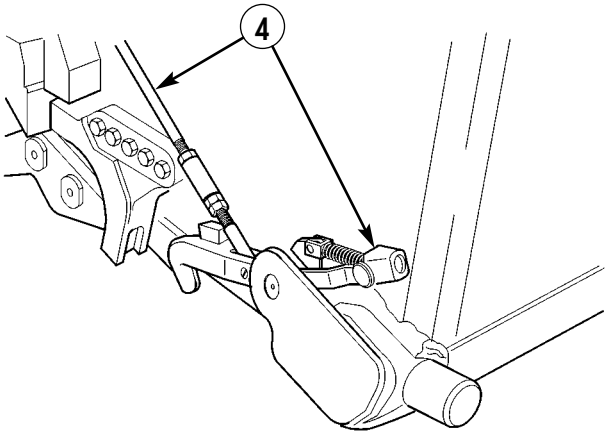
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
38	Semi-annually	Left outer ponton lock (4) assembly and brackets	<p>a. Ensure outer ponton lock is assembled properly.</p> <p>b. Inspect brackets, spring pins, pins, spacers, lever, and connecting link for cracks, broken welds, binding, and deformation.</p> 	<p>a. Outer ponton lock not functioning properly.</p> <p>b. Broken welds or deformation noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

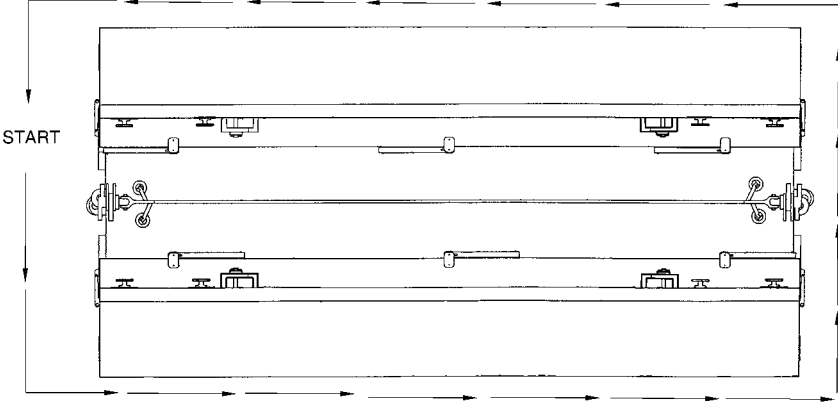
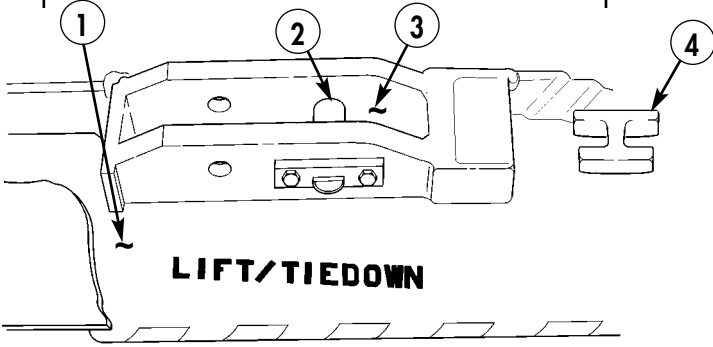
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			<p style="text-align: center;">NOTE</p> <p>Perform steps 39 through 43 from top of interior bay, starting at either end, proceeding counterclockwise. (Refer to figure 5.)</p> 	
39	Semi-annually	Left and right front load receiving pin (2), recess (3), cleats (4), and splash plate (1)	<p>a. Inspect pin and mounting hardware for cracks or if missing.</p> <p>b. Inspect recess for cracks and broken welds.</p> <p>c. Inspect cleat for broken welds or if missing.</p> 	<p>a. Pin is missing or damage prevents pin use.</p> <p>b. Cracks or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

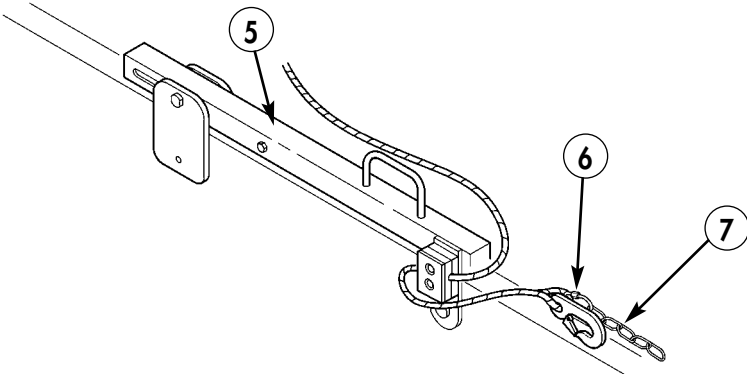
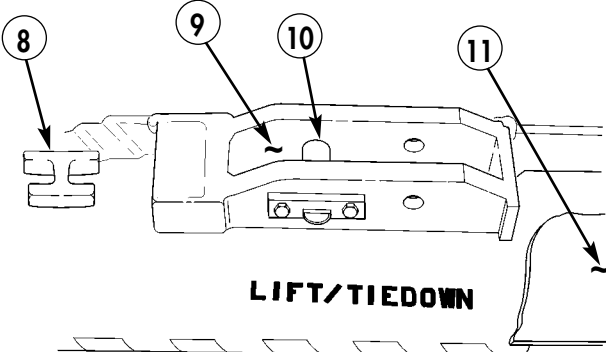
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
40	Semi-annually	Left, right, and center handrail assemblies (5), chain extension (7), and chain linker (6)	<p>Inspect handrail assembly for missing or damaged mounting hardware, rope and deterioration of rope, snaphooks, chain extensions, chain linkers, and if stanchion will lock in stowed and set positions.</p> 	Missing or damaged parts are found or stanchion is not operational.
41	Semi-annually	Left and right load receiving pin (10), recess (9), cleats (8), and splash plate (11)	<p>a. Inspect pin and mounting hardware for cracks or if missing.</p> <p>b. Inspect recess for cracks and broken welds.</p> <p>c. Inspect cleat for broken welds or if missing.</p> 	<p>a. Pin is missing or damage prevents pin use.</p> <p>b. Cracks or broken welds noted.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

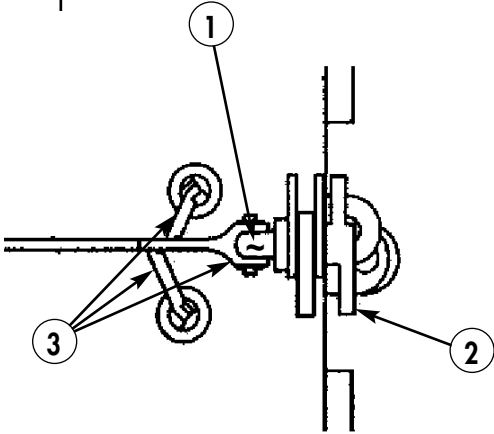
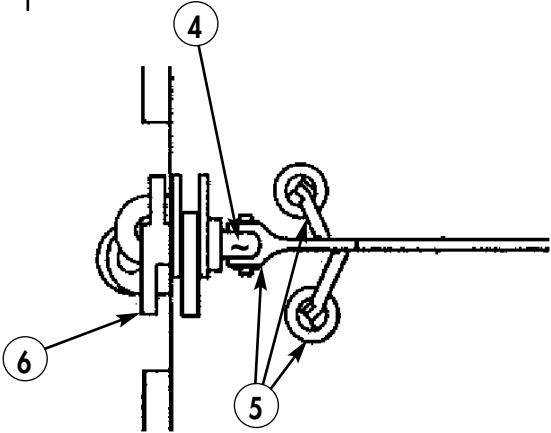
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
42	Semi-annually	Rear lifting lug (2), eyebolt (1), and lever assembly (3)	<p>a. Inspect for damaged, loose, or missing parts.</p> <p>b. Inspect for cracks, deformation of eyebolt, or proper shim assembly.</p> 	<p>a. Any damaged, loose, or missing parts.</p> <p>b. Any cracks noted or eyebolt elongation of more than 50% of hole diameter noted. Shims are not assembled properly.</p>
43	Semi-annually	Front lifting lug (6), eyebolt (4), and lever assembly (5)	<p>a. Inspect for damaged, loose, or missing parts.</p> <p>b. Inspect for cracks, deformation of eyebolt, and proper shim assembly.</p> 	<p>a. Any damaged, loose, or missing parts.</p> <p>b. Any cracks noted or eyebolt elongation of more than 50% of hole diameter noted. Shims are not assembled properly.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

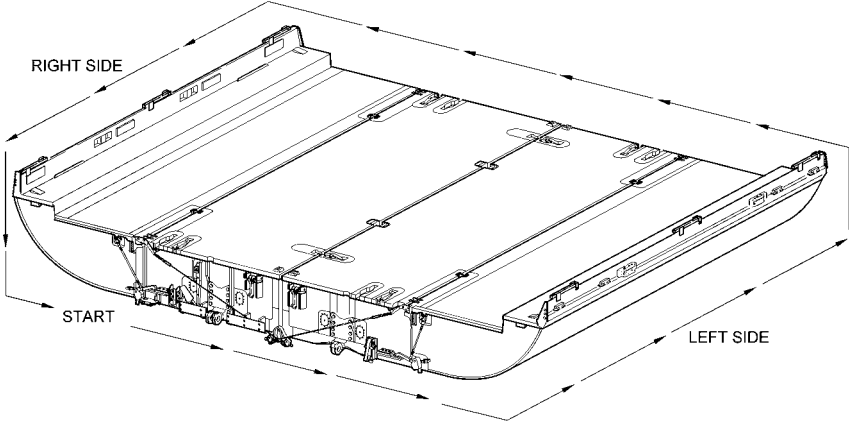
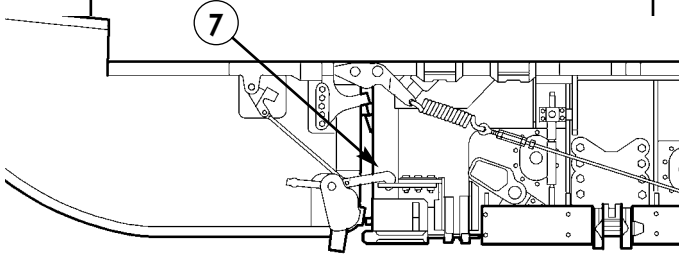
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			<p style="text-align: center;">CAUTION</p> <p>Ensure longitudinal and transverse couplings and outer ponton locks are engaged before performing inspection.</p> <p style="text-align: center;">NOTE</p> <p>Perform items 44 through 53 with interior bay unfolded and secured, starting at either end, proceeding counterclockwise. (Refer to figure 6.)</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><i>Figure 6. PMCS, Interior Bay Unfolded.</i></p>	
44	Semi-annually	Right outer ponton lock (7) at end of bay	<p>a. Inspect engagement of outer ponton lock.</p> <p>b. Adjust outer ponton lock (WP 0045 00).</p> <div style="text-align: center;">  </div>	<p>a. Outer ponton lock will not engage.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

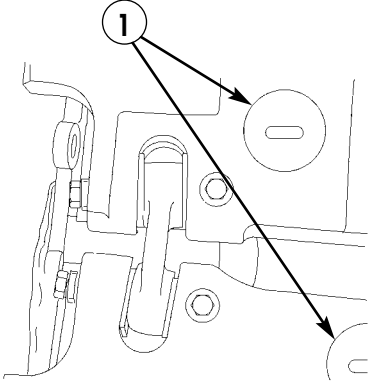
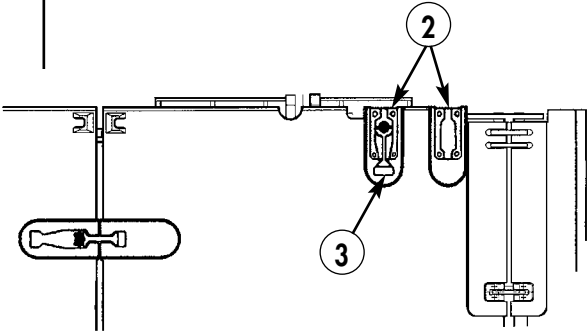
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
45	Semi-annually	Right and inner ponton bilge plugs (1)	<p>Ensure bilge plugs are secured and not cracked or broken.</p> 	Any bilge plug missing, cracked, or broken.
46	Semi-annually	Longitudinal upper coupling (3) and receptacle blocks (2)	<p>NOTE Receptacle consists of entire housing (block) in which connector is seated.</p> <p>a. Inspect seams on welded insert blocks for cracks or broken welds.</p> <p>b. Inspect receptacle area for cracks, broken welds, elongation, and deformation.</p> 	<p>a. Cracks or broken welds noted.</p> <p>b. Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

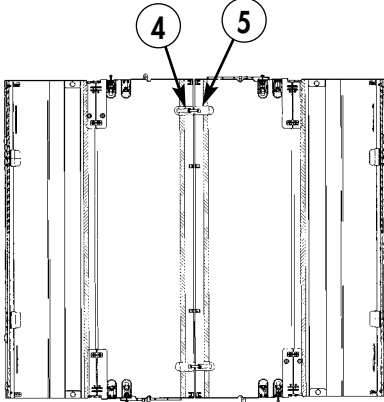
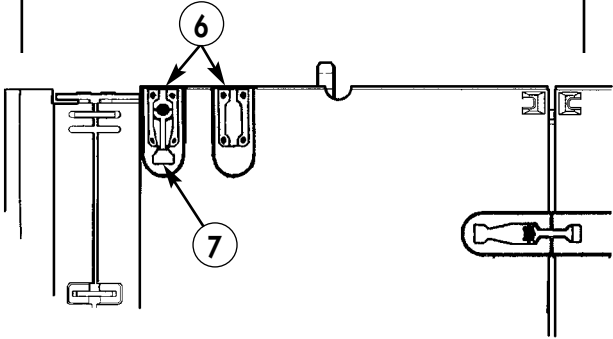
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
47	Semi-annually	Transverse upper coupling (4) and receptacle blocks (5)	Inspect receptacle area for cracks, broken welds, elongation, and deformation. 	Cracks, broken welds, elongation, or deformation prevents proper seating of connector.
48	Semi-annually	Longitudinal upper coupling (7) and receptacle blocks (6)	<p style="text-align: center;">NOTE</p> <p style="text-align: center;">Receptacle consists of entire housing (block) in which connector is seated.</p> <p>a. Inspect seams on welded insert blocks for cracks or broken welds.</p> <p>b. Inspect receptacle area for cracks, broken welds, elongation, and deformation.</p> 	<p>a. Cracks or broken welds noted.</p> <p>b. Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

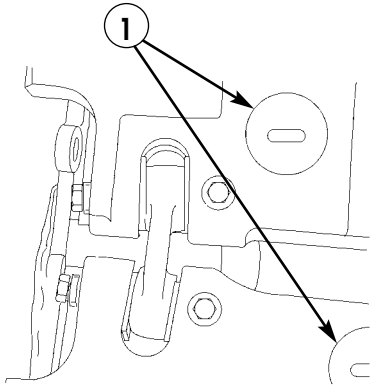
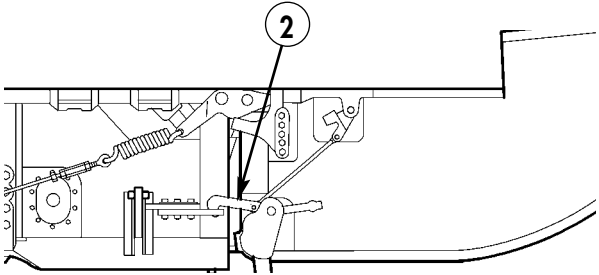
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
49	Semi-annually	Left inner and outer ponton bilge plugs (1)	<p>Ensure bilge plugs are secured and not cracked or broken.</p> 	Any bilge plug missing, cracked, or broken.
50	Semi-annually	Left outer ponton lock (2) at end of bay	<p>a. Inspect engagement of outer ponton lock.</p> <p>b. Adjust outer ponton lock (WP 0045 00).</p> 	a. Outer ponton lock will not engage.

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

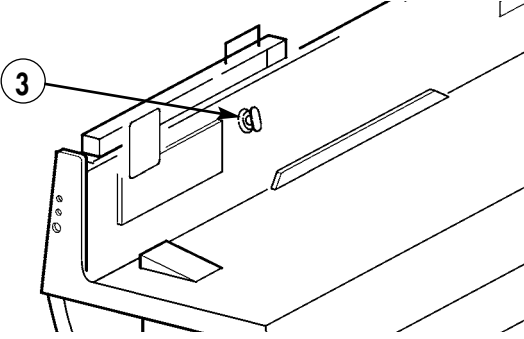
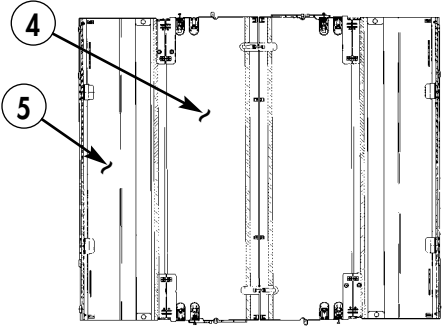
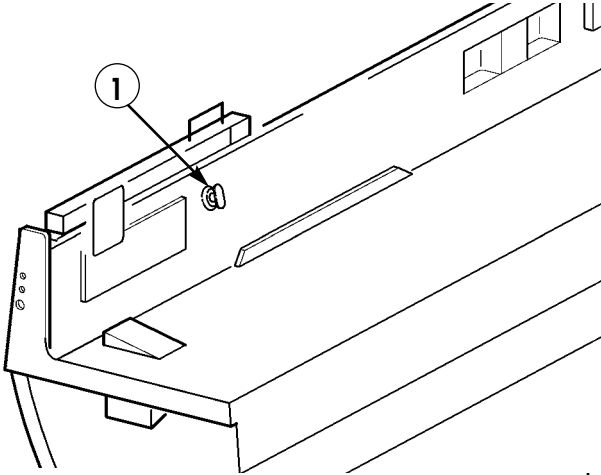
ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
51	Semi-annually	Belay cleat (3)	<p>Inspect cleat for damage, cracked welds, or if missing.</p> 	
52	Semi-annually	Left outer ponton personnel walkway surface (5) and inner ponton roadway surface (4)	<p>a. Inspect for structural damage, deformity, holes, and tears.</p> <p>b. Inspect for punctures, cracks, tears, dents, holes, and broken welds.</p> <p>c. Ensure that non-skid coating adequately covers walkways. Refer to WP 0076 00 for application of non-skid coating.</p> 	<p>a. Damage prevents safe traffic crossing or causes personnel safety hazard.</p> <p>b. Damage which punctures the entire deck (both top and bottom deck skins) and cumulatively adds up to a hole approximately 6 in. (15.5 cm) in diameter).</p>

Table 2. Unit Preventive Maintenance Checks and Services for Interior Bay (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
53	Semi-annually	Belay cleat (1)	Inspect cleat for damage, cracked welds, or if missing. 	
54	Semi-annually	Opposite end of bay	Repeat items 44 through 53.	

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

**IMPROVED RIBBON BRIDGE (IRB)
 RAMP BAY M16
 NSN 5420-01-470-5825 P/N 12478918;
 M17 INTERIOR BAY
 NSN 5420-01-470-5824 P/N 12478919.**

**Section III. RAMP BAY UNIT MAINTENANCE
 TABLE OF CONTENTS**

THIS WORK PACKAGE SUPERSEDES WP 0019 00, DATED 8 APRIL 2003

WP Title	WP Sequence No.-Page No.
Cable Assembly Maintenance	0020 00-1
Front and Rear Eyebolt Replacement	0021 00-1
Torsion Bar Replacement	0022 00-1
Inner Ponton and Outer Ponton Separation	0023 00-1
Unfolding Stabilizer and Brackets Replacement	0024 00-1
Ramp Plate and Strap Replacement	0025 00-1
Swivel Plate Replacement	0026 00-1
Swivel Hook and Retainer Shaft Replacement	0027 00-1
Stowage Compartment Access Cover and Tiedown Straps Replacement	0028 00-1
Foldlock Replacement	0029 00-1
Lower Lock-Drive Maintenance	0030 00-1

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

CABLE ASSEMBLY MAINTENANCE

REMOVAL, INSTALLATION, ADJUSTMENT

THIS WORK PACKAGE SUPERSEDES WP 0020 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Dunnage
Four cotter pins (WP 0086 00)
Lubricating Oil (Item 13, WP 0134 00)
Cap and plug set (Item 5, WP 0134 00)

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).

Travel latch and foldlock locked
(TM 5-5420-278-10).

Yokes fully retracted (TM 5-5420-278-10).

CABLE ASSEMBLY MAINTENANCE (Contd)

REMOVAL

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Removal of left and right cable assemblies is performed the same way. Right side is shown.

1. Using transporter or suitable lifting device, raise bay (1) and position dunnage lengthwise and on an angle under center of inner pontons (2). Lower bay (1) on dunnage.
2. Loosen two jamnuts (11) on clevis rods (13), and turn nut (12) counterclockwise until tension is removed from cable (7).

NOTE

Ends of cotter pins are bent for safety.

3. Straighten and remove cotter pin (9) and pin (10) from clevis (8) and cable (7). Discard cotter pin (9).
4. Straighten and remove cotter pin (15) and pin (16) from bellcrank (14) and cable (7). Discard cotter pin (15).

WARNING

Failure to ensure residual fluid pressure is relieved may result in injury to personnel.

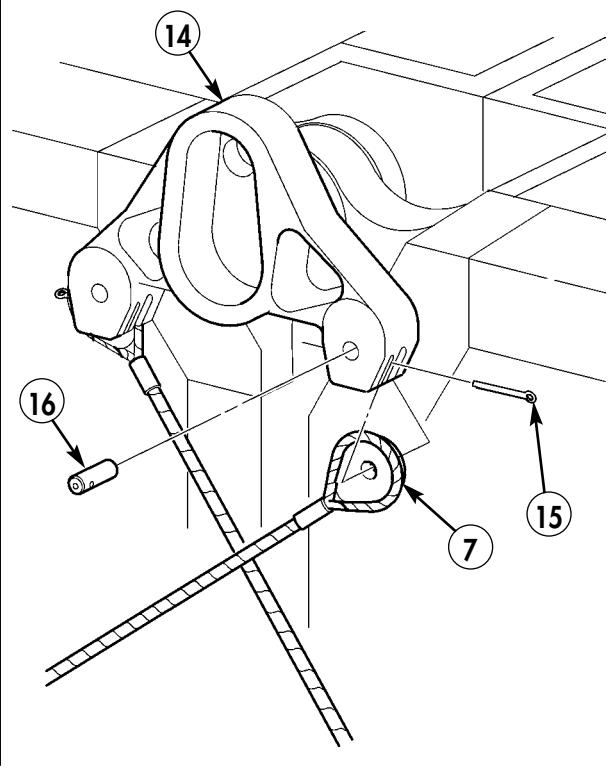
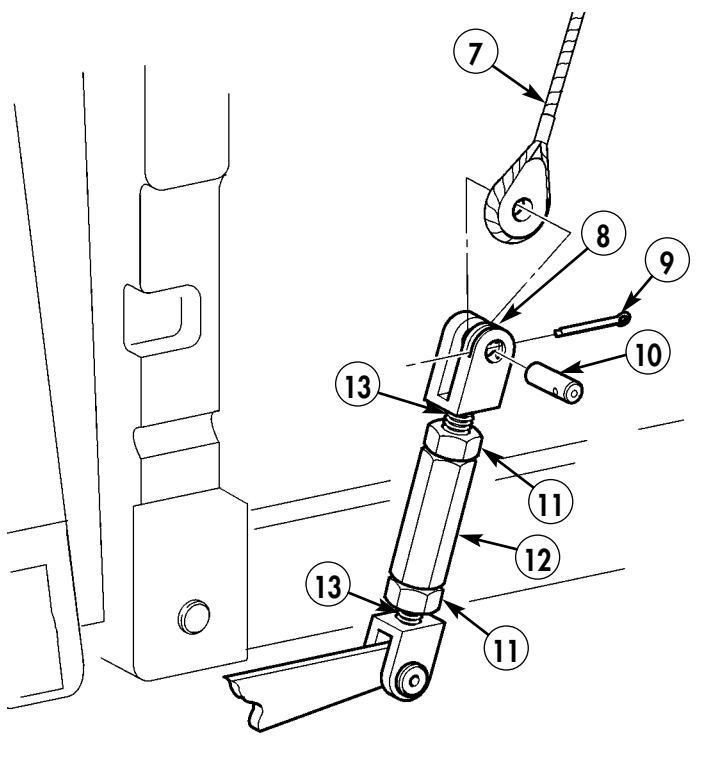
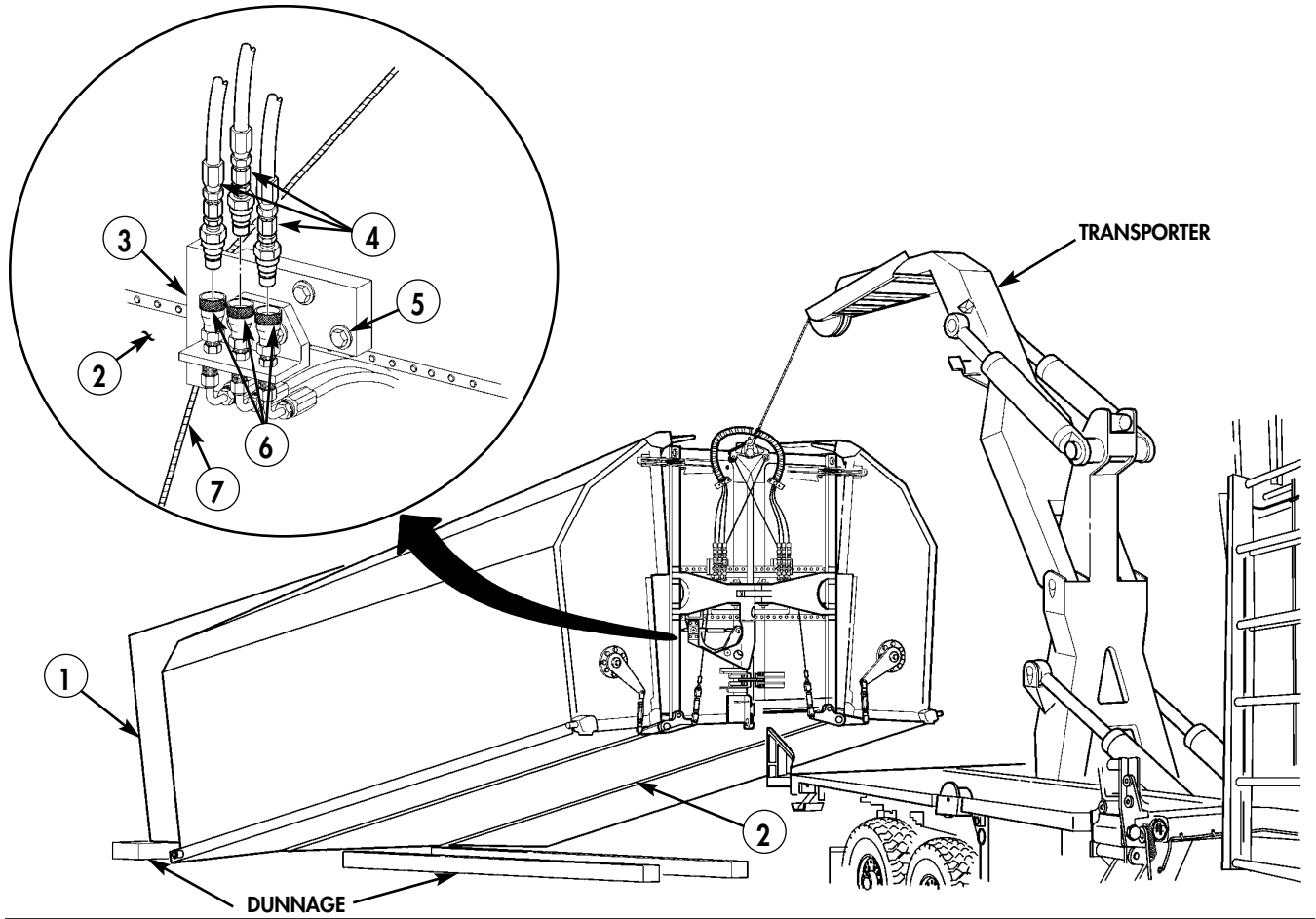
NOTE

Tag hoses for installation.

Cap and plug all hoses and fittings immediately after disconnecting.

5. Disconnect three hoses (4) from quick-disconnects (6), and secure out of way.
6. Loosen three screws (5), and move cable guide (3) away from inner ponton (2) until end of cable (7) can be removed. Remove cable (7) from bay.
7. Perform steps 2 through 6 to remove cable assembly from opposite side.

CABLE ASSEMBLY MAINTENANCE (Contd)



CABLE ASSEMBLY MAINTENANCE (Contd)

INSTALLATION

NOTE

Installation of left and right cable assemblies is performed the same way. Right side is shown.

The cable connected to right side of front bellcrank must pass in front of cable connected to left side of front bellcrank.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Route cable (6) behind cable guide (1), yoke, and outside piston rod of cylinder.
2. Connect end of cable (6) to bellcrank (7) with pin (9) and new cotter pin (8).
3. Tighten three screws (3) on cable guide (1) and inner ponton (2).
4. Remove caps and plugs, and connect three hoses (4) to quick-disconnects (5) as tagged during removal.
5. Connect end of cable (6) to clevis (11) with pin (13) and new cotter pin (12).
6. Slightly bend protruding ends of cotter pins (8) and (12).
7. Perform steps 1 through 6 to install opposite cable assembly.

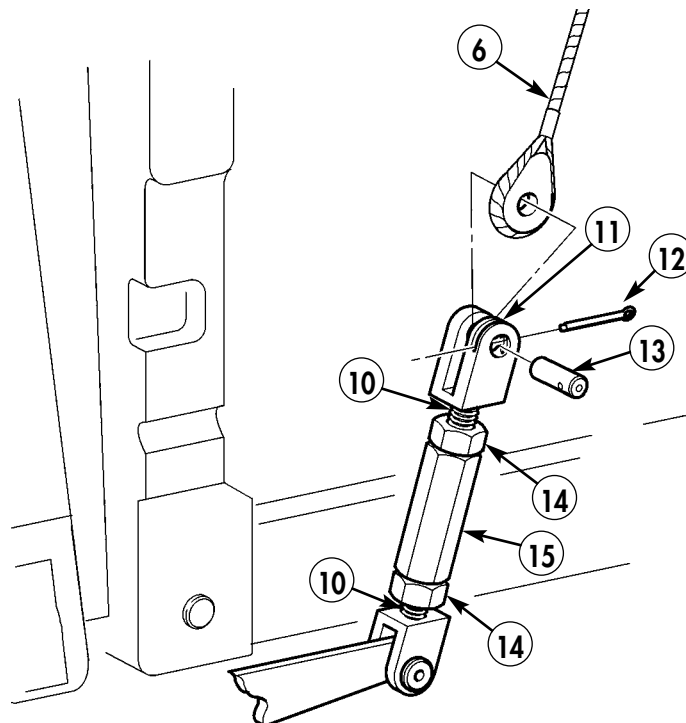
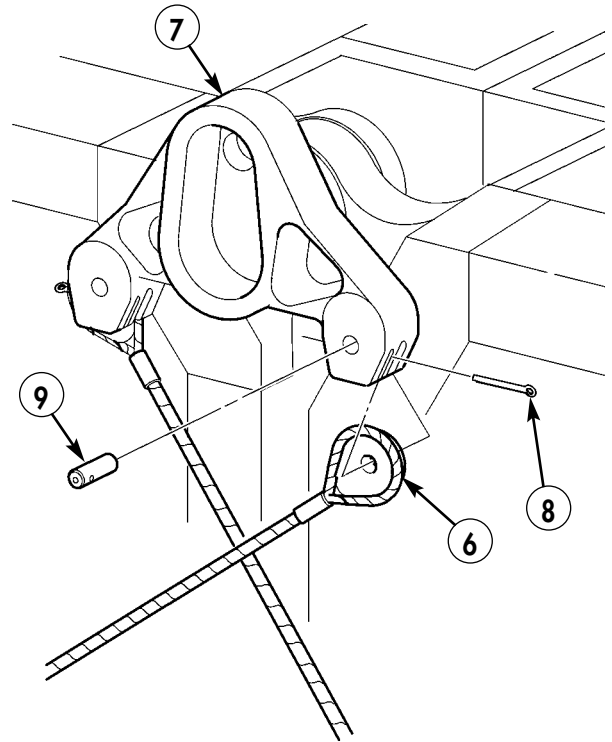
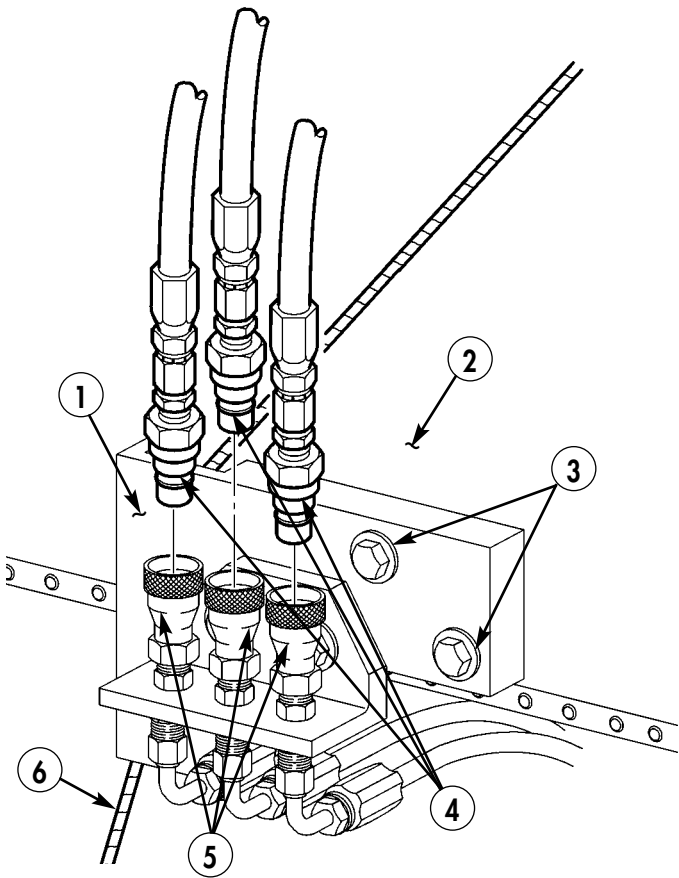
ADJUSTMENT

NOTE

The correct cable deflection is achieved when the center of the cable can be pushed with the thumb to just touch the ponton wall.

1. Loosen two jamnuts (14) on clevis rods (10), and turn nut (15) clockwise until cable (6) is tensioned. Tighten jamnuts (14).
2. Perform step 1 to adjust tension of opposite cable.
3. Lubricate cable assemblies (TM 5-5420-278-10).
4. Install ramp bay on transporter (TM 5-5420-278-10).

CABLE ASSEMBLY MAINTENANCE (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

FRONT BELLCRANK AND REAR EYEBOLT REPLACEMENT

FRONT BELLCRANK REMOVAL, REAR EYEBOLT REMOVAL, REAR EYEBOLT INSTALLATION, FRONT BELLCRANK INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0021 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Travel latch and foldlock locked
(TM 5-5420-278-10).
Cable assemblies removed (WP 0020 00).

Materials/Parts

Two cotter pins (WP 0088 00)
Two locknuts (WP 0088 00)
Locknut (WP 0089 00)
Grease (Item 10, WP 0134 00)

FRONT BELLCRANK AND REAR EYEBOLT REPLACEMENT (Contd)

FRONT BELLCRANK REMOVAL

1. Remove two cotter pins (4) and washers (3) from pin (15), and drive pin (15) out from lever (1) and front eyebolt (13). Discard cotter pins (4).
2. Remove two locknuts (9), screws (8), and shackles (2) with lever (1) from inner pontoons (12). Discard locknuts (9).
3. Remove locknut (14) and screw (6) from front collar (5), and drive front bellcrank (13) forward and remove collar (5). Discard locknut (14).

NOTE

Note location and number of shim(s) for installation; quantity may vary between bays.

4. Drive front bellcrank (13) completely out of inner ponton front hinges (7) and (11) and remove shim(s) (10).

REAR EYEBOLT REMOVAL

1. Remove locknut (14), screw (6), and rear collar (17) from rear eyebolt (16). Discard locknut (14).
2. Drive rear eyebolt (16) completely out of inner ponton rear hinges (7) and (11).

REAR EYEBOLT INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply grease to shaft of eyebolt at installation.

Install rear eyebolt (16) on inner ponton rear hinges (7) and (11) with rear collar (17), screw (6), and new locknut (14).

FRONT BELLCRANK INSTALLATION

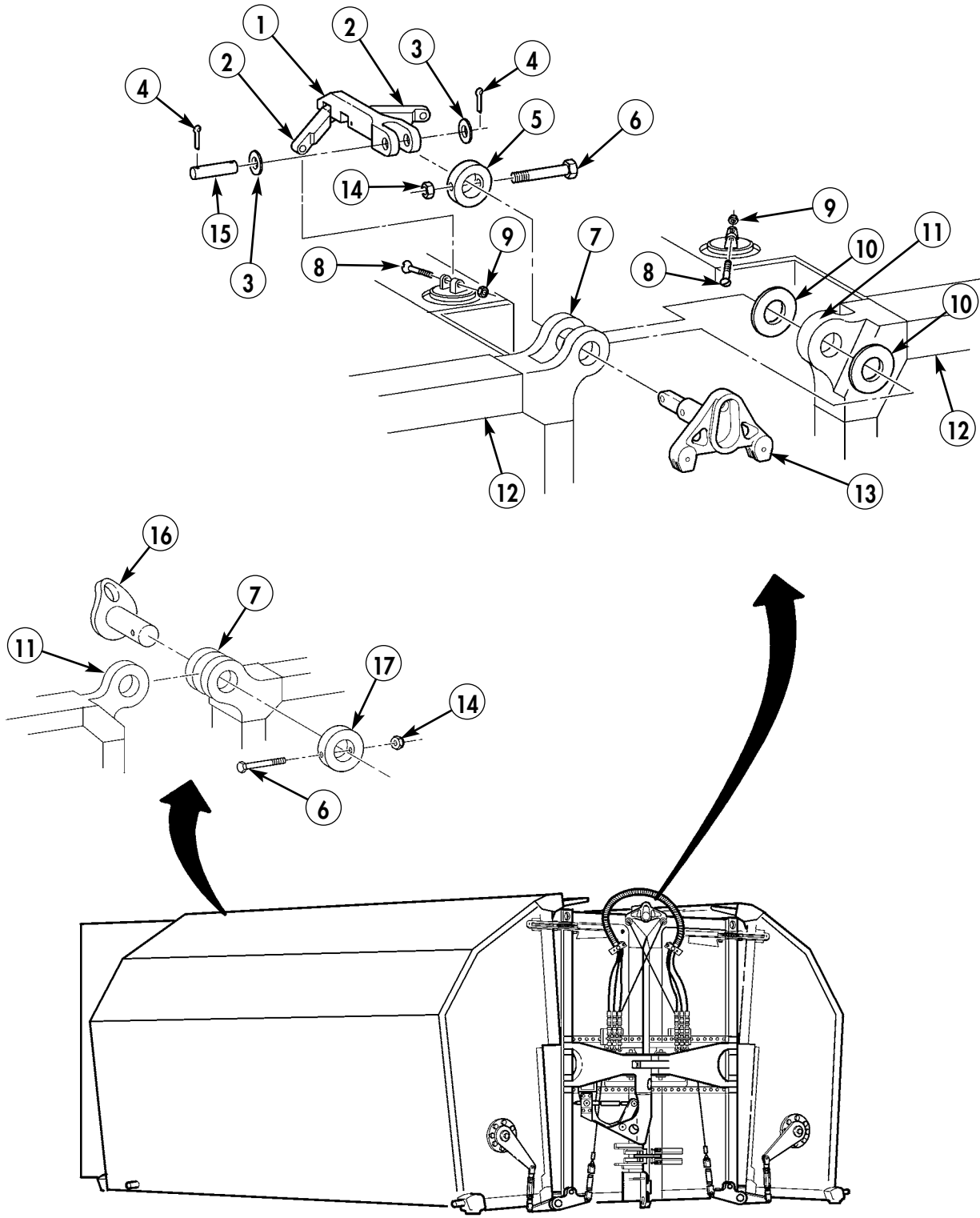
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to shims and shaft of bellcrank at installation.

1. Install two shims (10) between front hinges (7) and (11) and push front bellcrank (13) halfway in.
2. Install front collar (5) over shaft of front bellcrank (13) and push front bellcrank (13) all the way in.
3. Install front collar (5) on front bellcrank (13) with screw (6) and new locknut (14).
4. Install shackles (2) on inner pontoons (12) with two screws (8) and new locknuts (9).
5. Install lever (1) with shackles (2) on front bellcrank (13) with two washers (3), pin (15), and two new cotter pins (4).
6. Install cable assembly (WP 0020 00).

FRONT BELLCRANK AND REAR EYEBOLT REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

TORSION BAR REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0022 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Torsion bar tools (Items 4 and 5, WP 0074 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

O-ring (WP 0090 00)
Sealing compound (Item 16, WP 0134 00)
Unlike metal compound
(Item 18, WP 0134 00)
Grease (Item 10, WP 0134 00)

References

WP 0016 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Inner pontoons separated (WP 0023 00).

TORSION BAR REPLACEMENT (Contd)

REMOVAL

WARNING

All personnel must stand clear during lifting operations. Ensure ponton foldlock and travel latches are in good mechanical condition and securely locked prior to lifting outer ponton. Failure to comply may result in injury to personnel.

NOTE

Removal and installation of right and left torsion bars are performed the same way. Left side is shown.

1. Unlock foldlock (4), and lift outer ponton (3) from inner ponton (5) until preload tension on torsion bar lever (2) is off turnbuckle (1).
2. Remove screw (6), washer (7), and pin (8) from turnbuckle (1) and torsion bar lever (2), and slide turnbuckle clevis (9) off torsion bar lever (2).
3. Remove screw (22), washer (23), and washer (24) from torsion bar lever (2) and torsion bar (20).
4. Install washer (24), washer (23), and screw (22) on torsion bar (20) finger tight.
5. Mark position of torsion bar lever (2) on outer ponton (3), and remove torsion bar lever (2) from torsion bar (20).
6. Mark position of flange (15) and outer ponton (3), and remove eight screws (17), washers (16), and torsion bar housing (14) from outer ponton (3).

NOTE

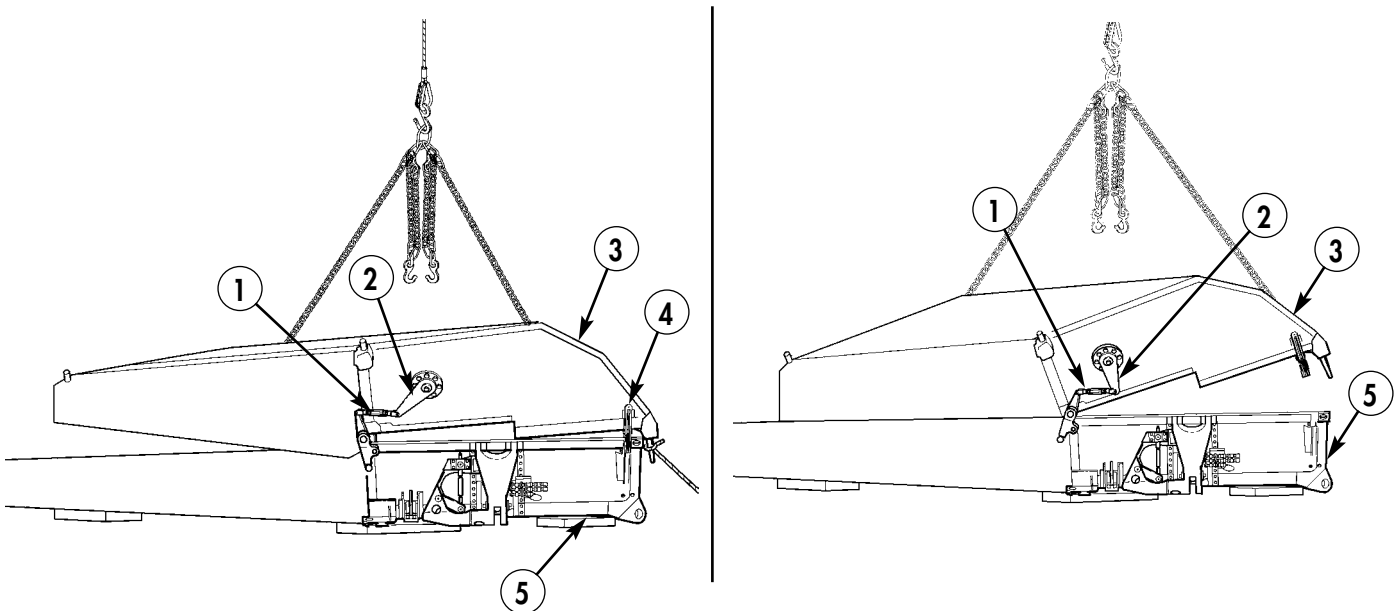
Note location and quantity of spacer(s) for installation.

7. Remove screw (25) from torsion bar housing (14) and washer (12).
8. Remove screw (10), washer (11), washer (12), and spacer(s) (13) from torsion bar housing (14) and torsion bar (20).
9. Push torsion bar (20) out of torsion bar housing (14).

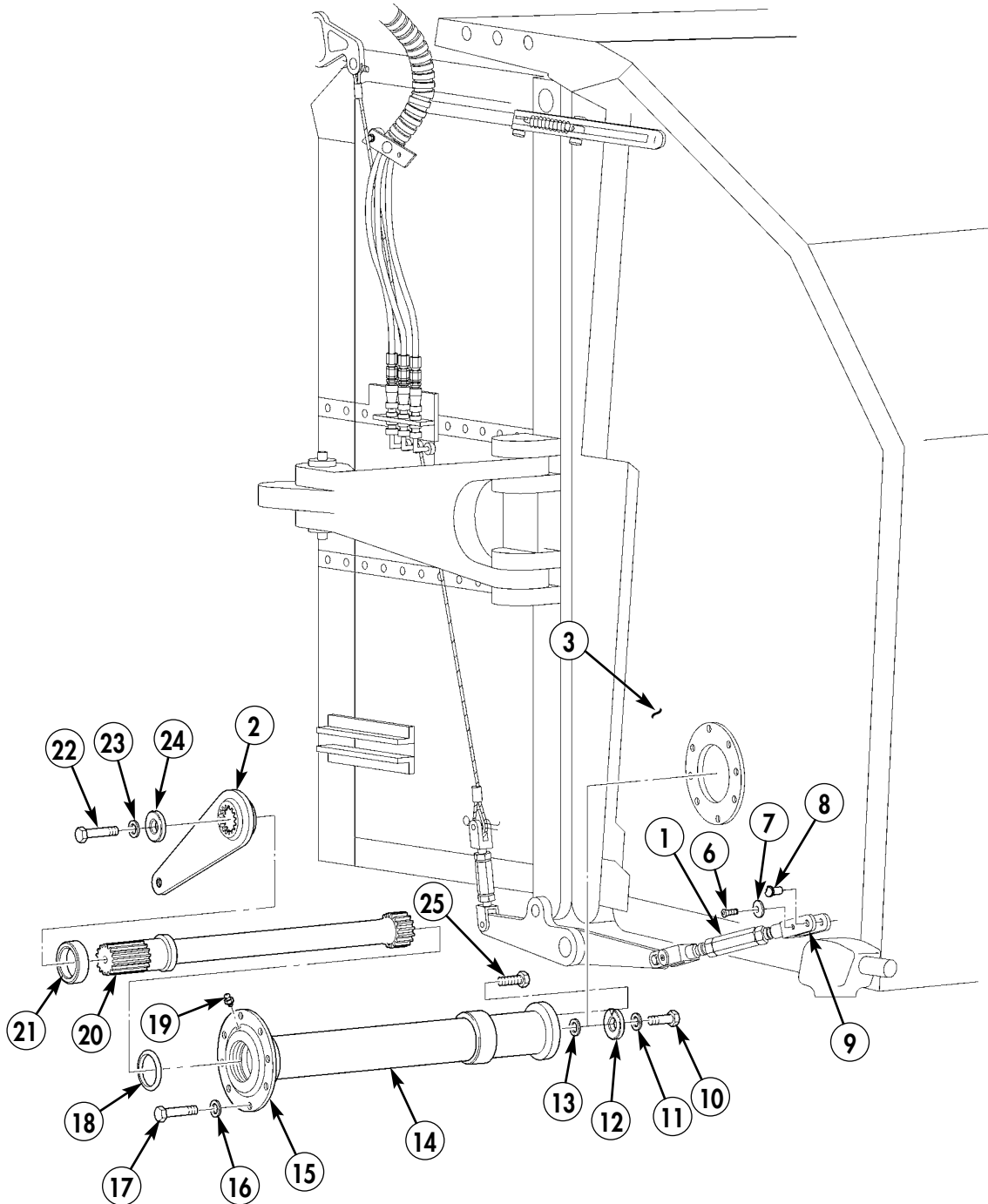
NOTE

Perform step 10 if removing spacer from torsion bar.

10. Using puller, remove spacer (21) from torsion bar (20).
11. Remove O-ring (18) and lube fitting (19) from flange (15). Discard O-ring (18).



TORSION BAR REPLACEMENT (Contd)



TORSION BAR REPLACEMENT (Contd)

INSTALLATION

NOTE

Removal and installation of right and left torsion bars are performed the same way. Left side is shown.

Apply grease to O-ring and splines of torsion bar prior to installation.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install new O-ring (15) and lube fitting (16) on flange (12) of torsion bar housing (11).

NOTE

Perform step 2 if spacer was removed from torsion bar.

2. Install spacer (18) on torsion bar (17) until seated.
3. Slide torsion bar (17) in torsion bar housing (11) and install spacer(s) (10), washer (9), washer (8), and screw (7) on torsion bar (17) and torsion bar housing (11). Do not tighten screw (7) until screw (23) is installed.
4. Align notch in washer (9) with hole in torsion bar housing (11), apply sealing compound to threads of screw (23) and install screw (23) on washer (9) and torsion bar housing (11). Tighten screws (7) and (23).

NOTE

If torsion bar lever was not marked or torsion bar was broken when removed, perform steps 5 through 10 and step 14 to pre-set torsion bar lever and turnbuckle for installation.

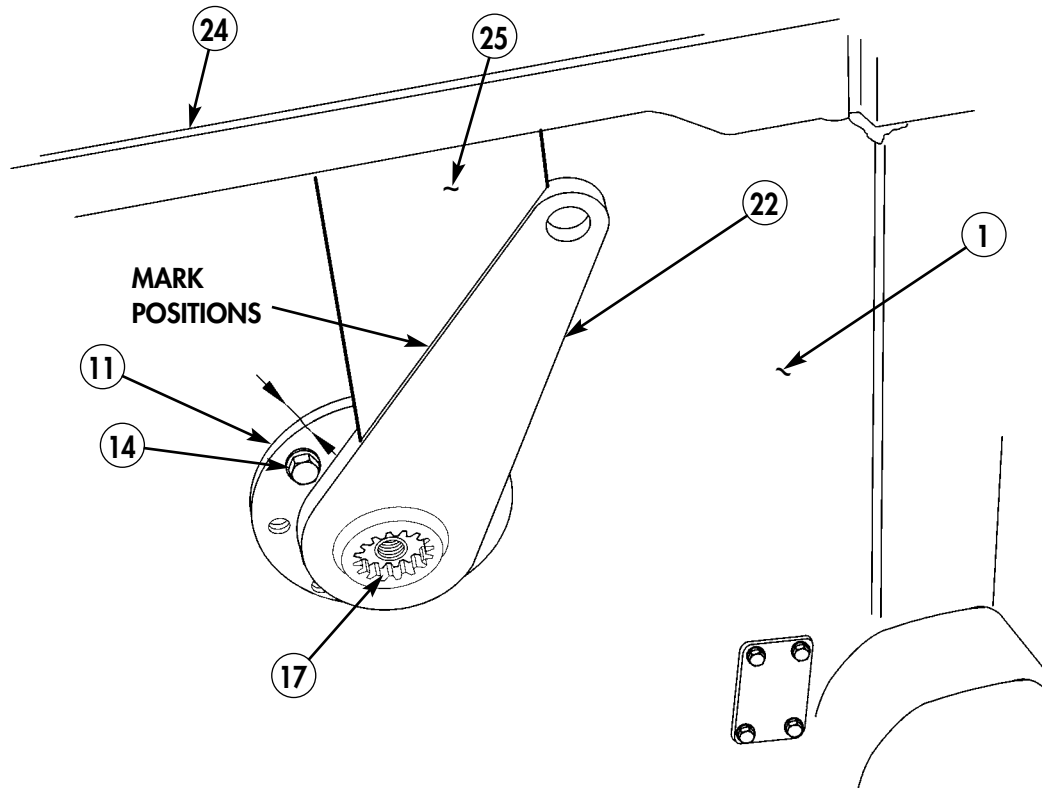
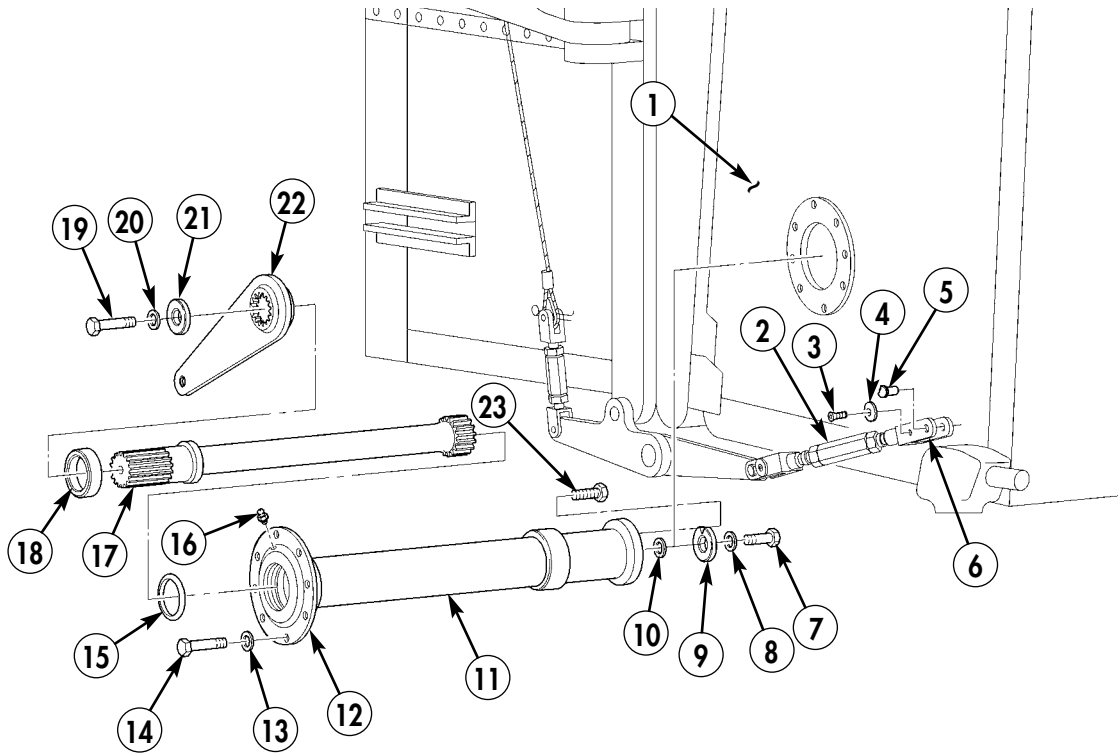
5. Install torsion bar housing (11) on outer ponton (1) with one screw (14).
6. Position pre-adjusting tool (25), flat edge against deck over-hang (24), on outer ponton (1).

NOTE

Lube fitting on torsion bar housing must face upper corner of outer ponton.

7. Install torsion bar lever (22) on torsion bar (17) and check alignment of lever (22) with pre-adjusting tool (25).
8. If necessary, adjust position of lever (22) by moving lever (22) one tooth up or down on torsion bar spline. This will move lever (22) 10 degrees.
9. If necessary, remove screw (14) and turn torsion bar housing (11) one screw position up or down. This will move lever (22) 45 degrees.
10. Mark position of torsion bar lever (22) and torsion bar housing (11) on outer ponton (1) and slide torsion bar housing (11) part way out of outer ponton (1).
11. Apply unlike metal compound to mating surfaces of outer ponton (1) and flange (12), align marks, and install torsion bar housing (11) on outer ponton (1) with eight washers (13) and screws (14).
12. Align marks, and install torsion bar lever (22) on torsion bar (17) with washer (21), washer (20), and screw (19).
13. If a new turnbuckle (2) or cleves ends (6) are being replaced, remove two screws (3), washers (4), and pins (5) from turnbuckle (2) and perform step 14 to pre-set turnbuckle (2)

TORSION BAR REPLACEMENT (Contd)



TORSION BAR REPLACEMENT (Contd)**NOTE**

Adjustment of left or right turnbuckle is performed the same way.
Right side is shown.

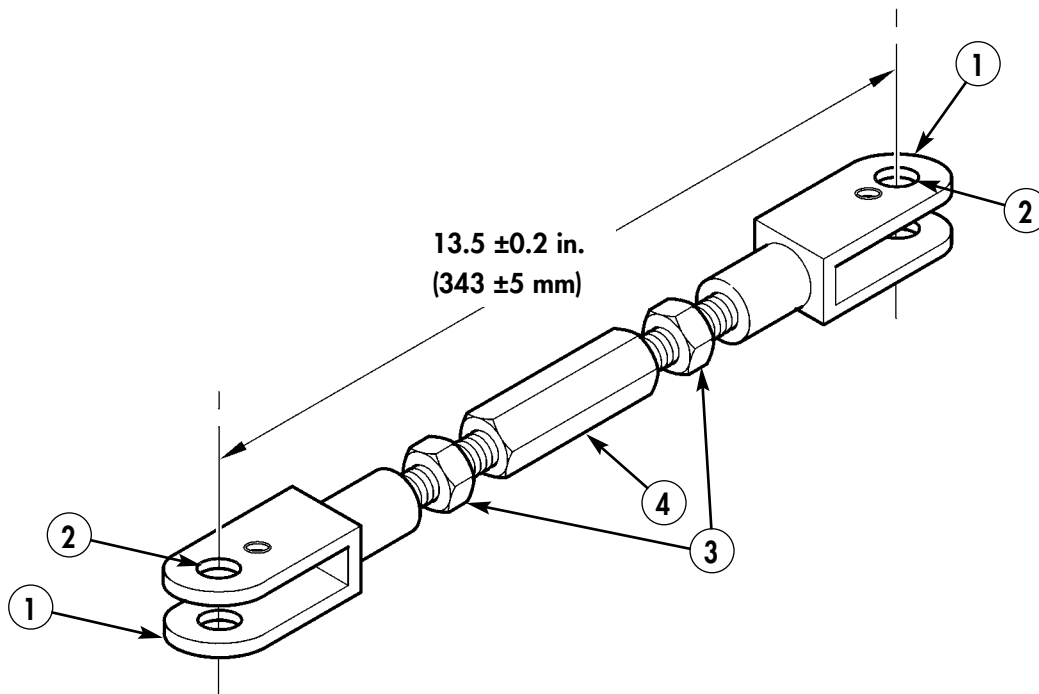
Free threads on turnbuckle clevis ends must have the same
number of threads showing \pm two threads.

14. Loosen nuts (3) and pre-set turnbuckle (4) to 13.5 ± 0.2 in. (343 ± 5 mm) from center of holes (2) by adjusting turnbuckle clevis ends (1). Do not tighten nuts (3) until turnbuckle (4) is installed.

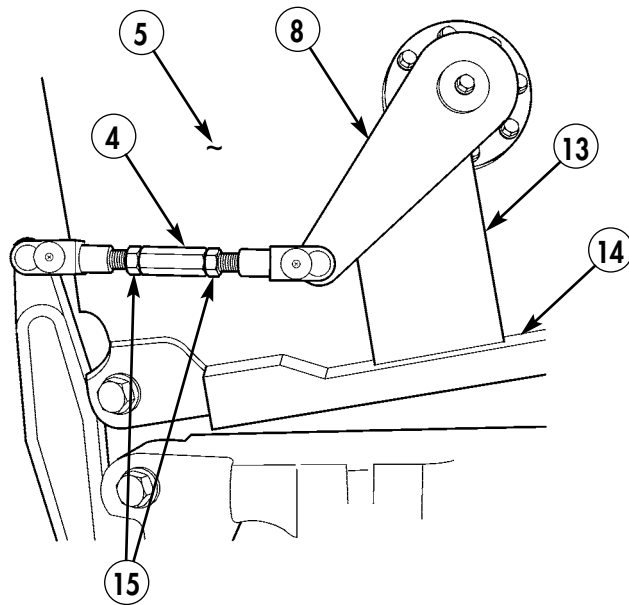
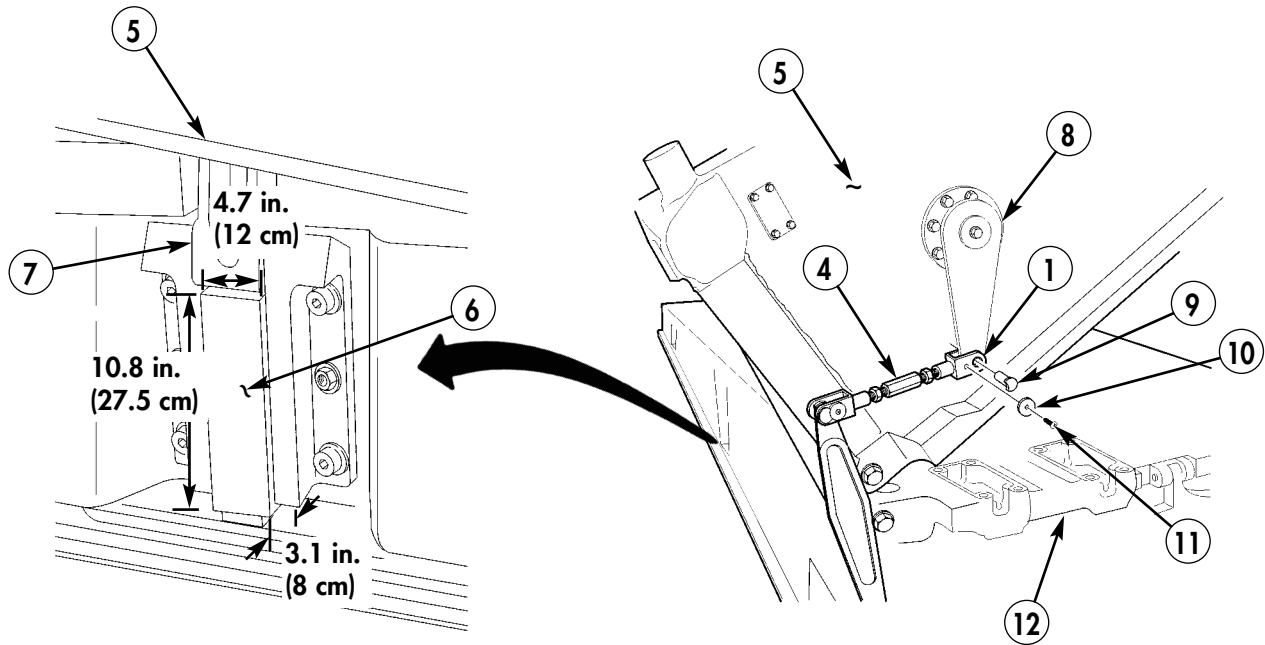
WARNING

All nonessential personnel must stand clear during lifting
operations. Ensure ponton foldlock and travel latches are in good
mechanical condition and securely locked prior to lifting outer
ponton. Failure to comply may result in injury to personnel.

15. Lift outer ponton (5) and install $3 \times 4.7 \times 10.8$ in. ($8 \times 12 \times 27.5$ cm) block (6) in position under connect link (7) and lower outer ponton (5) until turnbuckle clevis (1) aligns with hole in torsion bar lever (8), and install turnbuckle clevis (1) on torsion bar lever (8) with pin (9), washer (10), and screw (11). Remove block (6).
16. Lower outer ponton (5) down on inner ponton (12) and install pre-stressing tool (13), flat edge against deck overhang (14), on outer ponton (5) and adjust turnbuckle (4) until torsion bar lever (8) aligns with pre-stressing tool (13) then tighten two nuts (15). Remove pre-stressing tool (13).
17. Apply grease to lube fitting (WP 0016 00).
18. Engage foldlock.
19. Connect inner pontons (WP 0023 00).
20. Install ramp bay on transporter (TM 5-5420-278-10).



TORSION BAR REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

INNER PONTON AND OUTER PONTON SEPARATION

**SEPARATING INNER PONTONS, SEPARATING OUTER PONTONS FROM INNER PONTONS,
CONNECTING OUTER PONTONS TO INNER PONTONS, CONNECTING INNER PONTONS**
THIS WORK PACKAGE SUPERSEDES WP 0023 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
IRB hoisting gear (BII) (Item 6, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Travel latch and foldlocks locked
(TM 5-5420-278-10).
Cable assembly removed (WP 0020 00).

Materials/Parts

Two cotter pins (WP 0088 00)
Two locknuts (WP 0088 00)
Locknut (WP 0089 00)
Grease (Item 10, WP 0134 00)
Cap and plug set (Item 5, WP 0134 00)
Dunnage

INNER PONTON AND OUTER PONTON SEPARATION (Contd)

SEPARATING INNER PONTONS

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in injury to personnel.

1. Using transporter or suitable lifting device, raise ramp bay (1), position dunnage under inner pontons (3), and lower bay (1) on dunnage.

NOTE

Bay must be lifted from center of gravity (refer to loading and movement of equipment TM 5-5420-278-10).

Ensure one short chain of sling is connected to the load receiving pin at torsion bar end, and one long chain is connected to the load receiving pin at opposite end.

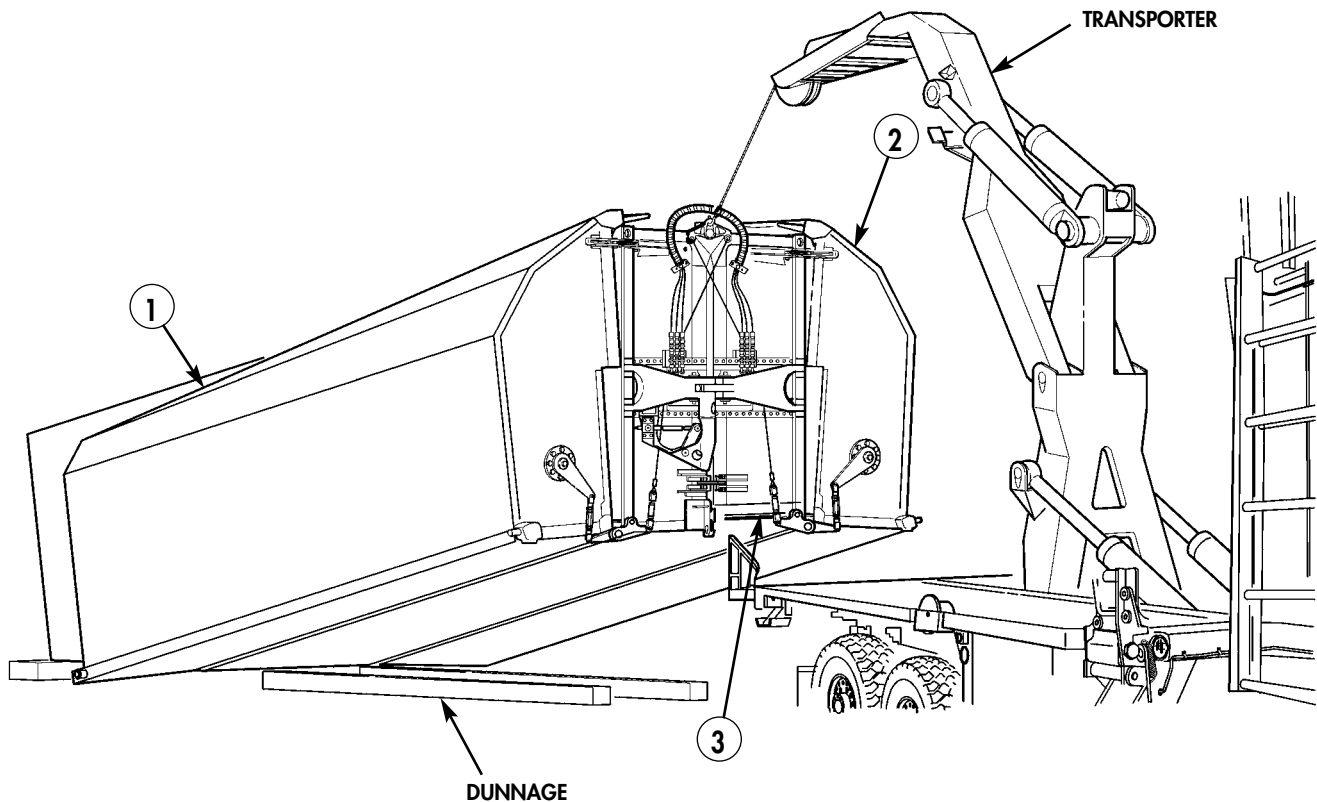
2. Attach lifting device and IRB hoisting gear to outer ponton (2) at load receiving pins (4), and take up slack.

NOTE

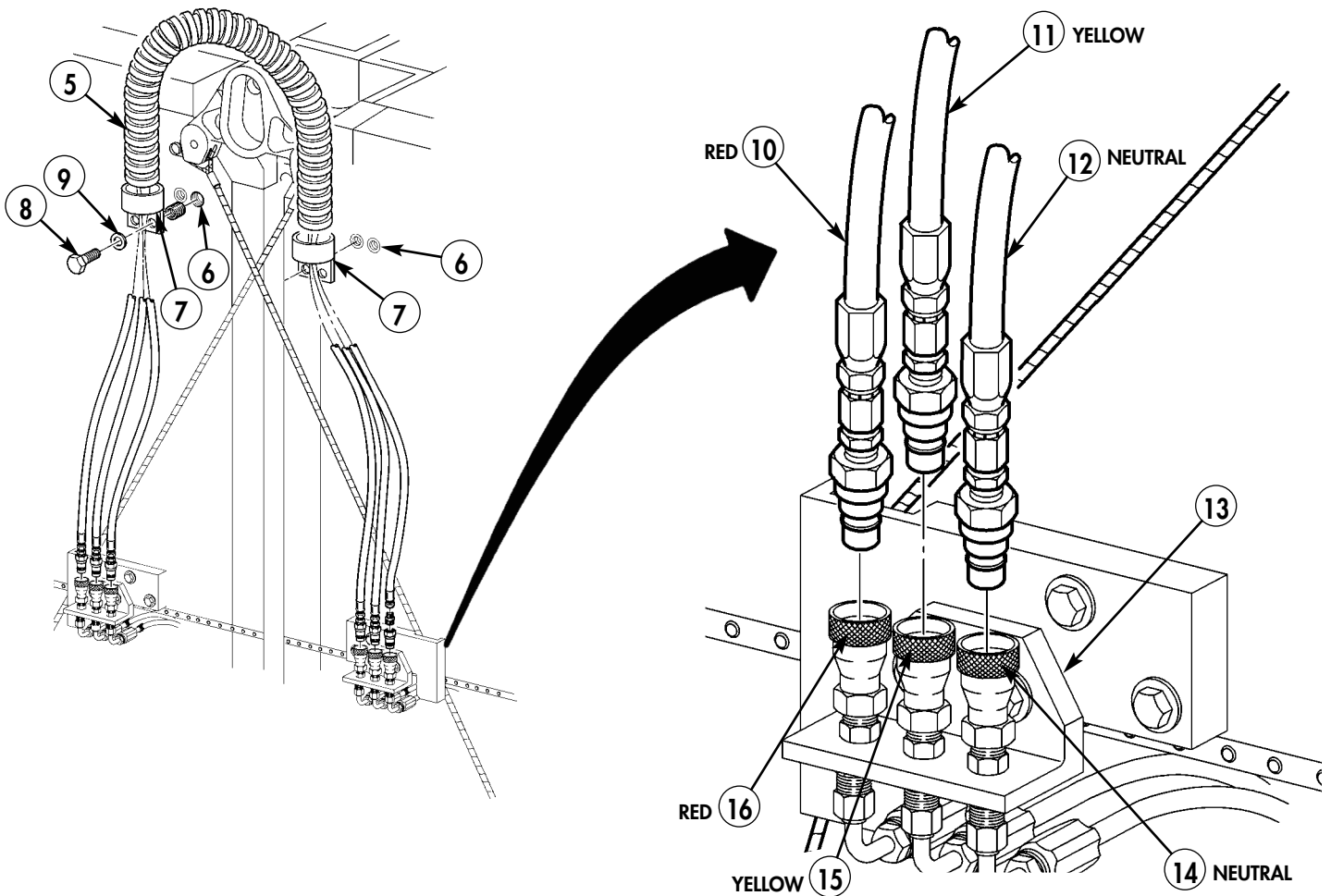
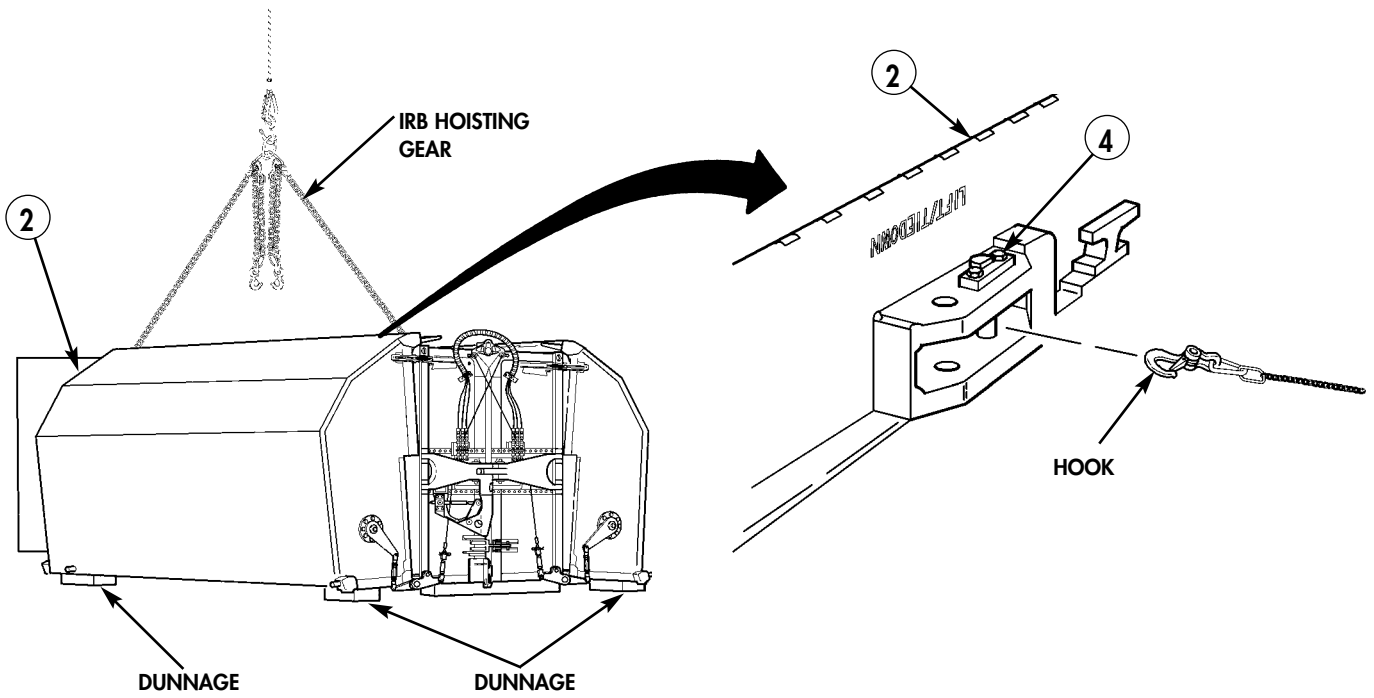
Tag hoses for installation.

Cap and plug all hoses and fittings immediately after disconnecting.

3. Disconnect hoses (10), (11), and (12) from quick-disconnects (16), (15), and (14) at inner ponton bracket (13).
4. Remove four screws (8), washers (9), two clamps (7), and hoses (10), (11), and (12) and loom tubing (5) from mounting supports (6).



INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

5. Remove two cotter pins (4) and washers (3) from pin (15), and drive pin (15) out from cover (1) and bellcrank (11). Discard cotter pins (4).
6. Remove two locknuts (7), screws (12), and connecting links (2) with cover (1) from inner ponton brackets (8). Discard locknuts (7).
7. Remove locknut (14) and screw (6) from front collar (5), drive bellcrank (11) forward, and remove collar (5) from bellcrank (11). Discard locknut (14).

NOTE

Note location and quantity of shims for installation.

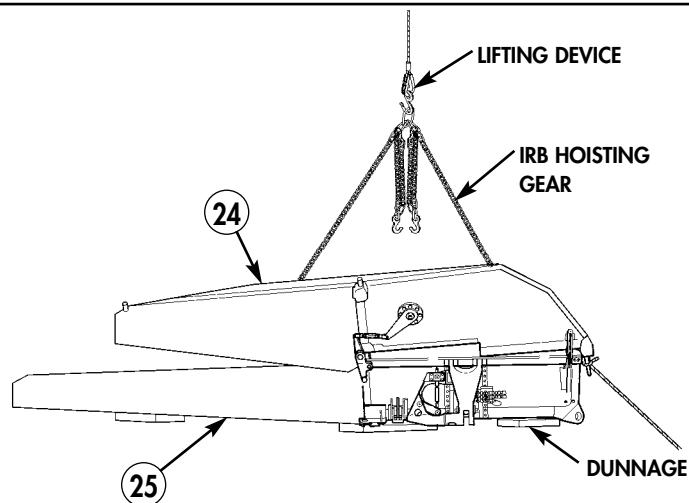
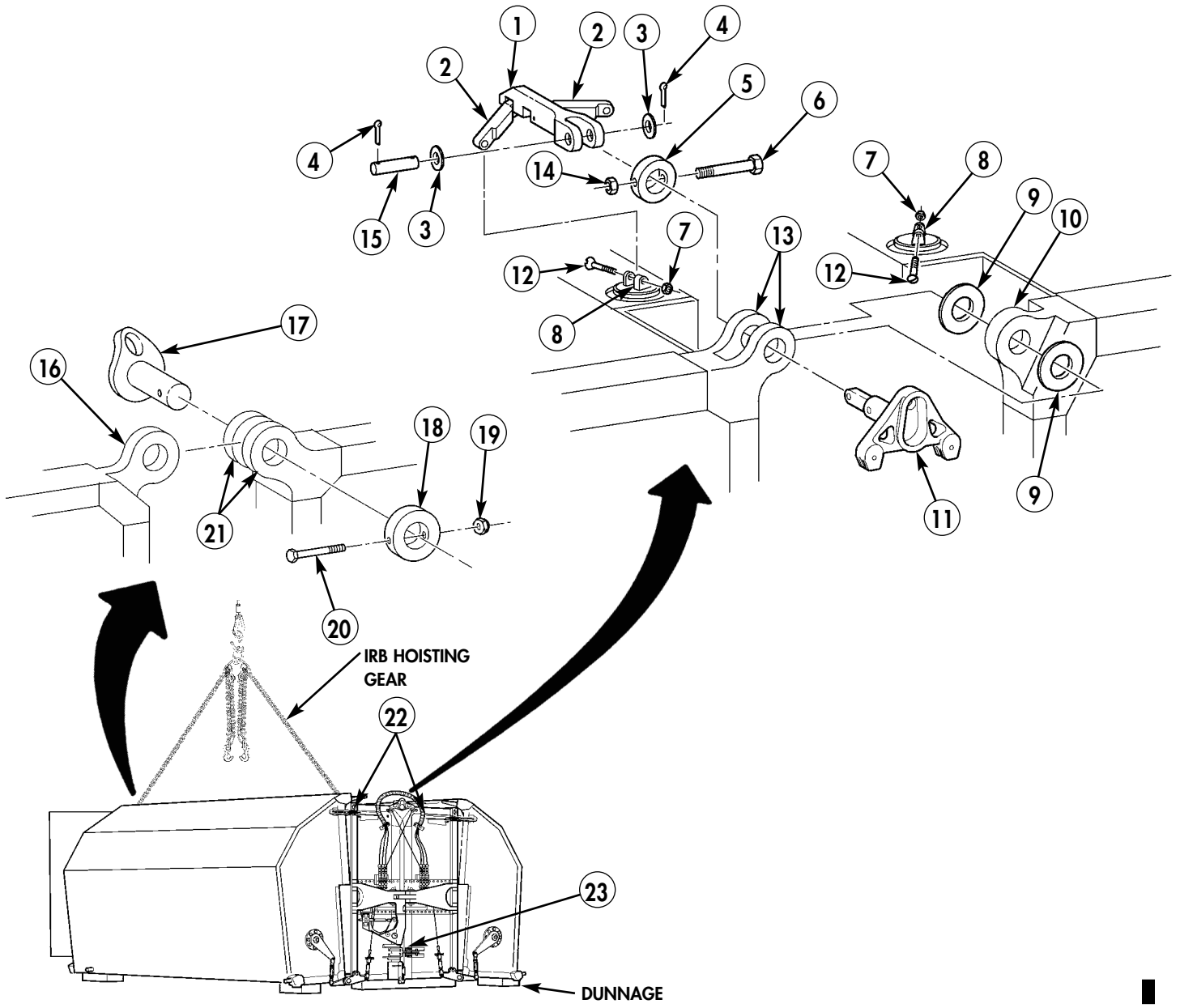
8. Drive bellcrank (11) completely out of inner ponton hinges (13) and (10), and remove shims (9).
9. Remove locknut (19), screw (20), and rear collar (18) from pin (17). Discard locknut (19).
10. Drive pin (17) out of inner ponton hinges (21) and (16).

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

11. Unlock travel latch (23), and lift and separate inner pontons (22) using lifting device.
12. Set inner ponton (22) and outer ponton (24) down, with roadway surface (25) of inner ponton (22) on dunnage.

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

SEPARATING OUTER PONTONS FROM INNER PONTONS

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting ponton. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Separation of left and right outer pontons is performed the same way. Right side is shown.

1. Remove screw (20), washer (19), and pin (18) from connecting link (17) and stabilizer lever (16), and lay connecting link (17) down.

NOTE

IRB hoisting gear must be adjusted so that outer ponton will hang level during separation.

2. Attach lifting device and IRB hoisting gear to load receiving pins on outer ponton (1).
3. Unlock foldlock (2) and raise outer ponton (1) from inner ponton (3) until preload tension on torsion bar lever (4) is off turnbuckle (6).
4. Remove two screws (5), washers (8), pins (7), and turnbuckle (6) from torsion bar lever (4) and stabilizer bracket (9).
5. Secure outer ponton (1) by installing tag lines prior to lifting.
6. Using lifting device, lift and swing outer ponton (1) to open vertical position.
7. Remove bolt (25) from outer ponton (1) and pin (23).
8. Remove screw (24) from pin (23), and using slide hammer, remove pin (23) and two spacer plates (21) from outer ponton (1) and stabilizer bracket (22).
9. Turn stopscrew (11) clockwise until head of stopscrew (11) contacts hinge bracket (14).
10. Remove four screws (12) and washers (13) from hinge bracket (14) and outer ponton (1).

WARNING

Ensure tag lines are held tight to prevent outer ponton from swinging, or injury to personnel or damage to equipment may result.

11. Using lifting device, remove outer ponton (1) from inner ponton (3) and set on dunnage.

NOTE

Note location and quantity of spacers for installation.

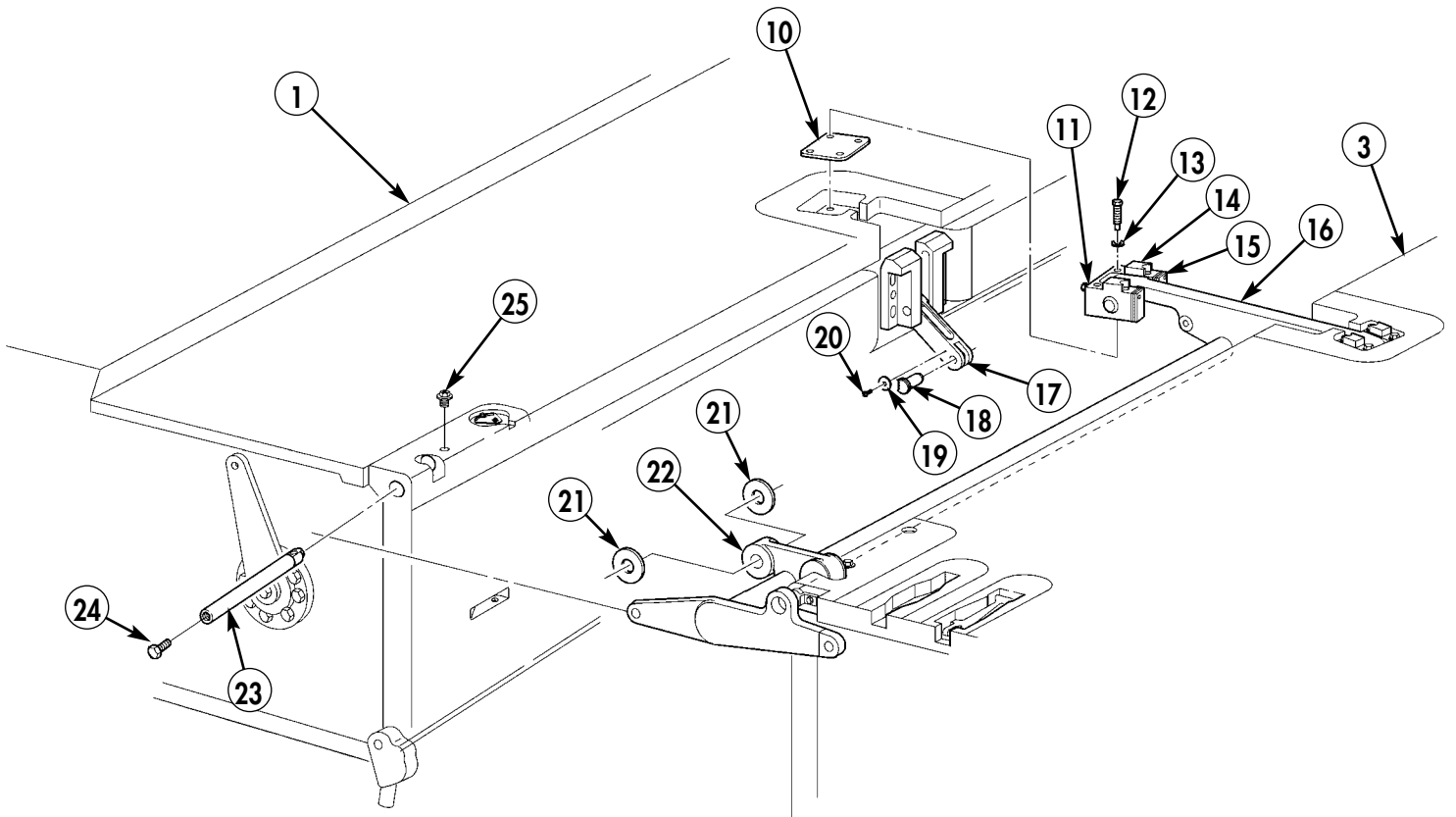
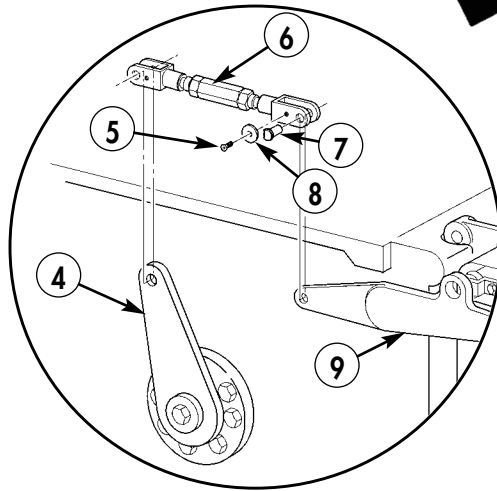
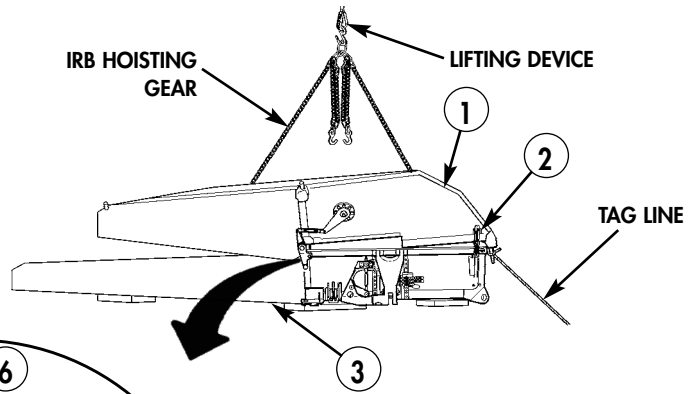
12. Lift hinge bracket (14) out of outer ponton (1), and secure in vertical position. Remove spacers (15) and (10).

NOTE

Perform step 13 if inner ponton(s) will be moved.

13. Using suitable lifting device and IRB hoisting gear attached to two deck pins, lift inner ponton (3) from dunnage.

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

CONNECTING OUTER PONTONS TO INNER PONTONS

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting ponton. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Connecting of left and right outer pontons is performed the same way. Right side is shown.

1. Secure stabilizer bracket (8) in vertical position.

NOTE

IRB hoisting gear must be adjusted so that outer ponton will hang level during connection.

2. Attach IRB hoisting gear and lifting device to load receiving pins on outer ponton (1).

WARNING

Ensure tag lines are held tight to prevent outer ponton from swinging. Failure to comply may result in injury to personnel or damage to equipment.

3. Using lifting device, raise and position outer ponton (1) next to inner ponton (9).

NOTE

Use adhesive to hold spacers in place.

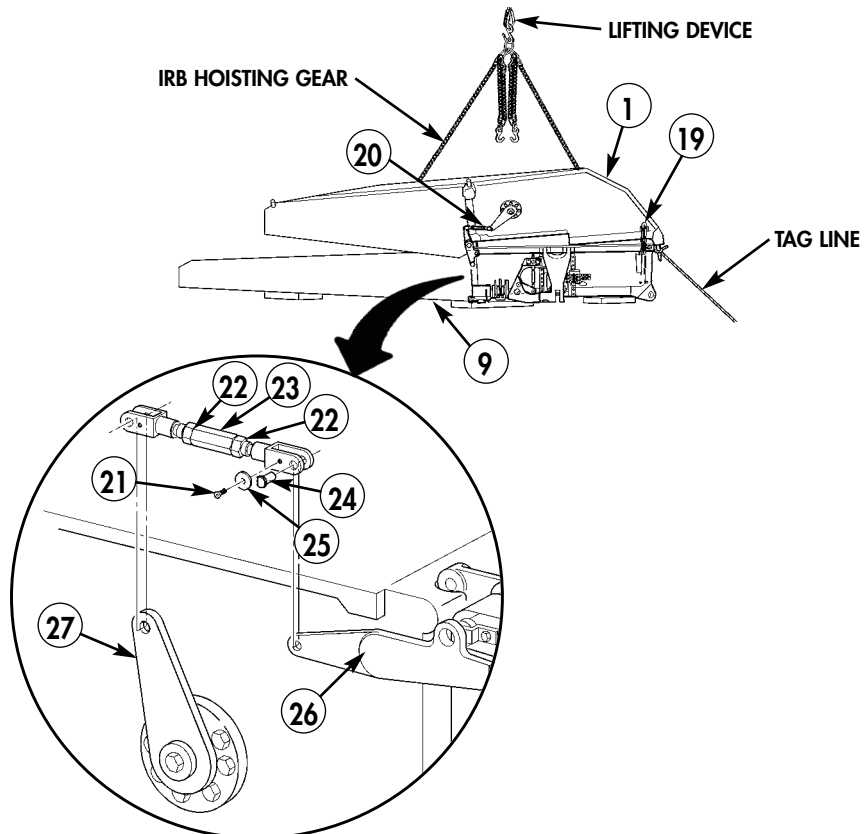
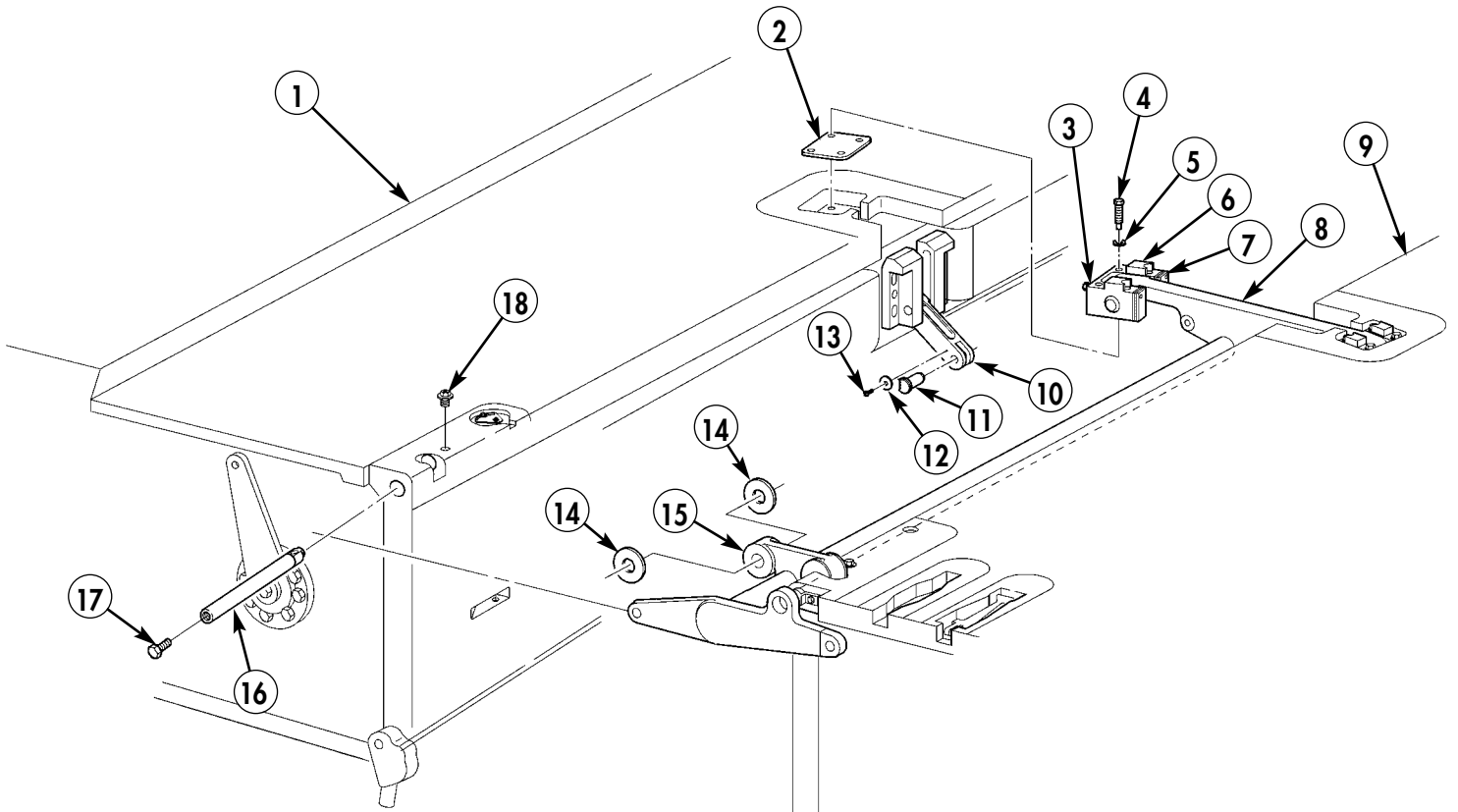
4. Position spacers (2) on outer ponton (1) and spacers (7) on hinge bracket (6).
5. Position outer ponton (1), and install hinge bracket (6) on outer ponton (1) with four washers (5) and screws (4). Do not tighten screws (4).

NOTE

Apply a light coat of grease to pins at installation.

6. Align outer ponton (1), and install pin (16) on outer ponton (1) and stabilizer bracket (15).
7. Lower outer ponton (1) to fully open position and level with dunnage until pin (16) can be easily removed and installed.
8. Remove pin (16) and install two spacer plates (14) and pin (16) on outer ponton (1) and stabilizer bracket (15).
9. Align pin (16) and install screw (18) on outer ponton (1) and pin (16).
10. Install screw (17) on end of pin (16).
11. Turn stopscrew (3) counterclockwise until spacers (7) contact edge of recess on outer ponton (1), then tighten four screws (4).
12. If jamnuts (22) and nut (23) on turnbuckle (20) were moved, adjust length of turnbuckle (20) to 12.835 in. (326 mm) by measuring from center-to-center from holes in clevises (see WP 0020 00-6) and turning nut (23). Tighten two jamnuts (22).
13. Using lifting device, lift outer ponton (1) and swing and lower outer ponton (1) down until turnbuckle (20) can be installed on torsion bar lever (27) and stabilizer bracket (26) with two pins (24), washers, (25), and screws (21). Lower outer ponton (1) down until resting on inner ponton (9).
14. Close foldlock (19) on outer ponton (1).
15. Connect connecting link (10) to stabilizer bracket (8) with pin (11), washer (12), and screw (13).

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

CONNECTING INNER PONTONS

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting pontoons. Failure to comply may result in damage to equipment or injury to personnel.

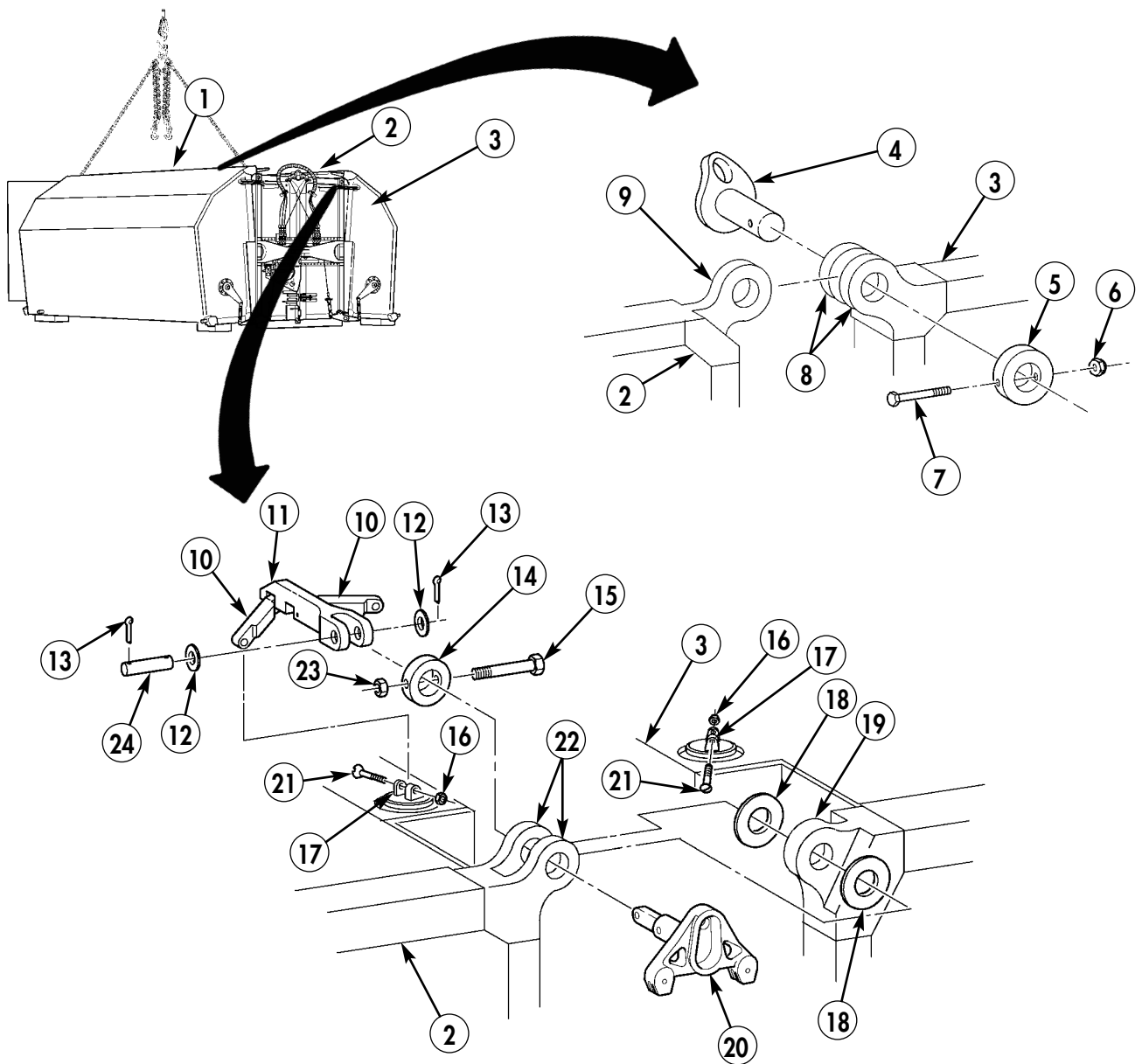
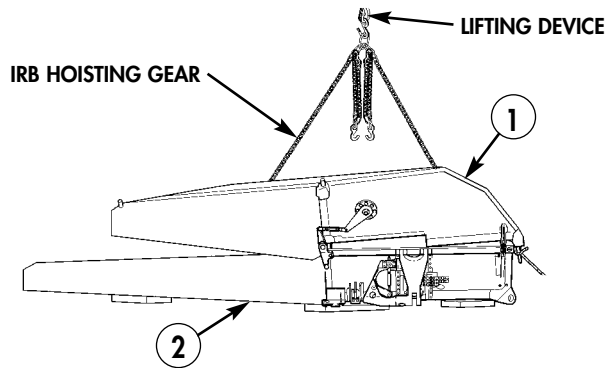
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to shims and shafts of eyebolts at installation.

1. Using lifting device and IRB hoisting gear, lift outer ponton (1) and inner ponton (2) off dunnage and place in position next to inner ponton (3).
2. Move inner pontoons (2) and (3) together with lifting device until hinges at both ends are aligned, then position dunnage under inner ponton (2) and outer ponton (1).
3. Install pin (4) on inner ponton hinges (8) and (9) with collar (5), screw (7), and new locknut (6).
4. Position two shims (18) between hinges (22) and (19), and install bellcrank (20) halfway in.
5. Position front collar (14) over shaft of bellcrank (20) and push bellcrank (20) all the way in.
6. Install front collar (14) on bellcrank (20) with screw (15) and new locknut (23).
7. Install connecting links (10) on inner ponton brackets (17) with two screws (21) and new locknuts (16).
8. Connect cover (11) on bellcrank (20) with two washers (12), pin (24), and two new cotter pins (13).

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

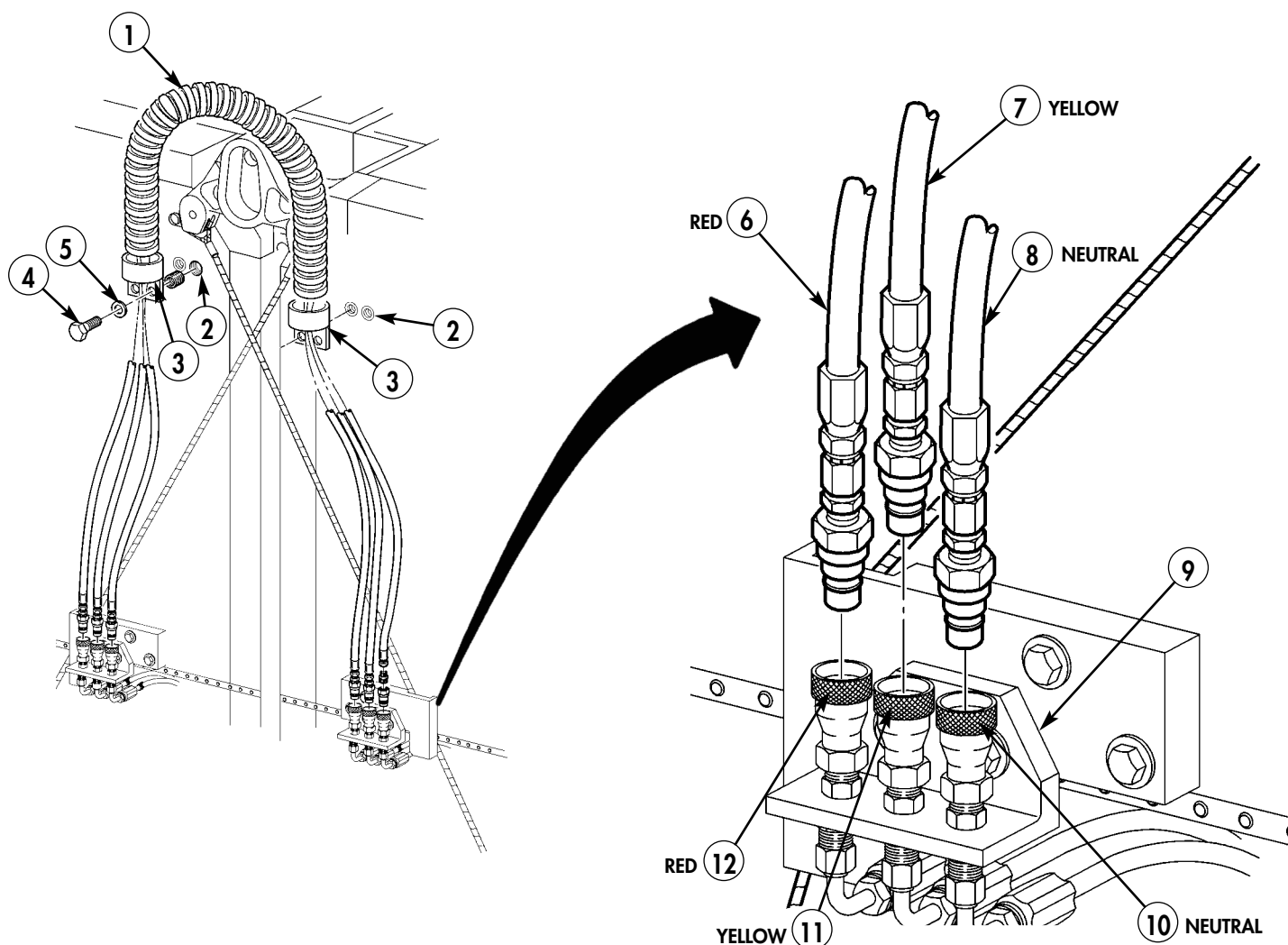
CONNECTING INNER PONTONS

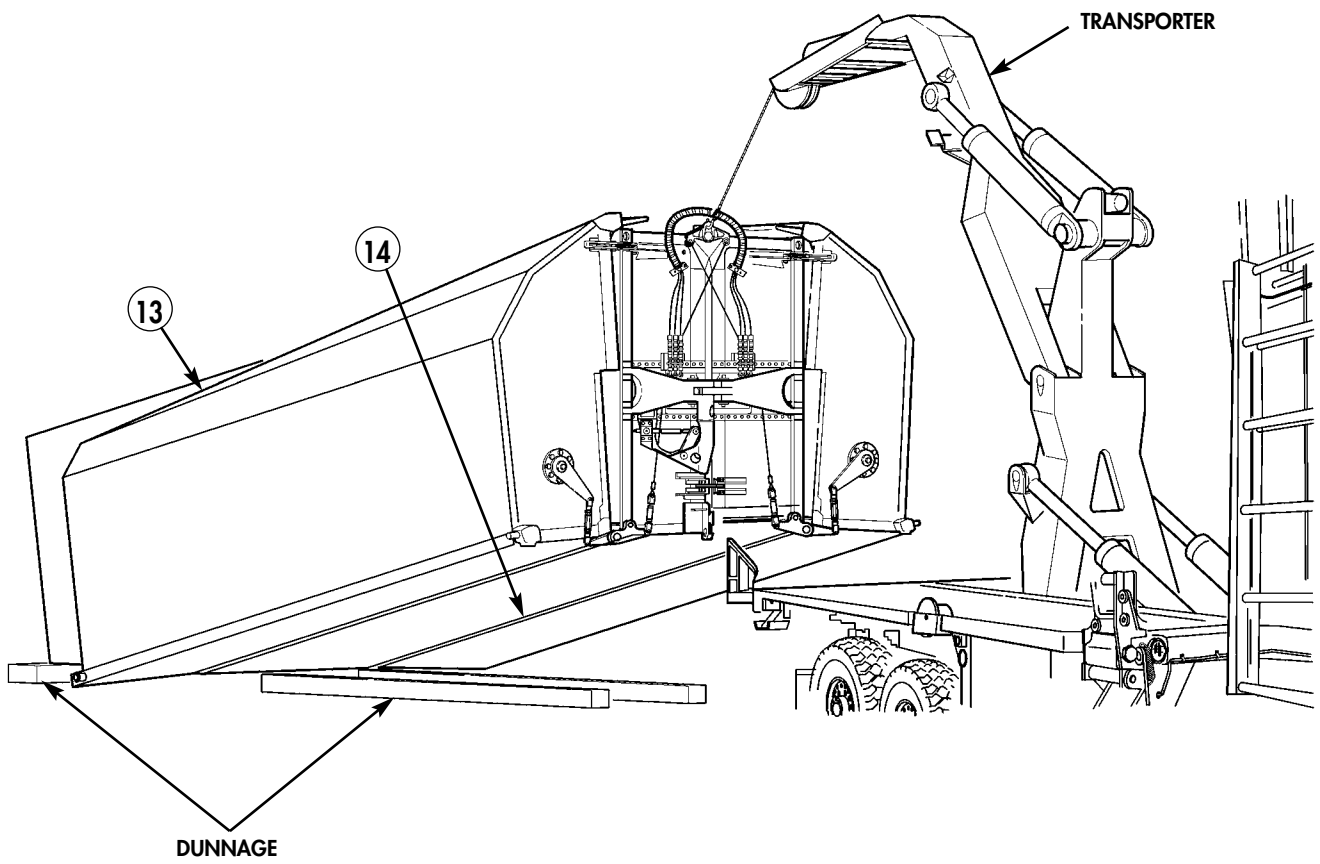
9. Secure three hoses (6), (7), and (8) and loom tubing (1) to inner ponton mounting supports (2) with two clamps (3), four washers (5), and screws (4).
10. Connect hoses (6), (7), and (8) to quick-disconnects (12), (11), and (10) at inner ponton brackets (9) as tagged.
11. Install cable assemblies (WP 0020 00).
12. Close travel latch (14).

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting pontons. Failure to comply may result in damage to equipment or injury to personnel.

13. Load ramp bay (13) on transporter (TM 5-5420-278-10).





UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

UNFOLDING STABILIZER AND BRACKETS REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0024 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Grease (Item 10, WP 0134 00)

References

WP 0091 00

Equipment Condition

Outer ponton separated from inner ponton
(WP 0023 00).

UNFOLDING STABILIZER AND BRACKETS REPLACEMENT (Contd)

REMOVAL

NOTE

Removal of left and right unfolding stabilizer and brackets is performed the same way. Right side is shown.

Note location and thickness of spacers for installation.

1. Raise stabilizer bracket (4) up and secure in vertical position.

WARNING

Connecting link will drop down suddenly once pin is removed. Ensure connecting link is held or secured, or injury to personnel may result.

2. Remove screw (25), washer (26), pin (27), and connecting link (15) from stabilizer bracket (4).
3. Turn stopscrew (7) clockwise until head of stopscrew (7) contacts hinge bracket (2).
4. Remove four screws (5) and washers (6) from hinge bracket (2), spacer (8), and inner ponton (9).

NOTE

Assistant will help with steps 5 and 6.

5. Remove bolt (23), screw (21), pin (22), and two spacers (24) from inner ponton (9) and stabilizer bracket (28).

NOTE

Note location and thickness of spacers for installation.

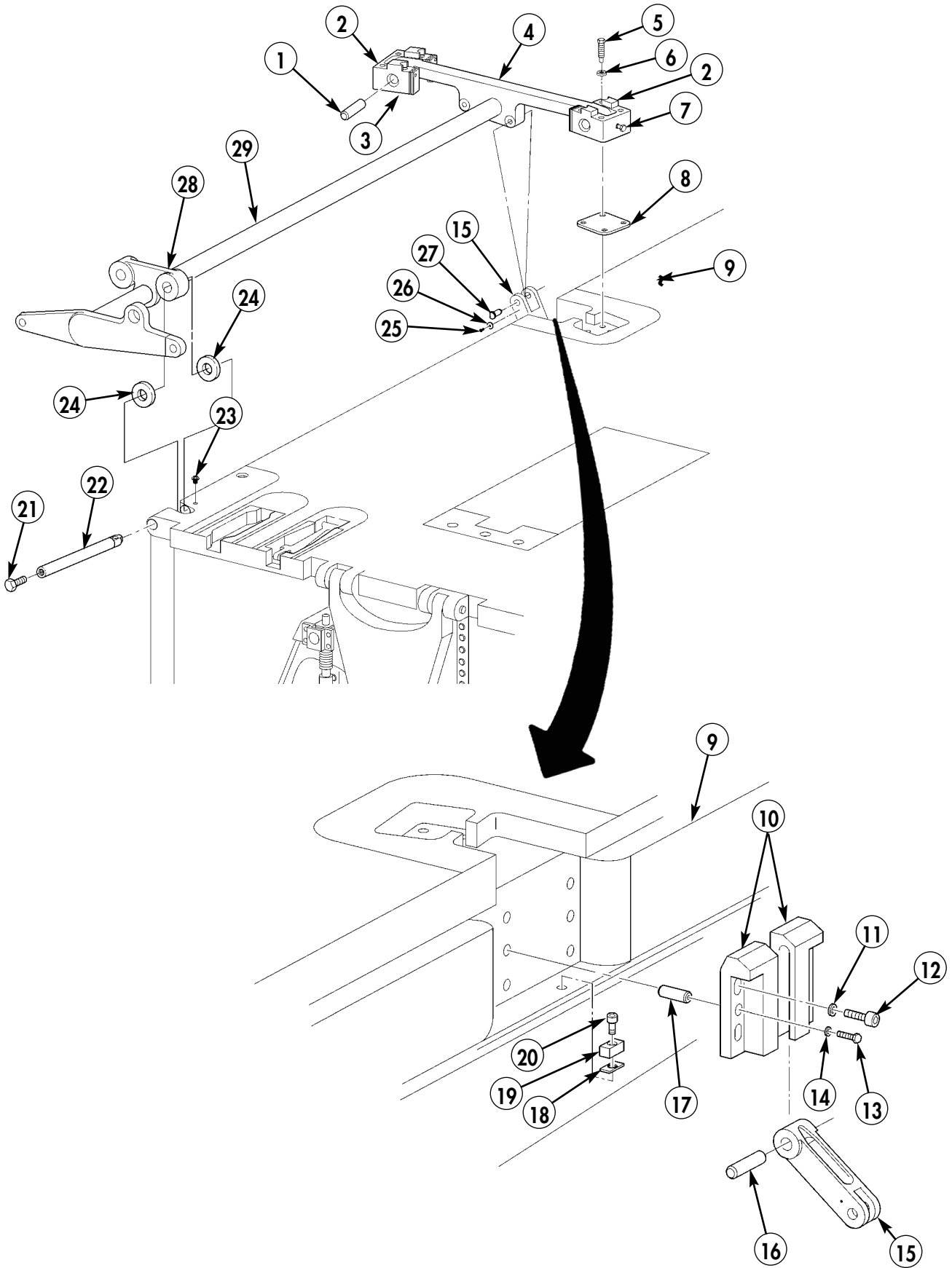
6. Lift hinge bracket (2) off of spacer (8) and out of recess in inner ponton (9), and remove stabilizer (29).
7. Remove two pins (1) and hinge brackets (2) from stabilizer bracket (4).
8. Remove four screws (12), washers (11), two inner ponton rail brackets (10), and connecting link (15) from inner ponton (9).
9. Remove pin (16) from connecting link (15).

NOTE

If present, note location and thickness of spacer plates.

10. Remove screw (20), bumper (19), and spacer plates (18) from inner ponton (9).
11. Remove two screws (13) and washers (14) from dowel pins (17) on inner ponton rail brackets (10). Remove dowel pins (17) from rail brackets (10) if necessary.
12. Repeat steps 8 through 11 to remove bumper, rail brackets, and connecting link from outer ponton (not shown).

UNFOLDING STABILIZER AND BRACKETS REPLACEMENT (Contd)



UNFOLDING STABILIZER AND BRACKETS REPLACEMENT (Contd)

INSTALLATION

NOTE

Installation of left and right unfolding stabilizer and brackets is performed the same way. Right side is shown.

Apply a light coat of grease to pins at installation.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

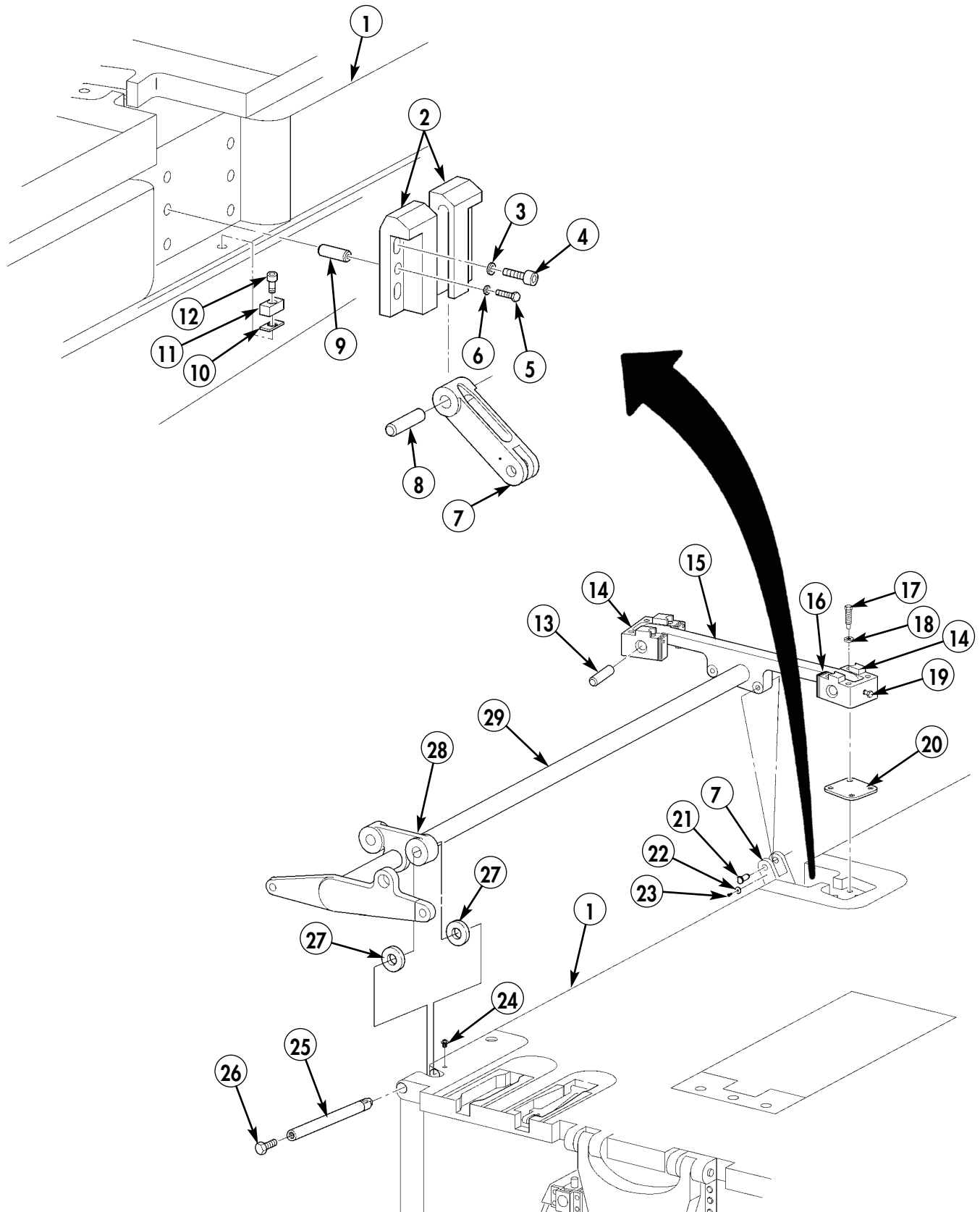
1. Install spacer plates (10) and bumper (11) on inner ponton (1) with screw (12).
2. Install pin (8) on connecting link (7).
3. If removed, install dowel pin (9) on each rail bracket (2).
4. Install two inner ponton rail brackets (2) and connecting link (7) on inner ponton (1) with four washers (3) and screws (4).
5. Install washer (6) and screw (5) on each dowel pin (9).
6. Repeat steps 1 through 5 to install bumper, rail brackets, and connecting link on outer ponton.
7. Install two hinge brackets (14) on stabilizer bracket (15) with two pins (13).
8. Position spacer(s) (20) in recess of inner ponton (1).

NOTE

Assistant will help with steps 9 and 10.

9. Install stabilizer (29) on inner ponton (1) by positioning hinge bracket (14) and spacers (16) in recess on inner ponton (1) and installing four washers (18) and screws (17). Do not tighten screws (17).
10. Align stabilizer bracket (28) and inner ponton (1), and install pin (25) and two spacers (27) on inner ponton (1) and stabilizer bracket (28).
11. Align hole in pin (25) with hole in inner ponton (1), and install screw (24) on pin (25).
12. Install screw (26) on pin (25).
13. Turn stopscrew (19) counterclockwise until spacers (16) contact edge of recess on inner ponton (1), then tighten four screws (17).
14. Connect inner ponton connecting link (7) to stabilizer bracket (15) with pin (21), washer (22), and screw (23).
15. Connect outer ponton to inner ponton (WP 0023 00).

UNFOLDING STABILIZER AND BRACKETS REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

RAMP PLATE AND STRAP REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0025 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Eight rivets (WP 0092 00)
Two cotter pins (WP 0092 00)
Locknut (WP 0092 00)

RAMP PLATE AND STRAP REPLACEMENT (Contd)**WARNING**

Ramp plates are heavy. Use three personnel when removing ramp plate. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Removal and installation of right and left ramp plates and straps are performed the same way. Right side is shown.

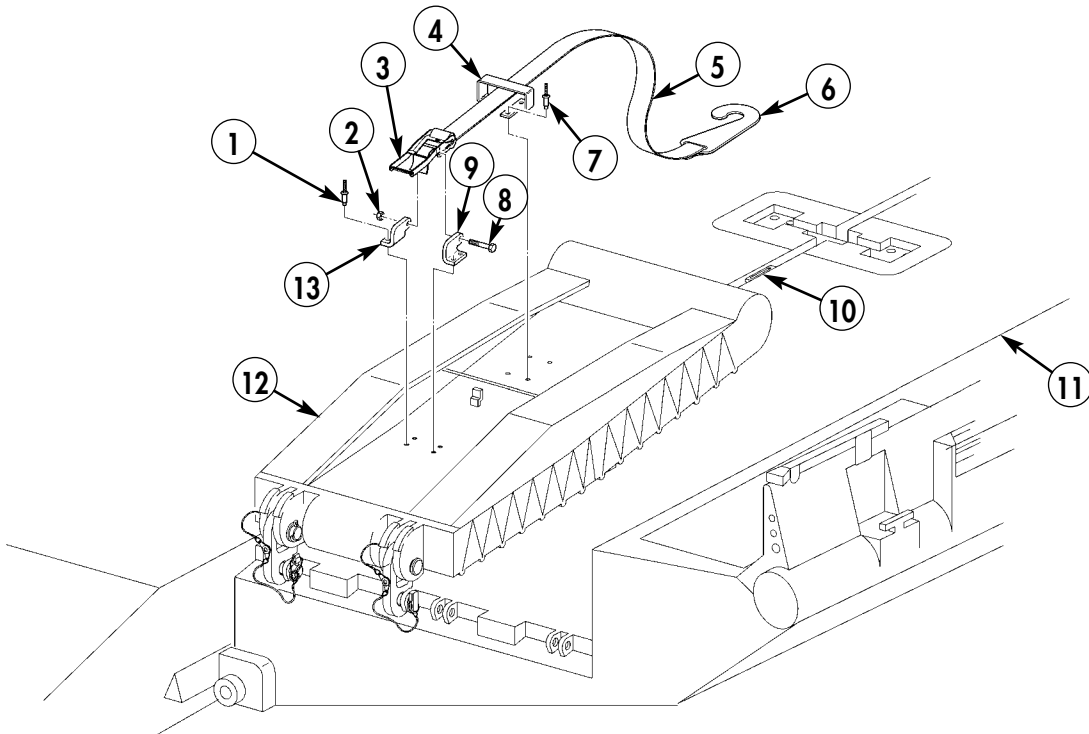
REMOVAL

1. Loosen binder ratchet (3) and strap (5) on ramp plate (12) and disconnect hook (6) from catch (10) on outer ponton (11).
2. Remove locknut (2), screw (8), and binder ratchet (3) from angle brackets (9) and (13) on ramp plate (12). Discard locknut (2).
3. If angle brackets (9) and (13) are damaged, remove four rivets (1) and angle plates (9) and (13) from ramp plate (12). Discard rivets (1).
4. If strap guide bracket (4) is damaged, remove four rivets (7) and strap guide bracket (4) from ramp plate (12). Discard rivets (7).
5. Lift locking rings (17) to open position on two pins (18), and remove pins (18) from two pins (16).

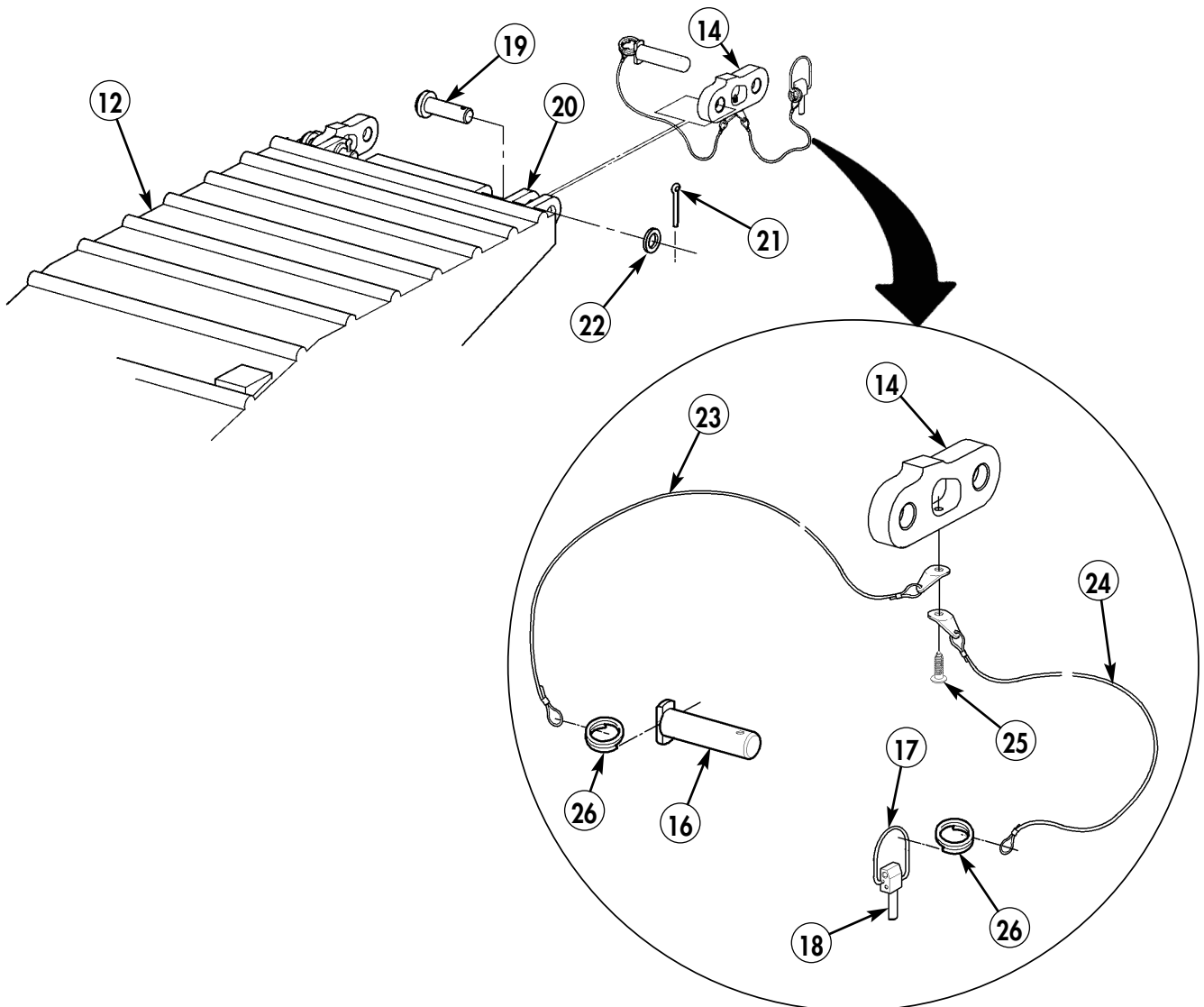
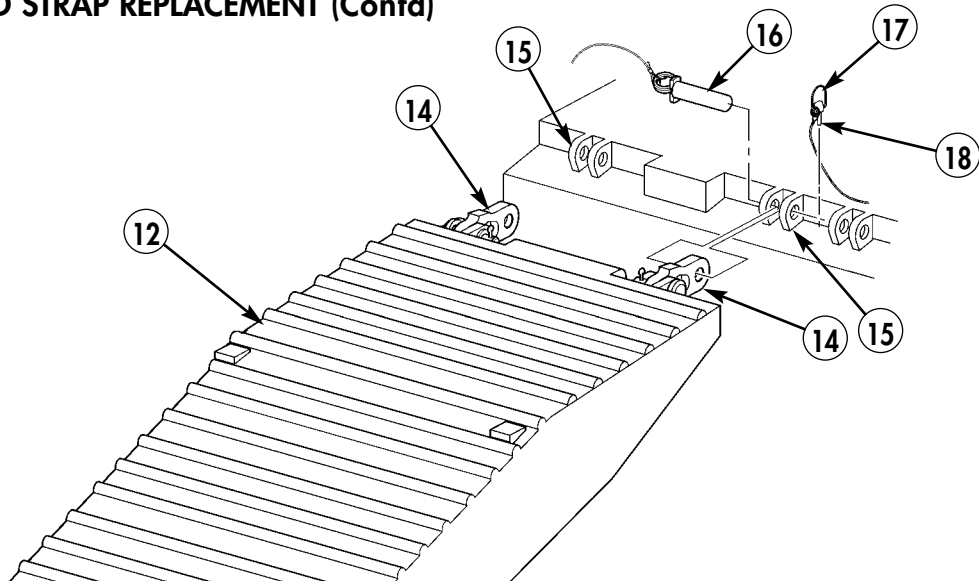
NOTE

Assistant will help with steps 6 and 7.

6. Support ramp plate (12) and remove two pins (16) from four outer ponton hinges (15) and two connecting links (14).
7. Remove ramp plate (12) from outer ponton (11).
8. Remove two cotter pins (21), washers (22), pins (19), and connecting links (14) from ramp plate hinges (20). Discard cotter pins (21).
9. Remove two screws (25) and wire ropes (23) and (24), from two connecting links (14).
10. Remove rings (26) from pins (16), pins (18), and wire ropes (23) and (24).



RAMP PLATE AND STRAP REPLACEMENT (Contd)



RAMP PLATE AND STRAP REPLACEMENT (Contd)

INSTALLATION

NOTE

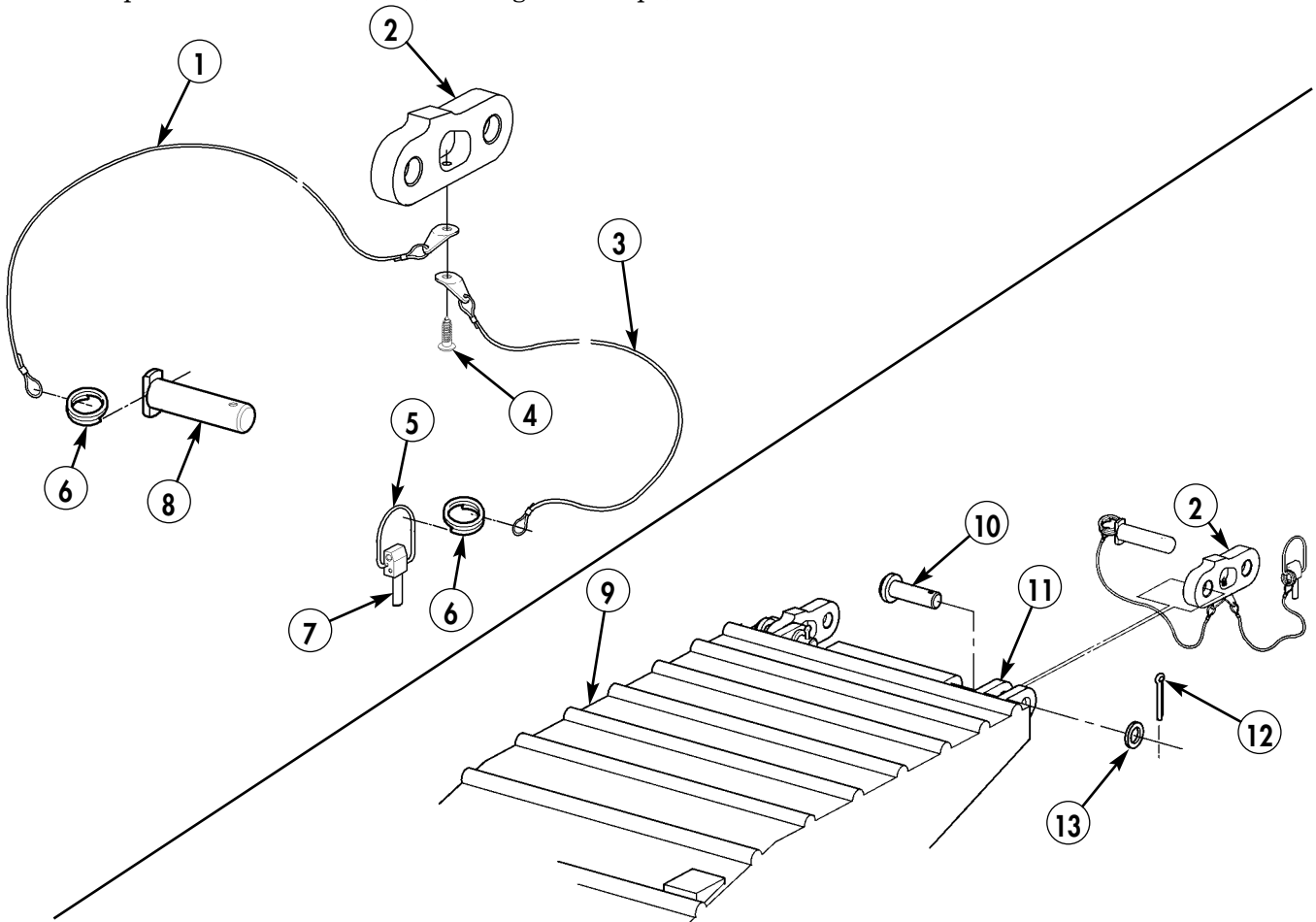
Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install wire ropes (1) and (3) on pins (8) and (7) with rings (6).
2. Install wire ropes (1) and (3) on two connecting links (2) with screws (4).
3. Install two connecting links (2) on ramp plate hinges (11) with two pins (10), washers (13), and new cotter pins (12).

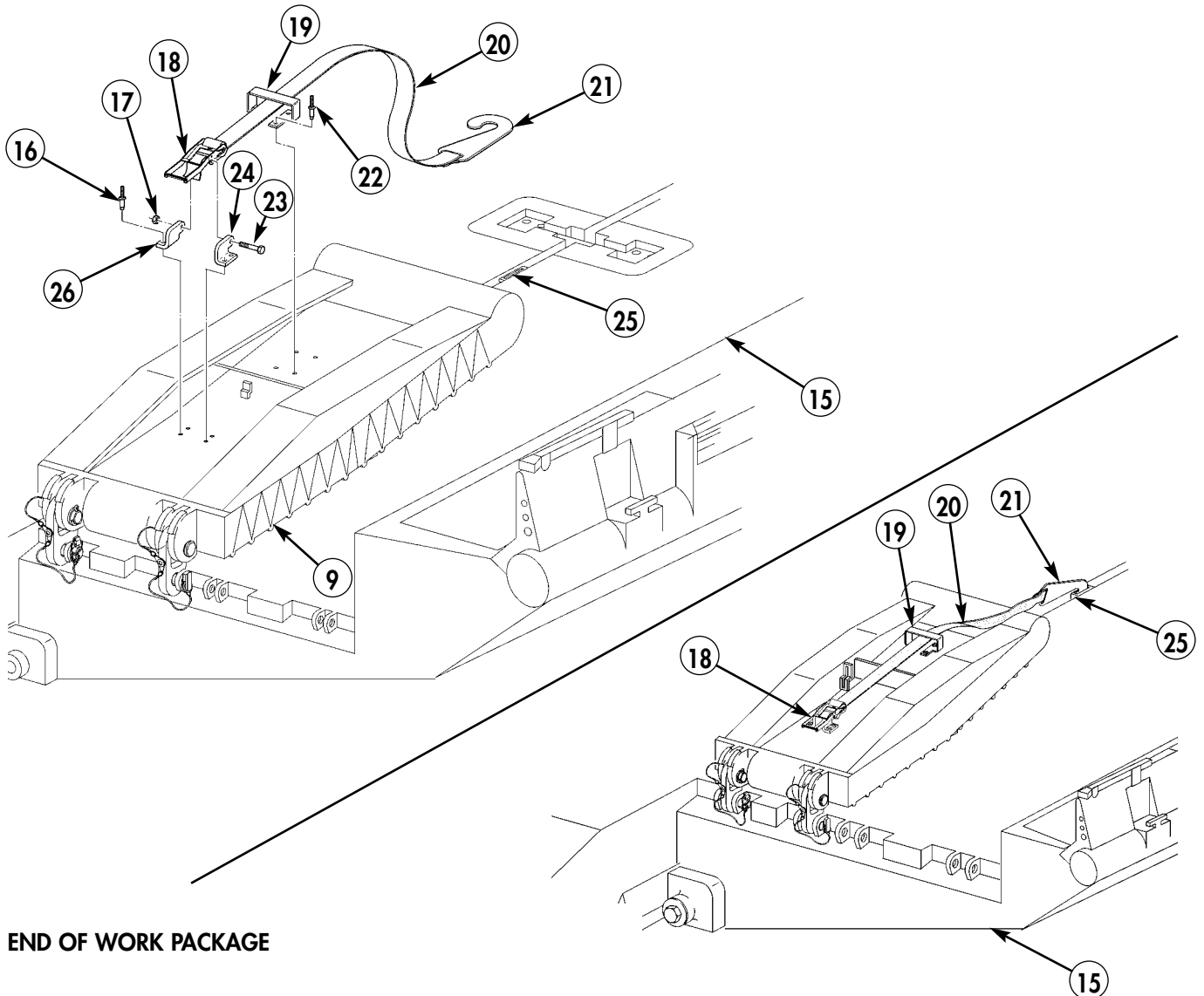
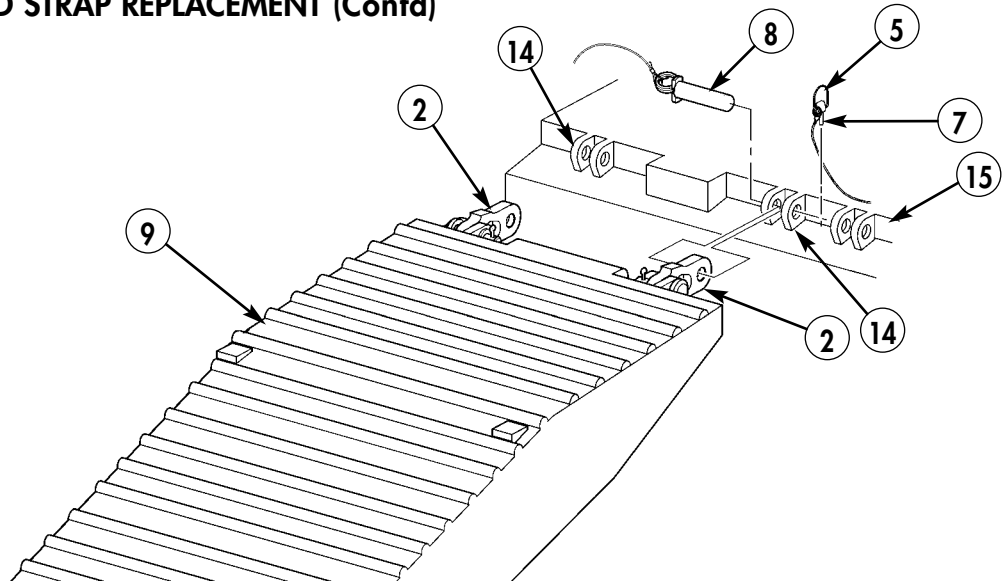
NOTE

Assistant will help with steps 4 and 5.

4. Position ramp plate (9) on outer ponton (15).
5. Support ramp plate (9) and connect two connecting links (2) to outer ponton hinges (14) with two pins (8) and pins (7). Close locking rings (5) on pins (7).
6. If removed, install strap guide bracket (19) on ramp plate (9) with four new rivets (22).
7. If removed, install angle brackets (24) and (26) on ramp plate (9) with four new rivets (16).
8. Install binder ratchet (18) on angle brackets (24) and (26) with screw (23) and new locknut (17). Do not over tighten locknut (17).
9. Route strap (20) through strap guide bracket (19), and connect hook (21) to catch (25) on outer ponton (15).
10. Operate binder ratchet (18) and tighten strap (20).



RAMP PLATE AND STRAP REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

SWIVEL PLATE REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0026 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Inner pontoons separated (WP 0023 00).

Materials/Parts

Four cotter pins (WP 0101 00)
Locknut (WP 0101 00)
Grease (Item 10, WP 0134 00)
Dunnage

SWIVEL PLATE REPLACEMENT (Contd)

NOTE

Removal and installation of right and left swivel plates are performed the same way. Left side is shown.

REMOVAL

1. Using lifting device and sling, lower bay down so that roadway of inner ponton (4) is resting on dunnage.
2. Place swivel plate (9) in closed position.
3. Remove two cotter pins (11), washers (10), and pin (12) from tension spring holder (13) and swivel plate (9), and disconnect tension spring holder (13) from bracket (8). Discard cotter pins (11).
4. Remove tension spring holder (13), spring (14), and spacer (19) from tension spring pin (18).
5. Remove two cotter pins (15), washers (17), pin (16), and tension spring pin (18) from bracket (20) on inner ponton (4). Discard cotter pins (15).
6. Remove locknut (5) and screw (7) from swivel plate (9) and swivel plate pin (2). Discard locknut (5).
7. Unlock foldlock and raise outer ponton to vertical position.
8. Remove setscrew (1) and indicator plate (3) from swivel plate pin (2).

NOTE

Note location and quantity of spacers for installation.

9. Pull swivel plate pin (2) out of swivel plate (9) and inner ponton (4), and remove swivel plate (9) and two spacers (6) from inner ponton (4).

INSTALLATION

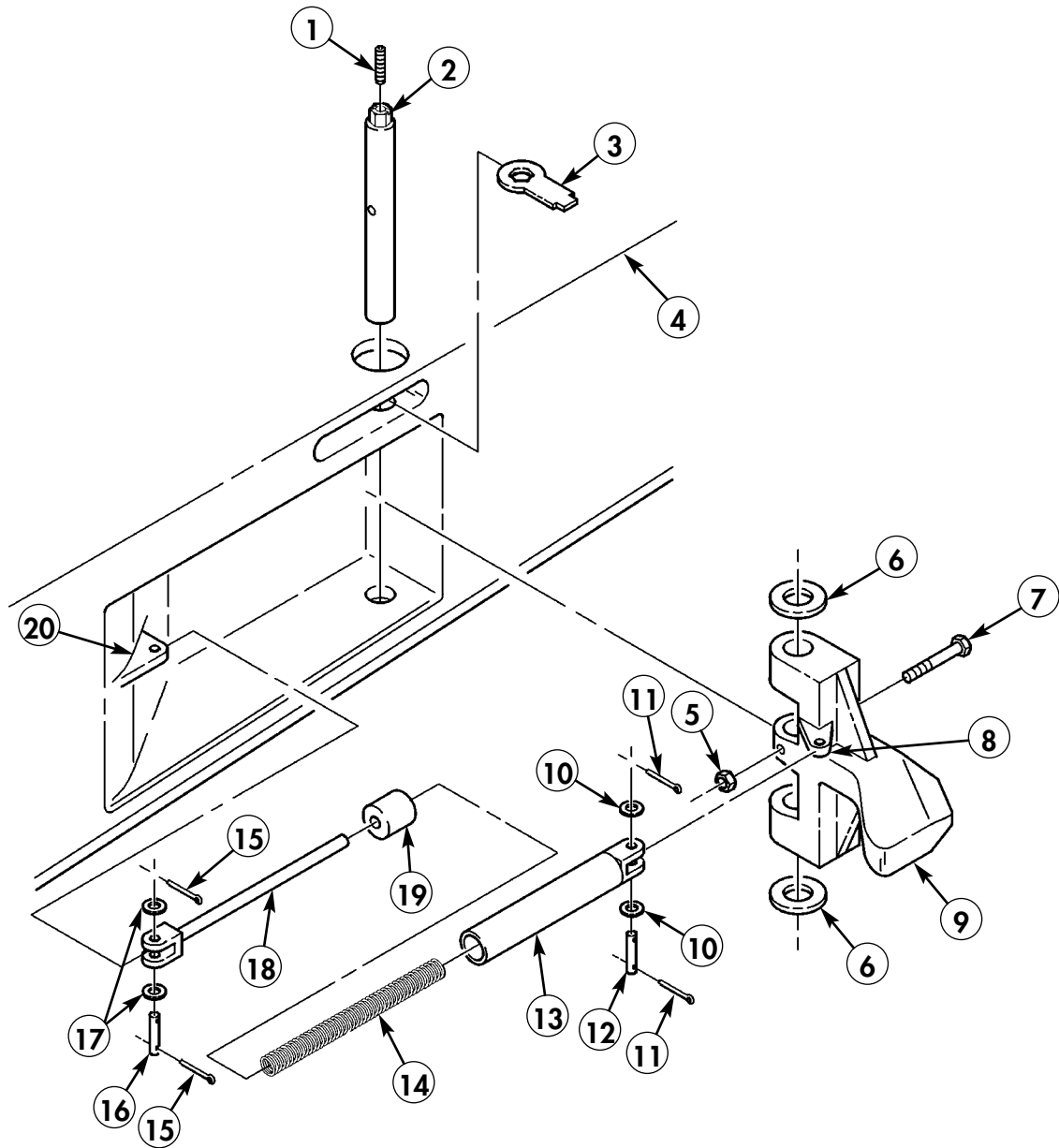
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to swivel plate pin, spacer, and tension spring holder prior to installation.

1. With outer ponton in vertical position, position swivel plate (9) and two spacers (6) on inner ponton (4), and slide swivel plate pin (2) through spacers (6) and swivel plate (9).
2. Place swivel plate (9) in closed position, and install indicator plate (3) on swivel plate pin (2) with pointer in line with swivel plate (9) and groove in swivel plate pin (2).
3. Align hole in swivel plate pin (2) with hole in swivel plate (9), and install screw (7) and new locknut (5).
4. Install setscrew (1) on indicator plate (3) and swivel plate pin (2).
5. Lower outer ponton down on inner ponton (4), and close foldlock.
6. Install tension spring pin (18) on bracket (20) with two washers (17), pin (16), and two new cotter pins (15).
7. Position spacer (19), spring (14), and tension spring holder (13) on tension spring pin (18), and install tension spring holder (13) on bracket (8) on swivel plate (9) with two washers (10), pin (12), and two new cotter pins (11).
8. Place swivel plate (9) in open position.
9. Connect inner pontons (WP 0023 00).

SWIVEL PLATE REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

SWIVEL HOOK AND RETAINER SHAFT REPLACEMENT SWIVEL HOOK REMOVAL, RETAINER SHAFT REMOVAL, RETAINER SHAFT INSTALLATION, SWIVEL HOOK INSTALLATION THIS WORK PACKAGE SUPERSEDES WP 0027 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

References

WP 0095 00

Equipment Condition

Inner pontoons separated (WP 0023 00).

Materials/Parts

Four cotter pins (WP 0101 00)
Locknut (WP 0101 00)
Grease (Item 10, WP 0134 00)
Dunnage

SWIVEL HOOK AND RETAINER SHAFT REPLACEMENT (Contd)

NOTE

Removal and installation of right and left swivel hooks are performed the same way. Left side is shown.

SWIVEL HOOK REMOVAL

1. Using lifting device and sling, lower bay down so that roadway of inner ponton (3) is resting on dunnage.
2. Place swivel hook lever (7) in closed position.
3. Remove two cotter pins (10), washers (9), and pin (11) from tension spring holder (12) and swivel hook lever (7), and disconnect tension spring holder (12) from bracket (6). Discard cotter pins (10).
4. Remove tension spring holder (12), spring (13), and spacer (16) from tension spring pin (15).
5. Remove two cotter pins (14), washers (18), pin (17), and tension spring pin (15) from bracket (19) on inner ponton (3). Discard cotter pins (14).
6. Remove locknut (8) and screw (5) from swivel hook lever (7) and swivel hook pin (20). Discard locknut (8).
7. Unlock foldlock and raise outer ponton to vertical position.
8. Remove setscrew (1) and indicator plate (2) from swivel hook pin (20).

NOTE

Note location and quantity of spacers for installation.

9. Pull swivel hook pin (20) out of swivel hook lever (7) and inner ponton (3), and remove swivel hook lever (7) and two spacers (4) from inner ponton (3).

RETAINER SHAFT REMOVAL

NOTE

Removal and installation of retainer shafts are performed the same way. Left side is shown.

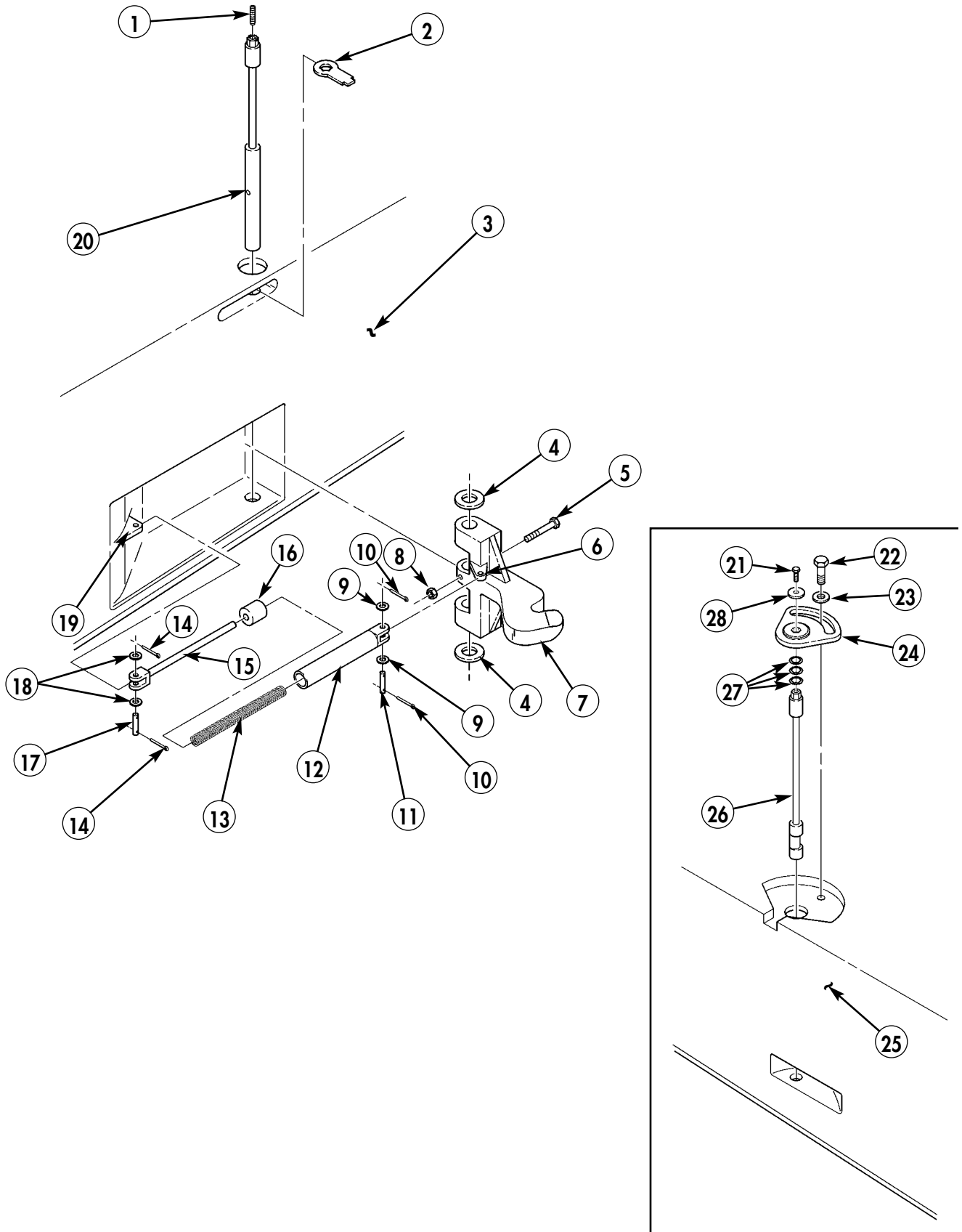
1. Mark position of swivel plate (24), and remove screw (22) and washer (23) from outer ponton (25).
2. Remove screw (21) and washer (28) from control rod (26), and mark position of swivel plate (24) on control rod (26) before removing swivel plate (24).

NOTE

Note location and quantity of hex washers for installation.

3. Remove swivel plate (24) and three hex washers (27) from control rod (26).
4. Remove control rod (26) from outer ponton (25).

SWIVEL HOOK AND RETAINER SHAFT REPLACEMENT (Contd)



SWIVEL HOOK AND RETAINER SHAFT REPLACEMENT (Contd)

RETAINER SHAFT INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to retainer shaft at installation.

1. Install control rod (6) and three hex washers (7) on outer ponton (5).
2. As marked, install swivel plate (4) on control rod (6) with washer (8) and screw (1).
3. Install washer (3) and screw (2) on outer ponton (5). Do not tighten screw (2).
4. Turn control rod (6) until marks on swivel plate (4) and outer ponton (5) line up, then tighten screw (2).

SWIVEL HOOK INSTALLATION

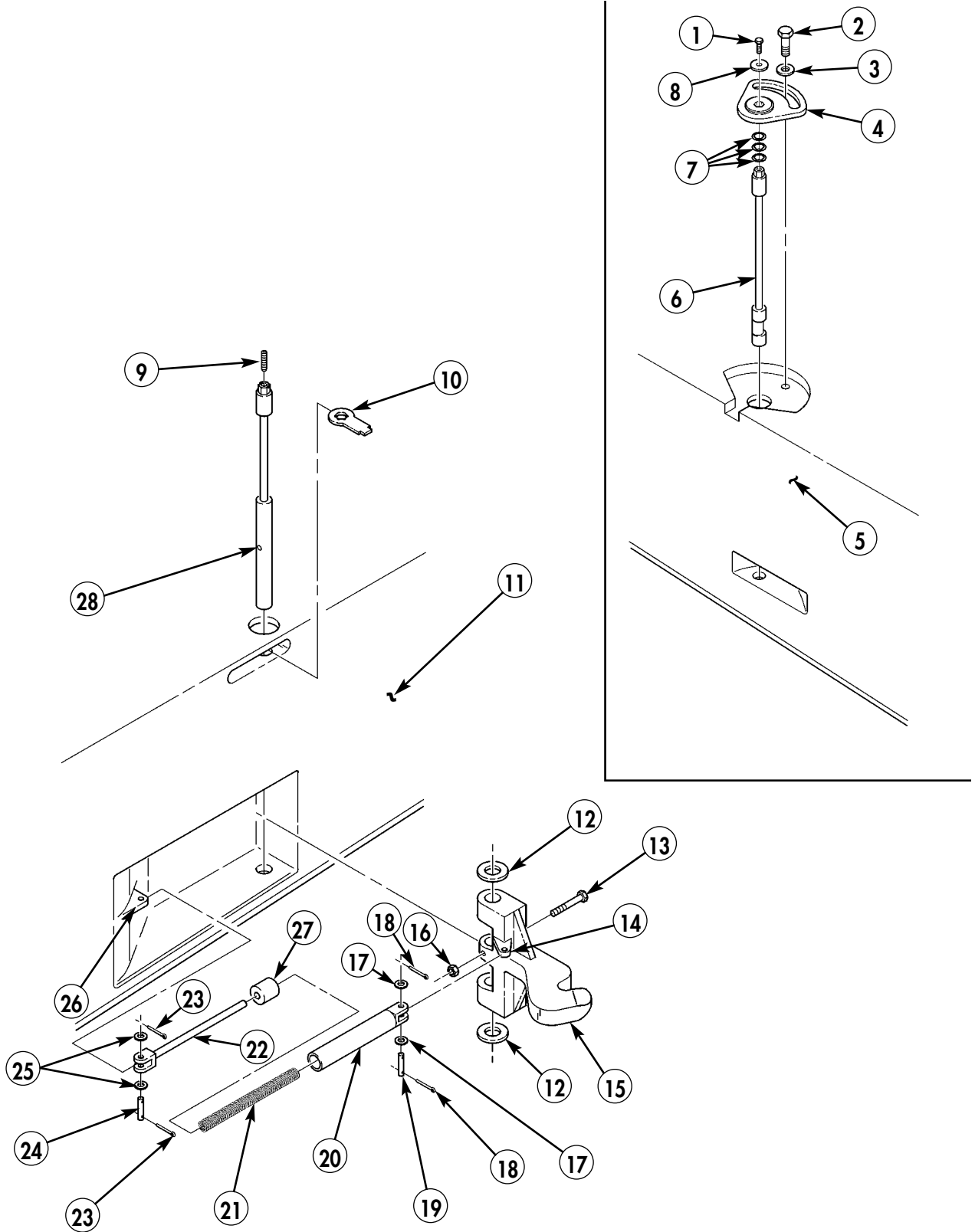
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to swivel hook pin and tension spring holder prior to installation.

1. Position swivel hook lever (15) and two spacers (12) on inner ponton (11), and slide swivel hook pin (28) through spacers (12) and swivel hook lever (15).
2. Place swivel hook lever (15) in closed position, and install indicator plate (10) on swivel hook pin (28) with pointer in line with swivel hook lever (15) and groove in swivel hook pin (28).
3. Align hole in swivel hook pin (28) with hole in swivel hook lever (15), and install screw (13) and new locknut (16).
4. Install setscrew (9) on indicator plate (10) and swivel hook pin (28).
5. Lower outer ponton down on inner ponton (11), and close foldlock.
6. Install tension spring pin (22) on bracket (26) with two washers (25), pin (24), and two new cotter pins (23).
7. Position spacer (27), spring (21), and tension spring holder (20) on tension spring pin (22), and install tension spring holder (20) on bracket (14) with two washers (17), pin (19), and two new cotter pins (18).
8. Place swivel hook lever (15) in open position.
9. Connect inner pontons (WP 0023 00).

SWIVEL HOOK AND RETAINER SHAFT REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0028 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
BII tools removed (TM 5-5420-278-10).

Materials/Parts

Seventeen rivets (WP 0096 00)

STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS REPLACEMENT (Contd)

NOTE

Removal of right and left stowage compartment access covers and tiedown straps are performed the same way. Right side is shown.

REMOVAL

1. Unlock two adjustable latches (4) on stowage compartment access cover (7).
2. Remove two rivets (11) and catch (10) from side of stowage compartment (12). Discard rivets (11).
3. Remove two rivets (3) and adjustable latch (4) from stowage compartment access cover (7). Discard rivets (3).
4. Repeat steps 1 through 3 and remove other catch (10) and adjustable latch (4).
5. Remove five rivets (1) from hinge (2) and outer ponton deck (26). Discard rivets (1).
6. Remove stowage compartment access cover (7) from outer ponton deck (26).
7. If damaged, remove stowage compartment seal (8) from inner edge of stowage compartment (12).
8. Remove four rivets (24), washers (20), and two velcro straps (21) from bulkhead (23). Discard rivets (24).
9. Remove two nuts (19), screws (29), washers (28), strap clips (27), and short tiedown straps (9) from BII tool support brackets (13) and (22).
10. Remove nut (18), screw (17), washer (16), strap clip (15), and long tiedown strap (14) from BII tool support bracket (22).
11. Remove four nuts (25), screws (31), and two holddown clamps (30) from BII tool support brackets (13) and (22).
12. Repeat steps 1 through 11 to remove other side seal, stowage compartment access cover, catches, latches, hinge, straps, and holddown clamps.

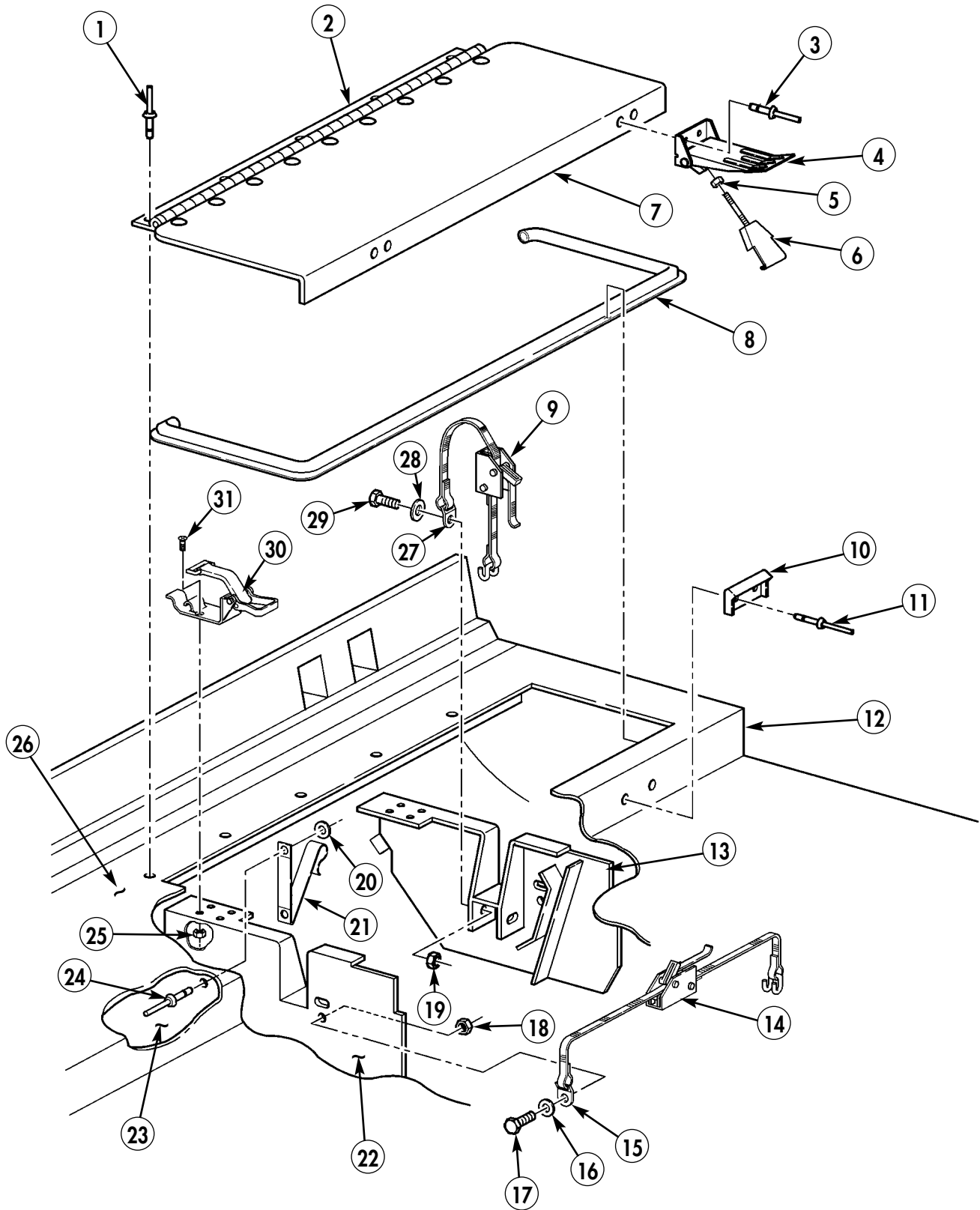
INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install two holddown clamps (30) on BII tool support brackets (13) and (22) with four screws (31) and nuts (25).
2. Install long tiedown strap (14) on BII tool support bracket (22) with strap clip (15), washer (16), screw (17), and nut (18).
3. Install two short tiedown straps (9) on BII tool support brackets (13) and (22) with strap clips (27), washers (28), screws (29), and nuts (19).
4. Install two velcro straps (21) on bulkhead (23) with four washers (20) and new rivets (24).
5. If removed, install stowage compartment seal (8) around inner edge of stowage compartment (12).
6. Position stowage compartment access cover (7) on outer ponton deck (26).
7. Align holes on hinge (2) with holes on outer ponton deck (26), and install five new rivets (1).
8. Install adjustable latch (4) on stowage compartment access cover (7) with two new rivets (3).
9. Install catch (10) on side of stowage compartment (12) with two new rivets (11).
10. Repeat steps 8 and 9 and install other adjustable latch (4) and catch (10).
11. Close stowage compartment access cover (7), and if necessary, loosen nut (5) and turn hook (6) on adjustable latch (4) clockwise to increase closed pressure on stowage compartment seal (8) or counterclockwise to decrease closing pressure. Tighten nut (5).
12. Repeat steps 1 through 11 to install other side holddown clamps, straps, hinge, latches, catches, seal, and stowage compartment access cover.
13. Install BII tools (TM 5-5420-278-10).
14. Install ramp bay on transporter (TM 5-5420-278-10).

STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

FOLDLOCK REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0029 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Materials/Parts

Two cotter pins (WP 0097 00)
Cotter pin (WP 0097 00)
Locknut (WP 0097 00)

FOLDLOCK REPLACEMENT (Contd)

NOTE

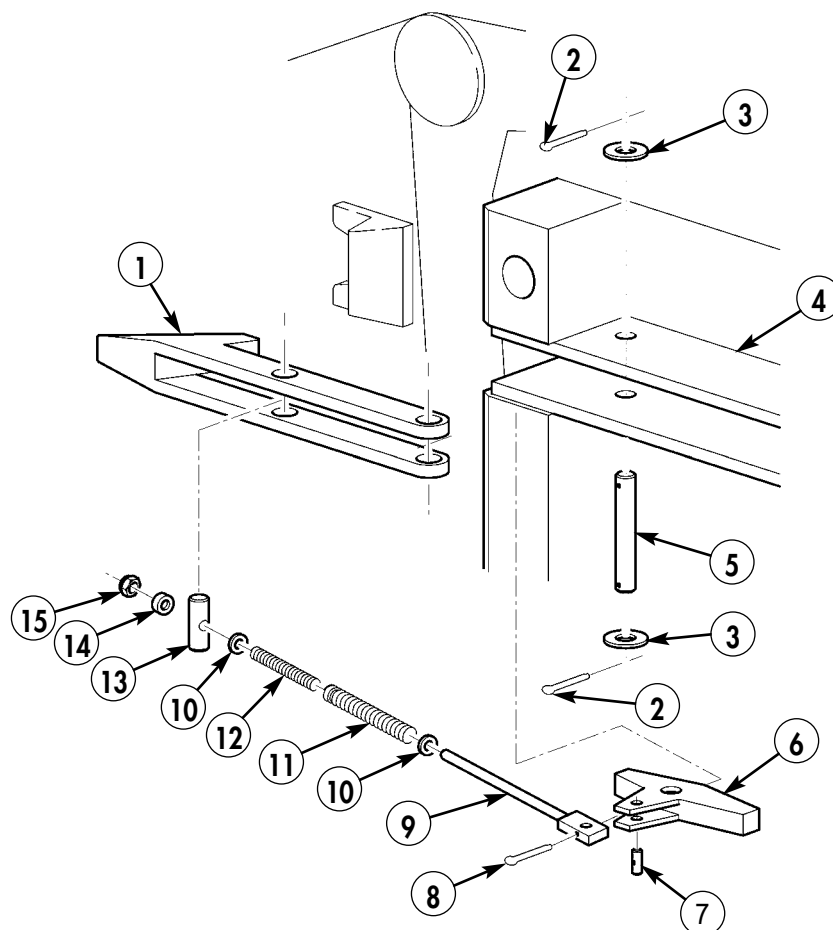
Removal and installation of foldlocks are performed the same way for left and right sides. Right side is shown.

REMOVAL

1. Remove cotter pin (8) from spring support (9) and pin (7), and remove pin (7) from spring support (9) and mounting block (6). Discard cotter pin (8).
2. Remove locknut (15) and spacer (14) from spring support (9). Discard locknut (15).
3. Remove spring support (9) and pin (13) from lever (1), and remove washer (10), springs (11) and (12), and washer (10) from spring support (9).
4. Remove two cotter pins (2) and washers (3) from pin (5). Remove pin (5), lever (1), and mounting block (6) from inner ponton supports (4). Discard cotter pins (2).
5. Perform steps 1 through 4 to remove opposite foldlock.

INSTALLATION

1. Install lever (1) and mounting block (6) on inner ponton supports (4) with pin (5), two washers (3), and new cotter pins (2).
2. Position washer (10), springs (11) and (12), and washer (10) on spring support (9), and position pin (13) and spring support (9) on lever (1).
3. Compress springs (11) and (12), and install spacer (14) and new locknut (15) on spring support (9).
4. Connect spring support (9) to mounting block (6) with new cotter pin (8).
5. Perform steps 1 through 4 to install opposite foldlock.



END OF WORK PACKAGE

Change 1

0029 00-2

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LOWER LOCK-DRIVE MAINTENANCE

REMOVAL, DISASSEMBLY, ASSEMBLY, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0030 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-287-10).

Materials/Parts

Two cotter pins (WP 0103 00)
Two cotter pins (WP 0104 00)
Four lockwashers (WP 0105 00)
Four lockwashers (WP 0105 00)
Grease (Item 10, WP 0134 00)

LOWER LOCK-DRIVE MAINTENANCE (Contd)**NOTE**

Both yokes are removed and installed the same way. Both yokes are shown. Right yoke contains connecting pin, trunnions, and lever, and is disassembled and assembled the same way.

REMOVAL

1. Place pump selector valve in UP position, and extend cylinder rod end (31) until pin (4) is clear to be removed.
2. Support cylinder rod end (31) and remove two cotter pins (3), washers (5), and pin (4) from yoke (6) and cylinder rod end (31). Discard cotter pins (3).

NOTE

Assistant will help with steps 3 and 4.

3. Support yoke (6), and remove two cotter pins (1), washers (2), and pins (32) from inner ponton brackets (33) and (34) and yoke brackets (29) and (30). Discard cotter pins (1).
4. Lift yoke (6) from brackets (34) and (33).

DISASSEMBLY

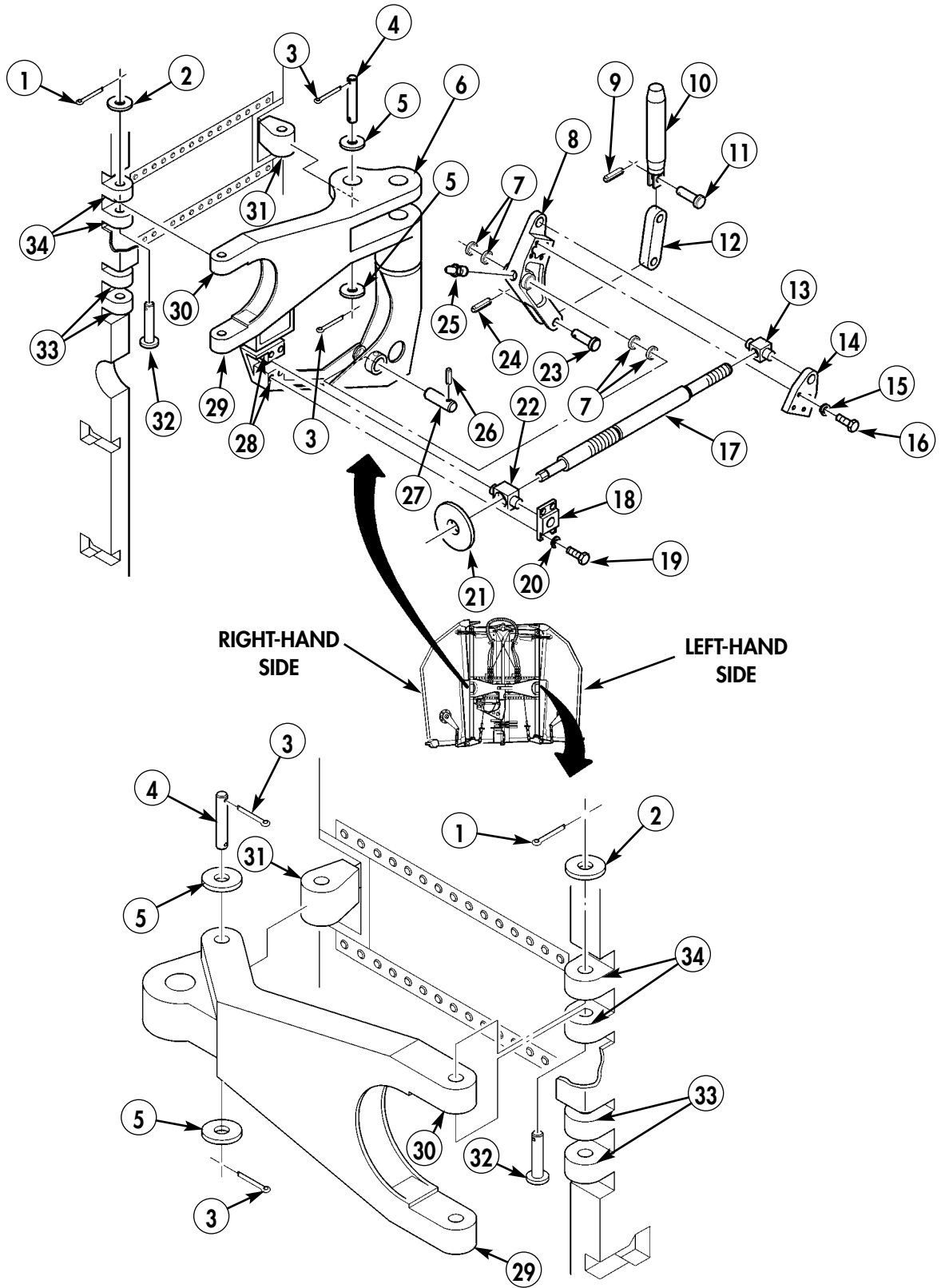
1. Remove four screws (19), lockwashers (20), and retainer (18) from trunnion nut (22) and yoke brackets (28). Discard lockwashers (20).
2. Remove four screws (16), lockwashers (15), and lever retainer (14) from trunnion nut (13) and bellcrank lever (8). Discard lockwashers (15).
3. Remove jackscrew (17), washer (21), and trunnion nuts (22) and (13) from yoke brackets (28) and bellcrank lever (8).
4. Remove washer (21), trunnion nut (22), and trunnion nut (13) from jackscrew (17).

NOTE

Note location and quantity of shims for installation.

5. Remove spring pin (26) from yoke (6) and pin (27).
6. Remove spring pin (24), pin (23), and connecting link (12) from bellcrank lever (8)
7. Remove pin (27), bellcrank lever (8), and shims (7) from yoke (6).
8. Remove lube fitting (25) from bellcrank lever (8).
9. Remove spring pin (9), pin (11), and link (12) from connecting pin (10).
10. Remove connecting pin (10) from yoke (6).

LOWER LOCK-DRIVE MAINTENANCE (Contd)



LOWER LOCK-DRIVE MAINTENANCE (Contd)

ASSEMBLY

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to all pins and threads of jackscrew prior to assembly.

1. Install connecting pin (10) on yoke (6).
2. Install connecting link (12) on connecting pin (10) with pin (11) and spring pin (9).
3. Install lube fitting (25) on bellcrank lever (8).
4. Connect connecting link (12) to bellcrank lever (8) with pin (23) and spring pin (24).
5. Install bellcrank lever (8) on yoke (6) with shims (7), pin (27), and link (12) aligned with slot on bellcrank lever (8).
6. Install spring pin (26) through yoke (6) and pin (27).
7. Install trunnion nut (22), washer (21), and trunnion nut (13) on jackscrew (17).
8. Adjust trunnion nut (22) and trunnion nut (13) to fit mounting holes in bellcrank lever (8) and yoke brackets (28).
9. Position jackscrew (17) on yoke (6) and install trunnion nut (13) on bellcrank lever (8) with lever retainer (14), four new lockwashers (15), and screws (16).
10. Install trunnion nut (22) on yoke brackets (28) with trunnion retainer (18), four new lockwashers (20), and screws (19).

INSTALLATION

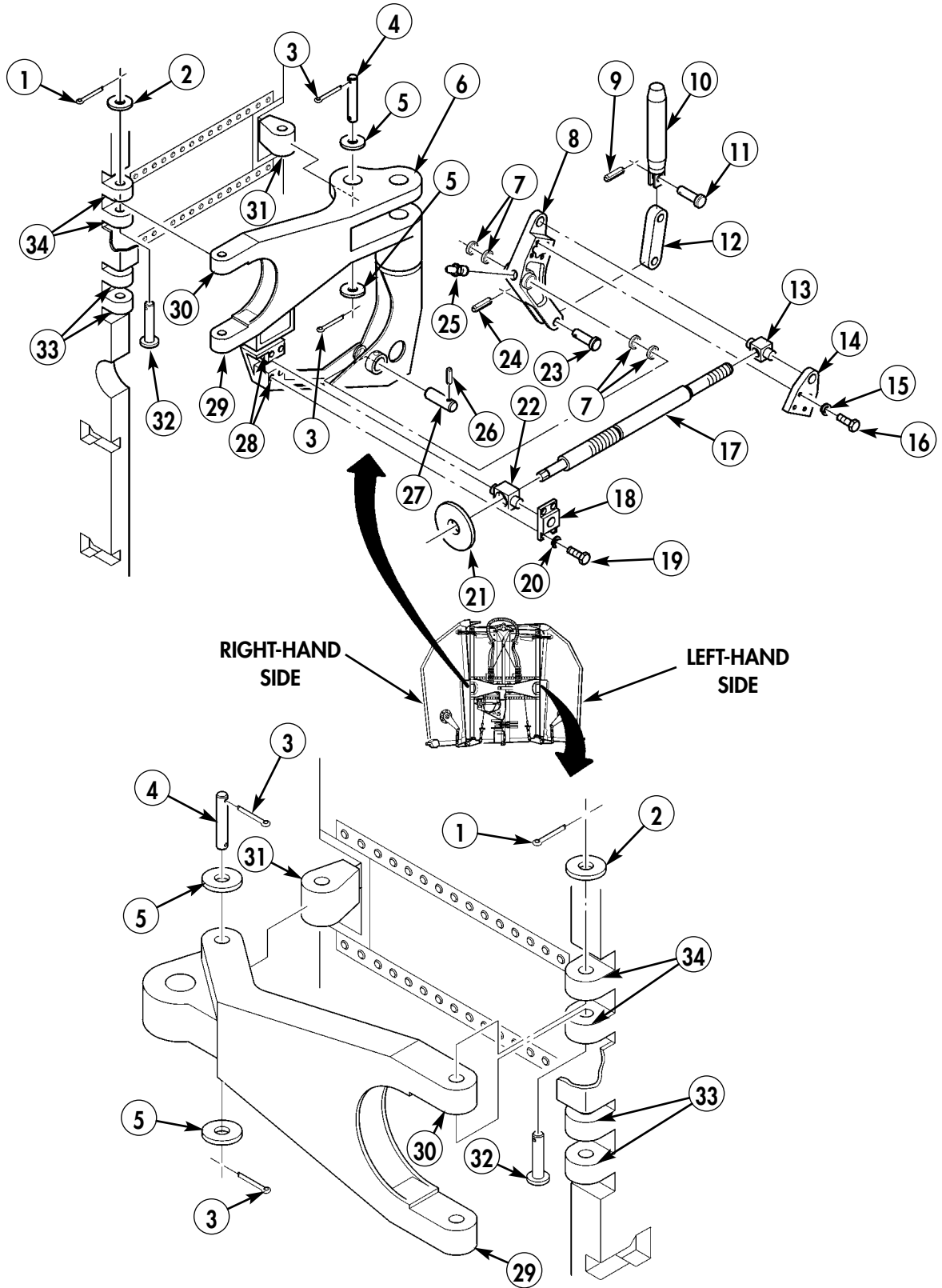
1. Place pump selector lever in UP position, and extend cylinder rod end (31) until pin (4) can be installed.

NOTE

Assistant will help with step 2.

2. Lift and install yoke (6) on inner ponton brackets (33) and (34) with two pins (32), washers (2), and new cotter pins (1).
3. Connect yoke (6) on cylinder rod end (31) with pin (4), two washers (5), and new cotter pins (3).
4. Install ramp bay on transporter (TM 5-5420-278-10).

LOWER LOCK-DRIVE MAINTENANCE (Contd)



END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

**IMPROVED RIBBON BRIDGE (IRB)
 RAMP BAY M16
 NSN 5420-01-470-5825 P/N 12478918;
 INTERIOR BAY M17
 NSN 5420-01-470-5824 P/N 12478919.**

**Section IV. RAMP BAY PUMP SYSTEM MAINTENANCE
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WP Title	WP Sequence No.-Page No.
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Pump Access Cover Replacement	0033 00-1
Pump Filter Element Replacement	0034 00-1
Pump Maintenance	0035 00-1
Cylinder Replacement	0036 00-1
Hose Assemblies and Fittings Replacement	0037 00-1
Bleeding Pump System	0038 00-1

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

DRAINING AND FILLING PUMP SYSTEM PUMP, CYLINDER

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(Item 3, WP 0135 00)

Materials/Parts

Drain hose assembly (Item 6, WP 0074 00)
Gasket (WP 0108 00)
Fluid (Item 17, WP 0134 00)
Cap and plug set (Item 5, WP 0134 00)

References

WP 0001 00
WP 0038 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Inner pontoons separated, if necessary
(WP 0023 00).

DRAINING AND FILLING PUMP SYSTEM (Contd)

NOTE

Draining and filling of fluids are the same for both pumps and cylinders. Right side pump and cylinder are shown.

PUMP

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. Refer to Army POL (WP 0001 00) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in injury or death.

CAUTION

Cap or plug all hoses, fittings, and openings immediately after disconnecting to prevent contamination. Remove caps or plugs prior to installation. Failure to do so may result in damage to equipment.

NOTE

Tag hoses for installation.

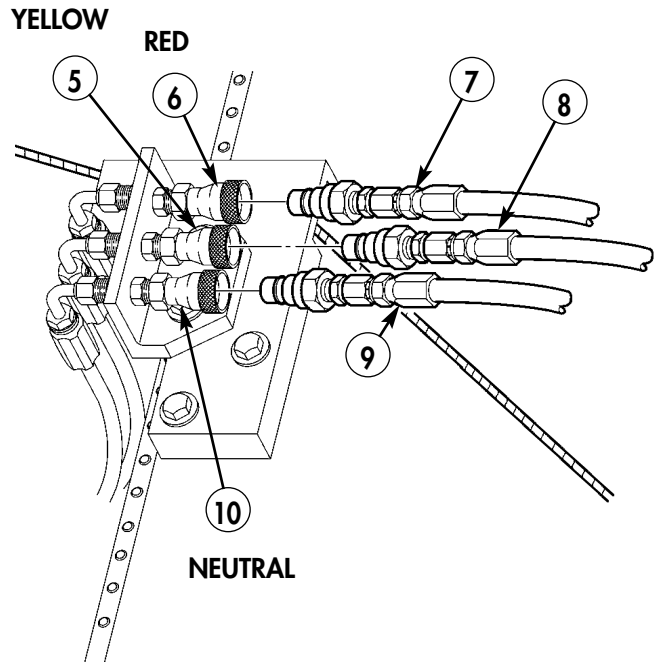
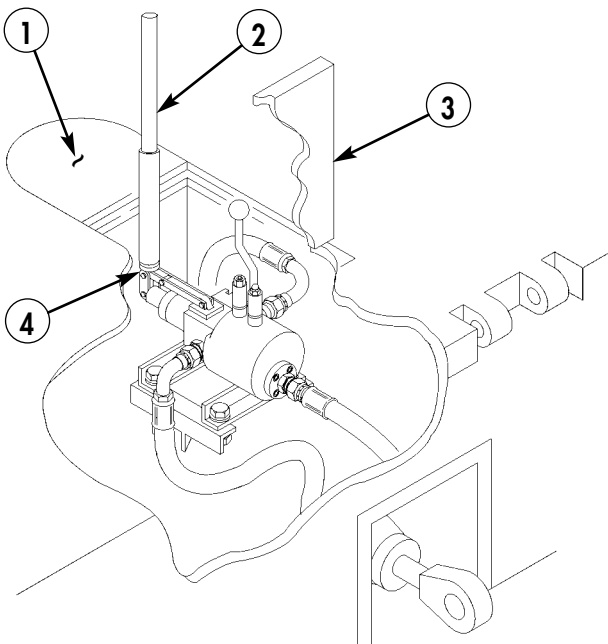
Have clean container ready to catch fluid.

1. Open access cover (3) on inner ponton (1).

WARNING

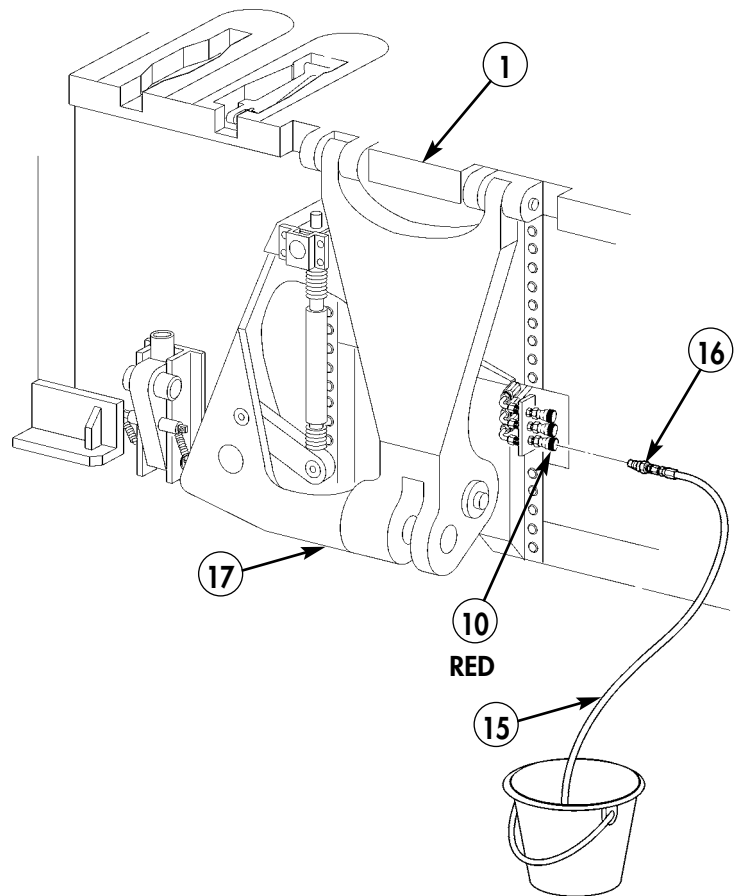
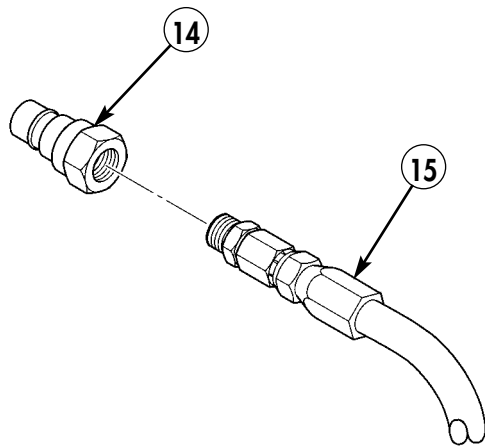
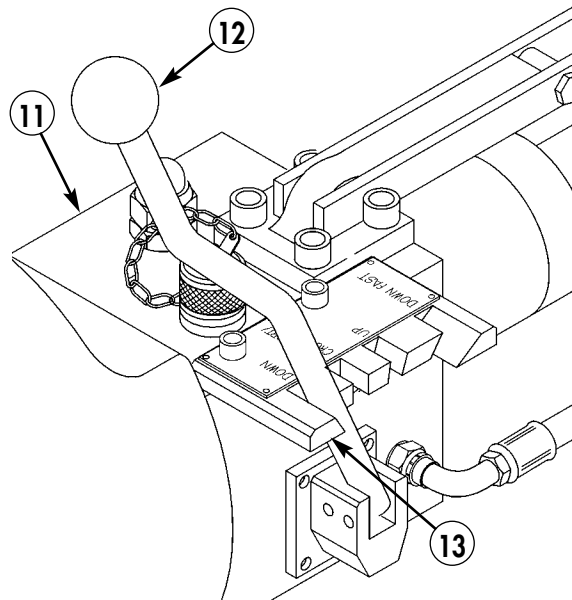
Relieve residual pressure on fluid system before disconnecting lines by moving control valve lever to all positions and then placing lever in transport/crossing position. Failure to do so may result in injury or death.

2. Disconnect hose assemblies (7), (8), and (9) from quick-disconnect couplings (6), (5), and (10).
3. Place control lever (12) to DOWN position (13) on pump (11), install handle (2) on lever (4), and operate handle (2) until yoke (17) is fully retracted.



DRAINING AND FILLING PUMP SYSTEM (Contd)

4. Remove quick-disconnect (14) from drain hose assembly (15) and place end of hose (15) in a suitable container to catch fluid.
5. Connect other end of hose (15) with quick-connector (16) to lower (red marked) quick-disconnect coupling (10) on inner ponton (1).



DRAINING AND FILLING PUMP SYSTEM (Contd)

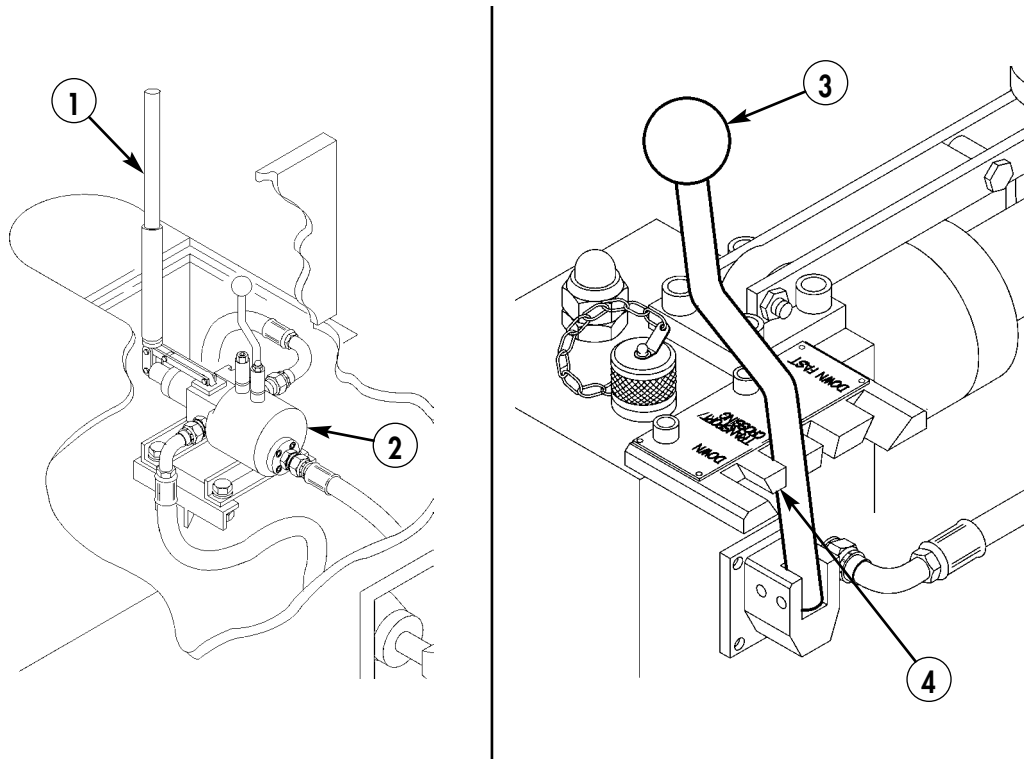
PUMP (Contd)

6. Operate pump handle (1) until pump reservoir (2) is empty.
7. Place control lever (3) to TRANSPORT/CROSSING position (4).

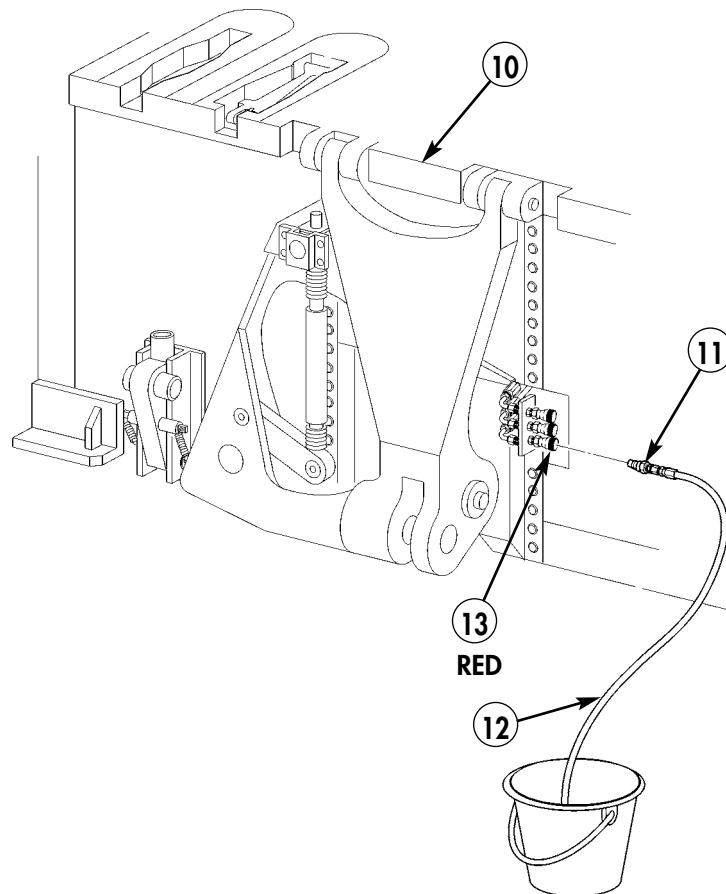
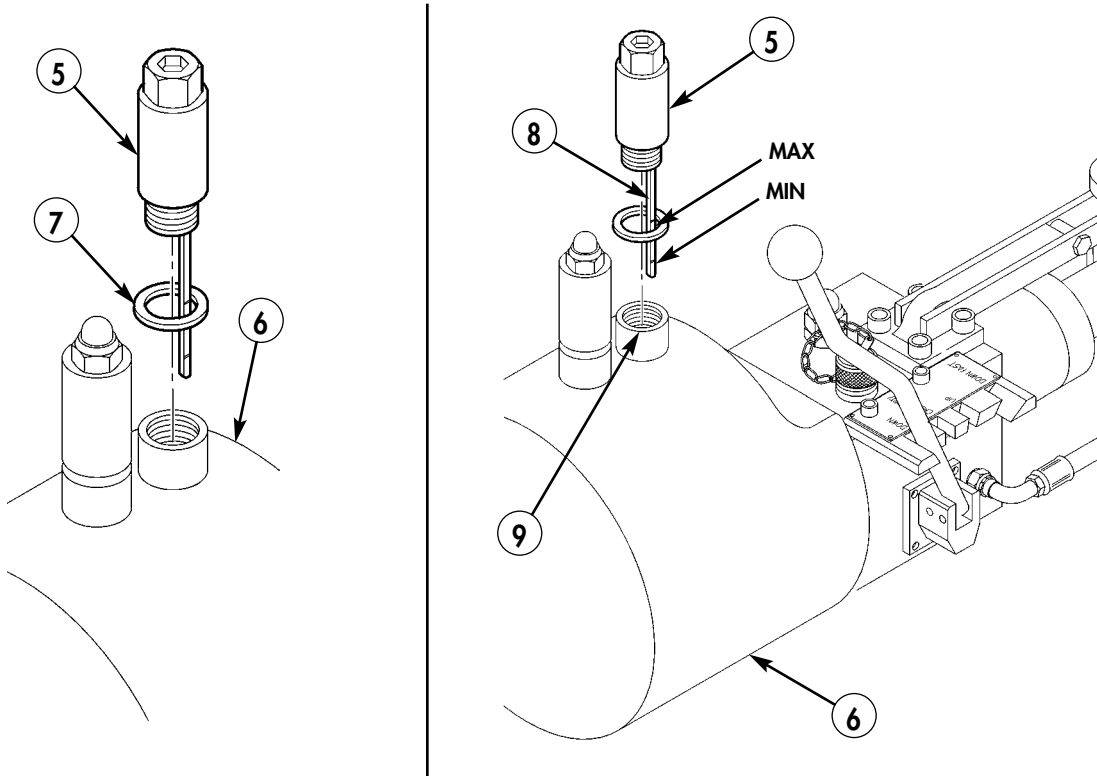
NOTE

Perform steps 8, 9, 10, and 11 if pump is not being removed or after pump is installed.

8. Remove filler cap with dipstick (5) and gasket (7) from pump reservoir (6). Discard O-ring seal (7) if damaged.
9. Install funnel on pump reservoir (6), fill reservoir (6) with fluid, and check fluid level. Fluid level must be between the min. and max. mark on filler cap dipstick (8) when dipstick (8) is placed on top of pump reservoir opening (9). Do not thread filler cap on reservoir (6) when checking fluid.
10. Install filler cap with dipstick (5) on pump reservoir (6).
11. Remove hose (12) and quick-connector (11) from quick-disconnect coupling (13) on inner ponton (10) if cylinder fluid is not being changed.



DRAINING AND FILLING PUMP SYSTEM (Contd)



DRAINING AND FILLING PUMP SYSTEM (Contd)**CYLINDER****NOTE**

Draining and filling of fluids are the same for both pumps and cylinders. Right side pump and cylinder are shown.

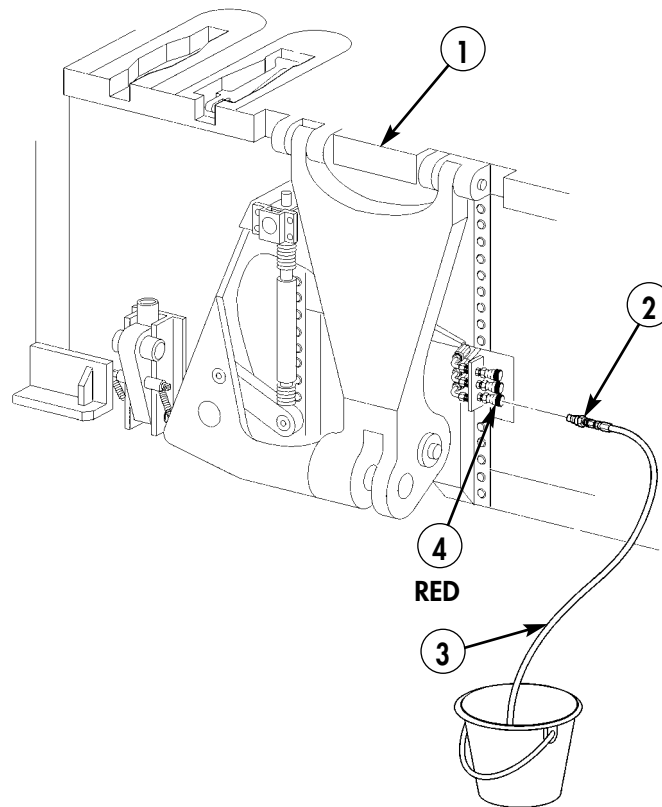
Piston rod or yoke must be in fully retracted position before draining and filling cylinder.

1. Install hose quick-connector (2) on inner ponton (1) lower (red marked) quick-disconnect coupling (4) with other end of hose (3) in a container if not installed.
2. Remove filler cap with dipstick (8) and gasket (10) from inner ponton pump (5), install funnel, and fill reservoir (9) with clean fluid.

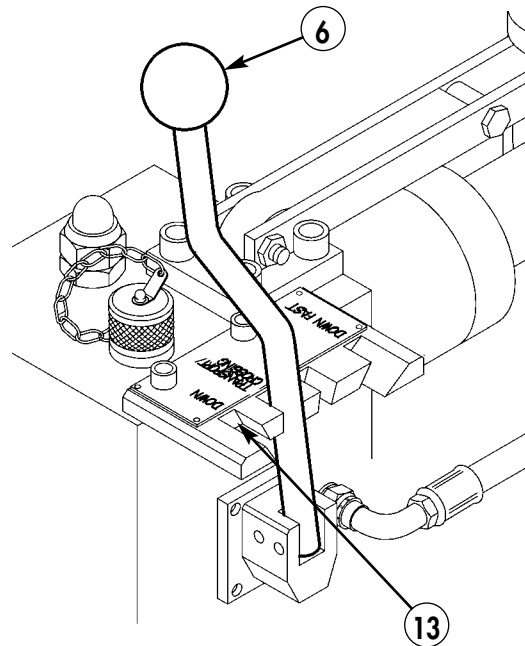
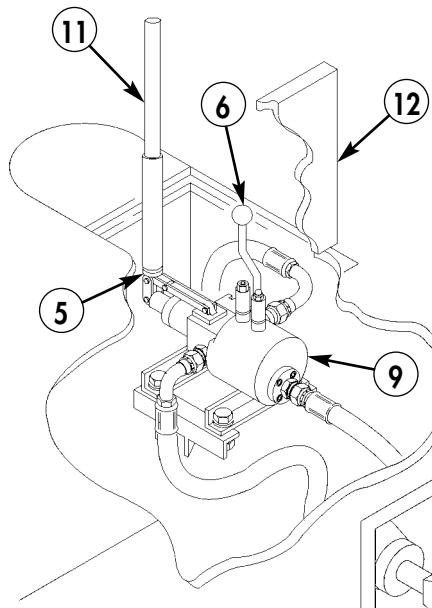
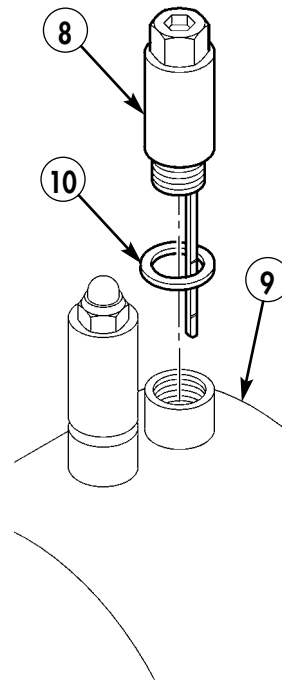
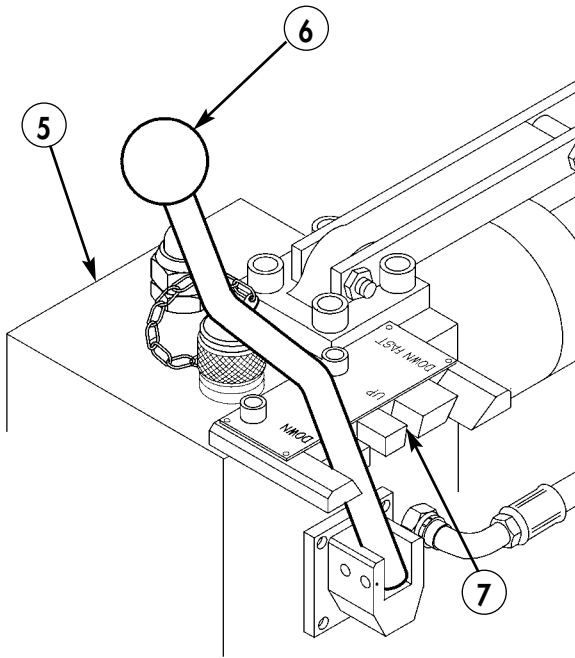
NOTE

Continually fill reservoir with clean fluid as piston rod or yoke is extended.

3. Place control lever (6) to UP position (7) if not in UP position (7), and operate handle (11) to extend piston rod or yoke from fully retracted position to fully extended position.
4. Disconnect hose quick-connector (2) from quick-disconnect coupling (4) on inner ponton (1).
5. Place control lever (6) on inner ponton pump (5) to DOWN position (13) and operate handle (11) to retract piston rod or yoke.
6. Place control lever (6) to TRANSPORT/CROSSING position.
7. Remove filler cap with dipstick (8) and gasket (10), if not removed, from reservoir (9) and refill reservoir (9) with clean fluid as necessary.
8. Install gasket (10) and filler cap with dipstick (8) and close access cover (12).
9. Bleed fluid system (WP 0038 00).
10. Install ramp bay on transporter (TM 5-5420-278-10).



DRAINING AND FILLING PUMP SYSTEM (Contd)



END OF WORK PACKAGE

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UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PUMP ACCESS COVER REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0033 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Ramp bay removed from transporter and unfolded
(TM 5-5420-278-10).

Chem-lite holder removed (TM 5-5420-278-10).

Materials/Parts

Three lockwashers (WP 0102 00)

Grease (Item 10, WP 0134 00)

PUMP ACCESS COVER REPLACEMENT (Contd)

NOTE

Removal and installation of right and left pump access covers are the same. Right side is shown.

REMOVAL

1. Remove three nuts (12), lockwashers (13), screws (17), washers (16), and hinge block (15) with access cover (1) from roadway inner ponton opening (11). Discard lockwashers (13).
2. Remove pin (14) from hinge block (15) and access cover (1).
3. Remove two screws (4), washers (3), and metal strap (2) from access cover (1).
4. Remove two screws (6) and spring clips (5) from access cover (1).

NOTE

Perform step 5 if instruction plate is to be removed.

5. Remove four screws (8) and instruction plate (7) from access cover (1).
6. Remove two screws (9) and stop plate (10) from roadway inner ponton opening (11).

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

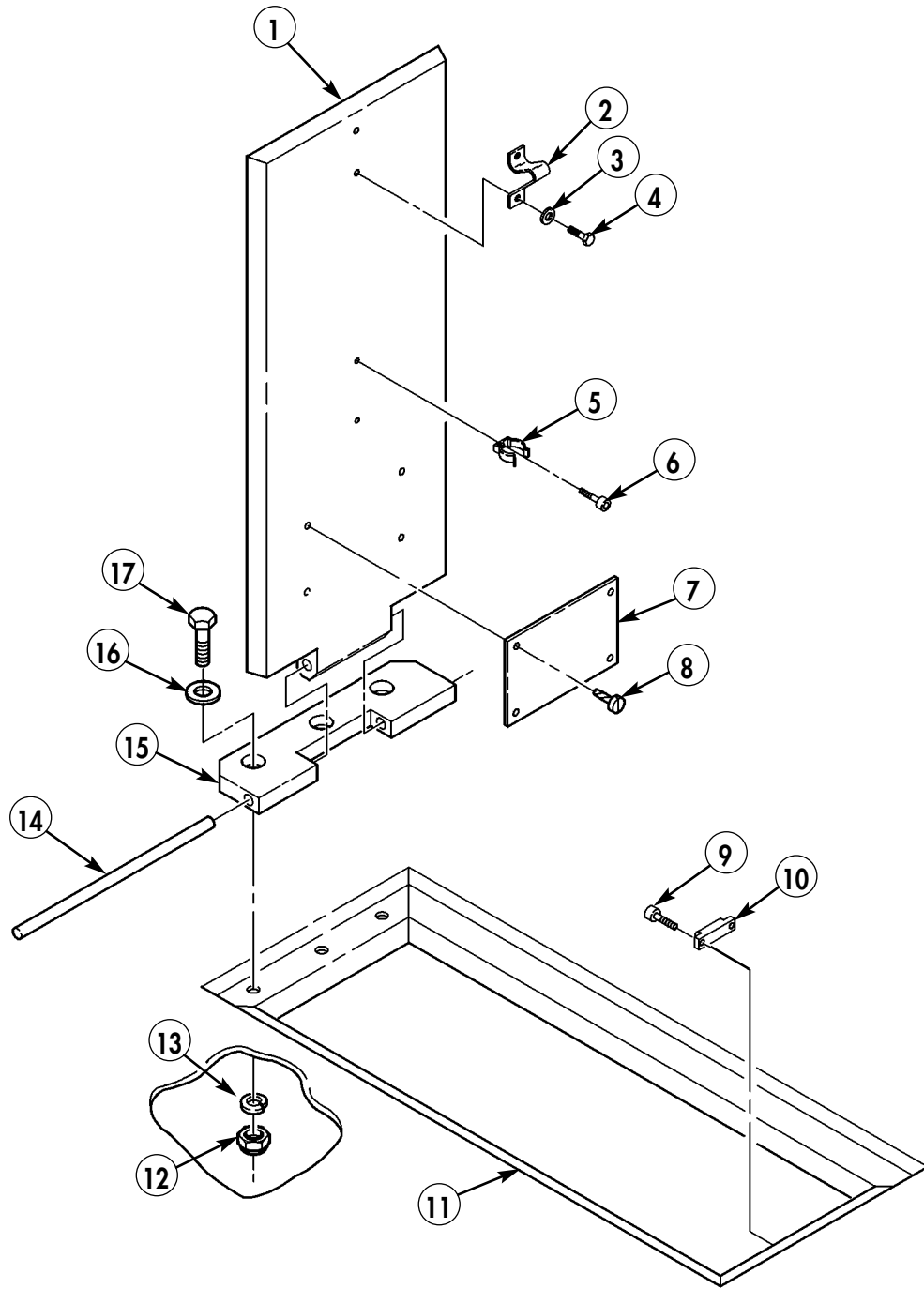
1. Install stop plate (10) on roadway inner ponton opening (11) with two screws (9).

NOTE

Perform step 2 if instruction plate was removed.

2. Install instruction plate (7) on access cover (1) with four screws (8).
3. Install two spring clips (5) on access cover (1) with screws (6).
4. Install metal strap (2) on access cover (1) with two washers (3) and screws (4).
5. Apply a light coat of grease to pin (14) and install access cover (1) on hinge block (15) with pin (14).
6. Install hinge block (15) with access cover (1) on roadway inner ponton opening (11) with three washers (16), screws (17), new lockwashers (13), and nuts (12).
7. Install Chem-lite holder (TM 5-5420-278-10).
8. Fold ramp bay and install ramp bay on transporter (TM 5-5420-278-10).

PUMP ACCESS COVER REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PUMP FILTER ELEMENT REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0034 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Crowfoot filter wrench (Table 2,
Item 2, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Four lockwashers (WP 0107 00)
Four lockwashers (WP 0106 00)
Filter element (WP 0106 00)
O-ring (WP 0106 00)
O-ring (WP 0106 00)
Fluid (Item 17, WP 0134 00)

References

WP 0001 00

Equipment Condition

Ramp bay removed from transporter and unfolded
(TM 5-5420-278-10) or inner pontoons
separated (WP 0023 00).
Pump drained (WP 0032 00).

PUMP FILTER ELEMENT REPLACEMENT (Contd)

REMOVAL

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. refer to Army POL (WP 0001 00) for information concerning storage, use and disposal of these liquids. Failure to do so may result in injury or death.

NOTE

Both pumps have a filter element and are removed and installed the same. This task covers only one filter element.

Have container ready to catch fluids.

WARNING

Relieve residual pressure on fluid system before disconnecting lines by moving control valve lever to all positions and then placing lever in transport/crossing position. Failure to do so may result in injury or death.

1. Remove hose assembly (7) from neutral quick-disconnect coupling fitting (9) on bracket (8).
2. Remove four nuts (6), lockwashers (5), screws (2), and washers (3) from two pump mounting brackets (4) and support brackets (10). Discard lockwashers (5).
3. Stand pump assembly (1) on end to access pump reservoir access cover (11).
4. Remove four screws (19), lockwashers (18), and pump reservoir access cover (11) with O-ring (12) from pump reservoir (17). Discard lockwashers (18).
5. Remove O-ring (12) from access cover (11). Discard O-ring (12).

NOTE

There are two types of filter elements used on the IRB; one filter element has a threaded adapter and an O-ring and is pulled off of filter support post. The other filter element has threads and is unscrewed from filter support post.

6. Using flat spanner wrench, pull or unscrew filter element (13) from filter support tube (16) inside pump reservoir (17). Discard screwed on filter element (13).
7. If filter element (13) was pulled off of support post (16), remove O-ring (15) and threaded adapter (14) from filter element (13). Discard O-ring (15) and filter element (13).

INSTALLATION

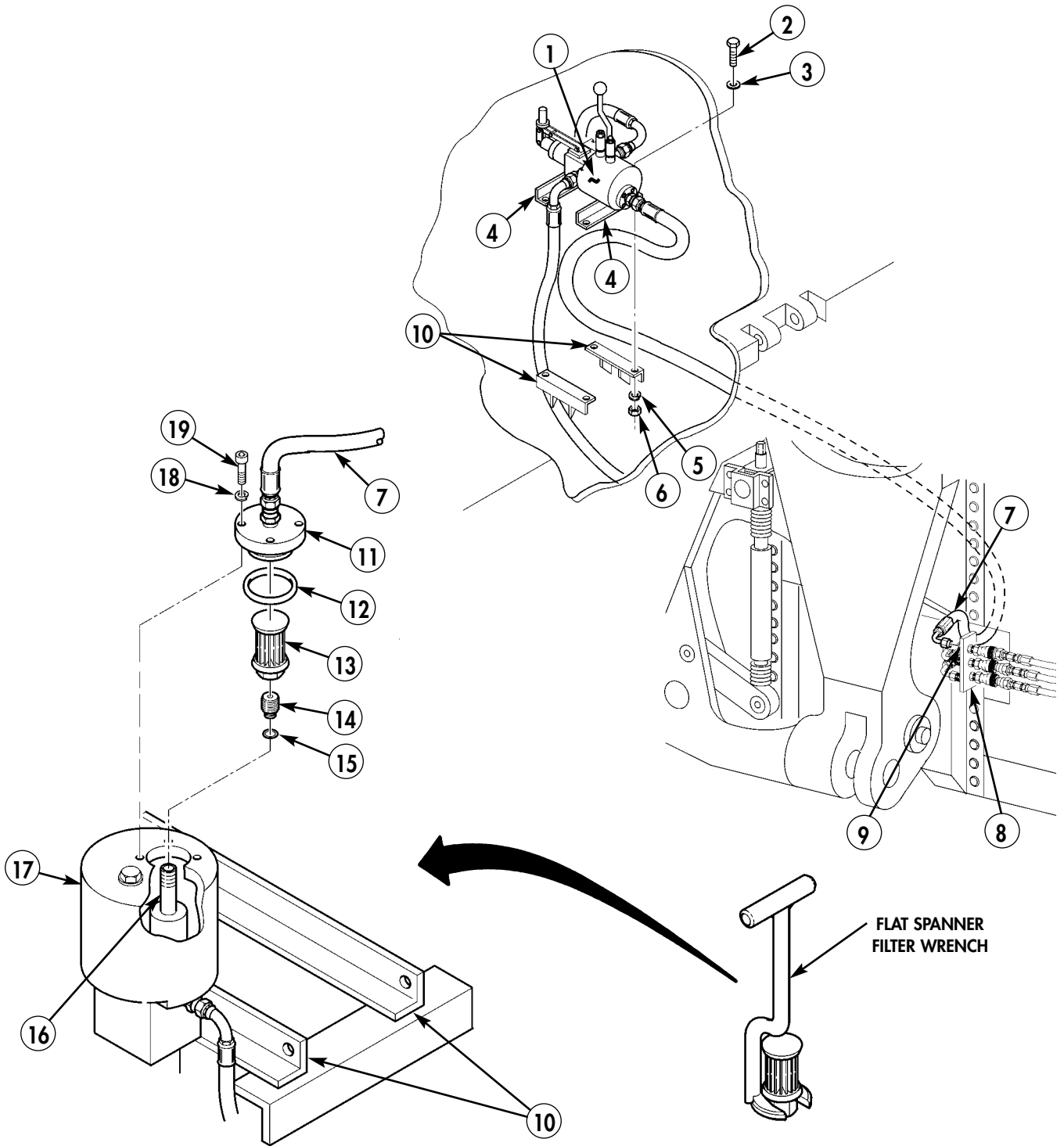
NOTE

There are two types of filter elements used on the IRB; one filter element has a threaded adapter and an O-ring and is pushed down onto filter support post. The other filter element has threads and is screwed onto filter support post.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. If filter element (13) was pulled off, install threaded adapter (14) and new O-ring (15) on filter element (13).
2. Apply fluid to O-ring on filter element (13) and push or screw new filter element (13) down on filter support tube (16) inside pump reservoir (17).
3. Apply fluid to new O-ring (12) and install O-ring (12) on pump reservoir access cover (11).
4. Install access cover (11) on pump reservoir (17) with four new lockwashers (18) and screws (19).
5. Position pump assembly (1) on two support brackets (10) and install four washers (3), screws (2), new lockwashers (5), and nuts (6).
6. Install hose assembly (7) on neutral quick-disconnect coupling fitting (9).
7. Fill pump reservoir (WP 0032 00).
8. Connect inner pontoons (WP 0023 00) or fold bay and install on transporter (TM 5-5420-278-10).

PUMP FILTER ELEMENT REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

PUMP MAINTENANCE

REMOVAL, DISASSEMBLY, ASSEMBLY, INSTALLATION
THIS WORK PACKAGE SUPERSEDES WP 0035 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Four lockwashers (WP 0107 00)
Three O-rings (WP 0107 00)
Two cotter pins (WP 0108 00)
Four lockwashers (WP 0108 00)
Four drive screws (WP 0108 00)
Two lockwashers (WP 0108 00)
Gasket (WP 0108 00)
Teflon pipe sealant (Item 15, WP 0134 00)
Cap and plug set (Item 5, WP 0134 00)
Fluid (Item 17, WP 0134 00)

References

WP 0001 00
WP 0038 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Ramp bay unfolded or inner pontoons separated and
unfolded (WP 0023 00).
Pump drained (WP 0032 00).

PUMP MAINTENANCE (Contd)

NOTE

Removal and installation of pumps are the same. Right side is shown.

REMOVAL

WARNING

Accidental or intentional introduction of liquid contaminant's into the environment is in violation of state, federal, and military regulation. refer to Army POL (WP 0001 00) for information concerning storage, use and disposal of these liquids. Failure to do so may result in injury or death

CAUTION

Cap or plug all hoses, connections, and openings immediately after disconnection to prevent contamination. Remove caps or plugs prior to installation. Failure to do so may result in damage to equipment.

NOTE

Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.

Tag all hoses for installation.

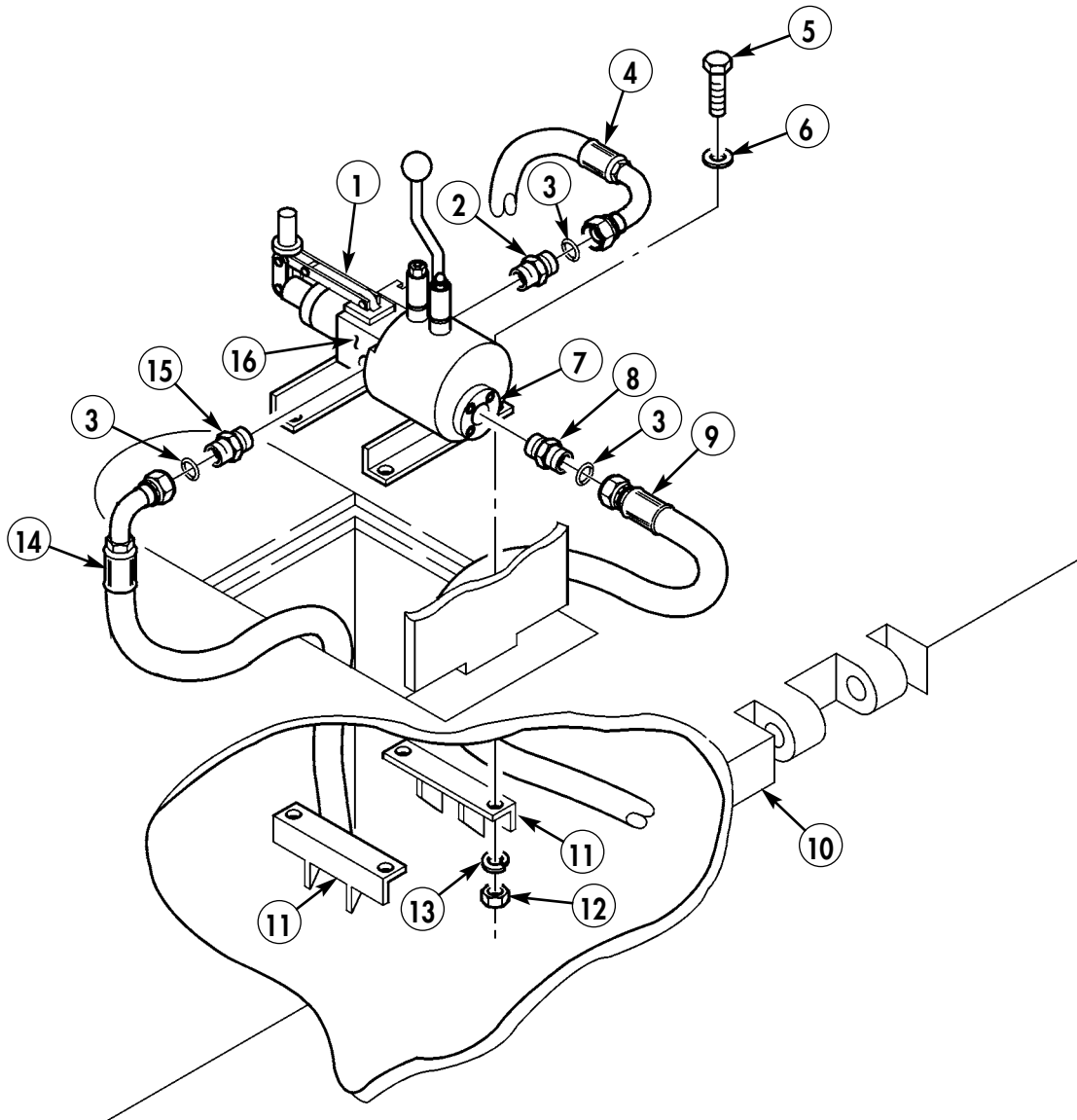
Have container ready to catch oil.

WARNING

Relieve residual pressure on fluid system before disconnecting lines by moving control valve lever to all positions and then placing lever in transport/crossing position. Failure to do so may result in injury or death.

1. Remove hose assembly (9) and O-ring (3) from adapter (8) on pump reservoir access cover (7). Discard O-ring (3).
2. Remove hose assembly (4) and O-ring (3) from adapter (2) on pump housing (16). Discard O-ring (3).
3. Remove hose assembly (14) and O-ring (3) from adapter (15) on pump housing (16). Discard O-ring (3).
4. Remove four nuts (12), lockwashers (13), washers (6), screws (5), and pump (1) from two support brackets (11) on inner ponton (10). Discard lockwashers (13).
5. Remove adapters (2) and (15) from pump housing (16).
6. Remove adapter (8) from pump reservoir access cover (7).

PUMP MAINTENANCE (Contd)



PUMP MAINTENANCE (Contd)

DISASSEMBLY

NOTE

Pump lever, control lever, and fill plug with dipstick can be removed and disassembled without removing pump from ramp bay.

Disassembly and assembly of pumps are performed the same way. Only one pump is shown.

A. Pump Lever

1. Remove cotter pin (1), washer (2), and pin (4) from pump lever (3) and piston rod (32). Discard cotter pin (1).
2. Remove nut (6), washer (5), screw (38), and pump lever (3) from piston rod (33) and between two straps (11).
3. Remove cotter pin (8), nut (7), screw (37), washer (36), and spacer (39) from between two straps (11). Discard cotter pin (8).
4. Remove nut (10), washer (9), screw (35), and two straps (11) from lever support (34).
5. Remove four screws (12), lockwashers (13), and lever support (34) from pump housing (32). Discard lockwashers (13).

B. Control Lever

1. Remove knob (21) from control lever (22).
2. Remove spring pin (20), control lever (22), and spring (23) from control block (24).

NOTE

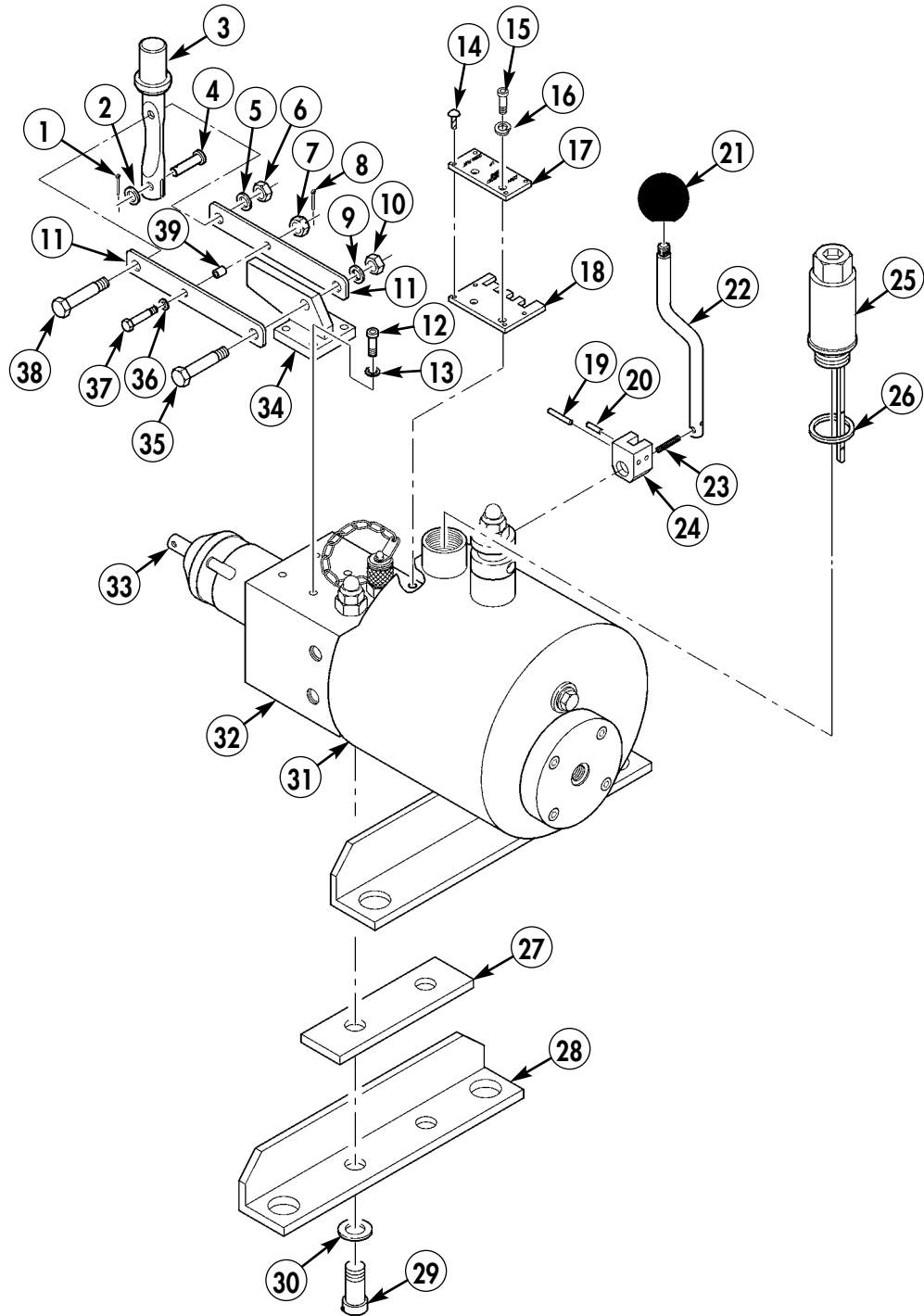
Perform step 3 only if replacing damaged control block.

3. Remove spring pin (19) and control block (24) from spool valve shaft (not shown).

C. Instruction Plate, Mounting Plate, and Fill Plug

1. Remove two screws (15), lockwashers (16), and mounting plate (18) from pump housing (32). Discard lockwashers (16).
2. If replacement is necessary, remove four drive screws (14) and instruction plate (17). Discard drive screws (14).
3. Remove two screws (29), washers (30), mounting plate (28), and spacer (27) from pump housing (32).
4. Remove fill plug with dipstick (25) and gasket (26) from pump reservoir (31). Discard O-ring (26) if damaged.

PUMP MAINTENANCE (Contd)



PUMP MAINTENANCE (Contd)

ASSEMBLY

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

A. Instruction Plate, Mounting Plate, and Fill Plug

1. Install new gasket (26), if necessary, and fill plug with dipstick (25) on pump reservoir (31).
2. Install spacer (27) and mounting plate (28) on pump housing (32) with two washers (30) and screws (29).
3. Install instruction plate (17), if removed, on plate (18) with four new drive screws (14).
4. Install plate (18) on pump housing (32) with two new lockwashers (16) and screws (15).

B. Control Lever

1. If removed, install control block (24) on spool valve shaft (not shown) with spring pin (19).
2. Install spring (23) and control lever (22) on control block (24) with spring pin (20).
3. Install knob (21) on control lever (22).

C. Pump Lever

1. Install lever support (34) on pump housing (32) with four new lockwashers (13) and screws (12).
2. Install two straps (11) on lever support (34) with screw (35), washer (9), and nut (10).
3. Install spacer (39) between two straps (11) with washer (36), screw (37), nut (7), and new cotter pin (8).
4. Install pump lever (3) between two straps (11) with screw (38), washer (5), and nut (6). Do not overtighten nut (6); pump lever (3) must move freely after tightening nut (6).
5. Install pump lever (3) on piston rod (33) with pin (4), washer (2), and new cotter pin (1).

PUMP MAINTENANCE (Contd)

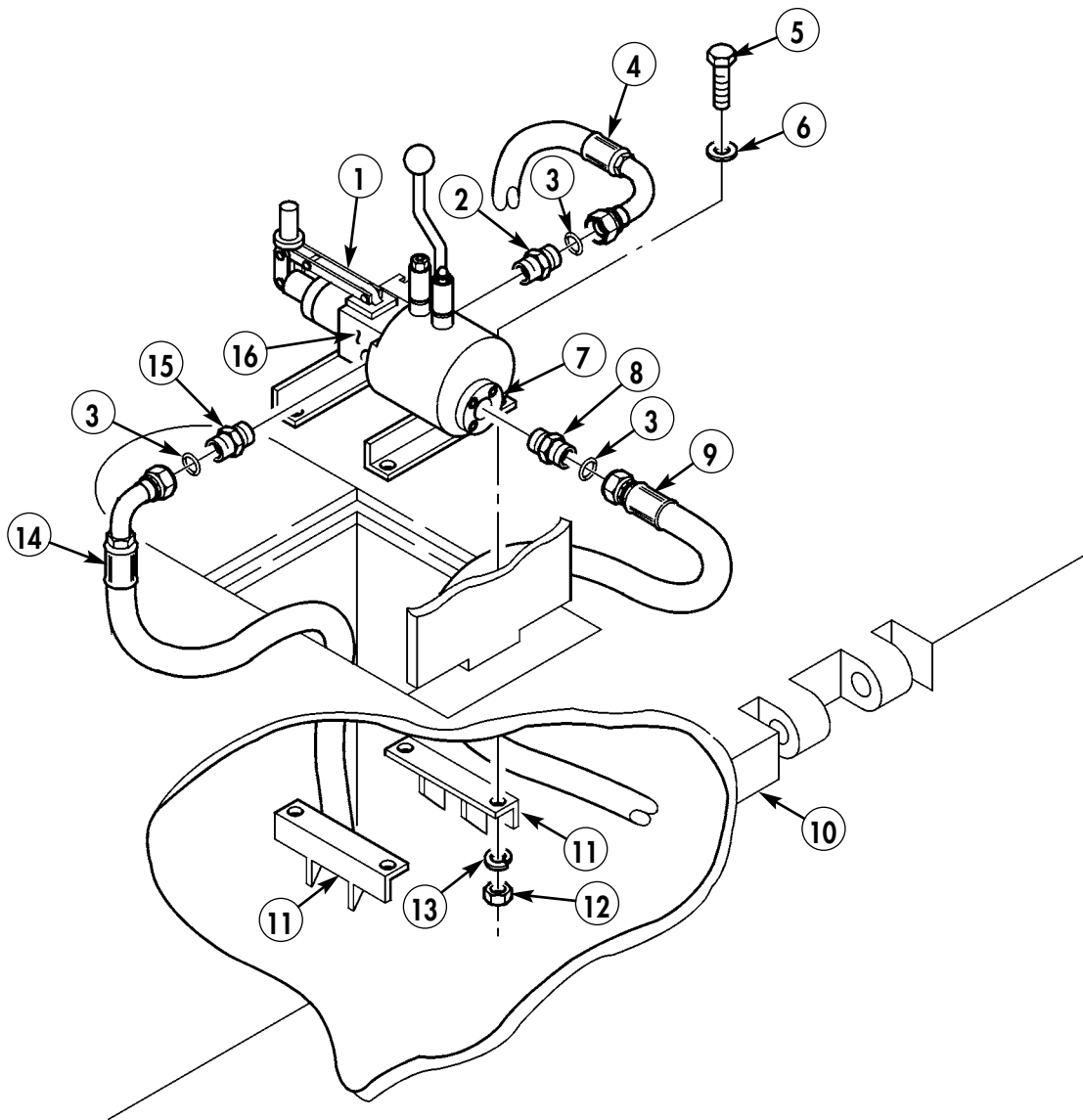
INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Apply sealant to male threads of adapters (2), (8), and (15).
2. Install adapter (8) on pump reservoir access cover (7).
3. Install adapters (2) and (15) on pump housing (16).
4. Install pump (1) on two support brackets (11) on inner ponton (10) with four washers (6), screws (5), new lockwashers (13), and nuts (12).
5. Apply fluid to three new O-rings (3) and install O-rings (3) on hose assemblies (4), (9), and (14).
6. Connect hose assembly (14) with O-ring (3) to adapter (15) on pump housing (16).
7. Connect hose assembly (4) with O-ring (3) to adapter (2) on pump housing (16).
8. Connect hose assembly (9) with O-ring (3) to adapter (8) on pump reservoir access cover (7).
9. Fill pump reservoir system (WP 0032 00).
10. Fold and connect pontoons, if separated (WP 0023 00).
11. Bleed fluid system (WP 0038 00).
12. Install ramp bay on transporter (TM 5-5420-278-10).

PUMP MAINTENANCE (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

CYLINDER REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0036 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

O-ring (WP 0114 00)
Gasket (WP 0113 00)
Teflon pipe sealant (Item 15, WP 0134 00)
Cap and plug set (Item 5, WP 0134 00)
Fluid (Item 17, WP 0134 00)

References

WP 0001 00
WP 0038 00
WP 0012 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Inner and outer pontoons unfolded or separated
(WP 0023 00).
Yoke removed or lifted and secured in UP position
(WP 0030 00).
Pump removed (WP 0035 00).

CYLINDER REPLACEMENT (Contd)

NOTE

Removal and installation of cylinders are the same. Left side is shown.

REMOVAL

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. refer to Army POL (WP 0001 00) for information concerning storage, use and disposal of these liquids. Failure to do so may result in injury or death

CAUTION

Cap or plug all hoses, connections, and openings immediately after disconnection to prevent contamination. Remove caps or plugs prior to installation. Failure to do so may result in damage to equipment.

NOTE

Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.

Tag all hoses for installation.

Have container ready to catch fluid.

WARNING

Relieve residual pressure on fluid system before disconnecting lines by moving control valve lever to all positions and then placing lever in transport/crossing position. Failure to do so may result in injury or death.

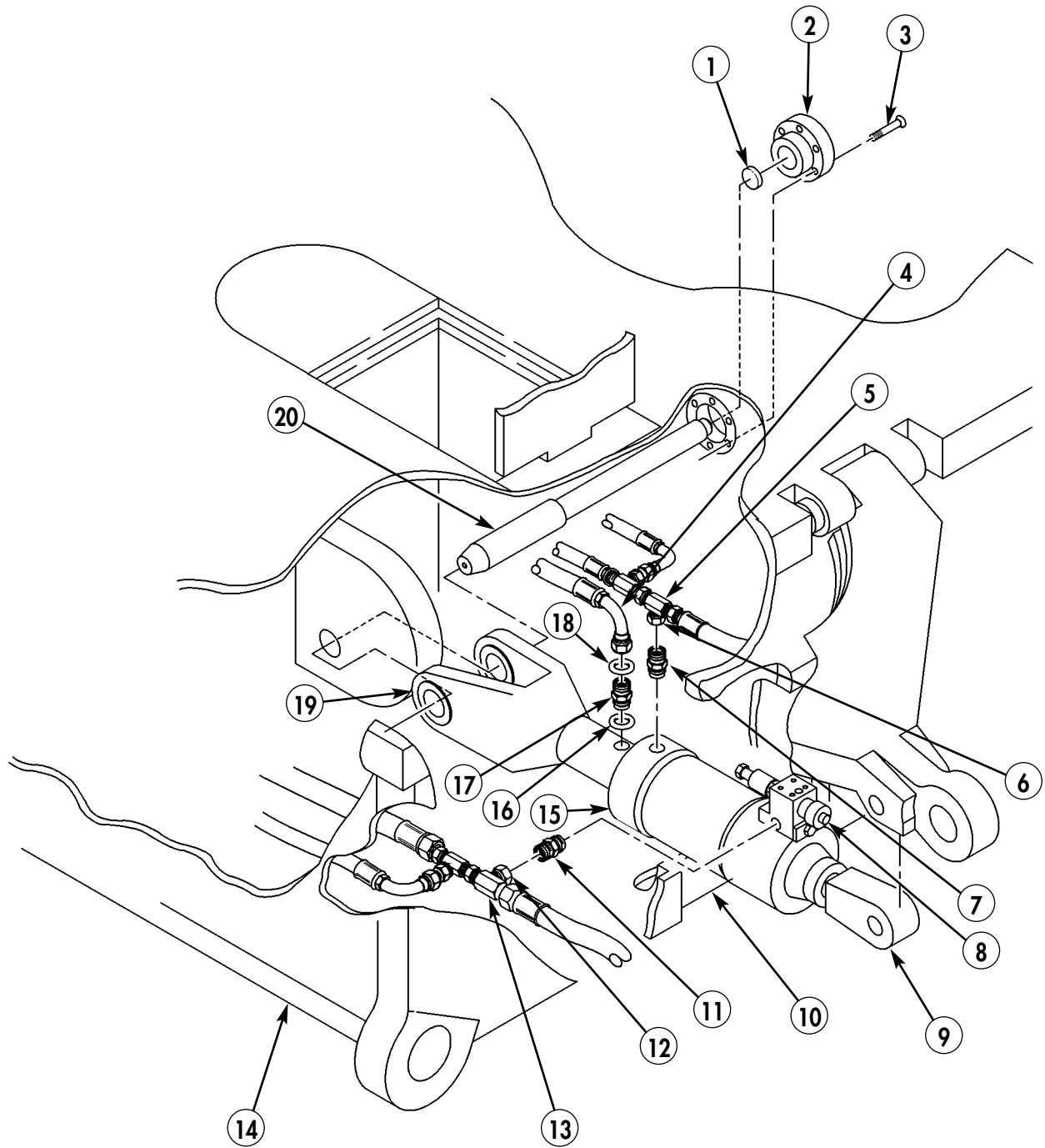
1. Loosen nut (6) and remove tee fitting (5) with hoses attached from adapter (7) on cylinder housing (15).
2. Loosen nut (12) and remove tee fitting (13) with hoses attached from adapter (11) on fluid lock assembly (8).
3. Remove hose assembly (4) and O-ring (18) from adapter (17) on cylinder housing (15). Discard O-ring (18).
4. Remove six screws (3), access cover (2), and rubber stop pad (1) from inner ponton (14).
5. Support cylinder housing (15) and cylinder end yoke (9), and remove retainer pin (20) from cylinder end yoke (19) and inner ponton (14).

NOTE

Assistant will help with step 6.

6. Using lifting device, strap, and assistant, remove cylinder housing (15) from opening (10) and inner ponton (14).
7. Remove adapter (11) from fluid lock assembly (8).
8. Remove adapter (7) from cylinder housing (15).
9. Remove adapter (17) and gasket (16) from cylinder housing (15). Discard gasket (16).

CYLINDER REPLACEMENT (Contd)



CYLINDER REPLACEMENT (Contd)

INSTALLATION

1. Install new gasket (16) and adapter (17) on cylinder housing (15).
2. Apply sealant to male threads of adapter (7) and install adapter (7) on cylinder housing (15).
3. Apply sealant to male threads of adapter (11) and install adapter (11) on fluid lock assembly (8).

NOTE

Assistant will help with step 4.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

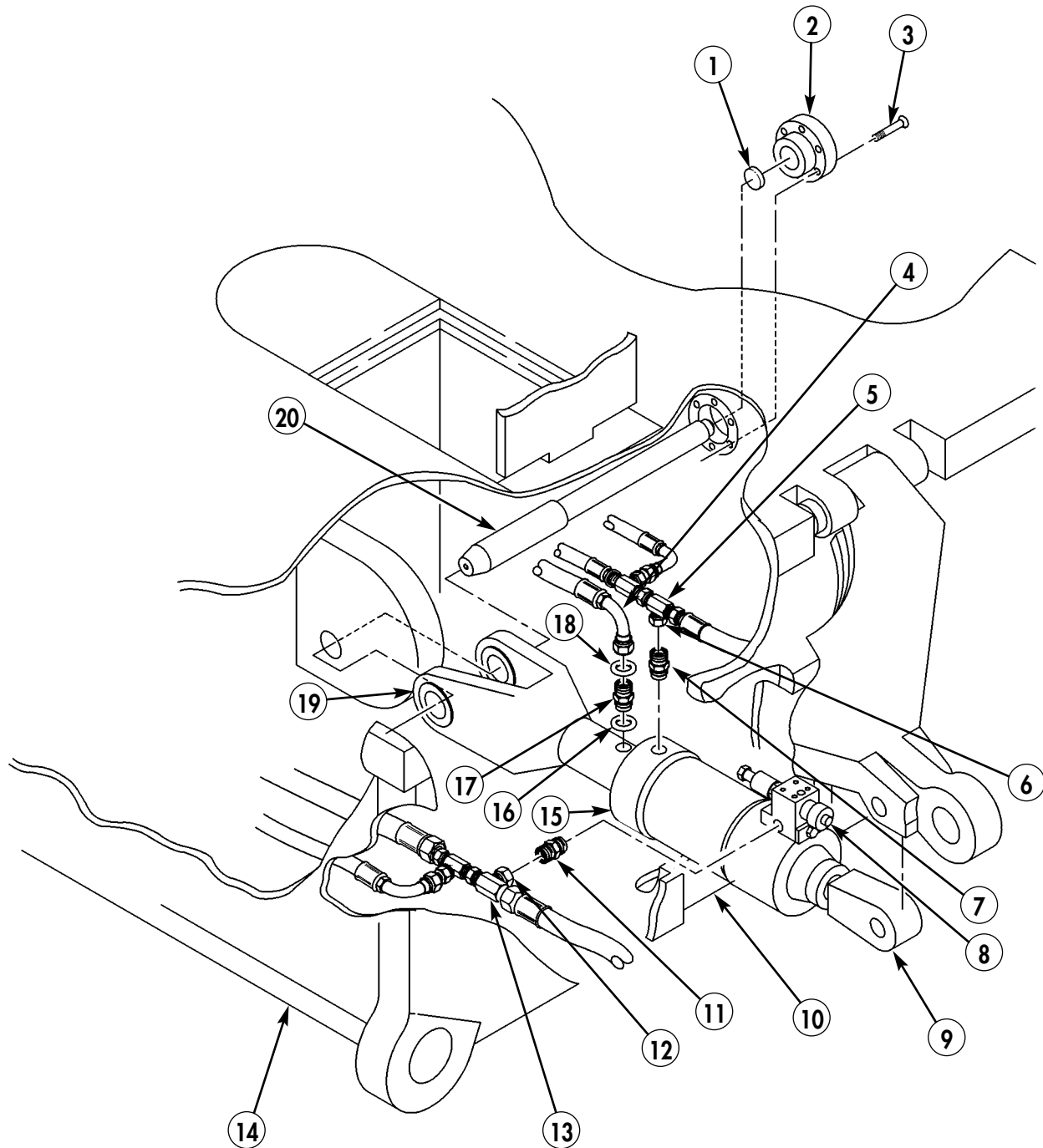
4. Using lifting device, strap, and assistant, position cylinder housing (15) and cylinder end yoke (9) in opening (10) on inner ponton (14) and install retainer pin (20) through inner ponton (14) and cylinder end yoke (19).
5. Install rubber stop pad (1) and access cover (2) on inner ponton (14) and retainer pin (20) with six screws (3).

NOTE

Apply a light coat of fluid to new O-ring at installation.

6. Install new O-ring (18) and hose assembly (4) to adapter (17) on cylinder housing (15).
7. Install tee fitting (13) with hoses attached on adapter (11) of fluid lock assembly (8) and tighten nut (12).
8. Install tee fitting (5) with hoses attached on adapter (7) of cylinder housing (15) and tighten nut (6).
9. Install pump (WP 0035 00).
10. Fill fluid system (WP 0032 00).
11. Install or lower yoke (WP 0030 00).
12. If separated, connect outer and inner pontons (WP 0023 00).
13. Bleed fluid system (WP 0038 00).
14. Install ramp bay on transporter (TM 5-5420-278-10).

CYLINDER REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

HOSE ASSEMBLIES AND FITTINGS REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0037 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Gasket (WP 0113 00)
Two lockwashers (WP 0112 00)
O-ring (WP 0113 00)
Twelve O-rings (WP 0113 00)
Teflon pipe sealant (Item 15, WP 0134 00)
Cap and plug set (Item 5, WP 0134 00)
Grease (Item 11, WP 0134 00)
Fluid (Item 17, WP 0134 00)

References

WP 0001 00
WP 0038 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Inner and outer pontoons unfolded or separated
(WP 0023 00).
Fluid system drained (WP 0032 00).
Pump removed (WP 0035 00).

HOSE ASSEMBLIES AND FITTINGS REPLACEMENT (Contd)**NOTE**

Removal and installation of hose assemblies and fittings are the same on both ramp bays. Left side has two more quick-disconnects, and left side is shown.

REMOVAL**WARNING**

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. Refer to Army POL (WP 0001 00) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in injury or death.

CAUTION

Cap or plug all hoses, connections, and openings immediately after disconnection to prevent contamination. Remove caps or plugs prior to installation. Failure to do so may result in damage to equipment.

NOTE

Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.

Tag hoses for installation.

Have container ready to catch fluid.

1. Remove two nuts (11), lockwashers (12), screws (15), and clamps (40) with hose assembly (39) from support brackets (41). Discard lockwashers (12).

WARNING

Relieve residual pressure on fluid system before disconnecting lines by moving control valve lever to all positions and then placing lever in transport/crossing position. Failure to do so may result in injury or death.

2. Remove hose assembly (39) and O-ring (38) from adapter (37) on end of cylinder (25). Discard O-ring (38).
3. Remove adapter (37) and gasket (35) from end of cylinder (25). Discard gasket (35).
4. Remove pressure limiting valve (13), O-ring (14), and clamps (40) from hose assembly (39). Discard O-ring (14).
5. Remove hose assembly (33) and O-ring (32) from tee fitting (30). Discard O-ring (32).
6. Remove hose assembly (8) and O-rings (31) and (9) from tee fitting (30) and bulkhead fitting (4) on support bracket (10). Discard O-rings (31) and (9).
7. Remove hose assembly (27) and O-rings (28) and (47) from tee fitting (29) and bulkhead fitting (4) on support bracket (49). Discard O-rings (28) and (47).

NOTE

Note position of tee fittings for installation.

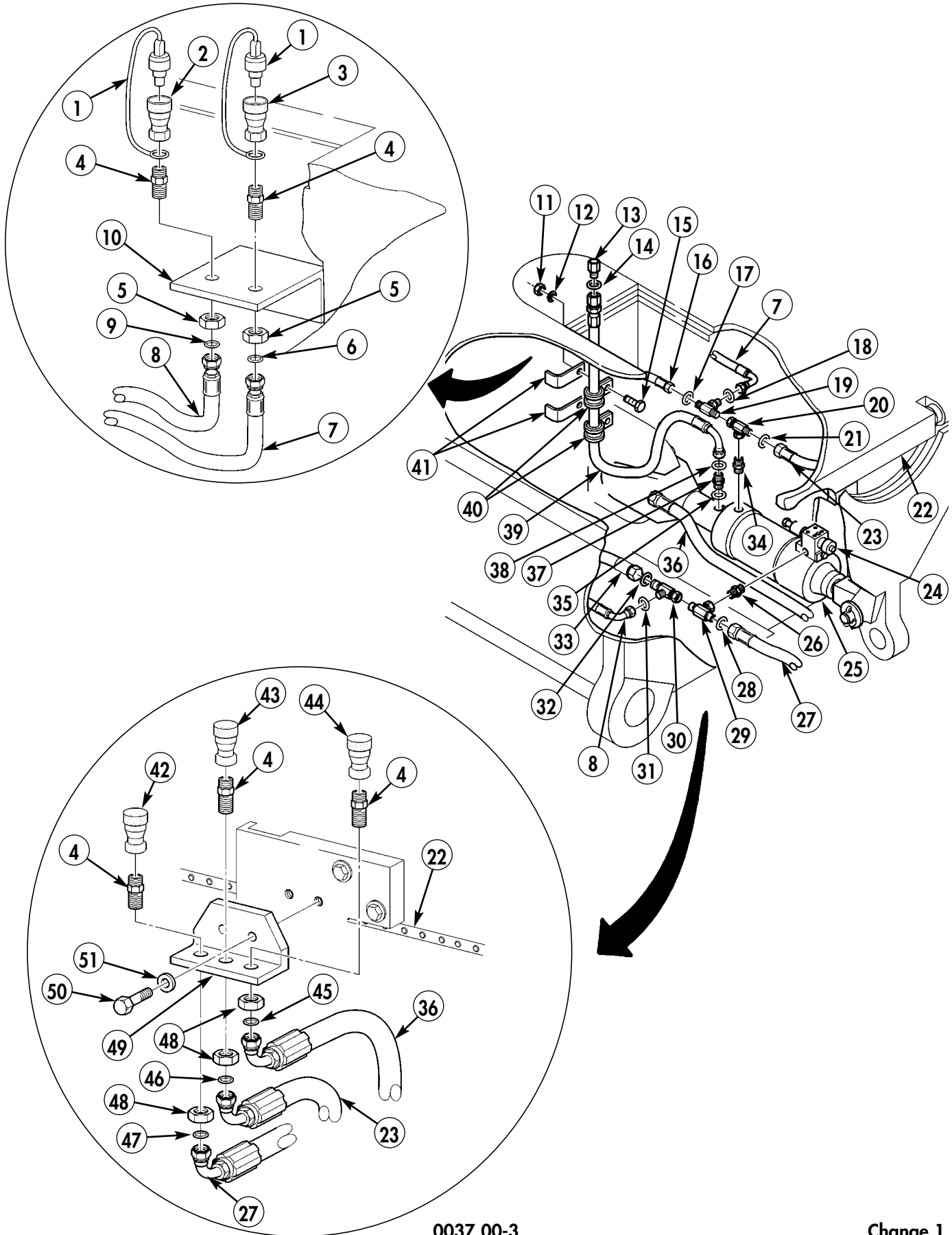
8. Remove tee fittings (29) and (30) from adapter (26) on cylinder fluid lock assembly (24).
9. Remove adapter (26) from cylinder fluid lock assembly (24).
10. Remove hose assembly (16) and O-ring (17) from tee fitting (19). Discard O-ring (17).
11. Remove hose assembly (7) and O-rings (6) and (18) from tee fitting (19) and bulkhead fitting (4) on support bracket (10). Discard O-rings (6) and (18).
12. Remove hose assembly (23) and O-rings (21) and (46) from tee fitting (20) and bulkhead fitting (4) on support bracket (49). Discard O-rings (21) and (46).

NOTE

Note position of tee fittings for installation.

13. Remove tee fittings (19) and (20) from adapter (34) on cylinder (25).
14. Remove adapter (34) from cylinder (25).
15. Remove hose assembly (36) and O-ring (45) from bulkhead fitting (4) on support bracket (49). Discard O-ring (45).
16. Remove quick-disconnects (2) and (3) with cap retainers (1), from two bulkhead fittings (4) on support bracket (10).
17. Remove two nuts (5) and bulkhead fittings (4) from support bracket (10).
18. Remove quick-disconnects (42), (43), and (44) from three bulkhead fittings (4) on support bracket (49).
19. Remove three nuts (48) and bulkhead fittings (4) from support bracket (49).
20. Remove two screws (50), washers (51), and support bracket (49) from end of inner ponton (22).

HOSE ASSEMBLIES AND FITTINGS REPLACEMENT (Contd)



HOSE ASSEMBLIES AND FITTINGS REPLACEMENT (Contd)

NOTE

Apply sealant to all male pipe threads at installation.

Apply a light coat of fluid to all new O-rings at installation.

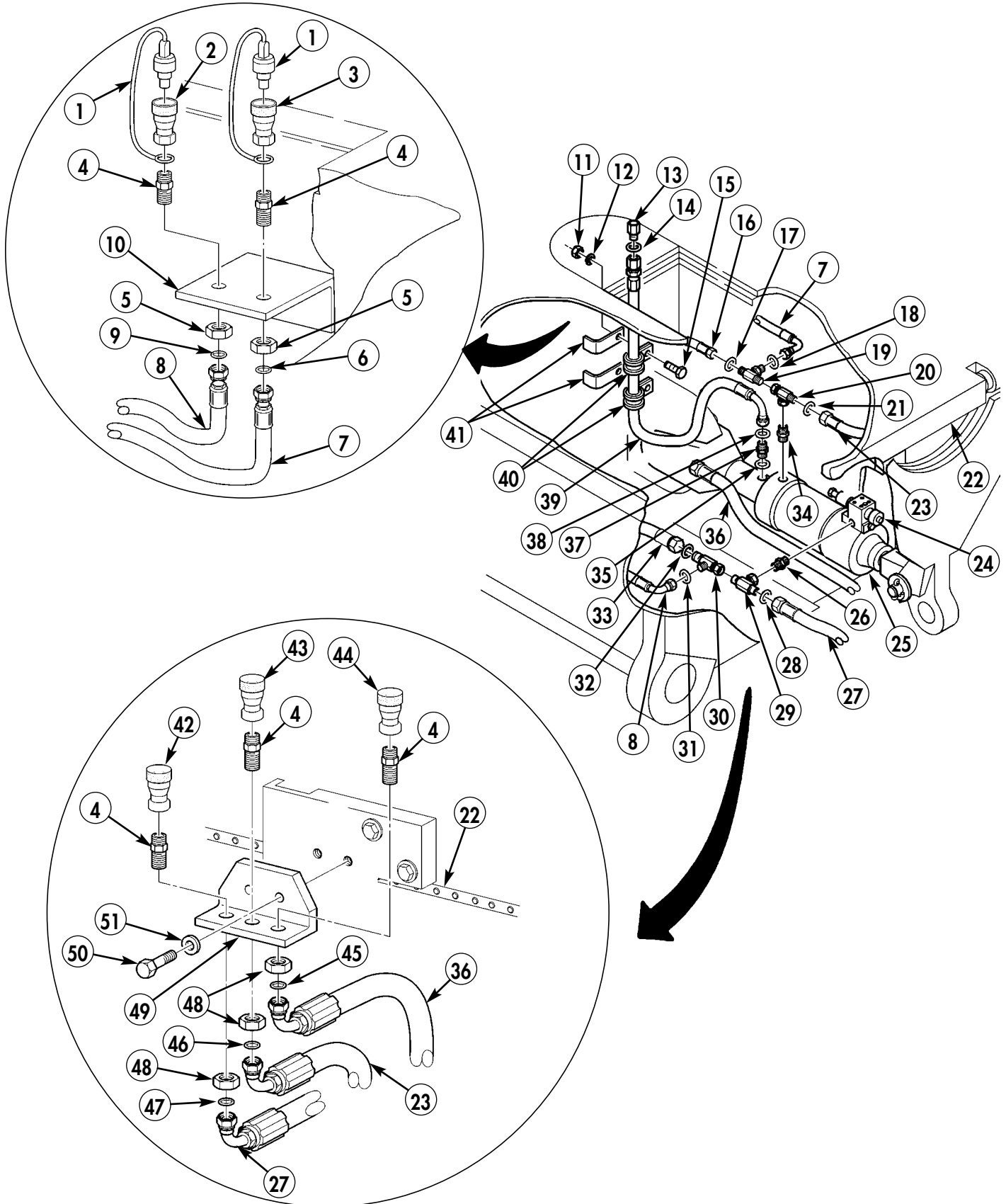
INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install support bracket (49) on end of inner ponton (22) with two washers (51) and screws (50).
2. Install three bulkhead fittings (4) on support bracket (49) with three nuts (48).
3. Install quick-disconnects (42), (43), and (44) on three bulkhead fittings (4).
4. Install two bulkhead fittings (4) on support bracket (10) with two nuts (5).
5. Install quick-disconnects (2) and (3) with cap retainers (1), if equipped, first on bulkhead fittings (4).
6. Install new O-ring (45) and hose assembly (36) on bulkhead fitting (4).
7. Install adapter (34) on cylinder (25).
8. Install tee fittings (20) and (19) on adapter (34).
9. Install new O-rings (21) and (46) and hose assembly (23) on tee fitting (20) and bulkhead fitting (4) on support bracket (49).
10. Install new O-rings (18) and (6) and hose assembly (7) on tee fitting (19) and bulkhead fitting (4) of support bracket (10).
11. Install new O-ring (17) and hose assembly (16) on tee fitting (19).
12. Install adapter (26) on cylinder fluid lock assembly (24).
13. Install tee fittings (29) and (30) on adapter (26) on cylinder fluid lock assembly (24).
14. Install new O-rings (28) and (47) and hose assembly (27) on tee fitting (29) and bulkhead fitting (4) on support bracket (49).
15. Install new O-rings (9) and (31) and hose assembly (8) on tee fitting (30) and bulkhead fitting (4) on support bracket (10).
16. Install new O-ring (32) and hose assembly (33) on tee fitting (30).
17. Apply a light coat of grease to top of pressure limiting valve (13) and install new O-ring (14) and pressure limiting valve (13) on hose assembly (39).
18. Install new gasket (35) and adapter (37) on end of cylinder (25).
19. Install new O-ring (38) and hose assembly (39) on adapter (37).
20. Install hose assembly (39) on two support brackets (41) with clamps (40), screws (15), new lockwashers (12), and nuts (11).
21. Install pump (WP 0035 00).
22. Fill pump (WP 0032 00).
23. Bleed fluid system (WP 0038 00).
24. If separated, connect inner and outer pontoons (WP 0023 00).
25. Install ramp bay on transporter (TM 5-5420-278-10).

HOSE ASSEMBLIES AND FITTINGS REPLACEMENT (Contd)



UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

BLEEDING PUMP SYSTEM

PUMP, CYLINDER

THIS WORK PACKAGE SUPERSEDES WP 0038 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Deflation hose assembly (Item 8, WP 0074 00)

Equipment Condition

Ramp bay removed from transporter and unfolded
(TM 5-5420-278-10).
Inner pontoons separated, if necessary (WP 0023 00).

Materials/Parts

Fluid (Item 17, WP 0134 00)

BLEEDING PUMP SYSTEM (Contd)**NOTE**

Bleeding of fluid on both pumps is performed the same way. Right-hand inner ponton pump is shown.

PUMP**WARNING**

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. Refer to Army POL (WP 0001 00) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in injury or death.

CAUTION

Cap or plug all hoses, connections, and openings immediately after disconnection to prevent contamination. Remove caps or plugs prior to installation. Failure to do so may result in damage to equipment.

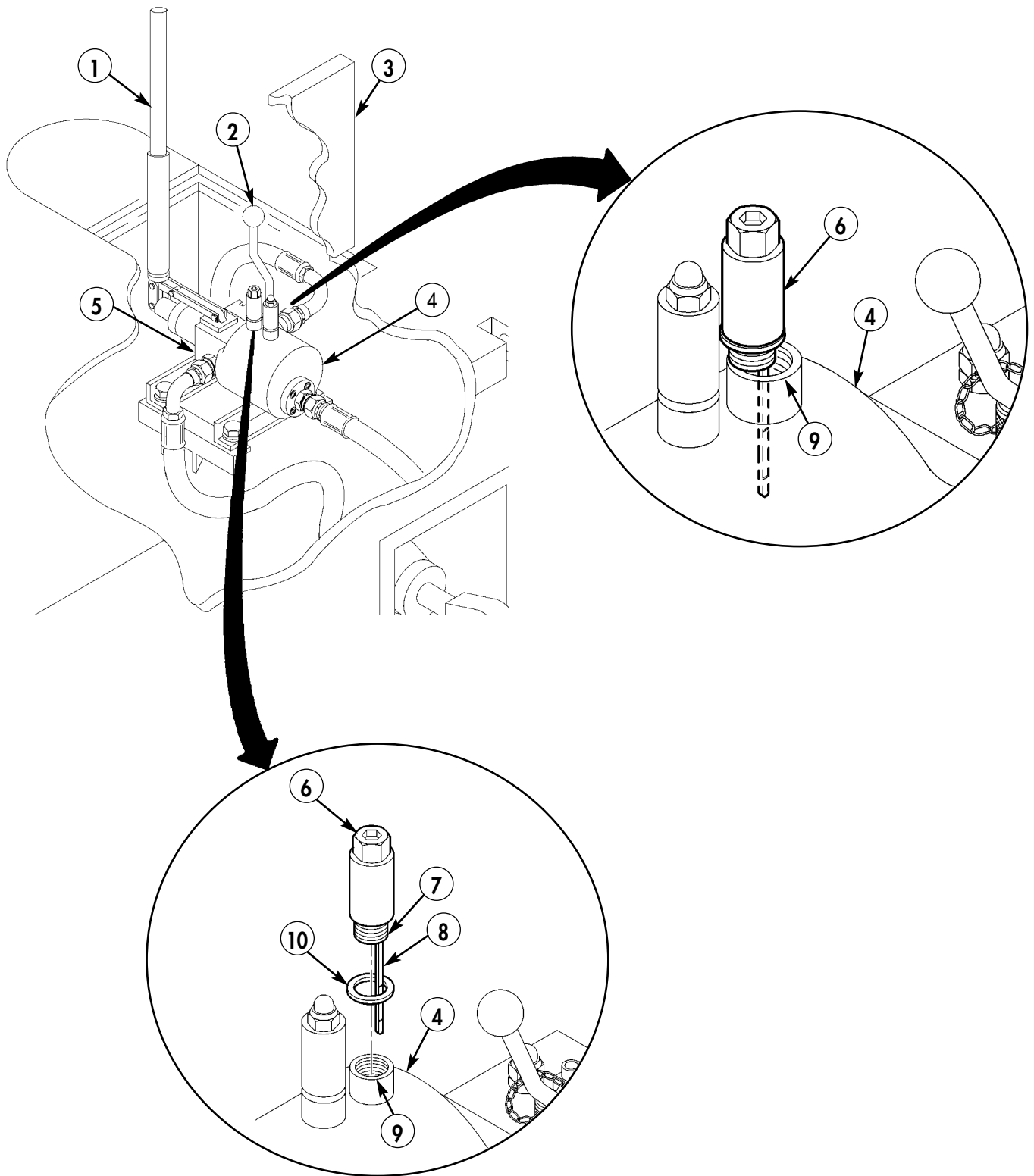
NOTE

Tag hoses for installation.

Have container ready to catch fluid.

1. Open access cover (3) and place control lever (2) on pump (5) to TRANSPORT/CROSSING position.
2. Install handle (1) on pump (4) and operate handle (1) approximately 30 strokes to bleed pump (5).
3. Remove filler cap with dipstick (6) from pump reservoir (4) and check fluid level using filler cap dipstick (6).
4. Position filler cap plug threads (7) onto reservoir opening (9) with threads on top of opening (9) to check level, and fill reservoir (4) to max position on dipstick (8) if necessary.
5. Check gasket seal (10) on filler cap with dipstick (6) for damage and replace if necessary.
6. Install filler cap with dipstick (6) on pump reservoir (4).

BLEEDING PUMP SYSTEM (Contd)



BLEEDING PUMP SYSTEM (Contd)**NOTE**

Bleeding fluid from right-hand or left-hand pump and cylinder is performed the same way. Left inner ponton is shown.

CYLINDER

1. Place control lever (2) to UP position (3) on pump (1).
2. Remove cap (7) from valve (6) and connect deflation hose (8) to valve (6) on cylinder (10). Place other end of hose (8) in clean container.

NOTE

Pump reservoir must be filled and remain full during this operation to prevent air from entering system.

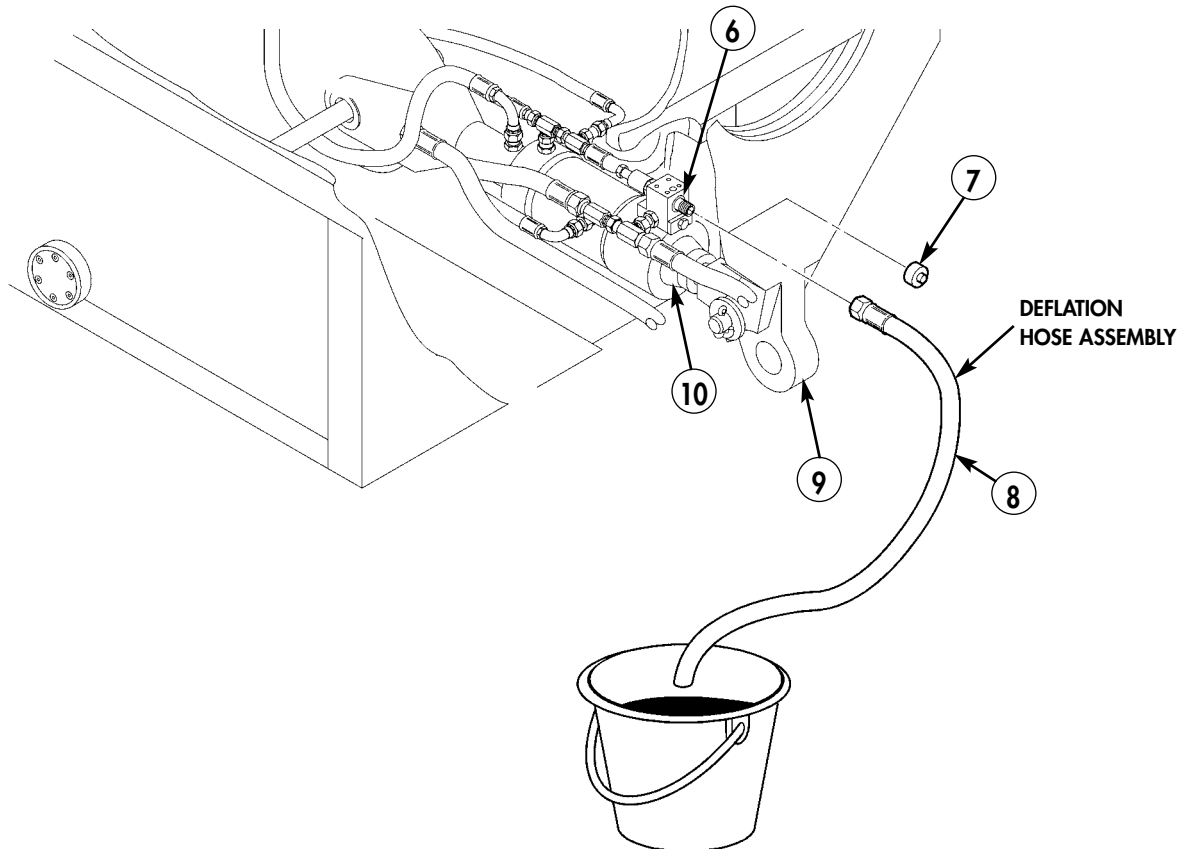
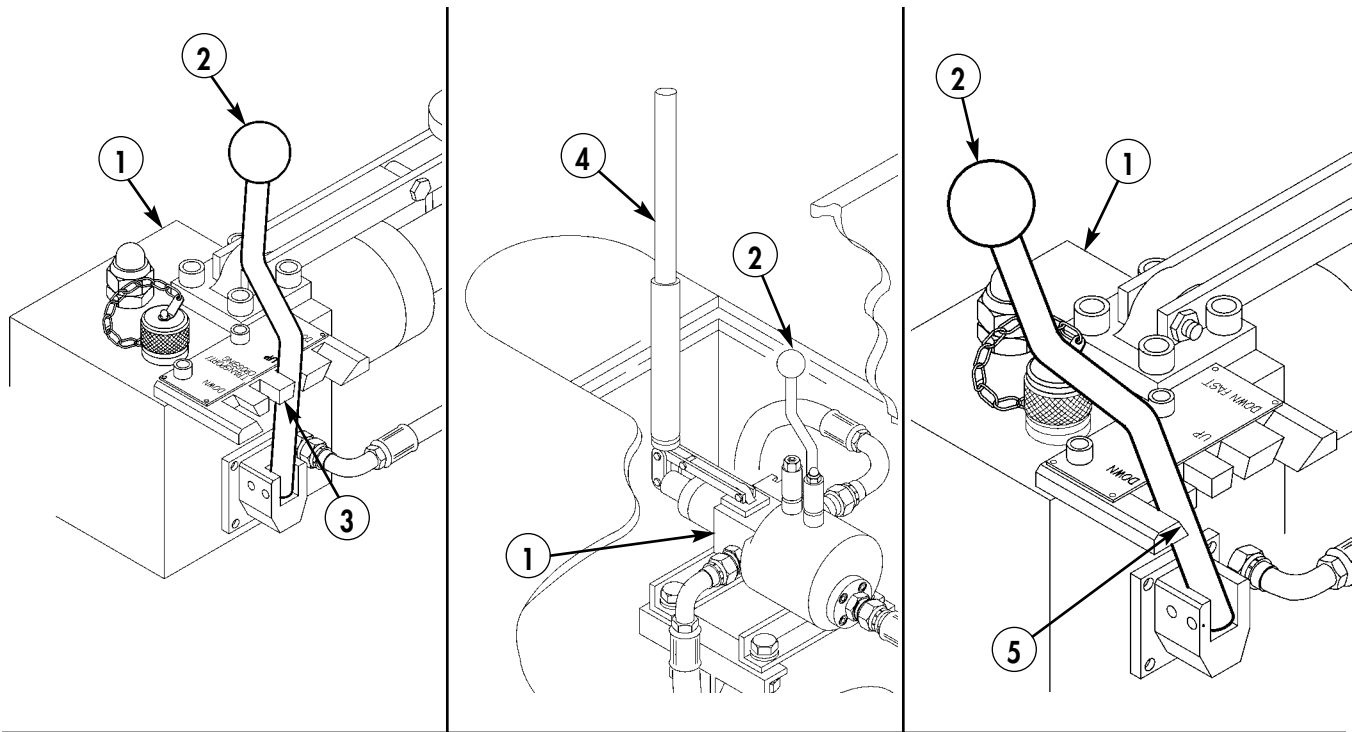
3. Operate pump handle (4) until piston rod or yoke (9) is fully extended.
4. Disconnect deflation hose (8) from valve (6) on cylinder (10) and install cap (7) on valve (6).

WARNING

When the cylinder is extended to the stop point, the piston rod on the pump must be completely extended and the handle must point towards the open cover before control lever is operated. Failure to do so may result in injury or death.

5. Place control lever (2) in DOWN position (5) on pump (1) and operate pump handle (4) until piston rod or yoke (9) is fully retracted.
6. Repeat steps 1 through 5 until there are no air bubbles coming from deflation hose (8), in step 3, at container.

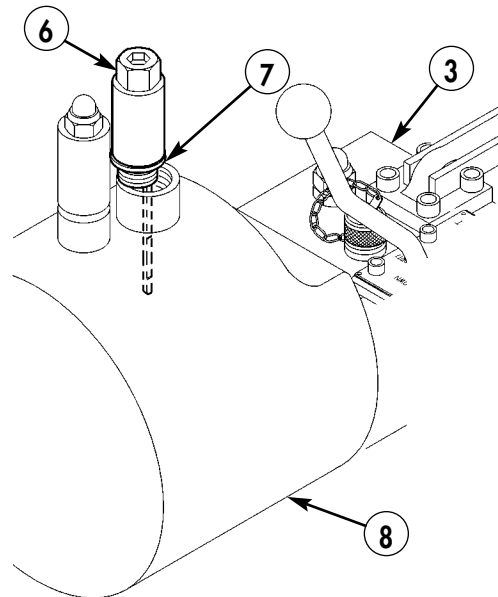
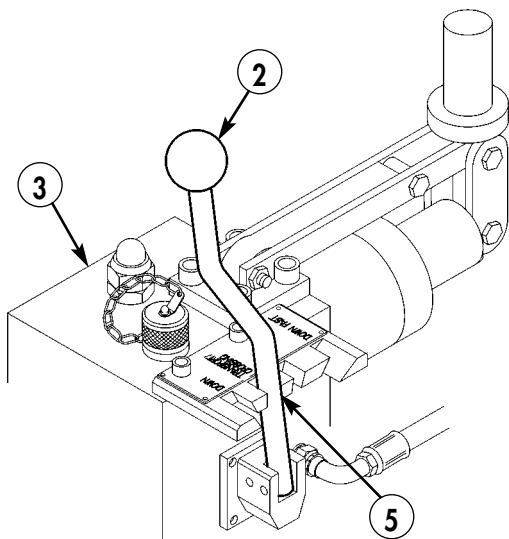
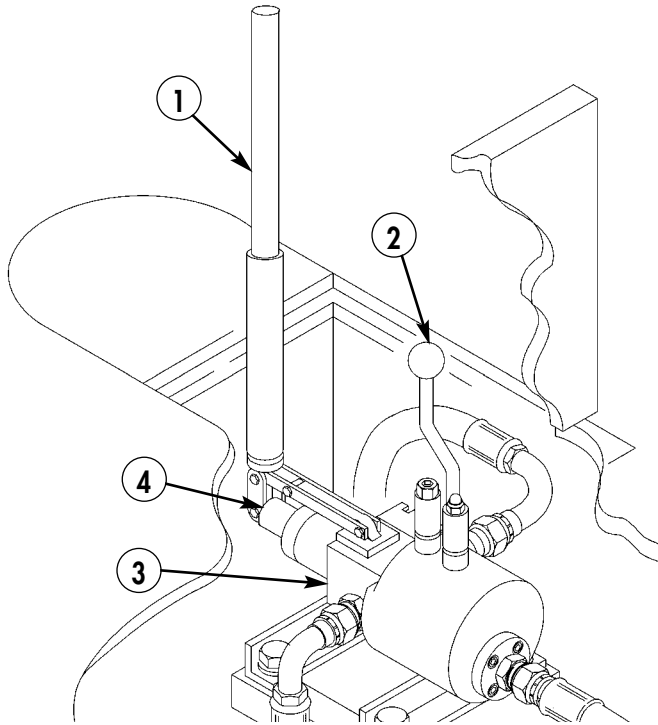
BLEEDING PUMP SYSTEM (Contd)



BLEEDING PUMP SYSTEM (Contd)

CYLINDER (Contd)

7. Place control lever (2) to TRANSPORT/CROSSING position (5) on pump (3).
8. Position pump handle (1) in such a way that the piston rod (4) on pump (3) is retracted to the stop and remove handle (1).
9. Check O-ring seal (7) on filler cap with dipstick (6) for damage and replace if necessary.
10. Install filler cap with dipstick (6) on pump reservoir (8).
11. Check all hoses and connections for signs of leaks.
12. If separated, connect inner pontons (WP 0023 00).
13. Install ramp bay on transporter (TM 5-5420-278-10).



UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

Section V. INTERIOR BAY MAINTENANCE

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Bumper Stop Replacement	0044 00-1
Outer Ponton Lock Maintenance	0045 00-1
Foldlock Replacement	0046 00-1
Access Cover Replacement	0047 00-1
Lower Main Coupling Replacement	0048 00-1
Bumpers Replacement	0049 00-1
Lower Lock-Drive Replacement	0050 00-1

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

CABLE ASSEMBLY MAINTENANCE REMOVAL, INSTALLATION, ADJUSTMENT

THIS WORK PACKAGE SUPERSEDES WP 0040 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Material/Parts

Two cotter pins (WP 0117 00)
Dunnage
Lubricating oil (Item 13, WP 0134 00)

References

WP 0115 00
WP 0116 00

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-278-10).
Foldlocks and travel latch locked
(TM 5-5420-278-10).

CABLE ASSEMBLY MAINTENANCE (Contd)**NOTE**

Removal, installation, and adjustment of cable assemblies are performed the same way for both sides. Front right or rear left side is shown.

REMOVAL**WARNING**

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

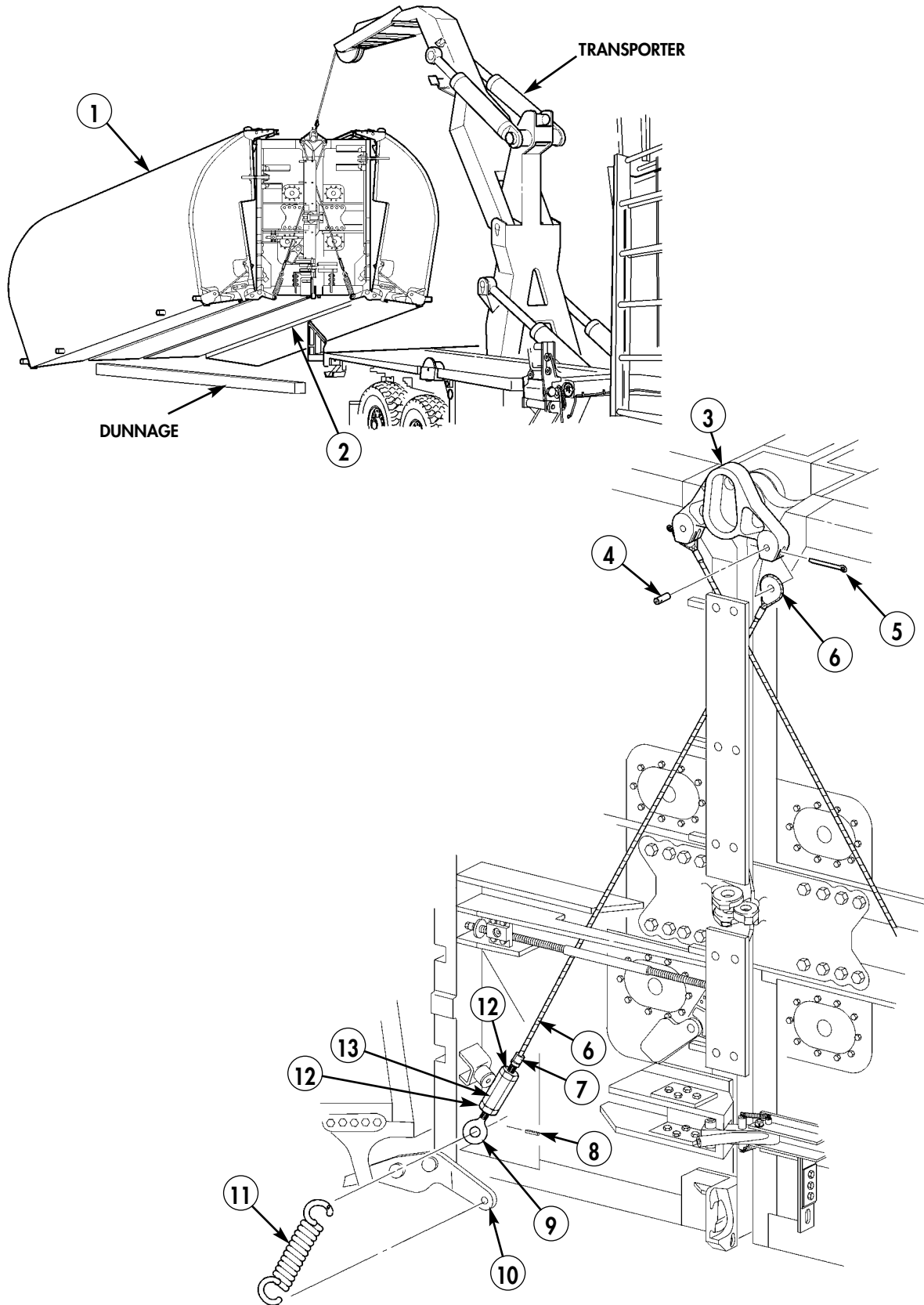
1. Using transporter or suitable lifting device, raise bay (1) and position dunnage lengthwise under center of interior pontons (2).

NOTE

Perform step 2 if replacing spring or turnbuckle bolt eye.

2. Remove spring pin (8) from spring (11).
3. Loosen two jamnuts (12) on bolt eye (9) and wire cable end (7), and turn nut (13) clockwise until tension is released from wire cable (6).
4. Straighten and remove cotter pin (5) from pin (4), and remove pin (4) and wire cable (6) from bellcrank (3). Discard cotter pin (5).
5. Disconnect spring (11) from bolt eye (9) and stabilizer lever (10). Remove wire cable (6) from bay (1).
6. Perform steps 1 through 5 to remove cable assembly from opposite side.

CABLE ASSEMBLY MAINTENANCE (Contd)



CABLE ASSEMBLY MAINTENANCE (Contd)

INSTALLATION

NOTE

The cable connected to front right or rear left side of bellcrank must pass in front of cable connected to rear left or front right side of bellcrank.

Ensure cable is routed behind lower lock-drive jackscrew and bumper.

1. Route wire cable (4) on inner ponton (12), and connect end of wire cable (4) to bellcrank (1) with pin (2) and new cotter pin (3). Slightly bend protruding end of cotter pin (3).

NOTE

Ensure tension spring is installed with hook ends pointing toward pontons.

2. If removed, install spring (9) on bolt eye (7) with spring pin (6), and connect spring (9) to stabilizer lever (8).
3. Perform steps 1 and 2 to install opposite cable assembly.

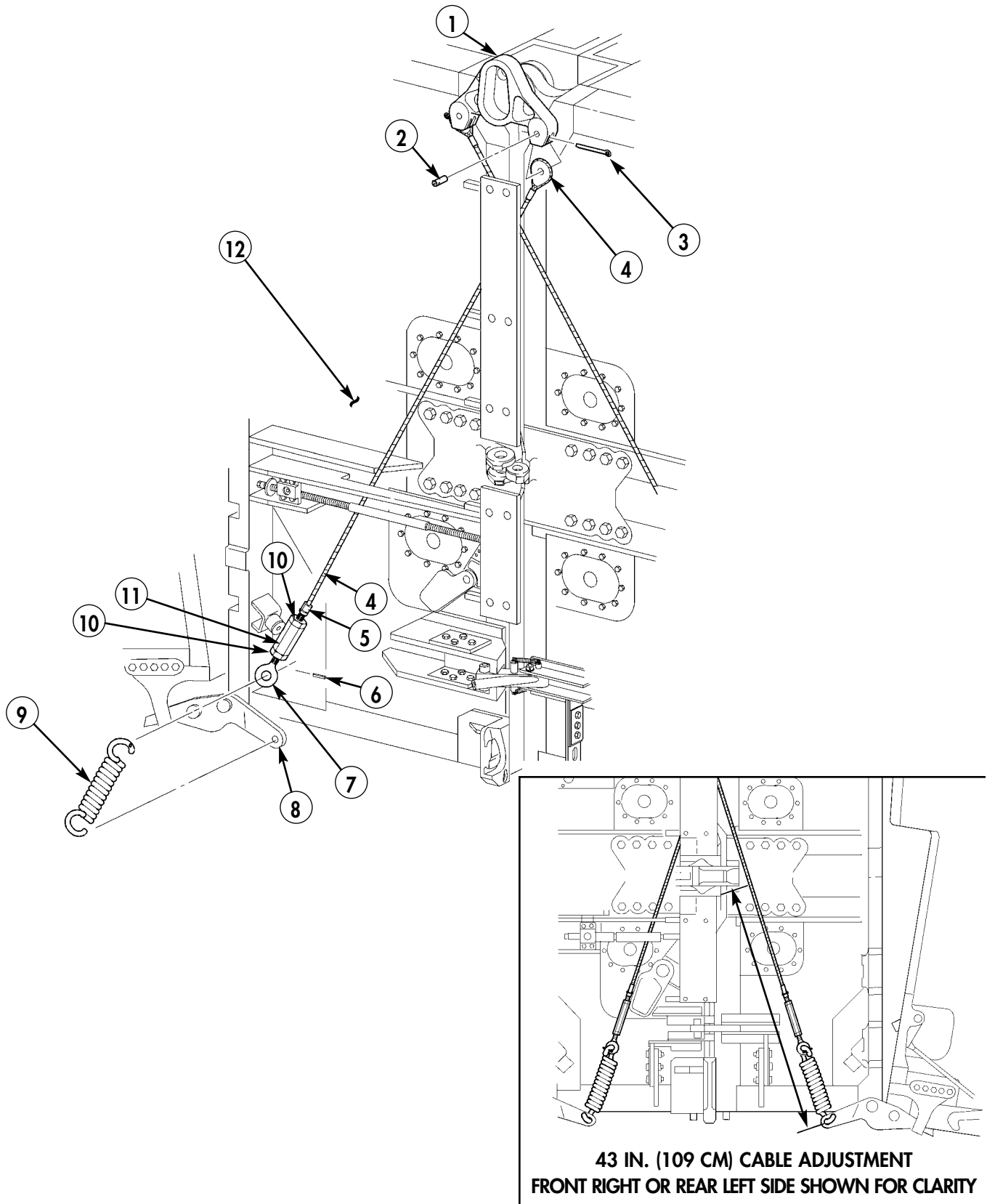
ADJUSTMENT

NOTE

The correct cable tension is achieved when the cable can be pushed with the thumb to just touch the ponton wall at a position approximately 43 in. (109 cm) from bottom end of cable assembly.

1. Loosen two jamnuts (10) on bolt eye (7) and cable end (5), and turn nut (11) counterclockwise until wire cable (4) is tensioned. Tighten two jamnuts (10).
2. Perform step 1 to adjust tension of opposite cable.
3. Apply a light coat of lubricating oil to cable assemblies.
4. Install interior bay on transporter (TM 5-5420-278-10).

CABLE ASSEMBLY MAINTENANCE (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

EYEBOLT REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0041 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Travel latch and foldlocks in locked position
(TM 5-5420-278-10).
Cable assembly removed (WP 0040 00).

Materials/Parts

Two cotter pins (WP 0117 00)
Two locknuts (WP 117 00)
Locknut (WP 0117 00)
Grease (Item 10, WP 0134 00)

EYEBOLT REPLACEMENT (Contd)

NOTE

Removal and installation of the two eyebolts are performed the same way.

REMOVAL

1. Remove two cotter pins (3), washers (5), and pin (17) from shaft of bellcrank (11). Discard cotter pins (3).
2. Remove two locknuts (7) and screws (14) from links (4), and remove cover (2) from inner ponton brackets (13). Discard locknuts (7).
3. Remove locknut (16) and screw (6) from collar (15) and shaft of bellcrank (11), drive bellcrank (11) forward, and remove collar (15) from bellcrank (11). Discard locknut (16).

NOTE

Note location and quantity of shims for installation.

4. Remove bellcrank (11) from inner ponton hinges (9) and (12), and remove shims (8).
5. Remove spring pin (18), pin (1), and two links (4) from cover (2).
6. Perform steps 1 through 5 to remove eyebolt at opposite end of bay.

INSTALLATION

1. Install two links (4) on cover (2) with pin (1) and spring pin (18).
2. If moved, align inner pontoons (10) using lifting device and sling.

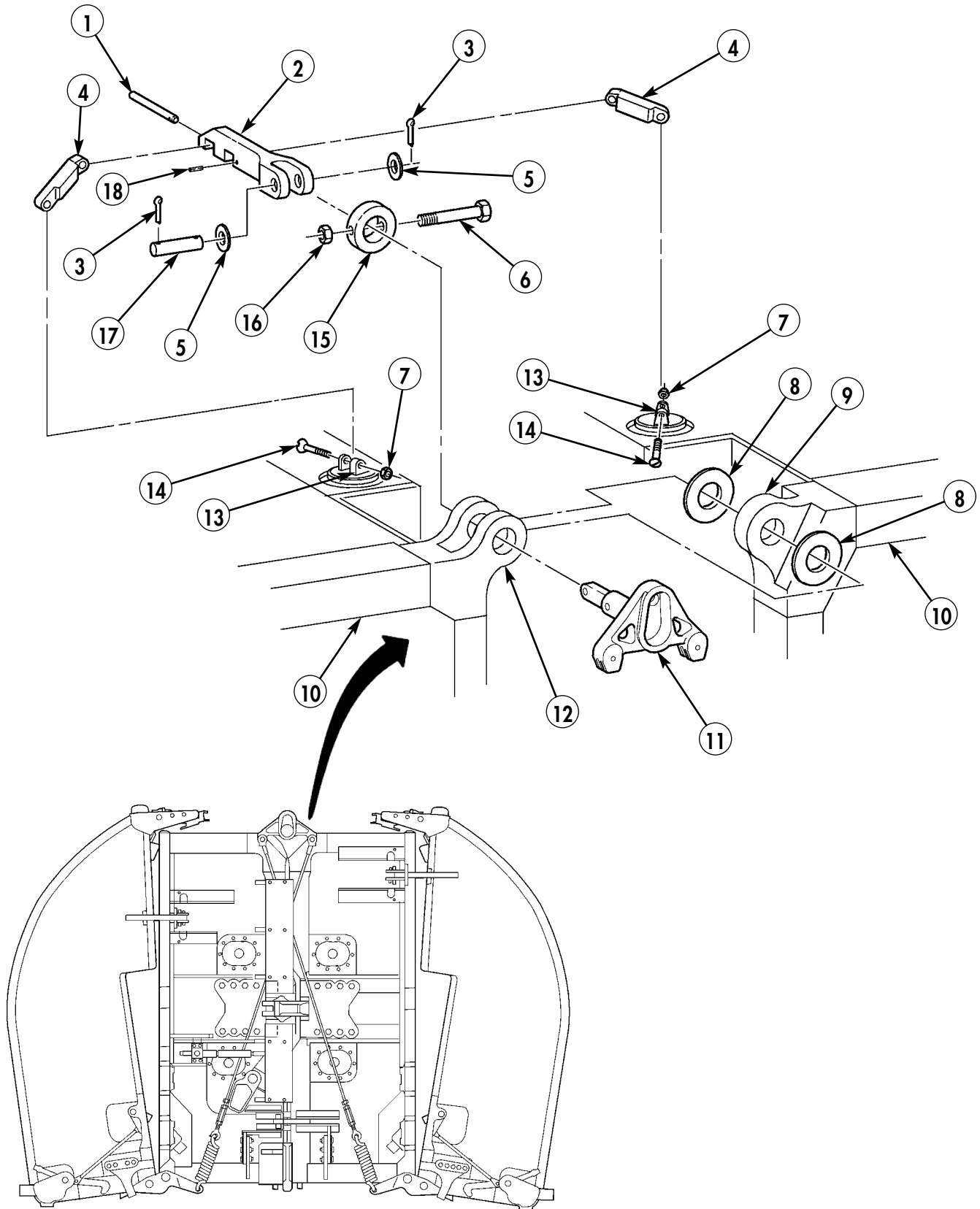
NOTE

Apply a light coat of grease to shims, pin, and shaft of bellcrank at installation.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

3. Position two shims (8) between hinges (9) and (12), and install bellcrank (11) halfway.
4. Position collar (15) over shaft of bellcrank (11), and push bellcrank (11) in all the way.
5. Install collar (15) on bellcrank (11) with screw (6) and new locknut (16).
6. Install cover (2) on shaft of bellcrank (11) with pin (17), two washers (5), and new cotter pins (3).
7. Connect two links (4) to inner ponton brackets (13) with two screws (14) and new locknuts (7).
8. Perform steps 1 through 7 to install eyebolt at opposite end of bay.
9. Install cable assembly (WP 0040 00).

EYEBOLT REPLACEMENT (Contd)



UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

INNER PONTON AND OUTER PONTON SEPARATION

SEPARATING INNER PONTONS, SEPARATING OUTER PONTONS FROM INNER PONTONS,
CONNECTING OUTER PONTONS TO INNER PONTONS, CONNECTING INNER PONTONS
THIS WORK PACKAGE SUPERSEDES WP 0042 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
IRB hoisting gear (BII) (Item 6, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Four cotter pins (WP 0117 00)
Four locknuts (WP 0117 00)
Two locknuts (WP 0117 00)
Grease, (Item 10, WP 0134 00)
Sealing compound (Item 16, WP 0134 00)
Dunnage

References

WP 0118 00

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-278-10).
Travel latch and foldlock locked
(TM 5-5420-278-10).
Cable assembly removed (WP 0040 00).

INNER PONTON AND OUTER PONTON SEPARATION (Contd)

SEPARATING INNER PONTONS

1. Using transporter or suitable lifting device and IRB hoisting gear, raise bay (1), position dunnage under inner pontons (2), and lower bay (1) on dunnage.

NOTE

Ensure the two long chains of IRB hoisting gear are connected to the load receiving pins so pontons will hang level during separation.

2. Attach lifting device and IRB hoisting gear to outer ponton load receiving pins (19) on outer pontons (3), and take up slack.
3. Remove two cotter pins (4) and washers (5) and pin (16), from cover (18) and shaft of bellcrank (12). Discard cotter pins (4).
4. Remove two locknuts (7), screws (9), and connecting links (17) and cover (18) from inner ponton brackets (8). Discard locknuts (7).
5. Remove locknut (15) and screw (6) from front collar (14), drive shaft of bellcrank (12) forward, and remove collar (14). Discard locknut (15).

NOTE

Note location and quantity of shims for installation.

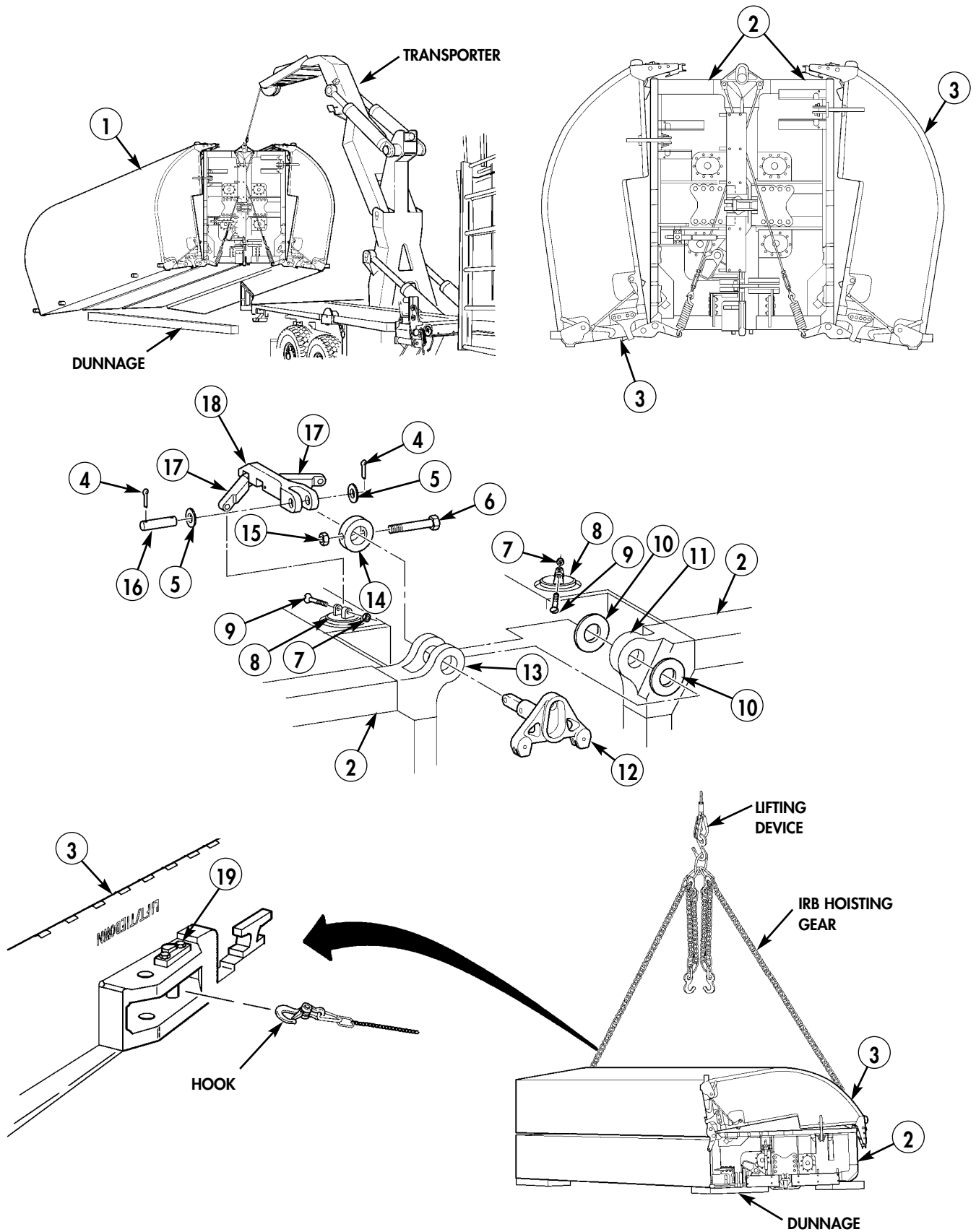
6. Remove bellcrank (12) from inner ponton hinges (11) and (13), and remove shims (10).
7. Repeat steps 1 through 6 to remove bellcrank (12) from opposite end.

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

8. Open two travel latches and lift and separate inner pontons (2) using lifting device.
9. Set inner ponton (2) down with roadway deck resting on dunnage.

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

SEPARATING OUTER PONTONS FROM INNER PONTONS

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Separation of rear left and front right outer pontoons is performed the same way. Front right side is shown.

1. Open two foldlocks (3) from ends of outer ponton (2).

NOTE

Ensure the two long chains of the IRB hoisting gear are connected to the load receiving pins so pontoons will hang level during separation.

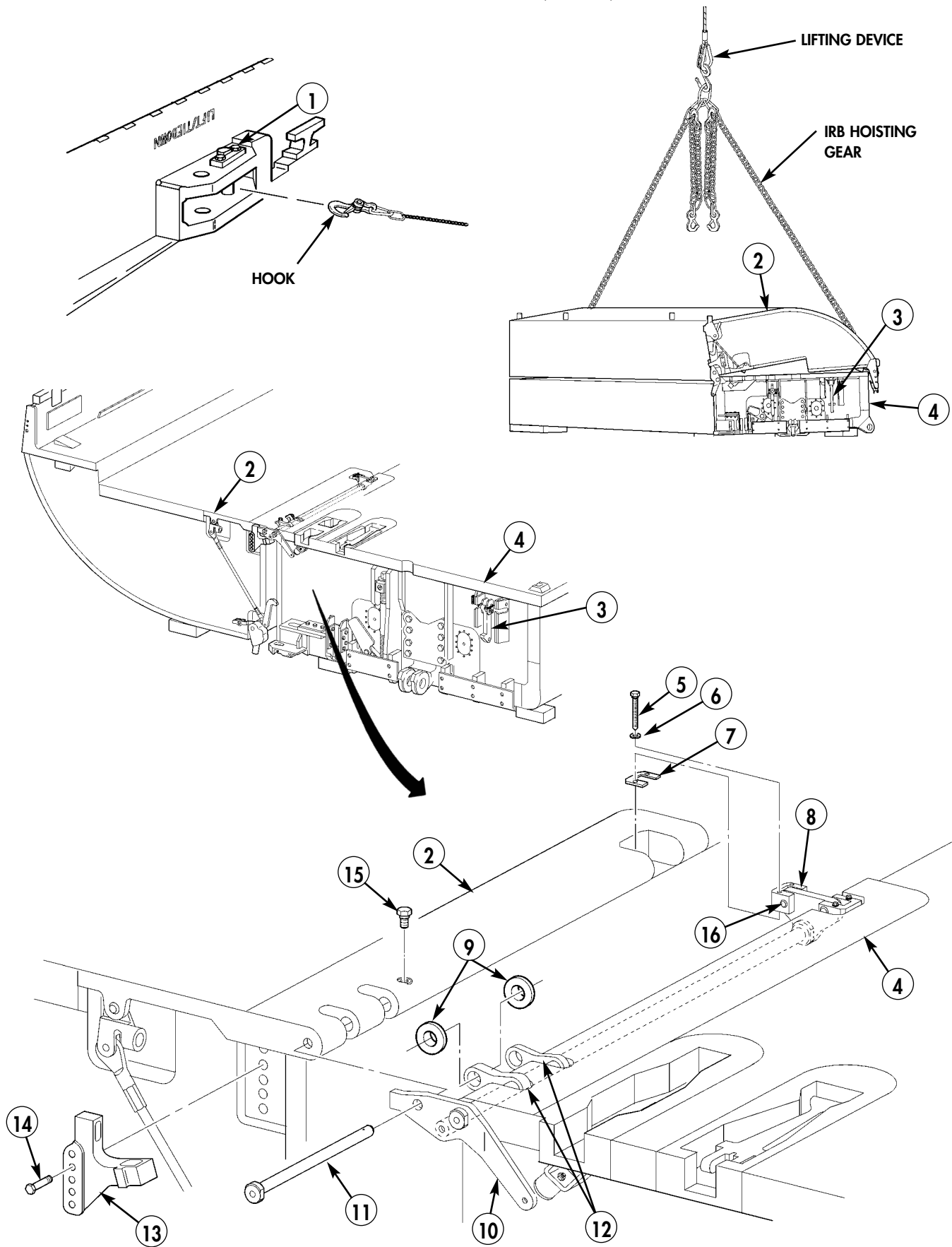
2. Attach lifting device and IRB hoisting gear to load receiving pins (1) of outer ponton (2). Lift and swing outer ponton (2) to open position, and lower outer ponton (2) down on dunnage so that outer ponton (2) is level with inner ponton (4).
3. Remove two screws (5) and washers (6) from bracket (8), spacer (7), and outer ponton (2).
4. Remove screw (15) from pin (11) and outer ponton (2).
5. Remove pin (11), two connecting links (12), and spacer plates (9) from stabilizer (10) and outer ponton (2).
6. Using lifting device, remove outer ponton (2) from inner ponton (4).
7. Remove spacer (7) from outer ponton (2) and remove pin (16) and bracket (8) from stabilizer (10).
8. Remove five screws (14) and brackets (13) from outer ponton (2) if necessary.

NOTE

Perform step 9 if inner ponton(s) will be moved.

9. Attach lifting device and IRB hoisting gear hooks to two roadway pins to lift inner ponton (4) from dunnage.

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

CONNECTING OUTER PONTONS TO INNER PONTONS

NOTE

Connecting of rear left and front right outer pontoons is performed the same way. Front right side is shown.

Apply a light coat of grease to pins prior to installation.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install bracket (2) on stabilizer lever (4) with pin (14).
2. Position spacer (3) in recess on outer ponton (12).
3. Using lifting device and IRB hoisting gear, position outer ponton (12) so that holes in stabilizer lever (4) and bracket (2) align with holes in outer ponton (12).
4. Using dunnage, level and support outer ponton (12).
5. Install pin (8) and two spacer plates (15) on stabilizer lever (7), outer ponton (12), and two connecting links (6).
6. Install screw (11) on outer ponton (12) and pin (8) and install two washers (13) and screws (1) on bracket (2), spacer (3), and outer ponton (12).
7. Apply a light coat of sealing compound to back of bracket (9), and install bracket (9) on outer ponton (12) with five screws (10).

WARNING

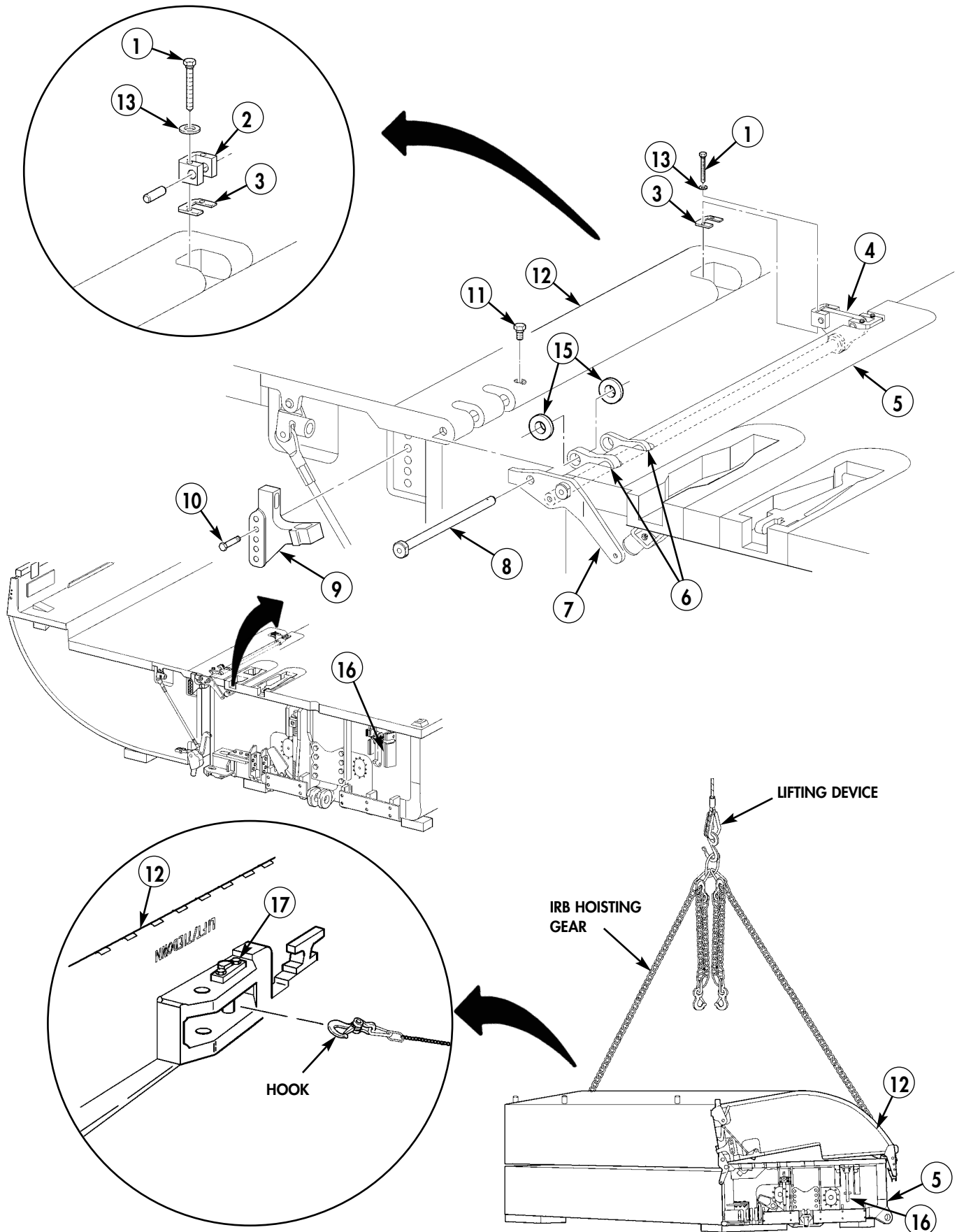
All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Ensure the two long chains of the IRB hoisting gear are connected to the load receiving pins so pontoons will hang level during connection.

8. Attach lifting device and IRB hoisting gear to load receiving pins (17) on outer ponton (12), and lift and swing outer ponton (12) down on inner ponton (5).
9. Close two foldlocks (16) at ends of outer ponton (12).

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



INNER PONTON AND OUTER PONTON SEPARATION (Contd)

CONNECTING INNER PONTONS

WARNING

All nonessential personnel must stand clear during lifting operations. Ensure ponton foldlocks and travel latch are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in damage to equipment or injury to personnel.

NOTE

Ensure the two long chains of the IRB hoisting gear are connected to the load receiving pins so pontoons will hang level during connection.

1. Attach lifting device and IRB hoisting gear to outer ponton (1), and lift outer ponton (1) and inner ponton (3) off dunnage and place in vertical position on dunnage next to other half of bay.

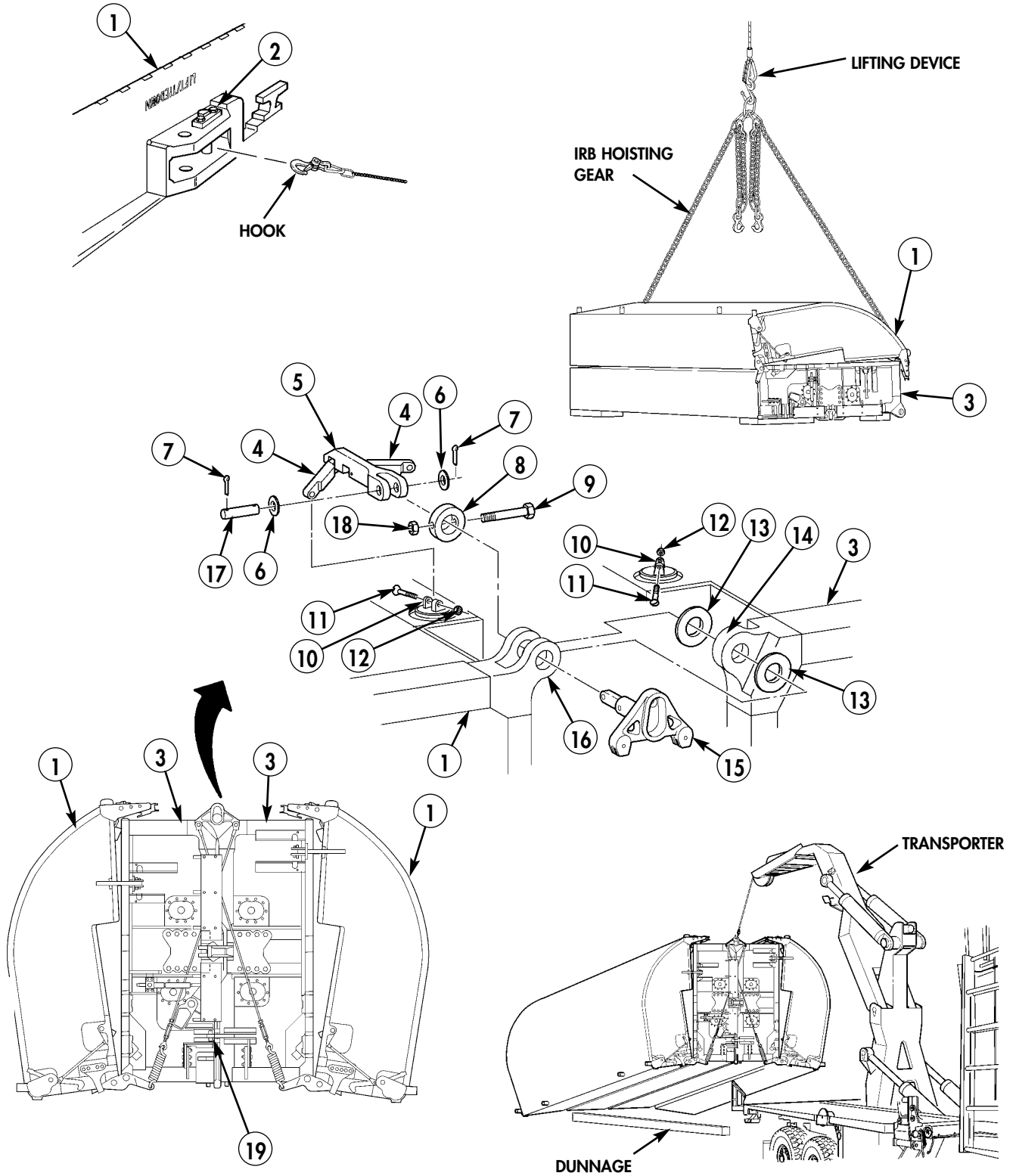
NOTE

Apply a light coat of grease to shims and shafts of bellcranks prior to installation.

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

2. Using lifting device, move inner pontoons (3) together until hinges (14) and (16) are aligned, then lock two travel latches (19) on inner pontoons (3).
3. Position two shims (13) between hinges (14) and (16) and push shaft of bellcrank (15) halfway in.
4. Position collar (8) over shaft of bellcrank (15) and push bellcrank (15) all the way in.
5. Install collar (8) on bellcrank (15) with screw (9) and new locknut (18).
6. Install connecting links (4) on inner ponton brackets (10) with two screws (11) and new locknuts (12).
7. Connect cover (5) to shaft of bellcrank (15) with two washers (6), pin (17), and two new cotter pins (7).
8. Repeat steps 3 through 7 to install bellcrank (15) at opposite end of bay.
9. Install cable assembly (WP 0040 00).
10. Load interior bay on transporter (TM 5-5420-278-10).

INNER PONTON AND OUTER PONTON SEPARATION (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

UNFOLDING STABILIZER AND BRACKET REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0043 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Grease (Item 10, WP 0134 00)

References

WP 0118 00

Equipment Condition

Outer ponton separated from inner ponton
(WP 0042 00).

UNFOLDING STABILIZER AND BRACKET REPLACEMENT (Contd)

REMOVAL

NOTE

Removal of rear left and front right unfolding stabilizers and brackets is performed the same way. Front right side is shown.

Assistant will help with steps 1 through 3.

1. Remove two screws (10), washers (11), and bracket (12) from front and rear inner ponton (7).
2. Remove screw (6) from inner ponton (7) and pin (14).

NOTE

Note location and quantity of shims and connecting links for installation.

3. Remove pin (14), connecting links (5) and (2), two shims (4), and stabilizer bar (3) from inner ponton (7).
4. Remove pin (9) and bracket (12) from stabilizer bracket (8).

NOTE

Note location and quantity of spacer plates for installation.

5. Remove spacer plates (13) from inner ponton (7).

INSTALLATION

NOTE

Installation of rear left and front right unfolding stabilizers and brackets is performed the same way. Front right side is shown.

Apply a light coat of grease to pins at installation.

1. Position spacer plates (13) on inner ponton (7).
2. Install bracket (12) on stabilizer bracket (8) with pin (9).

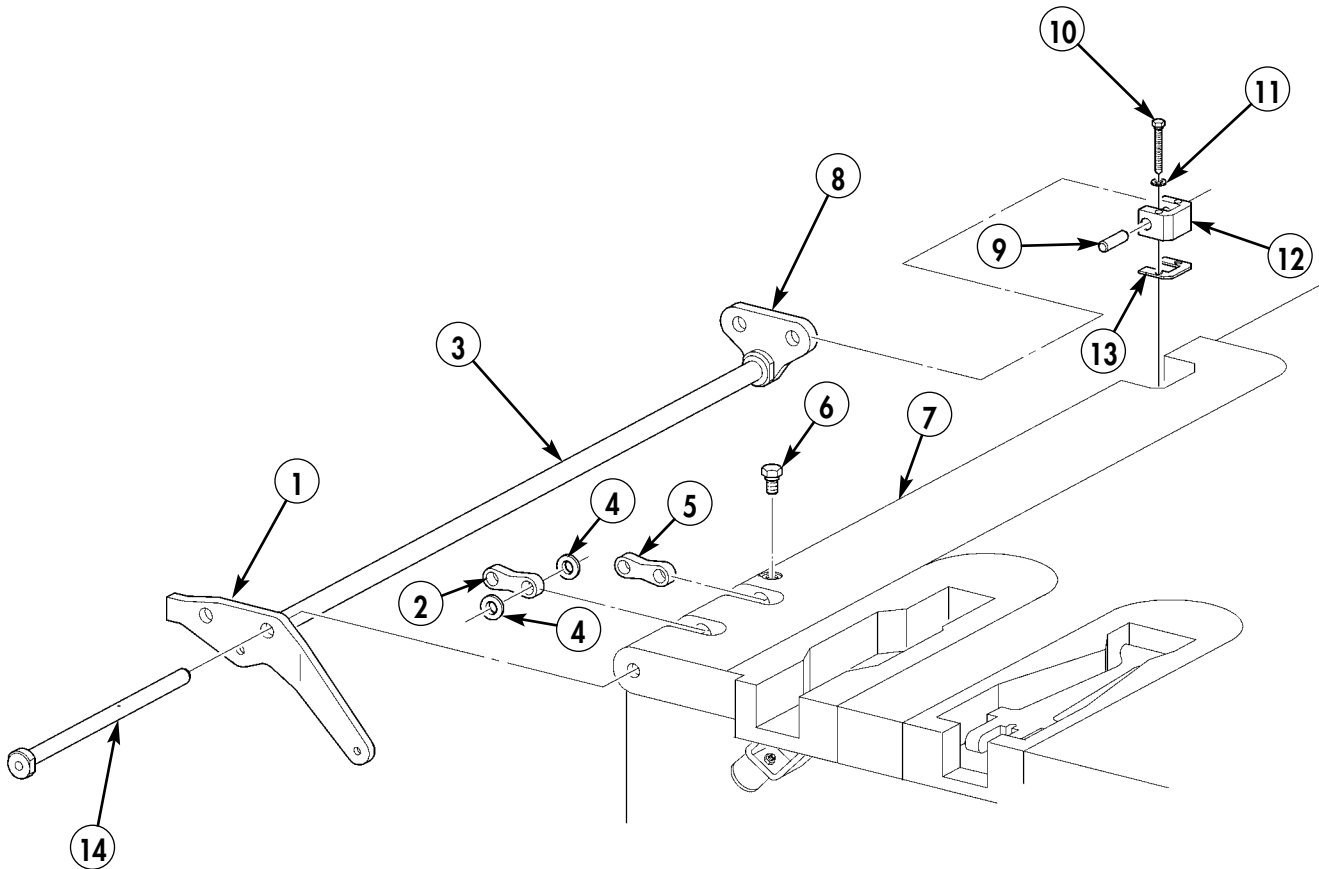
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Assistant will help with steps 3 through 5.

3. Position stabilizer bar (3) on inner ponton (7) with two shims (4) and connecting links (2) and (5), and install pin (14) on lever (1) and inner ponton (7).
4. Align hole in pin (14) with hole in inner ponton (7), and install screw (6).
5. Install bracket (12) and spacer plates (13) on inner ponton (7) with two washers (11) and screws (10).
6. Connect outer ponton to inner ponton (WP 0042 00), or retrieve bay from water.

UNFOLDING STABILIZER AND BRACKET REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

BUMPER STOP REPLACEMENT REMOVAL, INSTALLATION

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

References

WP 0118 00

Equipment Condition

Interior bay in folded position
(TM 5-5420-278-10)

BUMPER STOP REPLACEMENT (Contd)**NOTE**

The interior bay has four bumper stops. All bumper stops are removed and installed the same way. Right side is shown.

Note quantity of spacer washers prior to removal for installation.

REMOVAL**NOTE**

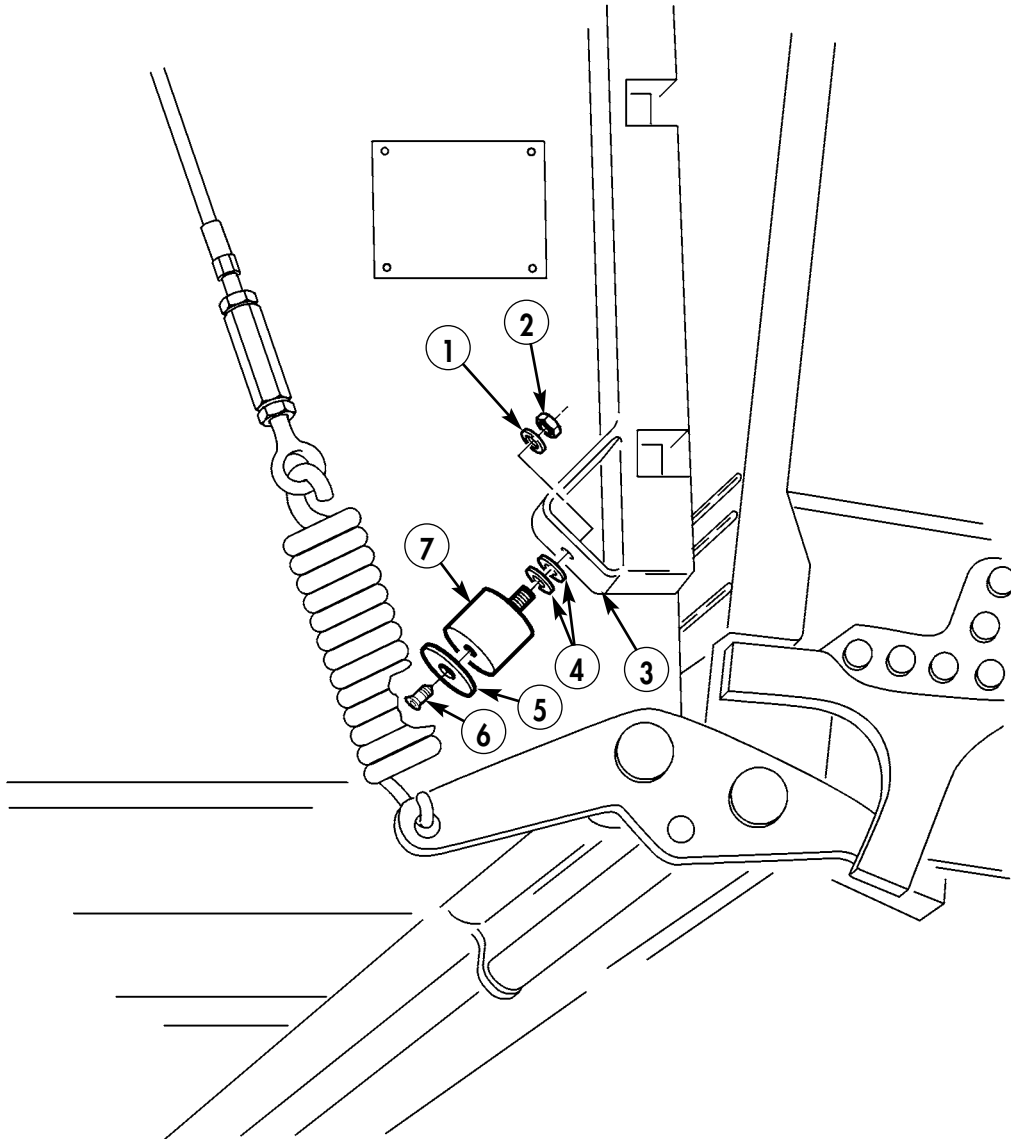
Note thickness of plate for installation.

1. Remove screw (6) and plate (5) from bumper stop (7).
2. Remove nut (2), washer (1), bumper stop (7), and spacer washers (4) from bracket (3).
3. Perform steps 1 and 2 to remove remaining bumper stops.

INSTALLATION

1. If present, install spacer washers (4) and bumper stop (7) on bracket (3) with washer (1) and nut (2).
2. Install plate (5) on bumper stop (7) with screw (6).
3. Perform steps 1 and 2 to install remaining bumper stops.

BUMPER STOP REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

OUTER PONTON LOCK MAINTENANCE REMOVAL, INSTALLATION, ADJUSTMENT

THIS WORK PACKAGE SUPERSEDES WP 0045 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Two cotter pins (WP 0120 00)
Sealing compound (Item 16, WP 0134 00)

References

WP 0042 00

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-278-10).

OUTER PONTON LOCK MAINTENANCE (Contd)

REMOVAL

NOTE

Removal of outer ponton lock assembly is the same for left and right sides. Left side is shown.

1. Position outer ponton lock in unlocked position (TM 5-5420-278-10).
2. Remove pin (17) from lever (18) and connector link (24) by turning pin (17) counterclockwise.

NOTE

If replacing turnbuckle, note length between rod ends for installation.

3. Turn pin (26) counterclockwise, and remove pin (26) and connector link (24) from bellcrank (27).
4. Remove cotter pin (25) from pin (1), and remove pin (1), washer (28), spacer (29), and bellcrank (27) from ponton support (2). Discard cotter pin (25).

NOTE

Mark location of spacer plates prior to removal for installation.

5. Remove three nuts (9), screws (7), and spacer plates (6) and (8) from ponton support (5).
6. Remove washer (13), spring (14), and washer (13) from spring holder (12) by slowly raising lever (18) counterclockwise until end of spring holder (12) drops free from pin (15).
7. Remove pin (15) and washer (23) from lever (18).
8. Remove setscrew (22) from lever (18), and remove pin (3), washers (16), (19), and (20), and lever (18) from ponton support (4).
9. Remove spring pin (10), pin (11), and pin spring holder (12) from ponton support (21).
10. Perform steps 1 through 9 to remove remaining outer ponton locks.

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Installation of outer ponton lock assembly is the same for left and right sides. Left side is shown.

Ensure plates are installed in same location as marked during removal.

1. Install pin spring holder (12) on ponton support (21) with pin (11) and spring pin (10).

NOTE

Ensure hole in pin is aligned with setscrew during installation; head of setscrew must seat against top of hook lever.

Apply sealing compound to threads of setscrew at installation.

2. Install lever (18) on ponton support (4) with pin (3), washers (19), (20), and (16), and setscrew (22).
3. Install pin (15) on lever (18) with hole facing ponton support (21).
4. Install bellcrank (27) on ponton support (2) with pin (1), spacer (29), washer (28), and new cotter pin (25).

NOTE

Apply sealing compound to threads of pin at installation.

5. Install connector link (24) on bellcrank (27) with pin (26) and tighten pin (26).
6. Install two washers (13) and spring (14) on spring holder (12), rotate lever (18) clockwise until end of spring holder (12) enters pin (15), and lever (18) is up against stop.

NOTE

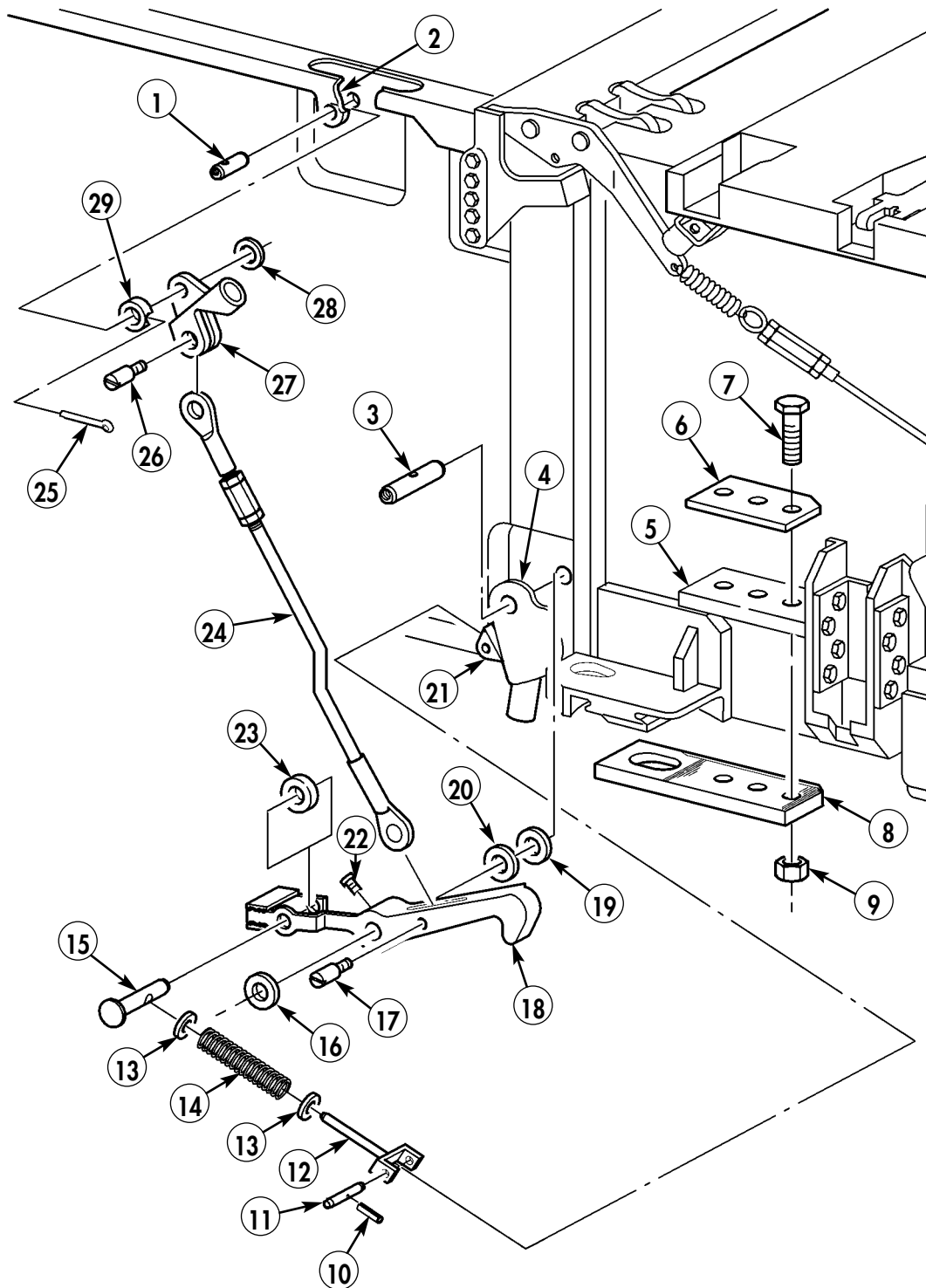
Perform step 7 if turnbuckle was disassembled or a replacement turnbuckle was installed. Ensure length between rod ends is as noted during removal.

Apply sealing compound to threads of pin at installation.

7. Connect connector link (24) to lever (18) with pin (17) and tighten pin (17).

OUTER PONTON LOCK MAINTENANCE (Contd)

8. Install spacer plates (6) and (8) on ponton support (5) with three screws (7) and nuts (9). Tighten nuts (9) 144 lb-ft (195 N•m).
9. Perform steps 1 through 8 to install remaining outer ponton locks.
10. Perform outer ponton lock adjustment.



OUTER PONTON LOCK MAINTENANCE (Contd)

ADJUSTMENT

NOTE

Adjustment is the same for left and right sides. Left side is shown.

1. Unfold interior bay (WP 0042 00).
2. Position outer ponton lock in locked position (TM 5-5420-278-10).

NOTE

Outer ponton must be fully open with a clearance of 0.118 in. \pm 0.020 in. (3 mm \pm 0.5 mm) between interstop blocks and 2.0 in. (50.8 mm) between bays prior to lock adjustment.

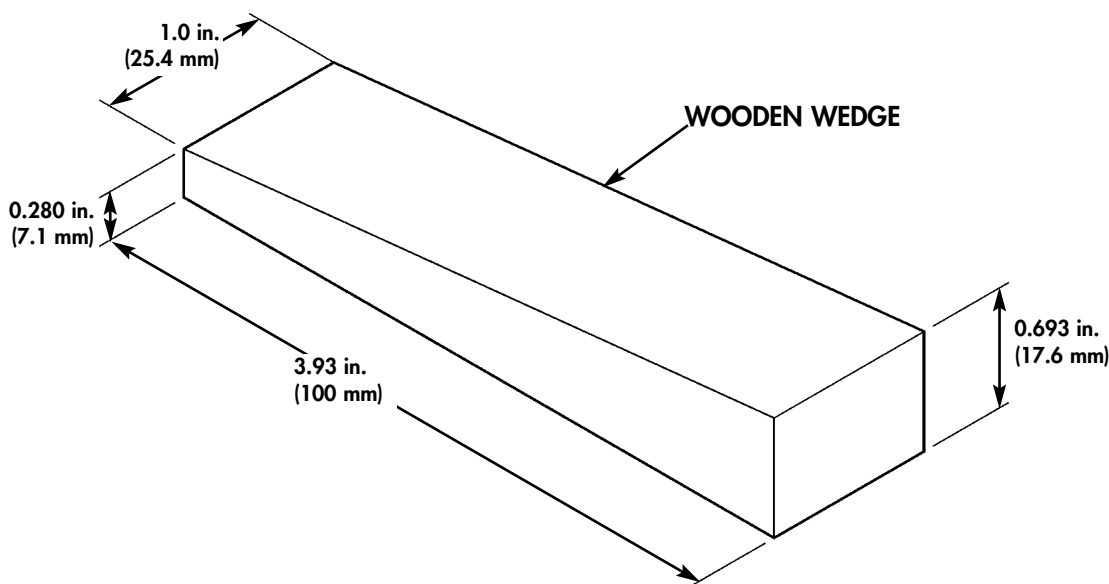
Use a setup wedge with measurement of 1 in. (25.4 mm) x 3.93 in. (100 mm) x 0.693 in. (17.6 mm) x 0.280 in. (7.1 mm) to hold bellcrank when checking alignment of all three pins.

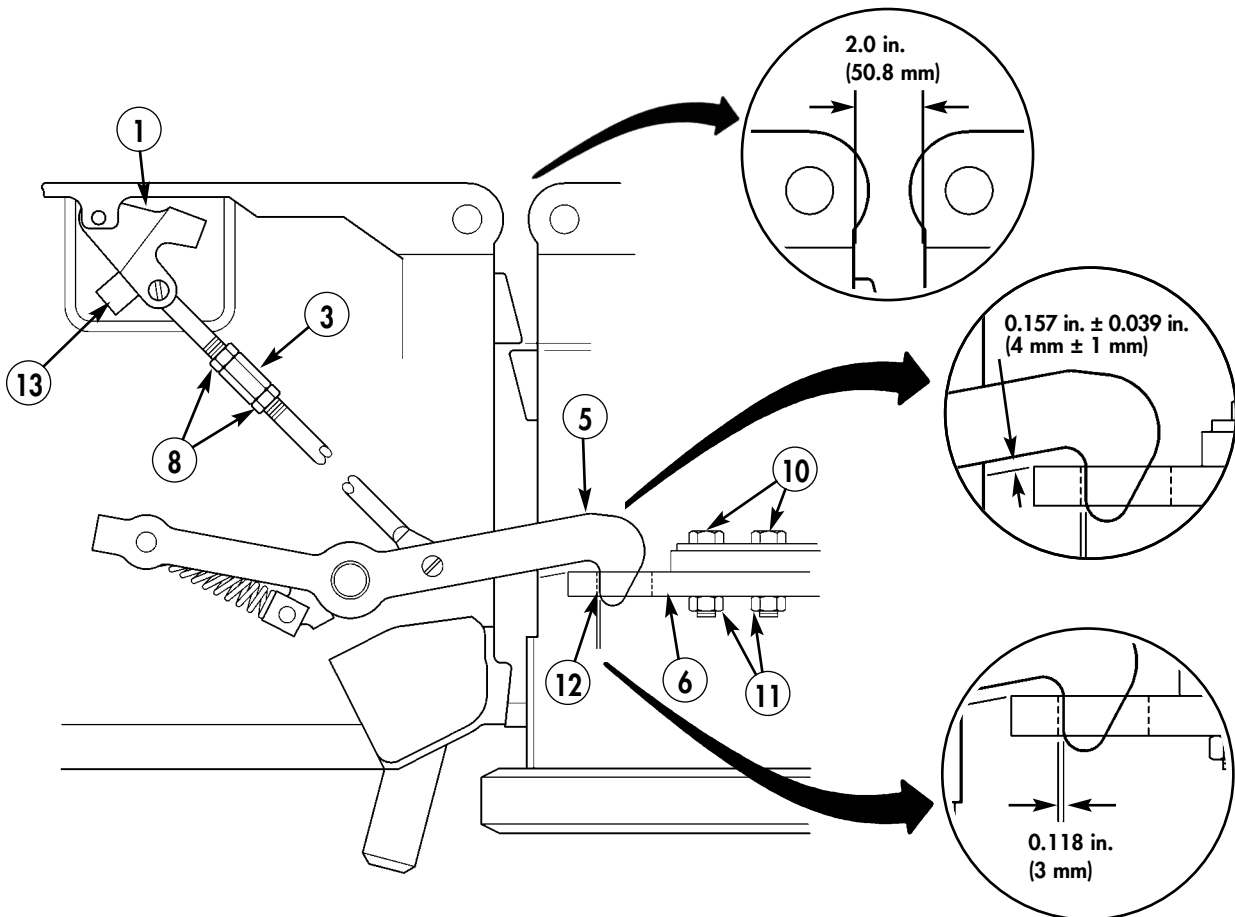
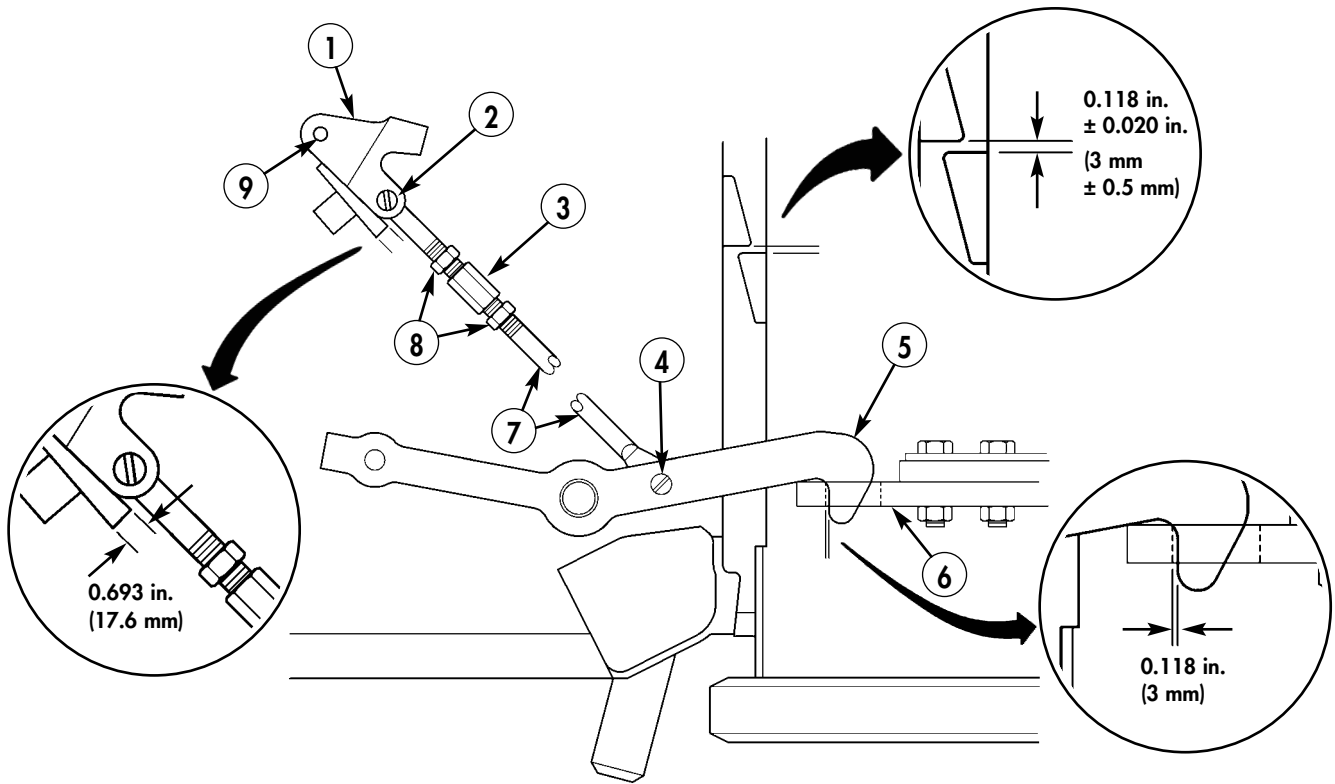
3. Loosen two jamnuts (8) and turn nut (3) until bottom of lever (5) rests on top of spacer plate (6). Check that pins (9) and (2) on bellcrank (1) are aligned with pin (4) on connecting link (7) with lever (5) resting on spacer plate (6).
4. If not aligned, turn nut (3) to move bellcrank (1) to align pins (9), (2), and (4).
5. After pins (9), (2), and (4) are aligned, remove setup wedge and adjust lever (5) clearance on spacer plate (6).
6. Measure distance between bottom of lever (5) and top of spacer plate (6) with lever (6) in lock position and bellcrank (1) resting on stop block (13). Clearance must be 0.157 in. \pm 0.039 in. (4 mm \pm 1 mm). If necessary, turn nut (3) until correct clearance is achieved and then tighten two jamnuts (8).

NOTE

Outer ponton must be fully open prior to lock adjustment.

7. Measure distance between inside edge (12) on lever (5) and spacer plate (6); clearance must be 0.118 in. (3 mm). If necessary, loosen three nuts (11) on screws (10), and tap on spacer plate (6) until correct clearance is achieved. Tighten nuts (11) 144 lb-ft (195 N•m).





END OF WORK PACKAGE

0045 00-5/6 blank

Change 1

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

FOLDLOCK REPLACEMENT REMOVAL, INSTALLATION

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-278-10).

Materials/Parts

Two cotter pins (WP 0119 00)
Grease, (Item 10, WP 0134 00)

FOLDLOCK REPLACEMENT (Contd)**NOTE**

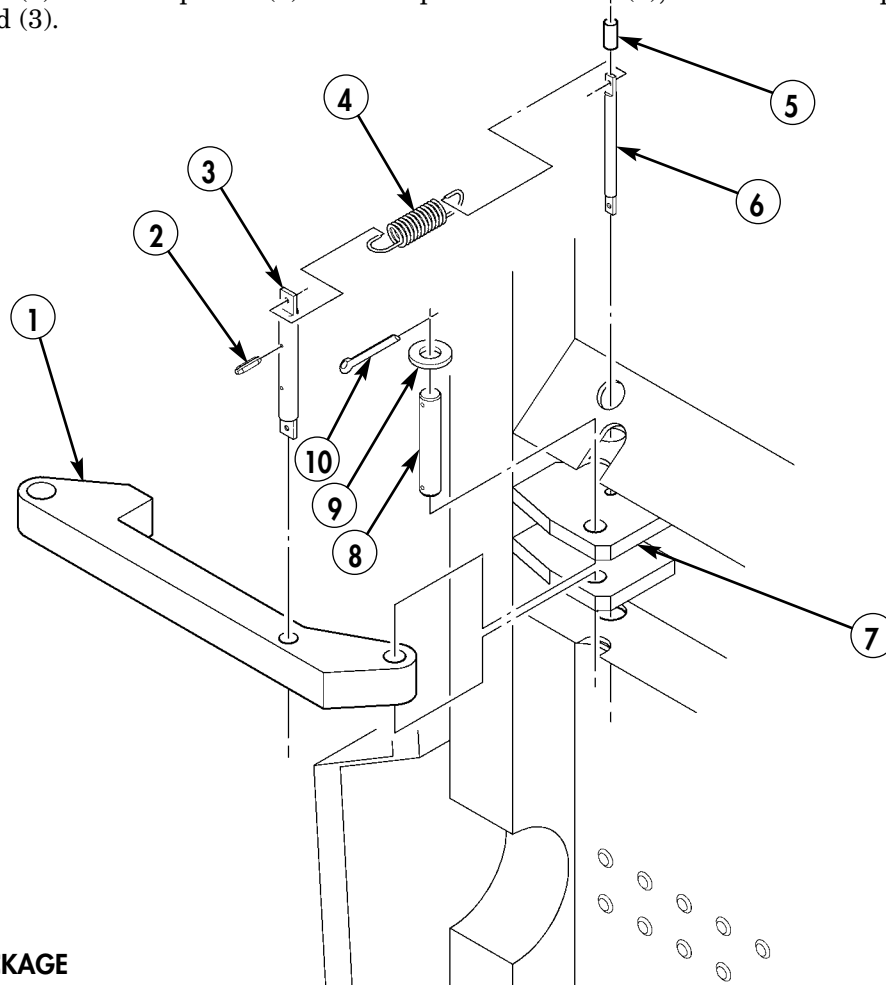
Removal and installation of foldlocks on left and right sides are performed the same way. Left side is shown.

REMOVAL

1. Move lever (1) to latched position (TM 5-5420-278-10).
2. Remove two springs (4), spacers (5), and pin (6) from inner ponton brackets (7) and pin (3).
3. Remove two cotter pins (10), washers (9), pin (8), and lever (1) from inner ponton brackets (7). Discard cotter pins (10).
4. Remove two spring pins (2) and pin (3) from lever (1).

INSTALLATION

1. Apply a light coat of grease to pins (3), (6), and (8).
2. Position pin (3) on lever (1), and install two spring pins (2) on pin (3).
3. Install lever (1) on inner ponton brackets (7) with pin (8), two washers (9), and new cotter pins (10).
4. Move lever (1) to latched position (TM 5-5420-278-10).
5. Position pin (6) and two spacers (5) on inner ponton brackets (7), and install two springs (4) on pins (6) and (3).



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

ACCESS COVER REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0047 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-278-10).

Materials/Parts

Gasket (WP 0124 00)
Adhesive (Item 3, WP 0134 00)
Sealing compound (Item 16, WP 0134 00)

ACCESS COVER REPLACEMENT (Contd)

REMOVAL

NOTE

Inner ponton has four access covers, and they are removed and installed the same way.

1. Remove ten screws (7) and washers (6) from inner ponton (1) and access cover (2).
2. Turn access cover (2) and remove access cover (2) from inside of inner ponton (1).
3. Remove gasket (5) from front of access cover (2). Discard gasket (5).
4. If necessary, remove screw (3) and handle (4) from access cover (2).
5. Repeat steps 1 through 4 to remove other access covers (2).

INSTALLATION

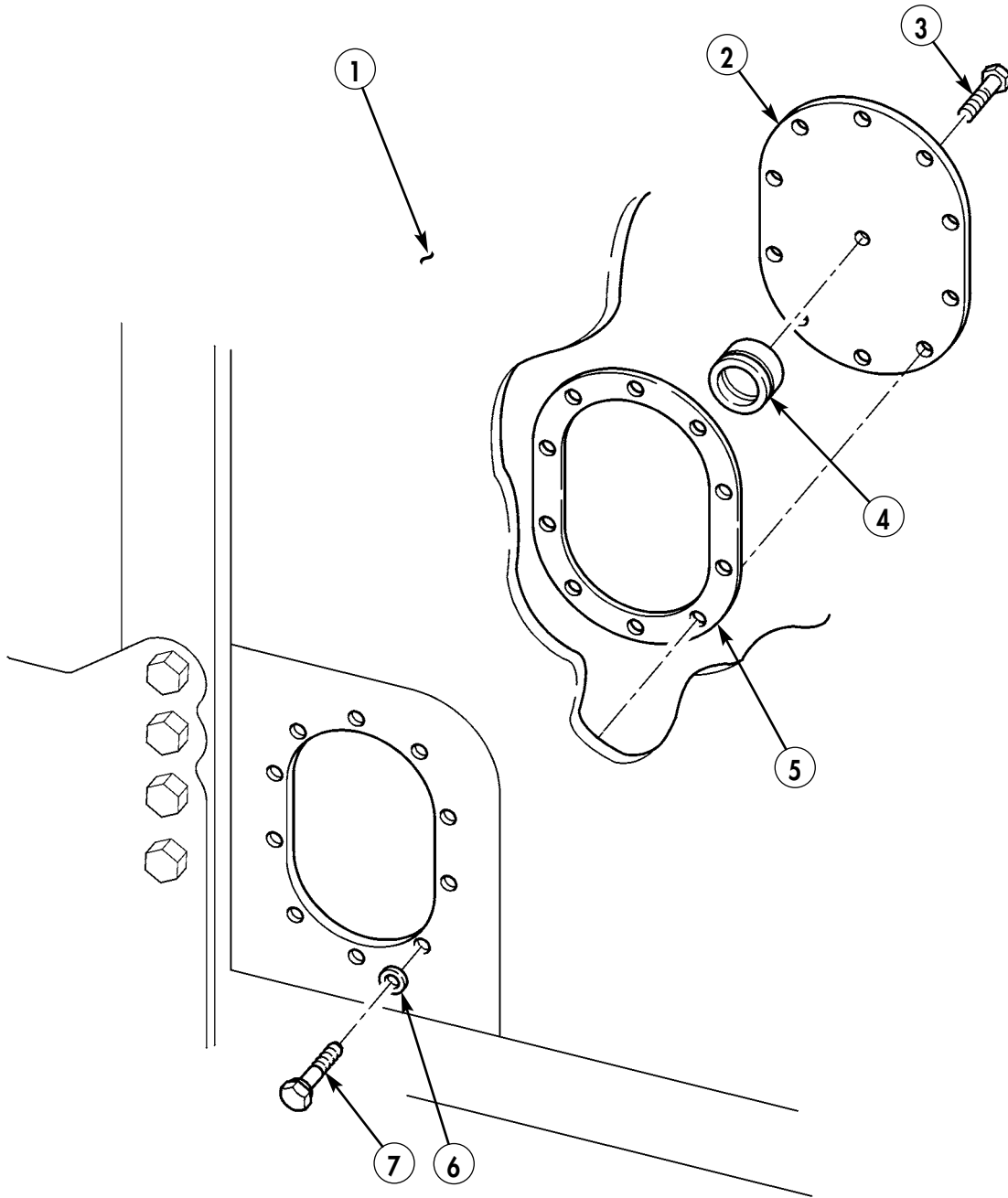
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply sealing compound to threads of all screws at installation.

1. If removed, install handle (4) on access cover (2) with screw (3).
2. Apply adhesive to new gasket (5) and install gasket (5) on access cover (2).
3. Install access cover (2) with gasket (5) inside of inner ponton (1) and turn access cover (2).
4. Align holes in access cover (2) with holes in inner ponton (1) and install ten washers (6) and screws (7) on inner ponton (1) and access cover (2). Tighten screws (7) 15 lb-ft (20 N•m).
5. Repeat steps 1 through 4 to install other access covers (2).

ACCESS COVER REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LOWER MAIN COUPLING REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0048 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Gasket (WP 0124 00)
Unlike metal compound (Item 18, WP 0134 00)
Adhesive (Item 1, WP 0134 00)
Anti-corrosive compound (Item 3.1, WP 0134 00)
Sealing compound (Item 16, WP 0134 00)

References

WP 0059 00
WP 0125 00

Equipment Condition

Inner pontoons separated (WP 0042 00).

LOWER MAIN COUPLING REPLACEMENT (Contd)

REMOVAL

1. Remove ten screws (4) and washers (5) from inner ponton (3) and access cover (1).
2. Turn access cover (1) and remove access cover (1) from inner ponton (3).
3. Remove gasket (2) from front of access cover (1). Discard gasket (2).
4. Repeat steps 1 through 3 to remove other access covers (1) as necessary.

CAUTION

Do not overheat area around lower main coupling or damage to aluminum may occur.

NOTE

Heat area around lower main coupling to loosen sealing compound before removing lower main coupling.

5. Remove eight nuts (7), washers (6), and bolts (16) from inner ponton (3) and double hinge coupling (15) or single hinge joint (17).

NOTE

Note location of long screws and thick washers for installation.

6. Remove twelve nuts (9), two thick washers (10), ten washers (8), eight bolts (13), four bolts (14), and twelve washers (12) from inner ponton (3), plate (11), and double hinge (15) or single hinge coupling (17).

NOTE

Assistant will help with step 7.

7. Remove double or single hinge coupling (15) or (17) from inner ponton (3).
8. Clean sealing compound from mating surfaces of double or single hinge coupling (15) or (17) and inner ponton (3).

INSTALLATION

1. Apply unlike metal compound to mating surface of double or single hinge coupling (15) or (17) and inner ponton (3).

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Assistant will help with step 2.

2. Install double or single hinge coupling (15) or (17) on inner ponton (3).

NOTE

Apply unlike metal compound to all bolts at installation.

3. Install twelve washers (12), four bolts (14), eight bolts (13), ten washers (8), two thick washers (10), and twelve nuts (9) on double or single hinge coupling (15) or (17), plate (11), and inner ponton (3). Do not tighten bolts (13) and (14).
4. Install eight bolts (16), washers (6), and nuts (7) on double or single hinge coupling (15) or (17) and inner ponton (3). Tighten screws (13) and (14) 996 lb-ft (1350 N·m) and screws (16) 443 lb-ft (660 N·m).
5. Coat all nuts (9) and (7) and steel surfaces with anti-corrosive compound after tightening.
6. Apply adhesive to new gasket (2), and install new gasket (2) on access cover (1).
7. Position access cover (1) and gasket (2) on inner ponton (3).

NOTE

Apply sealing compound to threads of screws at installation.

8. Install access cover (1) on inner ponton (3) with ten washers (5) and screws (4). Tighten screws (4) 15 lb-ft (20 N·m).
9. Pressure test inner ponton (3) for leaks (WP 0059 00), and seal if necessary.
10. Connect inner pontons (WP 0042 00).

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

BUMPERS REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0049 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Forward repair system (FRS)
(Item 7, WP 0135 00)

References

WP 0126 00

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-287-10)

BUMPERS REPLACEMENT (Contd)

NOTE

There are two bumpers at each end of bay. Removal and installation are performed the same way.

REMOVAL

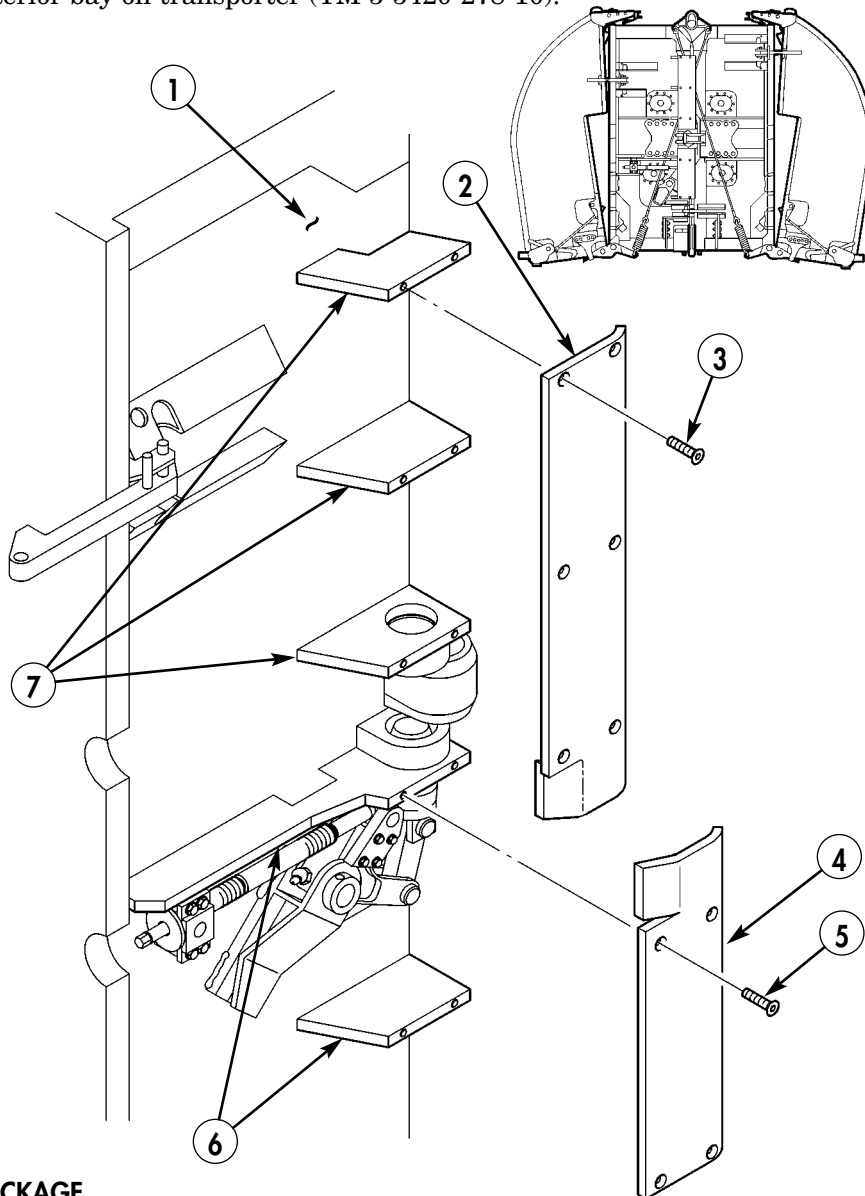
1. Remove six screws (3) and bumper (2) from three mounting brackets (7) on inner ponton (1).
2. Remove four screws (5) and bumper (4) from two mounting brackets (6) on inner ponton (1).

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install bumper (4) on two inner ponton mounting brackets (6) with four screws (5).
2. Install bumper (2) on three inner ponton mounting brackets (7) with six screws (3).
3. Install interior bay on transporter (TM 5-5420-278-10).



END OF WORK PACKAGE

Change 1

0049 00-2

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LOWER LOCK-DRIVE REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0050 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Interior bay removed from transporter
(TM 5-5420-278-10).

Materials/Parts

Four lockwashers (WP 0127 00)
Four lockwashers (WP 0127 00)
Lubricating oil (Item 14, WP 0134 00)
Grease (Item 10, WP 0134 00)

LOWER LOCK-DRIVE REPLACEMENT (Contd)**REMOVAL**

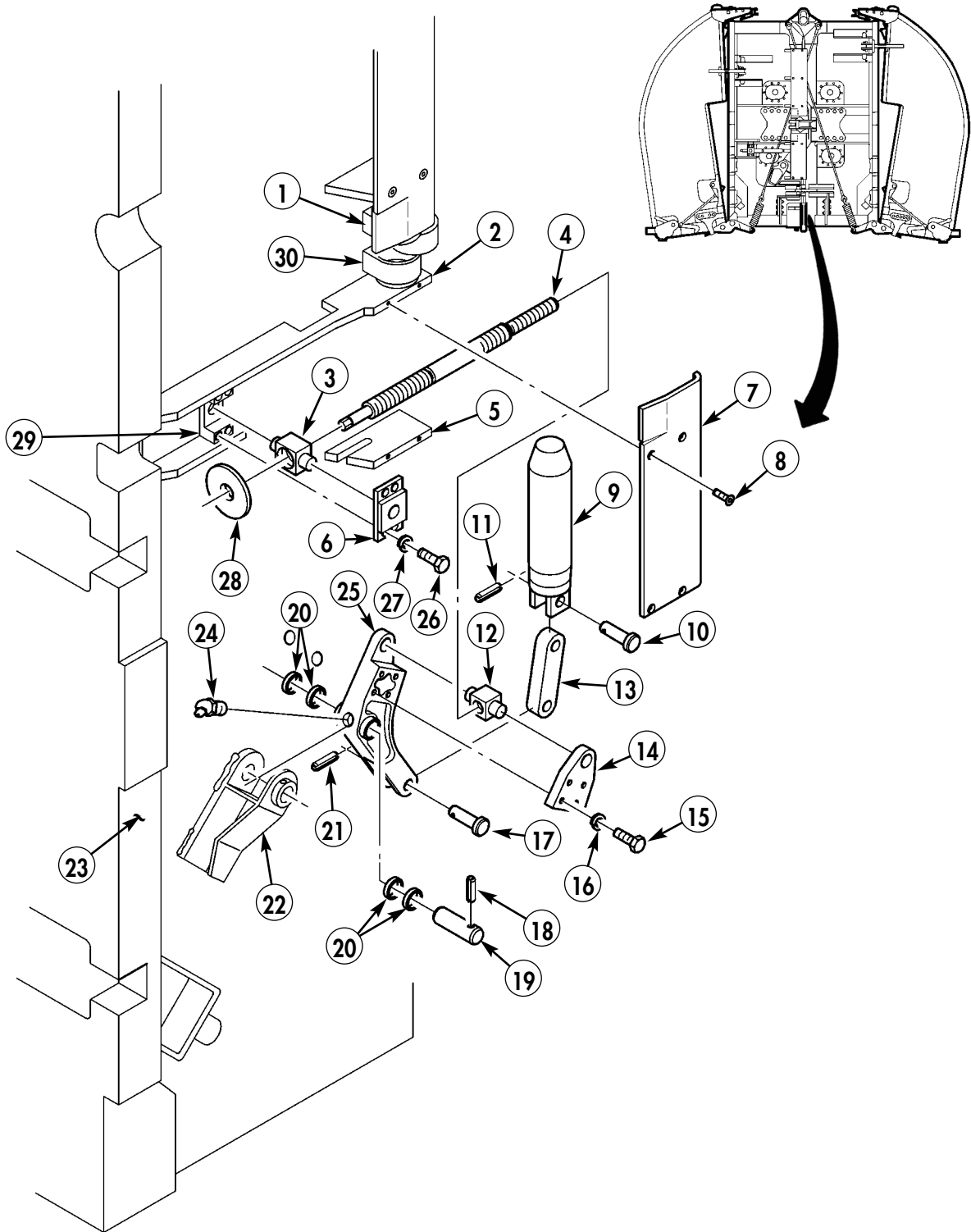
1. Remove four screws (8) and bumper (7) from inner ponton mounting brackets (2) and (5).
2. Remove four screws (26), lockwashers (27), and trunnion retainer (6) from trunnion nut (3) and bracket (29). Discard lockwashers (27).
3. Remove four screws (15), lockwashers (16), and trunnion lever (14) from trunnion nut (12) and bellcrank lever (25). Discard lockwashers (16).
4. Remove jackscrew (4), washer (28), and trunnion nuts (3) and (12) from upper bracket (29) and bellcrank lever (25).
5. Remove washer (28), trunnion nut (3), and trunnion nut (12) from jackscrew (4).
6. Remove spring pin (21), pin (17), and connecting link (13) from bellcrank lever (25).
7. Remove spring pin (18) from bracket (22) and pin (19).

NOTE

Note location and quantity of shims for installation.

8. Remove pin (19), bellcrank lever (25), and shims (20) from bracket (22) on inner ponton (23).
9. Remove lube fitting (24) from bellcrank lever (25).
10. Remove spring pin (11), pin (10), and connecting link (13) from connecting pin (9).
11. Remove connecting pin (9) from inner ponton bracket (30) and yoke (1).

LOWER LOCK-DRIVE REPLACEMENT (Contd)



LOWER LOCK-DRIVE REPLACEMENT (Contd)

INSTALLATION

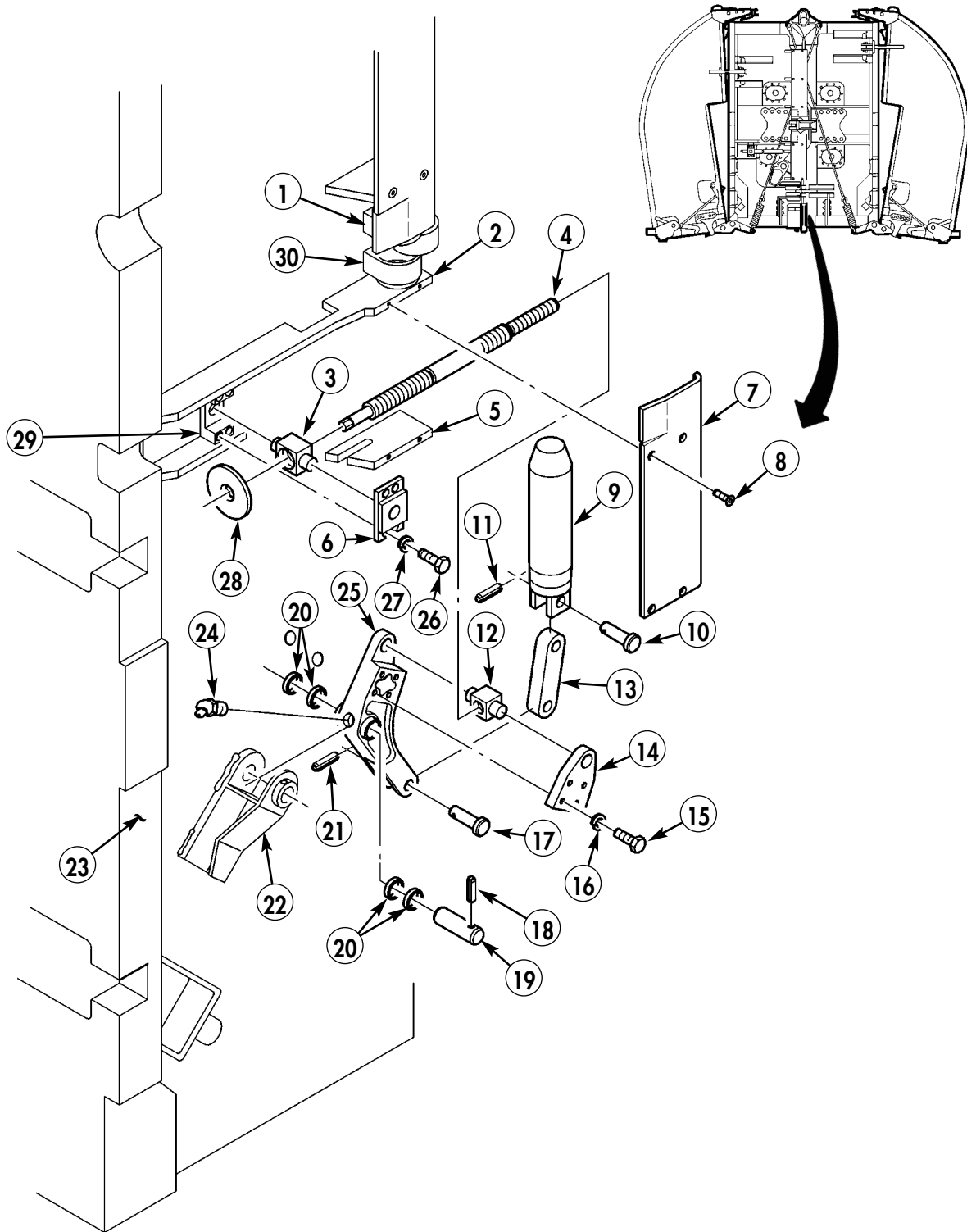
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease to all pins and a light coat of lubricating oil to threads of jackscrew at installation.

1. Install connecting pin (9) on inner ponton bracket (30) and yoke (1).
2. Install connecting link (13) on connecting pin (9) with pin (10) and spring pin (11).
3. Install lube fitting (24) on bellcrank lever (25).
4. Install bellcrank lever (25) on bracket (22) with shims (20) and pin (19).
5. Install spring pin (18) through bracket (22) and pin (19).
6. Connect link (13) on bellcrank lever (25) with pin (17) and spring pin (21) and retract connecting pin (9) to its stop position.
7. Install trunnion nut (3), washer (28), and trunnion nut (12) on jackscrew (4).
8. Adjust trunnion nut (12) so jackscrew threads are flush with bottom of trunnion nut (12) and adjust trunnion nut (3) to approximate distance between mounting holes in bellcrank lever (25) and bracket (29).
9. Position jackscrew (4) on bellcrank lever (25) and install trunnion lever (14) on trunnion nut (12) and bellcrank lever (25) with four new lockwashers (16) and screws (15).
10. Install upper trunnion nut (3) on bracket (29) with trunnion retainer (6), four new lockwashers (27), and screws (26).
11. Install bumper (7) on inner ponton mounting brackets (2) and (5) with four screws (8).
12. Install interior bay on transporter (TM 5-5420-278-10).

LOWER LOCK-DRIVE REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

**IMPROVED RIBBON BRIDGE (IRB)
 RAMP BAY M16
 NSN 5420-01-470-5825 P/N 12478918;
 INTERIOR BAY M17
 NSN 5420-01-470-5824 P/N 12478919.**

Section VI. GENERAL MAINTENANCE, RAMP AND INTERIOR BAYS

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THIS WORK PACKAGE SUPERSEDES WP 0051 00, DATED 8 APRIL 2003

WP Title	WP Sequence No.-Page No.
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Travel Latch and Receptacle Maintenance	0056 00-1
Upper Coupling and Receptacle Blocks Replacement	0057 00-1
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Coupling Device Wheels and Pins Replacement	0059 01-1

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

HANDRAIL REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0052 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

References

TM 5-5420-278-10

Materials/Parts

Two locknuts (WP 0093 00 IRB-R,
or WP 0121 00 IRB-I)
Grease (Item 10, WP 0134 00)

HANDRAIL REPLACEMENT (Contd)

NOTE

All handrail stanchions, ropes, chains, and chain linkers are removed and installed the same way. There are four handrail stanchions, two ropes, and chains with linkers on each ramp bay, and six handrail stanchions, two ropes, and four chains with linkers on each interior bay.

Handrail stanchions, ropes, and chains with linkers can be accessed with bay either folded or unfolded.

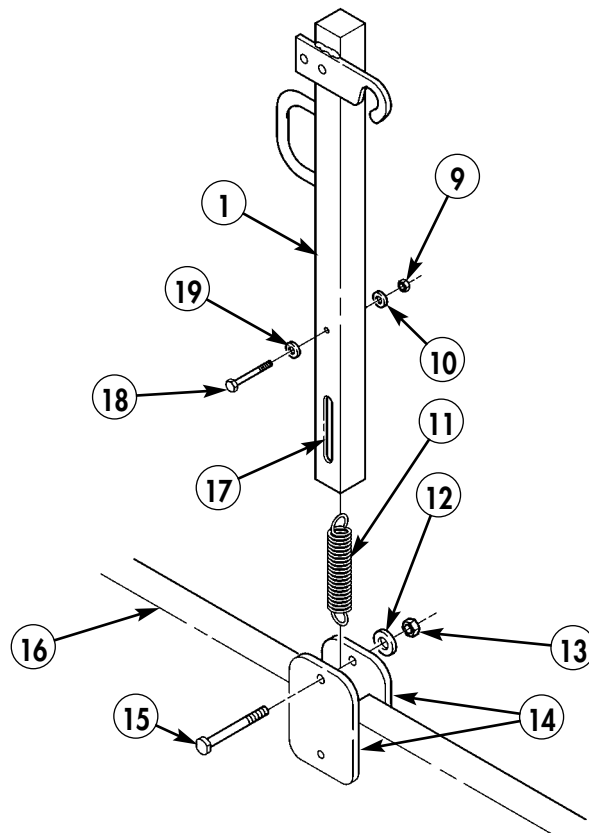
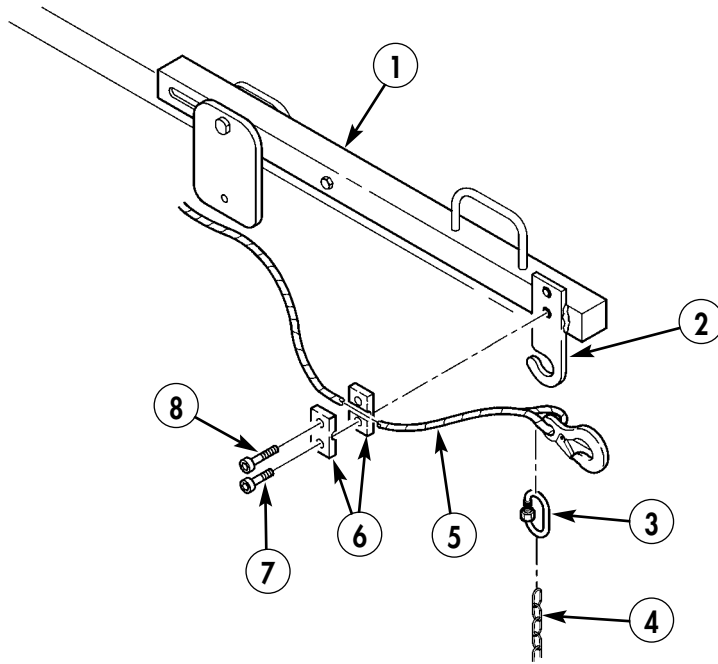
REMOVAL

NOTE

Perform steps 1 through 3 to remove chain, linker, and rope only.
Perform steps 4 through 8 to remove handrail stanchion.

1. Loosen nut on chain linker (3) and remove linker (3) and chain (4) from rope (5).
2. Position all handrail stanchions (1) in the upright position (TM 5-5420-278-10), and note length of rope (5) from fairlead blocks (6) to hook end of rope (5).
3. Remove screws (7) and (8), two fairlead blocks (6), and rope (5) from each handrail bracket (2) on handrail stanchions (1).
4. Unhook handrail stanchion (1) from stowed position on outer ponton (16), lift and place handrail stanchion (1) in upright position between brackets (14).
5. Remove locknut (13), washer (12), and bolt (15) from brackets (14), handrail stanchion (1), slot (17), and spring (11). Discard locknut (13).
6. Remove handrail stanchion (1) from brackets (14).
7. Remove locknut (9), washer (10), screw (18), washer (19), and spring (11) from handrail stanchion (1). Discard locknut (9).
8. Perform steps 1 through 7 to remove remaining chain, linker, rope, or handrail stanchions.

HANDRAIL REPLACEMENT (Contd)



HANDRAIL REPLACEMENT (Contd)

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply a light coat of grease between brackets and to bottom of handrail stanchion at installation.

Perform steps 1 through 5 to install handrail stanchion.

Perform steps 6 through 8 to install chain, linker, and rope only.

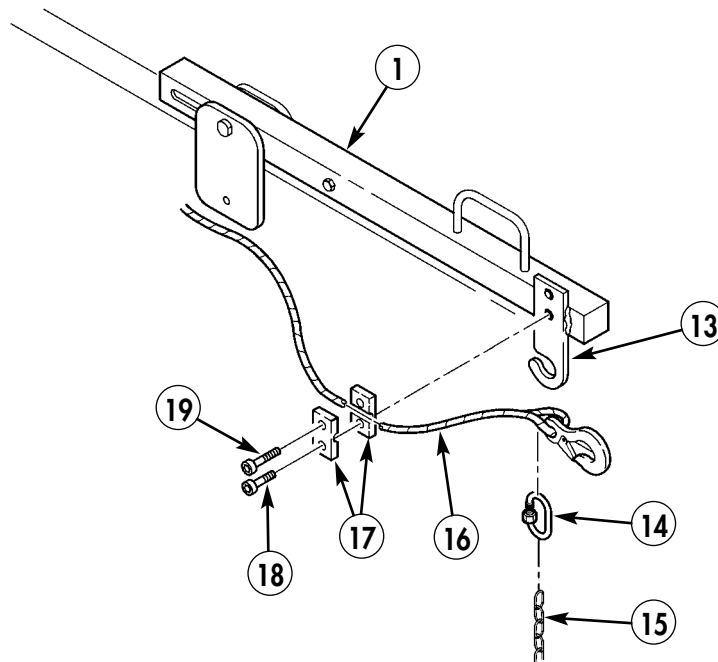
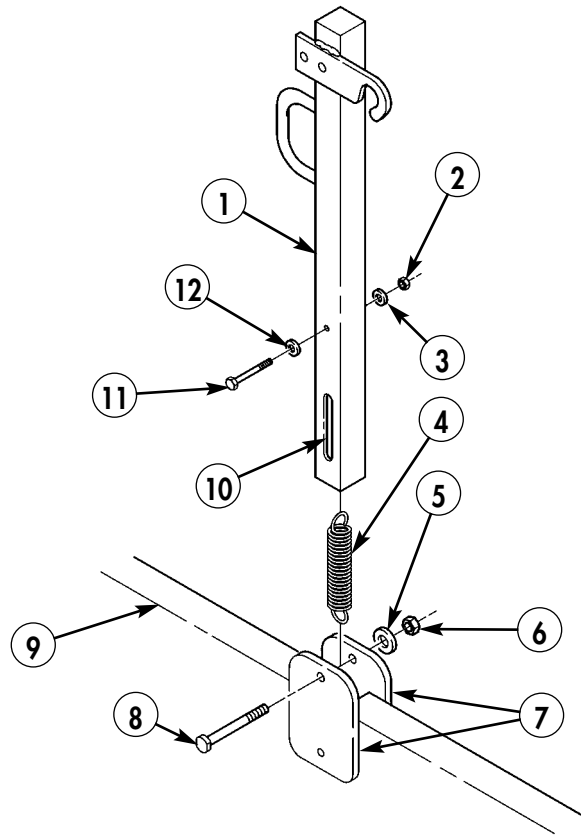
1. Slide spring (4) inside of handrail stanchion (1).
2. Align hook of spring (4) with holes on handrail stanchion (1), and install spring (4), washer (12), screw (11), washer (3), and new locknut (2) on handrail stanchion (1). Tighten nut (2) 71 lb-in. (8 N•m).
3. Place in stowed position on outer ponton (9) (TM 5-5420-278-10).
4. Install handrail stanchion (1) and spring (4) on brackets (7) with slot (10) aligned with holes in brackets (7).
5. Align hook of spring (4) with holes in brackets (7), and install bolt (8) on brackets (7) and spring (4) with washer (5) and new locknut (6). Tighten locknut (6) 97 lb-in. (11 N•m).
6. Install rope (16) on each handrail bracket (13) with two fairlead blocks (17), screw (18), and screw (19). Do not tighten screws (18) and (19).

NOTE

Clamping block is installed on center stanchion of interior bay and one end of ramp bay.

7. Adjust length of rope (16) from end to stanchion (1) as noted during removal. Tighten screws (18) and (19) on each handrail stanchion (1) 177 lb-in. (20 N•m).
8. Install chain (15) and chain linker (14) on each end of rope (16) and tighten nut on linker (14).
9. Perform steps 1 through 8 to install remaining handrail stanchions, rope, chain, or linker.

HANDRAIL REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

BILGE/DRAIN PLUGS AND INSERTS REPLACEMENT REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0053 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

References

TM 5-5420-278-10

Materials/Parts

Gasket (WP 0093 00 IRB-R,
or WP 0121 00 IRB-I)
Pipe sealant (Item 15, WP 0134 00)
Sealing compound (Item 16, WP 0134 00)
Grease (Item 10, WP 0134 00)

BILGE/DRAIN PLUGS AND INSERTS REPLACEMENT (Contd)

NOTE

Bilge plugs on bottom of inner and outer pontoons of IRB-I are accessed with bay in the folded position only.

Bilge plugs on roadway/walkway decks are accessible with bay in unfolded position only.

Bilge plugs on ramp bay and interior bay are removed and installed the same way. Interior bay is shown.

REMOVAL

1. Remove bilge plug (5) and clasp (2) from ponton (7) (TM 5-5420-278-10).
2. Remove clamp (3) and cable (4) from bilge plug (5).
3. Remove clamp (3) and cable (4) from clasp (2).
4. Remove gasket (6) from bilge plug (5). Discard gasket (6).

CAUTION

Do not overheat area around insert or damage to aluminum may occur.

NOTE

Heat ponton inserts to loosen sealing compound before removing insert.

5. Remove insert (1) from ponton (7), using a large extractor or steel plate.

INSTALLATION

NOTE

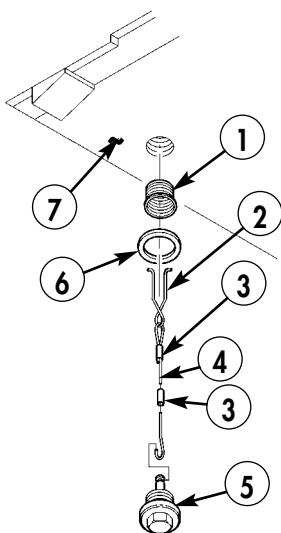
Apply sealing compound to threads of insert.

1. Using a bilge plug (5) installed in insert (1), install insert (1) on ponton (7). Do not remove bilge plug (5) until sealing compound has hardened.
2. Install new gasket (6) on bilge plug (5).
3. Install cable (4) and clamp (3) on clasp (2).
4. Install cable (4) and clamp (3) on bilge plug (5).

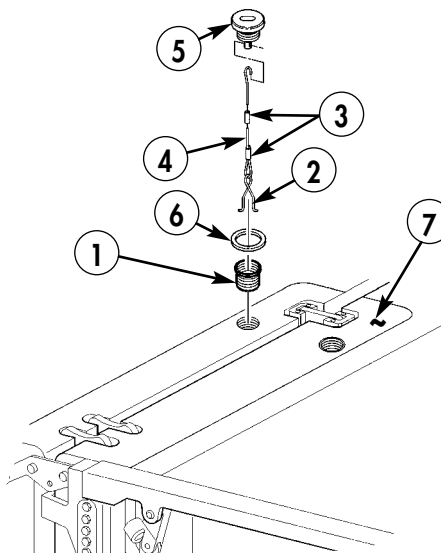
NOTE

Apply a light coat of grease to threads of bilge plugs at installation.

5. Install clasp (2) and bilge plug (5) on ponton (7) (TM 5-5420-278-10).



BILGE PLUG, BOTTOM OF BAY



BILGE PLUG, ROADWAY/WALKWAY DECK

END OF WORK PACKAGE

Change 1

0053 00-2

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LOAD RECEIVING PIN AND RAFTING BRACKET PIN REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0054 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

References

WP 0093 00
WP 0121 00

LOAD RECEIVING PIN AND RAFTING BRACKET PIN REPLACEMENT (Contd)

NOTE

There are four load receiving pins on each IRB-R and each IRB-I. All load receiving pins on ramp and interior bays are removed and installed the same way.

REMOVAL

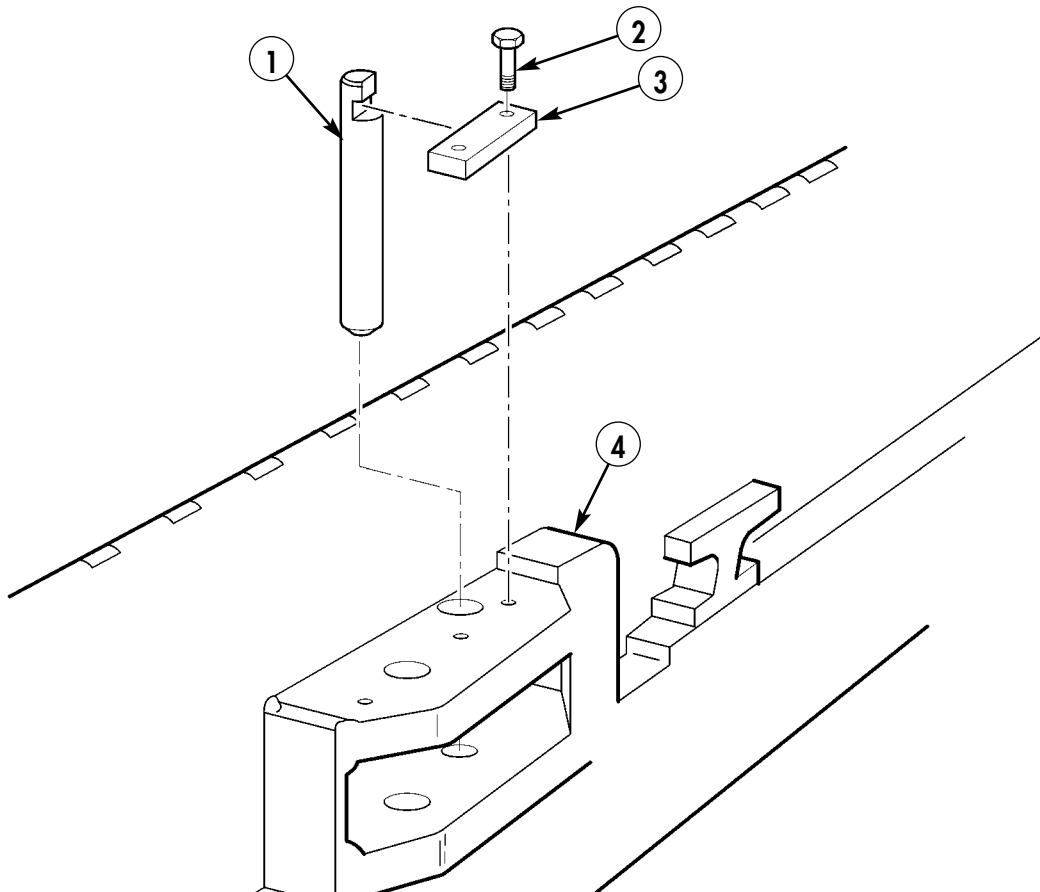
1. Remove two screws (2) and retainer strap (3) from load receiving pin (1) and recess block (4).
2. Remove load receiving pin (1) from recess block (4).
3. Perform steps 1 and 2 to remove remaining load receiving pins.

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install load receiving pin (1) on recess block (4).
2. Install retainer strap (3) on load receiving pin (1) and recess block (4) with two screws (2).
3. Perform steps 1 and 2 to install remaining load receiving and rafting bracket pins.



END OF WORK PACKAGE

Change 1

0054 00-2

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

TRUNNION WEAR CAP REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0055 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Lockwasher (WP 0094 00)
Sealing compound (Item 16, WP 0134 00)
Grease (Item 12, WP 0134 00)

TRUNNION WEAR CAP REPLACEMENT (Contd)

NOTE

There are two wear caps on the ramp bay only.

REMOVAL

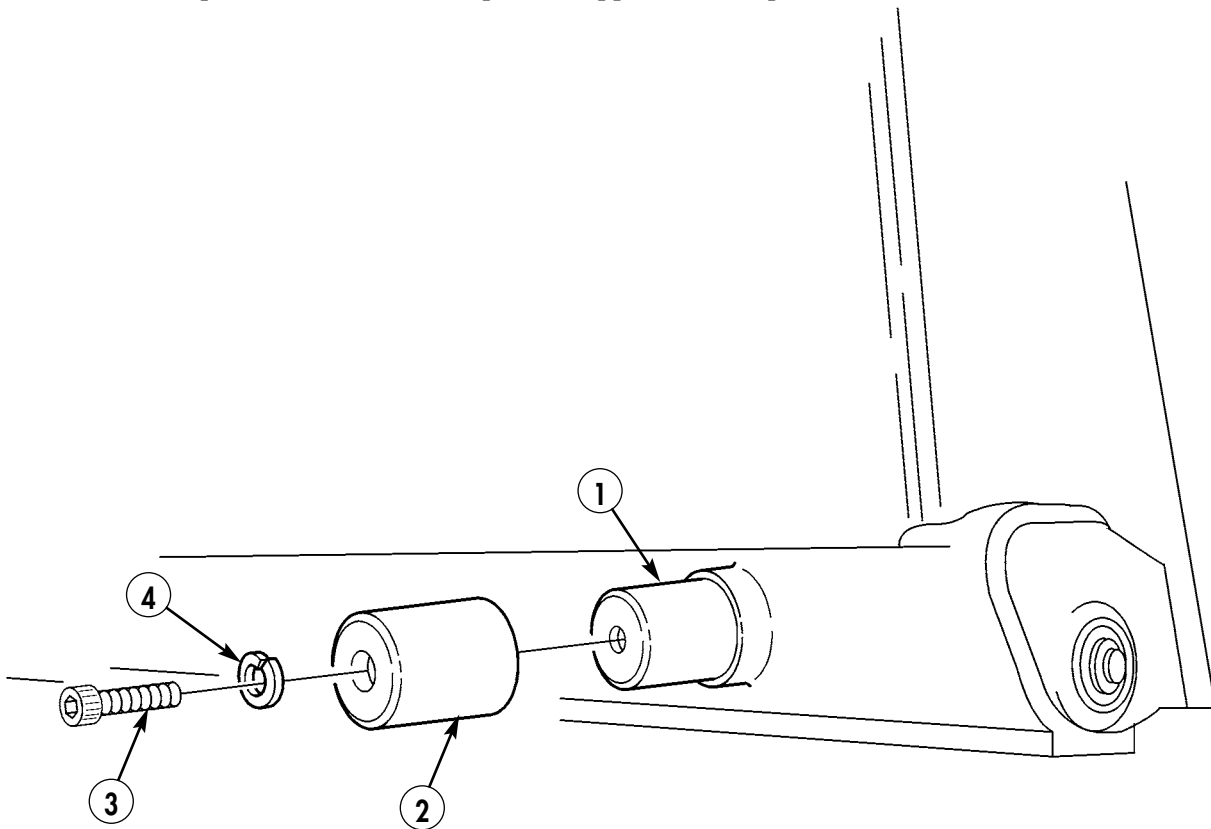
1. Remove screw (4), lockwasher (3), and cap (2) from outer ponton trunnion (1). Discard lockwasher (4).
2. Perform step 1 to remove cap (2) on opposite outer ponton.

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Apply a light coat of grease to outer ponton trunnion (1) and inside of cap (2).
2. Install cap (2) on outer ponton trunnion (1) with new lockwasher (3) and screw (4).
3. Perform steps 1 and 2 to install cap (2) on opposite outer ponton.



WEAR CAP, RAMP BAY ONLY

END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

TRAVEL LATCH AND RECEPTACLE MAINTENANCE TRAVEL LATCH REMOVAL, RECEPTACLE REMOVAL, RECEPTACLE INSTALLATION, TRAVEL LATCH INSTALLATION, ADJUSTMENT THIS WORK PACKAGE SUPERSEDES WP 0056 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Bay removed from transporter
(TM 5-5420-278-10).

Materials/Parts

Eight lockwashers (WP 0098 00 IRB-R,
or WP 0122 00 IRB-I)
Two cotter pins (WP 00098 IRB-R,
or WP 0122 00 IRB-I)

TRAVEL LATCH AND RECEPTACLE MAINTENANCE (Contd)

NOTE

Removal and installation of travel latch and receptacle on ramp and interior bays are performed the same way. Ramp bay is shown.

TRAVEL LATCH REMOVAL

1. Move lever (10) to open position.
2. Remove two springs (7), spacers (6), and pin (5) from lever (10).
3. Remove two cotter pins (1), washers (2), pin (3), and lever (10) from inner ponton mounting brackets (4). Discard cotter pins (1).
4. Remove two spring pins (8) from pin (9), and remove pin (9) from lever (10).

NOTE

Perform step 5 if replacing lever.

Note number of washers used on stopscrew for installation.

5. Remove stopscrew (12) and washers (11) from lever (10).

RECEPTACLE REMOVAL

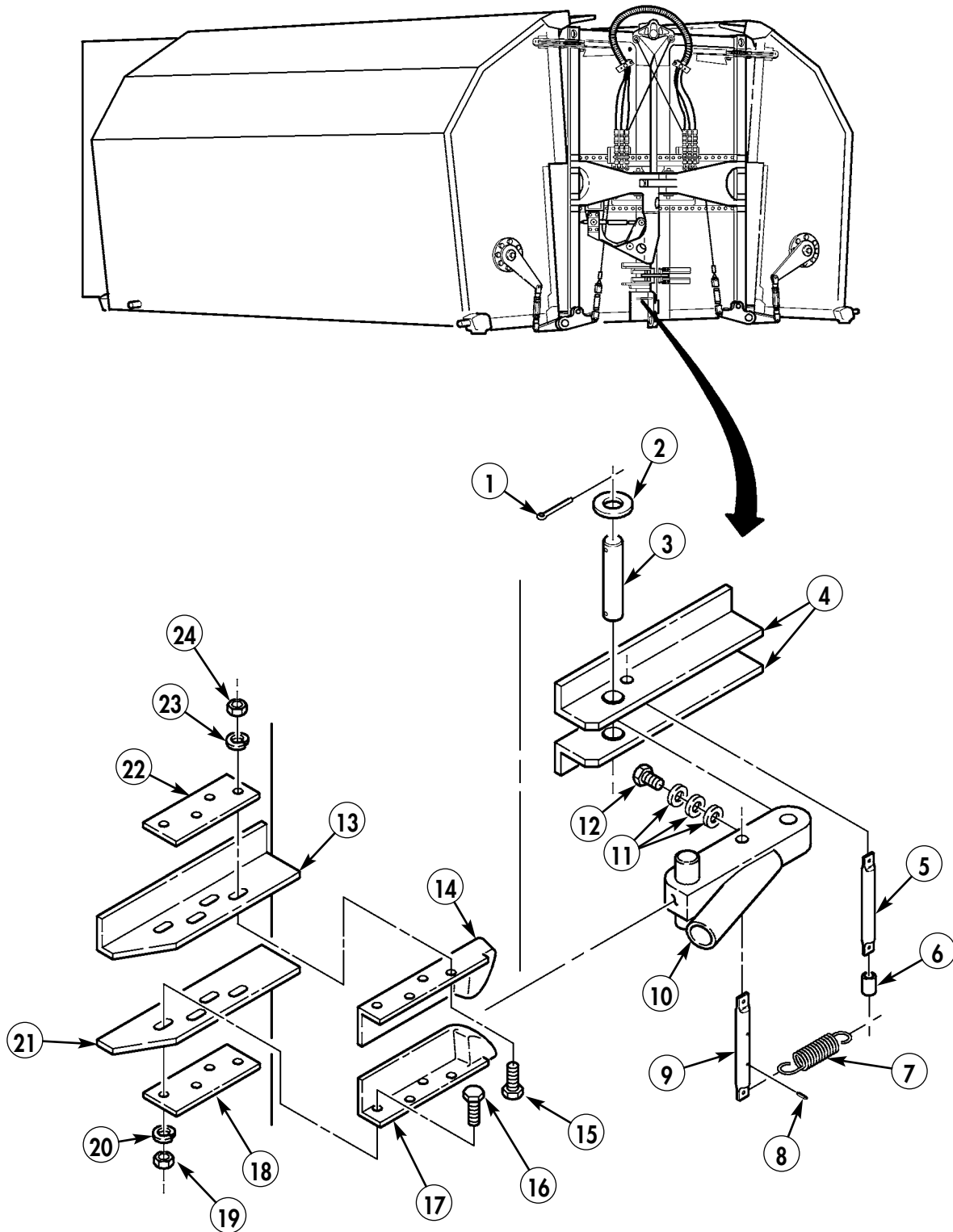
1. Position lever (10) in open position, if not removed.

NOTE

Scribe marks on strike catches and inner ponton mounting brackets for installation.

2. Remove four nuts (24), lockwashers (23), plate (22), four screws (15), and strike catch (14) from inner ponton mounting bracket (13). Discard lockwashers (23).
3. Remove four nuts (19), lockwashers (20), plate (18), four screws (16), and strike catch (17) from inner ponton mounting bracket (21). Discard lockwashers (20).

TRAVEL LATCH AND RECEPTACLE MAINTENANCE (Contd)



TRAVEL LATCH AND RECEPTACLE MAINTENANCE (Contd)

RECEPTACLE INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install strike catch (19) on inner ponton mounting bracket (23) with four screws (18), plate (20), four new lockwashers (22), and nuts (21).
2. Install strike catch (15) on inner ponton mounting bracket (14) with four screws (17), plate (24), four new lockwashers (25), and nuts (26).

TRAVEL LATCH INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

1. Install washers (12) and stopscrew (13) on lever (10).
2. Install pin (9) on lever (10) with two spring pins (8).
3. Install lever (10) on inner ponton mounting brackets (4) with pin (3), two washers (2), and new cotter pins (1).
4. Position pin (5) and two spacers (6) on inner ponton mounting bracket (4), and install springs (7) on pins (5) and (9).
5. Move lever (10) to closed position.

ADJUSTMENT

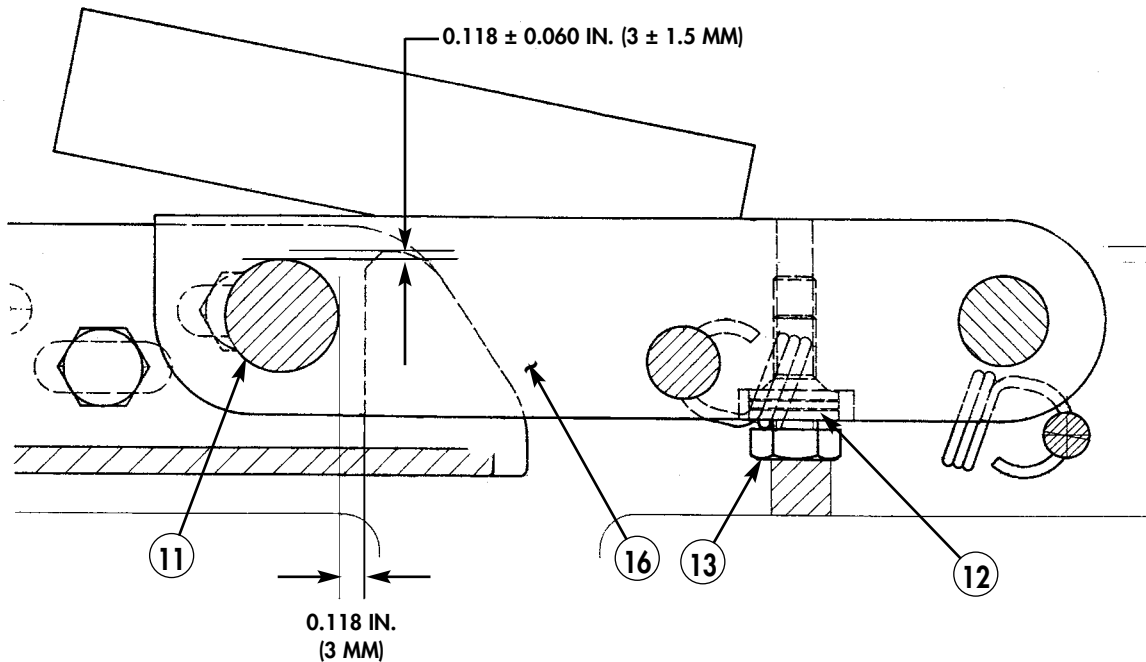
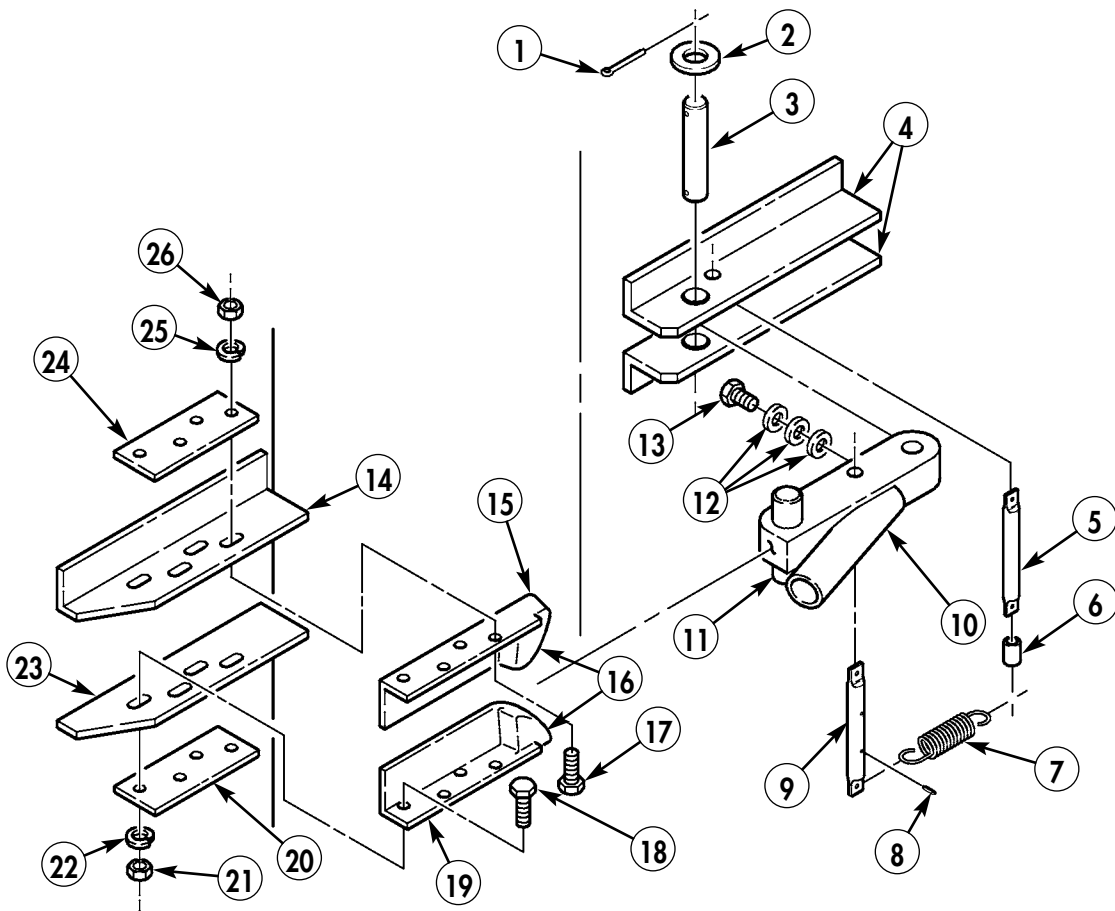
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Adjustment of the travel latch and receptacle is performed with bay on transporter and with ponton runners resting against guide rollers of transporter.

1. Close lever (10) and loosen nuts (21) and (26). Move upper and lower strike catches (15) and (19) until there is 0.118 in. (3 mm) clearance between dowel pin (11) on lever (10) and strikers (16) of strike catches (15) and (19).
2. Tighten eight nuts (21) and (26) 31-34 lb-ft (42-46 N•m).
3. Check clearance between pin (11) and strikers (16). Clearance should be 0.118 ± 0.060 in. (3 ± 1.5 mm). Adjust clearance by removing washers (12) to increase clearance or adding washers (12) to decrease clearance.

TRAVEL LATCH AND RECEPTACLE MAINTENANCE (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

UPPER COUPLING AND RECEPTACLE BLOCKS REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0057 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Bay removed from transporter and unfolded
(TM 5-5420-278-10).

Materials/Parts

Two cotter pins (WP 0099 00 IRB-R,
or WP 0123 00 IRB-I)

Unlike metal compound (Item 18, WP 0134 00)

UPPER COUPLING AND RECEPTACLE BLOCKS REPLACEMENT (Contd)

NOTE

Removal and installation of upper couplings and receptacle blocks on ramp or interior bays are performed the same way.

Removable insert blocks are provided on the bay-to-bay ends of inner pontoons only. Inner-to-inner ponton coupling locating recesses are welded in place and will not be removed at unit level maintenance.

REMOVAL

NOTE

Perform steps 1 through 3 to remove connector lever and bracket.
Perform steps 4 and 5 to remove receptacle blocks.

1. Remove spring (9) from pin (7) and lever (10).
2. Remove two screws (5) and bracket (11) from receptacle block (12).
3. Remove two cotter pins (6), washers (8), pin (7), and lever (10) from bracket (11). Discard cotter pins (6).

CAUTION

Do not overheat area around block or damage to aluminum may occur.

Receptacle blocks must be removed by driving them straight up and out of inner pontoons, or damage to equipment may result.

NOTE

Heat area around block to loosen sealing compound before removing block.

4. Remove three screws (3), screw (4), and receptacle block (12) from end of inner ponton (13).
5. Remove four screws (1) and receptacle block (2) from end of inner ponton (13).
6. Perform steps 1 through 5 to remove remaining connector levers and receptacle blocks.

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Perform steps 1 and 2 to install receptacle blocks, if removed.

Apply unlike metal compound to all screws and mating surfaces of receptacle blocks and inner ponton prior to installation.

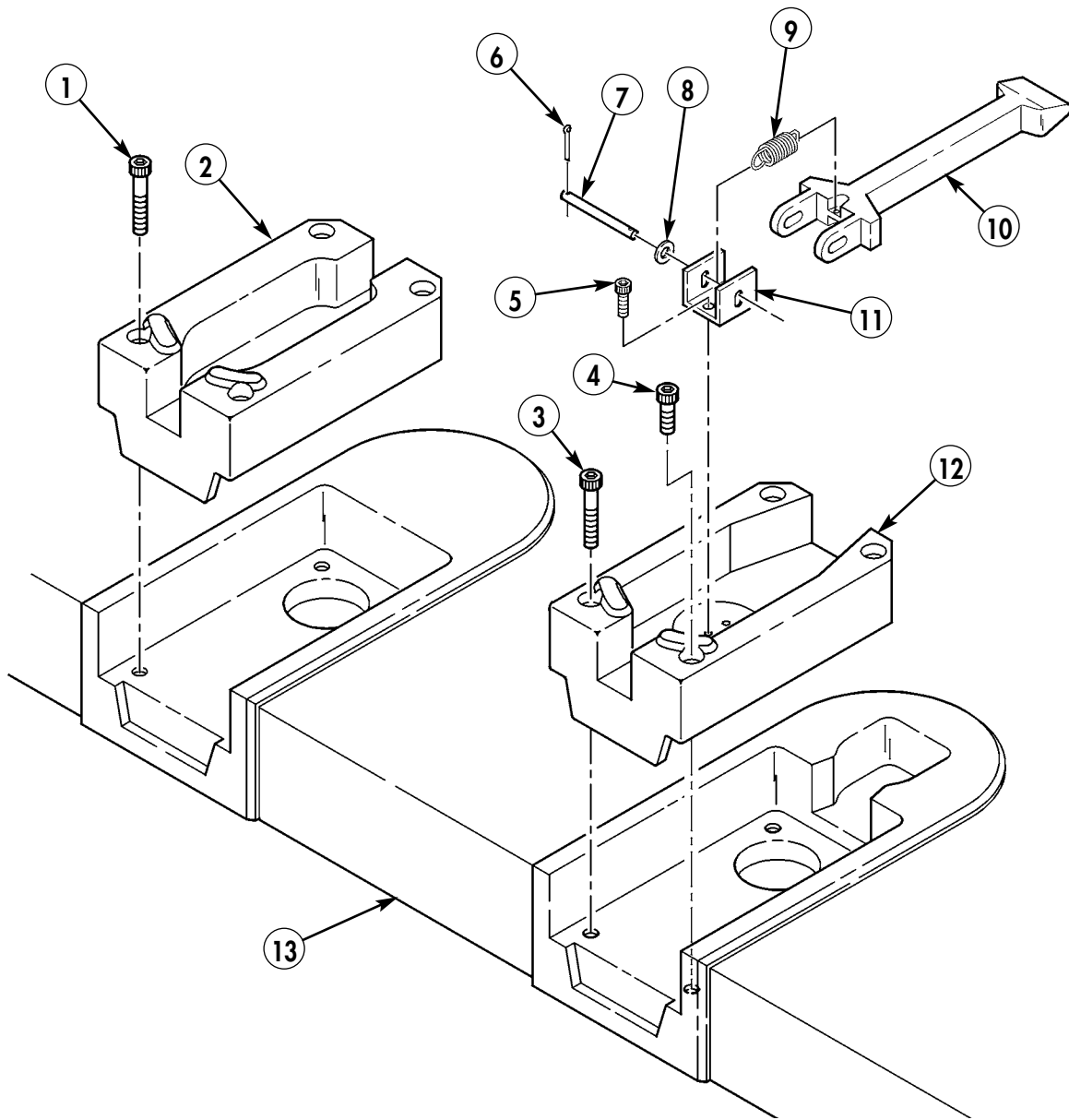
1. Install receptacle block (2) on end of inner ponton (13) with four screws (1). Tighten screws (1) 135 lb-ft (183 N•m).
2. Install receptacle block (12) on end of inner ponton (13) with three screws (3) and screw (4). Tighten screws (3) and (4) 135 lb-ft (183 N•m).

NOTE

Perform steps 3 through 5 to install coupling lever and bracket.

3. Install lever (10) on bracket (11) with pin (7), two washers (8), and new cotter pins (6).
4. Install bracket (11) on receptacle block (12) with two screws (5). Tighten screws (5) 84-102 lb-in. (9.5-11.5 N•m).
5. Install spring (9) on pin (7) and lever (10).
6. Perform steps 1 through 5 to install remaining receptacle blocks and connector levers.
7. Fold bay and install bay on transporter (TM 5-5420-278-10).

UPPER COUPLING AND RECEPTACLE BLOCKS REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

THREADED INSERT REPLACEMENT

REMOVAL, INSTALLATION

THIS WORK PACKAGE SUPERSEDES WP 0058 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Master metric thread insert repair kit
(Item 5, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Equipment Condition

Ramp bay or interior bay removed from transporter
(TM 5-5420-278-10).
Inner and outer pontoons separated (WP 0023 00
or WP 0042 00) as necessary.

Materials/Parts

Unlike metal compound (Item 18, WP 0134 00)

THREADED INSERT REPLACEMENT (Contd)

NOTE

Removal and installation of all threaded inserts on either ramp or interior bays are performed the same way.

REMOVAL

1. Using drill, remove damaged or stripped threaded insert (1).
2. Clean chips out of threaded insert hole.

INSTALLATION

1. Use drill bit that is specified for the size of threaded insert (3) to be installed.
2. Use tap to thread hole for insert (3).

NOTE

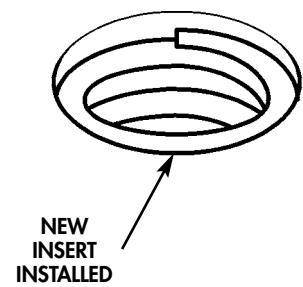
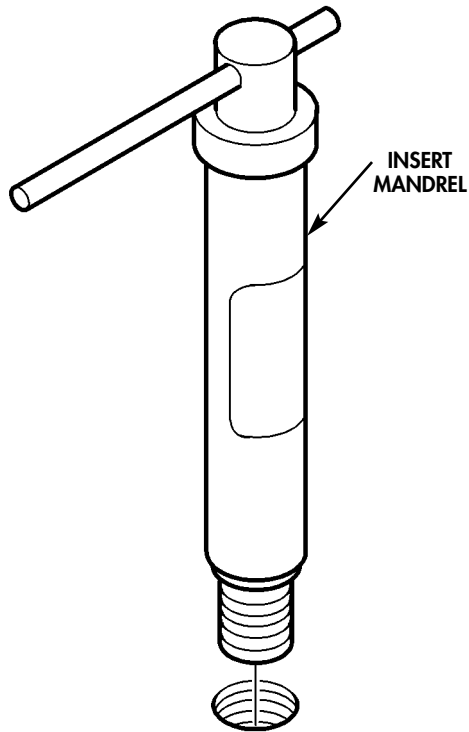
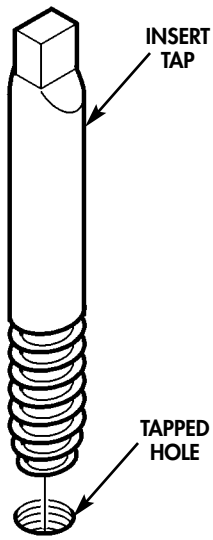
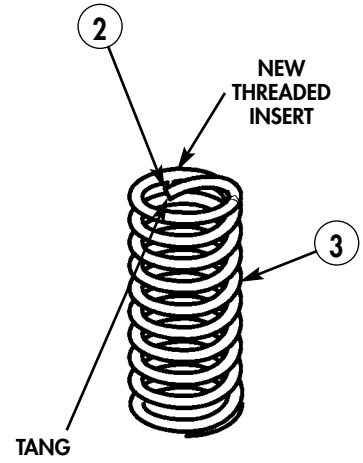
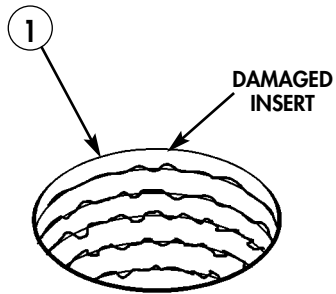
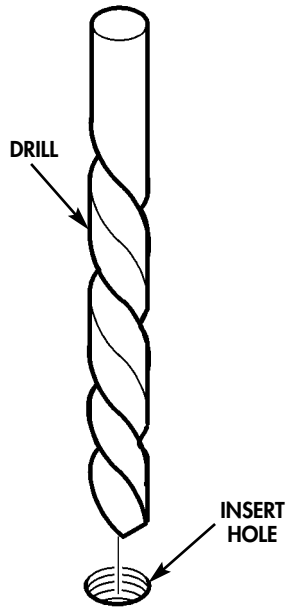
Fine threaded inserts must be prewound on fine thread insert mandrel to reduce insert diameter before installing insert into tapped hole.

Coarse thread inserts can be installed without prewinding insert using coarse thread insert mandrel.

Coat insert with unlike metal compound prior to installation.

3. Install threaded insert (3) on insert mandrel with tang (2) down.
4. Using insert mandrel, install threaded insert (3) in tapped hole.
5. Using insert mandrel, break off tang (2) on threaded insert (3) and remove insert mandrel from threaded insert (3) and tang from bottom of hole.
6. Connect inner and outer pontoons (WP 0023 00 or WP 0042 00), if necessary.
7. Install ramp bay or interior bay on transporter (TM 5-5420-278-10).

THREADED INSERT REPLACEMENT (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PONTON LEAK TEST

INSTALLATION, REMOVAL

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Ponton leak detector (Table 2, Item 1,
WP 0135 00)

References

WP 0068 00

Equipment Condition

Ramp bay or interior bay removed from transporter
(TM 5-5420-278-10).

Inner pontoons separated and outer pontoons unfolded
(WP 0023 00 or WP 0042 00) or bay unfolded in
water (TM 5-5420-278-10).

PONTON LEAK TEST (Contd)

NOTE

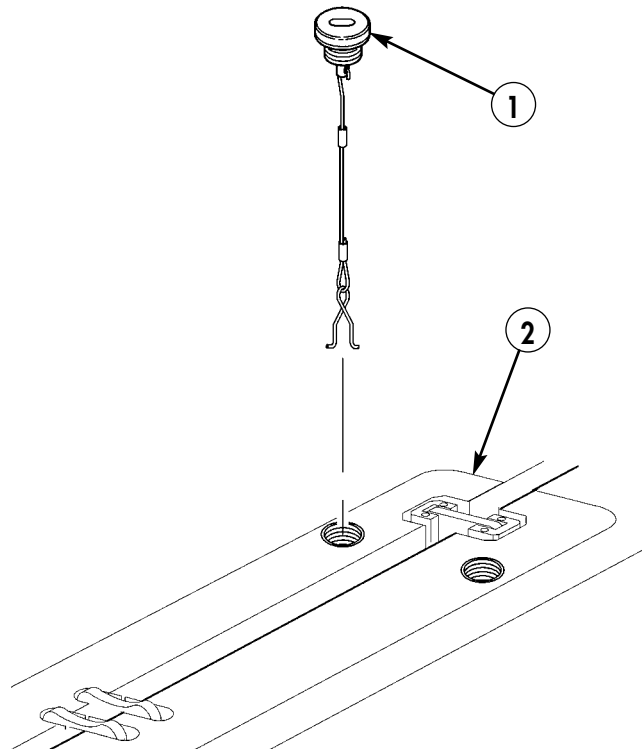
Transporter may be used to supply air pressure for leak test.

INSTALLATION

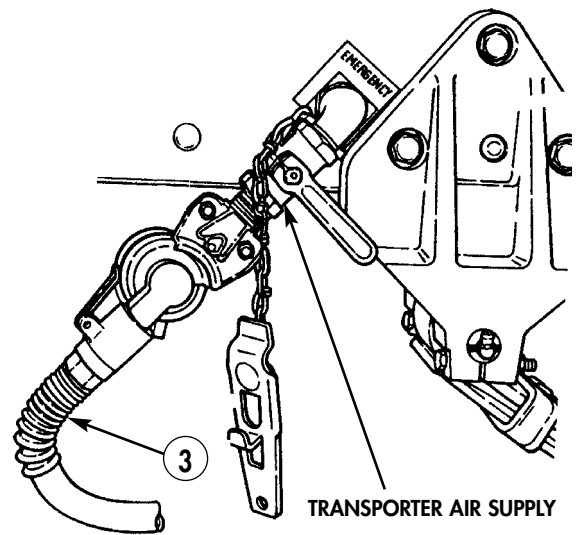
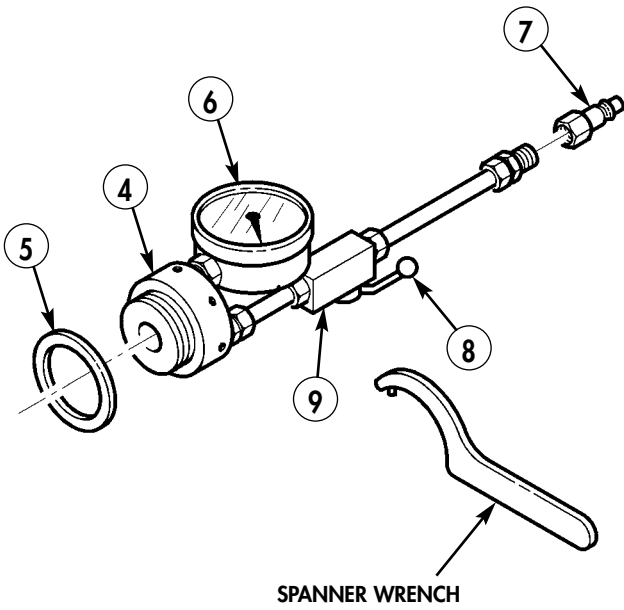
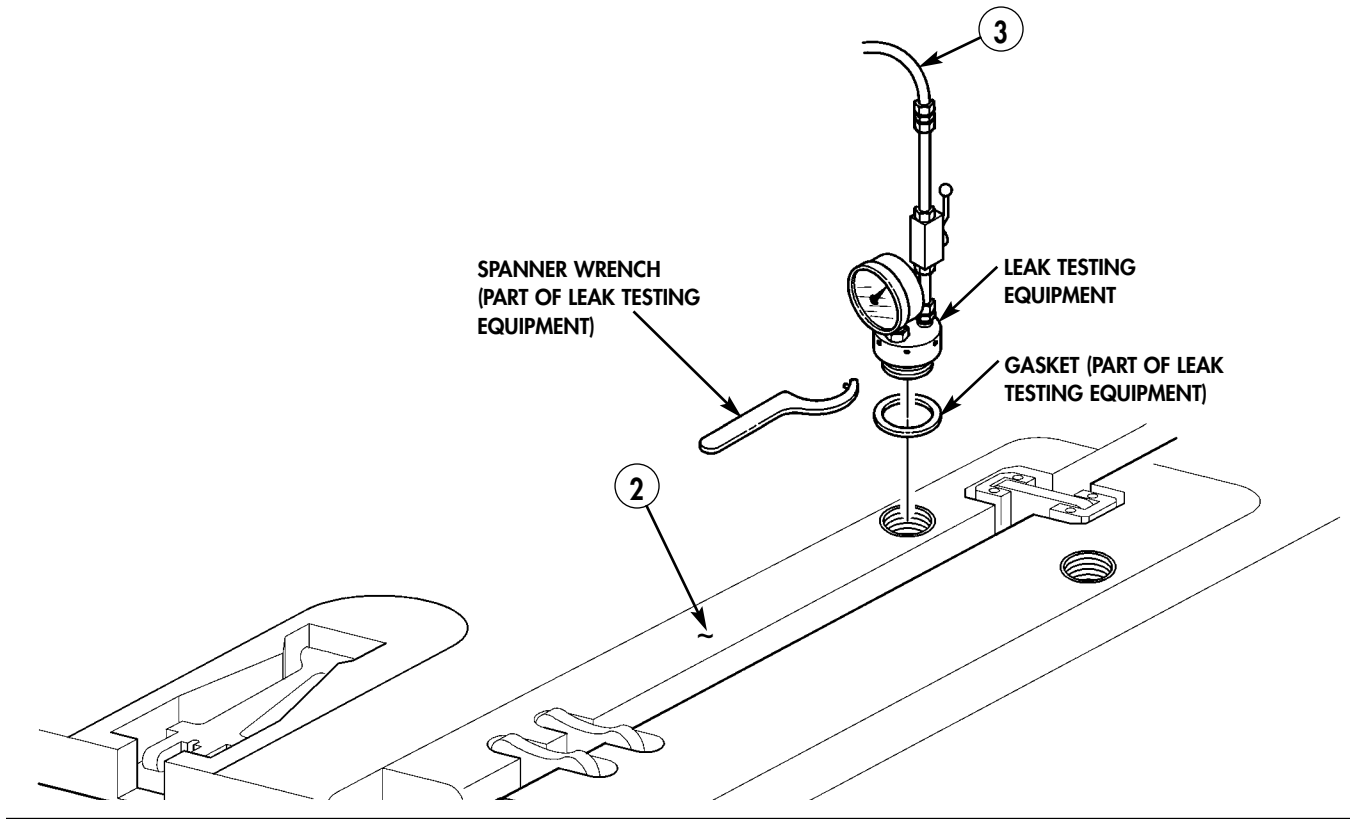
1. Remove bilge plug (1) from ponton (2) and install gasket (5) and ponton leak detector (4).
2. Place control lever (8) on shutoff valve (9) to closed position.
3. Connect air supply hose (3) to shutoff valve fitting (7).
4. Start engine on transporter and open emergency air supply to pressurize air supply hose (3).
5. Move control lever (8) to open position and fill ponton (2) with air until pressure gauge (6) reads $1.6 \pm .1$ psig (110 ± 7 mbar).
6. Move control lever (8) to closed position. Pressure gauge (6) must not drop within 5 minutes. If necessary, apply soapy solution to ponton surfaces and check for leaks.
7. Repair or replace gaskets, sealing compound, or cracks as necessary. Notify Direct Support Maintenance.

REMOVAL

1. Disconnect air supply hose (3) and move control lever (8) to open position on shutoff valve (9).
3. Remove ponton leak detector (4) and gasket (5) from ponton (2).
4. Install bilge plug (1) on ponton (2).
5. Fold outer pontoons and connect inner pontoons (WP 0023 00 or WP 0042 00) or fold bay by retrieving from water (TM 5-5420-278-10).



PONTON LEAK TEST (Contd)



END OF WORK PACKAGE

UNIT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

COUPLING DEVICE WHEELS AND PINS REPLACEMENT REMOVAL, INSTALLATION

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)

Materials/Parts

Two cotter pins (WP 0131 01)
Four cotter pins (WP 0131 01)

COUPLING DEVICE WHEELS AND PINS REPLACEMENT (Contd)

REMOVAL

1. Remove two cotter pins (2), washers (3), wheels (4), and washers (3) from wheel shaft (9). Discard cotter pins (2).
2. If damaged, remove wheel shaft (9) from lever assembly (11).

NOTE

Note position of handle assembly and pins for installation.

3. Remove two cotter pins (5), washers (10), pins (12), and handle assembly (1) from lever assembly (11). Discard cotter pins (5),
4. Remove two cotter pins (5), washers (6), pin (7), and hook (8) from lever assembly (11). Discard cotter pins (5).

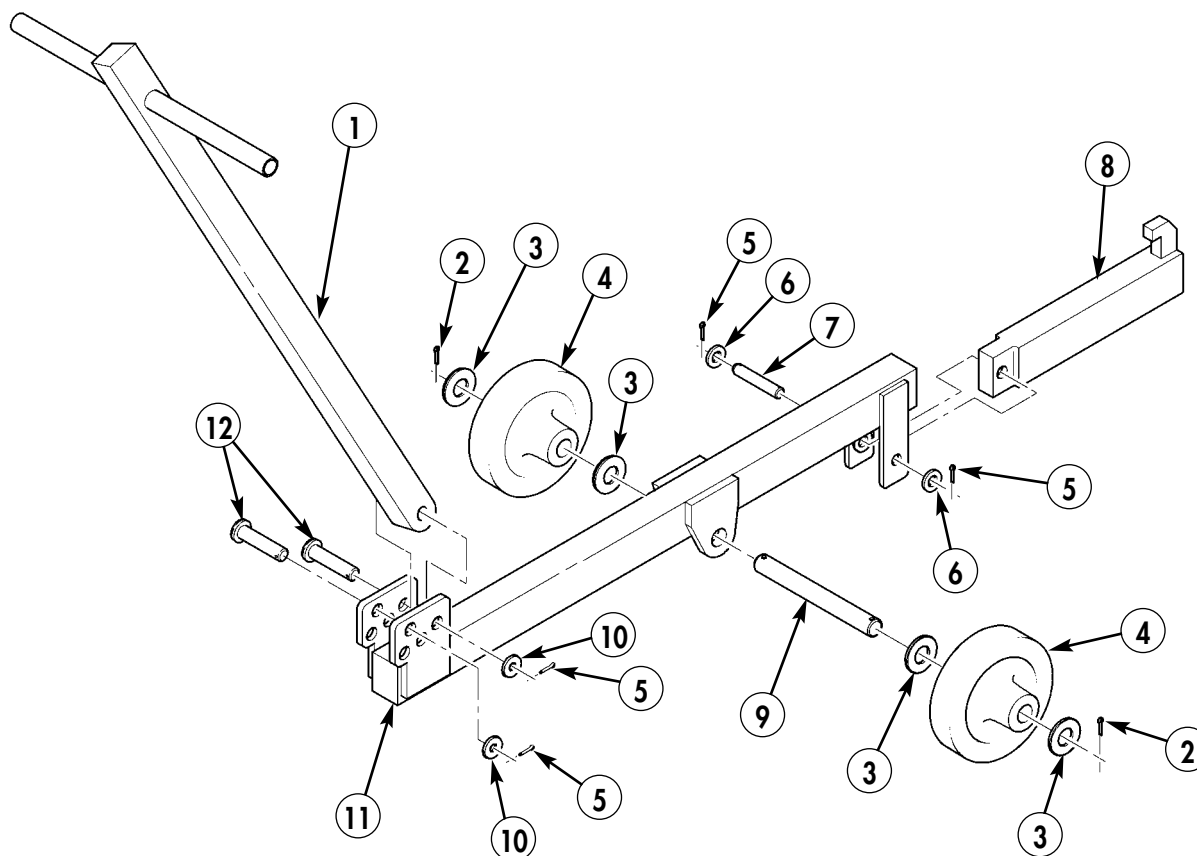
INSTALLATION

1. Install hook (8) on lever assembly (11) with pin (7), two washers (6), and new cotter pins (5).

NOTE

Install pins and handle assembly as noted at removal.

2. Install handle assembly (1) on lever assembly (11) with two pins (12), washers (10), and new cotter pins (5).
3. If removed, install wheel shaft (9) on lever assembly (11).
4. Install two washers (3) and wheels (4) on wheel shaft (9) with two washers (3) and new cotter pins (2).



END OF WORK PACKAGE

Change 1

0059 01-2

CHAPTER 4

DIRECT SUPPORT TROUBLESHOOTING FOR IMPROVED RIBBON BRIDGE (IRB)

Section I.	Introduction to Troubleshooting	WP 0060 00
Section II.	Direct Support Troubleshooting Procedures	WP 0062 00

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

Section I. INTRODUCTION TO TROUBLESHOOTING

WP Title

WP Sequence No.-Page No.

Introduction to Troubleshooting 0061 00-1

END OF WORK PACKAGE

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

INTRODUCTION TO TROUBLESHOOTING

GENERAL

a. This chapter provides the necessary troubleshooting procedures to diagnose mechanical and hydraulic malfunctions for the IRB ramp and interior bays.

b. The symptom index has its own work package number and is used to identify the malfunction and locate the troubleshooting procedure to diagnose the problem.

c. Each troubleshooting procedure lists a description of the malfunction followed by a step or sequence of steps to check the operation of a component. Then, in the order of probability, substeps instruct the user to determine if a condition exists through a check, inspection, or test, followed by the corrective action required to solve the malfunction.

d. Prior to performing any troubleshooting procedure, the following recommendations should be observed:

(1) Check the Equipment Inspection and Maintenance Worksheet, DA Form 2404, DA Form 5988-E, and Maintenance Request form, DA Form 5504, to find out why the equipment has been deadlined. Note the operator's and unit maintenance written descriptions of the problem and, whenever possible, ask the operator and unit maintenance personnel; this can save time and effort in diagnosing the malfunction.

(2) It is best not to assume the lower lever maintenance diagnosis is correct, even if it sounds accurate. Always perform the appropriate troubleshooting procedure(s) to verify the cause of the problem. Performing a corrective action without proof of a fault wastes time and increases the maintainability of the equipment.

(3) Always first isolate the system where the malfunction occurs, then locate the component and perform the corrective action in the order listed.

(4) Use approved mechanical and fluid repair practices provided in technical manuals, field manuals, and technical bulletins listed in References (WP 0082 00) of this manual.

(5) Use the approved special tools and test equipment to determine the known parameters for isolating a fault.

END OF WORK PACKAGE

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

Section II. DIRECT SUPPORT TROUBLESHOOTING PROCEDURES TABLE OF CONTENTS

WP Title	WP Sequence No.-Page No.
Mechanical Troubleshooting Symptom Index	0063 00-1
Mechanical Troubleshooting	0064 00-1
Pump System Troubleshooting Symptom Index	0065 00-1
Pump System Troubleshooting	0066 00-1

END OF WORK PACKAGE

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)
 RAMP BAY M16
 NSN 5420-01-470-5825 P/N 12478918;
 INTERIOR BAY M17
 NSN 5420-01-470-5824 P/N 12478919.

MECHANICAL TROUBLESHOOTING SYMPTOM INDEX

MALFUNCTION NO.	MALFUNCTION	TROUBLESHOOTING WP-PAGE
1.	Foldlock will not engage or hold when engaged	0064 00-1
2.	Inner or outer ponton leaking	0064 00-1
3.	Lower lock drive will not engage	0064 00-1
4.	Upper coupling will not engage in receptacle block.	0064 00-1
5.	Ramp or interior bay trunnions damaged	0064 00-2

END OF WORK PACKAGE

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

MECHANICAL TROUBLESHOOTING

NOTE

Refer to the general instructions in Introduction to Troubleshooting, WP 0061 00, prior to performing mechanical troubleshooting.

Direct Support Mechanical Troubleshooting

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

1. FOLDLOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED

Check foldlock catch on outer ponton for excessive wear or damage.

Repair or replace catch if excessively worn or damaged.

END OF TESTING

2. INNER OR OUTER PONTON LEAKING

Check ponton for structural damage such as cracks, broken welds, or holes.

a. Repair visible structural damage by welding; refer to TC 9-237, Welding Theory and Application.

b. After structural damage is repaired, perform ponton leak test (WP 0059 00).

END OF TESTING

3. LOWER LOCK-DRIVE WILL NOT ENGAGE

Check for worn or damaged connecting eyes on inner ponton main lower coupling (interior bay only) or yoke (ramp bay only).

If worn or damaged, repair by welding; refer to TC 9-237, Welding Theory and Application, or replace lower main coupling (WP 0048 00) or yoke (WP 0030 00).

END OF TESTING

4. UPPER COUPLING WILL NOT ENGAGE IN RECEPTACLE BLOCK

Check for heavily worn or damaged transverse receptacle block.

Notify (EWK) field service.

END OF TESTING

*Direct Support Mechanical Troubleshooting***MALFUNCTION****TEST OR INSPECTION****CORRECTIVE ACTION****5. RAMP OR INTERIOR BAY TRUNNIONS DAMAGED**

Check trunnion for excessive wear, damage, or if bent.

Repair or replace trunnion if worn, bent, or damaged by welding; refer to TC 9-237, Welding Theory and Application, and (WP 0069 00).

END OF TESTING

END OF WORK PACKAGE

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)
 RAMP BAY M16
 NSN 5420-01-470-5825 P/N 12478918;
 INTERIOR BAY M17
 NSN 5420-01-470-5824 P/N 12478919.

PUMP SYSTEM TROUBLESHOOTING SYMPTOM INDEX

MALFUNCTION NO.	MALFUNCTION	TROUBLESHOOTING WP-PAGE
1.	Pump system will not raise bay (ramp bay only)	0066 00-1
2.	Pump system will not hold bay in raised position (ramp bay only)	0066 00-1

END OF WORK PACKAGE

DIRECT SUPPORT TROUBLESHOOTING

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PUMP SYSTEM TROUBLESHOOTING

THIS WORK PACKAGE SUPERSEDES WP 0066 00, DATED 8 APRIL 2003

NOTE

Refer to the general instructions in Introduction to Troubleshooting, WP 0061 00, prior to performing pump system troubleshooting.

Direct Support Pump System Troubleshooting

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

1. PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY)

Step 1. Check cylinder for internal leak.

Repair cylinder if leaking (WP 0072 00).

Step 2. Check pump for internal leak.

Repair pump if leaking (WP 0071 00).

Step 3. Check pump control valves for leaks.

Replace pump control valves if leaking (WP 0071 00).

Step 4. Check cylinder valve block for leaks.

Replace cylinder valve if leaking (WP 0072 00).

END OF TESTING

2. PUMP SYSTEM WILL NOT HOLD BAY IN RAISED POSITION (RAMP BAY ONLY)

Step 1. Check pump control valves for leaks.

Replace pump control valves if leaking (WP 0071 00).

Step 2. Check cylinder valve block for leaks.

Replace cylinder block if leaking (WP 0072 00).

Step 3. Check cylinder for internal leak.

Repair cylinder if leaking (WP 0072 00).

END OF TESTING

END OF WORK PACKAGE

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS FOR IMPROVED RIBBON BRIDGE (IRB)

Ramp Bay and Interior Bay Maintenance WP 0067 00

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

RAMP BAY AND INTERIOR BAY MAINTENANCE

TABLE OF CONTENTS

WP Title	WP Sequence No.-Page No.
Ramp Bay and Interior Bay Crack Repair	0068 00-1
Ramp Bay and Interior Bay Trunion Repair	0069 00-1

END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

RAMP BAY AND INTERIOR BAY CRACK REPAIR

PREPARATION, WELDING

THIS WORK PACKAGE SUPERSEDES WP 0068 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Ponton leak detector (Table 2, Item 1,
WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials

Aluminum plate stock
(Item 23, WP 0134 00)

References

TC 9-237
WP 0059 00

Equipment Condition

Ramp bay or interior bay removed from transporter
(TM 5-5420-278-10).
Inner and outer pontoons separated (WP 0023 00
or WP 0042 00), if necessary, or unfolded
(TM 5-5420-278-10).

RAMP BAY AND INTERIOR BAY CRACK REPAIR (Contd)

NOTE

If there are several cracks or holes within a damaged area, repair must be performed by removing damaged area and welding in a new sheet aluminum plate, P/N AMS-QQ-A-25014, NSN 9535-00-003-6946.

IRB bays are made from corus aluminum ABKANTGUETE 6061-T651 749572.

PREPARATION

1. Position ponton (1) so crack (2) is face-up for welding.
2. Grind area and find ends of crack (2).
3. Drill a hole (4) at ends of crack (2) in order to prevent enlargement of crack (2). Use a drill with diameter corresponding to half the plate thickness.

NOTE

If crack is open 0.098 in. (2.5 mm) or more, and additional permanent weld pool retainer is required. For this retainer, use a metal strip 1 in. (25.4 mm) or more in width and with a milled groove.

4. Mill or grind a V-seam along crack (2) with a groove angle of 70 degrees.
5. Clean area to be welded with a stainless steel wire brush.

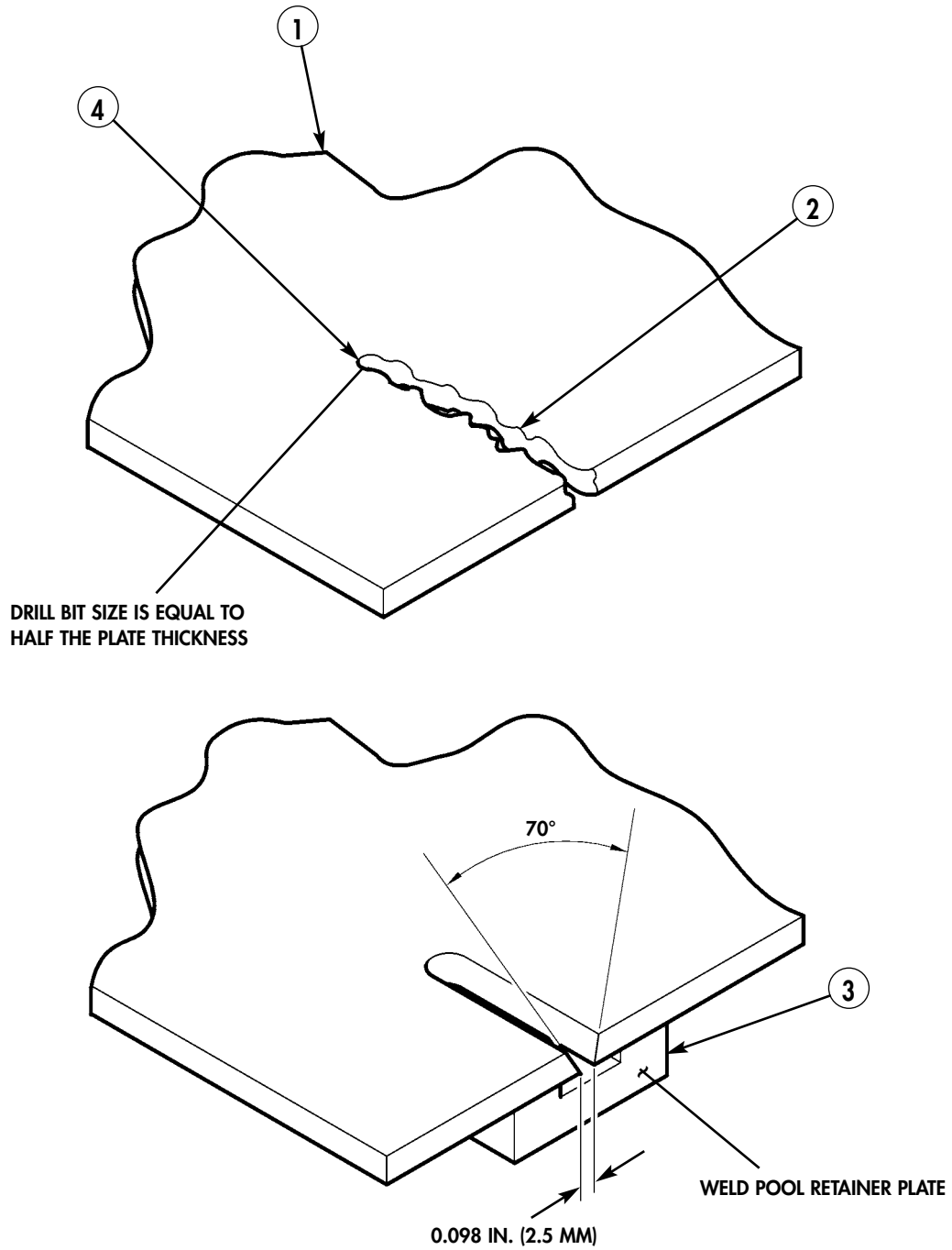
WELDING

NOTE

If temperature is below 59°F (15°C) preheat welding area to a maximum of 265°F (130°C) before welding.

1. If necessary, insert and tack weld retainer (3) (refer to TC 9-237).
2. Finish weld area to be welded root, filler, and final pass welds (refer to TC 9-237).
3. Perform ponton leak test (WP 0059 00). Reweld if necessary.
4. Clean, treat, and paint area per MIL-T-704 TYPE B.
5. Remove leak detector kit (WP 0059 00).
6. Connect outer ponton and inner ponton (WP 0023 00 or WP 0042 00), if separated.
7. Install ramp bay or interior bay on transporter (TM 5-542-278-10).

RAMP BAY AND INTERIOR BAY CRACK REPAIR (Contd)



END OF WORK PACKAGE

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

RAMP BAY AND INTERIOR BAY TRUNNION REPAIR PREPARATION, WELDING

THIS WORK PACKAGE SUPERSEDES WP 0069 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

References

TM 9-237
WP 0055 00
WP 0094 00

Equipment Condition

Ramp bay or interior bay removed from transporter
(TM 5-5420-278-10).
Remove wear cap (WP 0055 00) if equipped.

RAMP BAY AND INTERIOR BAY TRUNNION REPAIR (Contd)**WARNING**

If trunnion is bent or severely worn, it must be completely replaced. Failure to comply may result in injury to personnel.

NOTE

Build-up welding on trunnion is performed if wear does not exceed 1.181 in. (30 mm). The abrasion or wear may display a variety of inclinations or crack-like features.

IRB bays are made from corus aluminum ABKANTGUETE 6061-T651 749572.

PREPARATION

1. Grind off to beyond ends of cracks on trunnion (1).
2. Clean welding area with a stainless steel wire brush.

WELDING**NOTE**

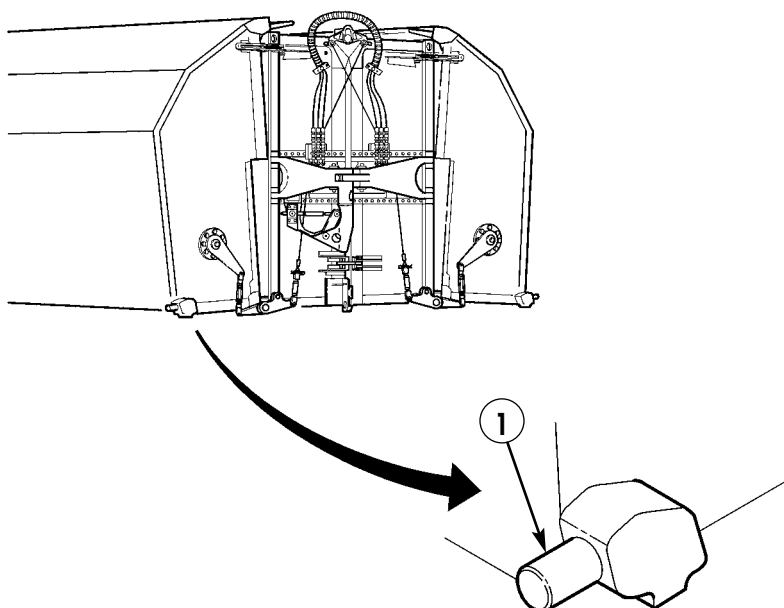
If temperature is below 59°F (15°C), preheat welding area to a maximum of 265°F (130°C) before welding.

1. Apply circular welding beads (refer to TC 9-237) from inside towards the outside and position welding beads closely. Depending upon the required build-up thickness, several circular welding beads must be applied.
2. After welding trunnion (1), work diameter and length of trunnion (1) to dimensions provided in illustrations. Chamfer end of trunnion (1).
3. Clean, treat, and paint area per MIL-T-704 TYPE B.

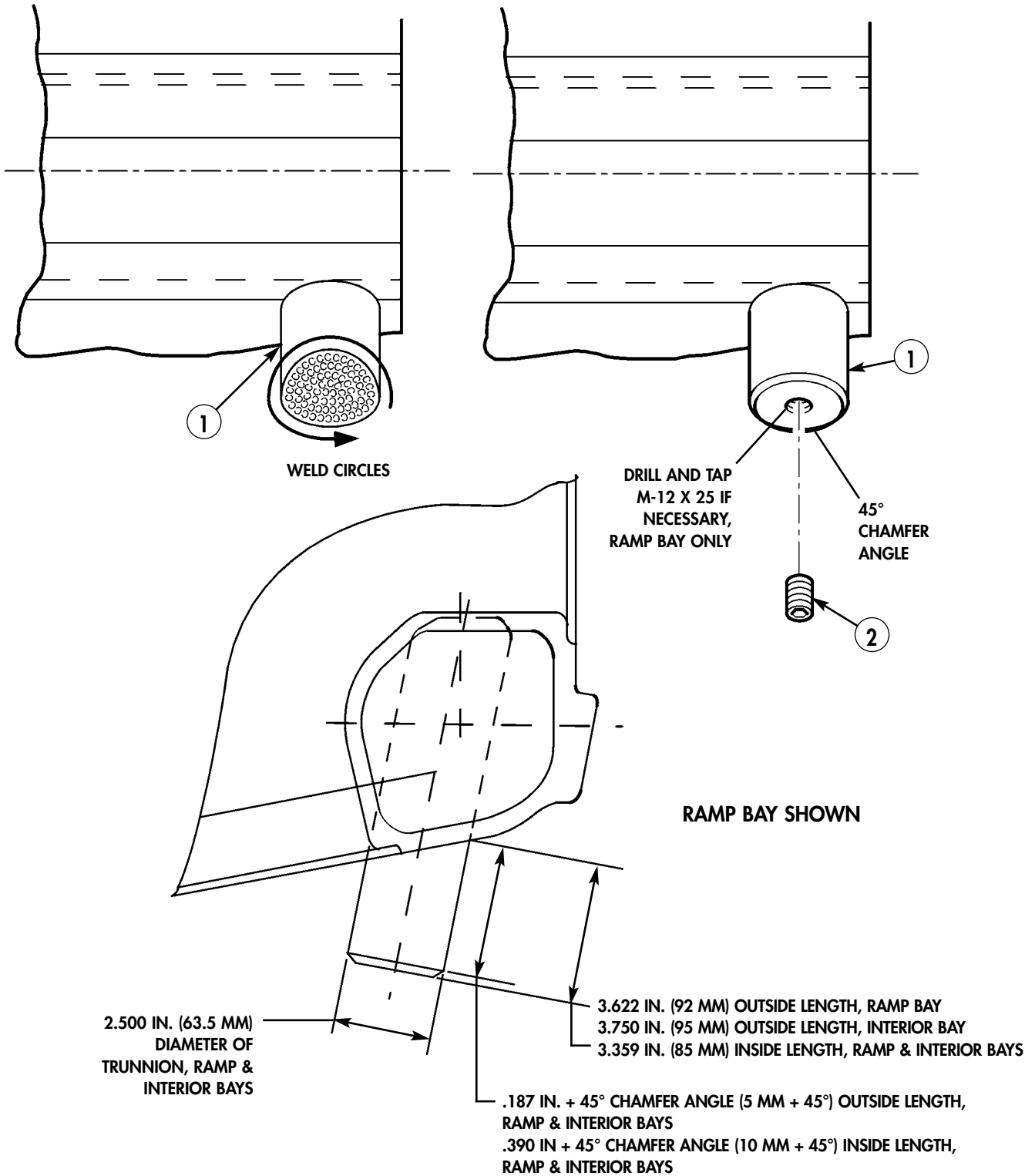
NOTE

Perform steps 4 and 5 on ramp bay trunnions equipped with wear caps where drilling and tapping a new mounting hole is required.

4. Mark, drill, and tap a M-12 x 25 threaded hole in center of trunnion (1). Install new threaded insert (2) (refer to WP 0058 00).
5. Install wear cap (WP 0055 00) (ramp bay only).
6. Install ramp bay or interior bay on transporter (TM 5-5420-278-10).



RAMP BAY AND INTERIOR BAY TRUNNION REPAIR (Contd)



END OF WORK PACKAGE

CHAPTER 6

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS FOR IMPROVED RIBBON BRIDGE (IRB)

General Support Maintenance WP 0070 00

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

GENERAL SUPPORT MAINTENANCE

TABLE OF CONTENTS

WP Title	WP Sequence No.-Page No.
Pump Maintenance	0071 00-1
Cylinder Maintenance	0072 00-1

END OF WORK PACKAGE

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

PUMP MAINTENANCE

DISASSEMBLY, CLEANING AND INSPECTION, ASSEMBLY

THIS WORK PACKAGE SUPERSEDES WP 0071 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Flat spanner filter wrench (Table 2, Item 2,
WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Eight lockwashers (WP 0108 00)
Four lockwashers (WP 0108 00)
Two cotter pins (WP 0108 00)
Scraper ring (WP 0108 00)
Four drivescrews (WP 0108 00)
Two lockwashers (WP 0108 00)
Three O-rings (WP 0108 00)
O-ring (WP 0108 00)
Two O-rings (WP 0108 00)
O-ring (WP 0108 00)
O-ring (WP 0108 00)
Gasket (WP 0108 00)
O-ring (WP 0108 00)
Two gaskets (WP 0108 00)
Four gaskets (WP 0108 00)
Cleaning solvent (Skysol-100)
(Item 6, WP 0134 00)
Lint-free rag (Item 7, WP 0134 00)
Teflon pipe sealant (Item 15, WP 0134 00)
Fluid (Item 17, WP 0134 00)
Sealing compound (Item 16, WP 0134 00)

References

WP 0001 00
WP 0032 00
WP 0038 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Ramp bay unfolded (TM 5-5420-278-10) or inner
pontoon separated (WP 0023 00).
Pump removed (WP 0035 00).

PUMP MAINTENANCE (Contd)

NOTE

Disassembly and assembly of pumps are the same. Only one pump is shown.

DISASSEMBLY

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. Refer to Army POL (WP 0001 00) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in injury or death.

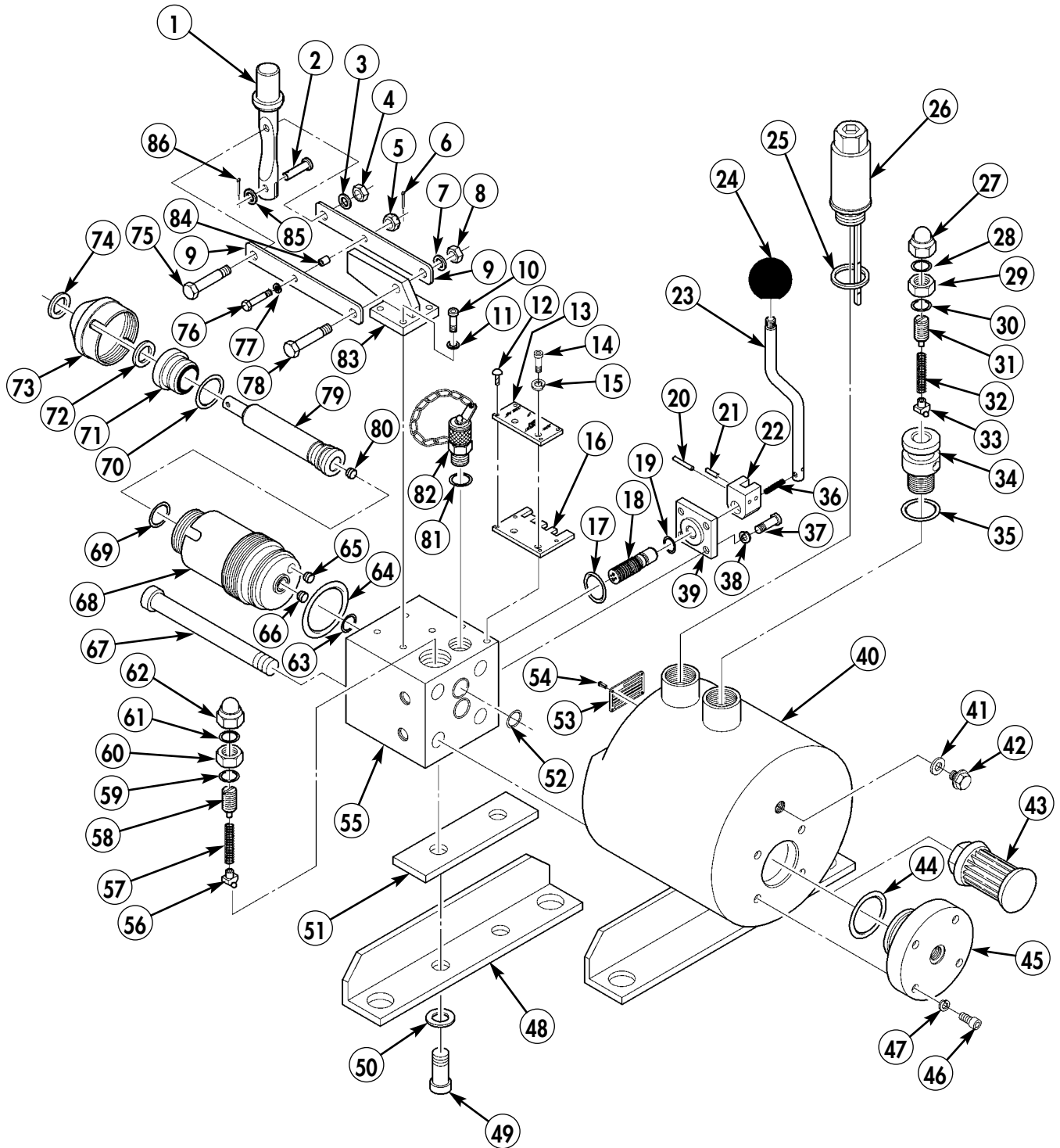
NOTE

Have container ready to catch fluid.

1. Remove cotter pin (86), washer (85), and pin (2) from pump lever (1) and piston rod (79). Discard cotter pin (85).
2. Remove nut (4), washer (3), screw (75), and pump lever (1) from piston rod (79) and between two straps (9).
3. Remove cotter pin (6), nut (5), screw (76), washer (77), and spacer (84) from between two straps (9). Discard cotter pin (6).
4. Remove nut (8), washer (7), screw (78), and two straps (9) from lever support (83).
5. Remove four screws (10), lockwashers (11), and lever support (83) from valve block (55). Discard lockwashers (11).
6. Remove knob (24) from control lever (23).
7. Remove spring pin (21), control lever (23), and spring (36) from control block (22).
8. Remove spring pin (20) and control block (22) from spool valve assembly (18).
9. Remove four screws (37), lockwashers (38), spool valve cover (39), O-ring (19), spool valve assembly (18), and O-ring (17) from valve block (55). Discard lockwashers (38) and O-rings (17) and (19).
10. Remove two screws (14), lockwashers (15), and plate (16) from bottom of valve block (55). If necessary, remove four drivescrews (12) and instruction plate. Discard lockwashers (15) and drivescrews (12) if removed.
11. Remove test connector (12) and O-ring (13) from valve block (55). Discard O-ring (13).
12. Remove cap nut (62), gasket (61), nut (60), gasket (59), screw (58), pressure spring (57), and case valve (56) from valve block (55). Discard gaskets (59) and (61).
13. Remove threaded ring (73) from piston housing (68).
14. Remove scraper ring (74) from threaded ring (73). Discard scraper ring (74).
15. Remove O-ring (72), sleeve (71), O-ring (70), piston rod (79), and O-ring (69) from piston housing (68). Discard O-rings (70), (69), and (72).
16. Remove check valve (80) from end of piston rod (79).
17. Using spanner wrench, remove piston housing (68) and O-rings (63) and (64) from valve block (55). Discard O-rings (63) and (64).
18. Remove check valves (65) and (66) from piston housing (68).
19. Remove two screws (49), washers (50), angle (48), and plate (51) from bottom of valve block (55).
20. Remove four screws (67), valve block (55), and two O-rings (52) from pump reservoir (40). Discard O-rings (52).
21. Remove fill plug with dipstick (26) and gasket (25) from pump reservoir (40). Discard gasket (25), if damaged.
22. Remove cap nut (27), gasket (28), nut (29), gasket (30), screw (31), pressure spring (32), and case valve (33) from valve housing (34). Discard gaskets (28) and (30).
23. Remove valve housing (34) and gasket (35) from pump reservoir (40). Discard gasket (35).
24. Remove screw plug (42) and gasket (41) from pump reservoir (40). Discard gasket (44).
25. Remove four screws (46), lockwashers (47), access cover (45), and O-ring (44) from pump reservoir (40). Discard lockwashers (47) and O-ring (44).

PUMP MAINTENANCE (Contd)

26. Using filter wrench, remove filter element (43) from pump reservoir (40).
27. If necessary, remove four drivescrews (54) and name plate (53) from pump reservoir (40). Discard drivescrews (54).



PUMP MAINTENANCE (Contd)

CLEANING AND INSPECTION

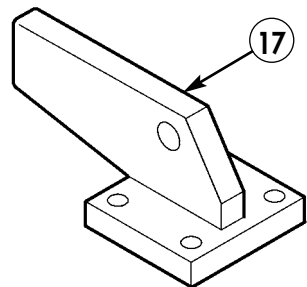
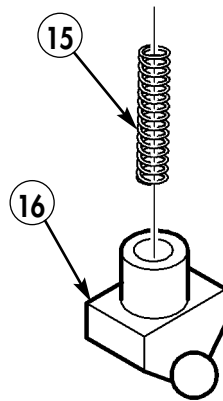
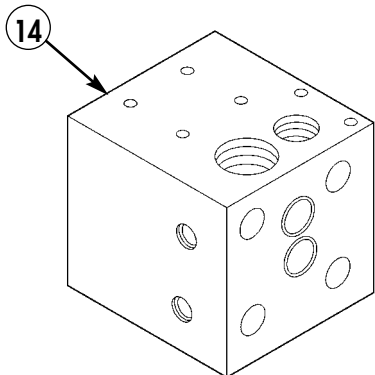
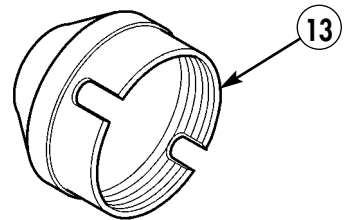
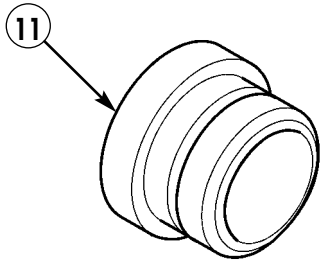
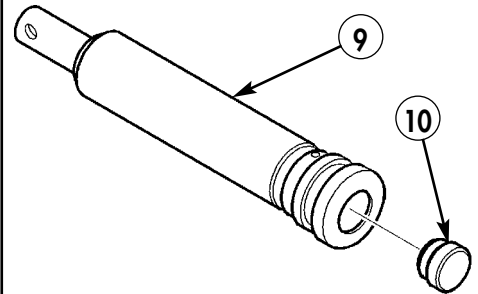
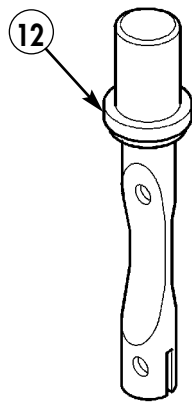
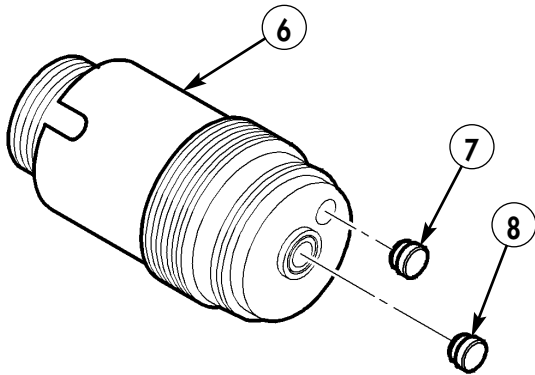
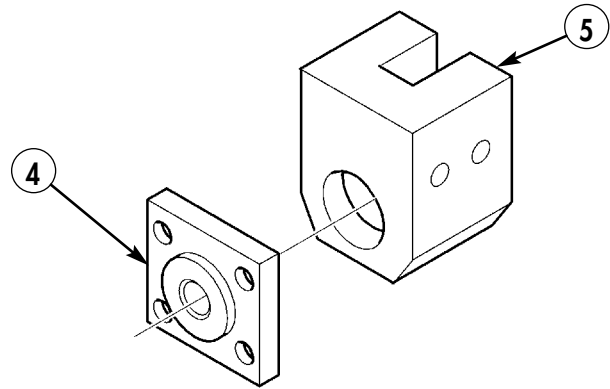
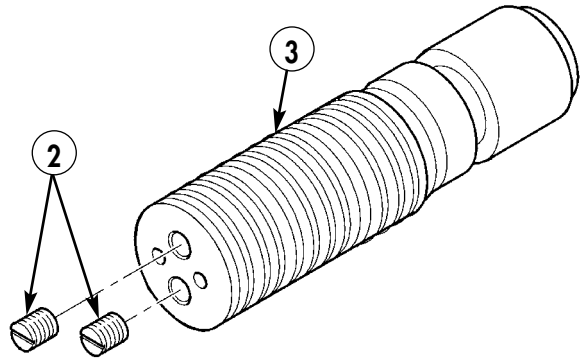
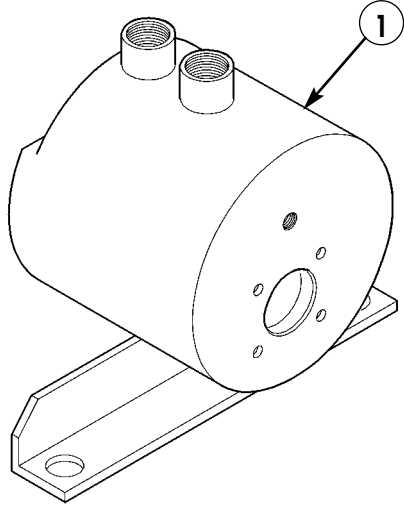
WARNING

Skysol-100 mixture is combustible. Use mechanical ventilation whenever product is used in a confined space, is heated above ambient temperatures, or is agitated. DO NOT use or store near heat, sparks, flame, or other ignition sources. Keep container sealed when not in use.

Contact with Skysol-100 may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least fifteen (15) minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity.

1. Clean all pump parts with Skysol-100 and dry with lint-free cloth before inspection.
2. Inspect pump reservoir (1) for cracks or damaged filter tube threads.
3. Inspect spool valve (3) for nicks, scratches, cracks, scoring, or excessive wear.
4. Apply thread lock adhesive to threads of plugs (2) and install plugs (2) on spool valve assembly (3), if removed for cleaning.
5. Inspect spool valve cover (4) for nicks, scratches, cracks, scoring, or excessive wear.
6. Inspect control block (5) for cracks or excessive wear.
7. Inspect piston housing (6) for nicks, scratches, cracks, scoring, damaged threads, or excessive wear.
8. Inspect check valves (7), (8), and (10) for cracks or damaged seats.
9. Inspect piston rod (9) for nicks, scratches, cracks, scoring, or excessive wear.
10. Inspect sleeve (11) for cracks, scoring, or excessive wear.
11. Inspect pump lever (12) for cracks or excessive wear in pin holes.
12. Inspect threaded ring (13) for damaged threads.
13. Inspect valve block (14) for nicks, scratches, cracks, scoring, excessive wear, or damaged threads.
14. Inspect three pressure springs (15) for cracked or broken coils.
15. Inspect two case valves (16) for worn or cracked seats.
16. Inspect lever support (17) for cracks.
17. Inspect threaded hardware for damaged or worn threads.
18. Replace all worn or damaged parts as necessary.

PUMP MAINTENANCE (Contd)



PUMP MAINTENANCE (Contd)

ASSEMBLY

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

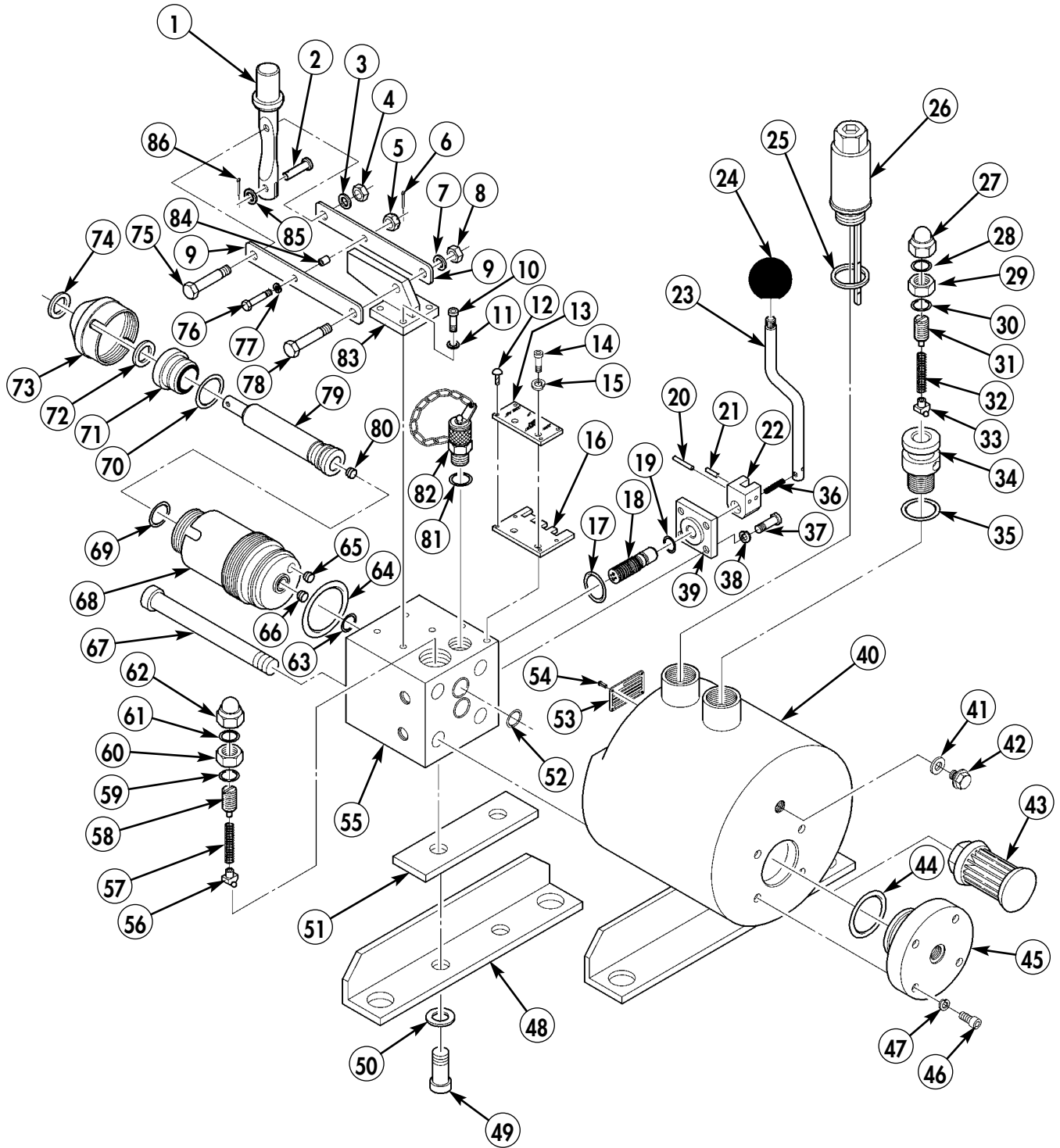
Apply fluid to piston housing, piston rod, valves, valve block bores, spool valve, cap valves, seals, and O-rings at assembly.

Apply teflon pipe sealant to all male pipe threads of fittings at assembly.

1. If removed, install name plate (53) on pump reservoir (40) with four new drivescrews (54).
2. Install filter element (43) in pump reservoir (40) and tighten with filter wrench.
3. Install access cover (45) on pump reservoir (40) with new O-ring (44), four new lockwashers (47), and screws (46).
4. Install new gasket (41) and screw plug (42) on pump reservoir (40).
5. Install new gasket (35) and valve housing (34) on pump reservoir (40).
6. Install case valve (33), pressure spring (32), and screw (31) on valve housing (34) and turn screw (31) in halfway on valve housing (34).
7. Install new gasket (30) and nut (29) on screw (31) and tighten nut (29).
8. Install new gasket (28) and cap nut (27) on screw (31).
9. Install new gasket (25), if discarded, and fill plug with dipstick (26) on pump reservoir (40).
10. Install valve block (55) on pump reservoir (40) with two new O-rings (52) and four screws (67). Tighten screws (67) 25-lb ft (34-N·m).
11. Install plate (51) and angle (48) on bottom of valve block (55) with two washers (50) and screws (49).
12. Install check valves (65) and (66) on piston housing (68).
13. Place new O-rings (63) and (64) on piston housing (68) and install piston housing (68) on valve block (55) with spanner wrench.
14. Install check valve (80) and new O-ring (69) on piston rod (79).
15. Install new scraper ring (74) on threaded ring (73).
16. Install piston rod (79) in piston housing (68) with new O-ring (70), sleeve (71), new O-ring (72), and threaded ring (73). Tighten threaded ring (73) on piston housing (68).
17. Install case valve (56), pressure spring (57), and screw (58) on valve block (55) and turn screw (58) in halfway on valve block (55).
18. Install new gasket (59) and nut (60) on screw (58) and tighten nut (60).
19. Install new gasket (61) and cap nut (62) on screw (58).
20. Install new O-ring (13) and test connector (12) on valve block (55).
21. If removed, install instruction plate (13) on plate with four new drivescrews (12) and install plate (16) on valve block (55) with two new lockwashers (15) and screws (14).
22. Install new O-ring (19) on spool valve assembly (18) and slide spool valve (18) in valve block (55).
23. Install new O-ring (17) and spool valve cover (39) on valve block (55) with four new lockwashers (38) and screws (37).
24. Install control block (22) on spool valve assembly (18) with spring pin (20).
25. Install spring (36) and control lever (23) on control block (22) with spring pin (21).
26. Install knob (24) on control lever (23).
27. Install lever support (83) on valve block (55) with four new lockwashers (11) and screws (10). Tighten screws (10) 15 lb ft (20-N·m).
28. Install two straps (9) on support lever (83) with screw (78), washer (7), and nut (8).
29. Install spacer (84) between straps (9) with washer (77), screw (76), and nut (5). Tighten nut (5) and install new cotter pin (6).
30. Install pump lever (1) between straps (9) with screw (75), washer (3), and nut (4). Do not overtighten nut (4).
31. Install pump lever (1) on piston rod (79) with pin (2), washer (85), and new cotter pin (86).
32. Install hydraulic pump (WP 0035 00).

PUMP MAINTENANCE (Contd)

- 33. Fill pump (WP 0032 00).
- 34. Bleed fluid system (WP 0038 00).
- 35. Connect inner pontons, if separated (WP 0023 00) or fold ramp bay (TM 5-5420-287-10).
- 36. Install ramp bay on transporter (TM 5-5420-278-10).



END OF WORK PACKAGE

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

CYLINDER MAINTENANCE

DISASSEMBLY, CLEANING AND INSPECTION, ASSEMBLY

THIS WORK PACKAGE SUPERSEDES WP 0072 00, DATED 8 APRIL 2003

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(Item 3, WP 0135 00)
Forward repair system (FRS)
(Item 7, WP 0135 00)

Materials/Parts

Four lockwashers (WP 0110 00)
O-ring (WP 0110 00)
O-ring (WP 0110 00)
Five piston rod seal rings (WP 0110 00)
Piston seal ring (WP 0110 00)
O-ring (WP 0110 00)
O-ring (WP 0110 00)
Bushing (WP 0110 00)
O-ring (WP 0110 00)
Seal (WP 0110 00)
Lockwasher (WP 0110 00)
Support ring (WP 0110 00)
Lint-free rag (Item 7, WP 0134 00)
Cleaning solvent (Skysol-100)
(Item 6, WP 0134 00)
Fluid (Item 17, WP 0134 00)
Sealing compound (Item 16, WP 0134 00)

References

WP 0001 00
WP 0038 00

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10).
Ramp bay unfolded (TM 5-5420-278-10) or inner
pontons separated (WP 0023 00).
Pump removed (WP 0035 00).
Cylinder removed (WP 0036 00).

CYLINDER MAINTENANCE (Contd)

NOTE

Disassembly and assembly of cylinders are the same. Only one cylinder is shown.

DISASSEMBLY

WARNING

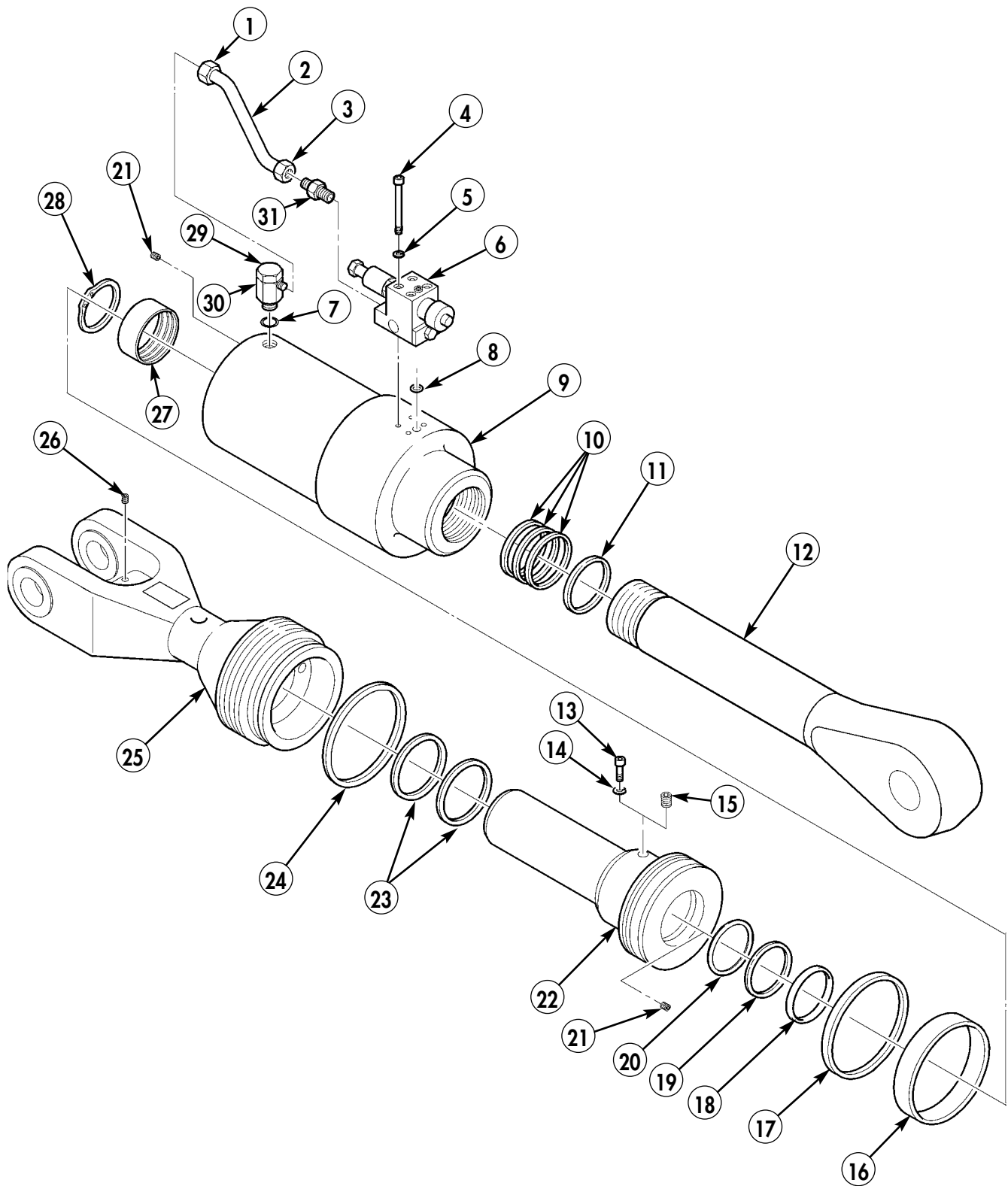
Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulation. Refer to Army POL (WP 0001 00) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in injury or death.

NOTE

Have container ready to catch fluid.

1. Loosen nuts (1) and (3) on tube (2) and remove tube (2) from adapter (31).
2. Remove four screws (4), lockwashers (5), fluid lock assembly (6), and O-ring (8) from cylinder housing (9). Discard lockwashers (5) and O-ring (8).
3. Remove adapter (31) from fluid lock assembly (6).
4. Remove screw (29), fitting (30), O-ring (7), and tube (2) from cylinder housing (9). Discard O-ring (7).
5. Secure cylinder housing (9) and remove cylinder end yoke (25) and O-ring (24) from cylinder housing (9). Discard O-ring (24).
6. Remove two piston rod seal rings (23) from cylinder end yoke (25). Discard piston rod seal rings (23).
7. Remove screw (13), lockwasher (14), and plug (15) from piston (22) and piston rod (12). Discard lockwasher (14).
8. Secure piston rod (22) and remove piston (22) from piston rod (12) and cylinder housing (9).
9. Remove O-ring (18), support ring (19), piston seal ring (16), and piston guide ring (20) from piston (22). Discard O-ring (18), support ring (19), piston seal ring (20), and piston guide ring (16).
10. Remove piston rod (12) from cylinder housing (9).
11. Remove three piston rod seals (10) and scraper (11) from cylinder housing (9). Discard piston rod seals (10) and scraper (11).
12. Remove snap ring (28) and bushing (27) from cylinder housing (9). Discard bushing (27).
13. Remove plugs (21) and (26) from cylinder end yoke (25), piston rod (22), and cylinder housing (9).

CYLINDER MAINTENANCE (Contd)



CYLINDER MAINTENANCE (Contd)

CLEANING AND INSPECTION

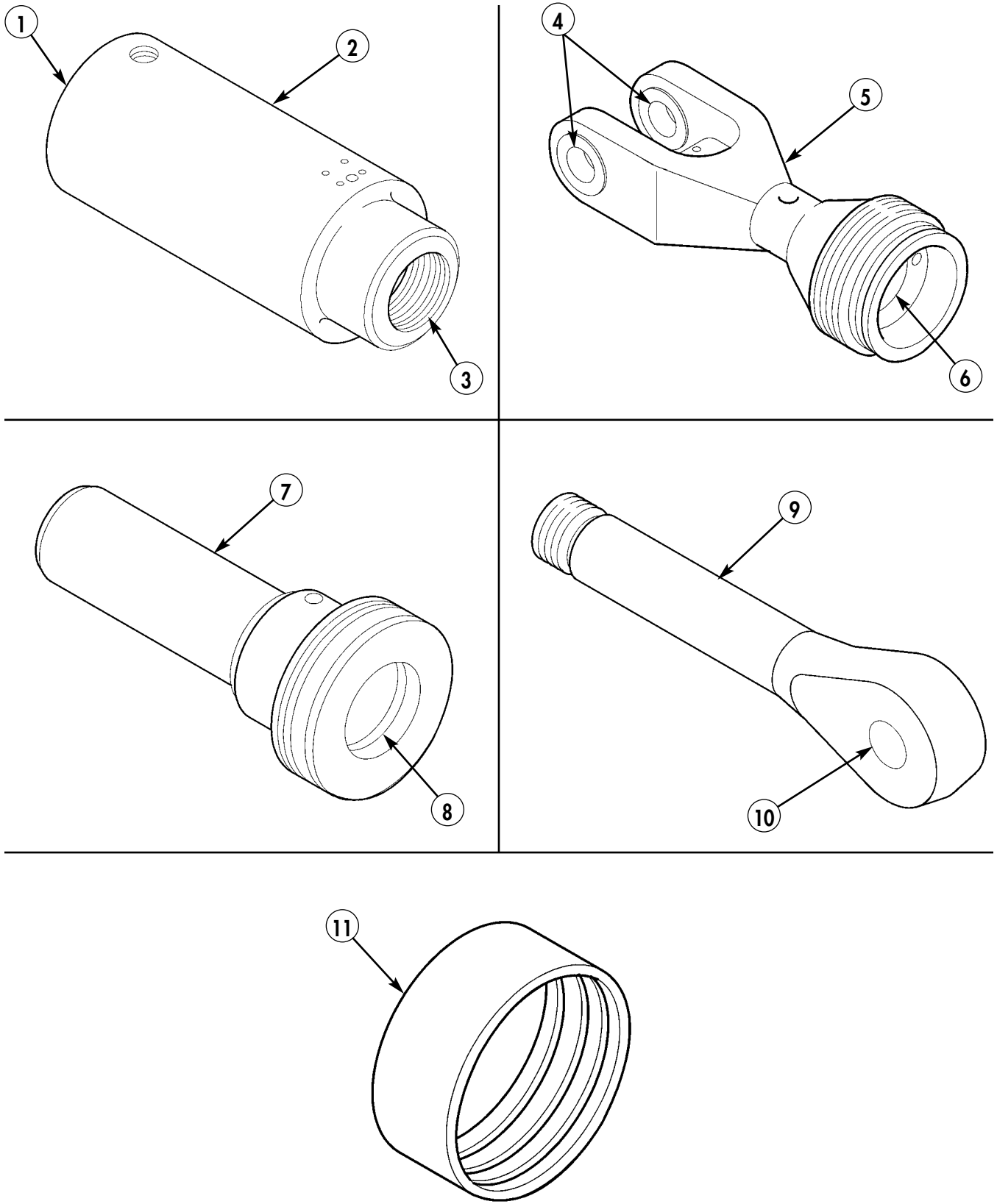
WARNING

Skysol-100 mixture is combustible. Use mechanical ventilation whenever product is used in a confined space, is heated above ambient temperatures, or is agitated. DO NOT use or store near heat, sparks, flame, or other ignition sources. Keep container sealed when not in use.

Contact with Skysol-100 may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least fifteen (15) minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity.

1. Clean all cylinder parts with Skysol-100 and dry with lint-free cloth before inspection.
2. Inspect piston bore (1) in cylinder housing (2) for nicks, scratches, cracks, scoring and excessive wear.
3. Inspect piston rod bore (3) in cylinder housing (2) for nicks, scratches, cracks, scoring, or excessive wear.
4. Inspect piston rod bore (6) in cylinder end yoke (5) for nicks, scratches, cracks, scoring, or excessive wear.
5. Inspect diameter of mounting pin bore (4) in cylinder end yoke (5).
6. Inspect piston (7) and O-ring groove (8) for nicks, scratches, cracks, scoring, or excessive wear.
7. Inspect diameter of mounting pin bore (10) in piston rod (9).
8. Inspect bushing (11) for nicks, scratches, cracks, scoring, or excessive wear.
9. Inspect all threads for damage or wear.

CYLINDER MAINTENANCE (Contd)



CYLINDER MAINTENANCE (Contd)

ASSEMBLY

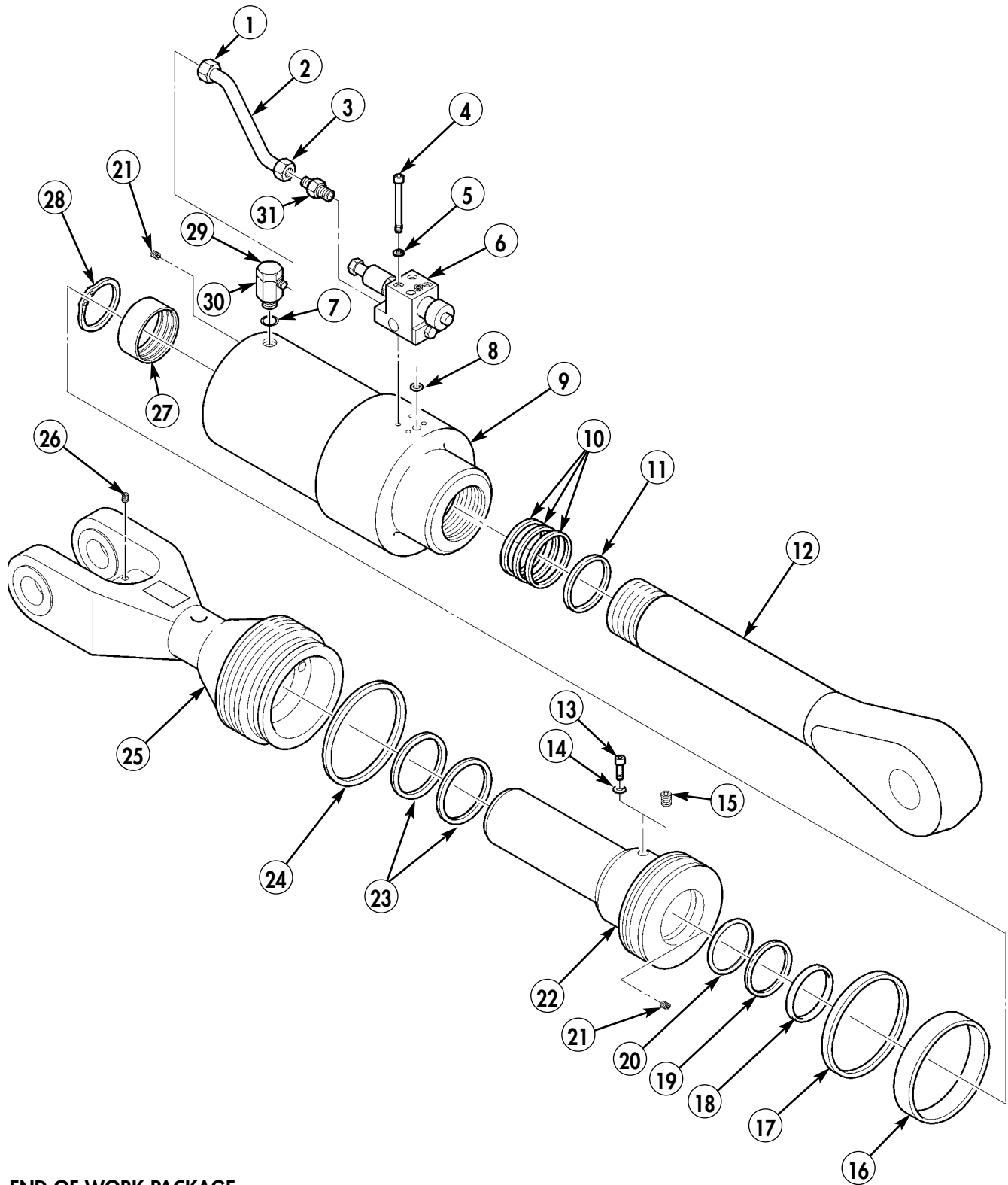
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. Refer to metric torque limits in WP 0075 00.

Apply fluid to seal rings, piston, piston rod, and O-rings at assembly.

1. Apply sealing compound to threads of plugs (21) and (26) and install plugs (21) and (26) on cylinder end yoke (25), piston rod (22), and cylinder housing (9).
2. Install new bushing (27) in cylinder housing (9) with snap ring (25).
3. Install three new piston rod seals (10) and new scraper (11) in cylinder housing (9).
4. Slide piston rod (12) in cylinder housing (9).
5. Install new piston guide ring (16), new piston seal ring (17), new O-ring (18), new support ring (19), and new piston seal ring (20) on piston (22).
6. Install piston (19) in cylinder housing (9) and screw piston rod (12) into piston (22).
7. Install plug (15) and new lockwasher (14) on piston (19) and piston rod (12).
8. Install two piston rod seal rings (23) and new O-ring (24) on cylinder end yoke (25).
9. Apply sealing compound to threads of end yoke (25) and install cylinder end yoke (25) on piston (22) and cylinder housing (9).
10. Install new O-ring (7), fitting (30), and tube (2) on cylinder housing (9) with screw (29).
11. Install adapter (31) on fluid lock assembly (6).
12. Install fluid lock assembly (6) with tube (2) on cylinder housing (9) with new O-ring (8), four new lockwashers (5), and screws (4).
13. Tighten nuts (1) and (3) on tube (2).
14. Install cylinder (WP 0036 00).
15. Install pump (WP 0035 00).
16. Fill fluid system (WP 0032 00).
17. Bleed fluid system (WP 0038 00).
18. Connect inner pontoons, if separated (WP 0023 00), or fold ramp bay (TM 5-5420-278-10).
19. Install ramp bay on transporter (TM 5-5420-278-10).

CYLINDER MAINTENANCE (Contd)



END OF WORK PACKAGE

CHAPTER 7

GENERAL MAINTENANCE FOR IMPROVED RIBBON BRIDGE (IRB)

General Maintenance Procedures	WP 0073 00
Illustrated List of Manufactured Items	WP 0074 00
Torque Limits	WP 0075 00
Painting Instructions	WP 0076 00
Camouflage Patterns	WP 0077 00
Ramp System Schematic	WP 0078 00

GENERAL MAINTENANCE

IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY M16
NSN 5420-01-470-5825 P/N 12478918;
INTERIOR BAY M17
NSN 5420-01-470-5824 P/N 12478919.

GENERAL MAINTENANCE PROCEDURES

GENERAL MAINTENANCE PROCEDURES

General maintenance instructions for cleaning, inspection, repair, assembly, and disassembly are provided in this work package. Publications which provide additional information on general shop practice techniques, preservation, welding, sheet metal work, etc. are listed in References, WP 0084 00.

CLEANING

a. General Instructions. Cleaning procedures will be the same for the majority of parts and components which make up the IRB subassemblies. General cleaning procedures are detailed in steps b through l.

b. The Importance of Cleaning. Great care and effort are required in all cleaning operations. The presence of dirt and foreign material is a constant threat to satisfactory equipment operation and maintenance. The following instructions will apply to all cleaning operations:

WARNING

Improper cleaning methods and use of unauthorized cleaning solvents may result in injury to personnel.

CAUTION

Keep all related parts and components together. Do not mix parts. Failure to comply may result in damage to parts.

- (1) Clean all parts before inspection, after repair, and before assembly.
- (2) Hands must be kept free of any accumulation of grease which can collect dust and grit.
- (3) After cleaning, all parts must be covered or wrapped in plastic or paper to protect them from dust and/or dirt.

c. Disassembled Parts Cleaning.

- (1) Place all disassembled parts in wire baskets for cleaning.
- (2) Clean, dry, and cover all parts.
- (3) All parts subject to rusting must be lightly oiled and wrapped.
- (4) Place cleaned parts on racks to hold for inspection or repair.

WARNING

Skysol-100 mixture is combustible. Use mechanical ventilation whenever product is used in a confined space, is heated above ambient temperatures, or is agitated. DO NOT use or store near heat, sparks, flame, or other ignition sources. Keep container sealed when not in use.

CLEANING (Contd)

Contact with Skysol-100 may cause skin irritation. Use chemical resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least fifteen (15) minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity.

d. Castings.

- (1) Clean inner and outer surfaces of castings and all areas subject to grease and fluid with Skysol-100.
- (2) Use a stiff brush to remove sludge and gum deposits.

WARNING

Compressed air source will not exceed 30 psi (207 kPa). When cleaning with compressed air, eyeshields must be worn. Failure to comply may result in injury to personnel.

- (3) Use compressed air to blow out all tapped screw holes and to dry castings after cleaning.

e. Fluid Passages. Particular attention must be given to all fluid passages in castings and machined parts. Fluid passages must be clean and free of any obstructions.

- (1) Clean passages with wire probes to break up any sludge or gum deposits.
- (2) Wash passages by flushing with solvents.

WARNING

Compressed air source will not exceed 30 psi (207 kPa). When cleaning with compressed air, eyeshields must be worn. Failure to comply will result in injury to personnel.

- (3) Dry passages with compressed air.

f. Seals and Flexible Hoses.

CAUTION

Do not allow Skysol-100 to come in contact with seals or flexible hoses. Failure to comply will result in damage to parts.

Clean with soap and water.

g. Bearings.

- (1) Bearings require special cleaning. After removing surface grease and gum deposits, wipe bearings dry; do not use compressed air. After cleaning, coat bearings with grease, wrap, and hold for inspection.
- (2) Refer to TM 9-214 for more information on care of bearings.

h. Machine Tooled Parts. Clean with Skysol-100 and dry with compressed air.

i. Machined Surfaces. Clean with Skysol-100 and dry with lint-free cloth.

CLEANING (Contd)

j. Mated Surfaces.

WARNING

Eyeshields must be worn when cleaning with a wire brush. Flying rust and metal particles may result in injury to personnel.

Remove old gasket and/or sealing compound using wire brush and Skysol-100.

k. Rusted Surfaces.

NOTE

All parts subject to rusting must be lightly oiled and wrapped prior to storage.

Clean all rusted surfaces using wire brush and emery cloth.

l. Externally Exposed Parts.

Wash with soap and water. Rinse thoroughly and air dry.

INSPECTION

a. General Instructions. Procedures for inspections will be the same for many of the parts and components that make up the IRB subassemblies. General procedures are detailed in steps b through k. Dimensional standards for parts have been fixed at extremely close tolerances; use specification where provided. Use specified inspection equipment for inspection where cracks and other damage cannot be spotted visually. Exercise extreme care in all phases of inspection.

b. Castings.

- (1) Inspect all ferrous and nonferrous castings for cracks using a magnifying glass and strong light.
- (2) Refer to ASTM-E 1417, Inspection, Liquid Penetrant Methods, and MIL-I-6868, Inspection Process, Magnetic Particles.
- (3) Particularly inspect areas around studs, pipe plugs, threaded inserts, and sharp corners. Replace all cracked castings.
- (4) Inspect machined surfaces for nicks, burrs, or raised metal. Mark damaged areas for repair or replacement.
- (5) Inspect all pipe plugs, pipe plug openings, screws, and screw openings for damaged or stripped threads. Replace or repair damaged or stripped threads.
- (6) Using a straightedge or surface plate, check all gasket mating surfaces, flanges on housings, and supports for warpage. Inspect mating flanges for discolorations which may indicate persistent oil leakage. Replace damaged parts.
- (7) Check all castings for conformance to applicable repair standards. Replace damaged castings.

c. Bearings. Refer to TM 9-214 for inspection of bearings. Check all bearings for conformance to applicable repair standards.

d. Studs, Bolts, and Screws. Replace if threads are damaged, bent, or stripped.

e. Seals. Seals are mandatory replacement items.

f. Bushings and Bushing-Type Bearings.

- (1) Check all bushings and bushing-type bearings for secure fit, evidence of overheating, wear, burrs, nicks, and out-of-round condition.
- (2) Check for dirt in lubrication holes or grooves. Holes and grooves must be clean and free from damage.

g. Machined Tooled Parts. Inspect for cracks, breaks, elongated holes, wear, and chips.

h. Machined Surfaces. Inspect for cracks, evidence of wear, galled or pitted surface, burrs, nicks, and scratches.

INSPECTION (Contd)

- i. **Mated Surfaces.** Inspect for remains of old gasket, seal, secure fit, pitting, and evidence of leakage.
- j. **Rusted Surfaces.** Inspect for pitting, holes, and severe damage.
- k. **Externally Exposed Parts.** Inspect for breaks, cracks, rust damage, and wear.
- l. **Rivets.** Inspect for loose, broken, and missing rivets in accordance with TM 9-450.

REPAIR

- a. **General Instructions.** Repair of parts and components is limited to procedures outlined in applicable maintenance tasks and the following general procedures detailed in steps b through g.
- b. **Castings.**
 - (1) All cracked castings will be replaced.
 - (2) Only minor repairs to machined surfaces, flanges, and gasket mating surfaces are permitted. Remove minor nicks, burrs, and/or scratches with:
 - (a) Fine mill file.
 - (b) Emery cloth dipped in Skysol-100.
 - (c) Lapping across a surface plate.
 - (3) Machining of machined surfaces to repair damaged, warped, or uneven surfaces is not permitted. Replace castings.
 - (4) Repair damaged threaded pipe plug and/or screw holes with the correct size tap. Repair oversize holes with threaded inserts.
- c. **Bearings.** See TM 9-214.
- d. **Studs.** Replace all bent and stretched studs. Repair minor thread damage with the correct size thread die. Replace studs having stripped or damaged threads as outlined below:
 - (1) Remove studs using a stud remover. Back studs out slowly to avoid heat buildup and seizure which can cause stud to break off.

NOTE

If welding method is used, refer to TC 9-237.

- (2) If a stud breaks off too short to use a stud remover or a stud extractor, use welding method.
 - (3) Broken studs can be removed by welding bar stock or a nut to stud and removing with wrench.
 - (4) Standard studs may have a coarse thread on one end and a fine thread on the other end. The coarse thread end is installed in the casting. Studs having coarse threads on both ends are used in some applications; the shorter threaded end goes into the casting. Refer to TM 5-5420-278-24P for correct part numbers.
 - (5) Replacement studs have a special coating and must have a small amount of antiseize compound (WP 0134 00, Item 4) applied on threads before stud is installed. Install replacement stud slowly to prevent heat buildup and snapping off.
- e. **Bushings and Bushing-Type Bearings.** When bushings and bushing-type bearings seize to a shaft and spin in the bore, the associated part must also be replaced.
 - f. **Seals.**
 - (1) Using proper seal removal tool, remove seals; use caution not to damage casting, adapter bore, or seal surface of shaft.
 - (2) Always install new seal in bore using the specified seal driving tool.
 - g. **Rivets.** Replace rivets per TM 9-450.

DISASSEMBLY

- a.** The work area for disassembly of any item must be kept as clean as possible. This will prevent contamination of internal parts.
- b.** Before disassembling any item, study the illustration carefully, noting the relationship of internal parts. Knowing the details of construction will speed up disassembly and help avoid mistakes. If in doubt, tag all parts.
- c.** All gaskets, O-rings, and seals removed during repair will be discarded and replaced with new parts. These items are usually damaged during removal. Lockwire, lockwashers, locknuts, cotter pins, and like items should be discarded during disassembly.
- d.** When removing gaskets, O-rings, or seals, do not use any metal tool that will scratch the sealing surface next to these items.

ASSEMBLY

- a.** Cleanliness is essential in all assembly operations. Dirt and dust, even in small quantities, are abrasive. Parts must be cleaned as specified and kept clean. Wrap or cover parts and components when assembly procedures are not completed immediately.
- b.** Lubricate all metal parts with lubricant or fluid used during operation. Refer to WP 0016 00 for proper lubricants.
- c.** Installation of cotter pins and lockwires shall be accomplished as specified in assembly procedures.
- d.** Critical torque values are specified in the assembly procedure. When not specified, tighten bolts, screws, and nuts in accordance with standard dry torque values (WP 0075 00).
- e.** All fuel, air, and hydraulic components must be kept thoroughly clean at all times. Plug all open ports until the component is installed.
- f.** All pressing operations should be accomplished using a suitable press and adapters, unless otherwise specified.

END OF WORK PACKAGE

ILLUSTRATED LIST OF MANUFACTURED ITEMS
THIS WORK PACKAGE SUPERSEDES WP 0074 00, DATED 8 APRIL 2003

SCOPE

This work package includes complete instructions for making items authorized to be manufactured or fabricated at the direct support and general support maintenance levels.

HOW TO USE THE INDEX OF MANUFACTURED ITEMS

A part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the page which covers fabrication criteria.

EXPLANATION OF THE ILLUSTRATIONS OF MANUFACTURED ITEMS

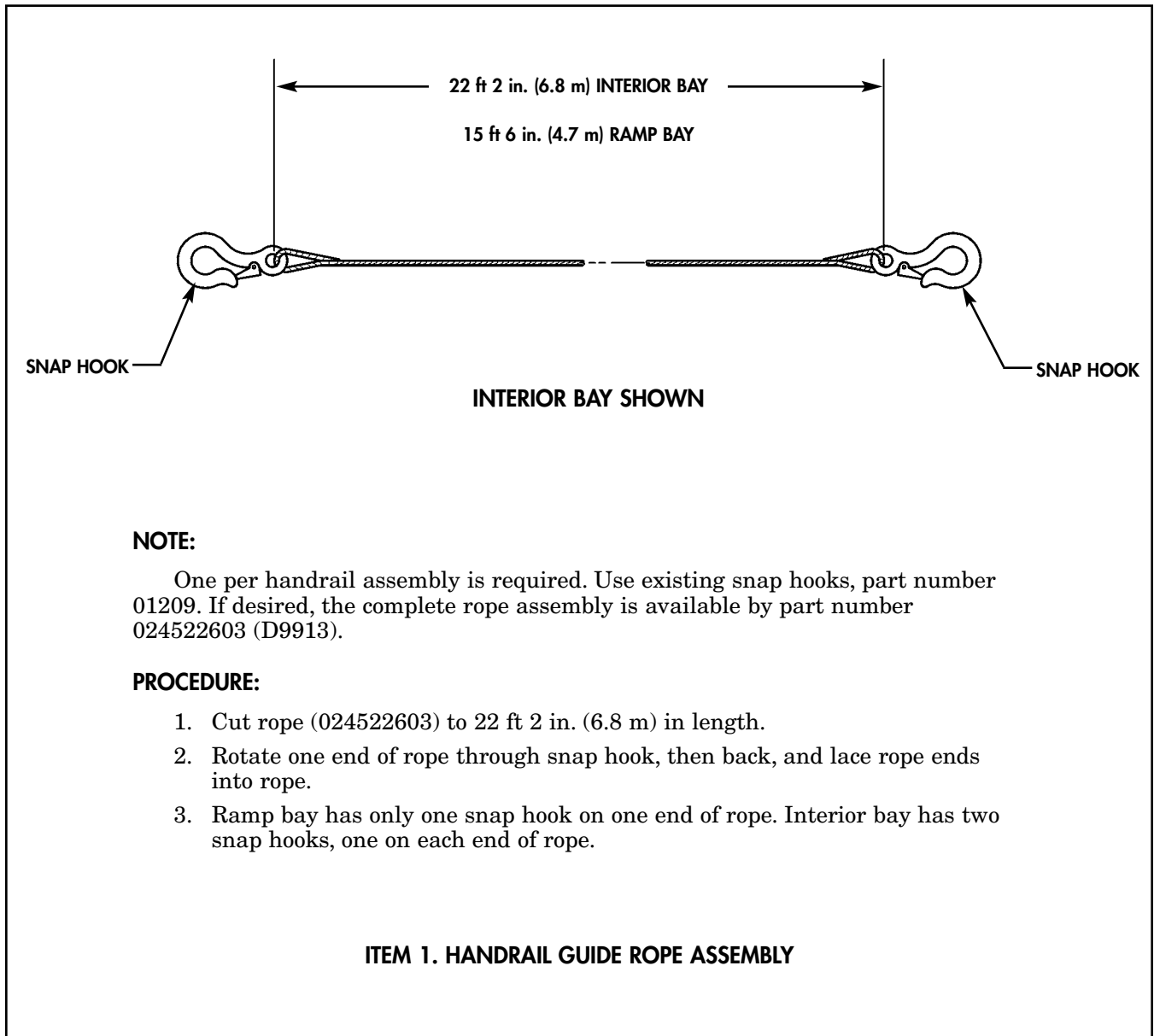
Instructions to manufacture the item are provided in procedural form below each illustration. All bulk materials required for manufacture of an item are listed by part number or specification number within the procedure, and in Table 1, Manufactured Items Part Number Index.

For NSN and cage codes, refer to cross reference index (WP 0133 00).

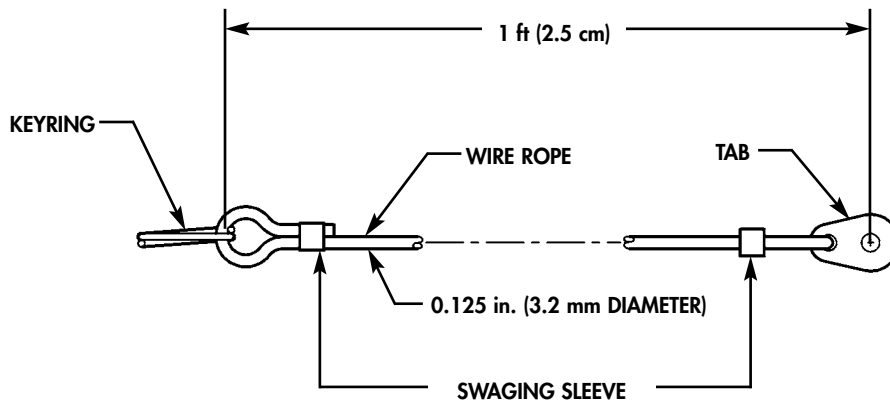
Table 1. Manufactured Items Part Number Index.

ITEM NO.	PART NO.	ITEM	PAGE NO.
1	024522601	Handrail guide rope assembly	0074 00-2
2	909667501	Rafting bracket quick-release pin retainer assembly	0074 00-3
3	027007314 027007313	Bilge plug retainer assembly	0074 00-4
4	029990102	Torsion bar pre-adjusting tool	0074 00-5
5	029990101	Torsion bar pre-stressing tool	0074 00-6
6	909724854	Drain hose assembly	0074 00-7
7	629153401	Clevis Cleaning Hook	0074 00-8
8	HFF20-096 TCM20-1/4NPT-V	Deflation Hose Assembly Pneumatic Tank Valve	0074 00-9
9	029108902	Coupling Device Hook	0074 00-10

ILLUSTRATIONS OF MANUFACTURED ITEMS



ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)

**NOTE:**

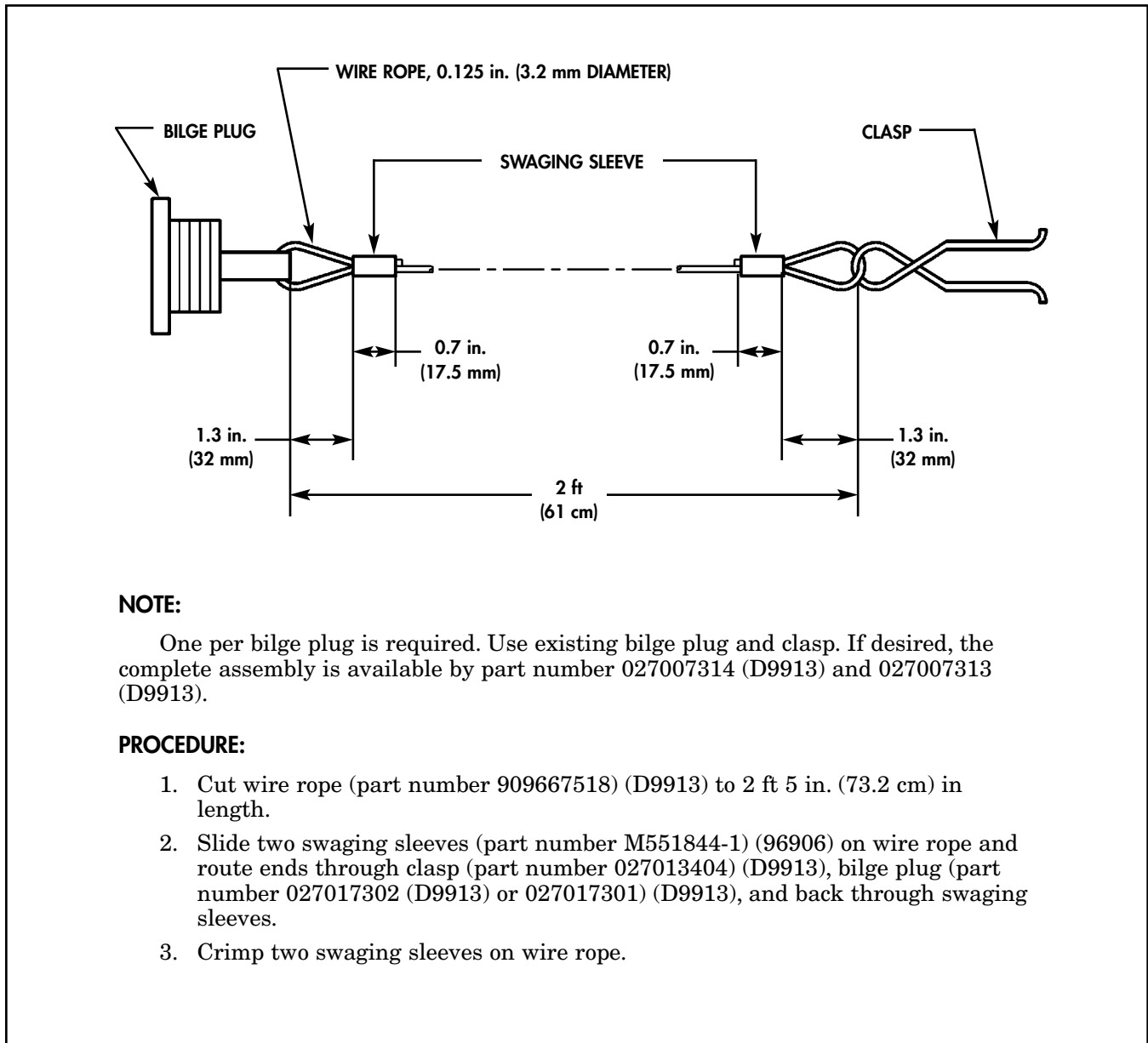
Use existing tab and keyring. If desired, the complete cable assembly is available by part number 909667501 (D9913).

PROCEDURE:

1. Cut wire rope (LT1504-C6-10) or equivalent 0.125 in. (3.2 mm) diameter to 1 ft 2 in. (35.6 cm) in length.
2. Slide two swaging sleeves (part number M551844-1) (96906) on wire rope and route ends through tab (part number 13219E4269) (97403), keyring (part number 027074-002) (D9913), and back through clamps.
3. Crimp two swaging sleeves on wire rope.

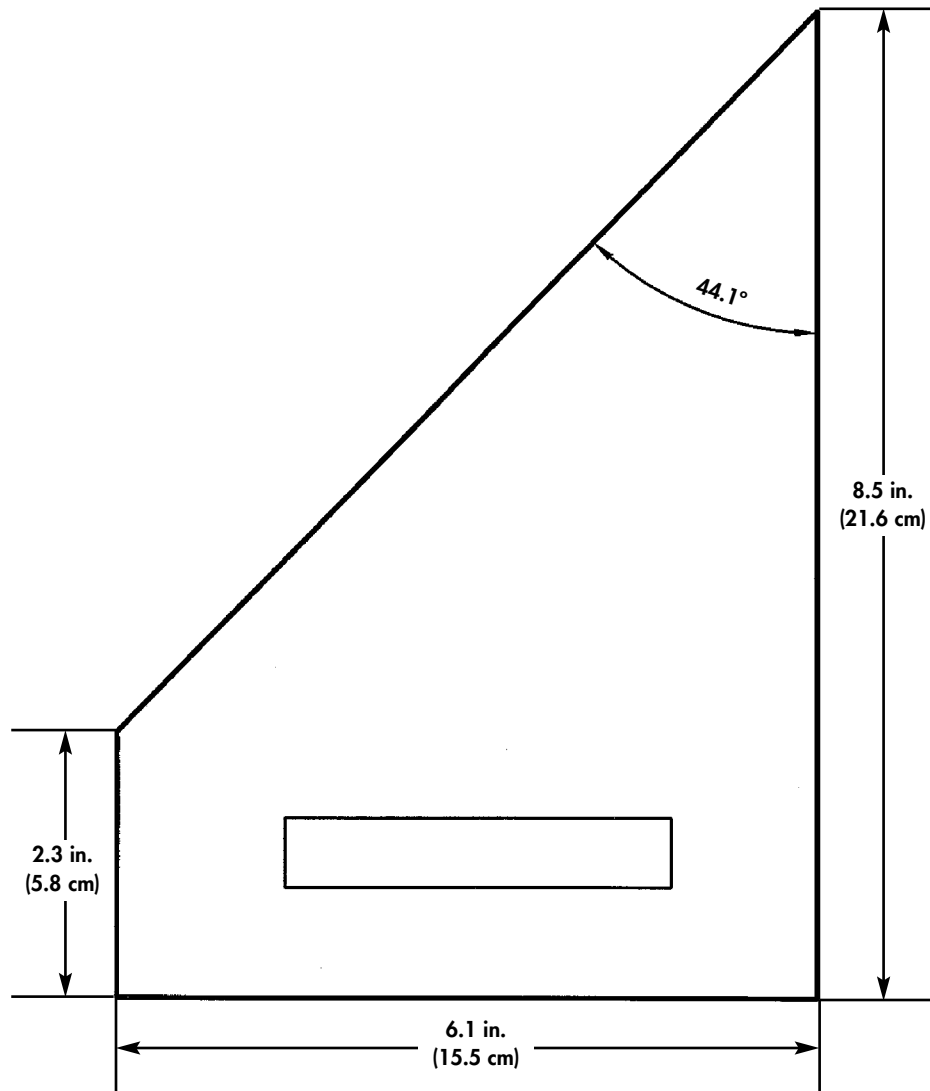
ITEM 2. RAFTING BRACKET QUICK-RELEASE PIN RETAINER ASSEMBLY

ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)



ITEM 3. BILGE PLUG RETAINER ASSEMBLY

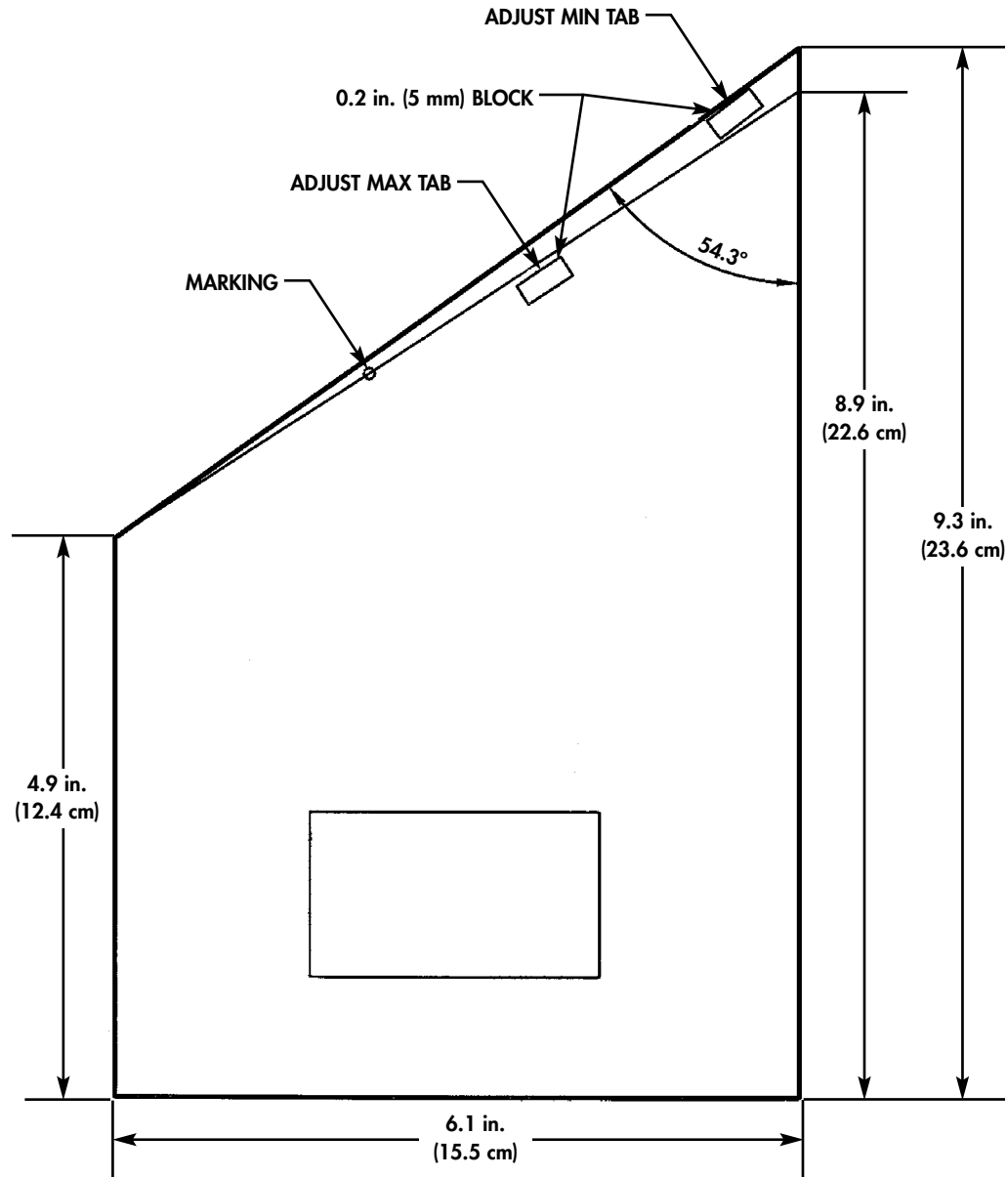
ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)

**PROCEDURE:**

Make from NSN 9515-00-057-6643 0.250-in. (0.6-cm) thick steel metal plate.

ITEM 4. TORSION BAR PRE-ADJUSTING TOOL

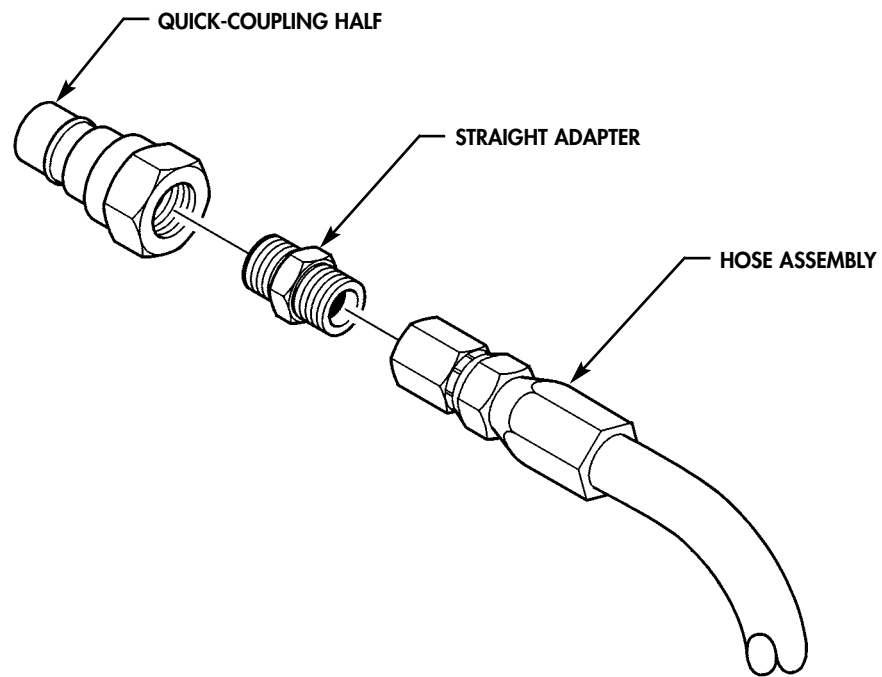
ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)



PROCEDURE:

Make from NSN 9515-00-057-6643 0.250-in. (0.6-cm) thick steel metal plate.

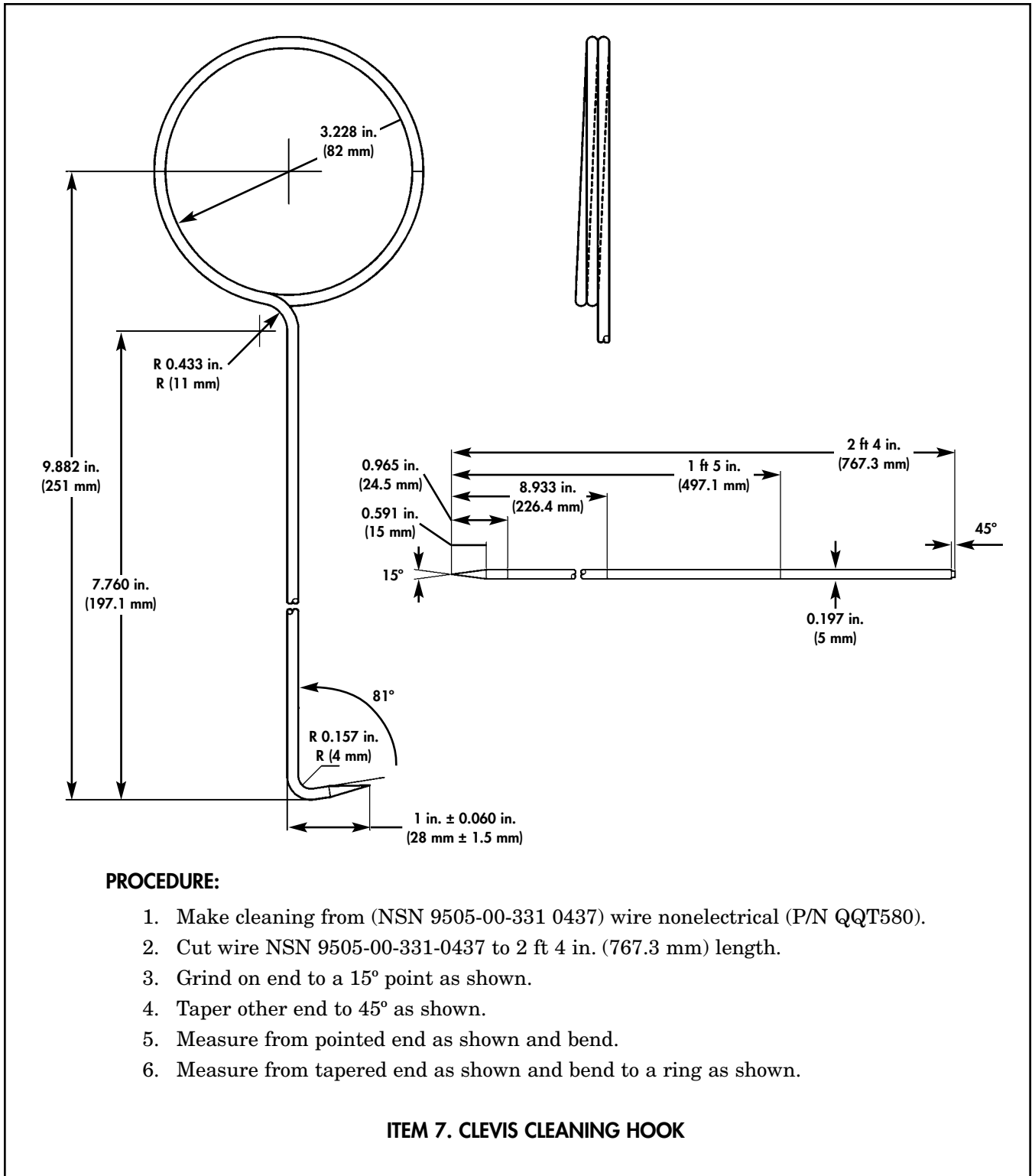
ITEM 5. TORSION BAR PRE-STRESSING TOOL

ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)**PROCEDURE:**

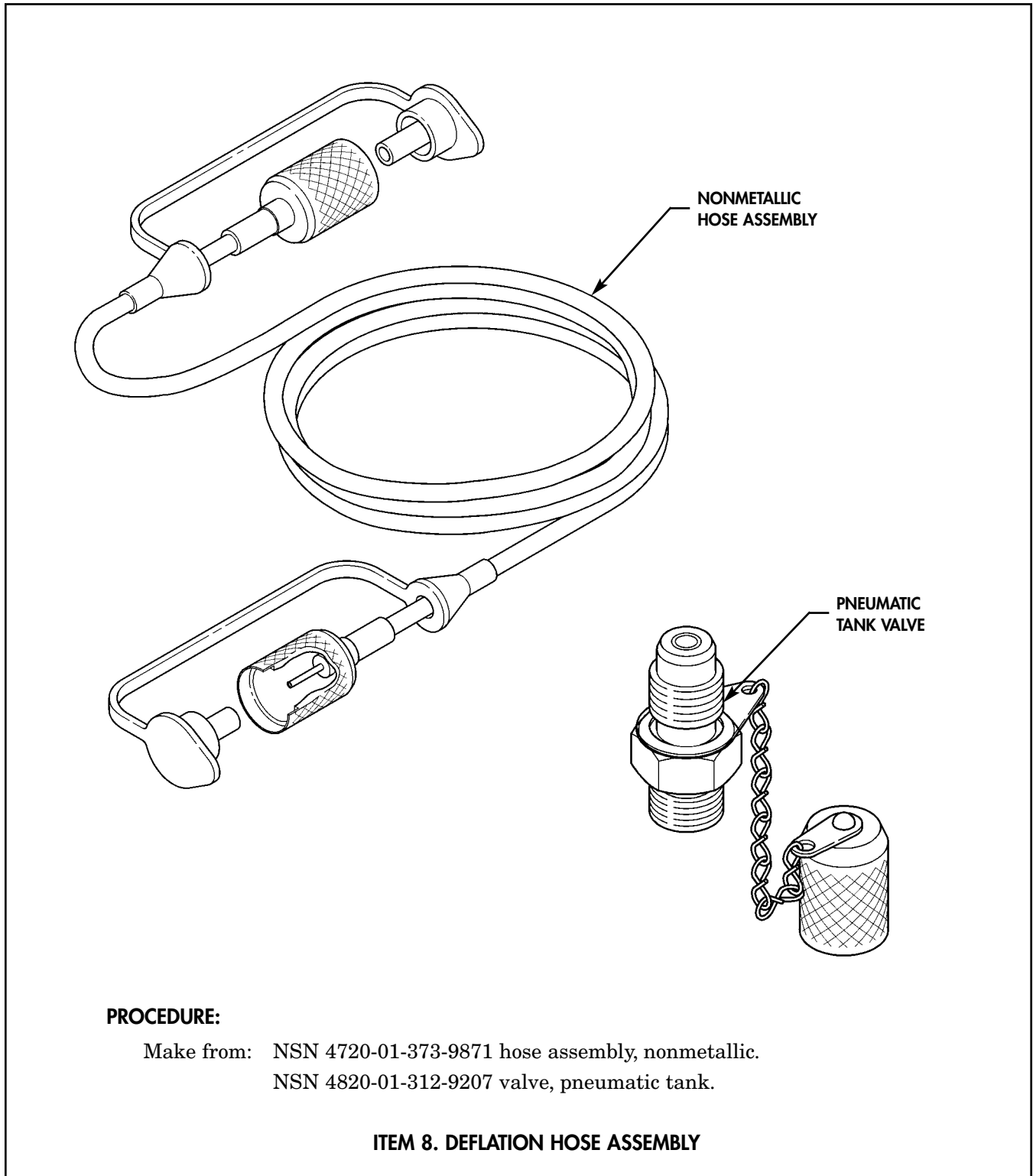
Make from: 909724854 (D9913) hose assembly.
909654022 (D9913) straight adapter.
909614036 (D9913) quick-coupling half.

ITEM 6. DRAIN HOSE ASSEMBLY AND QUICK-COUPLING HALF

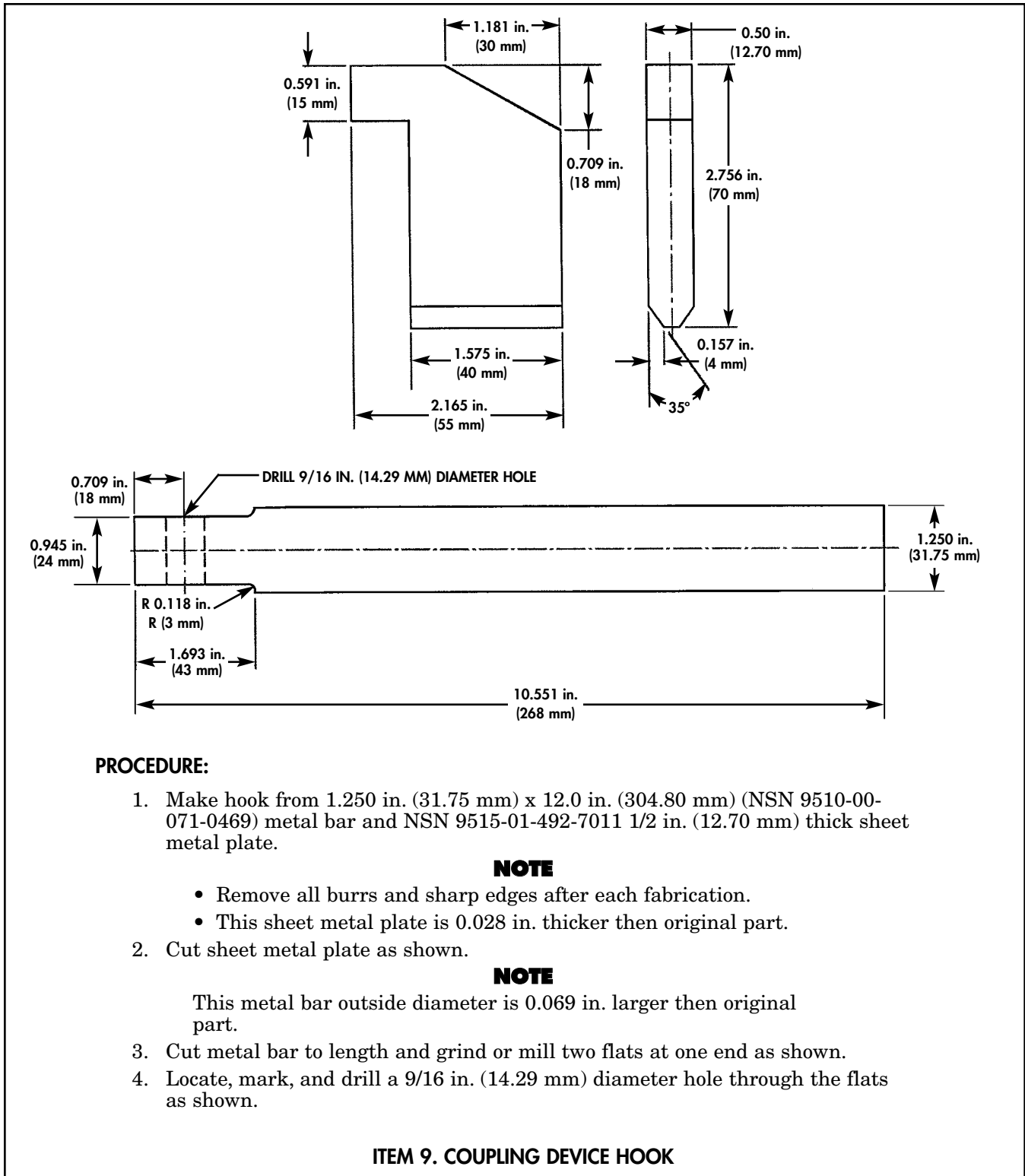
ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)



ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)



ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)



PROCEDURE:

1. Make hook from 1.250 in. (31.75 mm) x 12.0 in. (304.80 mm) (NSN 9510-00-071-0469) metal bar and NSN 9515-01-492-7011 1/2 in. (12.70 mm) thick sheet metal plate.

NOTE

- Remove all burrs and sharp edges after each fabrication.
- This sheet metal plate is 0.028 in. thicker than original part.

2. Cut sheet metal plate as shown.

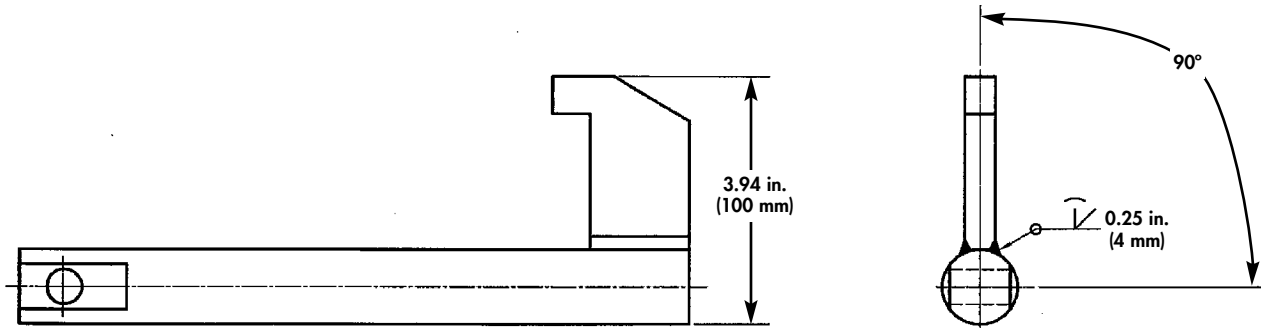
NOTE

This metal bar outside diameter is 0.069 in. larger than original part.

3. Cut metal bar to length and grind or mill two flats at one end as shown.
4. Locate, mark, and drill a 9/16 in. (14.29 mm) diameter hole through the flats as shown.

ITEM 9. COUPLING DEVICE HOOK

ILLUSTRATIONS OF MANUFACTURED ITEMS (Contd)

**PROCEDURE (Contd):**

5. Position sheet metal plate on bar stock at 90° to hole as shown and weld into place. Refer to TC 9-237.
6. Clean and paint as required. Refer to TM 43-0139.

ITEM 9. COUPLING DEVICE HOOK (Contd)

END OF WORK PACKAGE

TORQUE LIMITS

GENERAL

NOTE

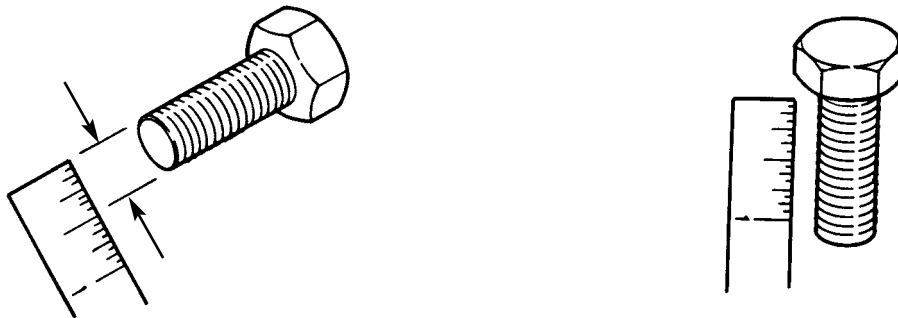
Use standard torque limits when tightening screws that are installed in thread inserts unless noted.

This work package provides general torque limits for screws used on the IRB-R and IRB-I bays. Special torque limits are indicated within the maintenance tasks for applicable components. The general torque limits given in this work package shall be used when specific torque limits are not indicated in the maintenance task. These general torque limits cannot be applied to screws that retain rubber components. Rubber components will become damaged before the correct torque limit can be reached.

TORQUE TABLES

Table 1 lists dry torque limits. Dry torque limits are used on screws that do not have lubricants applied to the threads. Table 2 lists wet torque limits. Wet torque limits are used on screws that have high pressure lubricants applied to the threads. For metric fasteners, refer to table 3 for torque limit requirements.

HOW TO USE TORQUE TABLES



1. Measure the diameter of the screw.
2. Count the number of threads per inch.
3. Under the heading **SIZE**, look down the left hand column and find the diameter of the screw. (There will usually be two lines beginning with the same size).
4. In the second column under **SIZE**, find the number of threads per inch that matches the number of threads you counted in step 2 (not required for metric screws).
5. Determine the grade of screw by matching the markings on the head of the screw to the correct picture of **CAPSCREW HEAD MARKINGS** in the illustration preceding the torque limits table.

CAPSCREW HEAD MARKINGS

<p>Manufacturer's marks may vary. These are all SAE Grade 5 (3-line)</p> <div style="text-align: center;"> </div> <p style="text-align: center;">STANDARD</p>	<p>Metric screws are of three grades: 8.8, 10.9, and 12.9. Grades & Manufacturer's marks appear on the screw head</p> <div style="text-align: center;"> </div> <p style="text-align: center;">METRIC</p>
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6. Look down the column under the picture you found in step 5 until you find the torque limit (in lb-ft or N·m) for the diameter and threads per inch of the screw.

TORQUE LIMITS (Contd)

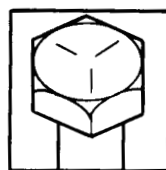
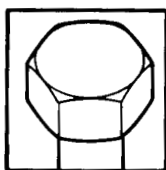
Table 1. Torque Limits for Dry Fasteners.

SIZE			TORQUE							
			SAE GRADE NO. 1 or 2		SAE GRADE NO. 5		SAE GRADE NO. 6 or 7		SAE GRADE NO. 8	
DIA. INCHES	THREADS PER INCH	DIA. MILLIMETERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS
1/4	20	6.35	5	7	8	11	10	14	12	16
1/4	28	6.35	6	9	10	14	12	16	14	19
5/16	18	7.94	11	15	17	23	21	28	24	33
5/16	24	7.94	12	16	19	26	24	33	27	37
3/8	16	9.53	20	27	30	41	40	54	45	61
3/8	24	9.53	23	31	35	47	45	61	50	68
7/16	14	11.11	30	41	50	68	60	81	70	95
7/16	20		35	47	55	75	70	95	80	108
1/2	13	12.70	50	68	75	102	95	129	110	149
1/2	20		55	75	90	122	100	136	120	163
9/16	12	14.29	65	88	110	149	135	183	150	203
9/16	18		75	102	120	163	150	203	170	231
5/8	11	15.88	90	122	150	203	190	258	220	298
5/8	18		100	136	180	244	210	285	240	325
3/4	10	19.05	160	217	260	353	320	434	380	515
3/4	16		180	244	300	407	360	488	420	597
7/8	9	22.23	140	190	400	542	520	705	600	814
7/8	14		155	210	440	597	580	786	660	895
1	8	25.40	220	298	580	786	800	1085	900	1220
1	12		240	325	640	868	860	1166	1000	1356
1-1/8	7	25.58	300	407	800	1085	1120	1519	1280	1736
1-1/8	12		340	461	880	1193	1260	1709	1440	1953
1-1/4	7	31.75	420	570	1120	1519	1580	2142	1820	2468
1-1/4	12		460	624	1240	1681	1760	2387	2000	2712
1-3/8	6	34.93	560	759	1460	1980	2080	2820	2380	3227
1-3/8	12		640	868	1690	2278	2380	3227	2720	3688
1-1/2	6	38.10	740	1003	1940	2631	2780	3770	3160	4285
1-1/2	12		840	1139	2200	2983	3100	4204	3560	4827

CAPSCREW HEAD MARKINGS



Manufacturer's marks may vary. These are all SAE Grade 5 (3-line).



TORQUE LIMITS (Contd)

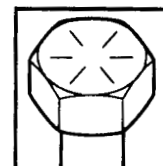
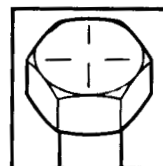
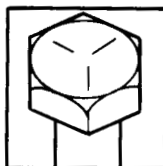
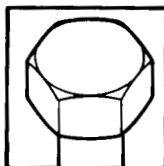
Table 2. Torque Limits for Wet Fasteners.

SIZE			TORQUE							
			SAE GRADE NO. 1 or 2		SAE GRADE NO. 5		SAE GRADE NO. 6 or 7		SAE GRADE NO. 8	
DIA. INCHES	THREADS PER INCH	DIA. MILLIMETERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS
1/4	20	6.35	4	6	6	8	8	11	9	12
1/4	28	6.35	5	7	7	9	9	12	10	14
5/16	18	7.94	8	11	13	18	16	22	18	24
5/16	24	7.94	9	12	14	19	18	24	20	27
3/8	16	9.53	15	20	23	31	30	41	40	54
3/8	24	9.53	17	23	25	34	30	41	44	60
7/16	14	11.11	24	33	35	47	45	61	55	75
7/16	20		25	34	40	54	50	68	60	81
1/2	13	12.70	35	47	55	75	70	95	80	108
1/2	20		40	54	65	88	80	108	90	122
9/16	12	14.29	50	68	80	108	100	136	110	149
9/16	18		55	75	90	122	110	149	130	176
5/8	11	15.88	70	95	110	149	140	190	170	231
5/8	18		80	108	130	176	160	217	180	244
3/4	10	19.05	120	163	200	271	240	325	280	380
3/4	16		140	190	220	298	280	380	320	434
7/8	9	22.23	110	149	300	407	400	542	460	624
7/8	14		120	163	320	434	440	597	500	678
1	8	25.40	160	217	440	597	600	814	680	922
1	12		170	231	480	651	660	895	740	1003
1-1/8	7	25.58	220	298	600	814	840	1139	960	1302
1-1/8	12		260	353	660	895	940	1275	1080	1464
1-1/4	7	31.75	320	434	840	1139	1100	1492	1360	1844
1-1/4	12		360	488	920	1248	1320	1790	1500	2034
1-3/8	6	34.93	420	570	1100	1492	1560	2115	1780	2414
1-3/8	12		460	624	1260	1709	1780	2414	2040	2766
1-1/2	6	38.10	560	760	1460	1980	2080	2820	2360	3200
1-1/2	12		620	841	1640	2224	2320	3146	2660	3607

CAPSCREW HEAD MARKINGS



Manufacturer's marks may vary. These are all SAE Grade 5 (3-line).

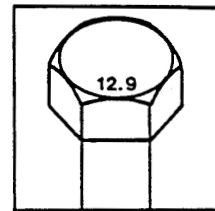
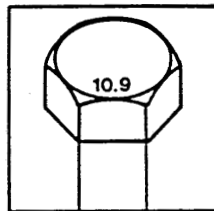
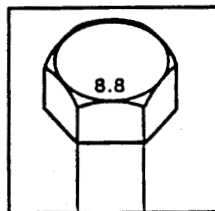


TORQUE LIMITS (Contd)

Table 3. Torque Limits for Metric Fasteners.

SIZE		TORQUE					
		METRIC GRADE 8.8		METRIC GRADE 10.9		METRIC GRADE 12.9	
DIA. INCHES	DIA. MILLIMETERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS	POUND FEET	NEWTON METERS
.157	4	2	3	3	4	4	5
.197	5	4	5	6	8	7	9
.237	6	7	9	10	14	11	15
.276	7	11	15	16	22	20	27
.315	8	18	24	25	34	29	39
.394	10	32	43	47	64	58	79
.473	12	58	79	83	113	100	136
.552	14	94	127	133	180	159	216
.630	16	144	195	196	266	235	319
.709	18	190	258	269	365	323	438
.788	20	260	353	366	496	440	597
.867	22	368	499	520	705	678	919
.946	24	470	637	664	900	794	1077
1.064	27	707	959	996	1351	1235	1675
1.182	30	967	1311	1357	1840	1630	2210

CAPSCREW HEAD MARKINGS

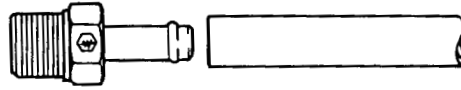


TORQUE LIMITS (Contd)

TUBING APPLICATION TIGHTENING ASSEMBLY INSTRUCTIONS

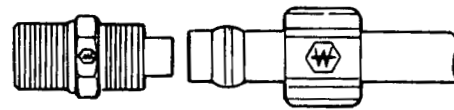
Slide tubing over barbed insert until it bottoms on fitting.

MINI-BARB



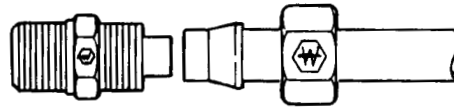
1. Slide nut and then sleeve on tubing.
2. Slide I.D. of tubing onto fitting insert until it bottoms.
3. Assemble nut to fitting body.
4. Tighten assembly finger tight to cover body threads.

KNURL-ON



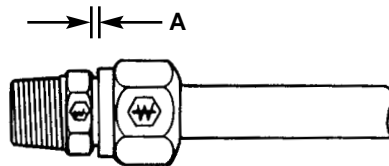
1. Slide nut and then sleeve on tubing.
2. Slide I.D. of tubing onto fitting insert until it bottoms.
3. Assemble nut to fitting body.
4. Finger tighten nut. From that point, tighten with a wrench two complete turns.

SELF-ALIGN-PTF



1. Cut tubing to desired length. Ensure ends are cut reasonably square.
2. Slide tubing into the preassembled fitting and push until tube bottoms.
3. Tighten nut as indicated in chart. Another check on proper assembly is gap dimension A, when nut is fully tightened.

NYLON TUBING FOR AIRBRAKE



DISASSEMBLY — Remove nut and pull tubing out of fitting body. Insert will remain on tubing.

REASSEMBLY — Push tubing and insert into fitting body until it bottoms. Thread nut onto fitting body and tighten as in step 3.

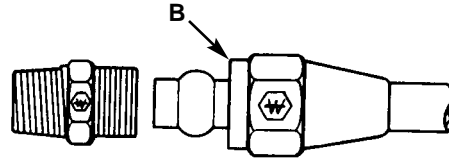
TUBE O.D.	TIGHTEN NUT TO:	A GAP DIMENSION
1/4	85 - 115 lb-in. (9.6 - 13.0 N.m)	.085/.105 in. (2.2/2.7 mm)
3/8	12 - 17 lb-ft (16.3 - 23.1 N.m)	.125/.145 in. (4.6/5.1 mm)
1/2	25 - 33 lb-ft (33.9 - 44.7 N.m)	.100/.120 in. (2.9/3.4 mm)
5/8	26 - 35 lb-ft (35.3 - 47.5 N.m)	.115/.135 in. (2.5/3.0 mm)
3/4	38 - 50 lb-ft (51.5 - 67.8 N.m)	.180/.200 in. (3.2/3.7 mm)

TORQUE LIMITS (Contd)

TUBING APPLICATION TIGHTENING ASSEMBLY INSTRUCTIONS (Contd)

1. Slide nut and then sleeve on tubing. Threaded end of nut (B) must face out.
2. Insert tubing into fitting. Ensure tubing is bottomed on fitting shoulder.
3. Thread nut onto fitting body until it is hand tight.
4. From that point, tighten with a wrench the number of turns indicated at right.

**COPPER TUBING
FOR HAND AIRBRAKE**



TUBE SIZE	ADDITIONAL NUMBER OF TURNS FROM HAND TIGHT
1/4, 3/8	1-3/4
1/2, 5/8, 3/4	3-1/4

TORQUE WRENCH ADAPTERS

Some maintenance tasks require the use of a torque wrench adapter when the nut or screw cannot be reached with a regular socket on the end of the torque wrench. These adapters add to the overall length of the torque wrench and make the dial or scale reading less than the actual torque applied to the nut or screw. To prevent overtightening and damage to equipment, calculate the correct dial or scale reading using the conversion formula provided; refer to Conversion Formula (WP 0075 00-7/8 blank).

TORQUE LIMITS (Contd)

CONVERSION FORMULA

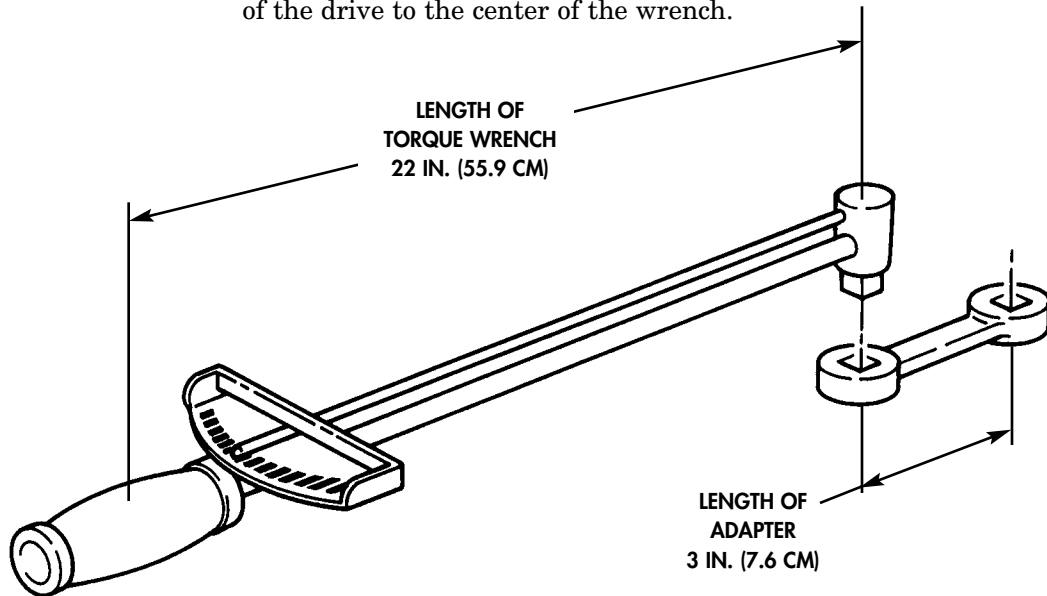
Corrected dial or scale readings are determined by the use of the following formula:

$$\text{Corrected reading} = \text{Required torque value} \div \frac{\text{Length of torque wrench} + \text{Length of adapter}}{\text{Length of torque wrench}}$$

NOTE

The length of the torque wrench is measured from the center of the handle to the center of the drive. The length of the adapter is measured from the center of the drive to the center of the wrench.

EXAMPLE:



In this example, the torque wrench measures 22 in. (55.9 cm) and the adapter is 3 in. (7.6 cm). The required torque is 19 lb-ft (25.8 N•m)

$$\text{Corrected reading} = 19 \text{ lb-ft (25.8 N}\cdot\text{m)} \div \frac{22 \text{ in. (55.9 cm)} + 3 \text{ in. (7.6 cm)}}{22 \text{ in. (55.9 cm)}}$$

$$\text{Corrected reading} = 19 \text{ lb-ft (25.8 N}\cdot\text{m)} \div \frac{25 \text{ in. (63.5 cm)}}{22 \text{ in. (55.9 cm)}}$$

$$\text{Corrected reading} = 19 \text{ lb-ft (25.8 N}\cdot\text{m)} \div 1.14$$

$$\text{Corrected reading} = 17 \text{ lb-ft (23.1 N}\cdot\text{m)}$$

END OF WORK PACKAGE

PAINTING INSTRUCTIONS

THIS WORK PACKAGE SUPERSEDES WP 0076 00, DATED 8 APRIL 2003

GENERAL

For specific painting procedures and techniques, refer to Painting Instructions for Army Materiel, TM 43-0139.

TREATMENT AND PAINTING

The portions of the interior bay and ramp bay assembly normally painted shall be cleaned and treated per TT-C-490 if ferrous, or MIL-C-5541 if aluminum, and primed and painted with chemical agent resistance paint per MIL-C-53072. Refer to TM 43-0139 for painting instructions. Unless otherwise specified, the topcoat color shall be Color Chip No. 34094, Green 383, of FED-STD-595. When camouflage patterns are required, the top coat shall be overcoated per the Government furnished camouflage patterns and top coat colors conforming to MIL-C-53072. Refer to Camouflage Patterns, WP 0077 00. The roadway/walkway and ramp plates are coated with a non-slip material called Ardopen-KS 55-Type A resin and hardener. Surface preparation and application instructions are provided with the container and further described in this work package.

APPLICATION AND REPAIR OF NONSLIP COATING

a. Application of Coating.

CAUTION

To avoid damage to equipment, do not use steel-shot blasting.
Clean roadway in compliance with cleaning directive
E 02 005 0803.

1. Clean roadway by shot-blasting with coarsest possible granulation (approximately 0.6–0.8 in. (16–20 mm)) to avoid contamination.

WARNING

Wear leather gloves when mixing or coating KS 55. Skin irritation may occur if procedure is performed without leather gloves.

Ensure proper ventilation in workshops. Injury to personnel may occur if used in a confined area.

Wash hands and wrists with skin protectant and rub with skin protectant ointment before and after performing task. Skin irritation may occur if hands and wrists are not properly cleaned and protected.

NOTE

Ensure area to be coated is dry.

Coat bridge in a temperature range of 64–75°F (18–24°C).

Coat roadway within eight hours of cleaning. If roadway coating shows any contamination, perform a follow-up treatment in compliance with E 02 005 0803.

Pre-heat the area to be coated to a temperature range of 68–77°F (20–25°C).

2. With a 7 in. (18 cm) lamb-wool roller, apply a 0.04 in. (1 mm) layer of non-skid surface compound to roadway. Let compound dry for one hour at 72°F (22°C) or two hours at 64°F (18°C).
3. Apply a special corundum mixture (aluminum oxide) with granulation 0.02–0.04 in. (0.5–1 mm).
4. Let corundum mixture dry for twelve hours at temperatures of 59°F (15°C) or above.
5. Sweep off non-adhering corundum granulation and use for further application. Sieve out potential contamination.

PAINTING INSTRUCTIONS (Contd)**CAUTION**

Stack parts with sufficient ventilation to allow coating to complete the setting process. Coating may be damaged if parts are stacked directly on top of one another before coating has set.

6. If stacking coated parts, use wooden blocks as spacers to assure sufficient space between parts.

CAUTION

Coatings can stand full chemical and mechanical stress after seven days of normal temperatures. Coating may be damaged if exposed to stress before it is completely dry.

NOTE

Once KS 55 has hardened, it cannot be removed and used for further application.

7. Store parts in the open after 48 hours of temperatures 64–75°F (18–24°C).

CAUTION

Scrub tools and equipment after each use. Dipping equipment and tools in solution does not constitute sufficient cleaning. Insufficient cleaning may cause damage to equipment.

8. Clean equipment and tools after each use with methychloroform (non-combustible).

b. Repair of Damaged Roadway Cover.**CAUTION**

Repair damage to coating as quickly as possible. Damage to coating may cause further damage to metal surface.

1. Removing coating from damaged area with scrapers and steel brushes until coating around damaged area becomes adhesive.
2. Clean damaged area until all coating is removed from metal.

WARNING

Wear leather gloves when mixing or coating KS 55. Skin irritation may occur if procedure is performed without leather gloves.

Ensure proper ventilation in workshops. Injury to personnel may occur if used in a confined area.

Wash hands and wrists with skin protectant and rub with skin protectant ointment before and after performing task. Skin irritation may occur if hands and wrists are not properly cleaned and protected.

NOTE

Ensure area to be coated is dry.

Coat bridge in a temperature range of 64–75°F (18–24°C)

Coat roadway within eight hours of cleaning. If the area shows any contamination, perform a follow-up treatment in compliance with E 02 005 0803.

Pre-heat the area to be coated to a temperature range of 68–77°F (20–25°C).

To adapt the repaired spot to existing coating, apply a second coat of KS 55 to the wet first coat.

3. Apply KS 55 with a brush to damaged area.
4. Apply corundum mixture per task A, steps 3 through 5.
5. Allow parts to dry and store per task A, steps 3 through 6.

PAINTING INSTRUCTIONS (Contd)

SURFACE TREATMENT WITH METAL SEPARATING AGENT

a. Preparation of Mixing Components.

NOTE

To ensure proper bonding, joint flanks or bonded surfaces must be dry, clean, free of dust and grease.

1. Clean per aluminum cleaning specification E 02 005 0803.

CAUTION

An excess dosing of hardener (max 10:1 by volume) does not cause a deterioration of the material properties. However, under-dosing of the hardener will cause a deterioration of the hardener and must be avoided in every case. A deterioration of the hardener may cause damage to equipment. When preparing mixture with automatic mixer, ensure correct setting of the dosing cylinders.

2. Mix components in proportion of 10:1 by volume. Use two-component mixture within approximately 30 minutes (pot time at 75°F (23°C)).

CAUTION

To avoid metal separating agent failure, do not process GD 677 under 50°F (10°C).

NOTE

Pot time is shorter at higher temperatures. As a general rule, cut time in approximately half for every increase of ten degrees celsius:

- 30 min pot time at 68°F (20°C).
- 15 min pot time at 86°F (30°C).
- 8 min pot time at 104°F (40°C).

3. Mix only the quantity to be processed in this time.

b. Application of Components.

1. Coat all individual parts with separating agent on the sealing surfaces. Apply a 0.04 in (1 mm) thick layer with a toothed plastic spatula.
2. Assemble steel parts with prescribed torques. Separating agent must exude from all sides. Remove excess material.

c. Hardening.

The hardening speed and the bonding structure of GD 677 essentially depend on the storage temperature of the parts manufactured with it. At 50°F (10°C), the hardening times are doubled to tripled, and they are shortened by about half at 86°F (30°C). A non-tacky surface is achieved after approximately 5 hours at 75°F (23°C).

Hardening development at 75°F (23°C) on basis of the increase of Shore A Hardness:

Time (H)	2	3	4	5	6	12	24
Shore A (+/-4)	5	14	20	25	28	34	40

PAINTING INSTRUCTIONS (Contd)

d. Operation of Automatic Mixer.

NOTE

To ensure mixing of proper proportions, completely empty the can.

1. Add component B (black) (8) to component A (2).
2. Insert tin containing component A (2) in the retaining tin (3) and secure the tension lock (4).
3. Mount spiral stirrer (6) in drill (9).

NOTE

Components should be sufficiently homogeneously blended after approximately 5 minutes.

To ensure proper bonding, component mixture must be used within 40 minutes at 68°F (20°C).

4. Blend component B (8) in the upper third of the tin containing component A (2). Proceed slowly to the bottom of the tin, stirring in an even, counterclockwise direction.

e. Filling the SVV 50 Gun.

1. Insert the pressing plate (1) into the tin containing component mixture (10). Press plate (1) downwards until the opening in the center of the plate is filled with sealant.
2. Remove nozzle head of the SVV 50 gun (7) and insert the gun (7) into the center opening of the pressing plate (1).
3. Position red valve lever, located at bottom of gun handle, for suction mode.

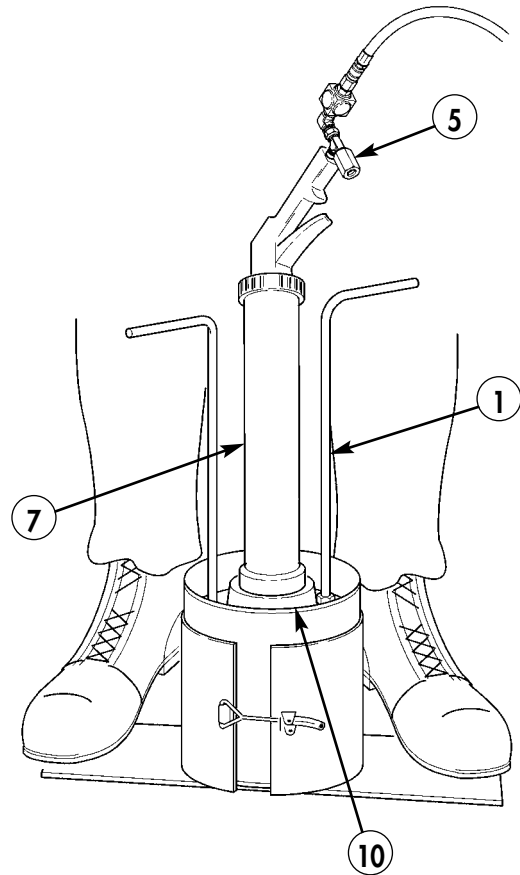
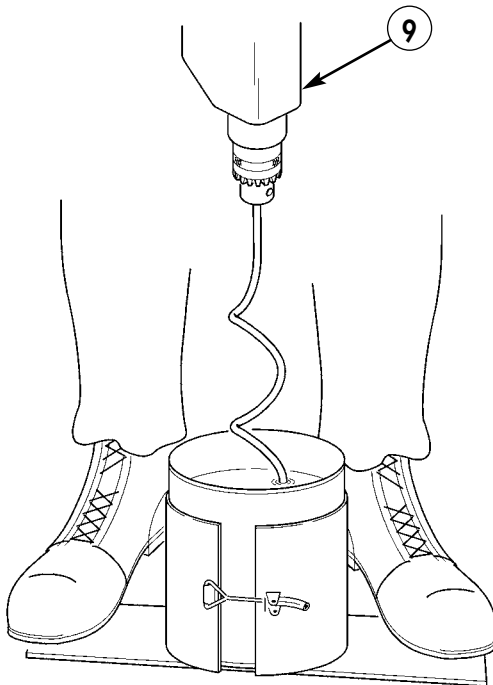
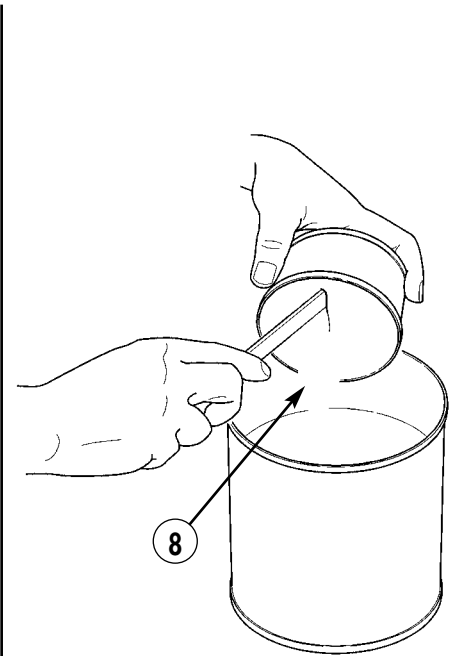
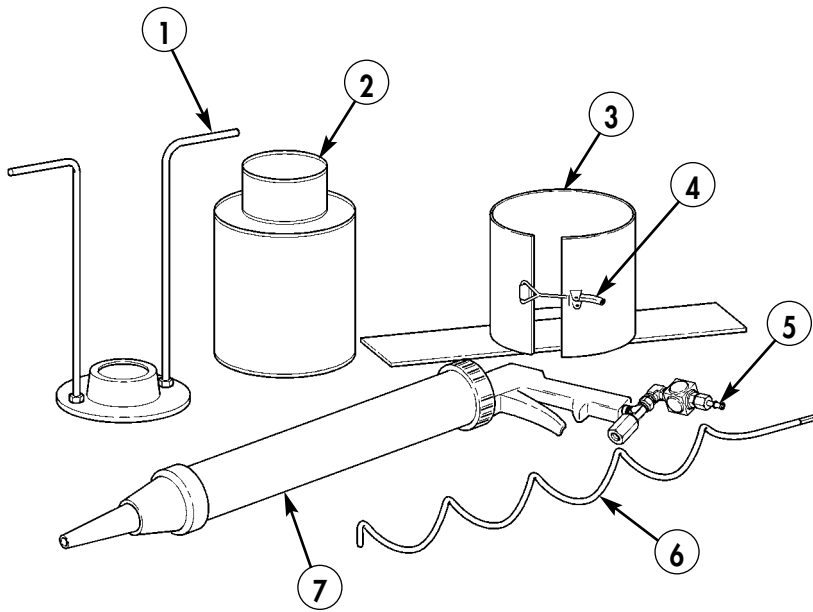
NOTE

For most efficient suction of component into gun, ensure gun remains in as perfect of a perpendicular position as possible.

When pressing plate comes to a standstill, the gun tube is filled with sealant.

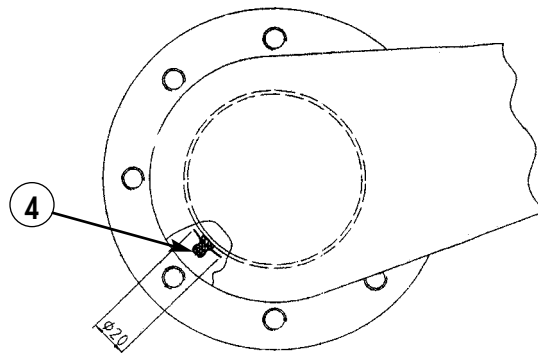
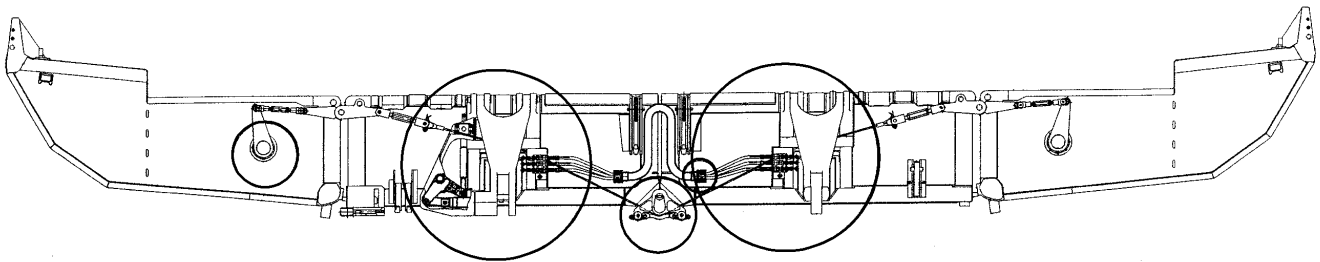
4. Actuate gun trigger and press gun securely against pressing plate (1). Pressing plate (1) will begin to lower.
5. Release gun trigger and shift red valve lever (5) to pressure position.
6. Apply component per task B, step 1.

PAINTING INSTRUCTIONS (Contd)



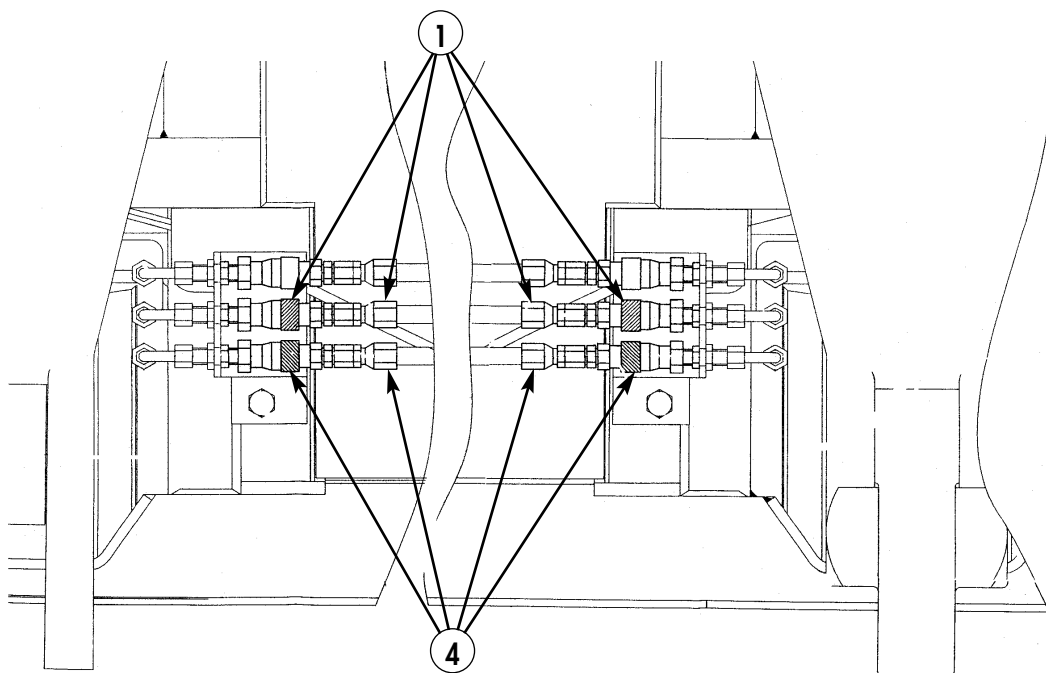
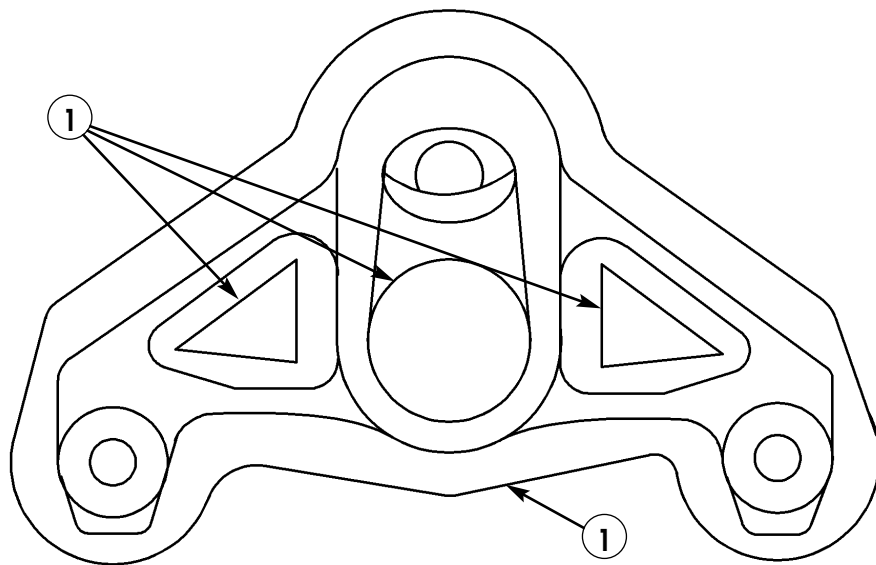
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



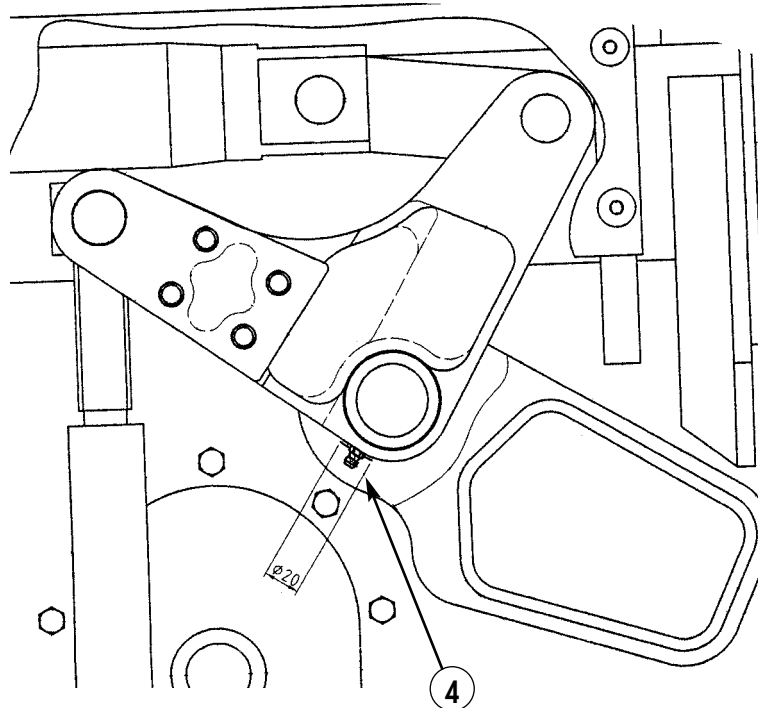
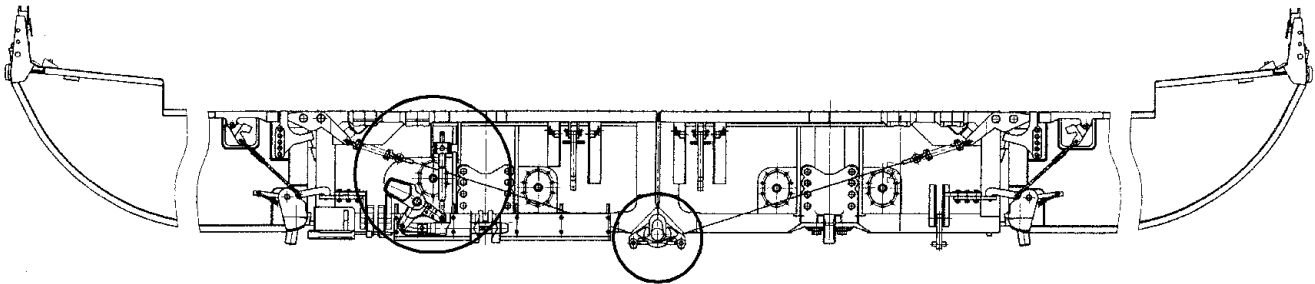
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



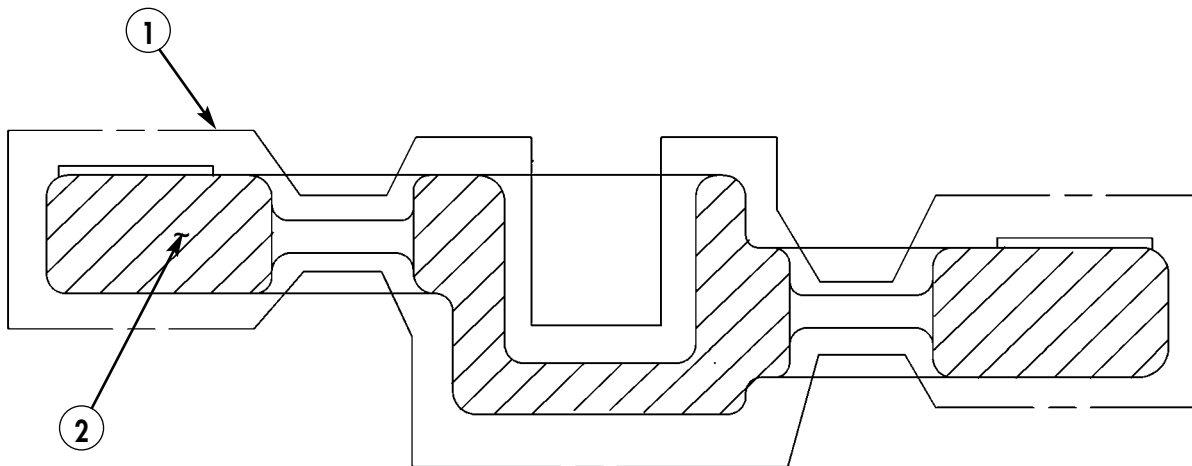
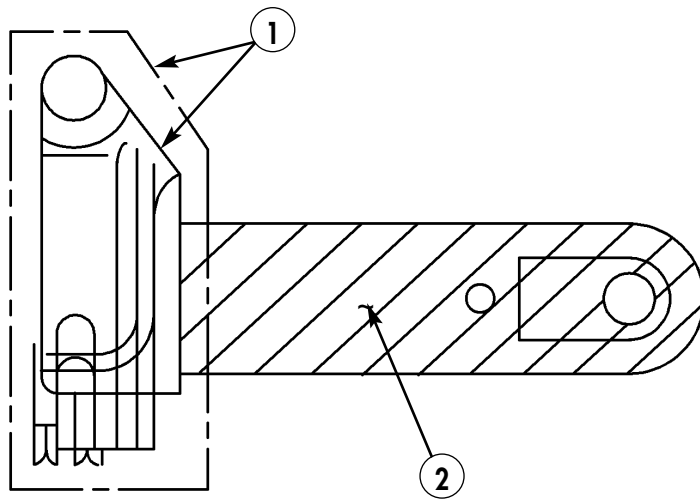
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



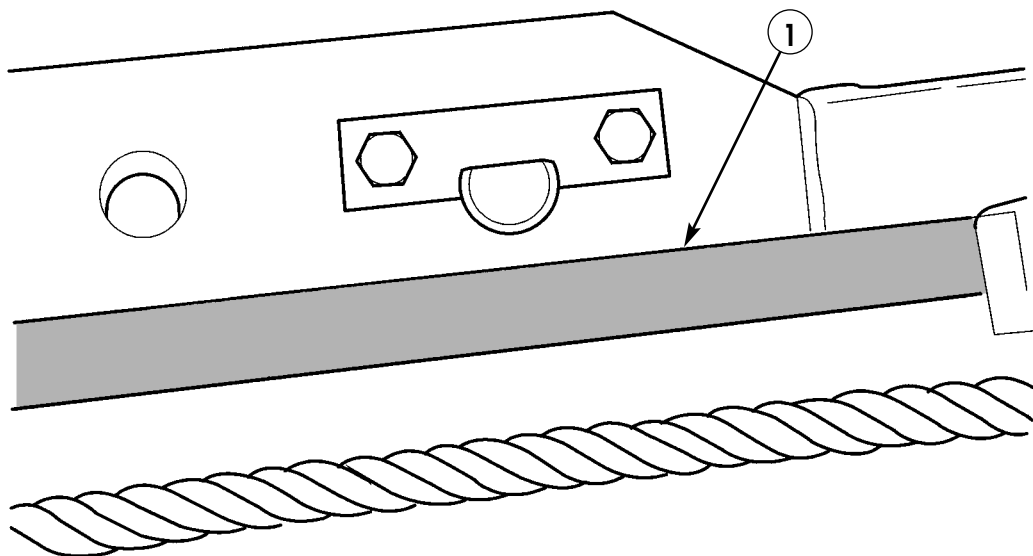
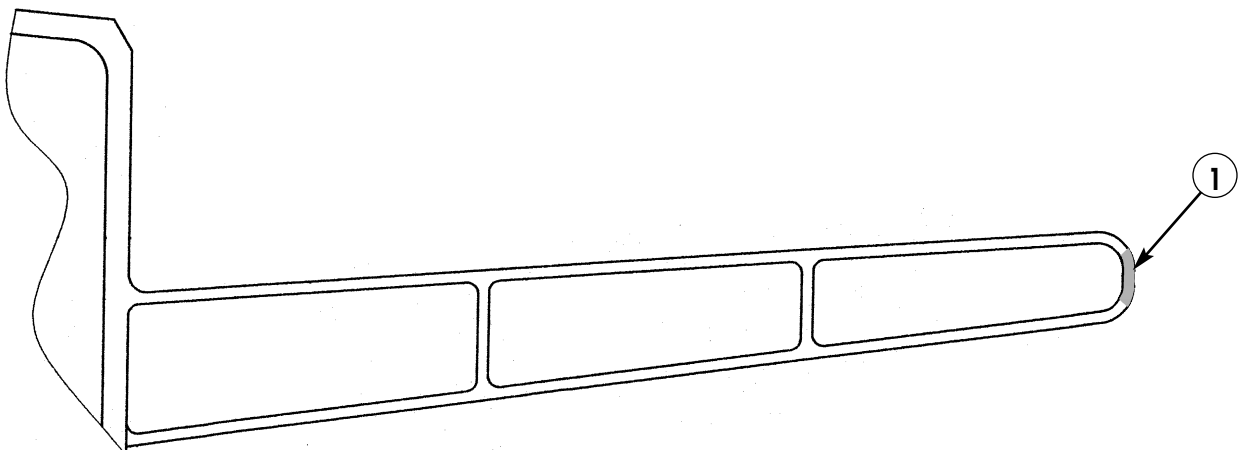
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
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2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



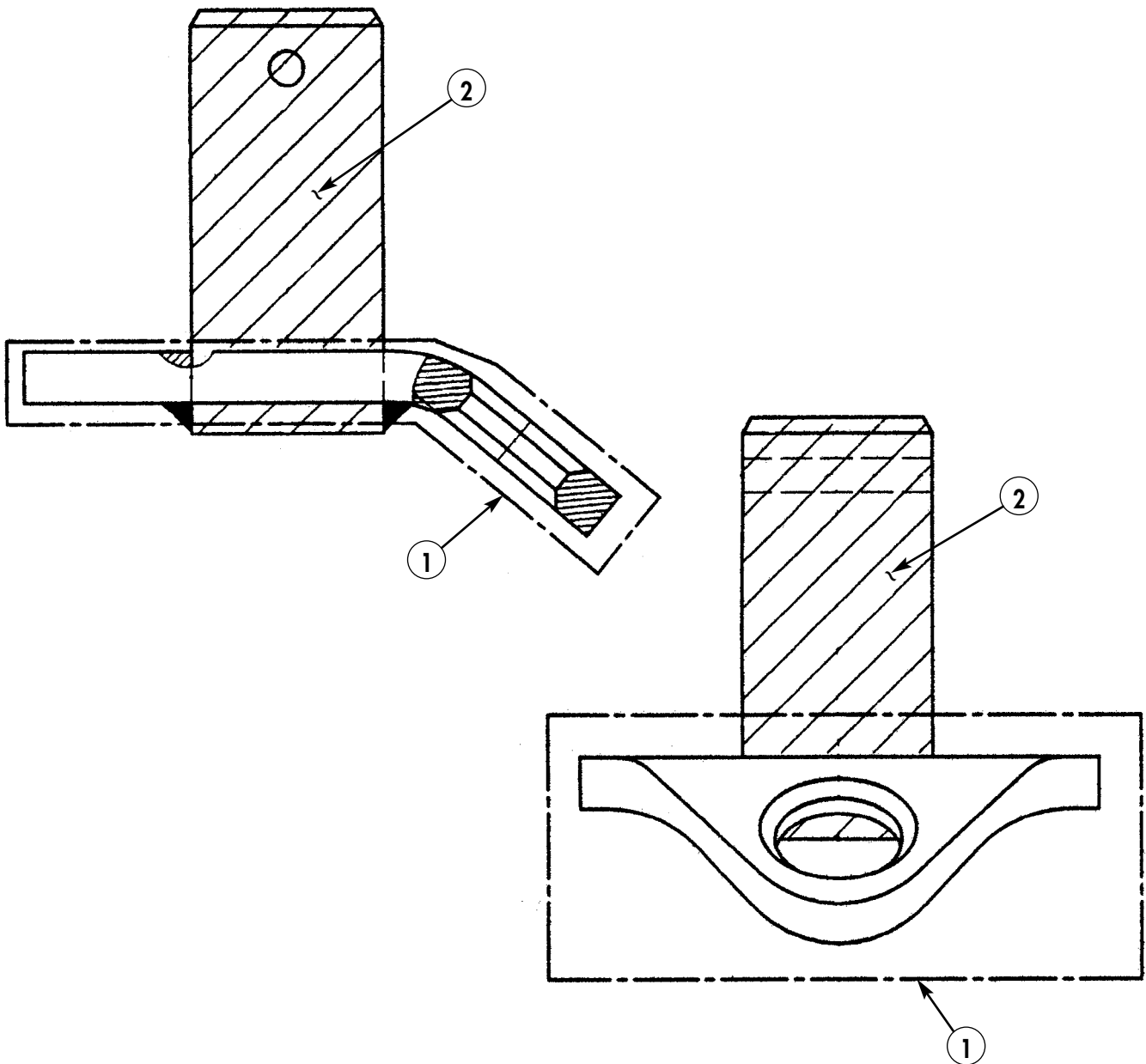
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



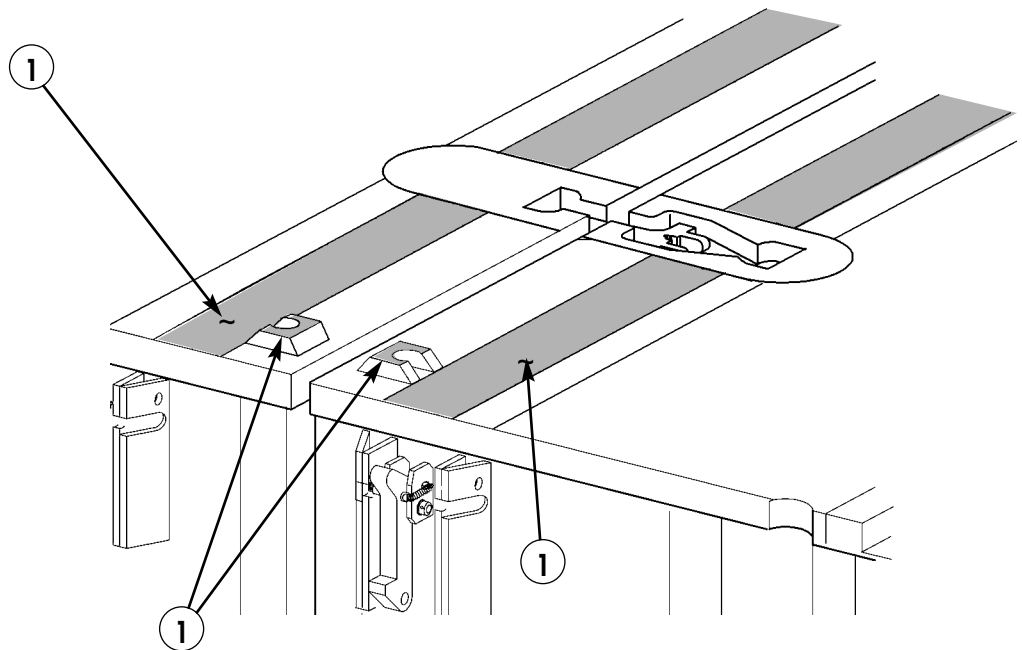
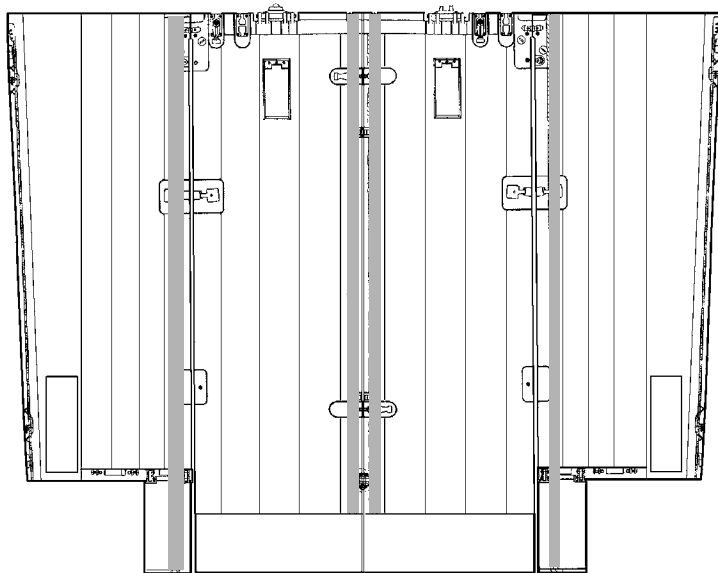
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
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2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



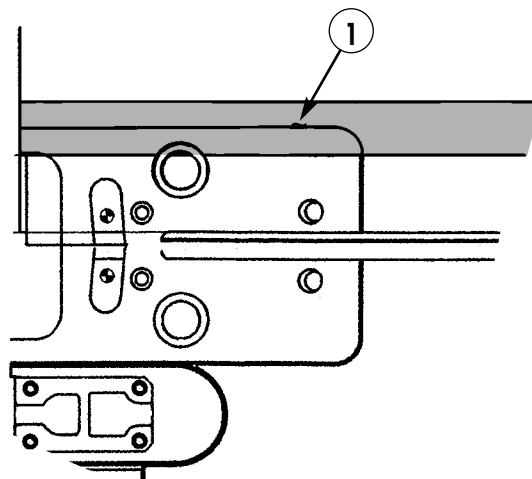
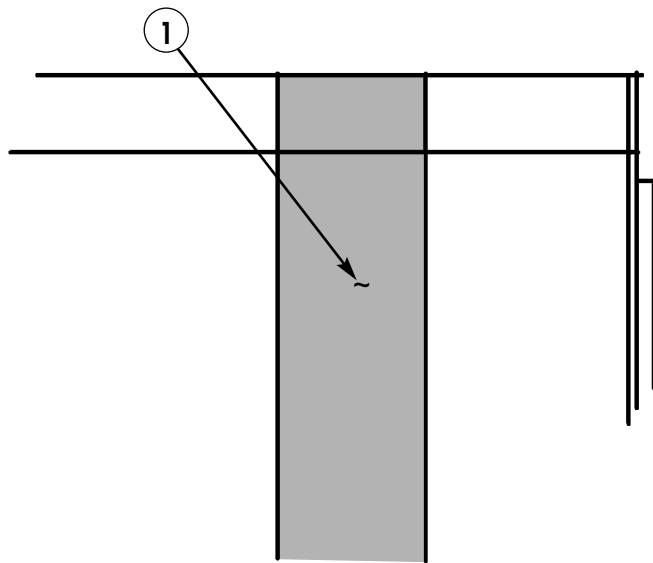
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
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2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



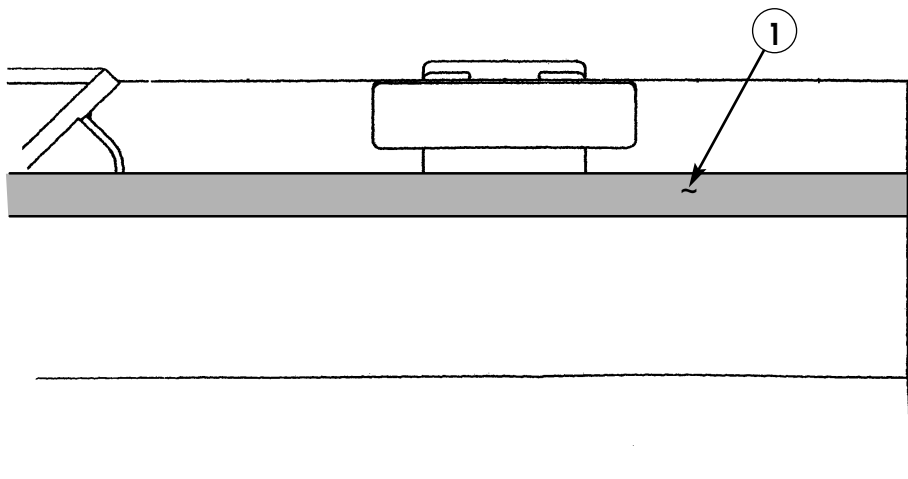
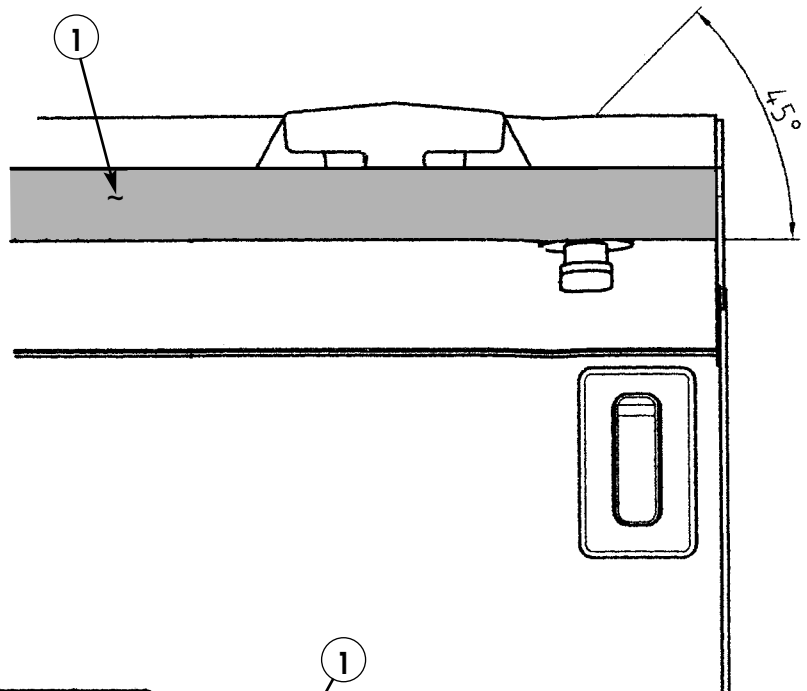
PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
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2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



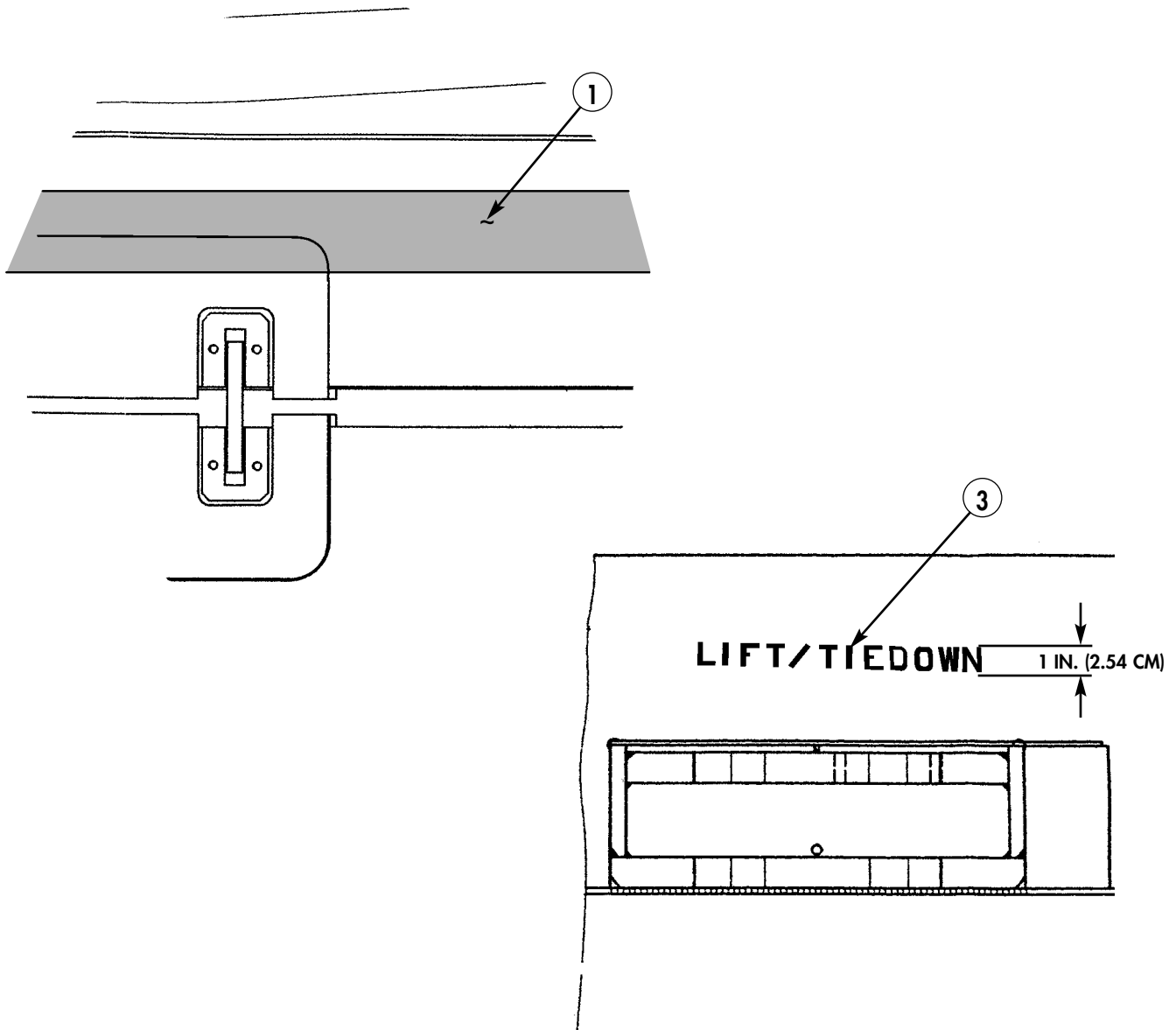
PAINTING INSTRUCTIONS (Contd)

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3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



PAINTING INSTRUCTIONS (Contd)

COLOR CODES	
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2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

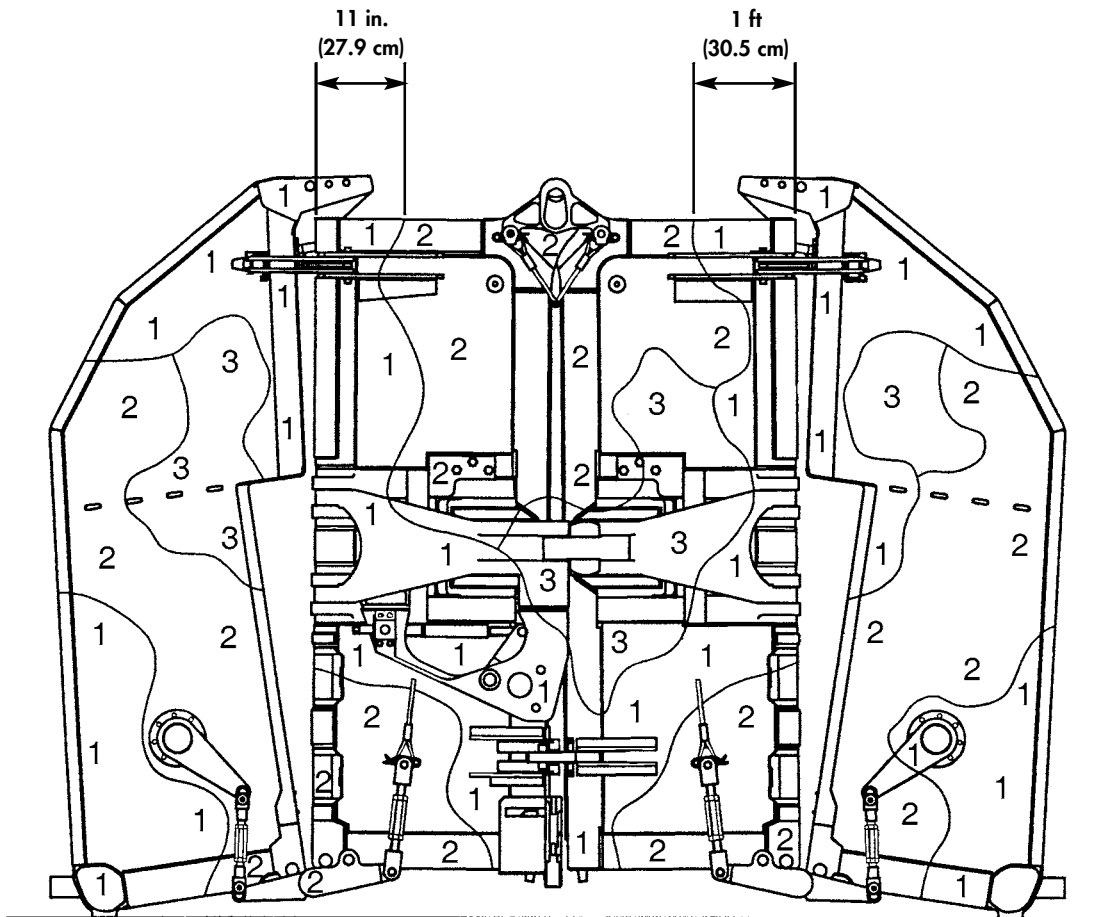


END OF WORK PACKAGE

CAMOUFLAGE PATTERNS

Refer to Painting Instructions (WP 0076 00) for preparation and painting of IRB camouflaged patterns.

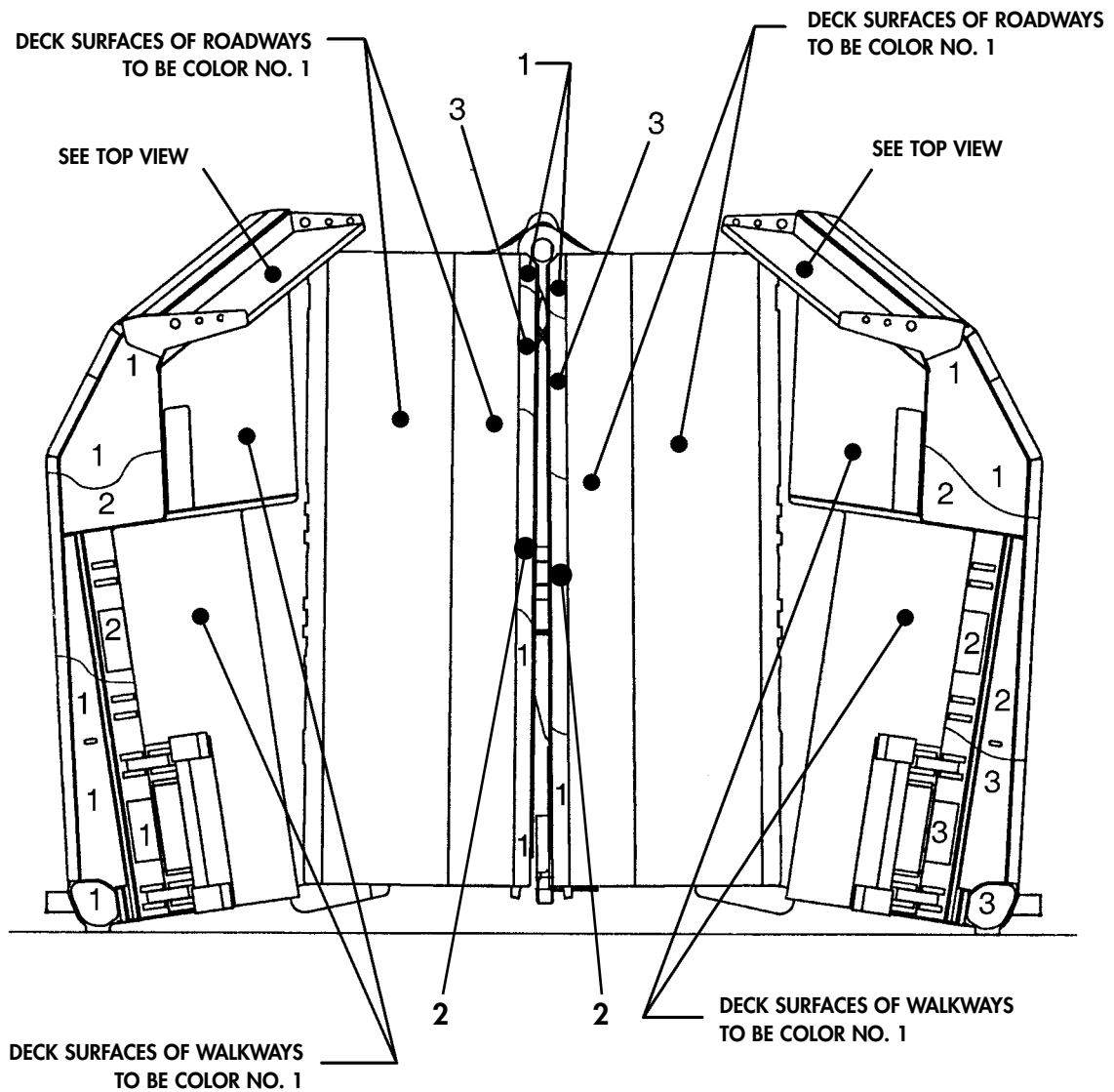
COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
1	BLACK	TAN 686	BLACK
2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



FRONT VIEW, M16 RAMP BAY

CAMOUFLAGE PATTERNS (Contd)

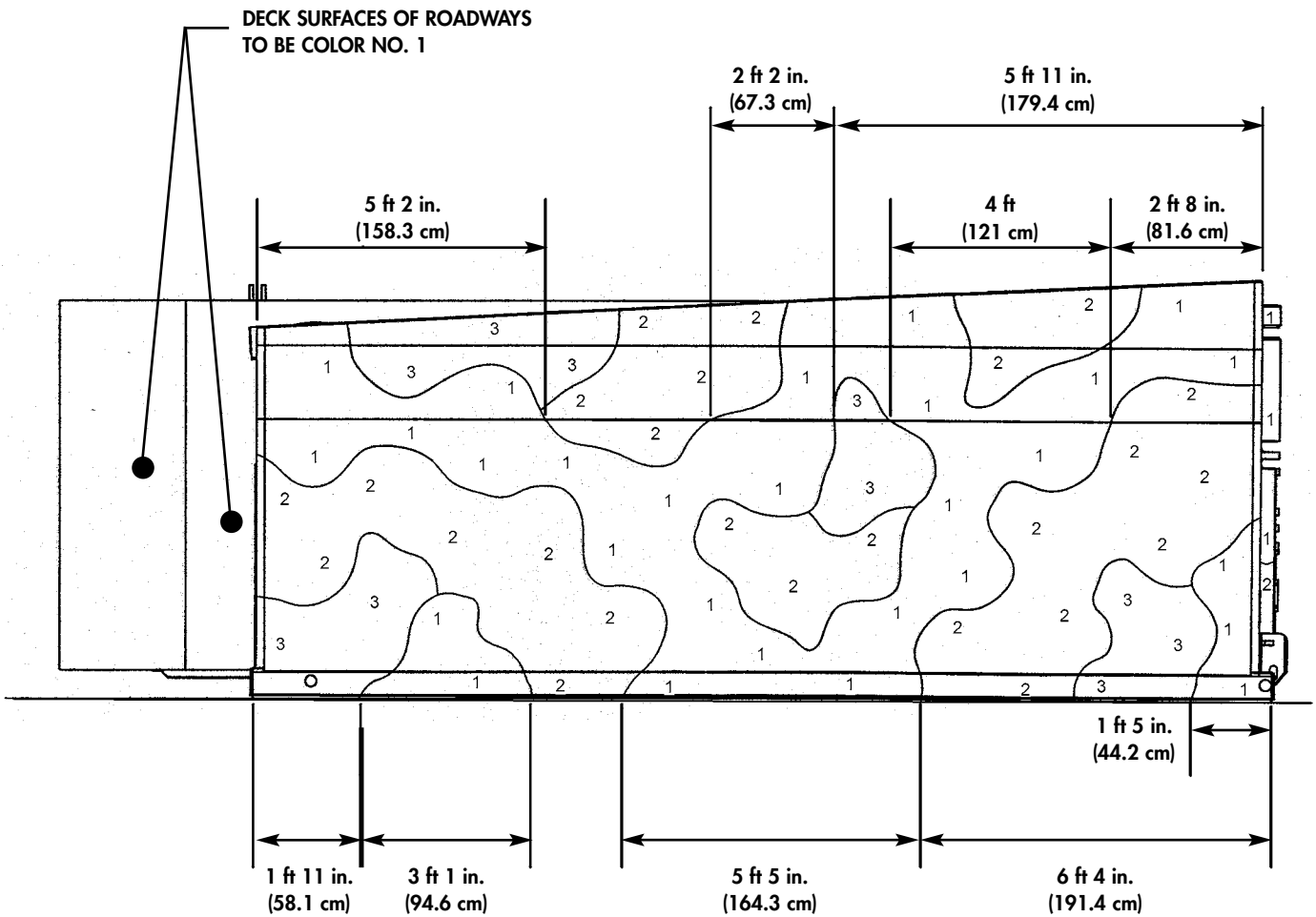
COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
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2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



REAR VIEW, M16 RAMP BAY

CAMOUFLAGE PATTERNS (Contd)

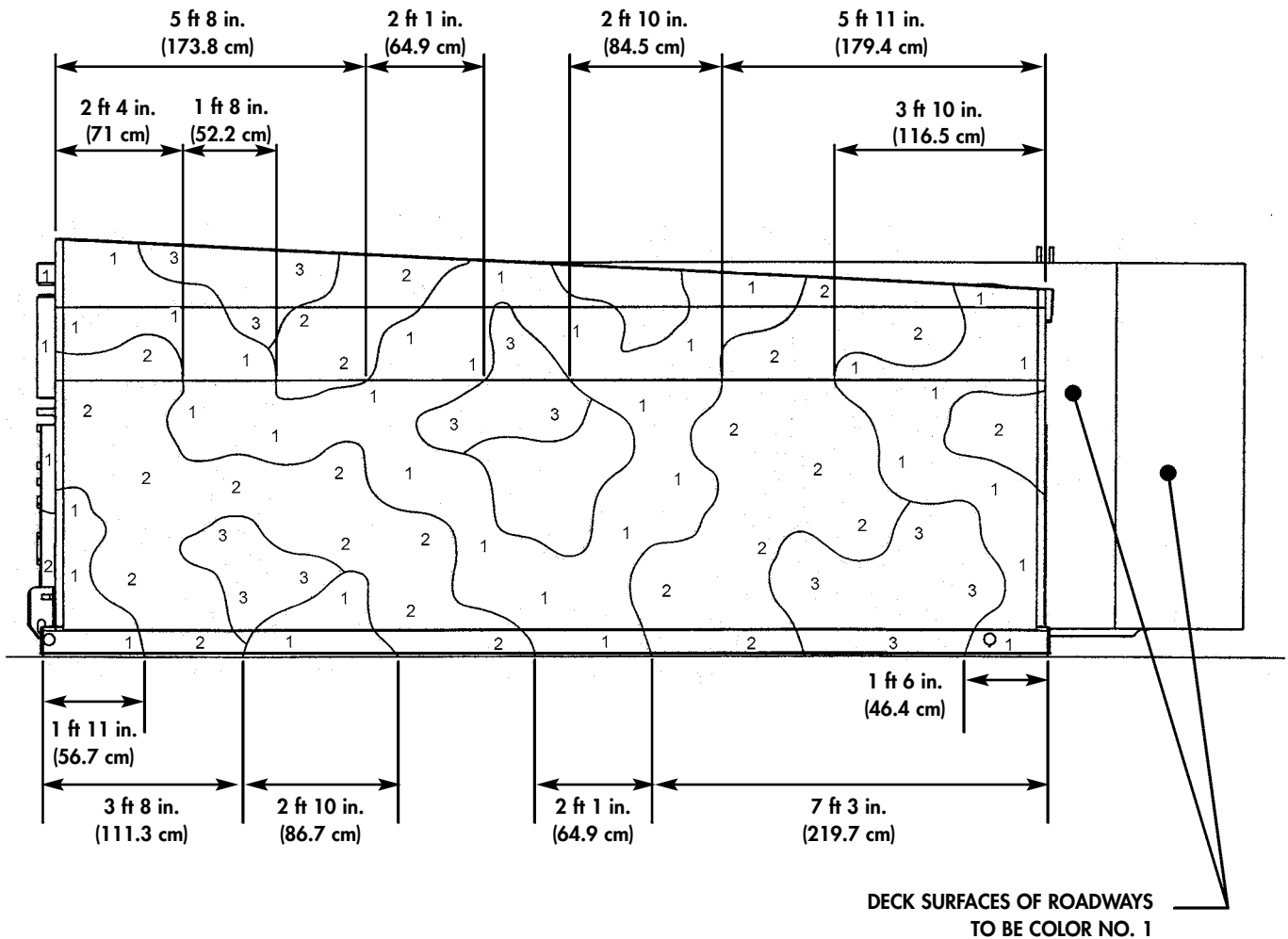
COLOR CODES			
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2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



RIGHT SIDE VIEW, M16 RAMP BAY

CAMOUFLAGE PATTERNS (Contd)

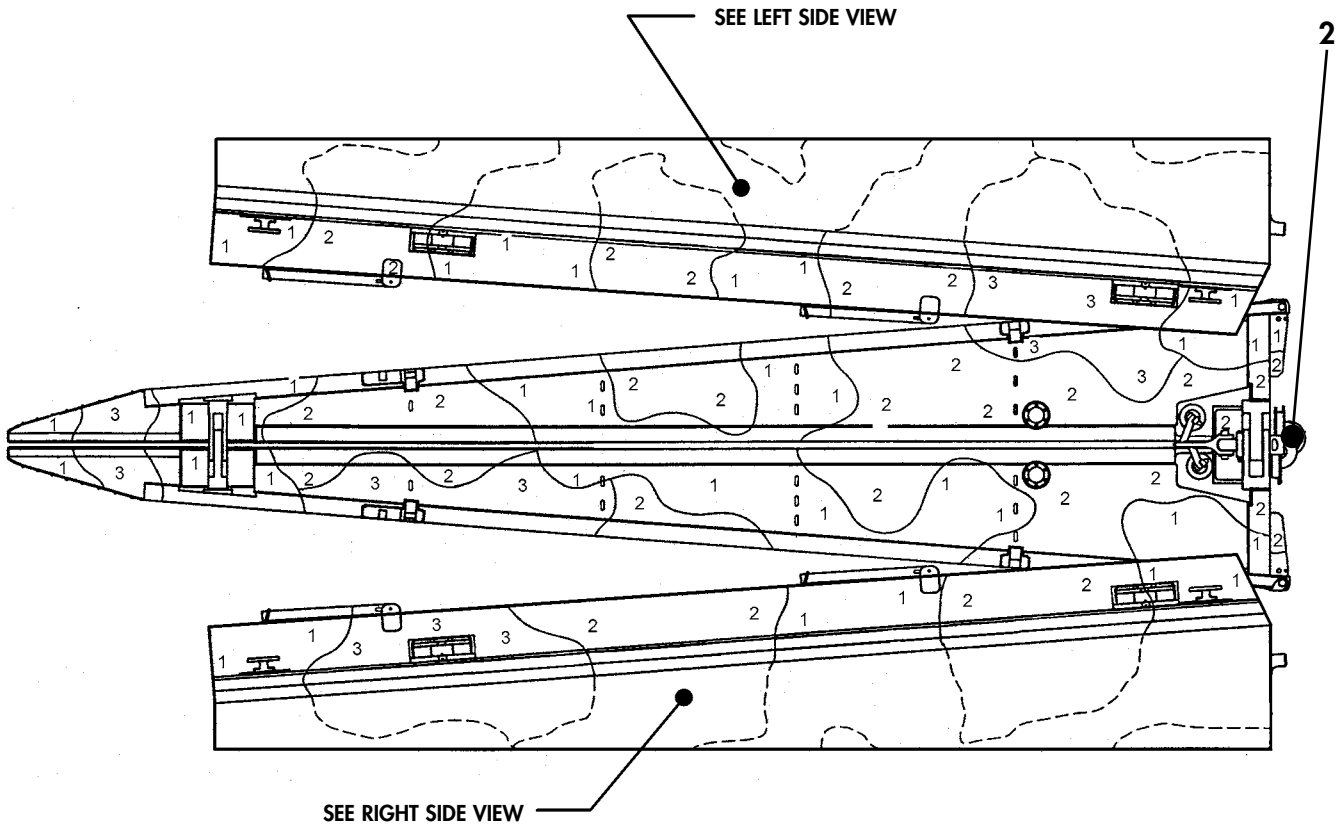
COLOR CODES			
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2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



LEFT SIDE VIEW, M16 RAMP BAY

CAMOUFLAGE PATTERNS (Contd)

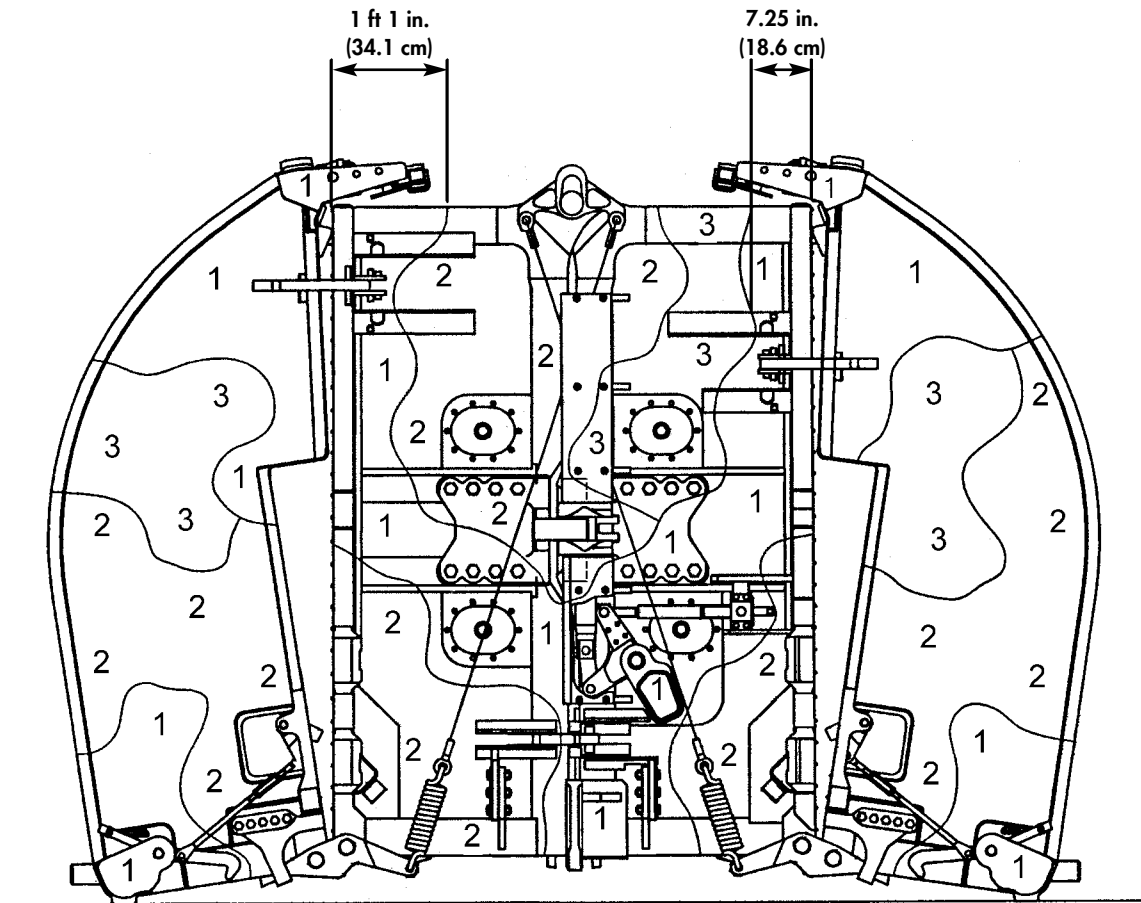
COLOR CODES			
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2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



TOP VIEW, M16 RAMP BAY

CAMOUFLAGE PATTERNS (Contd)

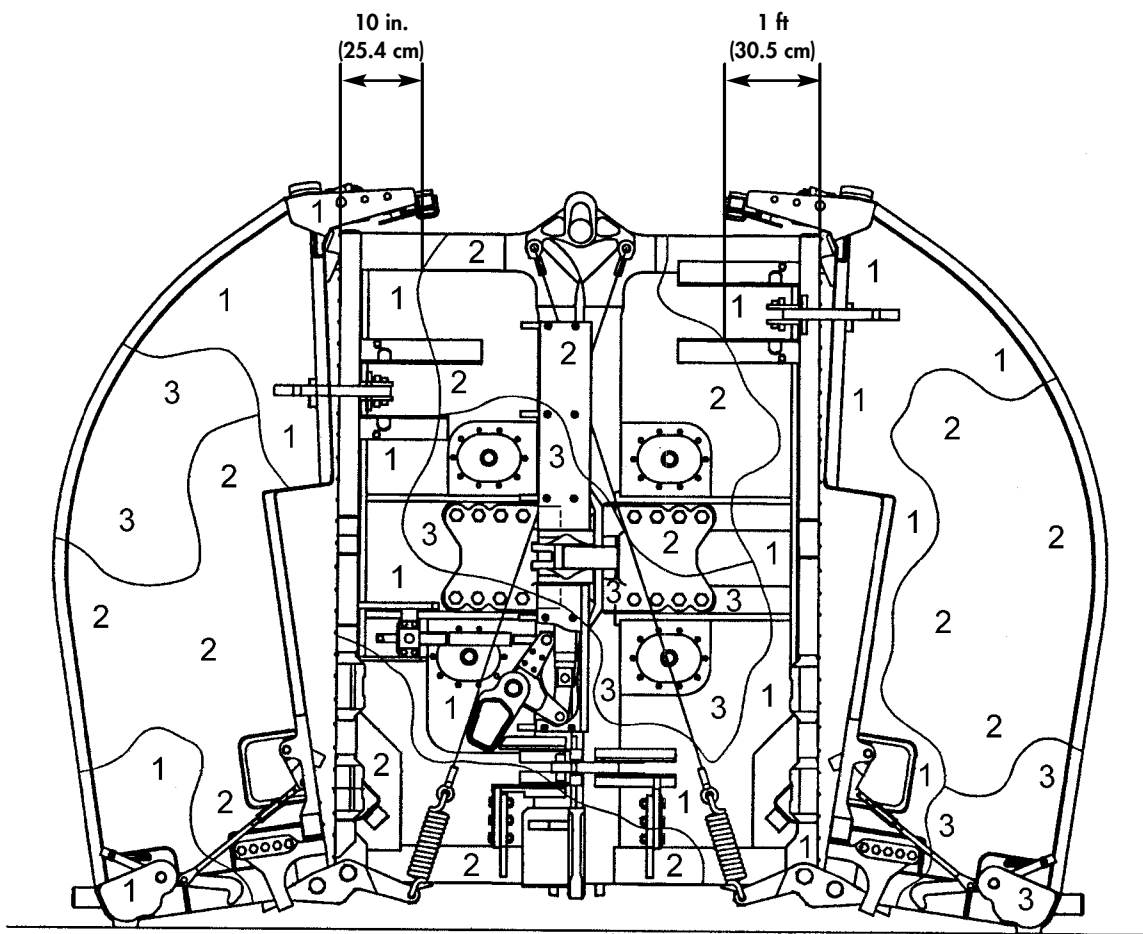
COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
1	BLACK	TAN 686	BLACK
2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



FRONT VIEW, M17 INTERIOR BAY

CAMOUFLAGE PATTERNS (Contd)

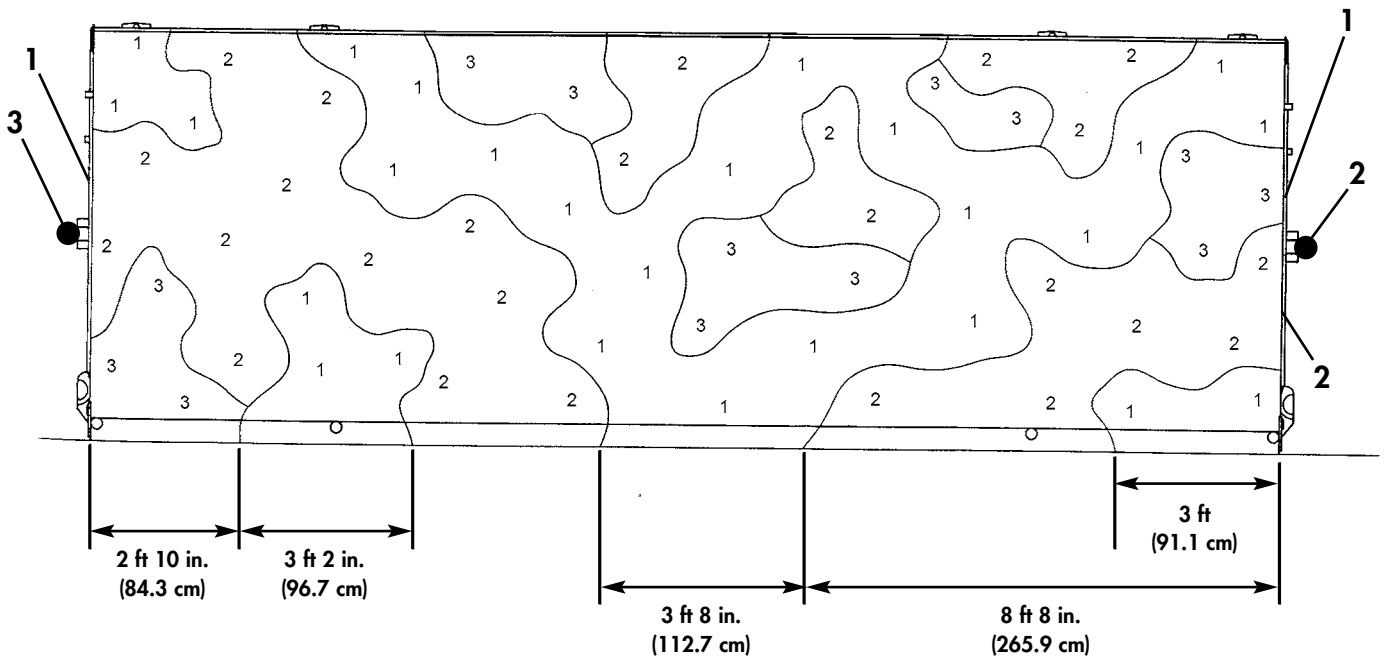
COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
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2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



REAR VIEW, M17 INTERIOR BAY

CAMOUFLAGE PATTERNS (Contd)

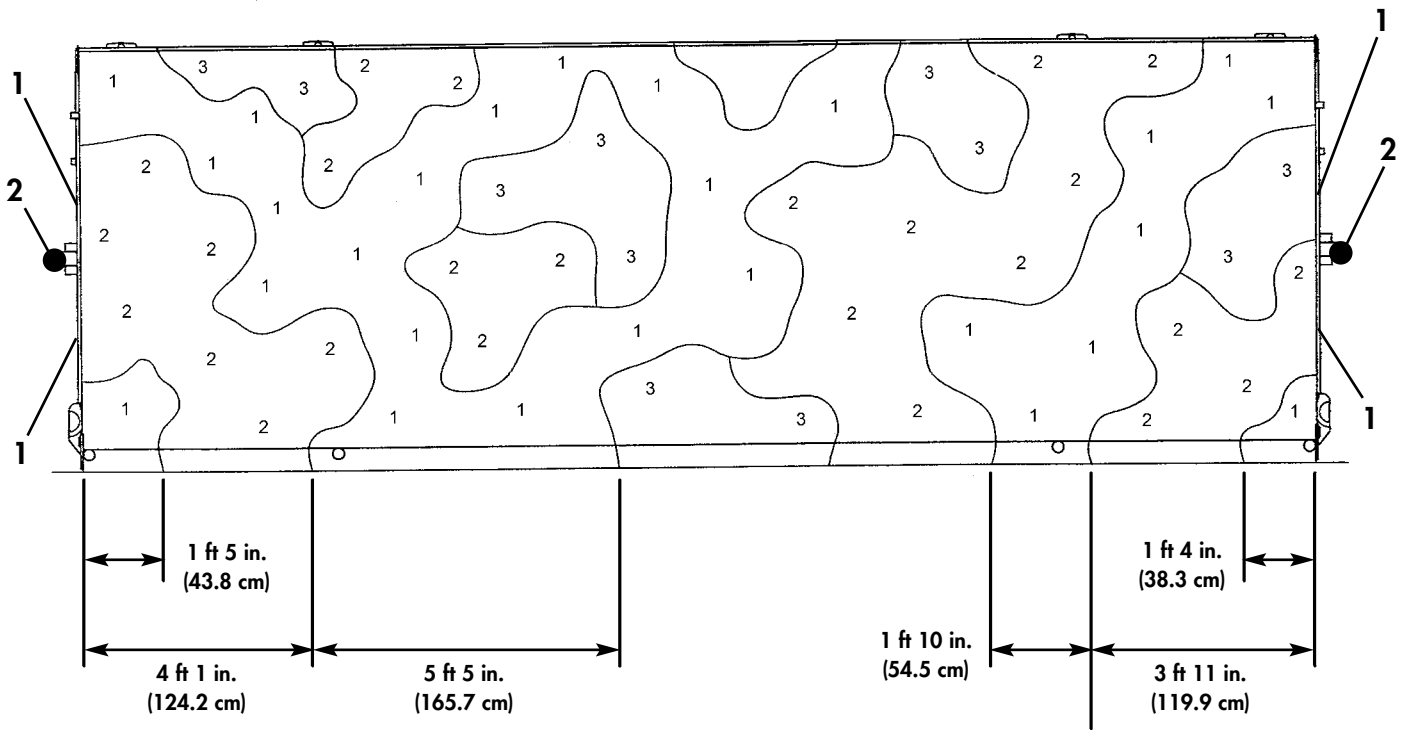
COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
1	BLACK	TAN 686	BLACK
2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



RIGHT SIDE VIEW, M17 INTERIOR BAY

CAMOUFLAGE PATTERNS (Contd)

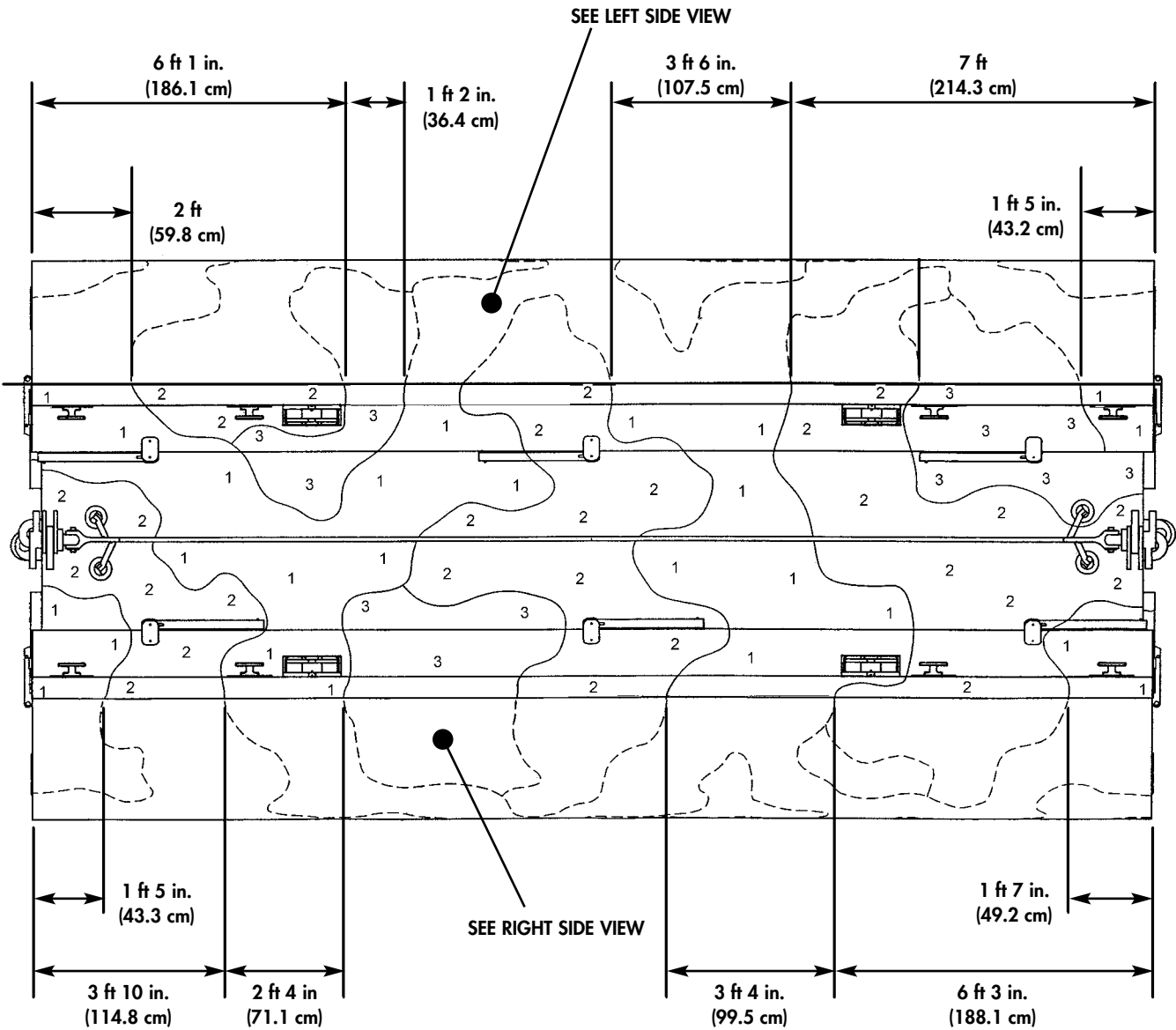
COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
1	BLACK	TAN 686	BLACK
2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



LEFT SIDE VIEW, M17 INTERIOR BAY

CAMOUFLAGE PATTERNS (Contd)

COLOR CODES			
NO.	STANDARD	DESERT	WINTER/SNOW
1	BLACK	TAN 686	BLACK
2	GREEN 383	TAN 686	WHITE
3	BROWN 383	TAN 686	BROWN 383



TOP VIEW, M17 INTERIOR BAY

PUMP SYSTEM SCHEMATIC

SCOPE

The IRB pump system schematic contains pictorial references designed to assist in isolating components and their hose connections for maintenance repair and/or replacement.

COMPONENT TABLES

The callout numbers referenced in the pump system schematic are used to identify individual components located in the IRB pump system configuration.

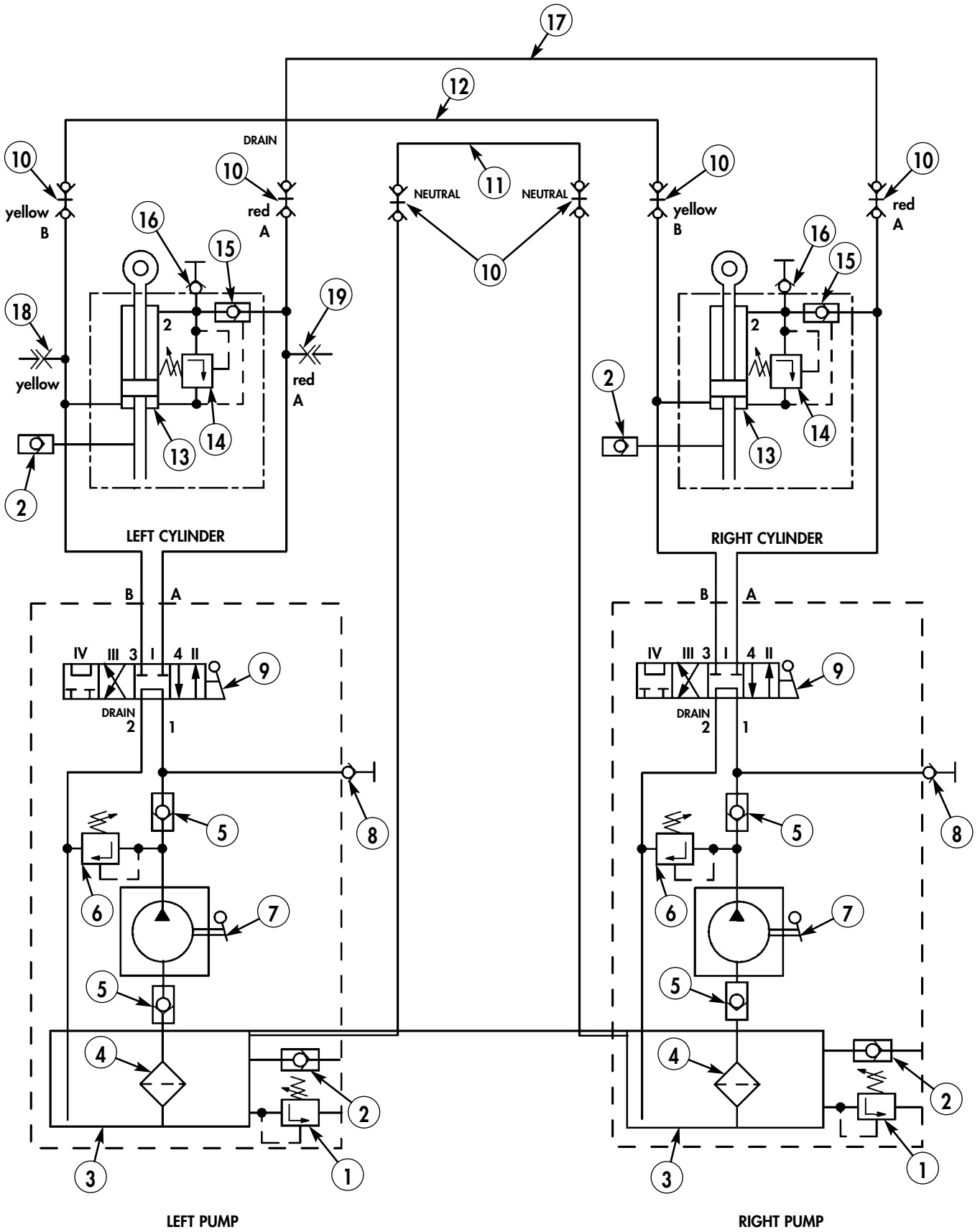
SCHEMATIC SYMBOLS

Schematic symbols are in accordance with standard symbols for fluid components. A list of component nomenclature is provided and is identified with the schematic symbols by callout number.

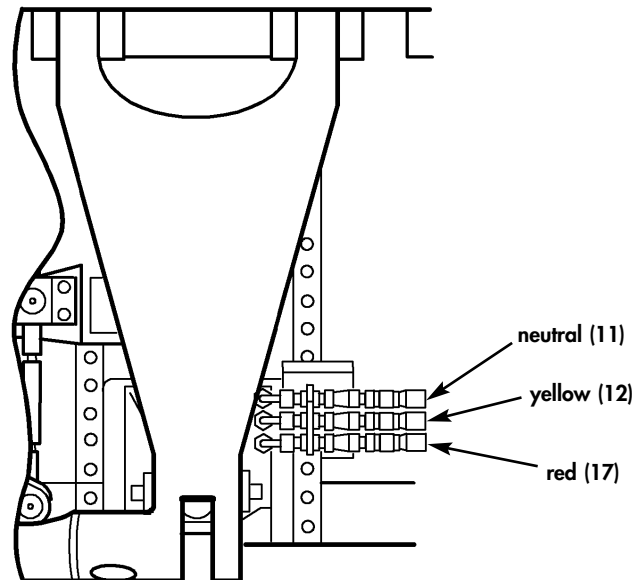
MAJOR SYSTEM SCHEMATIC

The following pump system schematic covers the complete IRB pump system, from pumps and control valves to cylinders and the complete routing of fluid hoses.

HYDRAULIC SYSTEM SCHEMATIC (Contd)



HYDRAULIC SYSTEM SCHEMATIC (Contd)



1. PRESSURE RELIEF VALVE 508 PSI (35 BAR)
2. VENTING VALVE 4-7 PSI (0.3-0.5 BAR)
3. FLUID RESERVOIR
4. SUCTION FILTER
5. CHECK VALVE (NON-RETURN VALVE)
6. PRESSURE RELIEF VALVE (SAFETY VALVE) 1450 PSI (100 BAR)
7. HANDPUMP
8. MEASURING CONNECTION ON HANDPUMP
9. DIRECTIONAL CONTROL VALVE
POSITIONS: DOWN
TRANSPORT/CROSSING
UP
DOWN FAST
10. COUPLING
11. CONNECTING HOSE BETWEEN TWO FLUID TANKS
12. CONNECTING HOSE BETWEEN TWO CYLINDERS (BOTTOM SIDE)
13. DOUBLE-ACTION WORKING CYLINDER
14. PRESSURE RELIEF VALVE (SAFETY VALVE) 8412 PSI (580 BAR)
15. SHUT-OFF VALVE
16. MEASURING CONNECTION AND VENTING AT THE CYLINDER
17. CONNECTING HOSE BETWEEN TWO CYLINDERS (HEAD SIDE)
18. EXTERNAL CONNECTION (BOTTOM SIDE)
19. EXTERNAL CONNECTION (HEAD SIDE)

A, B, 1, 2, 3, AND 4: PORT DESIGNATION

END OF WORK PACKAGE

CHAPTER 8

SHIPMENT AND LIMITED STORAGE INSTRUCTIONS FOR IMPROVED RIBBON BRIDGE (IRB)

General Preparation for Shipment	WP 0079 00
Loading and Movement of Equipment	WP 0080 00
Limited Storage	WP 0081 00

SHIPMENT AND LIMITED STORAGE

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

GENERAL PREPARATION FOR SHIPMENT

SCOPE

- a. This work package provides instructions on preserving and protecting IRB bays for shipment.
- b. Protection for IRB bays and accompanying equipment must be sufficient to protect the material against deterioration and physical damage.

CLEANING

WARNING

Skysol-100 mixture is combustible. Use mechanical ventilation whenever product is used in a confined space, is heated above ambient temperatures, or is agitated. DO NOT use or store near heat, sparks, flame, or other ignition sources. Keep container sealed when not in use.

Contact with Skysol-100 may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least fifteen (15) minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity.

Prior to application of preservatives, surfaces must be cleaned to ensure removal of corrosion, soil, grease, or vehicle acid and alkali residues.

- a. Remove all dirt, grease, oil, and other foreign matter from all painted metal surfaces of the IRB bay by scrubbing with cloths soaked in Skysol-100 (Item 6, WP 0134 00). Use warm water for cleaning rubber parts.
- b. Clean exterior surfaces of IRB bays by power washing with water, to ensure removal of all dirt and foreign matter. After cleaning, allow parts to air dry or wipe with clean, dry, lint-free cloths (Item 7, WP 0134 00).

PRESERVATION

All critical unpainted metal surfaces must be protected during shipment. Coat all unpainted, exposed, or machined metal surfaces on the exterior of the bay with approved corrosion-preventive compound only (Item 8, WP 0134 00). Equipment protected must be closely watched for signs of corrosion.

GENERAL PREPARATION FOR SHIPMENT (Contd)

PACKING

Pack all Basic Issue Items (BII) and Additional Authorization List (AAL) items to prevent physical damage.

SHIPMENT OF ARMY DOCUMENTS

Prepare all army shipping documents accompanying IRB per DA Pam 738-750.

END OF WORK PACKAGE

SHIPMENT AND LIMITED STORAGE

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LOADING AND MOVEMENT OF EQUIPMENT

SHIPPING DATA PLATE

A shipping data plate showing a silhouette of the side and end views of the bay is provided on each IRB-R and IRB-I. Overall dimensions, lifting and tiedown provisions, and center of gravity locations are depicted.

LOADING AND MOVEMENT

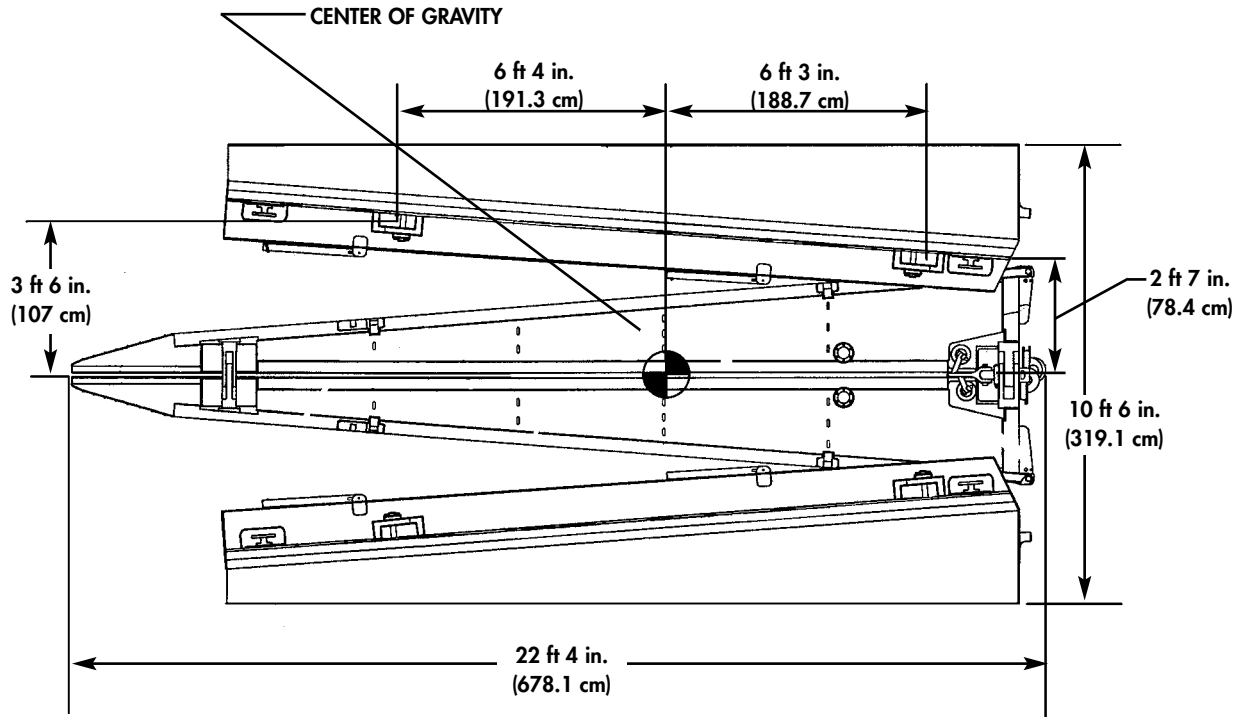
For transportability guidance in handling and movement of IRB bays, refer to TM 743-200-1, Storage and Materials Handling and TM 55-2200-001-12, Transportability Guidance for Application of Blocking, Bracing, and Tiedown Materials. Refer to TM 5-5420-278-10 or TM 5-5420-234-14&P for information on the Common Bridge Transporter (CBT) and the Bridge Adapter Pallet (BAP).

SLINGING PROVISIONS

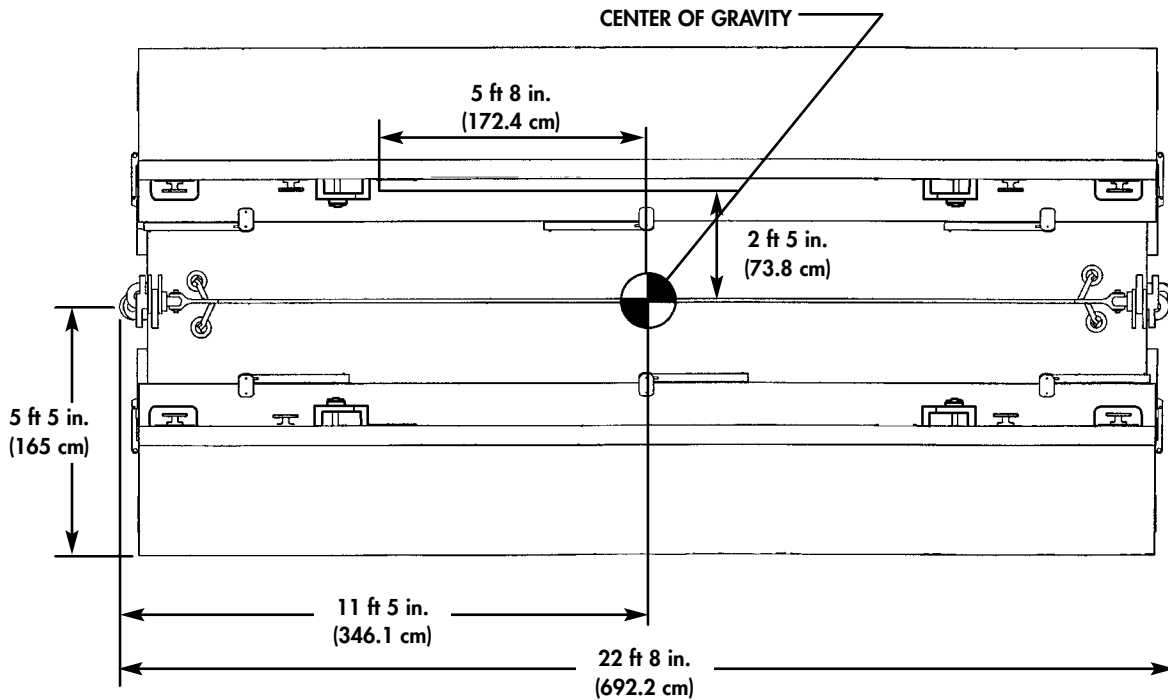
IRB slinging provisions enable lifting of either the ramp or interior bay for both normal lift and external lift by helicopter. When lifting the bay, connect lifting sling to the quick-release pins marked LIFT/TIEDOWN, located on top of the bay's outer pontons when in the folded position. When the BAP is used, lift the bay and the BAP by connecting the sling to the lifting eyes on the BAP. When the bay is tied down with the BAP, the tiedowns are to be attached to the bay and not the BAP. The quick-release pins are located in relationship to the bay's center of gravity. Refer to Center of Gravity (WP 0082 00) for measurements.

LOADING AND MOVEMENT OF EQUIPMENT (Contd)

CENTER OF GRAVITY LOCATIONS



TOP VIEW, M16 RAMP BAY



TOP VIEW, M17 INTERIOR BAY

SHIPMENT AND LIMITED STORAGE

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

LIMITED STORAGE

SCOPE

Commanders are responsible for ensuring that all IRB bays issued or assigned to their command are maintained in a serviceable condition and properly cared for, and that personnel under their command comply with technical instructions. Lack of time, trained personnel, or proper tools may result in a unit being incapable of performing maintenance for which it is responsible. In such cases, unit commanders may, with the approval of major commanders, place an IRB-R or IRB-I that is beyond the maintenance capability of the unit in administrative storage. For detailed information, refer to AR 750-1.

LIMITED STORAGE INSTRUCTIONS

NOTE

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontoons.

a. Time Limitations. Administrative storage is restricted to a period of 90 days and must not be extended unless the IRB bay(s) is reprocessed per b below.

b. Storage Procedure. Perform disassembly only as required to clean and preserve exposed surfaces. Except as otherwise noted, and to the maximum extent consistent with safe storage, place the bay(s) in administrative storage in as nearly a completely assembled condition as practicable. Install and adjust equipment so that the bay(s) may be placed in service and operated with minimum delay.

(1) The IRB-R or IRB-I should be stored on level ground in the most favorable location available, preferably one which affords protection from exposure to the elements and from pilferage. The IRB bays shall withstand indefinite storage in any ambient temperature in the range of -50° F (-45.6° C) to 160° F (71.1° C).

(2) This maintenance consists of inspecting, cleaning, servicing, preserving, lubricating, adjusting, and replacing mandatory repair parts as required.

(3) Provide access to the bay(s) to permit inspection, servicing, and subsequent removal from storage.

INSPECTION IN LIMITED STORAGE

NOTE

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontoons.

a. Conduct visual inspection of IRB bay(s) in limited storage at least once a month and immediately following hard rains, heavy snowstorms, windstorms, or other severe weather conditions. Perform disassembly as required to fully ascertain the extent of any discovered deterioration or damage. Maintain a record of these inspections for each bay. Attach record to bay so that it is protected from the weather.

LIMITED STORAGE (Contd)

b. Perform necessary reprocessing for limited storage when rust or deterioration is found on any unpainted area. Immediately repair damage caused to bay(s) by severe weather conditions. Repair damage to On-Equipment Material (OEM) as necessary. Thoroughly clean, dry, and repaint painted surfaces showing evidence of wear; refer to Painting Instructions (WP 0076 00).

REMOVAL FROM LIMITED STORAGE

NOTE

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontons.

Material removed from administrative storage will be:

- a.** Restored to normal operating conditions.
- b.** Repaired as required.
- c.** Returned to normal PMCS schedule using last type service completed as a starting point.

STORAGE OF NEW IRB BAYS

NOTE

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontons.

a. If new IRB bays (interior or ramp) are placed in storage at either contractor or Government facilities, before being put in service, the warranty period shall not start until each such IRB bay is withdrawn from that storage, or until nine months from the date shown on the Materiel Inspection and Receiving Report (DD Form 250); whichever occurs first.

b. If new IRB bays are placed in contractor storage, the contractor shall maintain and exercise such stored IRB bays in accordance with the contractor's approved technical manual. Upon removal from storage, and before delivering the IRB bays to the Government, the contractor shall exercise and perform all PMCS tasks per the contractor's approved technical manual.

c. If new IRB bays are placed in Government storage, the Government will exercise stored IRB bays in accordance with the contractor's approved technical manual. The Government shall notify the contractor before placing each such IRB bay in storage, and again at the time it is withdrawn. If there are any contractor-caused retrofits that must be applied to the IRB bays, the storage time does not start until those retrofits are completed.

END OF WORK PACKAGE

CHAPTER 9

SUPPORTING INFORMATION FOR IMPROVED RIBBON BRIDGE (IRB)

References	WP 0082 00
Maintenance Allocation Chart (MAC) Introduction	WP 0083 00
Maintenance Allocation Chart (MAC)	WP 0084 00
Repair Parts and Special Tools List (RPSTL)	WP 0085 00
Expendable and Durable Items List	WP 0134 00
Tool Identifications	WP 0135 00

REFERENCES

THIS WORK PACKAGE SUPERSEDES WP 0082 00, DATED 8 APRIL 2003

SCOPE

This work package lists all field manuals, forms, technical manuals, and miscellaneous publications referenced in this manual.

PUBLICATIONS INDEX

The following index should be consulted frequently for latest changes or revisions and for new publications relating to material covered in this manual.

DA Pam 738-750 The Army Maintenance Management System (TAMMS)

FORMS

The following forms pertain to this manual. See DA Pam 25-30 for index of blank forms. See DA Pam 738-750, The Army Maintenance Management System (TAMMS), for instructions on the use of maintenance forms pertaining to this manual.

DA Form 2028	Recommended Changes to DA Publications and Blank Forms
DA Form 2402	Exchange Tag
DA Form 2404/5988-E	Equipment Inspection and Maintenance Worksheet
DA Form 2408-9	Equipment Control Record
DA Form 5504	Maintenance Request
DD Form 250	Material Inspection and Receiving Report
DD Form 314	Preventive Maintenance Schedule and Report Card
SF 364	Report of Discrepancy (ROD)
SF 368	Product Quality Deficiency Report (Category 11)

FIELD MANUALS

AR 700-139	Army Warranty Program Concepts and Policies
FM 3-4	Nuclear, Biological, and Chemical (NBC) Protection
FM 3-5	Nuclear, Biological, and Chemical (NBC) Decontamination
FM 5-20	Camouflage Pattern Painting
FM 5-34	Engineer Field Data Bridging

TECHNICAL MANUALS

TM 5-5420-209-12	Operator's and Unit Maintenance Manual, Improved Float Bridge (Ribbon Bridge)
TM 5-5420-234-14&P	Operator's, Unit, Direct Support, and General Support Manual (including Repair Parts and Special Tool List), Common Bridge Transporter
TM 5-5420-278-10	Operator's Manual, Improved Ribbon Bridge (IRB)
TC 9-237	Welding Theory and Application
TM 9-214	Inspection, Care, and Maintenance of Antifriction Bearing Subscription Form
TM 9-2320-279-10	M977 Series, 8 x 8 Heavy Expanded Mobility Tractical Truck (HEMTT) Operator's Manual
TM 9-247	Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materiels Including Chemicals
TM 43-0139	Painting Instructions for Army Material
TM 43-1043	Equipment Improvement Report and Maintenance Summary

TECHNICAL MANUALS (Contd)

TM 743-200-1 Storage and Materials Handling
TM 746-10 Marking, Packing, and Shipment of Supplies and Equipment
TM 750-244-6 Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use

TECHNICAL BULLETINS

TB 43-0142 Safety, Inspection and Testing of Lifting Devices
TB 43-0209 Color, Marking, and Camouflage Painting of Military Vehicles

OTHER PUBLICATIONS

CTA 50-970 Expendable/Durable Items (except Medical, Class V, Repair Parts, and
Heraldic Items)
MIL-STD-12 Military Standard Abbreviations for Use on Drawings and in Specifications,
Standards and Technical Documents
MIL-C-53072 Chemical Agent Resistant Coating (System Application Procedures)
MIL-C-5541 Chemical Conversion Coatings on Aluminum Alloys

END OF WORK PACKAGE

MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

THIS WORK PACKAGE SUPERSEDES WP 0083 00, DATED 8 APRIL 2003

INTRODUCTION

THE ARMY MAINTENANCE SYSTEM (AMS)

This introduction provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

The Maintenance Allocation Chart (MAC) (WP 0084 00) 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 and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field Level (Tactical)-C (operator/crew), O (unit) maintenance, and F (Direct Support).

Sustainment Level (Sustainment)-H (General Support) and D (Depot).

The tools and test equipment requirements (immediately following the MAC) list the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks (immediately following the tools and test equipment requirements) contain 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). This includes scheduled inspection and gaging and evaluation of cannon tubes.
- 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 devices and hydrostatic testing of pressure hoses.
- 3. Service.** Operations required periodically to keep an item in proper operating condition; i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms.
- 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.
- 6. Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
- 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. 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.

MAINTENANCE FUNCTIONS (Contd)

9. 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 functions:

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).

Actions – Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

10. 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.

11. 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 (e.g., hours/miles) considered in classifying Army equipment/components.

EXPLANATION OF COLUMNS IN THE MAC

Column (1) – Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) – Component/ Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) – Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For detailed explanation of these functions refer to Maintenance Functions outlined above.)

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 man-hours 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 be shown for each level. The worktime 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.

MAINTENANCE FUNCTIONS (Contd)

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), and 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.

Column (6) – Remarks Code. When applicable this column contains a letter code, in alphabetic order, which is keyed to the remarks table entries.

EXPLANATION OF COLUMNS IN THE TOOLS AND TEST EQUIPMENT REQUIREMENTS

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.

Column (2) – Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) – Nomenclature. Name or identification of the tool or test equipment.

Column (4) – National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) – Tool Number. The manufacturer's part number, model number, or type number.

EXPLANATION OF COLUMNS IN THE REMARKS

Column (1) – Remarks Code. The code recorded in column (6) of the MAC.

Column (2) – Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

Table 1. Maintenance Allocation Chart.

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF. CODE	(6) REMARKS
			FIELD		SUSTAINMENT				
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
26	Ramp Bay Unfolding Mechanism								
2601	Cable Assembly	Inspect Service Adjust Replace	0.1 0.1	0.2 0.3			1 1 & 7	B	
2602	Cable Turnbuckle, and Connecting Pin	Inspect Replace	0.1	0.2			1 & 7		
2603	Front Bellcrank and Connecting Links	Inspect Replace	0.1	0.5			1 & 7		
2604	Rear Eyebolt	Inspect Replace	0.1	0.2			1 & 7		
2605	Torsion Bar and Lever	Inspect Replace		0.1 0.8			1 & 7		
27	Ramp Bay Inner and Outer Pontons	Separation		0.4			1 & 6		
2701	Unfolding Stabilizer and Bracket	Inspect Replace	0.1	8.0			1 & 7		
2702	Ramp Plate and Strap	Inspect Replace Repair	0.1	0.2 0.5			1 & 7 1 & 7		
2703	Handrail Stanchion, Bilge Plug, and Load Receiving Pin	Inspect Replace	0.1	0.2			1 & 7		
2704	Trunnion Wear Cap	Inspect Replace	0.1	0.1			1 & 7		
2705	Swivel Hook Retainer	Inspect Replace	0.1	0.1			1 & 7		
2706	Stowage Compartment Access Cover	Inspect Replace	0.1	0.4			7	D	
2707	Outer Ponton and Welded Cleat, Trunnion, and Load Receiving Bracket	Inspect Test Repair	0.1	1.5 1.0	4.0		7 7	A	
28	Ramp Bay Inner Pontons	Separation		0.4			1, 6, & 7		
2801	Foldlock	Inspect Repair Replace	0.1	0.5 0.3			1 1		
2801.1	Travel Latch and Receptacle	Inspect Adjust Repair Replace	0.1	0.2 0.5 0.3			1 & 7 1 & 7 1 & 7		

Table 1. Maintenance Allocation Chart (Contd).

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF. CODE	(6) REMARKS
			FIELD		SUSTAINMENT				
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
2802	Upper Coupling, Transverse and Longitudinal	Inspect Replace	0.1	0.3				1 & 7	
2803	Front Swivel Hooks and Rear Swivel Plate	Inspect Replace	0.1	1.0				1 & 7	
2804	Receptacle Block; Longitudinal	Inspect Replace	0.1	0.3				1 & 7	
2805	Pump Compartment Access Cover	Inspect Replace	0.1	0.2				1 & 7	A
2806	Inner Ponton, Welded Receptacle Block; Transverse	Inspect Test Repair	0.1	1.0 1.0	4.0			7 7	A
29	Ramp Bay Yoke and Lower Lock-Drive Assembly							1 & 7	
2901	Yoke	Inspect Replace	0.1	1.5				1 & 7	
2902	Connecting Pin, Trunnions, and Lever	Inspect Service Replace	0.1 0.1	1.8				1 & 7	
30	Ramp Bay Pump System								
3001	Draining and Filling Pump and Cylinder System	Service		1.5				1	
3002	Filter Element	Inspect Replace		0.1 0.3				1, 3, & 7	
3003	Pump	Inspect Service Replace Repair	0.1	0.5 1.0		8.0		1 & 7 7	
3004	Cylinder, Retaining Pin, and Cover	Inspect Replace Repair		0.1 1.4	2.0	8.0		1 & 7 1 & 7	
3005	Hose Assemblies, Connectors, Clamps, Fittings, and Quick-Release Connectors	Inspect Replace	0.1	1.0				1 & 7	
3006	Bleeding Pump System	Service		1.5				1	

Table 1. Maintenance Allocation Chart (Contd).

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF. CODE	(6) REMARKS
			FIELD		SUSTAINMENT				
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
31	Interior Bay Unfolding Mechanism							1	
3101	Cable Assembly	Inspect Service Adjust Replace	0.1 0.1	0.2 0.3				1 1	B
3102	Cable, Turnbuckle, Spring, and Connecting Pin	Inspect Replace	0.1	0.2				1	
3103	Eyebolt and Connecting Link	Inspect Replace	0.1	0.5				1 & 7	
32	Interior Bay Inner and Outer Pontons	Separation		0.4				1 & 7	
3201	Unfolding Stabilizer, Bracket, and Bump Stop	Inspect Replace	0.1	1.0				1 & 7	
3202	Ponton Lock	Inspect Replace	0.1	1.0				1	
3203	Handrail Stanchion, Bilge Plug, and Load Receiving Pins	Inspect Replace	0.1	0.2				1 & 7	
3204	Trunnion	Inspect Repair Replace	0.1	0.4 1.5				1 & 7 1 & 7	
3205	Outer Ponton, Welded Cleat, Trunnion, and Load Receiving Bracket	Inspect Test Repair	0.1	0.5 1.0	4.0			1 & 7	A
33	Interior Bay Inner Pontons	Separation		0.4				1, 6, & 7	
3301	Foldlock	Inspect Replace Repair	0.1	0.3 1.5				1 1	
3301.1	Travel Latch and Receptacles	Inspect Adjust Repair Replace	0.1	0.2 0.3 1.5				1 & 7 1 & 7 1 & 7	
3302	Upper Coupling; Transverse and Longitudinal	Inspect Replace	0.1	0.3				1 & 7	
3303	Receptacle Block; Longitudinal	Inspect Replace	0.1	0.3				1 & 7	
3304	Access Cover	Inspect Replace	0.1	0.3				1 & 7	
3305	Main Lower Coupling	Inspect Replace	0.1	8.0				1 & 7	

Table 1. Maintenance Allocation Chart (Contd).

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT REF. CODE	(6) REMARKS
			FIELD			SUSTAINMENT			
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
3306	Inner Ponton	Inspect Test Repair	0.1	3.0 1.0	4.0			1 & 4 4 & 7	A
34	Interior Bay Lower Lock-Drive Assembly							1 & 7	
3401	Bumpers	Inspect Replace	0.1	0.1				1 & 7	
3402	Connecting Pin, Trunnions, and Lever	Inspect Service Replace	0.1 0.1	1.8				1 & 7	
3501	Coupling Device Wheels and Pins	Inspect Service Repair	0.1 0.1	0.2				1	

Table 2. Tools, Special Tools, and Test Equipment Identification List.

TOOL OR TEST EQUIPMENT REF CODE (1)	MAINTENANCE CATEGORY (2)	NOMENCLATURE (3)	NATIONAL/NATO NUMBER (4)	PN TOOL NUMBER (5)
1	O	Tool Kit, General Mechanic's Automotive	5180-00-177-7033	
2	O	Scale: Spring, Cable, Adjusting	6670-01-010-5906	13220E4354
3	O	Filter Wrench, Crowfoot	TBD	029120201
4	O	Leak Testing Equipment	6685-12-357-2615	029107606
5		Deleted		
6	O	IRB Gear, Hoisting (Lifting Sling)	3940-12-359-3444	029186806
7	O	Forward Repair System (FRS)	4940-01-463-7940	

Table 3. Remarks.

REFERENCE CODE	REMARKS/NOTES
A	Repair by straightening and spot welding cracks.
B	Replace entire cable if kinked or frayed. Use only specified cable.
C	Use only specified cable with cable tensioner.
D	Limited repair to handle assemblies only.

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16

NSN 5420-01-470-5825 P/N 12478918;

INTERIOR BAY M17

NSN 5420-01-470-5824 P/N 12478919.

INTRODUCTION

SCOPE

This RPSTL lists and authorizes spare and repair parts; special tools; test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of unit, direct support, and general support maintenance of the Improved Ribbon Bridge (IRB). It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

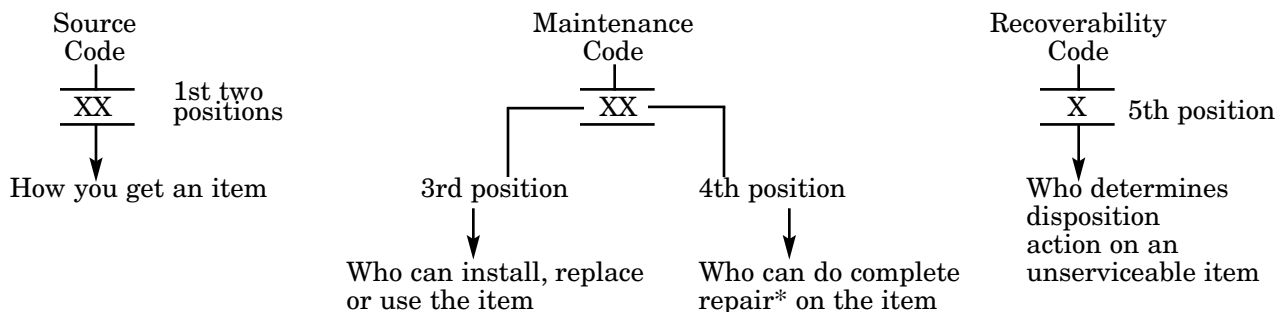
In addition to the Introduction Work Package, this Repair Parts and Special Tools List is divided into the following work packages:

- 1. Repair Parts List Work Packages.** Work packages list of spare and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alpha-numeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in FIG BULK at the end of the work package. Repair parts kits are listed separately in their own functional group and work package. Repair parts for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustration(s)/figure(s).
- 2. Special Tools List Work Packages.** Work packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column). Tools that are components of common tool sets and/or Class VII are not listed.
- 3. Cross-Reference Indexes Work Packages.** There are two cross-reference indexes work packages in this RPSTL: The National Stock Number (NSN) Index work package and the Part Number (P/N) Index work package. The National Stock Number Index work package refers you to the figure and item number appearance. The Part Number Index work package list all part numbers in alphanumeric sequence and refers you to the figure and item number appearance.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES

Item No. (Column (1)). Indicates the number used to identify items called out in the illustration.

SMR Code (Column (2)). The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



* 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.

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 follows:

Code	Explanation
PA	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3rd position of the SMR code.
PB	
PC**	
PD	
PE	
PF	
PG	
KD	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied.
KF	
KB	
MO- (Made at Unit Level)	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group of the repair parts list in the RPSTL. If the item is authorized to you by the 3rd position code 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.
MF- (Made at DS Level)	
MD- (Made at Depot)	
MH- (Made at General Repair Act (GRA))	
ML- (Made at Specialized Repair Act (GRA))	
AO- (Assembled by Unit Level)	
AF- (Assembled by DS Level)	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 3rd position code of the SMR code authorized you to replace the item, but the source code indicates the item is assembled at a higher level, order the
AH- (Assembled by GS Level)	
AL- (Assembled by SRA)	
AD- (Assembled by Depot)	
XA- Do not requisition an XA-coded item. Order its next higher assembly. (Also, refer to the note below.)	
XB- If an XB item is not available from salvage, order it using CAGEC and part number given.	
XC- Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.	
XD- Item is not stocked. Order an XD-coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.	

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.

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:

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 organizational maintenance.
O	– Unit level can remove, replace, and use the item.
F	– Direct support level can remove, replace, and use the item.
H	– General support level can remove, replace, and use the item.
K	– Repair by contractor only.
L	– Specialized repair activity can remove, replace, and use the item.
D	– Depot level can remove, replace, and use the item.

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 (i.e., 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.) This position will contain one of the following maintenance codes.

Code	Application/Explanation
O	– Unit is the lowest level that can do complete repair of the item.
F	– Direct support 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.
K	– Repair by contractor only.
L	– Specialized repair activity (designate the specialized repair activity) 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.

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:

Recoverability Code	Application/Explanation
Z	– Nonrepairable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in 3rd position of SMR code.
O	– Repairable item. When uneconomically repairable, condemn and dispose of the item at unit level.
F	– Repairable item. When uneconomically repairable, condemn and dispose of the item at the direct support level.
H	– Repairable item. When uneconomically repairable, condemn and dispose of the item at the general support level.
D	– Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot level.
L	– Repairable item. Condemnation and disposal not authorized below specialized repair activity (SRA).
K	– Repair by contractor only.
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.

NSN (Column (3)). The NSN for the item is listed in this column.

CAGEC (Column (4)). The Commercial and Government Entity Code (CAGEC) is a 5-digit numeric code is used to identify the manufacturer, distributor, or Government agency/activity, that supplies the item.

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. Part numbers not available (N/A) will be provided as updates to this manual when available.

NOTE

When you use a NSN to requisition an item, the item you receive may have a different part number from the part ordered.

Description and Usable on Code (UOC) (Column (6)). This column includes the following information:

- (1) The Federal item name and, when required, a minimum description to identify the item.
- (2) Items that are included in kits and sets are listed below the name of the kit or set.
- (3) Spare/repair parts that make up an assembled item are indented and listed immediately following the assembled item line entry.
- (4) Part numbers for bulk materials are referenced in this column in the line item entry for the item to be manufactured/fabricated.
- (5) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC).
- (6) The usable on code, when applicable (Special Information).
- (7) In the Special Tools List section, the Basis of Issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipment supported exceeds density spread indicated in the Basis of Issue, the total authorization is increased proportionately.
- (8) 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.

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, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. National Stock Number (NSN) Index Work Packages.

STOCK NUMBER Column. This column lists the NSN by National Item Identification Number (NIIN)

NSN

sequence. The NIIN consists of the last nine digits of the NSN (i.e., 5305-01-674-1467). When using this column

NIIN

to locate an item, ignore the first 4 digits of the NSN. However, the complete NSN should be used when ordering items by stock number.

FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts and special tools list work packages.

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 by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

CAGEC Column. The Commercial and Government Entity Code (CAGEC) is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

PART NUMBER Column. 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.

STOCK NUMBER Column. This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGEC columns to the left

FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tool list work packages.

ITEM Column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

USABLE ON CODE. The usable on code appears in the lower left corner of the Description column heading. Usable on codes are shown as "UOC:" in the Description Column (justified left) on the first line applicable item description/nomenclature. Uncoded items are applicable to all models. Identification of the usable on codes used in the RPSTL are:

Code	Used On	Code	Used On
ERB	M16	EIB	M17

Fabrication Instructions. Bulk materials required to manufacture items are listed in the Bulk Material Functional Group of this RPSTL. Part numbers for bulk materials are also referenced in the description column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source code to be manufactured or fabricated are found in TM 5-5420-278-24&P.

Assembly Instruction. Detailed assembly instructions for items source coded to be assembled from component spare/repair parts are found in TM 5-5420-278-24&P. Items that make up the assembly are listed immediately following the assembly item entry or reference is made to an applicable figure.

Kits. Line item entries for repair parts kits appear in group 9401 KITS in the repair parts list work packages.

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the National Stock Number/Part Number Index and the bulk material list in the repair parts list work packages.

Associated Publications. The publications listed below pertain to the Improved Ribbon Bridge (IRB) and its components:

TM 5-5420-278-10	Operator's Manual
TM 5-5420-278-24&P	Unit, Direct Support, General Support Maintenance Repair Parts and Special Tools List Manual

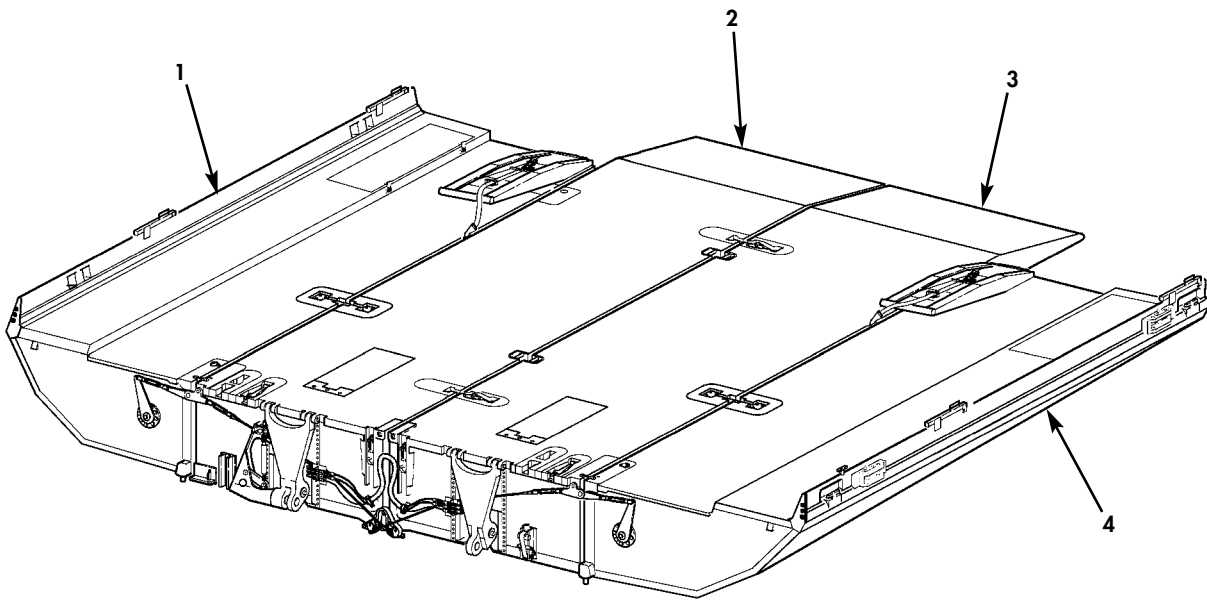
Illustrations. Item numbers on illustrations have been assigned in clockwise sequence, starting at the 11 o'clock position (upper left).

END OF WORK PACKAGE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).



30 October 2003 Change 1

Figure 1. Ramp Bay, Inner and Outer Pontons

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
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GROUP 26 RAMP BAY
2600 RAMP BAY

FIG. 1 RAMP BAY, INNER AND OUTER PONTONS

1	PFOHH		D9913	027500205	PONTON, OUTER R.H..... UOC:ERB	1 *
2	PFOHH		D9913	027500201	PONTON, INNER R.H..... UOC:ERB	1 *
3	PFOHH		D9913	027500203	PONTON, INNER L.H..... UOC:ERB	1 *
4	PFOHH		D9913	027500207	PONTON, OUTER L.H..... UOC:ERB	1 *

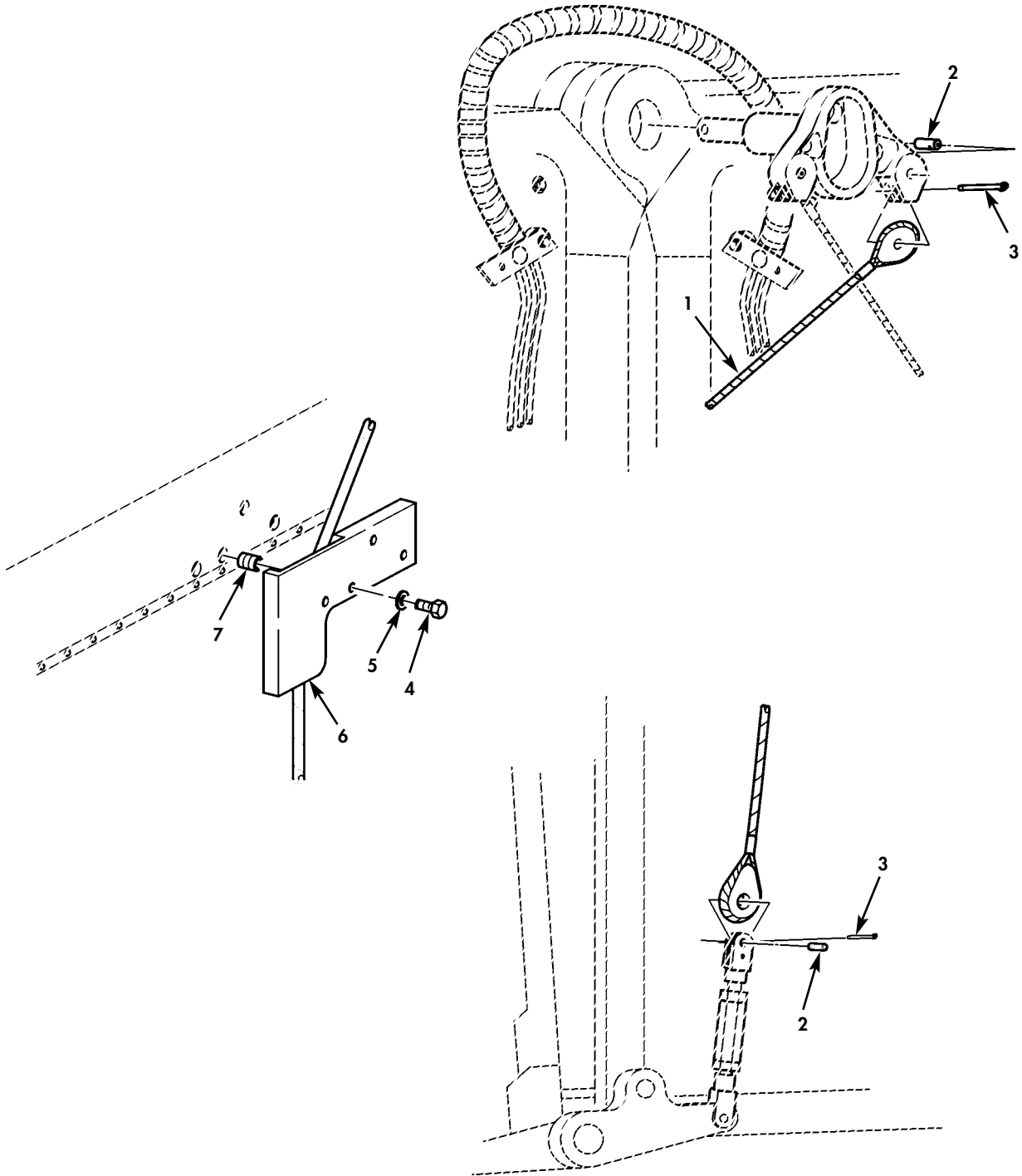
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0086 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 1A. Cable Assembly, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2601 CABLE ASSEMBLY						
FIG. 1A CABLE ASSEMBLY,L.H. AND R.H.						
1	PAOZZ	4010-12-356-1914	D9913	029660102	WIRE ROPE ASSEMBLY..... UOC:ERB	2
2	PAOZZ	5315-12-180-3616	D9913	027073613	PIN,PONTOON BOAT..... UOC:ERB	4
3	PAOZZ	5315-12-341-6612	D8286	DIN94-4X63-ST-A3 P	PIN,COTTER..... UOC:ERB	4
4	PAOZZ	5305-12-141-9963	D8286	DIN933-M16X70-8. 8-A3P	SCREW,CAP,HEXAGON H..... UOC:ERB	6
5	PAOZZ	5310-12-142-0640	D8286	DIN125-B17-140HV -A3P	WASHER,FLAT..... UOC:ERB	6
6	PAOZZ	5365-12-356-2551	D9913	027510380	GUIDE,WIRE ROPE..... UOC:ERB	1
6	PAOZZ	5365-12-356-2199	D9913	027510379	GUIDE,WIRE ROPE..... UOC:ERB	1
7	PAOZZ	5325-12-147-9354	D9913	909591099	INSERT,SCREW,THREAD..... UOC:ERB	6

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

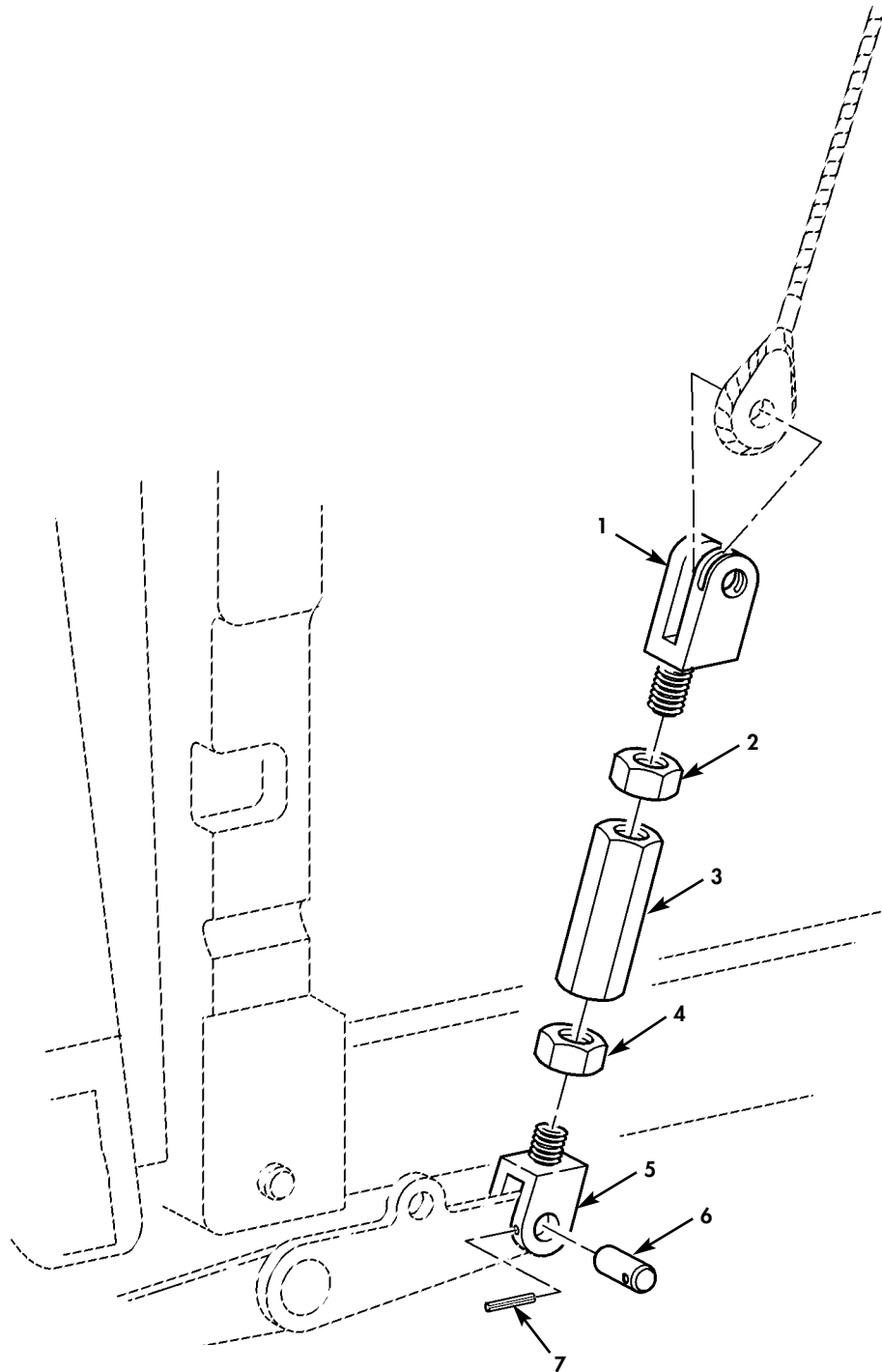


Figure 2. Turnbuckle and Connecting Pin for Unfolding Mechanism.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2602 TURNBUCKLE AND CONNECTING PIN FOR UNFOLDING MECHANISM						
FIG. 2 TURNBUCKLE AND CONNECTING PIN FOR UNFOLDING MECHANISM						
1	PAOZZ	5340-12-179-7652	D9913	027076601	CLEVIS, ROD END..... UOC:ERB	2
2	PAOZZ	5310-12-174-3877	D8286	DIN439-BM24-05-A 2P	NUT, PLAIN, HEXAGON..... UOC:ERB	2
3	PAOZZ	5340-12-356-6956	D8286	DIN1479-SP-M24-S T-A3P	NUT, SLEEVE..... UOC:ERB	2
4	PAOZZ	5310-12-179-8253	D8286	DIN439-BM24LH-05 -A2P	NUT, PLAIN, HEXAGON..... UOC:ERB	2
5	PAOZZ	5340-12-179-7654	D9913	027076602	CLEVIS, ROD END..... UOC:ERB	2
6	PAOZZ	5315-12-180-3618	D9913	027073627	PIN, STRAIGHT, HEADLE..... UOC:ERB	2
7	PAOZZ	5315-12-356-3958	D9913	940614	PIN, SPRING..... UOC:ERB	2

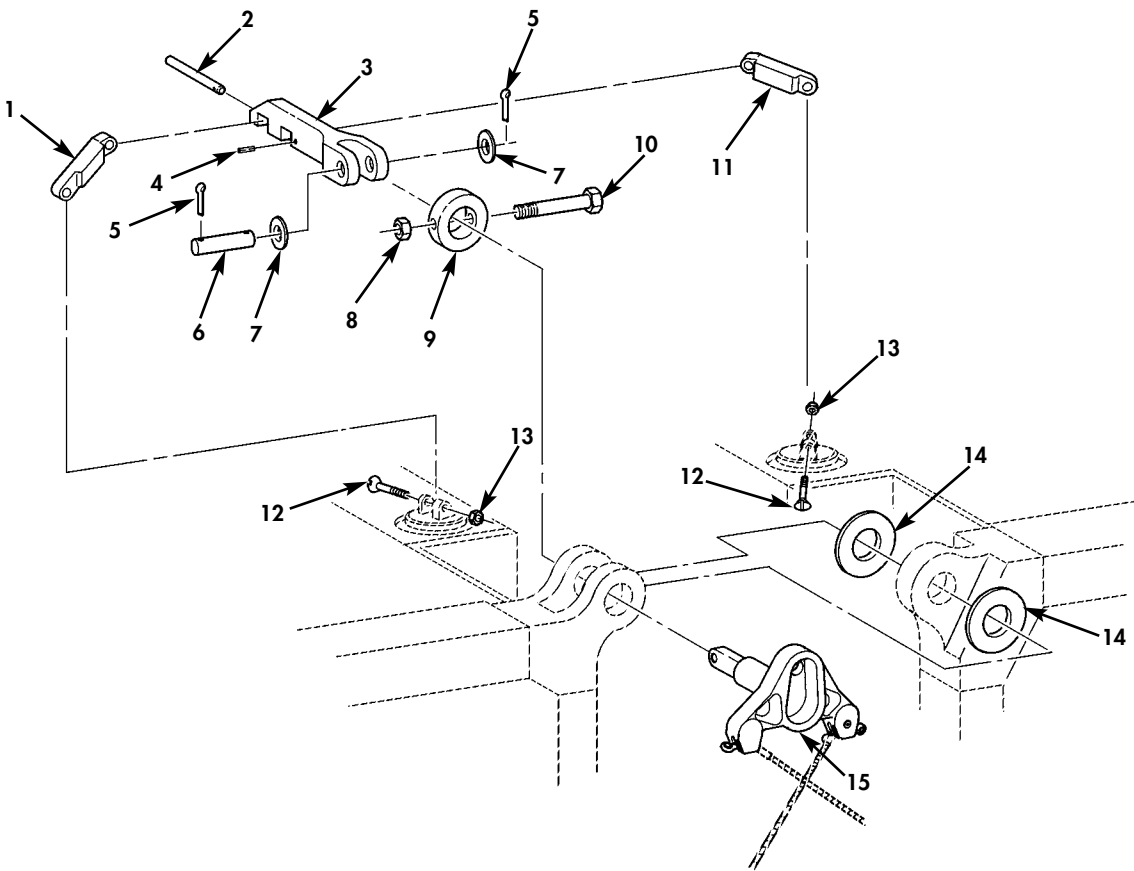
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
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30 October 2003 Change 1

Figure 3. Front Eyebolt, Shackles, and Lever.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2603 FRONT EYEBOLT, SHACKLES, AND LEVER						
FIG. 3 FRONT EYEBOLT, SHACKLES, AND LEVER						
1	PAOZZ	5420-12-179-0315	D9913	027074806	CONNECTING LINK, RIG..... UOC: ERB	1
2	PAOZZ	5315-12-180-3613	D9913	027073612	PIN, STRAIGHT, HEADLE..... UOC: ERB	1
3	PAOZZ	5420-12-179-0317	D9913	027071903	COVER, PIN CYLINDER..... UOC: ERB	1
4	PAOZZ	5315-12-314-9043	D8286	DIN1481-5X22-A3P	PIN, SPRING..... UOC: ERB	1
5	PAOZZ	5315-12-180-3614	D8286	DIN94-8X50-ST-A3 P	PIN, COTTER..... UOC: ERB	2
6	PAOZZ	5315-12-180-3615	D9913	027073611	PIN, STRAIGHT, HEADLE..... UOC: ERB	1
7	PAOZZ	5310-12-145-2843	D8286	DIN125-B37-140HV -A3P	WASHER, FLAT..... UOC: ERB	2
8	PAOZZ	5310-12-145-2655	D8286	DIN985-M12-8-A2P	NUT, SELF-LOCKING, HE..... UOC: ERB	1
9	PAOZZ	5420-12-179-0318	D9913	027074001	COLLAR, SHAFT..... UOC: ERB	1
10	PAOZZ	5305-12-179-8251	D8286	DIN931-M12X150-1 0.9-A3P	SCREW, CAP, HEXAGON H..... UOC: ERB	1
11	PAOZZ	5420-12-179-0316	D9913	027074805	CONNECTING LINK, RIG..... UOC: ERB	1
12	PAOZZ	5305-12-179-8250	D9913	909511604	SCREW, CLOSE TOLERAN..... UOC: ERB	2
13	PAOZZ	5310-01-418-2337	80204	B18241B120	NUT, PLAIN, HEXAGON..... UOC: ERB	2
14	PAOZZ	5310-12-179-8252	D9913	027074502	SHIM..... UOC: ERB	2
15	PAOZZ	3040-12-356-2893	D9913	027015009	BELL CRANK..... UOC: ERB	1 *

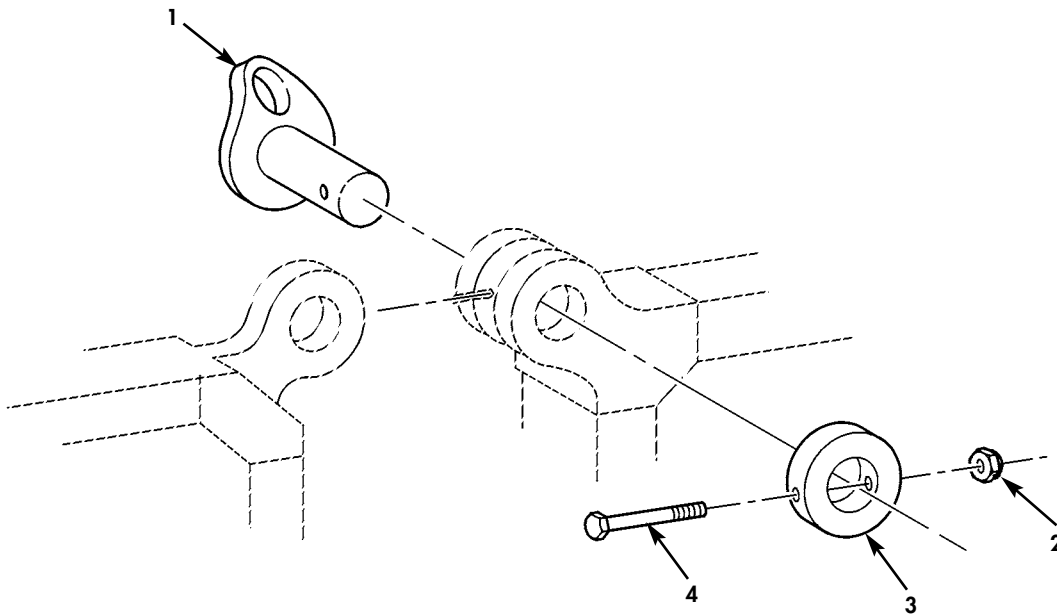
END OF FIGURE

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30 October 2003 Change 1

Figure 4. Rear Eyebolt.

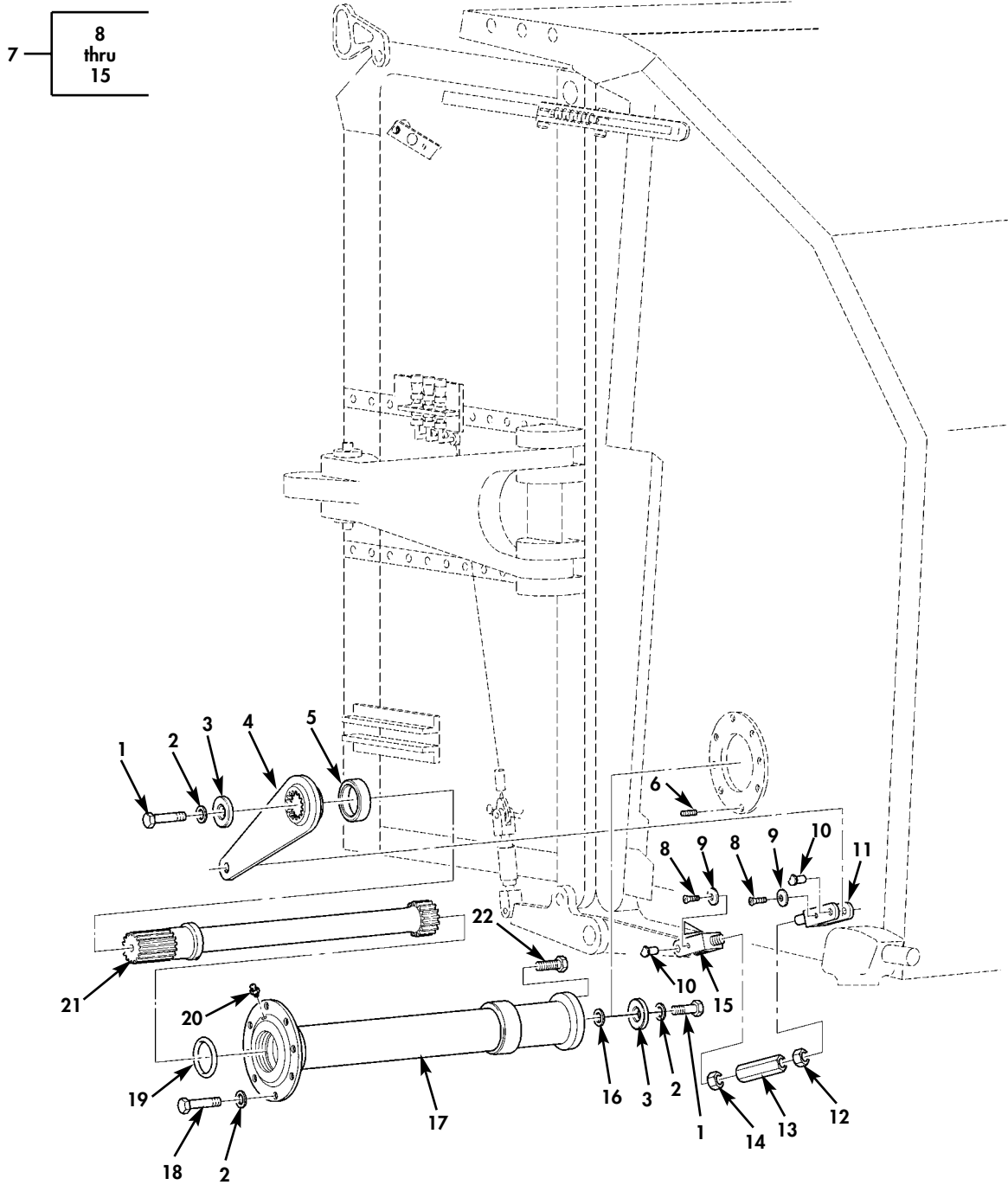
(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2603 REAR EYEBOLT						
FIG. 4 REAR EYEBOLT						
1	PAOZZ	5420-12-179-0320	D9913	027006703	PIN, STRAIGHT, HEADED..... UOC:ERB	1
2	PAOZZ	5310-12-145-2655	D8286	DIN985-M12-8-A2P	NUT, SELF-LOCKING, HE..... UOC:ERB	1
3	PAOZZ	5420-12-179-0318	D9913	027074001	COLLAR, SHAFT..... UOC:ERB	1
4	PAOZZ	5305-12-179-8251	D8286	DIN931-M12X150-1 0.9-A3P	SCREW, CAP, HEXAGON H..... UOC:ERB	1
END OF FIGURE						

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IMPROVED RIBBON BRIDGE (IRB)

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30 October 2003 Change 1

Figure 5. Torsion Bar and Related Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2605 TORSION BAR AND RELATED PARTS						
FIG. 5 TORSION BAR AND RELATED PARTS						
1	PAOZZ	5305-12-167-5376	D8286	DIN933-M12X35-8. 8-A3C	SCREW, CAP, HEXAGON H..... UOC:ERB	4
2	PAOZZ	5310-12-156-4899	D8286	DIN125-B13-140HV -A3P	WASHER, FLAT..... UOC:ERB	20
3	PAOZZ		D9913	027518119	WASHER, FLAT..... UOC:ERB	4
4	PAOZZ	3040-12-356-3468	D9913	027501901	LEVER, REMOTE CONTRO..... UOC:ERB	2
5	PAOZZ	5365-12-356-3032	D9913	027516004	SPACER, SLEEVE..... UOC:ERB	2
6	PAOZZ	5340-12-142-8249	D9728	0130 0120 024	INSERT, SCREW THREAD..... UOC:ERB	16
7	PAOZZ	5340-12-356-6984	D9913	027508901	CLEVIS, ROD END..... UOC:ERB	2
8	PAOZZ	5305-12-142-5931	D8286	DIN7991-M6X12-8. 8-A2P	.BOLT..... UOC:ERB	2
9	PAOZZ	5310-12-356-4434	D9913	027510381	.WASHER, FLAT..... UOC:ERB	2
10	PAOZZ	5315-12-356-3483	D9913	027515011	.PIN, STRAIGHT, HEADED..... UOC:ERB	2
11	PAOZZ	5340-12-356-6985	D9913	027511311	.CLEVIS, ROD END..... UOC:ERB	1
12	PAOZZ	5310-12-356-4433	D9913	936640	.NUT, PLAIN, HEXAGON..... UOC:ERB	1 *
13	PAOZZ	5340-12-356-6359	D9913	935982	.NUT, SLEEVE..... UOC:ERB	1
14	PAOZZ	5310-12-327-0721	D8286	DIN439-BM20-04-A 2P	.NUT, PLAIN, HEXAGON..... UOC:ERB	1
15	PAOZZ	5340-12-356-6986	D9913	027511312	.CLEVIS, ROD END..... UOC:ERB	1
16	PAOZZ	5310-12-356-2552	D9913	027518120	WASHER, FLAT 1.0 MM..... UOC:ERB	4
16	PAOZZ	5310-12-356-2553	D9913	027518121	WASHER, FLAT 1.5 MM..... UOC:ERB	2
16	PAOZZ	5310-12-356-2788	D9913	027518122	WASHER, FLAT 2.0 MM..... UOC:ERB	6
17	PAOZZ	3040-12-356-3469	D9913	027505502	HOUSING, MACHANICAL..... UOC:ERB	2
18	PAOZZ	5305-12-156-4876	D8286	DIN933-M12X30-8. 8-A3D	SCREW, CAP, HEXAGON H..... UOC:ERB	16
19	PAOZZ	5331-12-356-2890	D9913	909775197	O-RING..... UOC:ERB	2
20	PAOZZ	4730-12-125-0310	D8286	DIN71412AM6	FITTING, LUBRICATION..... UOC:ERB	2
21	PAOZZ	5340-12-356-6955	D9913	027518901	TORSION BAR, HINGE..... UOC:ERB	2
22	PAOZZ	5305-12-164-0266	D8286	DIN933-M8X20-A2- 70	SCREW, CAP, HEXAGON H..... UOC:ERB	2

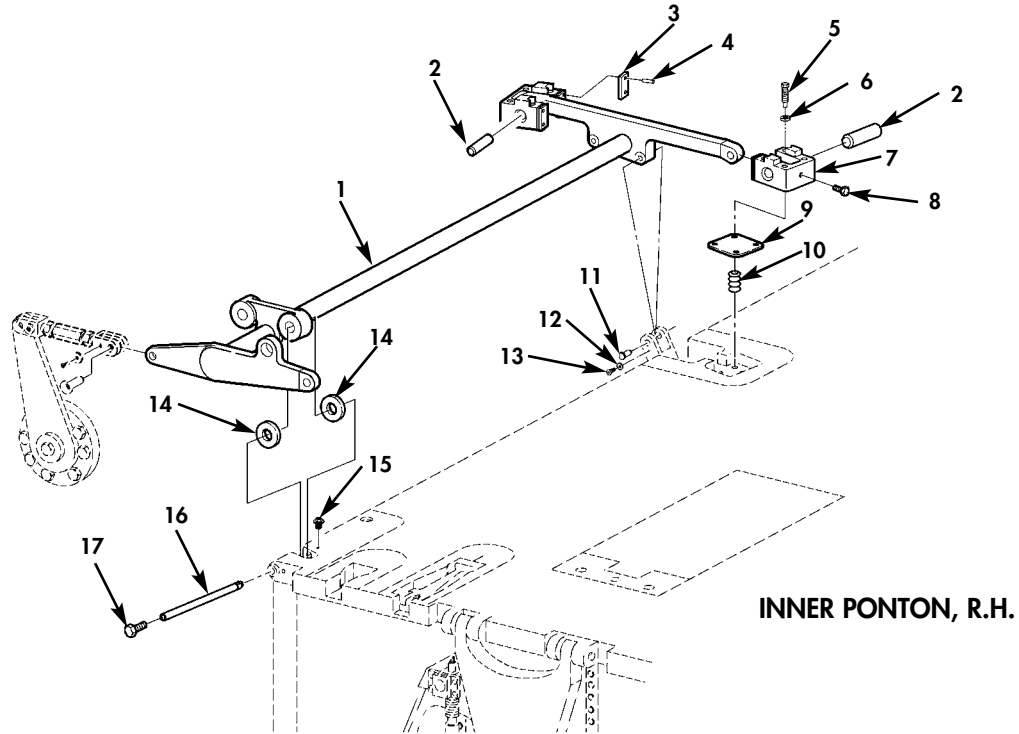
END OF FIGURE

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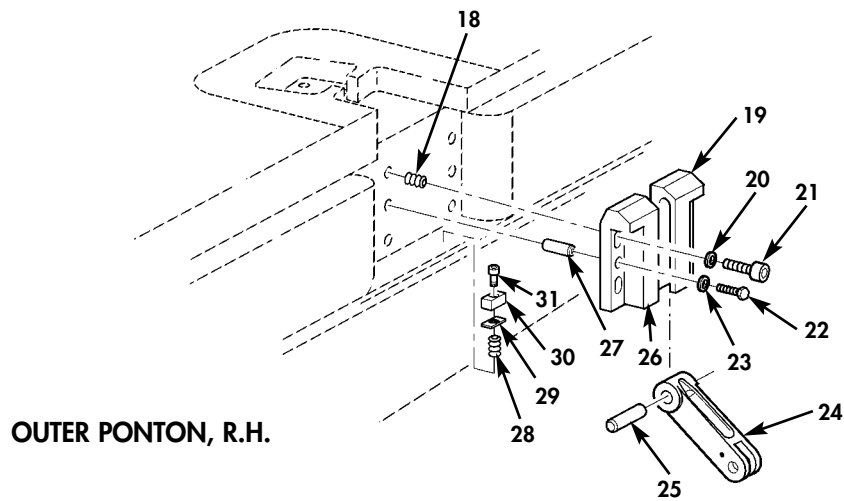
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RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

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INNER PONTON, R.H.



OUTER PONTON, R.H.

30 October 2003 Change 1

Figure 6. Unfolding Stabilizer, Brackets, and Related Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 27 RAMP BAY OUTER PONTONS 2701 UNFOLDING STABILIZER, BRACKETS, AND RELATED PARTS						
FIG. 6 UNFOLDING STABILIZER, BRACKETS, AND RELATED PARTS						
1	PAOZZ	3040-12-356-3471	D9913	027500401	BELL CRANK L.H..... UOC: ERB	1
1	PAOZZ	3040-12-356-3475	D9913	027500402	BELL CRANK R.H..... UOC: ERB	1
2	PAOZZ	5315-12-356-3474	D9913	027515003	PIN, STRAIGHT, HEADLE..... UOC: ERB	4
3	PAOZZ	5365-12-356-3035	D9913	027518101	SPACER, PLATE 0.5 MM..... UOC: ERB	16
3	PAOZZ	5365-12-356-3037	D9913	027518102	SPACER, PLATE 1.0 MM..... UOC: ERB	16
3	PAOZZ	5365-12-356-3038	D9913	027518103	SPACER, PLATE 2.0 MM..... UOC: ERB	16
3	PAOZZ	5365-12-359-2284	D9913	027518128	SPACER, PLATE 5.0 MM..... UOC: ERB	16 *
4	PAOZZ	5315-12-156-4700	D8286	DIN1481-3X12	PIN, SPRING..... UOC: ERB	16
5	PAOZZ	5305-12-167-5389	D8286	DIN931-M16X120-8 .8-A3C	SCREW, CAP, SOCKET HE..... UOC: ERB	16
6	PAOZZ	5310-12-356-2783	D9913	027518107	WASHER, FLAT..... UOC: ERB	16
7	PAOZZ	5340-12-356-6963	D9913	027517601	BRACKET, MOUNTING..... UOC: ERB	4
8	PAOZZ	5305-12-141-9891	D8286	DIN933-M10X25-10 .9-A3C	SCREW, CAP, HEXAGON H..... UOC: ERB	4
9	PAOZZ	5365-12-356-5118	D9913	027514001	SPACER, PLATE 1.0 MM..... UOC: ERB	12
9	PAOZZ	5365-12-356-3036	D9913	027514002	SPACER, PLATE 1.5 MM..... UOC: ERB	4
10	PAOZZ	5340-12-144-4037	D8442	LN9039-18320	INSERT, SCREW, THREAD..... UOC: ERB	16
11	PAOZZ	5315-12-356-2731	D9913	027515001	PIN, STRAIGHT, HEADED..... UOC: ERB	4
12	PAOZZ	5310-12-356-2784	D9913	027518106	WASHER, FLAT..... UOC: ERB	4
13	PAOZZ	5305-12-193-3664	D9913	934099	SCREW, MACHINE..... UOC: ERB	4
14	PAOZZ	5310-12-357-2525	D9913	027018108	WASHER, FLAT..... UOC: ERB	8
15	PAOZZ	5305-12-356-5297	D9913	027078504	BOLT, SHOULDER..... UOC: ERB	4
16	PAOZZ	5315-12-356-2355	D9913	027515004	PIN, STRAIGHT, HEADLE..... UOC: ERB	4
17	PAOZZ	5305-12-305-7892	D8286	DIN933-M20X20-8. 8-A3P	SCREW, CAP, HEXAGON H..... UOC: ERB	4
18	PAOZZ		D9913	909591450	INSERT, SCREW, THREAD..... UOC: ERB	16
19	PAOZZ	5340-12-356-6987	D9913	027517704	BRACKET, ANGLE NO.3, OUTER PONTOON... UOC: ERB	2
19	PAOZZ	5340-12-356-6960	D9913	027517702	BRACKET, ANGLE NO.1, INNER PONTOON... UOC: ERB	2
20	PAOZZ	5310-12-356-2782	D9913	027518113	WASHER, FLAT..... UOC: ERB	16
21	PAOZZ	5305-12-147-0295	D8286	DIN912-M20X60-8. 8-A3P	SCREW, CAP, HEXAGON H..... UOC: ERB	16

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
22	PAOZZ	5305-12-158-0033	D8286	DIN933-M10X16-8. 8-A3P	SCREW,CAP,HEXAGON H..... UOC:ERB	8
23	PAOZZ	5310-12-356-2785	D9913	027518110	WASHER,FLAT..... UOC:ERB	8
24	PAOZZ	3040-12-356-3472	D9913	027511304	CONNECTING LINK,RIG OUTER PONTOON.. UOC:ERB	2
24	PAOZZ	3040-12-356-3473	D9913	027511305	CONNECTING LINK,RIG INNER PONTOON.. UOC:ERB	2
25	PAOZZ	5315-12-356-2730	D9913	027515002	PIN,STRAIGHT,HEADLE..... UOC:ERB	4
26	PAOZZ	5340-12-356-6959	D9913	027517701	BRACKET,ANGLE NO.2,INNER PONTOON... UOC:ERB	2
26	PAOZZ	5340-12-356-6961	D9913	027517703	BRACKET,ANGLE NO.4,OUTER PONTOON... UOC:ERB	2
27	PAOZZ	5315-12-356-3214	D9913	129453	PIN,STRAIGHT,HEADLE..... UOC:ERB	8
28	PAOZZ	5340-12-156-2814	D8442	LN9039-18160	INSERT,SCREW,THREAD..... UOC:ERB	2
29	PAOZZ	5365-12-356-3033	D9913	027518112	SPACER,PLATE 2.0 MM..... UOC:ERB	12
29	PAOZZ	5310-12-357-2524	D9913	027518127	SPACER,PLATE 0.5 MM..... UOC:ERB	12
29	PAOZZ	5365-12-356-3034	D9913	027518111	SPACER,PLATE 1.0 MM..... UOC:ERB	12
30	PAOZZ	5340-12-356-6962	D9913	027510305	BUMPER,NONMETALLIC..... UOC:ERB	4
31	PAOZZ	5305-12-356-6171	D9913	933867	SCREW,CAP,SOCKET HE..... UOC:ERB	4

END OF FIGURE

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REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

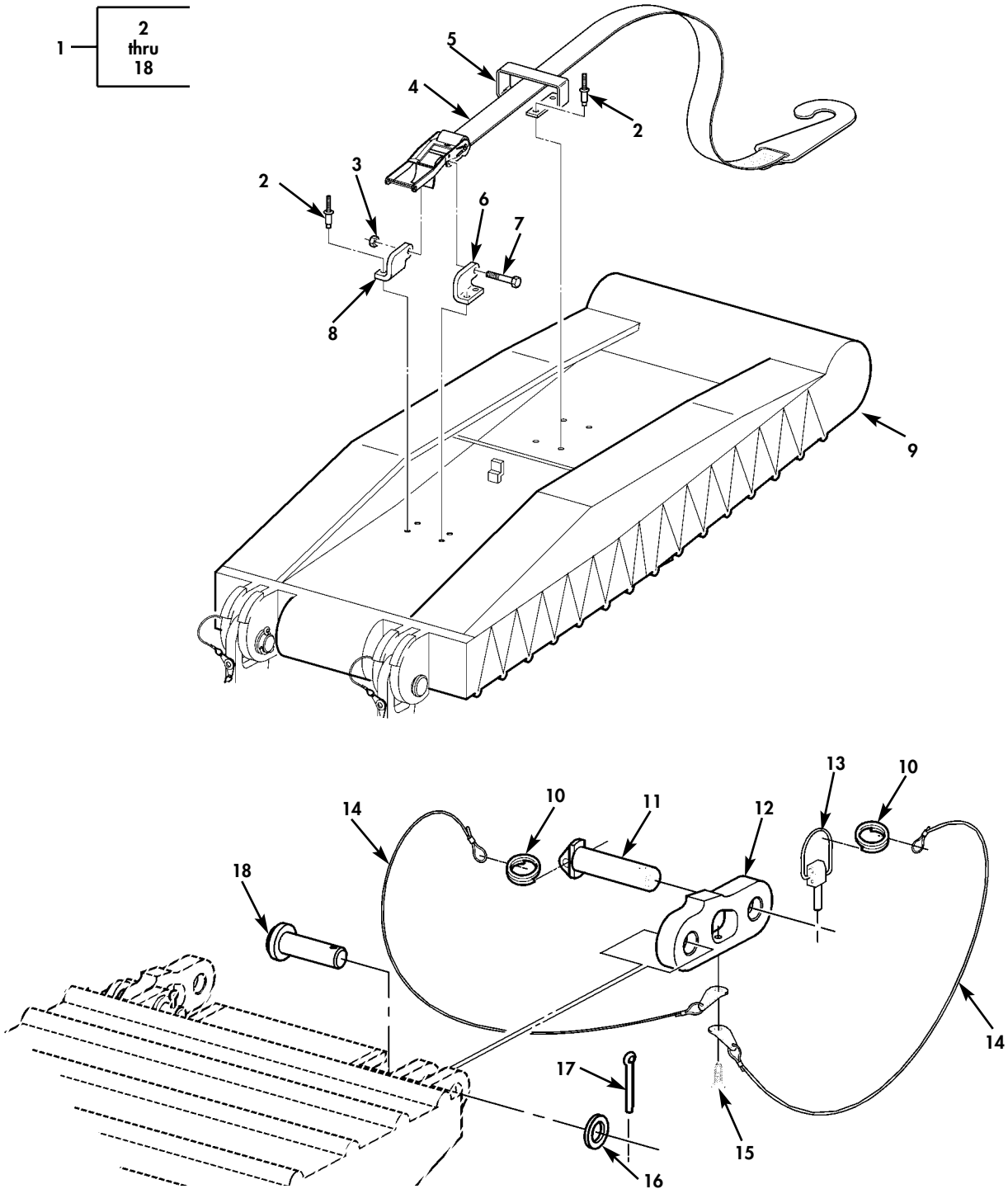


Figure 7. Ramp Plate, Strap, and Related Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2702 RAMP PLATE,STRAP,AND RELATED PARTS						
FIG. 7 RAMP PLATE,STRAP,AND RELATED PARTS						
1	PAOOO	3990-12-356-2554	D9913	027504001	PLATFORM,VEHICAL,LO..... UOC:ERB	2
2	PAOZZ	5320-99-983-0535	D9913	909550594	.RIVET,BLIND..... UOC:ERB	8
3	PAOZZ	5310-01-129-6737	72582	11502811	.NUT..... UOC:ERB	2
4	PAOZZ	3990-12-356-2555	D9913	027503803	.BINDER,LOAD..... UOC:ERB	2
5	PAOZZ	5340-12-357-0038	D9913	027513301	.STRAP,RETAINING..... UOC:ERB	2
6	PAOZZ	5340-12-357-0039	D9913	027511710	.BRACKET,ANGLE..... UOC:ERB	2
7	PAOZZ	5305-01-338-8012	80204	B18231B08040N	.SCREW,CAP,HEXAGON H..... UOC:ERB	2
8	PAOZZ	5340-12-357-0040	D9913	027511709	.BRACKET,ANGLE..... UOC:ERB	1
9	XAOZZ		D9913	027504002	.PLATE,RAMP..... UOC:ERB	2
10	PAOZZ	5365-12-356-2200	D9913	701718701	.RING,CONNECTING,ROU..... UOC:ERB	8
11	PAOZZ		D9913	027515013	.PIN,SHOULDER,HEADLE..... UOC:ERB	4
12	PAOZZ	3040-12-356-3470	D9913	027517606	.CONNECTING LINK,RIG..... UOC:ERB	4
13	PAOZZ	5315-12-179-8844	D8286	DIN11023-5X32 VE RZINKT	.PIN,QUICK-RELEASE..... UOC:ERB	4
14	PAOZZ	4010-12-179-1461	D2040	LT1504-C6-10	.WIRE ROPE ASSEMBLY..... UOC:ERB	8
15	PAOZZ	5305-12-142-5728	D8286	DIN7981-ST4,2X9, 5-C-H-A3P	.SCREW,TAPPING..... UOC:ERB	4
16	PAOZZ	5310-12-156-4905	D8286	DIN125-B21-140HV -A3P	.WASHER,FLAT..... UOC:ERB	4
17	PAOZZ	5315-12-178-5636	D8286	DIN94-5X32-ST-A3 P	.PIN,COTTER..... UOC:ERB	4
18	PAOZZ	5315-12-356-3213	D9913	117510	.PIN,STRAIGHT,HEADED..... UOC:ERB	4

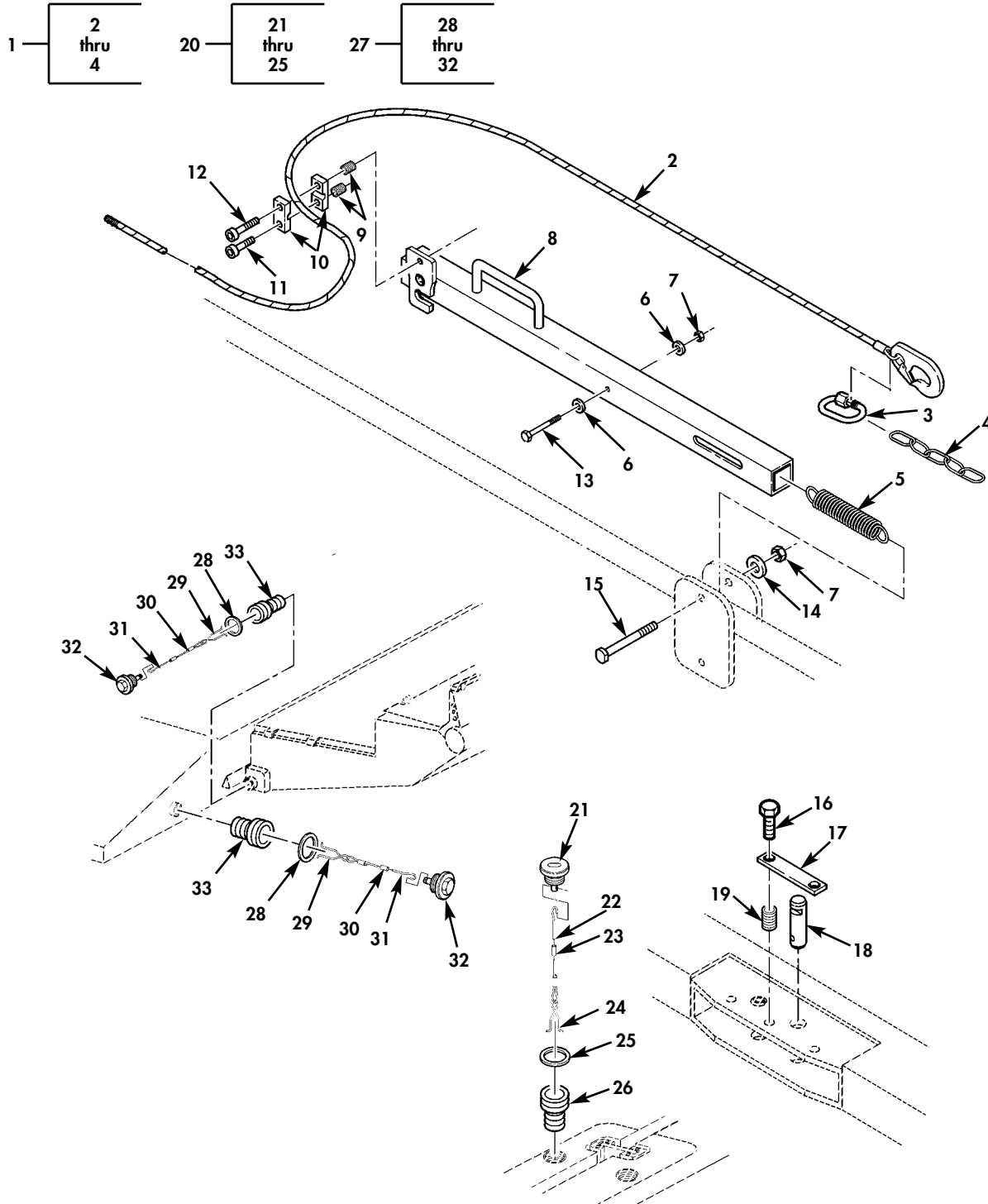
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IMPROVED RIBBON BRIDGE (IRB)

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0093 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 8. Handrail, Bilge Plugs, and Load Receiving Pins, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2703 HANDRAIL,BILGE PLUGS,AND LOAD RECIEVING PINS						
FIG. 8 HANDRAIL,BILGE PLUGS,AND LOAD RECIEVING PINS,L.H. AND R.H.						
1	PAOZZ		D9913	024502602	ROPE ASSEMBLY.....	2 *
					UOC:ERB	
2	PAOZZ	4020-12-356-1915	D9913	024522603	.FIBER ROPE ASSEMBLY.....	1 *
					UOC:ERB	
3	PAOZZ		D9913	909671024	.SHACKLE.....	1 *
					UOC:ERB	
4	PAOZZ		D9913	909661080	.CHAIN.....	1 *
					UOC:ERB	
5	PAOZZ	5360-12-356-2241	D9913	909571259	SPRING,HELICAL,EXTE.....	4 *
					UOC:ERB	
6	PAOZZ	5310-12-175-0141	D8286	DIN125-A8,4-140H V-A3C	WASHER,FLAT.....	8 *
					UOC:ERB	
7	PAOZZ	5310-01-328-7657	80204	B18241B080	NUT,PLAIN,HEXAGON.....	8 *
					UOC:ERB	
8	PAOZZ	2040-12-356-3619	D9913	024501103	STANCHION,DECK,RAIL.....	2 *
					UOC:ERB	
8	PAOZZ	2040-12-356-3625	D9913	024501104	STANCHION,DECK,RAIL.....	2 *
					UOC:ERB	
9	PAOZZ	5310-12-356-4163	D9913	909553138	INSERT,SCREW,THREAD.....	8 *
					UOC:ERB	
10	PAOZZ		D9913	909621916	FAIRLEAD,BLOCK FRONT.....	2 *
					UOC:ERB	
10	PAOZZ		D9913	909621917	FAIRLEAD,BLOCK REAR.....	2 *
					UOC:ERB	
11	PAOZZ	5305-12-142-5854	D8286	DIN912-M10X50-8. 8-A3P	SCREW,CAP,SOCKET HE.....	4 *
					UOC:ERB	
12	PAOZZ	5305-12-142-5852	D8286	DIN912-M10X45-8. 8-A3P	SCREW,CAP,SOCKET HE.....	4 *
					UOC:ERB	
13	PAOZZ	5305-12-156-4949	D8286	DIN931-M8X55-8.8 -A2P	SCREW,CAP,HEXAGON H.....	4 *
					UOC:ERB	
14	PAOZZ	5310-12-305-3868	D9913	DIN125-A10,5-140 HV-A2	WASHER,FLAT.....	4 *
					UOC:ERB	
15	PAOZZ	5305-12-356-2240	D8286	DIN1445-10H11X61 X75-ST-A3P	BOLT,SHOULDER.....	4 *
					UOC:ERB	
16	PAOZZ	5305-12-156-4873	D8286	DIN933-M10X30-8. 8-A3P	SCREW,CAP,HEXAGON H.....	8 *
					UOC:ERB	
17	PAOZZ	5365-12-356-2201	D9913	027510395	STRAP,RETAINING.....	4 *
					UOC:ERB	
18	PAOZZ	5315-12-356-2777	D9913	027515014	PIN,STRAIGHT,HEADED.....	4 *
					UOC:ERB	
19	PAOZZ	5340-12-142-8210	D9913	909591014	INSERT,SCREW THREAD.....	8 *
					UOC:ERB	
20	PAOZZ	5340-12-356-9397	D9913	027007313	PLUG,LEAKPROOF SEAL BILGE ASSEMBLY.	4 *
					UOC:ERB	
21	PAOZZ	5340-12-356-9396	D9913	027017301	.PLUG,LEAKPROOF SEAL BILGE.....	1 *
					UOC:ERB	
22	PAOZZ	4010-12-355-9346	D9913	909667518	.WIRE,NONELECTRICAL.....	1 *
					UOC:EIB	
23	PAOZZ	4030-12-356-3614	D9913	909625104	.TERMINAL,WIRE ROPE.....	2 *
					UOC:EIB	
24	PAOZZ	5340-12-356-9398	D9913	027013001	.HOLDER,SPRING.....	1 *
					UOC:ERB	
25	PAOZZ	5330-12-356-3027	D9913	027018703	.GASKET.....	1 *
					UOC:ERB	

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
* 26	PAOZZ	5340-12-356-6974	D9913	027016001	INSERT, SCREW, THREAD..... UOC: ERB	4
* 27	PAOZZ	5340-12-356-9399	D9913	027007314	PLUG, LEAKPROOF SEAL DRAIN ASSEMBLY. UOC: ERB	4
* 28	PAOZZ	5330-12-356-3029	D9913	027518701	.GASKET..... UOC: ERB	1
* 29	PAOZZ	5340-12-356-6972	D9913	027013404	.HOLDER, SPRING..... UOC: ERB	1
* 30	PAOZZ	4030-12-356-3614	D9913	909625104	.TERMINAL, WIRE ROPE..... UOC: ERB	2
* 31	PAOZZ	4010-12-355-9346	D9913	909667518	.WIRE, NONELECTRICAL..... UOC: ERB	1
* 32	PAOZZ	5340-12-356-6358	D9913	027017302	.PLUG, LEAKPROOF SEAL DRAIN..... UOC: ERB	1
* 33	PAOZZ	5340-12-356-6975	D9913	027016002	INSERT, SCREW, THREAD..... UOC: ERB	4

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
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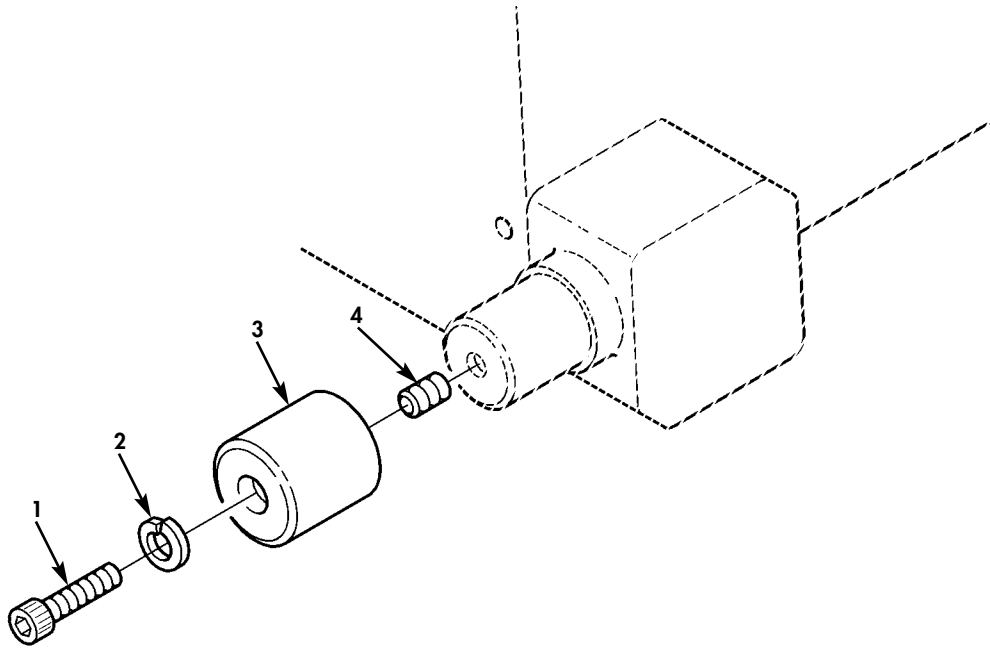


Figure 9. Trunnion Wear Cap.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2704 TRUNNION WEAR CAP						
FIG. 9 TRUNNION WEAR CAP						
1	PAOZZ	5305-12-142-8257	D8286	DIN7984-M12X35-8 .8-A3P	SCREW,CAP, SOCKET HE..... UOC:ERB	2
2	PAOZZ	5310-12-144-3934	D8286	DIN7980-12-FST-A 3P	WASHER, LOCK..... UOC:ERB	2
3	PAOZZ	5365-12-180-1655	D9913	027074603	BEARING,CAP..... UOC:ERB	2
4	PAOZZ	5340-12-142-8233	D8442	LN9039-13180	INSERT, SCREW, THREAD..... UOC:ERB	2
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
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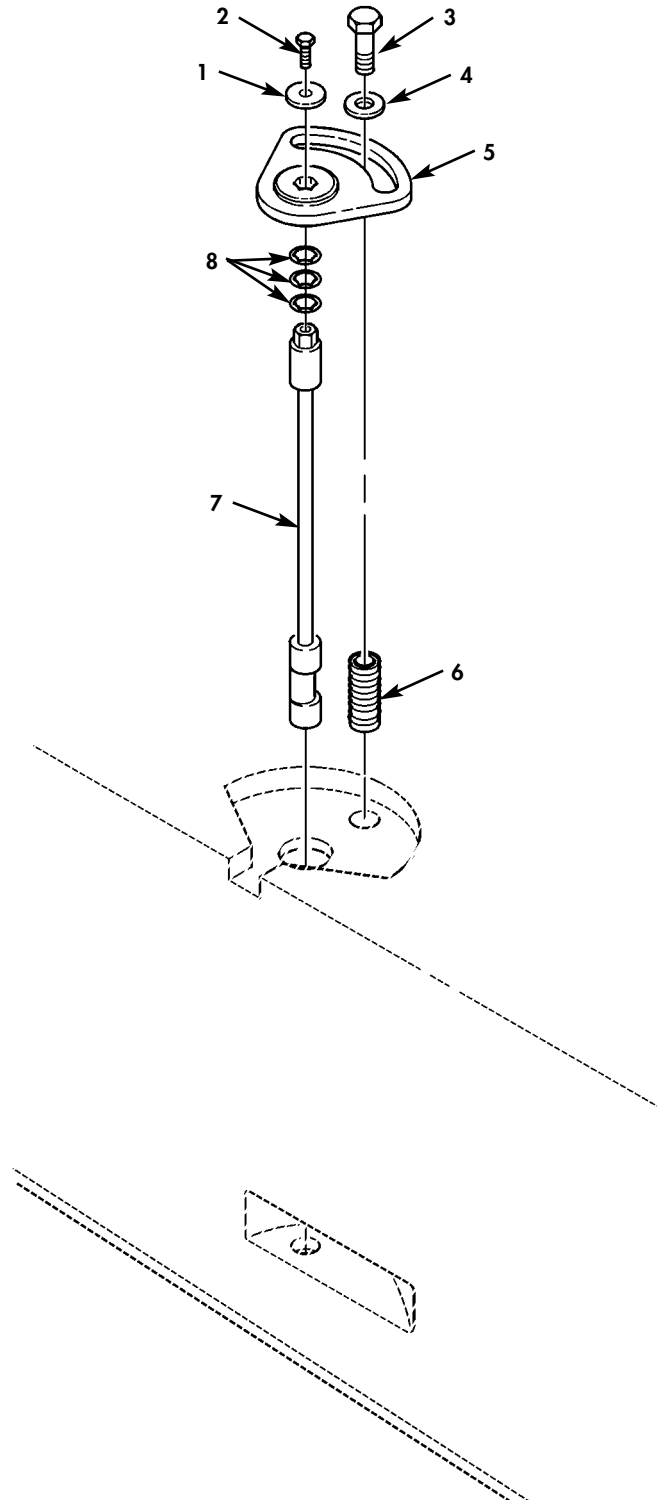


Figure 10. Front Swivel Hook Retainer.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2705 FRONT SWIVEL HOOK RETAINER						
FIG. 10 FRONT SWIVEL HOOK RETAINER						
1	PAOZZ	5310-12-356-2785	D9913	027518110	WASHER, FLAT..... UOC:ERB	2
2	PAOZZ	5305-12-156-4873	D8286	DIN933-M10X30-8. 8-A3P	SCREW, CAP, HEXAGON H..... UOC:ERB	2
3	PAOZZ	5305-01-461-2723	I9008	ISO4017-M16X40-8 .8-A2A	SCREW, CAP, HEXAGON H..... UOC:ERB	2
4	PAOZZ	5310-12-142-0640	D8286	DIN125-B17-140HV -A3P	WASHER, FLAT..... UOC:ERB	2
5	PAOZZ	5365-12-356-3368	D9913	027518114	SWIVEL, EYE AND LINK..... UOC:ERB	2
6	PAOZZ	5325-12-356-5395	D9913	909591430	INSERT, SCREW, THREAD..... UOC:ERB	2
7	PAOZZ	5342-12-356-6967	D9913	027514602	CONTROL ROD..... UOC:ERB	2
8	PAOZZ	5310-12-356-2786	D9913	027518116	WASHER, FLAT 1.0 MM..... UOC:ERB	6

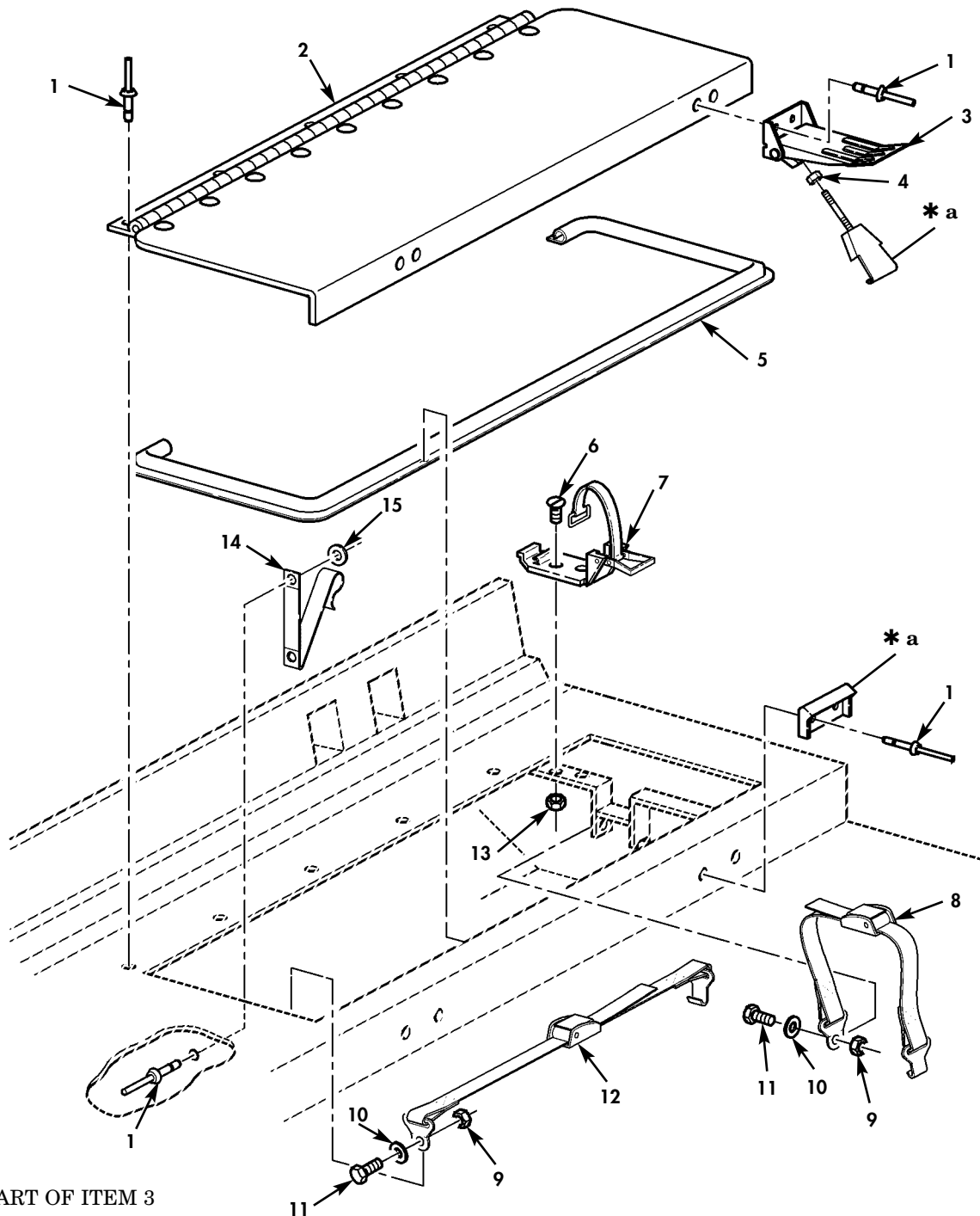
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
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IMPROVED RIBBON BRIDGE (IRB)

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0096 00, DATED 8 APRIL 2003



* a PART OF ITEM 3

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Figure 11. Stowage Compartment Access Cover and Tiedown Straps, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2706 STOWAGE COMPARTMENT ACCESS COVER						
FIG. 11 STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS,L.H. AND R.H.						
1	PAOZZ	5320-99-983-0535	D9913	909550594	RIVET,BLIND.....	34 *
					UOC:ERB	
2	PAOZZ	5340-12-356-5568	D9913	027501009	DOOR,ACCESS,WEAPON L.H.....	1
					UOC:ERB	
2	PAOZZ	5340-12-356-6958	D9913	027501008	DOOR,ACCESS,WEAPON R.H.....	1
					UOC:ERB	
3	PAOZZ	5340-12-356-6957	D9913	027516201	LATCH,RIM.....	4
					UOC:ERB	
4	PAOZZ	5310-12-169-7096	D8286	DIN934-M6-A2-70	NUT,PLAIN,HEXAGON.....	4
					UOC:ERB	
5	PAOZZ		D8905	461 0067	SEAL.....	2
					UOC:ERB	
6	PAOZZ	5305-12-173-0258	D8286	DIN7991-M5X16-8.8-A2P	SCREW,CAP,SOCKET HE.....	8
					UOC:ERB	
7	PAOZZ	2590-12-125-0335	D9477	VG75073A77,5	BRACKET,VEHICULAR C.....	4 *
					UOC:ERB	
8	PAOZZ		D9913	027503804	BELT,HOLD DOWN.....	4
					UOC:ERB	
9	PAOZZ	5310-12-156-4982	D8286	DIN934-M12-8-A2P	NUT,PLAIN,HEXAGON.....	6
					UOC:ERB	
10	PAOZZ	5310-12-156-4899	D8286	DIN125-B13-140HV-A3P	WASHER,FLAT.....	6
					UOC:ERB	
11	PAOZZ	5305-12-156-4875	D8286	DIN933-M12X25-8.8-A3P	SCREW,CAP,HEXAGON H.....	6
					UOC:ERB	
12	PAOZZ		D9913	027503805	BELT,HOLD DOWN.....	2
					UOC:ERB	
13	PAOZZ		D9913	936799	NUT.....	8
					UOC:ERB	
14	PAOZZ		D9913	027513803	BELT.....	4 *
					UOC:ERB	
15	PAOZZ		D9913	938263	WASHER,FLAT.....	8 *
					UOC:ERB	

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
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IMPROVED RIBBON BRIDGE (IRB)

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

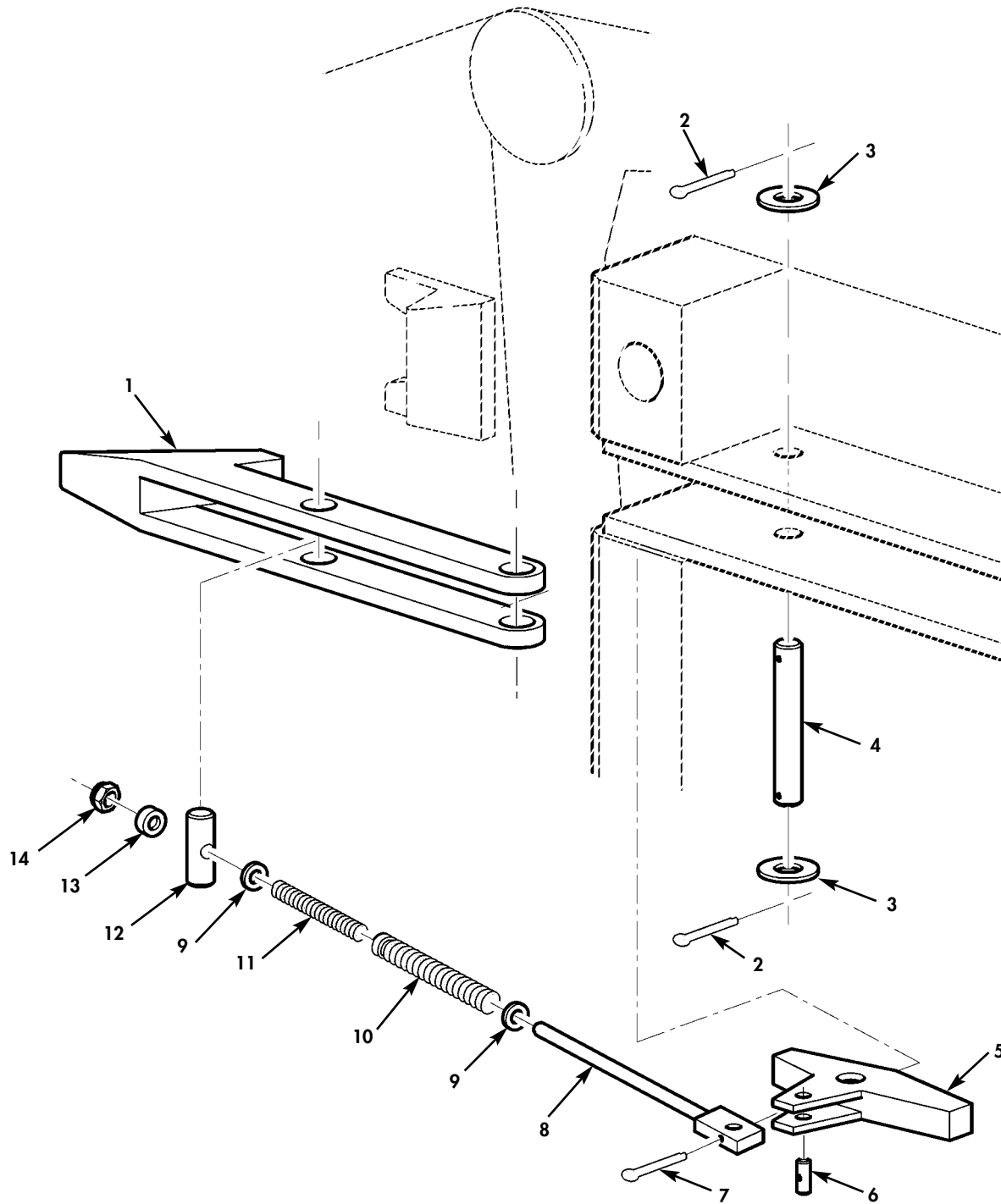


Figure 12. Foldlock.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 28 RAMP BAY INNER PONTONS 2801 FOLDLOCK						
FIG. 12 FOLDLOCK						
1	PAOZZ	5340-12-356-6978	D9913	027511902	LEVER, LOCK..... UOC: ERB	2
2	PAOZZ	5315-12-178-5636	D8286	DIN94-5X32-ST-A3 P	PIN, COTTER..... UOC: ERB	4
3	PAOZZ	5310-12-152-2147	D8286	DIN1440-22-ST-A3 P	WASHER, FLAT..... UOC: ERB	4
4	PAOZZ	5315-12-356-1916	D9913	027515012	PIN, STRAIGHT, HEADLE..... UOC: ERB	2
5	PAOZZ	5340-12-356-6979	D9913	027514303	BLOCK, MOUNTING..... UOC: ERB	2
6	PAOZZ	5315-12-180-4471	D9913	027073616	PIN..... UOC: ERB	2
7	PAOZZ	5315-12-196-2838	D8286	DIN94-3, 2X32-ST- A3P	PIN, COTTER..... UOC: ERB	2
8	PAOZZ	5340-12-356-6988	D9913	027508603	SPRING, SUPPORT..... UOC: ERB	2
9	PAOZZ	5310-12-156-5471	D8286	DIN125-A10, 5-140 HV-A3P	WASHER, FLAT..... UOC: ERB	4
10	PAOZZ	5360-12-179-8258	D9913	909572039	SPRING, COMPRESSION..... UOC: ERB	2
11	PAOZZ	5360-12-179-8257	D9913	909572038	SPRING, COMPRESSION..... UOC: ERB	2
12	PAOZZ	5315-12-356-1917	D9913	027515016	PIN, STRAIGHT, HEADLE..... UOC: ERB	2
13	PAOZZ	5365-12-356-2203	D9913	027518123	SPACER..... UOC: ERB	2
14	PAOZZ	5310-12-146-8397	D8286	DIN985-M10-8-A2P	NUT, SELF-LOCKING, HE..... UOC: ERB	2

END OF FIGURE

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REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

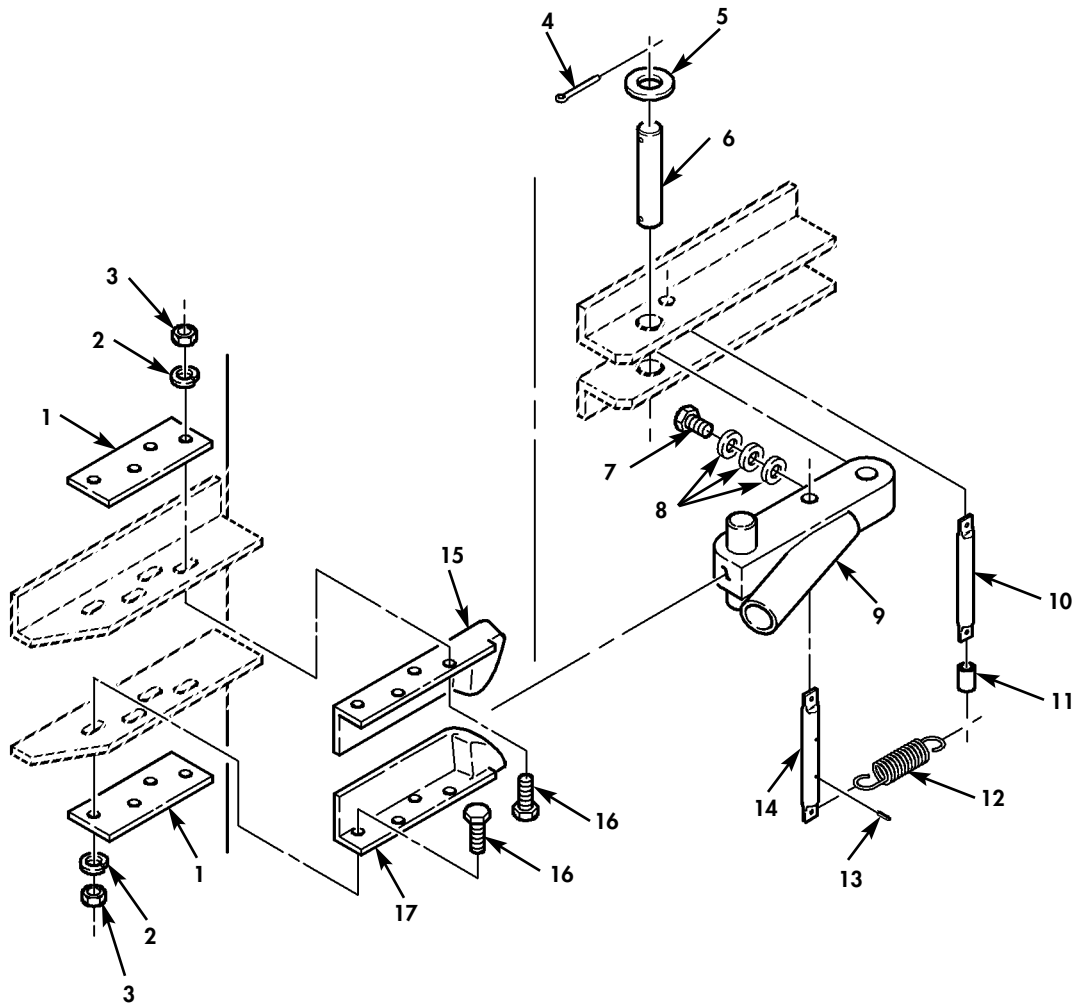


Figure 13. Travel Latch and Receptacles.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2802 TRAVEL LATCH AND RECEPTACLES						
FIG. 13 TRAVEL LATCH AND RECEPTACLES						
1	PAOZZ	5420-12-179-0332	D9913	027074804	PLATE,LATCH..... UOC:ERB	2
2	PAOZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A 3P	WASHER,LOCK..... UOC:ERB	8
3	PAOZZ	5310-99-739-9500	U0759	41031420	NUT,PLAIN,HEXAGON..... UOC:ERB	8
4	PAOZZ	5315-12-131-7424	D8286	DIN94-4X40-ST-A3 P	PIN,COTTER..... UOC:ERB	2
5	PAOZZ	5310-12-147-2103	D8286	DIN1440-20-ST	WASHER,FLAT..... UOC:ERB	2
6	PAOZZ	5315-12-180-4461	D9913	027073604	PIN,STRAIGHT,HEADLE..... UOC:ERB	1
7	PAOZZ	5305-12-141-9891	D8286	DIN933-M10X25-10 .9-A3P	SCREW,CAP,HEXAGON H..... UOC:ERB	1
8	PAOZZ	5310-12-156-5471	D8286	DIN125-A10,5-140 HV-A3P	WASHER,FLAT..... UOC:ERB	5
9	PAOZZ	5340-12-356-9403	D9913	027009504	LEVER,MANUAL CONTRO..... UOC:ERB	1
10	PAOZZ	5315-12-180-4460	D9913	027071701	PIN,SHOULDER,HEADLE..... UOC:ERB	1
11	PAOZZ	5365-12-180-1654	D9913	027074803	SPACER,SLEEVE..... UOC:ERB	2
12	PAOZZ	5360-12-179-8256	D9913	027072401	SPRING,HELICAL,EXTE..... UOC:ERB	2
13	PAOZZ	5315-12-320-4071	D8286	DIN1481-3X22-A3P	PIN,SPRING..... UOC:ERB	2
14	PAOZZ	5315-12-180-4462	D9913	027072902	PIN,SPRING SUPPORT..... UOC:ERB	1
15	PAOZZ	5420-12-179-0330	D9913	027008405	STRIKE,CATCH..... UOC:ERB	1
16	PAOZZ	5305-12-141-9893	D8286	DIN933-M10X30-10 .9-A3P	SCREW,CAP,HEXAGON H..... UOC:ERB	8
17	PAOZZ	5420-12-179-0331	D9913	027008404	RECEPTACLE,LATCH..... UOC:ERB	1

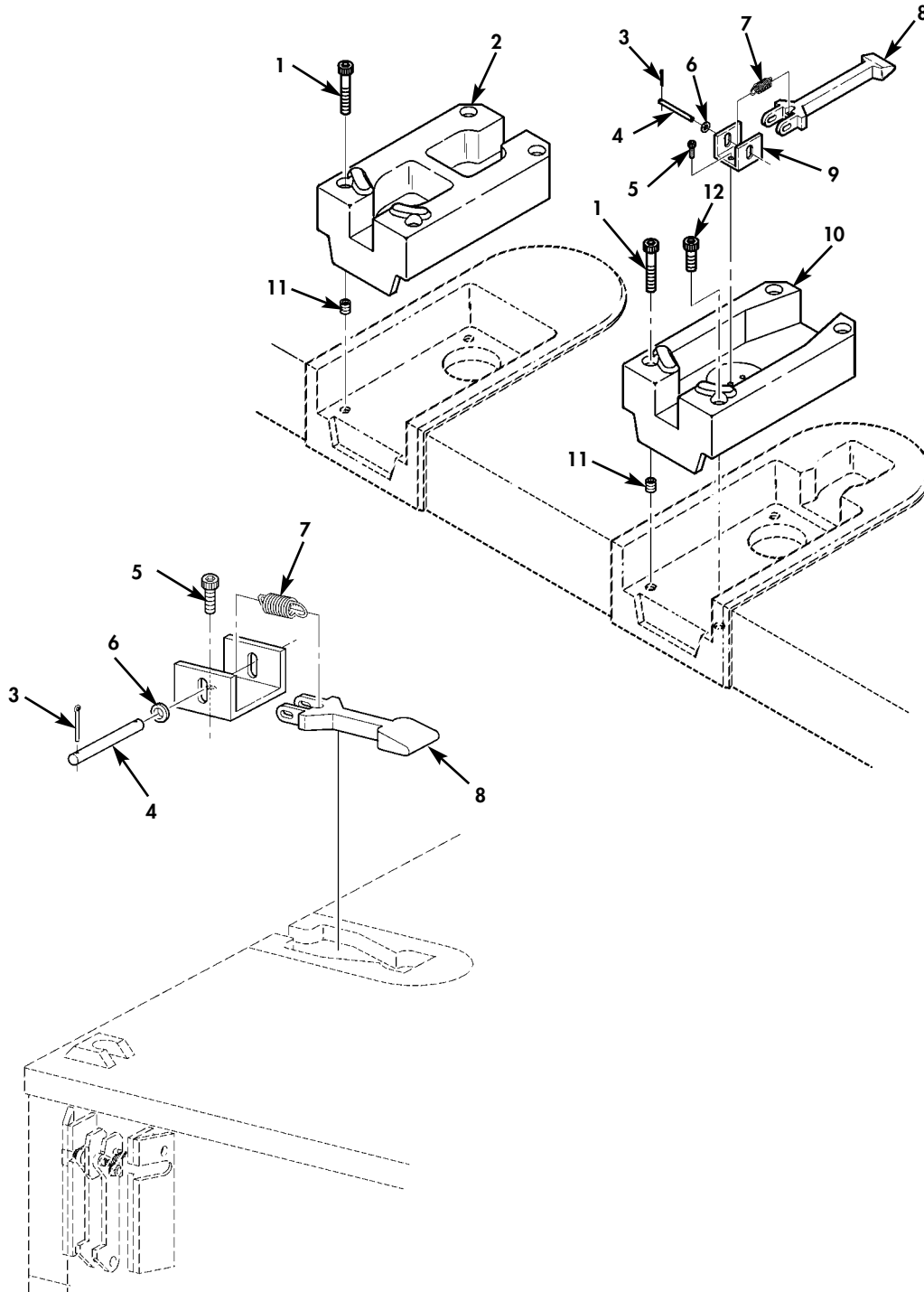
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REPAIR PARTS AND SPECIAL TOOLS LIST

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0099 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 14. Upper Couplings and Receptacle Blocks, Transverse and Longitudinal.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2802 UPPER COUPLINGS AND RECEPTACLE BLOCKS, TRANSVERSE AND LONGITUDINAL						
FIG. 14 UPPER COUPLINGS AND RECEPTACLE BLOCKS, TRANSVERSE AND LONGITUDINAL						
1	PAOZZ	5305-12-155-0838	D8286	DIN912-M16X70-8. 8-A3P	SCREW, CAP, SOCKET HE..... UOC:ERB	14 *
2	PAOZZ	5340-12-356-6970	D9913	027017204	RECEPTACLE, FRICTION..... UOC:ERB	2
3	PAOZZ	5315-12-192-5816	D8286	DIN94-1, 6X14-ST- A3P	PIN, COTTER..... UOC:ERB	8
4	PAOZZ	5315-12-180-3626	D9913	027073606	PIN, STRAIGHT, HEADLE..... UOC:ERB	4
5	PAOZZ	5305-12-184-2236	D8286	DIN7984-M6X16-8. 8-A2C	SCREW, CAP, SOCKET, HE..... UOC:ERB	8
6	PAOZZ	5310-12-356-0257	D9913	938351	WASHER, FLAT..... UOC:ERB	8
7	PAOZZ	5360-12-179-8255	D9913	027072402	SPRING, HELICAL, EXTE..... UOC:ERB	4
8	PAOZZ	5340-12-356-6976	D9913	027015702	LEVER, LOCK-RELEASE..... UOC:ERB	4 *
9	PAOZZ	5340-12-356-6977	D9913	027014302	BRACKET, DOUBLE ANGL..... UOC:ERB	4
10	PAOZZ	5340-12-356-6971	D9913	027017203	RECEPTACLE, FRICTION..... UOC:ERB	2
11	PAOZZ	5325-12-356-5396	D9913	909591449	INSERT, SCREW THREAD..... UOC:ERB	16
12	PAOZZ	5305-12-145-2079	D8286	DIN912-M16X65-8. 8-A3P	SCREW, CAP, SOCKET HE..... UOC:ERB	2 *

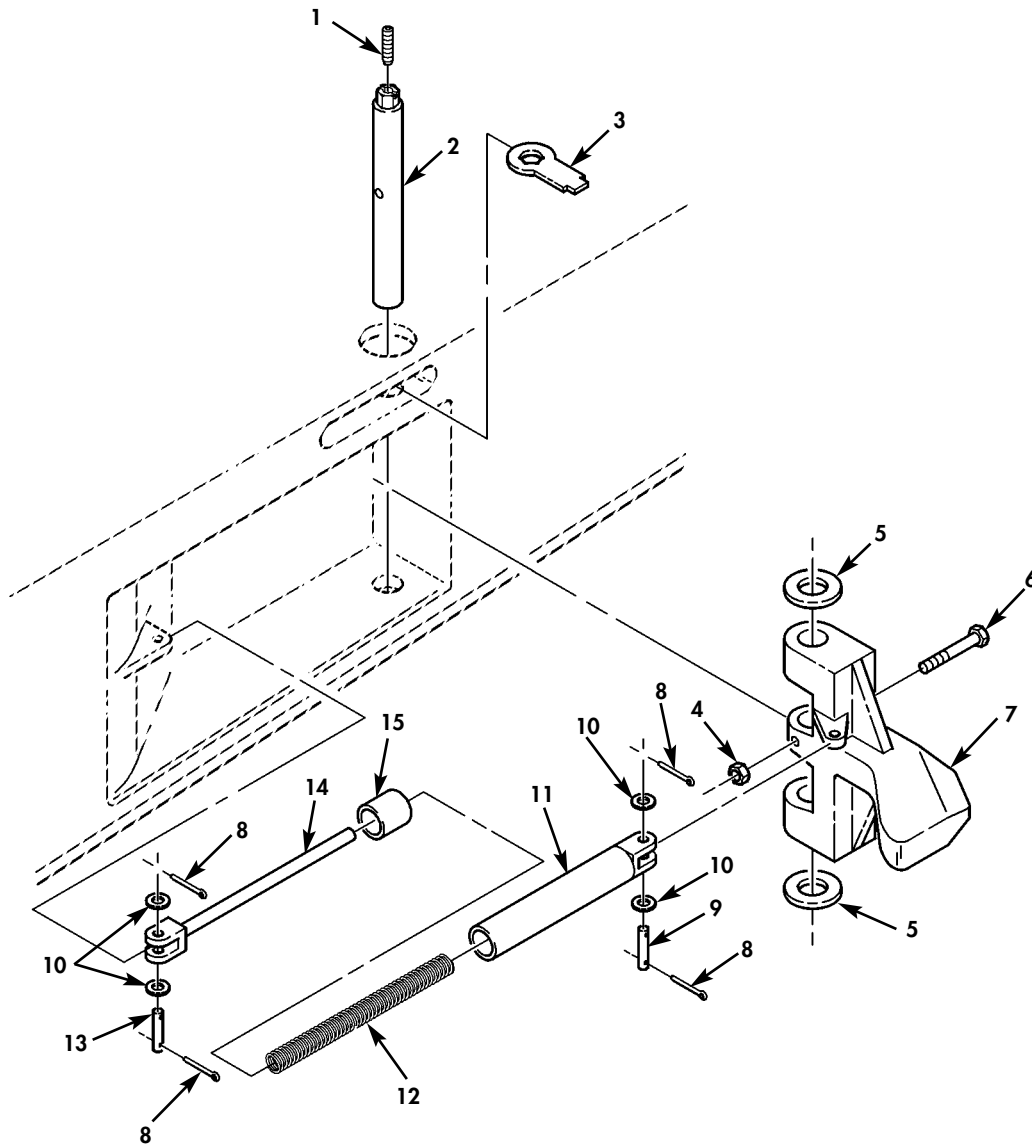
END OF FIGURE

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REPAIR PARTS AND SPECIAL TOOLS LIST

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0100 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 15. Swivel Plate, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2803 SWIVEL PLATE						
FIG. 15 SWIVEL PLATE,L.H. AND R.H.						
1	PAOZZ	5305-12-356-6174	D9913	941962	SCREW,CAP, SOCKET HE..... UOC:ERB	2
2	PAOZZ	5315-12-356-2787	D9913	027514603	PIN, SHOULDER, HEADLE..... UOC:ERB	2 *
3	PAOZZ	5330-12-356-3215	D9913	027514003	PLATE, RETAINING, SHA..... UOC:ERB	2
4	PAOZZ	5310-12-300-8139	D8286	DIN6925-M8-8-A2P	NUT, SELF-LOCKING, HE..... UOC:ERB	2
5	PAOZZ	5310-12-356-1920	D9913	027518124	SPACER, RING 2 MM..... UOC:ERB	4
5	PAOZZ	5310-12-356-1921	D9913	027518125	SPACER, RING 3 MM..... UOC:ERB	4
5	PAOZZ	5310-12-356-1922	D9913	027518126	SPACER, RING 4 MM..... UOC:ERB	4
5	PAOZZ	5365-12-356-3039	D9913	027518115	SPACER, RING 5 MM..... UOC:ERB	4
6	PAOZZ	5305-12-142-8497	D8286	DIN931-M8X70-8.8 -A2P	SCREW, CAP, HEXAGON H..... UOC:ERB	2
7	PAOZZ	3040-12-356-3477	D9913	027511204	LEVER, REMOTE CONTRO R.H..... UOC:ERB	1
7	PAOZZ	3040-12-356-3478	D9913	027511205	LEVER, REMOTE CONTRO L.H..... UOC:ERB	1
8	PAOZZ	5315-12-125-7770	D8286	DIN94-3, 2X18-ST- A3P	PIN, COTTER..... UOC:ERB	8
9	PAOZZ	5315-12-356-2732	D9913	027515007	PIN, STRAIGHT, HEADLE..... UOC:ERB	2
10	PAOZZ	5310-12-156-5471	D8286	DIN125-A10, 5-140 HV-A3P	WASHER, FLAT..... UOC:ERB	8
11	PAOZZ	5340-12-356-6968	D9913	027507401	HOLDER, SPRING..... UOC:ERB	2
12	PAOZZ	5360-12-356-8385	D9913	027513001	SPRING, HELICAL, COMP..... UOC:ERB	2
13	PAOZZ	5315-12-356-2733	D9913	027515008	PIN, SHOULDER, HEADLE..... UOC:ERB	2
14	PAOZZ	5315-12-356-2734	D9913	027516901	PIN, STRAIGHT, HEADED..... UOC:ERB	2
15	PAOZZ	5365-12-359-2285	D9913	027516008	SPACER, PLATE..... UOC:ERB	2 *

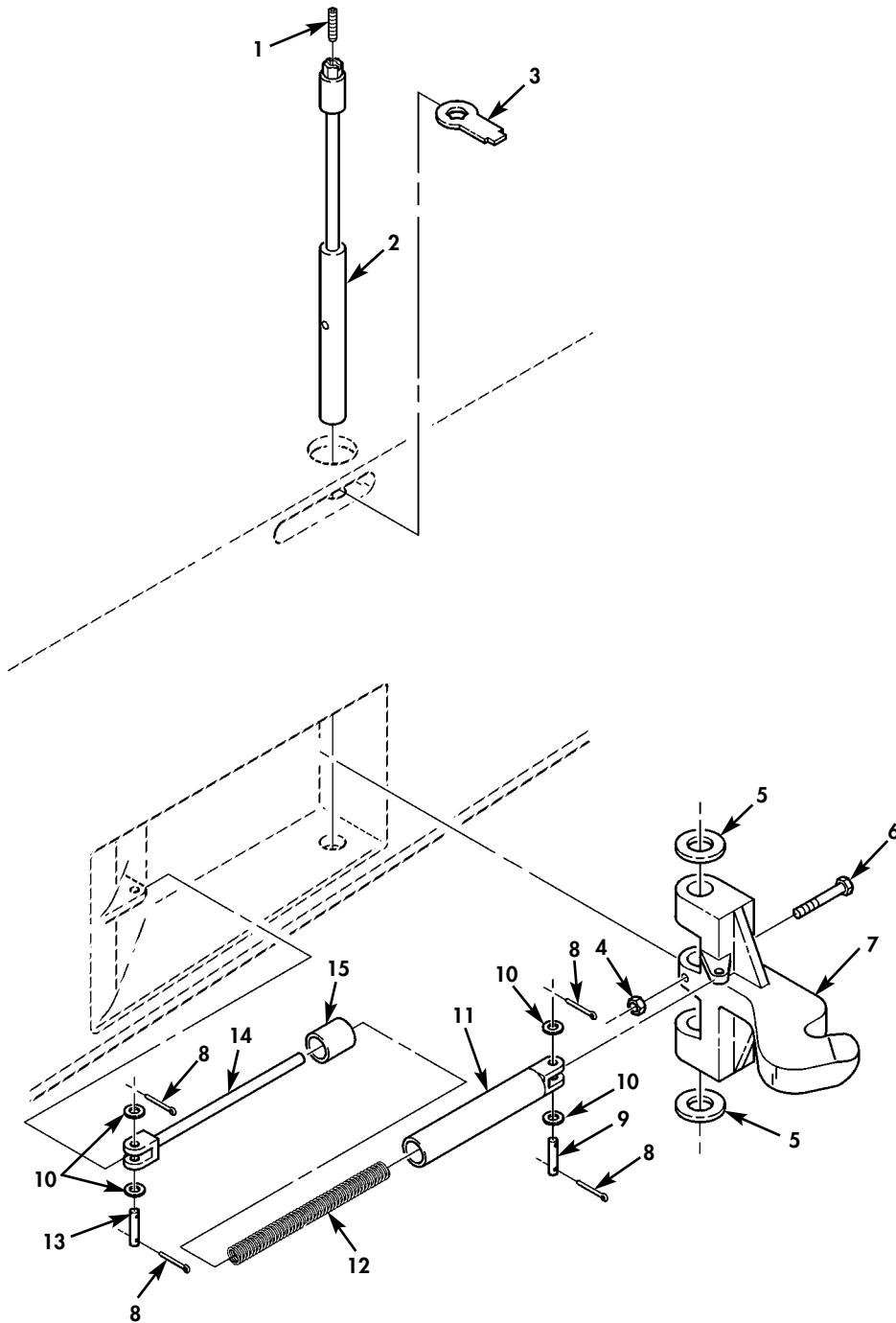
END OF FIGURE

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REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0101 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 16. Swivel Hook, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2803 SWIVEL HOOK						
FIG. 16 SWIVEL HOOK,L.H. AND R.H.						
1	PAOZZ	5305-12-356-6174	D9913	941962	SCREW,CAP, SOCKET HE..... UOC:ERB	2
2	PAOZZ	3040-12-357-2922	D9913	027514601	PIN, SHOULDER, HEADLE..... UOC:ERB	2
3	PAOZZ	5330-12-356-3215	D9913	027514003	PLATE, RETAINING, SHA..... UOC:ERB	2
4	PAOZZ	5310-12-300-8139	D8286	DIN6925-M8-8-A2P	NUT, SELF-LOCKING, HE..... UOC:ERB	2
5	PAOZZ	5365-12-356-3039	D9913	027518115	SPACER, RING 5 MM..... UOC:ERB	4
5	PAOZZ	5310-12-356-1920	D9913	027518124	SPACER, RING 2 MM..... UOC:ERB	4
5	PAOZZ	5310-12-356-1921	D9913	027518125	SPACER, RING 3 MM..... UOC:ERB	4
5	PAOZZ	5310-12-356-1922	D9913	027518126	SPACER, RING 4 MM..... UOC:ERB	4
6	PAOZZ	5305-12-142-8497	D8286	DIN931-M8X70-8.8 -A2P	SCREW, CAP, HEXAGON H..... UOC:ERB	2
7	PAOZZ	3040-12-356-3479	D9913	027511202	LEVER, REMOTE CONTRO R.H..... UOC:ERB	1
7	PAOZZ	3040-12-356-3480	D9913	027511203	LEVER, REMOTE CONTRO L.H..... UOC:ERB	1
8	PAOZZ	5315-12-125-7770	D8286	DIN94-3, 2X18-ST- A3P	PIN, COTTER..... UOC:ERB	8
9	PAOZZ	5315-12-356-2732	D9913	027515007	PIN, STRAIGHT, HEADLE..... UOC:ERB	2
10	PAOZZ	5310-12-156-5471	D8286	DIN125-A10, 5-140 HV-A3P	WASHER, FLAT..... UOC:ERB	8
11	PAOZZ	5340-12-356-6968	D9913	027507401	HOLDER, SPRING..... UOC:ERB	2
12	PAOZZ	5360-12-356-8385	D9913	027513001	SPRING, HELICAL, COMP..... UOC:ERB	2
13	PAOZZ	5315-12-356-2733	D9913	027515008	PIN, SHOULDER, HEADLE..... UOC:ERB	2
14	PAOZZ	5315-12-356-2734	D9913	027516901	PIN, STRAIGHT, HEADED..... UOC:ERB	2
15	PAOZZ	5365-12-359-2285	D9913	027516008	SPACER, PLATE..... UOC:ERB	2 *

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

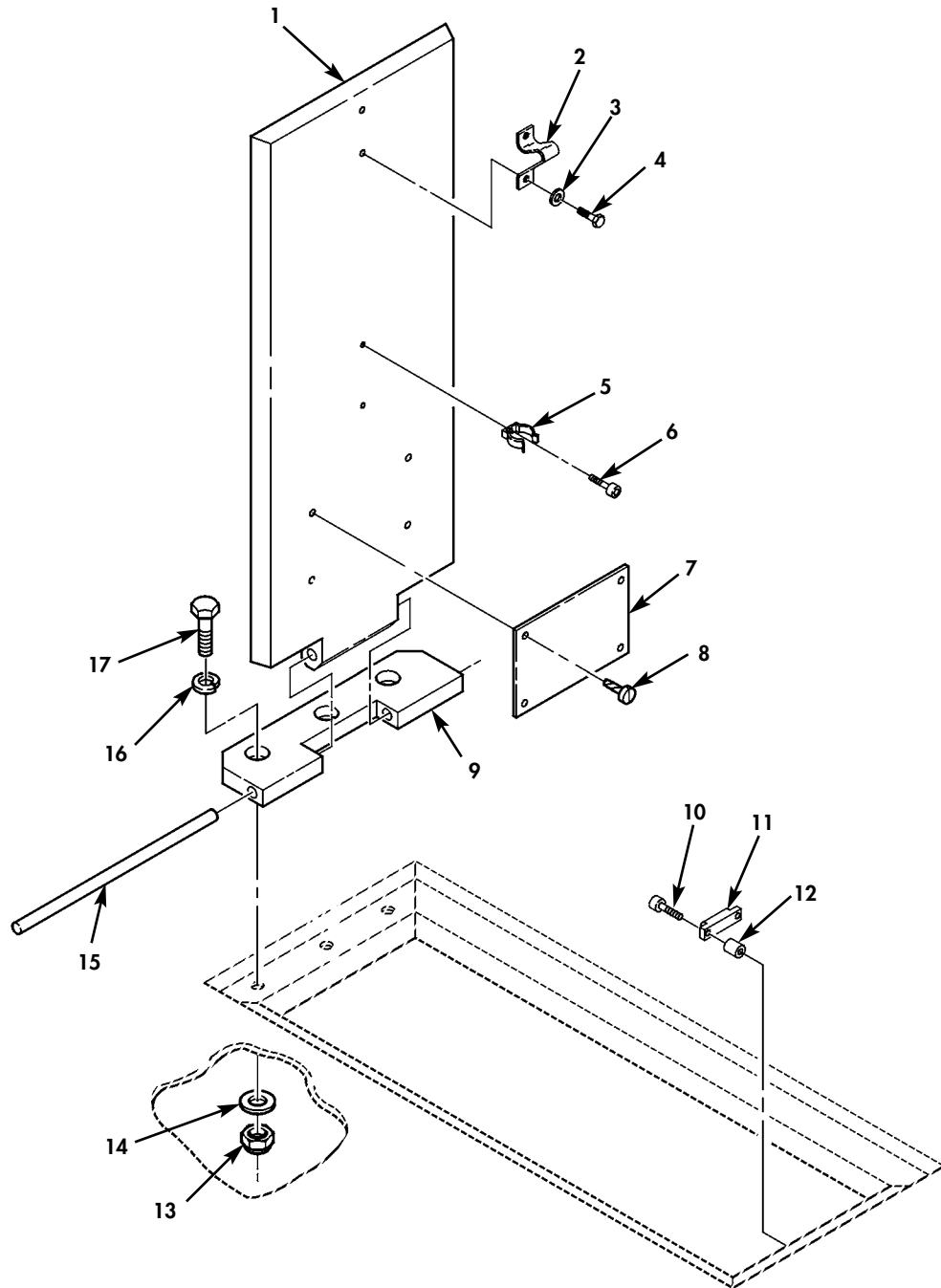


Figure 17. Pump Compartment Access Cover.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2805 PUMP COMPARTMENT ACCESS COVER						
FIG. 17 PUMP COMPARTMENT ACCESS COVER						
1	PAOZZ	5340-12-356-4945	D9913	027511015	COVER, ACCESS..... UOC: ERB	2
2	PAOZZ	5360-12-356-8152	D9913	027513002	HANDLE, BOW..... UOC: ERB	2
3	PAOZZ	5310-12-142-0644	D8286	DIN125-B6, 4-140H V-A3P	WASHER, FLAT..... UOC: ERB	4
4	PAOZZ	5305-12-146-2633	D8286	DIN933-M6X16-8.8 -A2P	SCREW, CAP, HEXAGON H..... UOC: ERB	4
5	PAOZZ	5340-12-356-7032	D9913	909571801	CLIP, SPRING TENSION..... UOC: ERB	4
6	PAOZZ	5305-12-142-5914	D8286	DIN912-M5X12-8.8 -A2P	SCREW, SOCKETHEAD..... UOC: ERB	4
7	PAOZZ	9905-12-356-3028	D9913	029271683	PLATE, INSTRUCTION..... UOC: ERB	2
8	PAOZZ	5305-12-179-8847	D8286	DIN7513-AM4X16-S T-A2A	SCREW, TAPPING..... UOC: ERB	8
9	PAOZZ	5420-12-179-0337	D9913	027075201	HINGE, BLOCK..... UOC: ERB	2
10	PAOZZ	5305-12-142-0989	D8286	DIN912-M8X25-8.8 -A2P	SCREW..... UOC: ERB	4
11	PAOZZ	5340-12-356-4946	D9913	027517103	PLATE, STOP..... UOC: ERB	2
12	PAOZZ	5325-14-212-9249	F1699	01300080016	INSERT, SCREW, THREAD..... UOC: ERB	4
13	PAOZZ	5310-12-146-8397	D8286	DIN985-M10-8-A2P	NUT, SELF-LOCKING, HE..... UOC: ERB	6
14	PAOZZ	5310-12-142-0481	D8286	DIN125-B10, 5-140 HV-A3P	WASHER, FLAT..... UOC: ERB	6
15	PAOZZ	5315-12-180-4463	D9913	027073610	PIN..... UOC: ERB	2
16	PAOZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A 3P	WASHER, LOCK..... UOC: ERB	6
17	PAOZZ	5305-12-142-8229	D8286	DIN931-M10X80-8. 8-A3P	SCREW, CAP, HEXAGON H..... UOC: ERB	6

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

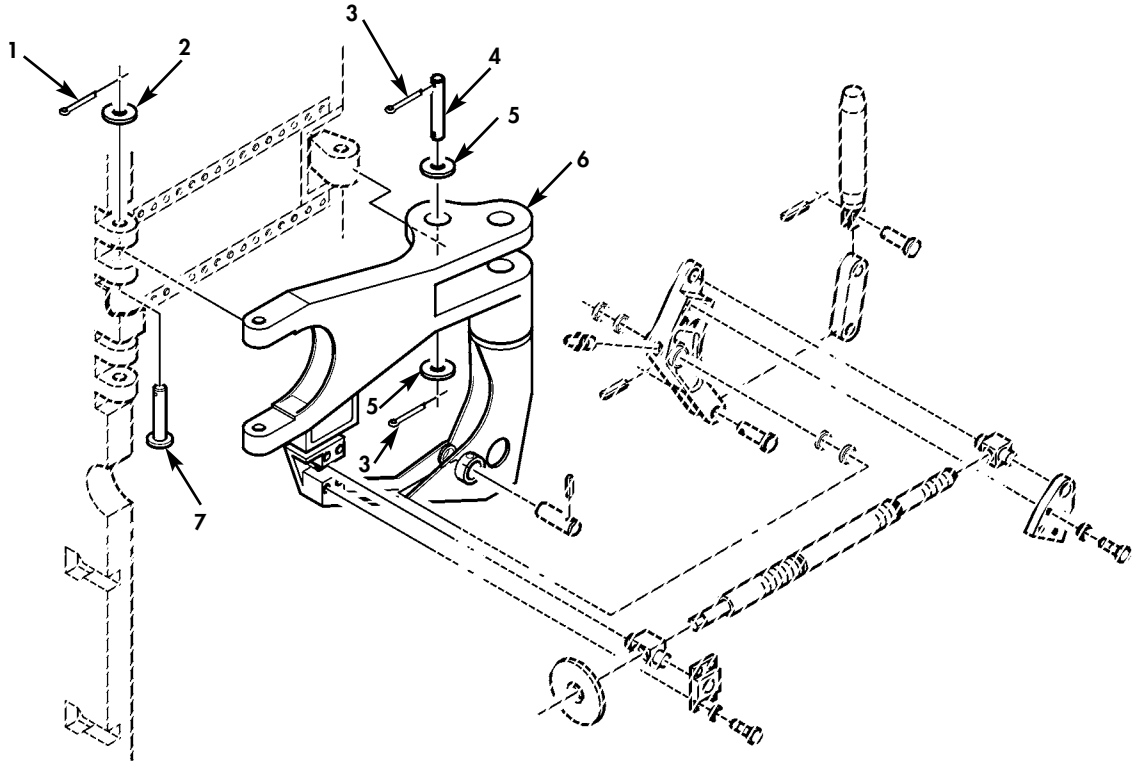


Figure 18. Lower Locking and Receiving Yoke, R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 29 RAMP BAY YOKES AND LOWER LOCK DRIVE ASSEMBLY						
2901 LOWER LOCKING AND RECEIVING YOKE						
FIG. 18 LOWER LOCKING AND RECEIVING YOKE, R.H.						
1	PAOZZ	5315-12-199-2959	D8286	DIN94-8X63-ST-A3 P	PIN,COTTER..... UOC:ERB	2
2	PAOZZ	5310-12-356-0681	D8286	DIN1441-34-ST-A3 P	WASHER,FLAT..... UOC:ERB	2
3	PAOZZ	5315-12-315-0187	D8286	DIN94-10X80-ST-A 3P	PIN,COTTER..... UOC:ERB	2
4	PAOZZ	5315-12-180-4468	D9913	027073621	PIN,STRAIGHT,HEADLE..... UOC:ERB	1
5	PAOZZ	5310-12-356-0258	D9913	938115	WASHER,FLAT..... UOC:ERB	2
6	PAOZZ	5340-12-356-7858	D9913	027501205	YOKE..... UOC:ERB	1
7	PAOZZ	5315-12-356-2778	D9913	027515009	PIN..... UOC:ERB	2
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

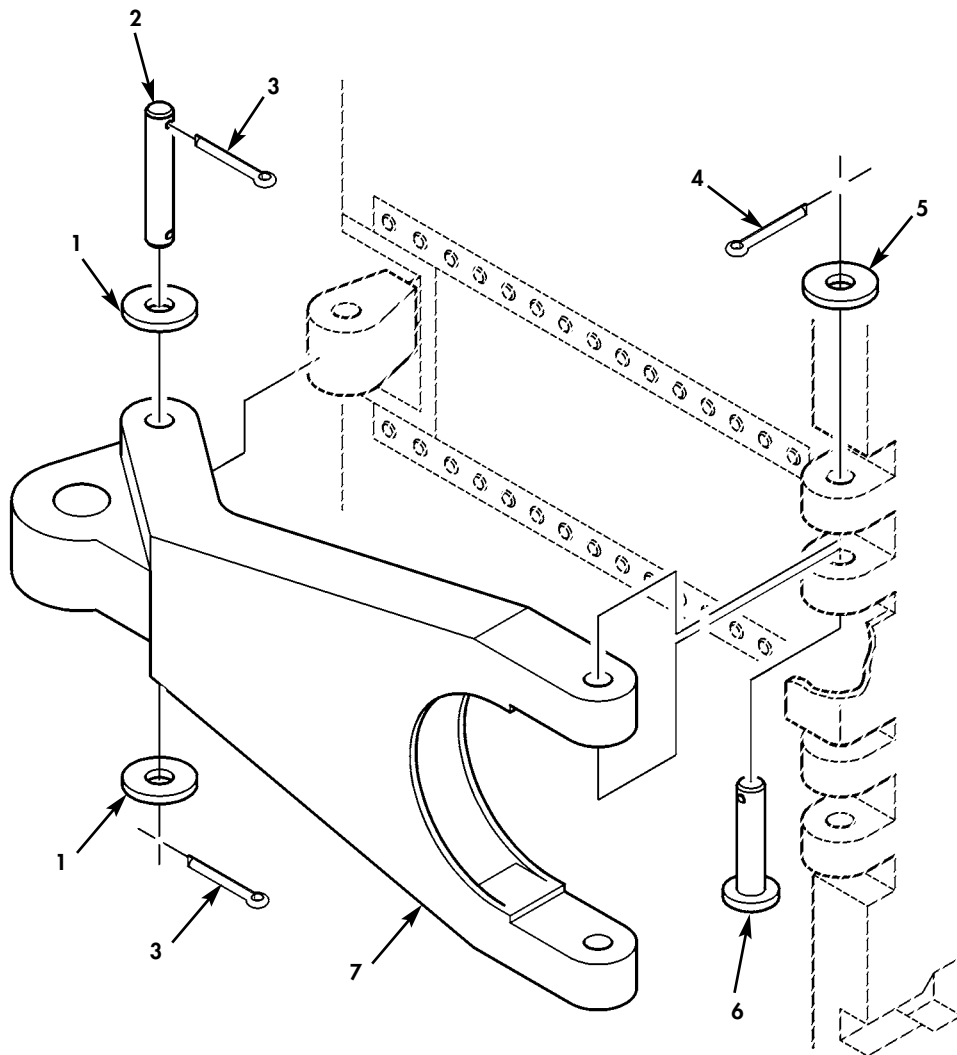


Figure 19. Yoke Assembly, L.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2901 YOKE ASSEMBLY						
FIG. 19 YOKE ASSEMBLY,L.H.						
1	PAOZZ	5310-12-356-0258	D9913	938115	WASHER,FLAT..... UOC:ERB	2
2	PAOZZ	5315-12-180-4468	D9913	027073621	PIN,STRAIGHT,HEADLE..... UOC:ERB	1
3	PAOZZ	5315-12-315-0187	D8286	DIN94-10X80-ST-A 3P	PIN,COTTER..... UOC:ERB	2
4	PAOZZ	5315-12-199-2959	D8286	DIN94-8X63-ST-A3 P	PIN,COTTER..... UOC:ERB	2
5	PAOZZ	5310-12-356-0681	D8286	DIN1441-34-ST-A3 P	WASHER,FLAT..... UOC:ERB	2
6	PAOZZ	5315-12-356-2778	D9913	027515009	PIN..... UOC:ERB	2
7	PAOZZ	5340-12-356-7857	D9913	027511308	YOKE..... UOC:ERB	1
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

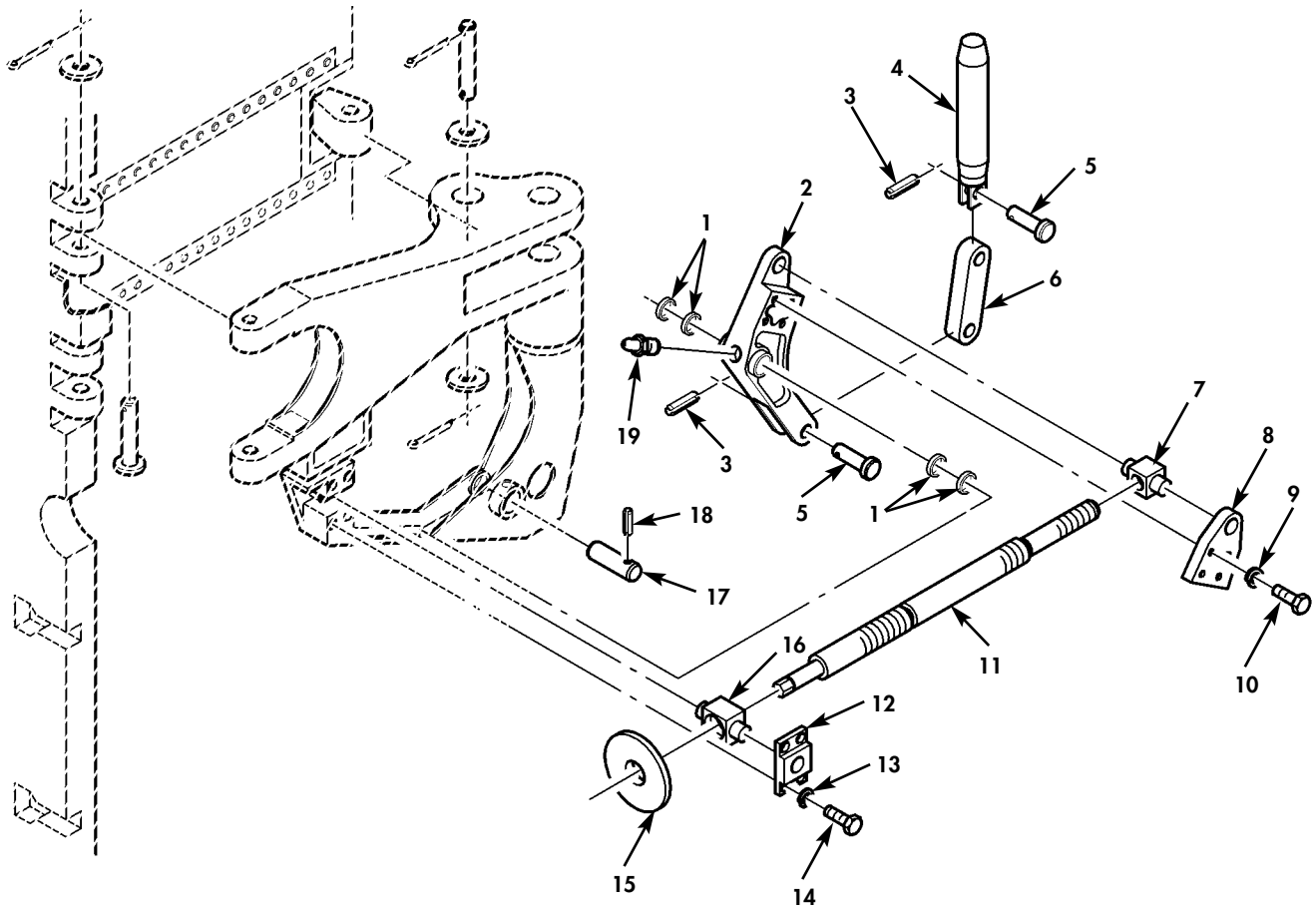


Figure 20. Lower Lock-Drive Assembly.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2902 LOWER LOCK-DRIVE ASSEMBLY						
FIG. 20 LOWER LOCK-DRIVE ASSEMBLY						
1	PAOZZ		D9913	938668	SHIM..... UOC:ERB	4
2	PAOZZ	5420-12-179-0321	D9913	027071901	BELL CRANK..... UOC:ERB	1
3	PAOZZ	5315-12-180-3624	D8286	DIN1481-5X40-A3C	PIN, SPRING..... UOC:ERB	2
4	PAOZZ	5420-12-179-0323	D9913	027073602	PIN, CONNECTING..... UOC:ERB	1
5	PAOZZ	5315-12-180-3625	D9913	027073603	PIN, STRAIGHT, HEADLE..... UOC:ERB	2
6	PAOZZ	5420-12-179-0314	D9913	027074802	CONNECTING LINK..... UOC:ERB	1
7	PAOZZ	5420-12-179-0324	D9913	027073803	TRUNNION NUT, LOWER..... UOC:ERB	1
8	PAOZZ	5420-12-179-0322	D9913	027072101	LEVER, REMOTE CONTRO..... UOC:ERB	1
9	PAOZZ	5310-12-142-0650	D8286	DIN127-B12-FST-A 3P	WASHER, LOCK..... UOC:ERB	4
10	PAOZZ	5305-12-142-8266	D8286	DIN931-M12X60-10 .9-A3P	SCREW, CAP, HEXAGON H..... UOC:ERB	4
11	PAOZZ	5420-12-179-0325	D9913	027071801	SCREW, PIN DRIVE..... UOC:ERB	1
12	PAOZZ	5420-12-179-8843	D9913	027072901	RETAINER, TRUNNION..... UOC:ERB	1
13	PAOZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A 3P	WASHER, LOCK..... UOC:ERB	4
14	PAOZZ	5305-12-141-9891	D8286	DIN933-M10X25-10 .9-A3C	SCREW, CAP, HEXAGON H..... UOC:ERB	4
15	PAOZZ	5310-12-179-7655	D9913	027072801	WASHER, FLAT..... UOC:ERB	1
16	PAOZZ	5420-12-179-0326	D9913	027073802	TRUNNION NUT, UPPER..... UOC:ERB	1
17	PAOZZ	5315-12-314-3888	D9913	027073623	SHAFT, STRAIGHT..... UOC:ERB	1
18	PAOZZ	5315-12-180-3623	D8286	DIN1481-6X55-A3C	PIN, STRAIGHT, HEADLE..... UOC:ERB	1
19	PAOZZ	4730-12-125-0310	D8286	DIN71412-AM6	FITTING, LUBRICATION..... UOC:ERB	1

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

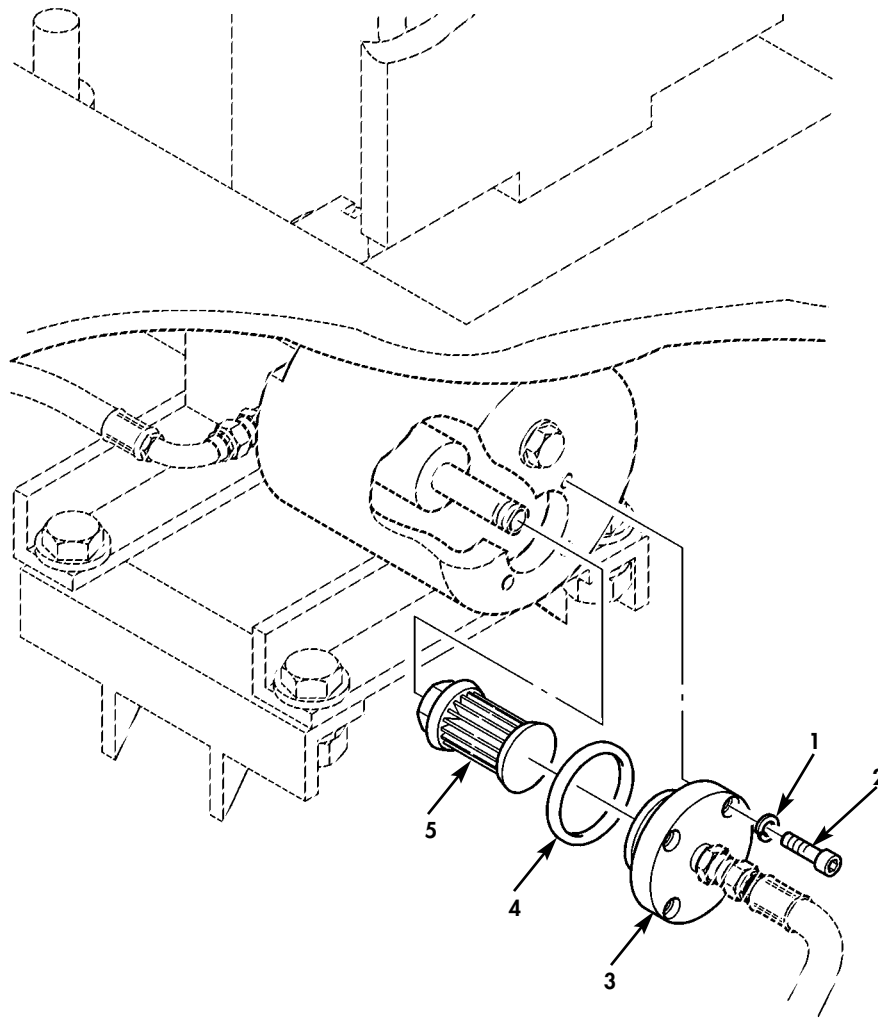


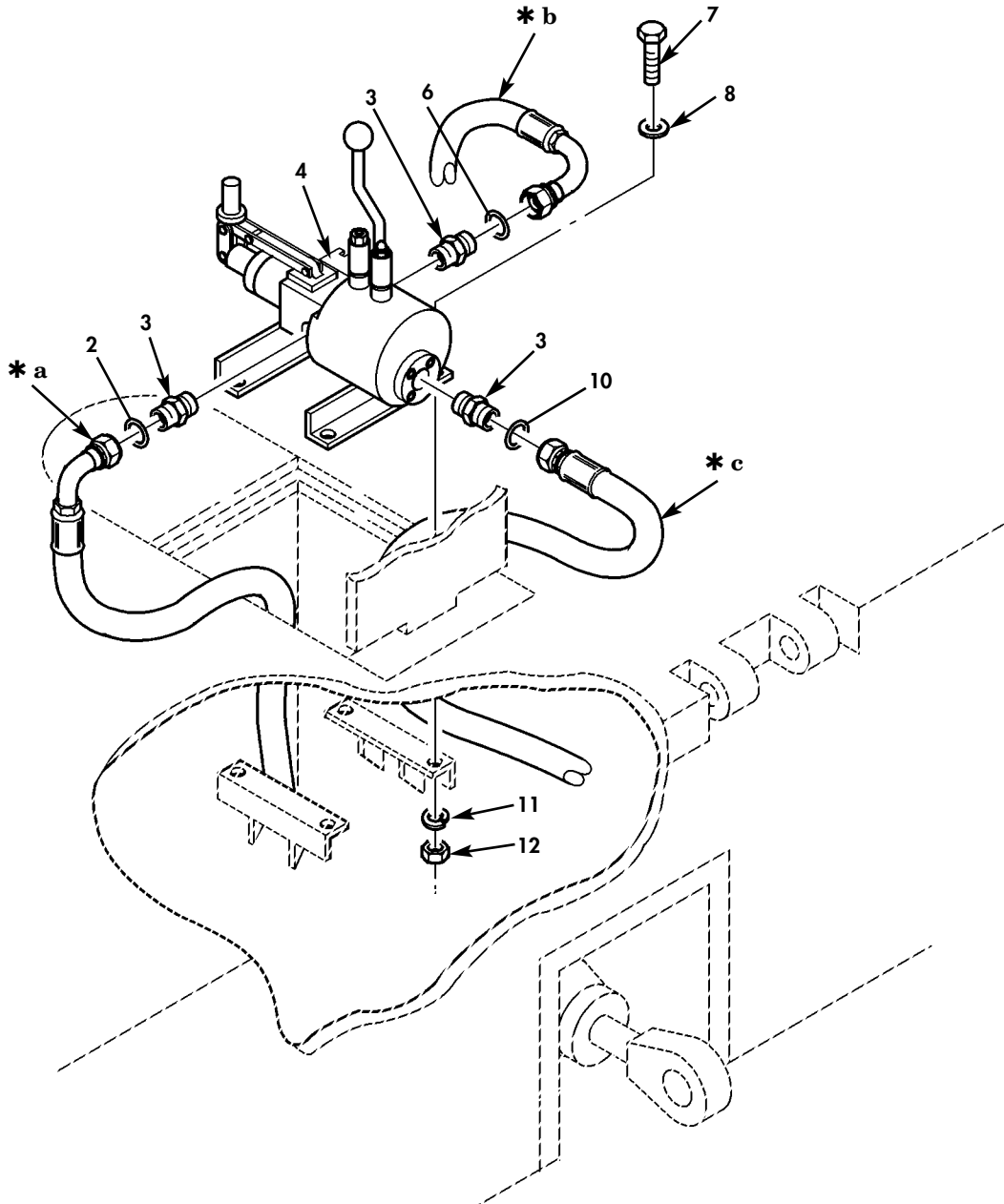
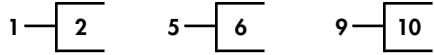
Figure 21. Pump Filter Element and Related Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 30 RAMP BAY HYDRAULIC SYSTEM						
3002 PUMP FILTER ELEMENT AND RELATED PARTS						
FIG. 21 PUMP FILTER ELEMENT AND RELATED PARTS						
1	PAHZZ	5310-12-356-3623	D9913	939270	WASHER, LOCK.....	8
					UOC:ERB	
2	PAHZZ	5305-12-356-4632	D9913	933777	SCREW, CAP, SOCKET HE.....	8
					UOC:ERB	
3	PAHZZ	5340-12-356-6980	D9913	024012806	COVER.....	2
					UOC:ERB	
4	KFHZZ		D9913	909773194	O-RING PART OF KIT P/N 024009402...	2
					UOC:ERB	
5	PAHZZ	2940-12-356-3627	D0718	AS010-00	FILTER, ELEMENT.....	2
					UOC:ERB	
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).



- * a PART OF ITEM 1
- * b PART OF ITEM 5
- * c PART OF ITEM 9

Figure 22. Pump Assembly and Mounting Hardware.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3003 PUMP ASSEMBLY AND MOUNTING HARDWARE						
FIG. 22 PUMP ASSEMBLY AND MOUNTING HARDWARE						
1	PAOZZ	4720-12-356-2086	D9913	909724855	HOSE ASSEMBLY, NONME..... UOC:ERB	2
2	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2
3	PAOZZ	4730-00-011-8537	81343	4-010111B	NUT, TUBE COUPLING..... UOC:ERB	6
4	PAOHH	4320-12-356-7358	D9913	024004012	PUMP, HYDRAULIC, RAM..... UOC:ERB	2
5	PAOZZ	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY, NONME..... UOC:ERB	2
6	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2
7	PAOZZ	5305-12-167-5376	D8286	DIN933-M12X35-8. 8-A3C	SCREW, CAP, HEXAGON H..... UOC:ERB	8
8	PAOZZ	5310-12-156-4899	D8286	DIN125-B13-140HV -A3P	WASHER, FLAT..... UOC:ERB	8
9	PAOZZ	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY, NONME..... UOC:ERB	2
10	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2
11	PAOZZ	5310-12-156-4899	D8286	DIN125-B13-140HV -A3P	WASHER, FLAT..... UOC:ERB	8
12	PAOZZ	5310-12-156-4982	D8286	DIN934-M12-B-A2P	NUT, PLAIN, HEXAGON..... UOC:ERB	8

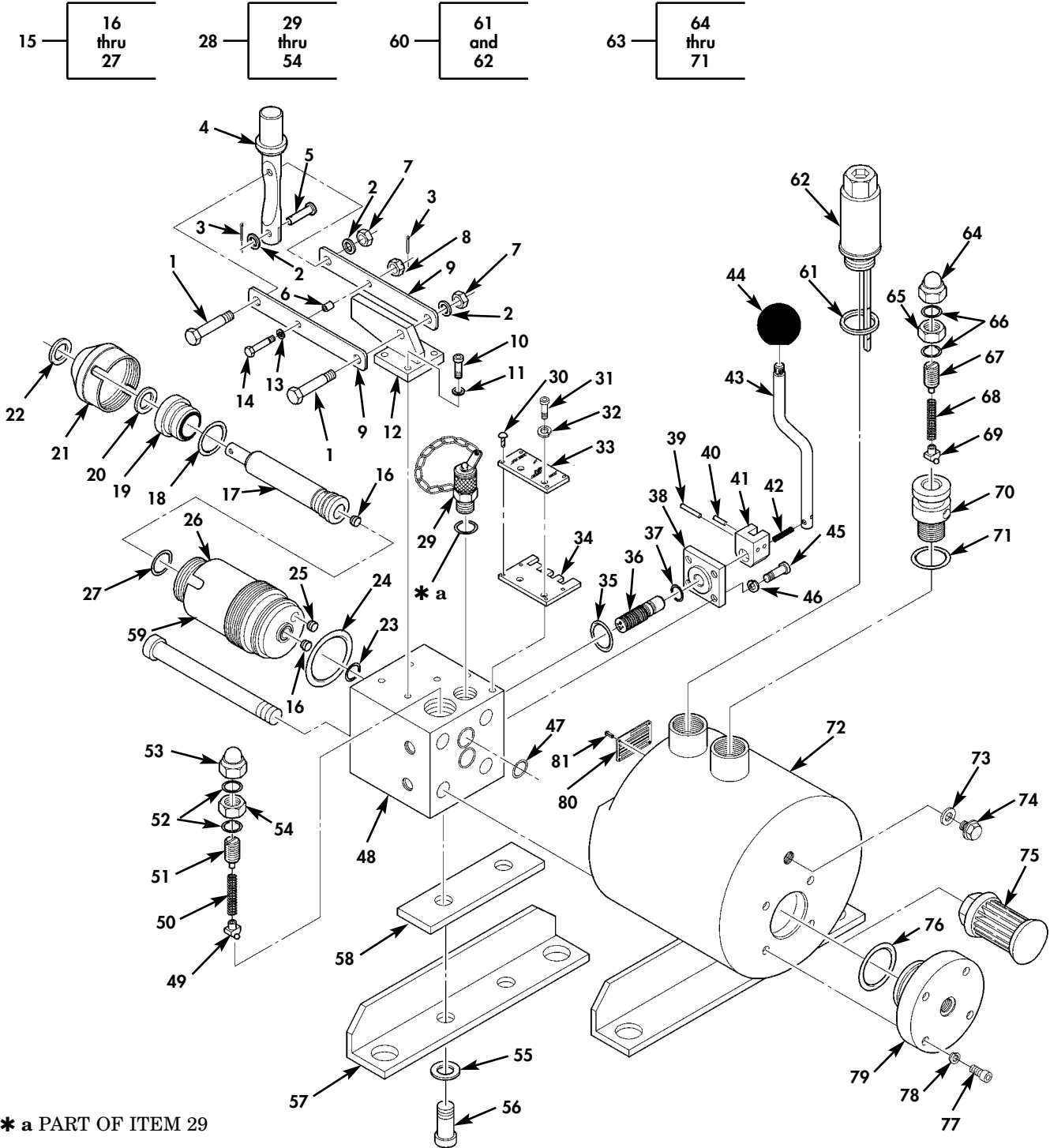
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0108 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 23. Pump and Reservoir.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3003 PUMP AND RESERVOIR						
FIG. 23 PUMP AND RESERVOIR						
1	PAHZZ	5305-12-355-9907	D9913	115215	BOLT, SHOULDER..... UOC: ERB	2
2	PAHZZ	5310-12-355-8440	D9913	937893	WASHER, FLAT..... UOC: ERB	3
3	PAHZZ	5315-12-132-0855	D8286	DIN94-2X20-CU2	PIN, COTTER..... UOC: ERB	2
4	PAHZZ	5340-12-356-5117	D9913	024015002	LEVER, MANUAL CONTRO..... UOC: ERB	1
5	PAHZZ	5315-12-356-2882	D9913	024017005	PIN, STRAIGHT, HEADED..... UOC: ERB	1
6	PAHZZ	5365-12-356-3360	D9913	024013904	SPACER, SLEEVE..... UOC: ERB	1
7	PAHZZ	5310-12-164-6571	D8286	DIN980-VM8-10-A2 C	NUT, SELF-LOCKING, HE..... UOC: ERB	2
8	PAHZZ	5310-12-356-3620	D9913	937420	NUT, PLAIN, SLOTTED H..... UOC: ERB	1
9	PAHZZ	5340-12-356-5116	D9913	024012602	PLATE, MENDING..... UOC: ERB	2
10	PAHZZ	5305-12-356-4631	D9913	933775	SCREW, CAP, SOCKET HE..... UOC: ERB	4
11	PAHZZ	5310-12-356-3623	D9913	939270	WASHER, LOCK..... UOC: ERB	4
12	PAHZZ	5340-12-356-6983	D9913	024006102	BRACKET, LEVER SUPPO..... UOC: ERB	1
13	PAHZZ	5310-12-356-2781	D9913	937869	WASHER, FLAT..... UOC: ERB	1
14	PAHZZ	5305-12-356-3957	D9913	024018101	BOLT, MACHINE..... UOC: ERB	1
15	PAHHH	3040-12-356-3465	D9913	024002018	CYLINDER ASSEMBLY..... UOC: ERB	1
16	XAHZZ		D9913	909414034	. VALVE, CHECK..... UOC: ERB	2
17	XAHZZ		D9913	024017505	. ROD, PISTON..... UOC: ERB	1
18	PAHZZ	5331-12-148-8843	D2480	OR25X2-72NBR/872	. O-RING PART OF KIT P/N 024009402.. UOC: ERB	1 *
19	XAHZZ		D9913	024013802	. SLEEVE, BUSHING..... UOC: ERB	1
20	PAHZZ	5330-12-356-3624	D1333	BA 115000030	. GASKET PART OF KIT P/N 024009402.. UOC: ERB	1
21	XAHZZ		D9913	024017905	. COVER, THREADED..... UOC: ERB	1
22	PAHZZ	5330-12-356-3481	D7040	WEM300180-T46N	. RING, SCRAPER PART OF KIT P/N 024009402..... UOC: ERB	1
23	KFHZZ		D9913	909772418	. O-RING PART OF KIT P/N 024009402.. UOC: ERB	1
24	KFHZZ		D9913	909773194	. O-RING PART OF KIT P/N 024009402.. UOC: ERB	1
25	XAHZZ		D9913	909414033	. VALVE, CHECK..... UOC: ERB	1
26	PAHZZ	4820-12-320-5594	D9913	024012704	. HOUSING..... UOC: ERB	1 *
27	KFHZZ		D9913	909775212	. O-RING PART OF KIT P/N 024009402.. UOC: ERB	1
28	PAHHH	4820-12-356-3464	D9913	024000804	VALVE, LINEAR, DIRECT..... UOC: ERB	1

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
29	PAHZZ	4730-12-305-4824	C0551	2102-01-14.48	.HEAD, HYDRUALIC, MOTO..... UOC: ERB	1
30	PAHZZ	5315-12-166-3517	D8286	DIN1476-3X6-AL	.DRIVESCREW..... UOC: ERB	4
31	PAHZZ	5305-12-356-4635	D9913	933499	.SCREW, CAP, SOCKET HE..... UOC: ERB	2
32	PAHZZ	5310-12-355-8644	D9913	939237	.WASHER, LOCK..... UOC: ERB	2
33	PAHZZ	9905-12-356-3030	D9913	029271682	.PLATE, INSTRUCTION..... UOC: ERB	1
34	XAHZZ		D9913	024013505	.PLATE..... UOC: ERB	1
* 35	PAHZZ	5331-12-148-8843	D2480	OR25X2-72NBR/872	.O-RING PART OF KIT P/N 024009402.. UOC: ERB	1
36	XAHZZ		D9913	024005701	.VALVE ASSEMBLY..... UOC: ERB	1
37	KFHZZ		D9913	909771726	.O-RING PART OF KIT P/N 024009402.. UOC: ERB	1
38	XAHZZ		D9913	024012807	.COVER PUMP LEVER..... UOC: ERB	1
39	PAHZZ	5315-12-356-0490	D9913	940608	.PIN, SPRING..... UOC: ERB	1
40	PAHZZ	5315-12-147-9381	D8286	DIN7-4M6X30-A4-7 0	.PIN, STRAIGHT, HEADLE..... UOC: ERB	1
41	PAHZZ	5340-12-356-5115	D9913	024017906	.BRACKET, LEVER..... UOC: ERB	1
42	PAHZZ	5360-12-356-2242	D9913	909572069	.SPRING, HELICAL, COMP..... UOC: ERB	1
43	PAHZZ	5340-12-356-6982	D9913	024015003	.LEVER..... UOC: ERB	1
44	PAHZZ	5355-12-156-4791	D8286	DIN319-C32FS	.KNOB, BALL..... UOC: ERB	1
45	PAHZZ	5305-12-356-4634	D9913	933936	.SCREW, CAP, SOCKET HE..... UOC: ERB	4
46	PAHZZ	5310-12-356-3623	D9913	939270	.WASHER, LOCK..... UOC: ERB	4
47	KFHZZ		D9913	909772418	.O-RING PART OF KIT P/N 024009402.. UOC: ERB	2
48	XAHZZ		D9913	024000304	.BLOCK, VALVE..... UOC: ERB	1
* 49	PAHZZ	4820-12-356-3467	D9913	024009401	.VALVE, FLAX..... UOC: ERB	1
* 50	PAHZZ	5360-12-356-8384	D9913	909572070	.SPRING, PRESSURE..... UOC: ERB	1
* 51	PAHZZ	5305-12-356-4630	D9913	024017403	.SCREW, CAP, SOCKET H..... UOC: ERB	1
52	PAHZZ	5330-12-124-0973	D8286	DIN7603-A12X18-A L	.GASKET..... UOC: ERB	2
53	PAHZZ	5310-12-356-2889	D9913	937596	.NUT, PLAIN, CAP..... UOC: ERB	1
54	PAHZZ	5310-12-356-2888	D9913	936670	.NUT, PLAIN, SLOTTED H..... UOC: ERB	1
55	PAHZZ	5310-12-355-8440	D9913	937893	WASHER, FLAT..... UOC: ERB	2
56	PAHZZ	5305-12-356-4631	D9913	933775	SCREW, CAP, SOCKET HE..... UOC: ERB	2
57	PAHZZ	5340-12-356-6981	D9913	024014102	ANGLE..... UOC: ERB	1
58	PAHZZ	5365-12-356-2204	D9913	024013504	PLATE, SPACER..... UOC: ERB	1
59	PAHZZ	5305-12-356-4633	D9913	933663	SCREW, CAP, SOCKET HE.....	4

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
60	PAHZZ	5340-12-356-6989	D9913	024008501	UOC:ERB PLUG ASSEMBLY,FILLE.....	1
61	PAHZZ	5330-12-125-2535	D2480	U21,5X28,7X2,5-7 2NBR/99041	.GASKET PART OF KIT P/N 024009402.. UOC:ERB	1
62	XAHZZ		D9913	024008201	.SCREW,PLUG..... UOC:ERB	1
63	PAHHH	4820-12-356-3484	D9913	024000805	VALVE,PRESSURE RELI..... UOC:ERB	1
64	PAHZZ	5310-12-356-2889	D9913	937596	.NUT,PLAIN,CAP..... UOC:ERB	1
65	PAHZZ	5310-12-356-2888	D9913	936670	.NUT,PLAIN,SLOTTED H..... UOC:ERB	1
66	PAHZZ	5330-12-124-0973	D8286	DIN7603-A12X18-A L	.GASKET..... UOC:ERB	2
67	PAHZZ	5305-12-356-4630	D9913	024017403	.SCREW,CAP,SOCKET H..... UOC:ERB	1 *
68	PAHZZ	5360-12-356-8384	D9913	909572070	.SPRING,PRESSURE..... UOC:ERB	1 *
69	PAHZZ	4820-12-356-3467	D9913	024009401	.VALVE,FLAX..... UOC:ERB	1 *
70	XAHZZ		D9913	024012705	.VALVE,HOUSING..... UOC:ERB	1
71	PAHZZ	5330-12-125-2535	D2480	U21,5X28,7X2,5-7 2NBR/99041	.GASKET..... UOC:ERB	1
72	PAHZZ		D9913	024000603	PUMP,RESERVOIR..... UOC:ERB	1
73	PAHZZ	5330-12-131-4119	D8286	DIN7603-D14X18-C U	GASKET PART OF KIT P/N 024009402... UOC:ERB	1
74	PAHZZ	5365-12-125-5213	D8286	DIN7604-A-M14X1, 5-ST	SCREW,PLUG..... UOC:ERB	1
75	PAHZZ	2940-12-356-3627	D0718	AS010-00	FILTER,ELEMENT..... UOC:ERB	1
76	KFHZZ		D9913	909773194	O-RING PART OF KIT P/N 024009402... UOC:ERB	1
77	PAHZZ	5305-12-356-4632	D9913	933777	SCREW,CAP,SOCKET HE..... UOC:ERB	4
78	PAHZZ	5310-12-356-3623	D9913	939270	WASHER,LOCK..... UOC:ERB	4
79	PAHZZ	5340-12-356-6980	D9913	024012806	COVER..... UOC:ERB	1
80	PAHZZ		D9913	029271681	PLATE,NAME..... UOC:ERB	1
81	PAHZZ	5315-12-166-3517	D8286	DIN1476-3X6-AL	DRIVESCREW..... UOC:ERB	4

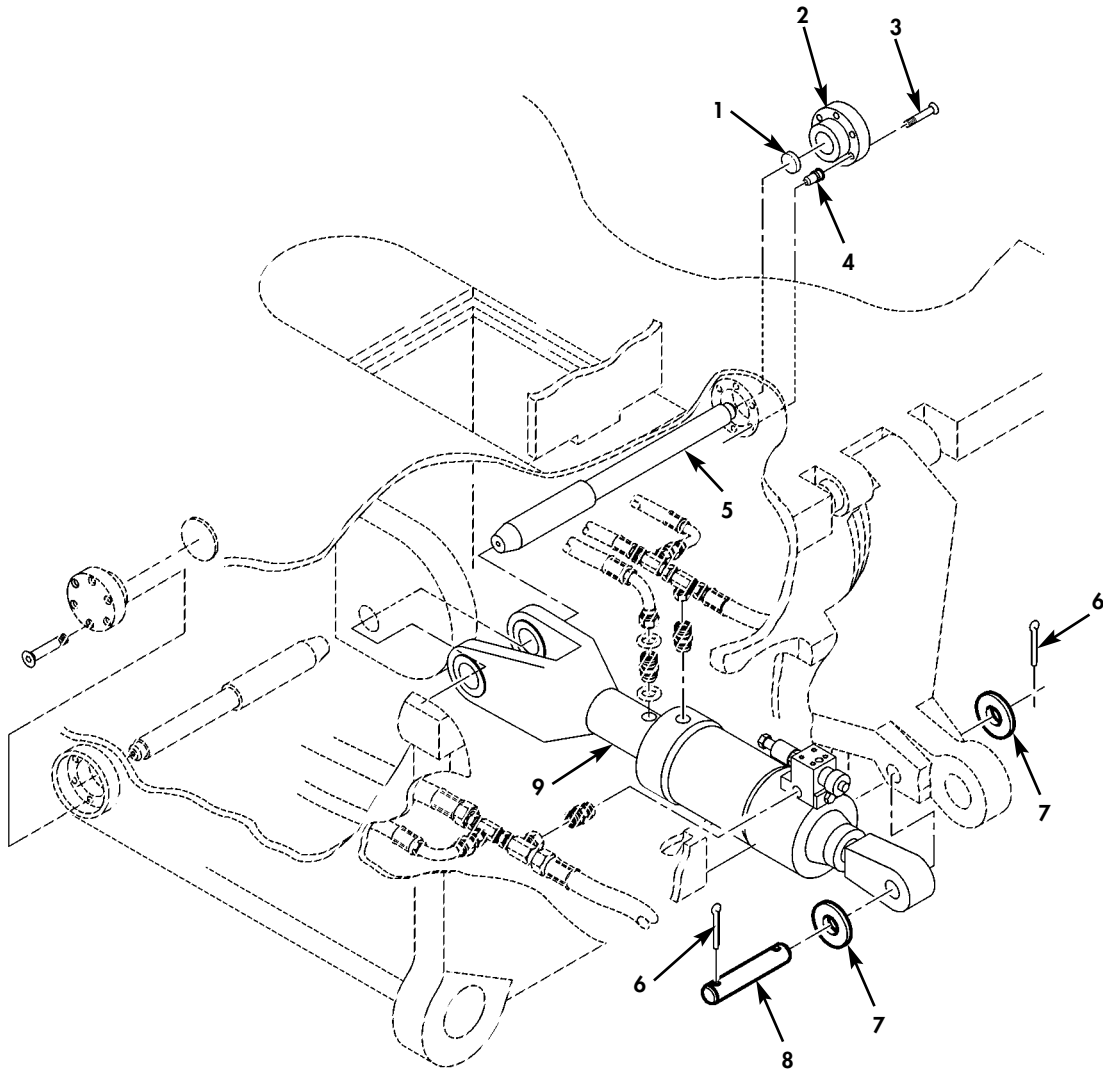
END OF FIGURE

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INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0109 00, DATED 8 APRIL 2003



INNER PONTON, L.H.

30 October 2003 Change 1

Figure 24. Cylinder, Retaining Pin, and Cover.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3004 CYLINDER,RETAINING PIN,AND COVER						
FIG. 24 CYLINDER,RETAINING PIN,AND COVER						
1	PAOZZ	5330-12-357-2517	D9913	027514011	PLATE,RUBBER..... UOC:ERB	2 *
2	PAOZZ	5340-12-356-4947	D9913	027501003	CAP,PILLOW BLOCK..... UOC:ERB	2 *
3	PAOZZ	5305-12-142-5941	D8286	DIN7991-M6X25-8. 8-A2P	SCREW,CAP, SOCKET HE..... UOC:ERB	12 *
4	PAOZZ	5310-12-318-7526	D9728	23311060065	INSERT,THREAD..... UOC:ERB	12 *
5	PAOZZ	5315-12-356-3858	D9913	027505002	PIN, SHOULDER, HEADLE..... UOC:ERB	2 *
6	PAOZZ	5315-12-315-0187	D8286	DIN94-10X80-ST-A 3P	PIN,COTTER..... UOC:ERB	4 *
7	PAOZZ	5310-12-356-0258	D9913	938115	WASHER,FLAT..... UOC:ERB	4 *
8	PAOZZ	5315-12-180-4468	D9913	027073621	PIN, STRAIGHT, HEADLE..... UOC:ERB	2 *
9	PAOHH	3040-12-356-2891	D9913	024002017	CYLINDER ASSEMBLY,A..... UOC:ERB	2 *

END OF FIGURE

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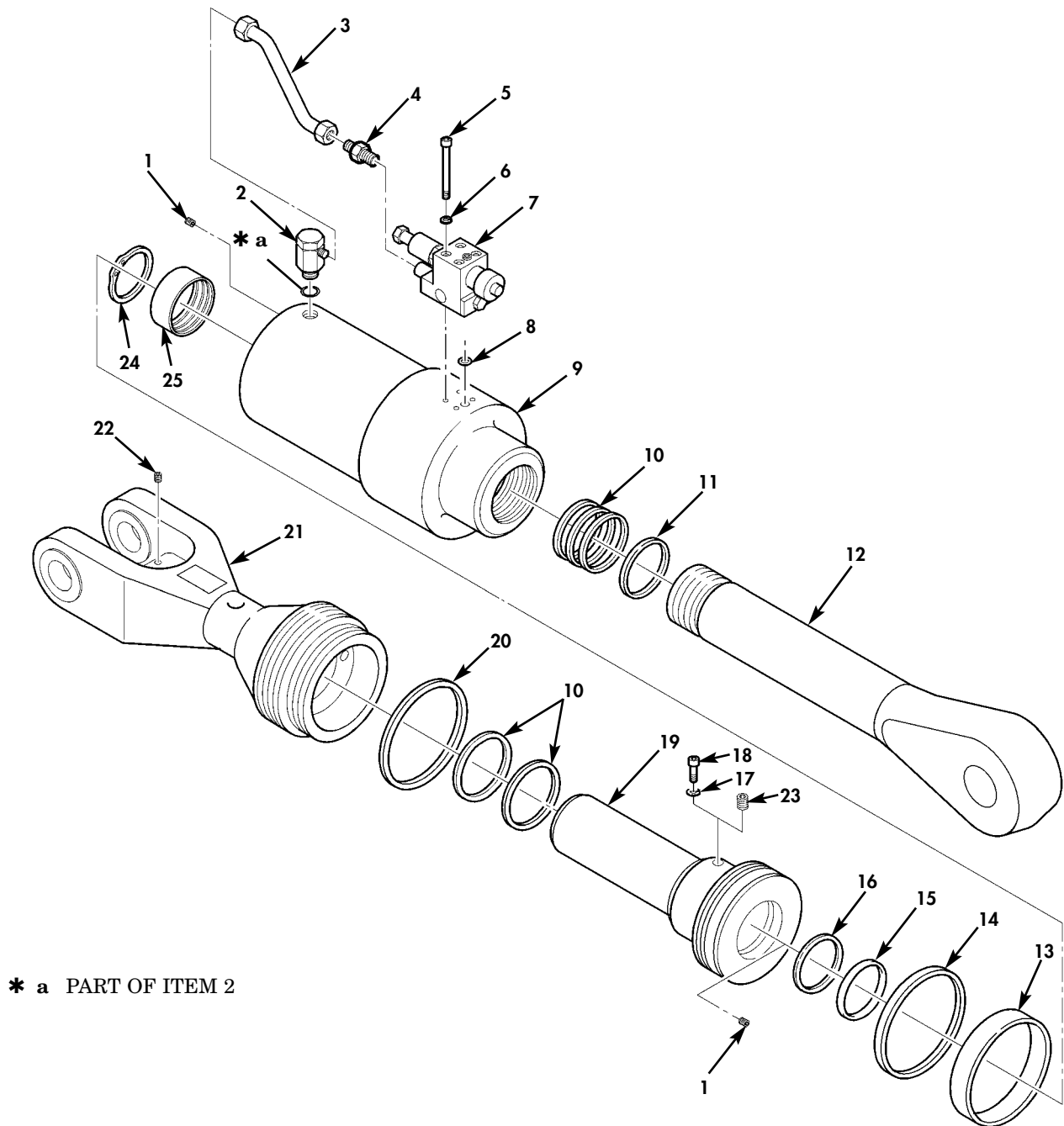


Figure 25. Cylinder and Related Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3004 CYLINDER AND RELATED PARTS						
FIG. 25 CYLINDER AND RELATED PARTS						
1	PAHZZ	5305-12-146-8156	D8286	DIN913-M8X10-33H -A3P	SETSCREW..... UOC:ERB	3
2	PAHZZ	4730-12-340-4132	D9913	909610338	SWIVEL JOINT, HYDRAU..... UOC:ERB	1
3	PAHZZ	4710-12-356-2083	D9913	024062602	PIPE, BENT, METALLIC..... UOC:ERB	1
4	PAHZZ	4730-12-356-2558	D9913	909610267	ADAPTER, STRAIGHT, PI..... UOC:ERB	1
5	PAHZZ	5305-12-356-6172	D9913	933960	SCREW, CAP, SOCKET HE..... UOC:ERB	4
6	PAHZZ	5310-12-356-3622	D9913	939273	WASHER, LOCK..... UOC:ERB	4
7	PAHZZ	4820-12-356-3476	D9913	909413810	VALVE, LINEAR, DIRECT..... UOC:ERB	1
8	PAHZZ	5331-12-354-3124	D9913	909775198	O-RING..... UOC:ERB	1
9	XAHZZ		D9913	904065503	TUBE, CYLINDER..... UOC:ERB	1
10	PAHZZ	5330-12-331-4476	D9913	909775208	PACKING, PREFORMED..... UOC:ERB	5
11	PAHZZ	2590-12-148-9613	D1333	A1 7005 N3587	RING, WIPER..... UOC:ERB	1
12	XAHZZ		D9913	904066111	PISTON, ROD..... UOC:ERB	1
13	PAHZZ	3040-12-356-3959	D9913	909823011	RING, ROD, PISTON..... UOC:ERB	1
14	PAHZZ	5330-12-331-4477	D9913	909775209	PACKING, PREFORMED..... UOC:ERB	1
15	PAHZZ	5331-12-352-5127	C0856	310833	O-RING..... UOC:ERB	1
16	PAHZZ	5330-12-352-5129	C0856	313377	RETAINER, PACKING..... UOC:ERB	1
17	PAHZZ	5310-12-356-3623	D9913	939270	WASHER, LOCK..... UOC:ERB	1
18	PAHZZ	5305-12-190-0318	D8286	DIN912-M8X25-A2- 70	SCREW, CAP, SOCKET HE..... UOC:ERB	1
19	XAHZZ		D9913	904067007	PISTON..... UOC:ERB	1
20	PAHZZ	5331-12-356-2892	D9913	909775199	O-RING..... UOC:ERB	1
21	XAHZZ		D9913	904061101	CYLINDER, BOTTOM..... UOC:ERB	1
22	PAHZZ	5305-12-356-6173	D9913	117768	SETSCREW..... UOC:ERB	1
23	PAOZZ	5340-12-314-0989	D9913	909734150	PROTECTIVE, DUST AND..... UOC:ERB	1
24	PAHZZ	5325-12-153-6230	D9913	909565746	RING, RETAINING..... UOC:ERB	1
25	PAHZZ	3120-12-356-2084	D9913	024063801	BUSHING, SLEEVE..... UOC:ERB	1

END OF FIGURE

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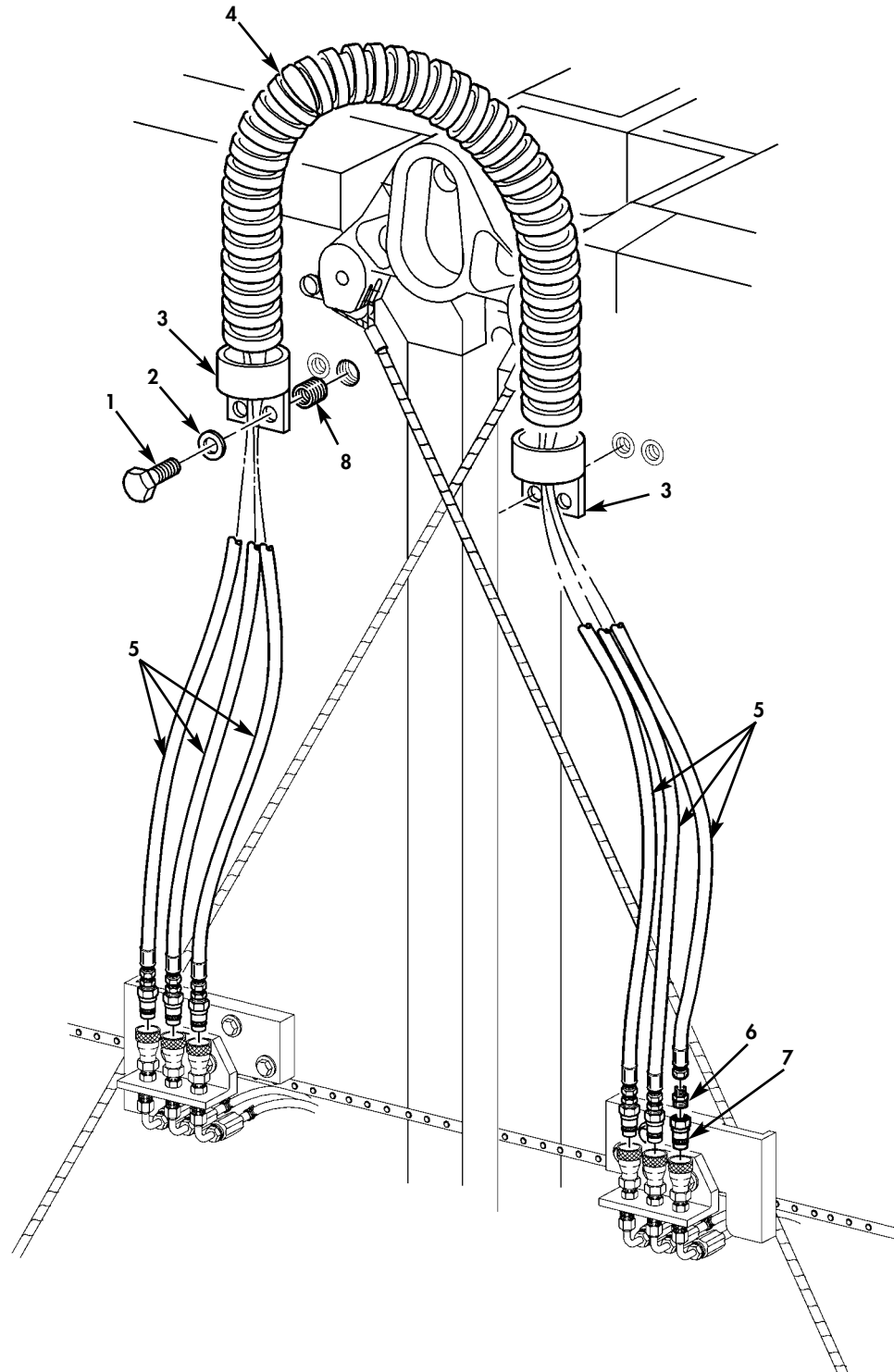


Figure 26. Hoses, Cover, and Related Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSES, COVER, AND RELATED PARTS						
FIG. 26 HOSES, COVER, AND RELATED PARTS						
1	PAOZZ	5305-12-156-4873	D8286	DIN933-M10X30-8. 8-A3P	SCREW, CAP, HEXAGON H..... UOC:ERB	4
2	PAOZZ	5310-12-145-2243	D8286	DIN7349-10,5-ST- A3P	WASHER, FLAT..... UOC:ERB	4
3	PAOZZ	5340-12-356-6964	D9913	027504301	CLAMP, LOOP..... UOC:ERB	2
4	PAOZZ	4720-12-356-2557	D9913	909721607	TUBING, NONMETALLIC..... UOC:ERB	1
5	PAOZZ	4720-12-356-2080	D9913	909724854	HOSE ASSEMBLY, NONME..... UOC:ERB	3
6	PAOZZ	4730-12-162-8809	D2497	15-006-10-6	ADAPTER, STRAIGHT..... UOC:ERB	6
7	PAOZZ	4730-12-180-1657	D2497	5602-6-6S	COUPLING HALF, QUICK..... UOC:ERB	6
8	PAOZZ	5340-12-142-8193	D9728	0130 0100 015	INSERT, SCREW THREAD..... UOC:ERB	4

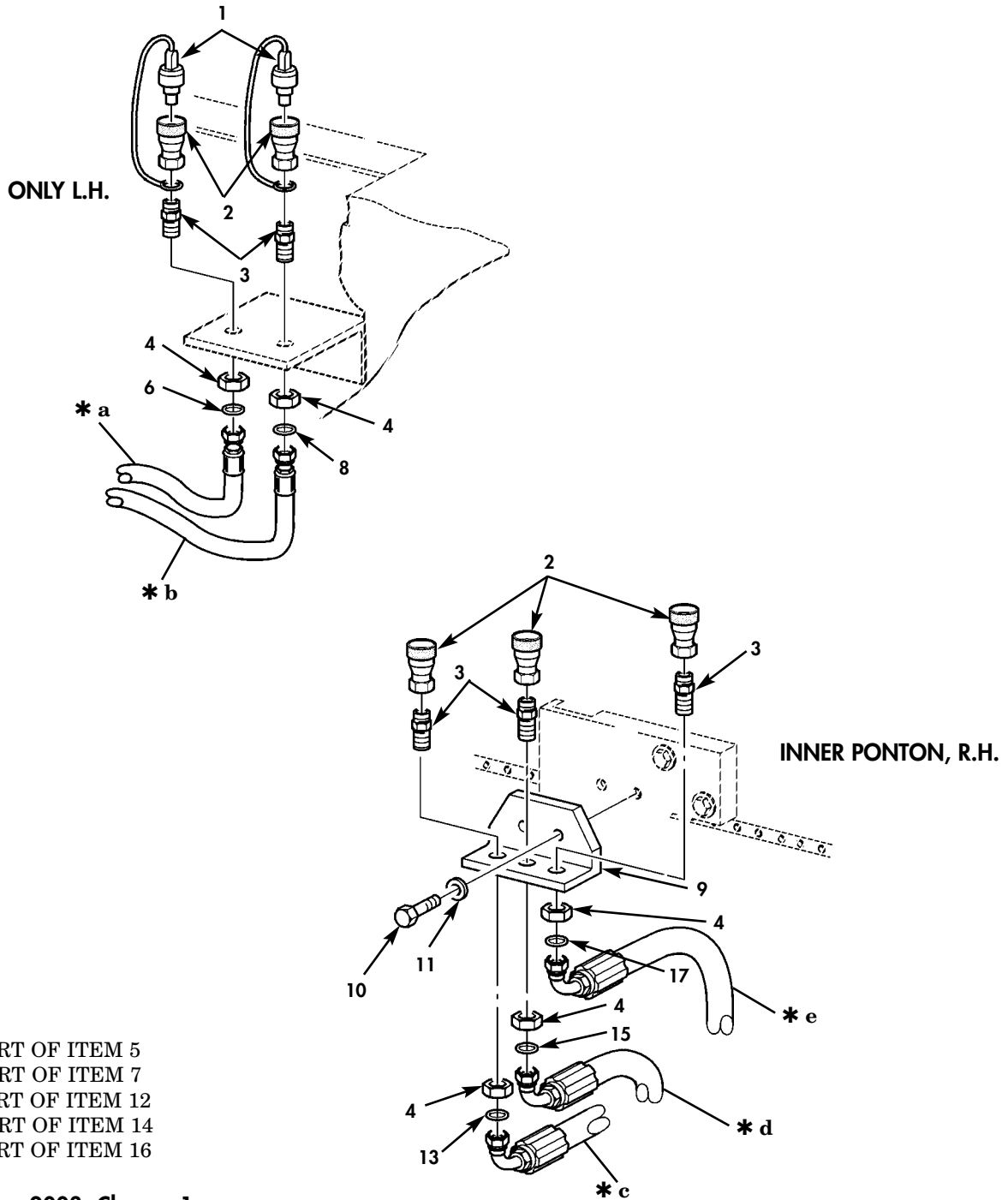
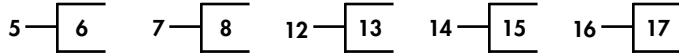
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THIS WORK PACKAGE SUPERSEDES WP 0112 00, DATED 8 APRIL 2003



- * a PART OF ITEM 5
- * b PART OF ITEM 7
- * c PART OF ITEM 12
- * d PART OF ITEM 14
- * e PART OF ITEM 16

30 October 2003 Change 1

Figure 27. Hoses, Bracket, Quick-Disconnects, and Fittings, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSES, BRACKET, QUICK-DISCONNECTS, AND FITTINGS, L.H. AND R.H.						
FIG. 27 HOSES, BRACKET, QUICK-DISCONNECTS, AND FITTINGS, L.H. AND R.H.						
1	PAOZZ	5340-12-162-8470	D2497	5659-6	CAP, CONNECTOR.....	2
					UOC:ERB	
2	PAOZZ	4730-12-180-1656	D2497	5601-6-6S	COUPLING HALF, QUICK.....	8
					UOC:ERB	
3	PAOZZ	4730-12-180-1202	D2497	15-006-10-6-1	ADAPTER, STRAIGHT, PI.....	8
					UOC:ERB	
4	PAOZZ	5310-12-145-2077	D8286	DIN80705-M16X1,5	NUT, PLAIN, HEXAGON H.....	8 *
				-14H-A2P	UOC:ERB	
5	PAOZZ	4720-12-356-2081	D9913	909724856	HOSE ASSEMBLY, NONME W/FITTING.....	1 *
					UOC:ERB	
6	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING.....	2 *
					UOC:ERB	
7	PAOZZ	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY, NONME W/FITTING.....	1
					UOC:ERB	
8	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING.....	2 *
					UOC:ERB	
9	PAOZZ	5340-12-356-6965	D9913	024010303	BRACKET, ANGLE L.H.....	1 *
					UOC:ERB	
9	PAOZZ	5340-12-356-6966	D9913	024010302	BRACKET, ANGLE R.H.....	1 *
					UOC:ERB	
10	PAOZZ	5305-12-141-9963	D8286	DIN933-M16X70-8.	SCREW, CAP, HEXAGON H.....	4 *
				8-A3P	UOC:ERB	
11	PAOZZ	5310-12-142-0640	D8286	DIN125-B17-140HV	WASHER, FLAT.....	4 *
				-A3P	UOC:ERB	
12	PAOZZ	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY, NONME W/FITTING.....	2 *
					UOC:ERB	
13	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING.....	2 *
					UOC:ERB	
14	PAOZZ	4720-12-356-2081	D9913	909724856	HOSE ASSEMBLY, NONME W/FITTING.....	2 *
					UOC:ERB	
15	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING.....	2 *
					UOC:ERB	
16	PAOZZ	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY, NONME W/FITTING.....	2 *
					UOC:ERB	
17	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING.....	2 *
					UOC:ERB	

END OF FIGURE

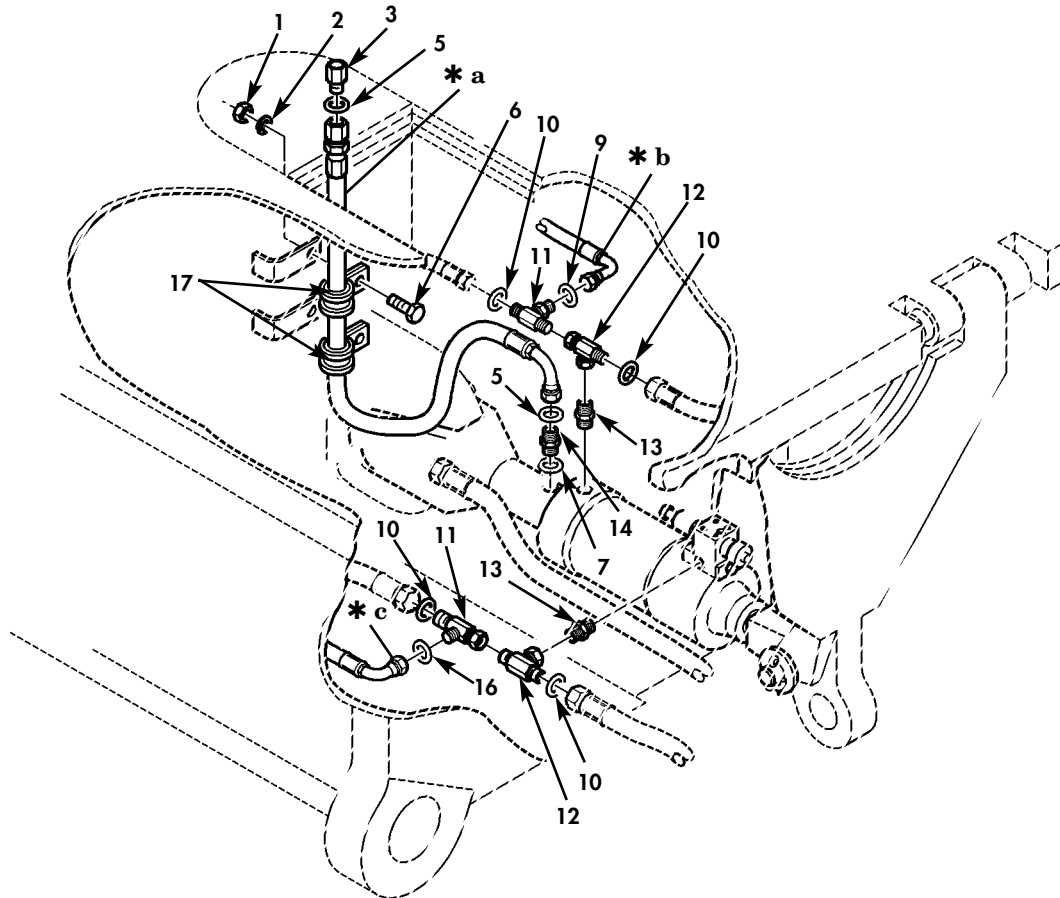
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4— 5 8— 9 15— 16



- * a PART OF ITEM 4
- * b PART OF ITEM 8
- * c PART OF ITEM 15

30 October 2003 Change 1

Figure 28. Hoses and Related Fittings, L.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSES AND RELATED FITTINGS						
FIG. 28 HOSES AND RELATED FITTINGS,L.H.						
1	PAOZZ	5310-12-144-6214	D8286	DIN934-M8-8-A2P	NUT,PLAIN,HEXAGON..... UOC:ERB	2
2	PAOZZ	5310-12-142-0658	D8286	DIN127-B8-FST-A3 P	WASHER,LOCK..... UOC:ERB	2
3	PAOZZ	4820-12-302-4275	D9913	024000802	VALVE,SAFETY RELIEF..... UOC:ERB	1
4	PAOZZ	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY,NONME W/FITTING..... UOC:ERB	1
5	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2 *
6	PAOZZ	5305-12-156-4870	I9006	EN24017-M8X30-8. 8-A2P	SCREW,CAP,HEXAGON H..... UOC:ERB	2 *
7	PAOZZ	5330-12-156-4527	D8286	DIN7603-A18X24-C U	GASKET..... UOC:ERB	1 *
8	PAOZZ	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY,NONME W/FITTING..... UOC:ERB	1 *
9	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2 *
10	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	O-RING..... UOC:ERB	4 *
11	PAOZZ	4730-12-356-2559	D9913	119196	TEE,PIPE..... UOC:ERB	2 *
12	PAOZZ	4730-12-179-1386	D8134	EVT10-LOMDK-A3L	TEE,TUBE..... UOC:ERB	2 *
13	PAOZZ	4730-12-186-9990	D8286	DIN3901-L10B-M-S T-A3P	ADAPTER,STRAIGHT..... UOC:ERB	2 *
14	PAOZZ	4730-12-356-2560	D9913	909617880	ADAPTER,STRAIGHT,HO..... UOC:ERB	1 *
15	PAOZZ	4720-12-356-2081	D9913	909724856	HOSE ASSEMBLY,NONME W/FITTING..... UOC:ERB	1 *
16	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2 *
17	PAOZZ	5340-12-180-3179	D8286	DIN3016-D1-17X20 -W1-2	CLAMP,LOOP..... UOC:ERB	2 *

END OF FIGURE

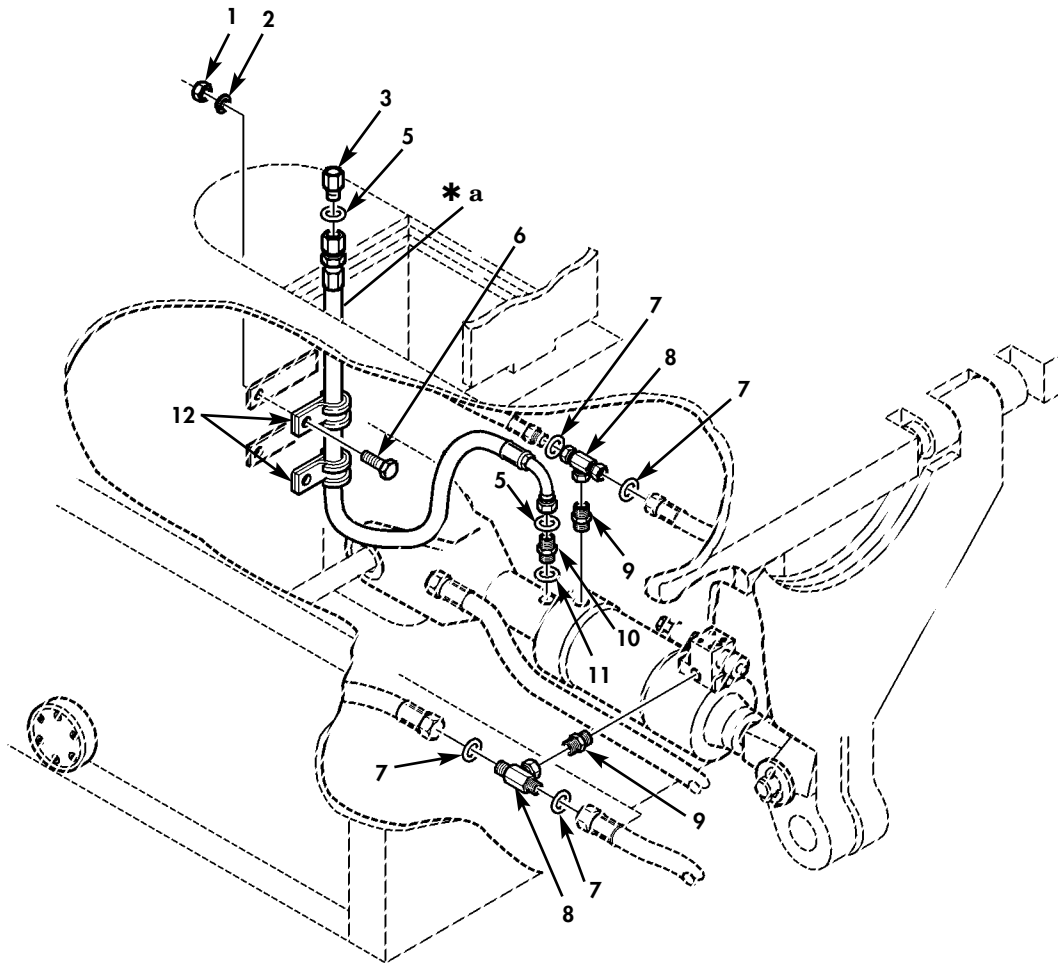
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4 — 5



* a PART OF ITEM 4

30 October 2003 Change 1

Figure 29. Hoses and Related Fittings, R.H.

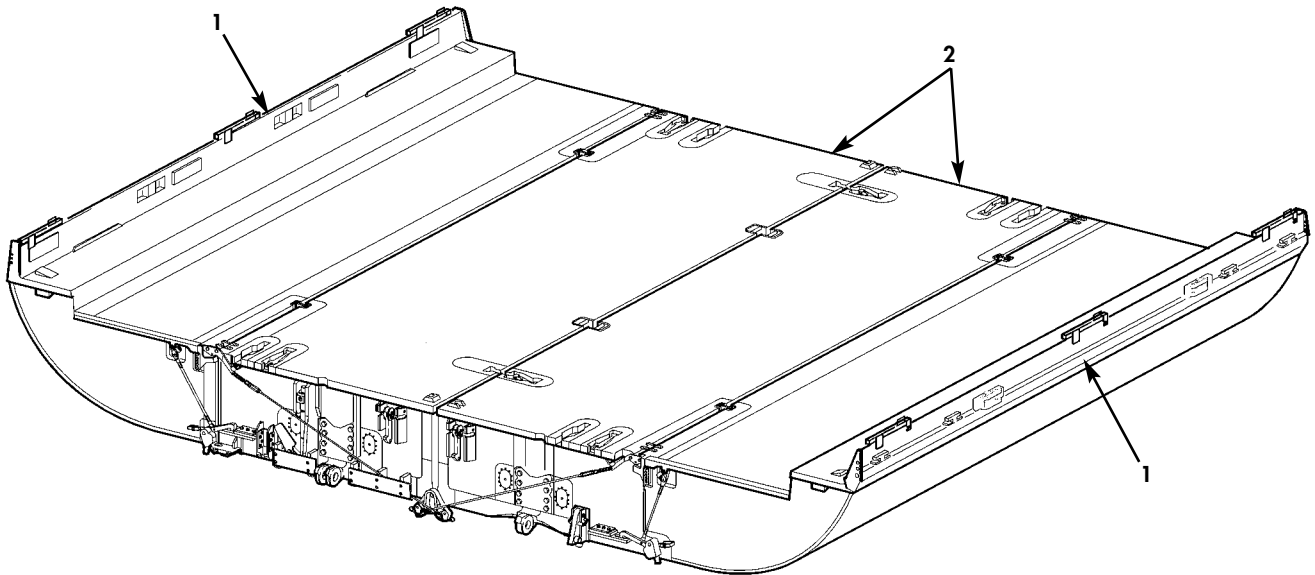
(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSES AND RELATED FITTINGS						
FIG. 29 HOSES AND RELATED FITTINGS,R.H.						
1	PAOZZ	5310-12-144-6214	D8286	DIN934-M8-8-A2P	NUT,PLAIN,HEXAGON..... UOC:ERB	2
2	PAOZZ	5310-12-142-0658	D8286	DIN127-B8-FST-A3 P	WASHER,LOCK..... UOC:ERB	2
3	PAOZZ	4820-12-302-4275	D9913	024000802	VALVE,SAFETY RELIEF..... UOC:ERB	1
4	PAOZZ	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY,NONME W/FITTING..... UOC:ERB	1
5	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	.O-RING..... UOC:ERB	2 *
6	PAOZZ	5305-12-156-4870	I9006	EN24017-M8X30-8. 8-A2P	SCREW,CAP,HEXAGON H..... UOC:ERB	2
7	PAOZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	O-RING..... UOC:ERB	4 *
8	PAOZZ	4730-12-179-1386	D8134	EVT10-LOMDK-A3L	TEE,TUBE..... UOC:ERB	2 *
9	PAOZZ	4730-12-186-9990	D8286	DIN3901-L10B-M-S T-A3P	ADAPTER,STRAIGHT..... UOC:ERB	2 *
10	PAOZZ	4730-12-356-2560	D9913	909617880	ADAPTER,STRAIGHT,HO..... UOC:ERB	1 *
11	PAOZZ	5330-12-156-4527	D8286	DIN7603-A18X24-C U	GASKET..... UOC:ERB	1 *
12	PAOZZ	5340-12-180-3179	D8286	DIN3016-D1-17X20 -W1-2	CLAMP,LOOP..... UOC:ERB	2 *

END OF FIGURE

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30 October 2003 Change 1

Figure 29A. Interior Bay, Inner and Outer Pontoons

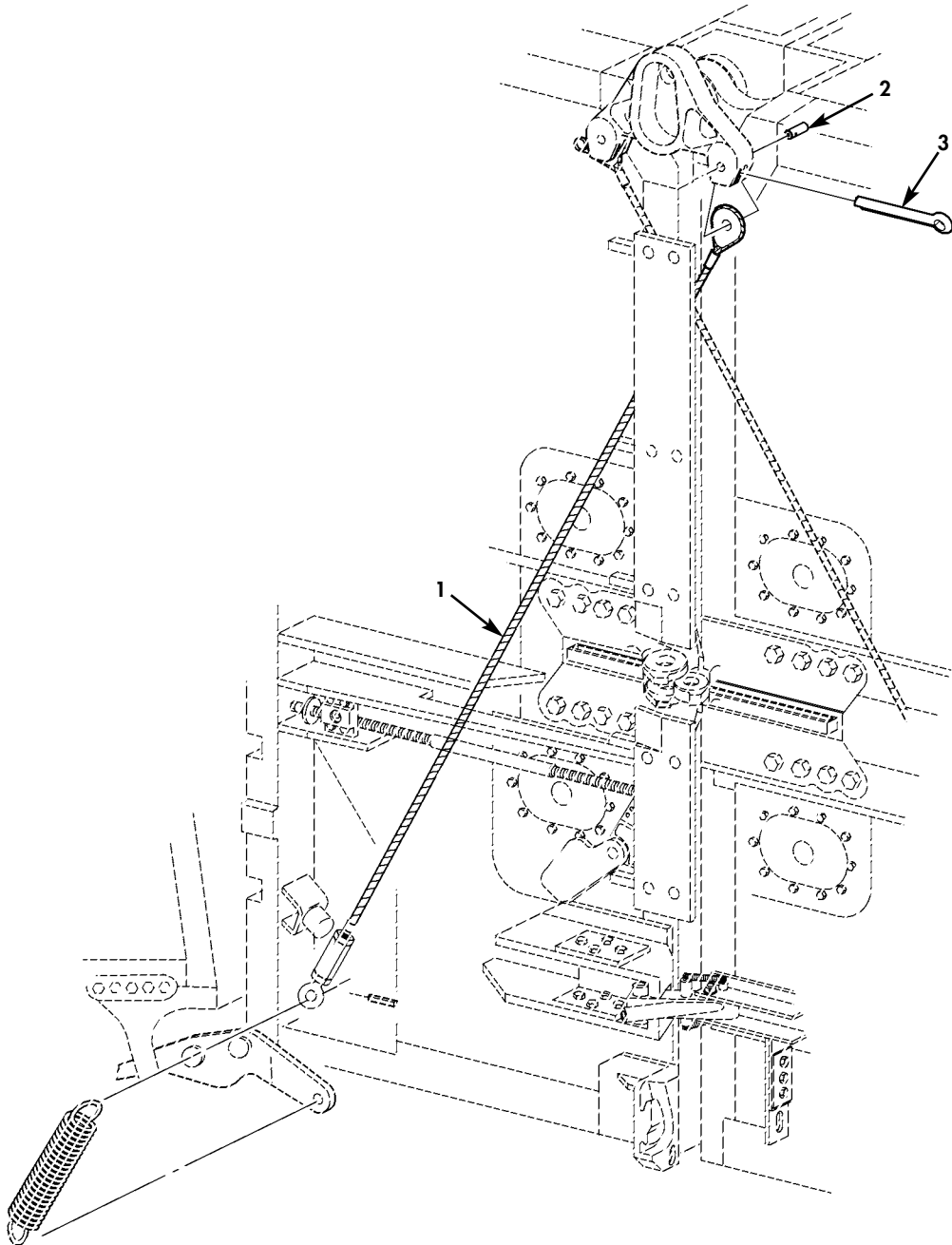
(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 31 INTERIOR BAY 3100 INTERIOR BAY	
					FIG. 29A INTERIOR BAY, INNER AND OUTER PONTONS	
1	PFOHH		D9913	027000205	PANTON, OUTER.....	2 *
					UOC:EIB	
2	PFOHH		D9913	027000203	PANTON, INNER.....	2 *
					UOC:EIB	
					END OF FIGURE	

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Figure 30. Cable Assembly.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3101 CABLE ASSEMBLY						
FIG. 30 CABLE ASSEMBLY						
1	PAOZZ	4010-12-356-2780	D9913	027075603	WIRE ROPE ASSEMBLY..... UOC:EIB	4
2	PAOZZ	5315-12-180-3616	D9913	027073613	PIN,PONTOON BOAT..... UOC:EIB	4
3	PAOZZ	5315-12-341-6612	D8286	DIN94-4X63-ST-A3 P	PIN,COTTER..... UOC:EIB	4
END OF FIGURE						

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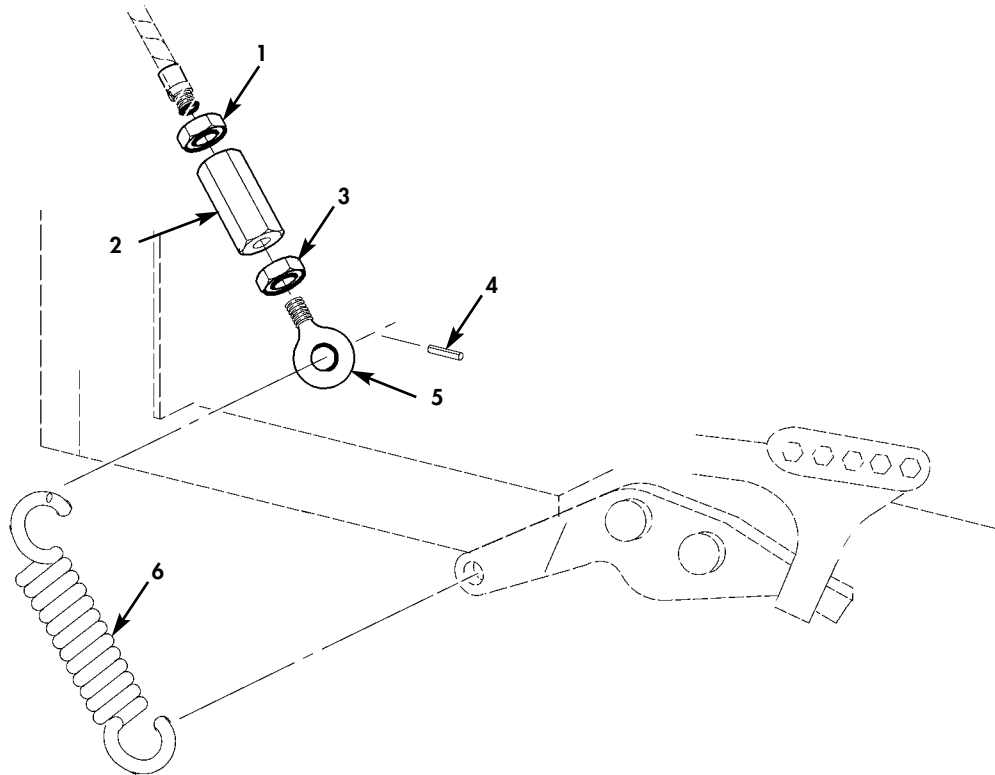


Figure 31. Turnbuckle, Spring Cable, and Connecting Pin.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3102 TURNBUCKLE, SPRING CABLE, AND CONNECTING PIN						
FIG. 31 TURNBUCKLE, SPRING CABLE, AND CONNECTING PIN						
1	PAOZZ	5310-12-327-0721	D8286	DIN439-BM20-04-A 2P	NUT, PLAIN, HEXAGON..... UOC: EIB	4
2	PAOZZ	5340-12-317-2253	D8286	DIN1479-SPM20-X1 0CRNITI189	NUT, PLAIN, HEXAGON..... UOC: EIB	4
3	PAOZZ	5310-12-252-1067	D9913	936640	NUT, PLAIN, HEXAGON..... UOC: EIB	4
4	PAOZZ	5315-12-180-1372	D8286	DIN1481-5X40-1.4 310	PIN, STRAIGHT, HEADLE..... UOC: EIB	4
5	PAOZZ	5306-12-314-4873	D9913	027077201	BOLT, EYE..... UOC: EIB	4
6	PAOZZ	5360-12-317-7984	D9913	027077108	SPRING, HELICAL, EXTE..... UOC: EIB	4
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

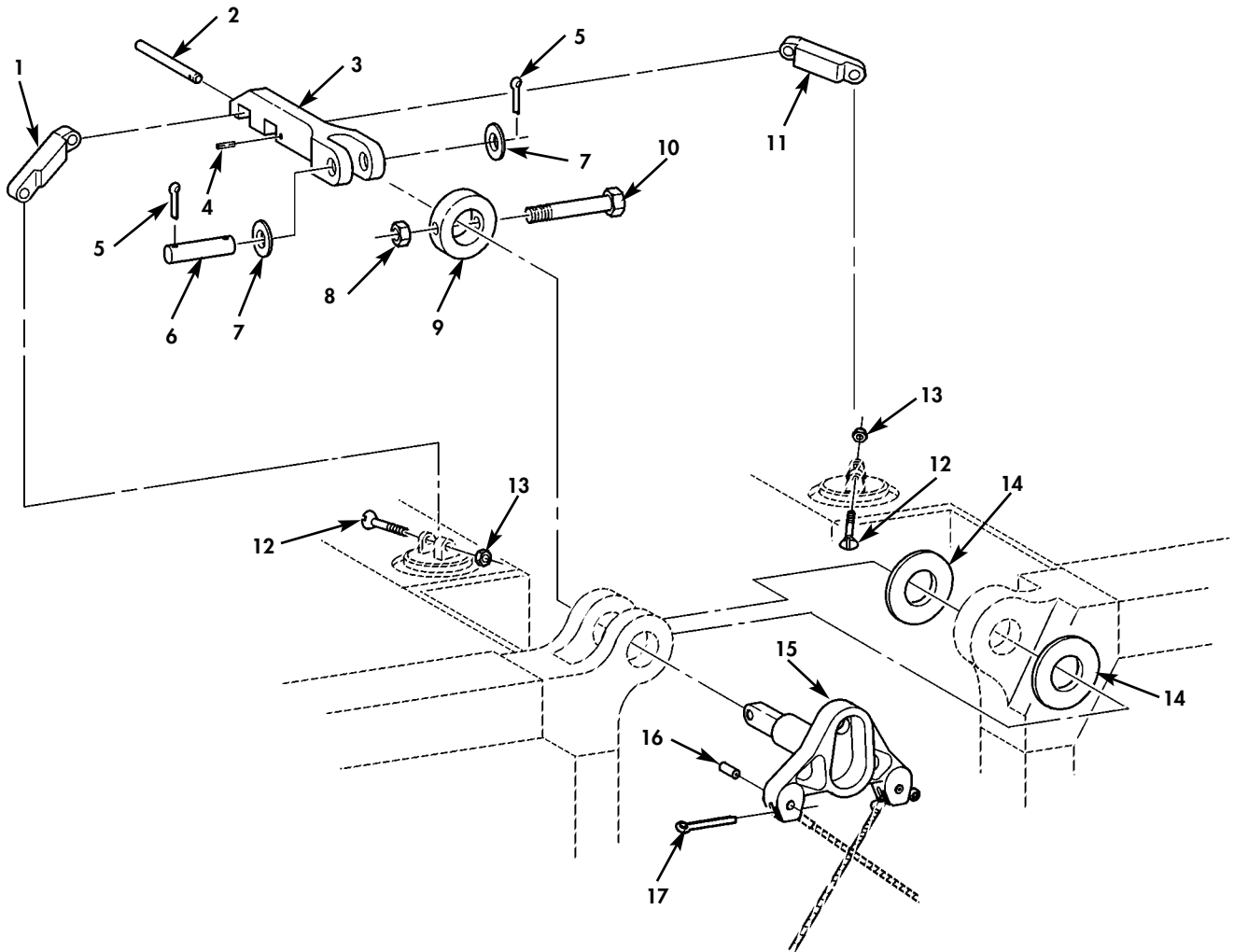


Figure 32. Eyebolt, Shackles, and Lever.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3103 EYEBOLT, SHACKLES, AND LEVER						
FIG. 32 EYEBOLT, SHACKLES, AND LEVER						
1	PAOZZ	5420-12-179-0315	D9913	027074806	CONNECTING LINK, RIG..... UOC: EIB	2
2	PAOZZ	5315-12-180-3613	D9913	027073612	PIN, STRAIGHT, HEADLE..... UOC: EIB	2
3	PAOZZ	5420-12-179-0317	D9913	027071903	COVER, PIN CYLINDER..... UOC: EIB	2
4	PAOZZ	5315-12-314-9043	D8286	DIN1481-5X22-A3P	PIN, SPRING..... UOC: EIB	2
5	PAOZZ	5315-12-180-3614	D8286	DIN94-8X50-ST-A3 P	PIN, COTTER..... UOC: EIB	4
6	PAOZZ	5315-12-180-3615	D9913	027073611	PIN, STRAIGHT, HEADLE..... UOC: EIB	2
7	PAOZZ	5310-12-145-2843	D8286	DIN125-B37-140HV -A3P	WASHER, FLAT..... UOC: EIB	4
8	PAOZZ	5310-12-145-2655	D8286	DIN985-M12-8-A2P	NUT, SELF-LOCKING, HE..... UOC: EIB	2
9	PAOZZ	5420-12-179-0318	D9913	027074001	COLLAR, SHAFT..... UOC: EIB	2
10	PAOZZ	5305-12-179-8251	D8286	DIN931-M12X150-1 0.9-A3P	SCREW, CAP, HEXAGON H..... UOC: EIB	2
11	PAOZZ	5420-12-179-0316	D9913	027074805	CONNECTING LINK, RIG..... UOC: EIB	2
12	PAOZZ	5305-12-179-8250	D9913	909511604	SCREW, CLOSE TOLERAN..... UOC: EIB	4
13	PAOZZ	5310-01-418-2337	80204	B18241B120	NUT, PLAIN, HEXAGON..... UOC: EIB	4
14	PAOZZ	5310-12-179-8252	D9913	027074502	SHIM..... UOC: EIB	4
15	PAOZZ	5420-00-507-7033	D9913	027015009	BELL CRANK..... UOC: EIB	2
16	PAOZZ	5315-12-180-3616	D9913	027073613	PIN, PONTOON BOAT..... UOC: EIB	4
17	PAOZZ	5315-12-341-6612	D8286	DIN94-4X63-ST-A3 P	PIN, COTTER..... UOC: EIB	4

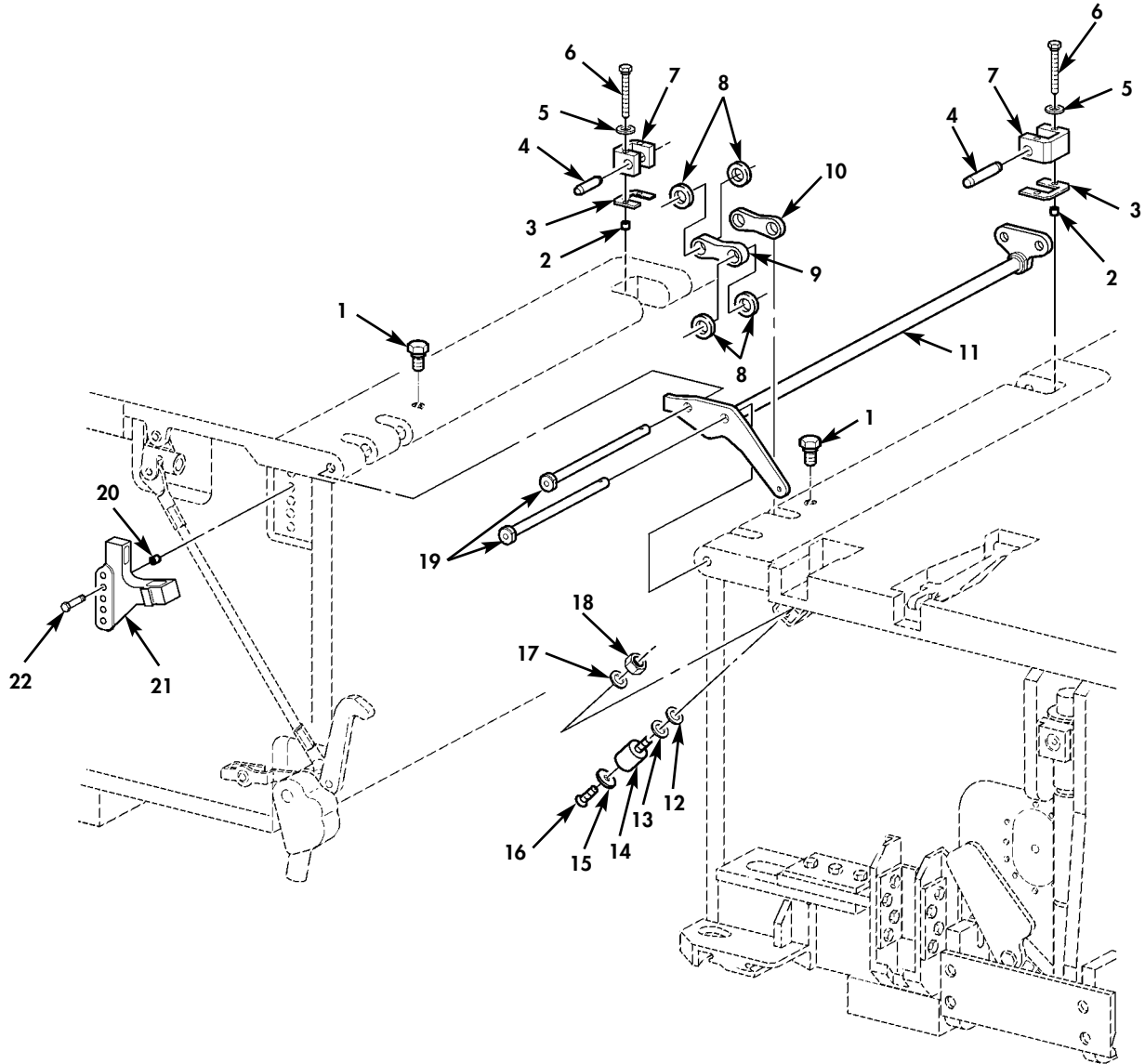
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
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30 October 2003 Change 1

Figure 33. Unfolding Stabilizer, Bracket, and Bump Stop, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 32 INTERIOR BAY OUTER PONTONS 3201 UNFOLDING STABILIZER, BRACKET, AND BUMP STOP						
FIG. 33 UNFOLDING STABILIZER, BRACKET, AND BUMP STOP, L.H. AND R.H.						
1	PAOZZ	5305-12-356-5297	D9913	027078504	BOLT, SHOULDER.....	8
					UOC: EIB	
2	PAOZZ	5340-12-142-8249	D9728	0130 0120 024	INSERT, SCREW THREAD.....	16
					UOC: EIB	
3	PAOZZ	5365-12-356-3362	D9913	027070301	SPACER, PLATE 2 X 85 X 85 MM.....	16
					UOC: EIB	
3	PAOZZ	5365-12-356-3363	D9913	027010368	SPACER, PLATE 1 X 85 X 85 MM.....	8
					UOC: EIB	
3	PAOZZ		D9913	027010388	SPACER, PLATE 0.5 X 85 X 85 MM.....	8
					UOC: EIB	
4	PAOZZ	5315-12-356-2779	D9913	027015008	PIN, STRAIGHT, HEADLE.....	8
					UOC: EIB	
5	PAOZZ	5310-12-356-2883	D9913	027018106	WASHER, FLAT.....	16
					UOC: EIB	
6	PAOZZ	5305-12-156-4902	D8286	DIN931-M12X90-8. 8-A3P	SCREW, CAP, HEXAGON H.....	16
					UOC: EIB	
7	PAOZZ	5340-12-356-9401	D9913	027015105	BRACKET, MOUNTING.....	8
					UOC: EIB	
8	PAOZZ	5310-12-357-2525	D9913	027018108	WASHER, FLAT.....	8
					UOC: EIB	
9	PAOZZ	3040-12-356-3617	D9913	027011201	CONNECTING LINK, RIG.....	4
					UOC: EIB	
10	PAOZZ	3040-12-356-3618	D9913	027017601	CONNECTING LINK, RIG.....	4
					UOC: EIB	
11	PAOZZ	3040-12-356-3466	D9913	027000601	LEVER, REMOTE CONTRO L.H.....	2
					UOC: EIB	
11	PAOZZ	3040-12-356-3859	D9913	027000602	LEVER, REMOTE CONTRO R.H.....	2
					UOC: EIB	
12	PAOZZ	5310-12-356-3365	D9913	027078102	WASHER, FLAT 1.2 MM.....	16
					UOC: EIB	
13	PAOZZ	5310-12-356-3366	D9913	027078101	WASHER, FLAT 4.8 MM.....	4
					UOC: EIB	
14	PAOZZ	5342-12-312-8842	D9913	909742007	BUMPER, NONMETALIC.....	4
					UOC: EIB	
15	PAOZZ	5310-12-359-2950	D9913	027078103	WASHER, BEVEL.....	4 *
					UOC: EIB	
16	PAOZZ	5305-12-165-1261	D8286	DIN7991-M10X16-8 .8-A3P	SCREW, CAP, SOCKET HE.....	4
					UOC: EIB	
17	PAOZZ	5310-12-156-5471	D8286	DIN125-A10, 5-140 HV-A3P	WASHER, FLAT.....	4
					UOC: EIB	
18	PAOZZ	5310-12-144-6134	D8286	DIN439-BM10-04-A 2P	NUT, PLAIN, HEXAGON.....	4
					UOC: EIB	
19	PAOZZ	5315-12-356-3367	D9913	027015007	PIN, STRAIGHT, HEADED.....	8
					UOC: EIB	
20	PAOZZ	5325-12-356-5393	D9913	909591289	INSERT, SCREW THREAD.....	20
					UOC: EIB	
21	PAOZZ	5340-12-356-9402	D9913	027017101	BRACKET, MOUNTING L.H.....	2
					UOC: EIB	
21	PAOZZ	5340-12-356-4948	D9913	027017102	BRACKET, MOUNTING R.H.....	2
					UOC: EIB	
22	PAOZZ	5305-12-142-8329	D8286	DIN931-M16X80-10 .9-A3P	BOLT, MACHINE.....	20
					UOC: EIB	

END OF FIGURE

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REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

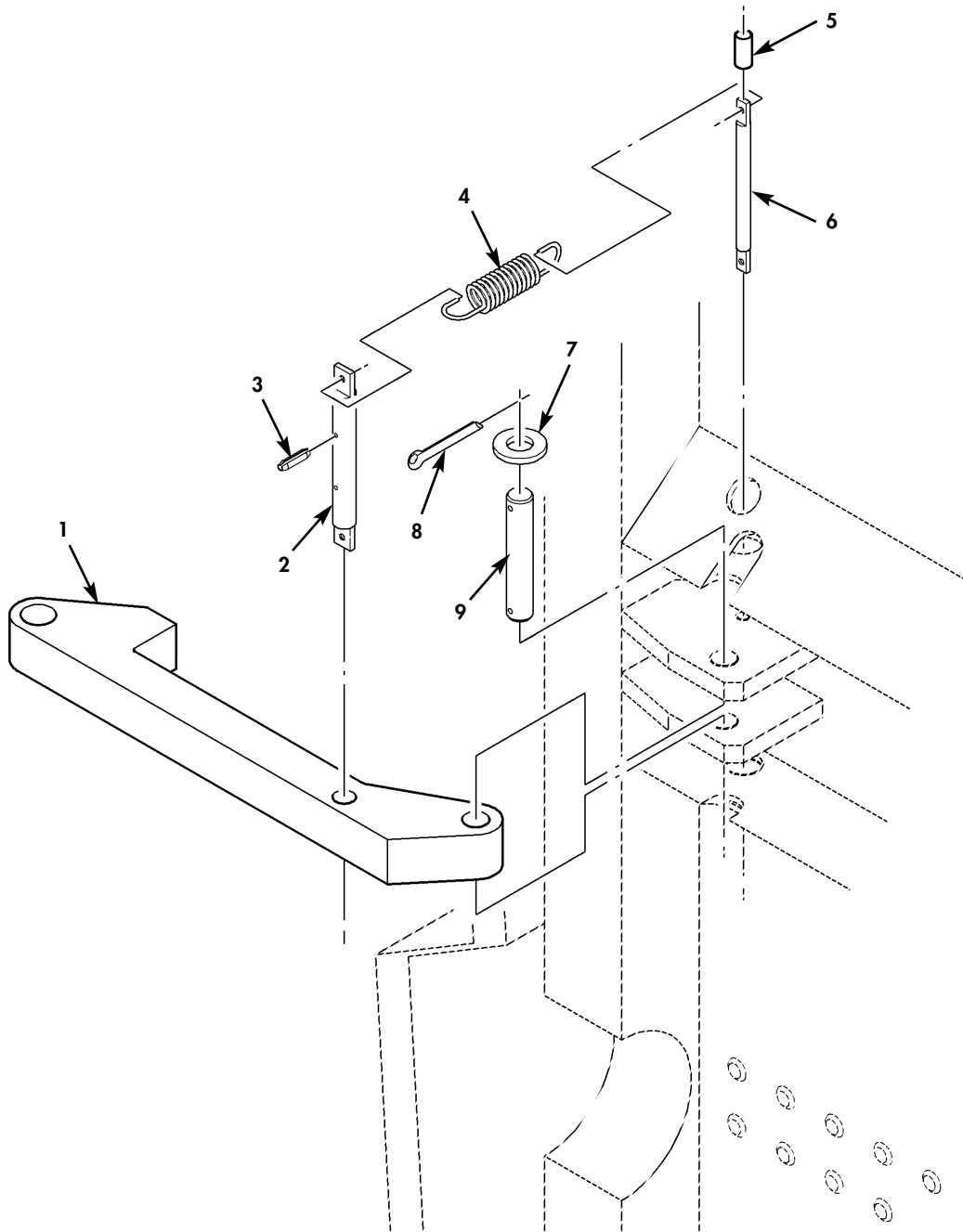


Figure 34. Foldlock and Related Parts.

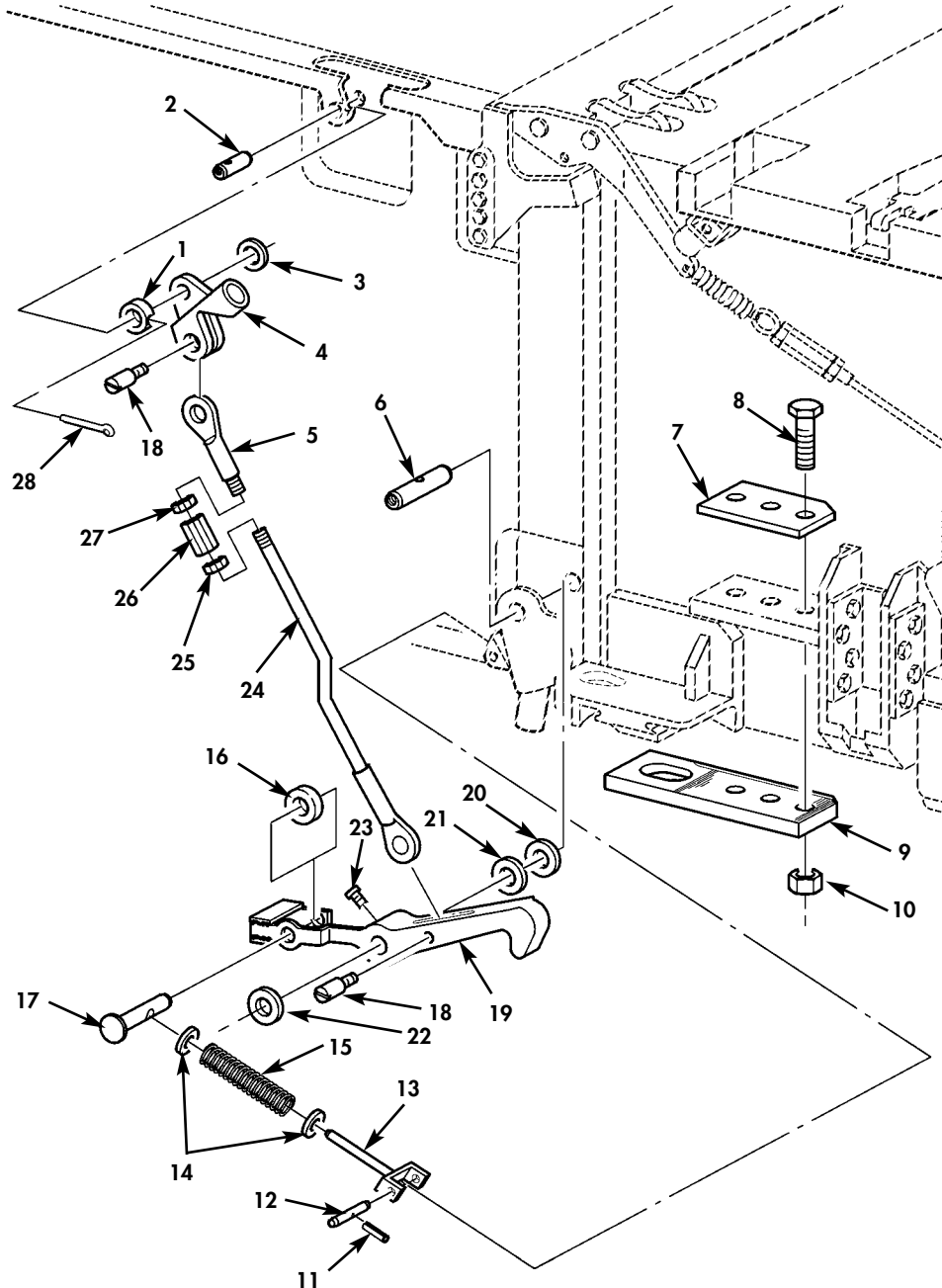
(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3202 FOLDLOCK AND RELATED PARTS						
FIG. 34 FOLDLOCK AND RELATED PARTS						
1	PAOZZ	5420-12-179-0333	D9913	027074201	LEVER, LOCK-RELEASE..... UOC: EIB	4
2	PAOZZ	5315-12-180-4462	D9913	027072902	PIN, SPRING SUPPORT..... UOC: EIB	4
3	PAOZZ	5315-12-320-4071	D8286	DIN1481-3X22-A3P	PIN, SPRING..... UOC: EIB	8
4	PAOZZ	5360-12-179-8256	D9913	027072401	SPRING, HELICAL, EXTE..... UOC: EIB	1
5	PAOZZ	5365-12-180-1654	D9913	027074803	SPACER, SLEEVE..... UOC: EIB	6
6	PAOZZ	5315-12-180-4460	D9913	027071701	PIN, SHOULDER, HEADLE..... UOC: EIB	4
7	PAOZZ	5310-12-147-2103	D8286	DIN1440-20-ST	WASHER, FLAT..... UOC: EIB	8
8	PAOZZ	5315-12-131-7424	D8286	DIN94-4X40-ST-A3 P	PIN, COTTER..... UOC: EIB	8
9	PAOZZ	5315-12-180-4461	D9913	027073604	PIN, STRAIGHT, HEADLE..... UOC: EIB	4
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
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IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0120 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 35. Outer Ponton Lock, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3202 OUTER PONTON LOCK						
FIG. 35 OUTER PONTON LOCK,L.H. AND R.H.						
1	PAOZZ	5365-12-356-2196	D9913	027018101	SPACER,STRAIGHT..... UOC:EIB	4
2	PAOZZ	5315-12-357-2516	D9913	027015011	PIN,STRAIGHT,HEADLE..... UOC:EIB	4
3	PAOZZ	5310-12-142-0642	D8286	DIN125-B23-140HV -A3P	WASHER,FLAT..... UOC:EIB	4
4	PAOZZ	3040-12-356-3621	D9913	027011901	BELL CRANK L.H..... UOC:EIB	2
4	PAOZZ	3040-12-356-3616	D9913	027011902	BELL CRANK R.H..... UOC:EIB	2
5	PAOZZ	5306-12-356-5567	D9913	027016701	CONNECTOR,ROD END..... UOC:EIB	4
6	PAOZZ	5315-12-356-1911	D9913	027015002	PIN,STRAIGHT,HEADLE..... UOC:EIB	4
7	PAOZZ	5365-12-356-2197	D9913	027010337	SPACER,PLATE..... UOC:EIB	4
8	PAOZZ	5305-12-142-8325	D8286	DIN931-M16X65-10 .9-A3P	BOLT..... UOC:EIB	12
9	PAOZZ	5365-12-356-2198	D9913	027014003	SPACER,PLATE L.H..... UOC:EIB	2
9	PAOZZ	5365-12-357-2614	D9913	027014007	SPACER,PLATE R.H..... UOC:EIB	2
10	PAOZZ	5310-12-156-4984	D8286	DIN934-M16-8-A2P	NUT..... UOC:EIB	12
11	PAOZZ	5315-12-156-4958	D8286	DIN1481-3X22	PIN,SPRING..... UOC:EIB	4
12	PAOZZ	5315-12-356-1912	D9913	027015004	PIN,STRAIGHT,HEADLE..... UOC:EIB	4
13	PAOZZ	5315-12-356-1913	D9913	027004301	PIN,STRAIGHT,HEADED..... UOC:EIB	4
14	PAOZZ	5310-12-144-4164	D9913	938315	WASHER,FLAT..... UOC:EIB	8
15	PAOZZ	5360-12-357-3819	D9913	909573027	SPRING,HELICAL,COMP..... UOC:EIB	4
16	PAOZZ		D9913	027018112	SPACER,SLEEVE..... UOC:EIB	4
17	PAOZZ	5315-12-356-2079	D9913	027015010	PIN,STRAIGHT,SHOULD..... UOC:EIB	4
18	PAOZZ	5305-12-356-3860	D9913	027015001	PIN,STRAIGHT,HEADED..... UOC:EIB	8
19	PAOZZ	5340-12-356-9400	D9913	027013401	LEVER,LOCK-RELEASE L.H..... UOC:EIB	2
19	PAOZZ	5340-12-357-3703	D9913	027013402	LEVER,LOCK-RELEASE R.H..... UOC:EIB	2
20	PAOZZ	5310-12-359-2953	D9913	027018111	WASHER,FLAT 10 MM..... UOC:EIB	4 *
21	PAOZZ	5310-12-359-2951	D9913	027018110	WASHER,FLAT 3 MM..... UOC:EIB	8 *
22	PAOZZ	5310-12-359-2952	D9913	027018109	WASHER,FLAT 1 MM..... UOC:EIB	4 *
23	PAOZZ	5305-12-356-5296	D9913	027018501	SETSCREW..... UOC:EIB	4
24	PAOZZ	3040-12-356-3615	D9913	027016702	CONNECTING LINK,RIG..... UOC:EIB	4
25	PAOZZ	5310-12-166-7736	D8286	DIN439-BM16-05-A 2P	NUT,JAM..... UOC:EIB	4
26	PAOZZ	5340-12-150-8958	D8286	DIN1479-SPM16-1.	NUT,PLAIN,HEXAGON.....	4

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
27	PAOZZ	5310-12-356-4435	I9008	3965 ISO4035-M16LH-05 -A2P	UOC:EIB NUT,JAM.....	4
28	PAOZZ	5315-12-313-2591	D8286	DIN94-5X56-ST-A3 P	UOC:EIB PIN,COTTER.....	4

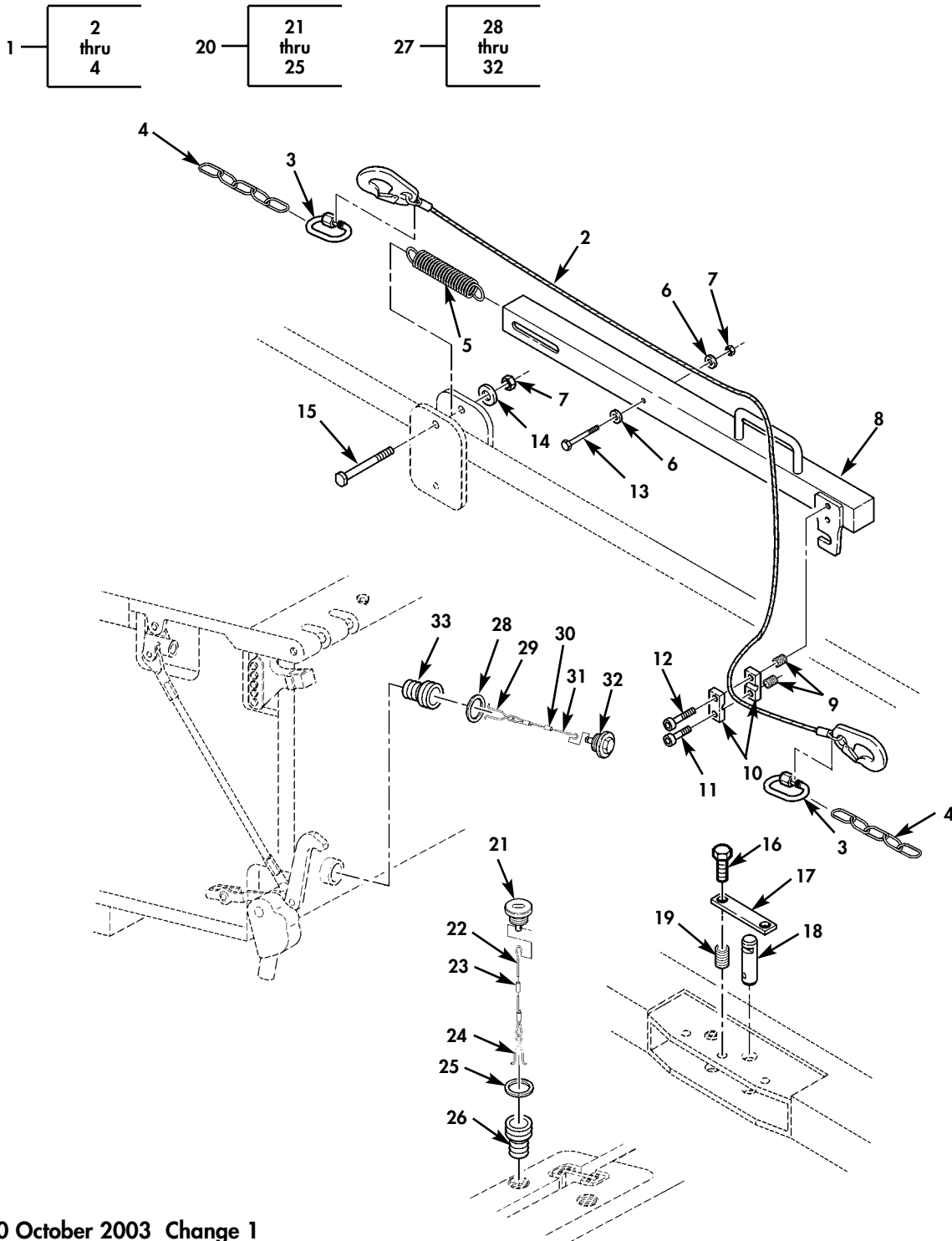
END OF FIGURE

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IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0121 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 36. Handrail, Bilge Plugs, and Load Receiving Pins, L.H. and R.H.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3203 HANDRAIL,BILGE PLUGS,AND LOAD RECIEVING PINS						
FIG. 36 HANDRAIL,BILGE PLUGS,AND LOAD RECIEVING PINS,L.H. AND R.H.						
1	PAOZZ		D9913	024502601	ROPE ASSEMBLY.....	2 *
					UOC:EIB	
2	PAOZZ		D9913	024522601	.FIBER ROPE ASSEMBLY.....	1 *
					UOC:EIB	
3	PAOZZ		D9913	909671024	.SHACKLE.....	2 *
					UOC:EIB	
4	PAOZZ		D9913	909661080	.CHAIN.....	2 *
					UOC:EIB	
5	PAOZZ	5360-12-356-2241	D9913	909571259	SPRING,HELICAL,EXTE.....	6 *
					UOC:EIB	
6	PAOZZ	5310-12-175-0141	D8286	DIN125-A8,4-140H V-A3C	WASHER,FLAT.....	12 *
					UOC:EIB	
7	PAOZZ	5310-01-328-7657	80204	B18241B080	NUT,PLAIN,HEXAGON.....	12 *
					UOC:EIB	
8	PAOZZ	2040-12-356-3619	D9913	024501103	STANCHION,DECK,RAIL.....	6 *
					UOC:EIB	
9	PAOZZ	5310-12-356-4163	D9913	909553138	INSERT,SCREW,THREAD.....	12 *
					UOC:EIB	
10	PAOZZ		D9913	909621916	FAIRLEAD,BLOCK OUTER.....	4 *
					UOC:EIB	
10	PAOZZ		D9913	909621917	FAIRLEAD,BLOCK INNER.....	2 *
					UOC:EIB	
11	PAOZZ	5305-12-142-5854	D8286	DIN912-M10X50-8. 8-A3P	SCREW,CAP,SOCKET HE.....	6 *
					UOC:EIB	
12	PAOZZ	5305-12-142-5852	D8286	DIN912-M10X45-8. 8-A3P	SCREW,CAP,SOCKET HE.....	6 *
					UOC:EIB	
13	PAOZZ	5305-12-156-4949	D8286	DIN931-M8X55-8.8 -A2P	SCREW,CAP,HEXAGON H.....	6 *
					UOC:EIB	
14	PAOZZ	5310-12-305-3868	D8286	DIN125-A10,5-140 HV-A2	WASHER,FLAT.....	6 *
					UOC:EIB	
15	PAOZZ	5305-12-356-2240	D8286	DIN1445-10H11X75 -ST-A3P	BOLT,SHOULDER.....	6 *
					UOC:EIB	
16	PAOZZ	5305-12-156-4873	D8286	DIN933-M10X30-8. 8-A3P	SCREW,CAP,HEXAGON H.....	8 *
					UOC:EIB	
17	PAOZZ	5365-12-356-2201	D9913	027510395	STRAP,RETAINING.....	4 *
					UOC:EIB	
18	PAOZZ	5315-12-356-2777	D9913	027515014	PIN,STRAIGHT,HEADED.....	4 *
					UOC:EIB	
19	PAOZZ	5340-12-142-8210	D9913	909591014	INSERT,SCREW THREAD.....	8 *
					UOC:EIB	
20	PAOZZ	5340-12-356-9397	D9913	027007313	PLUG,LEAKPROOF SEAL BILGE ASSEMBLY.	4 *
					UOC:EIB	
21	PAOZZ	5340-12-356-9396	D9913	027017301	.PLUG,LEAKPROOF SEAL BILGE.....	1 *
					UOC:EIB	
22	PAOZZ	4010-12-355-9346	D9913	909667518	.WIRE,NONELECTRICAL.....	1 *
					UOC:EIB	
23	PAOZZ	4030-12-356-3614	D9913	909625104	.TERMINAL,WIRE ROPE.....	2 *
					UOC:EIB	
24	PAOZZ	5340-12-356-9398	D9913	027013001	.HOLDER,SPRING.....	1 *
					UOC:EIB	
25	PAOZZ	5330-12-356-3027	D9913	027018703	.GASKET.....	1 *
					UOC:EIB	
26	PAOZZ	5340-12-356-6974	D9913	027016001	INSERT,SCREW,THREAD.....	4 *
					UOC:EIB	

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
* 27	PAOZZ	5340-12-356-9399	D9913	027007314	PLUG,LEAKPROOF SEAL DRAIN ASSEMBLY. UOC:EIB	8
* 28	PAOZZ	5330-12-356-3029	D9913	027518701	.GASKET..... UOC:EIB	1
* 29	PAOZZ	5340-12-356-6972	D9913	027013404	.HOLDER,SPRING..... UOC:EIB	1
* 30	PAOZZ	4030-12-356-3614	D9913	909625104	.TERMINAL,WIRE ROPE..... UOC:EIB	2
* 31	PAOZZ	4010-12-355-9346	D9913	909667518	.WIRE,NONELECTRICAL..... UOC:EIB	1
* 32	PAOZZ	5365-12-356-6358	D9913	027017302	.PLUG,LEAKPROOF SEAL DRAIN..... UOC:EIB	1
* 33	PAOZZ	5340-12-356-6975	D9913	027016002	INSERT,SCREW,THREAD..... UOC:EIB	8

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
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IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

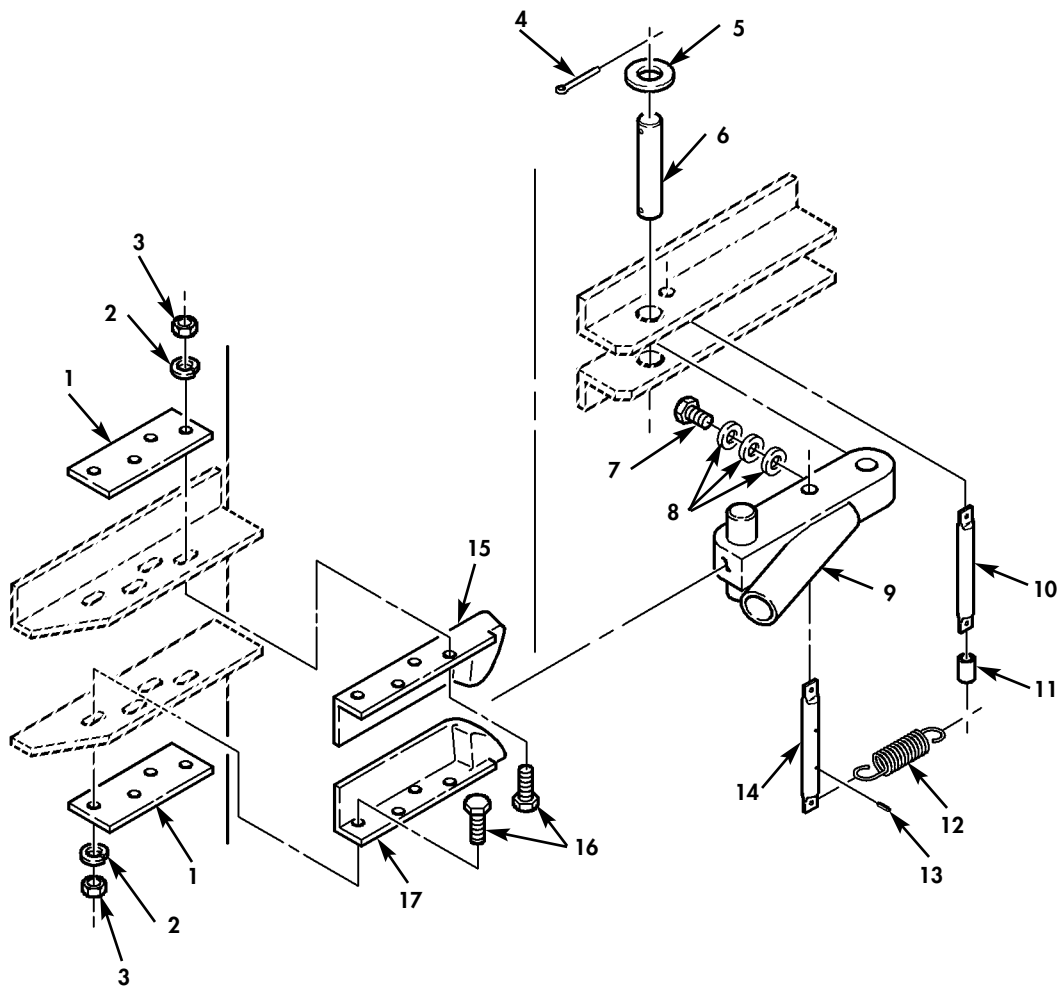


Figure 37. Travel Latch and Receptacles.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 33 INTERIOR BAY INNER PONTONS 3301 TRAVEL LATCH AND RECEPTACLES						
FIG. 37 TRAVEL LATCH AND RECEPTACLES						
1	PAOZZ	5420-12-179-0332	D9913	027074804	PLATE,LATCH..... UOC:EIB	4
2	PAOZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A 3P	WASHER,LOCK..... UOC:EIB	16
3	PAOZZ	5310-99-739-9500	U0759	41031420	NUT..... UOC:EIB	16
4	PAOZZ	5315-12-131-7424	D8286	DIN94-4X40-ST-A3 P	PIN,COTTER..... UOC:EIB	4
5	PAOZZ	5310-12-147-2103	D8286	DIN1440-20-ST	WASHER,FLAT..... UOC:EIB	4
6	PAOZZ	5315-12-180-4461	D9913	027073604	PIN,STRAIGHT,HEADLE..... UOC:EIB	2
7	PAOZZ	5305-12-141-9891	D8286	DIN933-M10X25-10 .9-A3P	SCREW,CAP,HEXAGON H..... UOC:EIB	2
8	PAOZZ	5310-12-156-5471	D8286	DIN125-A10,5-140 HV-A3P	WASHER,FLAT..... UOC:EIB	10
9	PAOZZ	5340-12-356-9403	D9913	027009504	LEVER,MANUAL CONTRO..... UOC:EIB	2
10	PAOZZ	5315-12-180-4460	D9913	027071701	PIN,SHOULDER,HEADLE..... UOC:EIB	2
11	PAOZZ	5365-12-180-1654	D9913	027074803	SPACER,SLEEVE..... UOC:EIB	4
12	PAOZZ	5360-12-179-8256	D9913	027072401	SPRING,HELICAL,EXTE..... UOC:EIB	4
13	PAOZZ	5315-12-320-4071	D8286	DIN1481-3X22-A3P	PIN,SPRING..... UOC:EIB	4
14	PAOZZ	5315-12-180-4462	D9913	027072902	PIN,SPRING SUPPORT..... UOC:EIB	2
15	PAOZZ	5420-12-179-0330	D9913	027008405	STRIKE,CATCH..... UOC:EIB	2
16	PAOZZ	5305-12-141-9893	D8286	DIN933-M10X30-10 .9-A3P	SCREW,CAP,HEXAGON H..... UOC:EIB	16
17	PAOZZ	5420-12-179-0331	D9913	027008404	RECEPTACLE,LATCH..... UOC:EIB	2

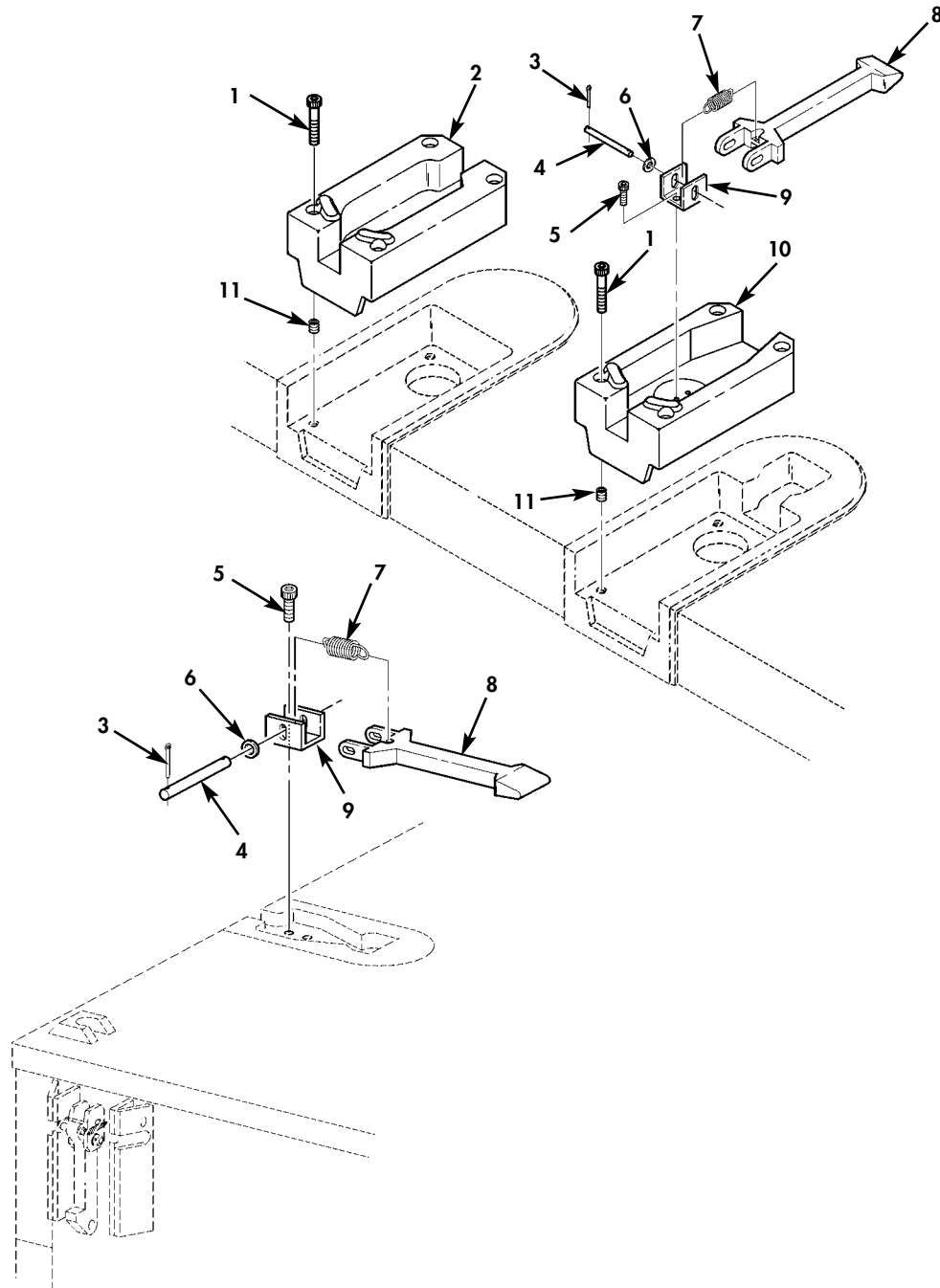
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0123 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 38. Upper Coupling and Receptacle Blocks, Transverse and Longitudinal.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3302 UPPER COUPLINGS AND RECEPTACLE BLOCKS, TRANSVERSE AND LONGITUDINAL						
FIG. 38 UPPER COUPLINGS AND RECEPTACLE BLOCKS, TRANSVERSE AND LONGITUDINAL						
1	PAOZZ	5305-12-155-0838	D8286	DIN912-M16X70-8. 8-A3P	SCREW, CAP, SOCKET HE..... UOC: EIB	32
2	PAOZZ	5340-12-356-6970	D9913	027017204	RECEPTACLE, FRICTION..... UOC: EIB	4
3	PAOZZ	5315-12-192-5816	D8286	DIN94-1, 6X14-ST- A3P	PIN, COTTER..... UOC: EIB	12
4	PAOZZ	5315-12-180-3626	D9913	027073606	PIN, STRAIGHT, HEADLE..... UOC: EIB	6
5	PAOZZ	5305-12-184-2236	D8286	DIN7984-M6X16-8. 8-A2C	SCREW, CAP, SOCKET, HE..... UOC: EIB	12
6	PAOZZ	5310-12-356-0257	D9913	938351	WASHER, FLAT..... UOC: EIB	12
7	PAOZZ	5360-12-179-8255	D9913	027072402	SPRING, HELICAL, EXTE..... UOC: EIB	6
8	PAOZZ	5340-12-356-6976	D9913	027015702	LEVER, LOCK-RELEASE..... UOC: EIB	6 *
9	PAOZZ	5340-12-356-6977	D9913	027014302	BRACKET, DOUBLE ANGL..... UOC: EIB	6
10	PAOZZ	5340-12-356-6971	D9913	027017203	RECEPTACLE, FRICTION..... UOC: EIB	4
11	PAOZZ	5325-12-356-5396	D9913	909591449	INSERT, SCREW THREAD..... UOC: EIB	32

END OF FIGURE

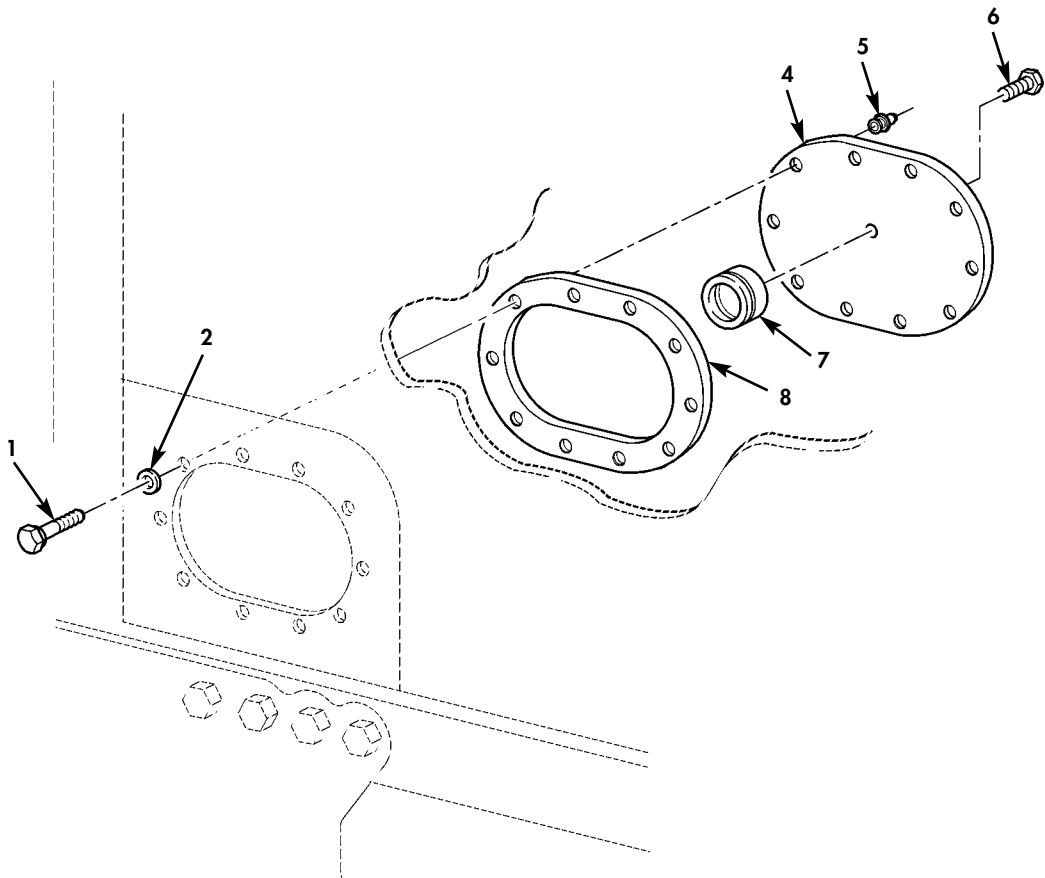
UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0124 00, DATED 8 APRIL 2003

3 —	4 thru 8
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30 October 2003 Change 1

Figure 39. Access Cover.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3304 ACCESS COVER						
FIG. 39 ACCESS COVER						
1	PAOZZ	5305-12-141-9870	D8286	DIN933-M8X35-8.8 -A2P	BOLT,MACHINE..... UOC:EIB	80
2	PAOZZ	5310-12-154-1380	D8286	DIN125-B8,4-140H V-A4	WASHER,FLAT..... UOC:EIB	80
3	PAOZZ	5340-12-356-5790	D9913	027001001	COVER,ACCESS..... UOC:EIB	8
4	PAOZZ	5340-12-359-3964	D9913	027010357	.COVER,ACCESS..... UOC:EIB	1 *
5	PAOZZ	5310-12-356-4164	D9913	909553174	.INSERT THREAD..... UOC:EIB	10
6	PAOZZ	5305-12-156-4962	D8286	DIN933-M8X18-8.8 -A2P	.BOLT,MACHINE..... UOC:EIB	1 *
7	PAOZZ	5340-12-359-2283	D9913	027017409	.BUSHING,SLEEVE..... UOC:EIB	1 *
8	PAOZZ	5330-12-356-3031	D9913	027019303	.GASKET..... UOC:EIB	1

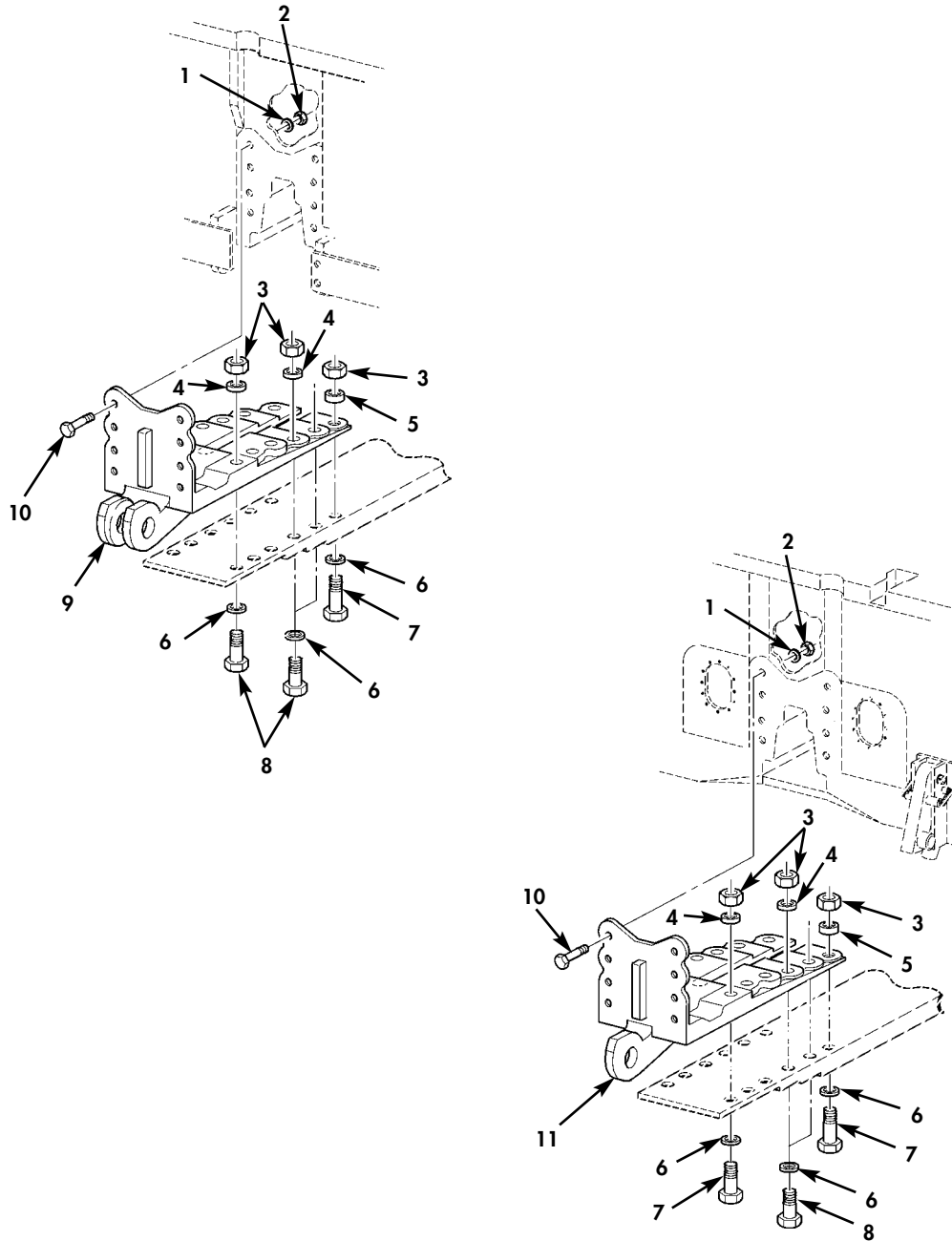
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 125 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 40. Lower Main Couplings.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3305 LOWER MAIN COUPLINGS						
FIG. 40 LOWER MAIN COUPLINGS						
1	PAOZZ	5310-12-356-2884	D9913	027018104	WASHER, FLAT..... UOC: EIB	32
2	PAOZZ	5310-12-196-2389	D8286	DIN934-M24-8-A2P	NUT, PLAIN, HEXAGON..... UOC: EIB	32
3	PAOZZ	5310-12-153-5036	D8286	DIN934-M30-8-A2P	NUT, PLAIN, HEXAGON..... UOC: EIB	48
4	PAOZZ	5310-12-356-2885	D9913	027018102	WASHER, FLAT..... UOC: EIB	40
5	PAOZZ	5310-12-356-2886	D9913	027018105	WASHER, FLAT..... UOC: EIB	8
6	PAOZZ	5310-12-356-2887	D9913	027018103	WASHER, FLAT..... UOC: EIB	48
7	PAOZZ	5305-12-355-9726	D8286	DIN609-M30X120-1 0.9-A3P	BOLT, SHOULDER..... UOC: EIB	32
8	PAOZZ	5305-12-355-9727	D8286	DIN609-M30X110-1 0.9-A3P	BOLT, SHOULDER..... UOC: EIB	16
9	PAOZZ		D9913	027011303	HINGE, BUTT COUPLING, DOUBLE EYE..... UOC: EIB	2 *
10	PAOZZ	5305-12-355-9728	D8286	DIN609-M24X75-10 .9-A3P	BOLT, SHOULDER..... UOC: EIB	32
11	PAOZZ		D9913	027016704	HINGE, BUTT COUPLING, SINGLE EYE..... UOC: EIB	2 *

END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

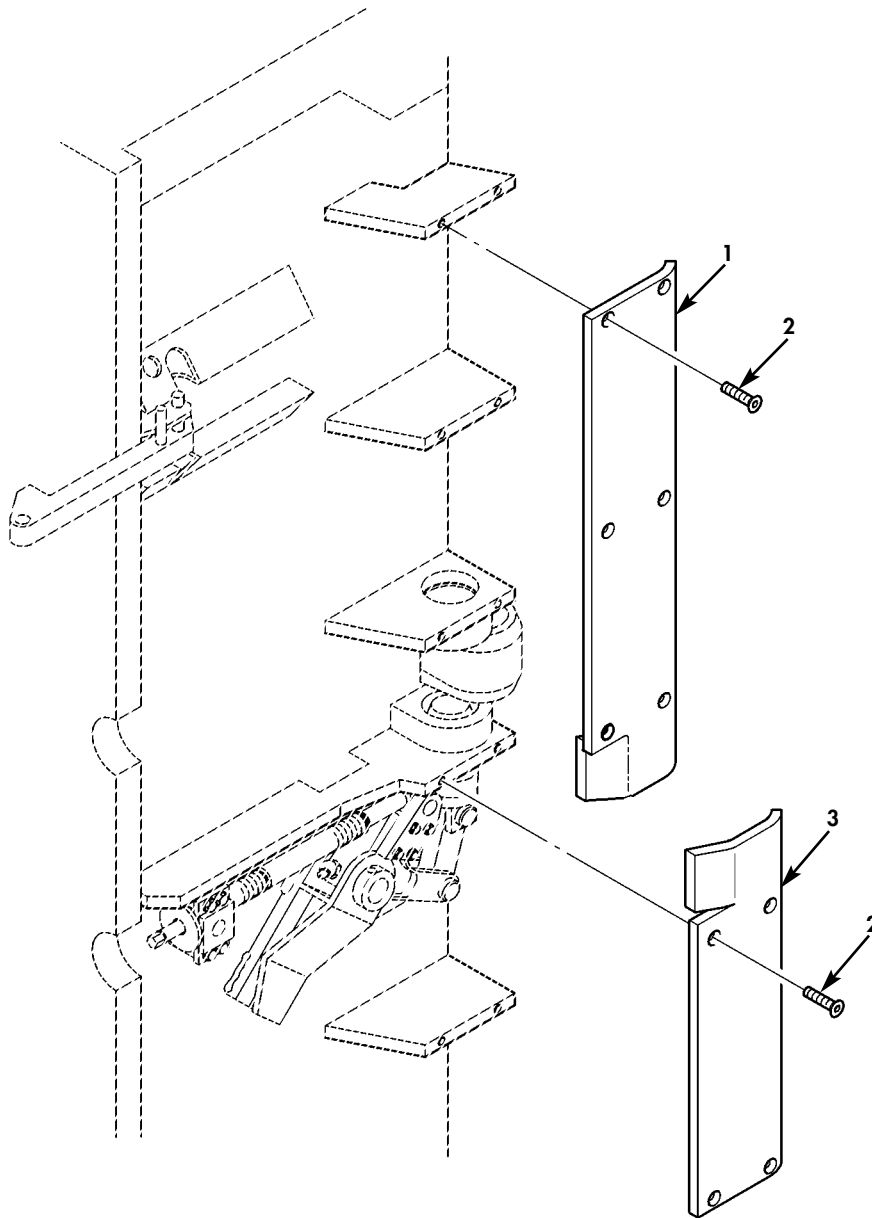


Figure 41. Bumper Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 34 INTERIOR BAY LOWER LOCK-DRIVE ASSEMBLY						
3401 BUMPER PARTS						
FIG. 41 BUMPER PARTS						
1	PAOZZ	5340-12-357-4717	D9913	027010387	BUMPER,METALLIC.....	2
UOC:EIB						
2	PAOZZ	5305-12-342-0255	D8286	DIN7991-M10X40-1 0.9-A3P	SCREW,CAP,SOCKET HE.....	20
UOC:EIB						
3	PAOZZ	5340-12-357-4718	D9913	027010386	BUMPER,METALLIC.....	2
UOC:EIB						
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

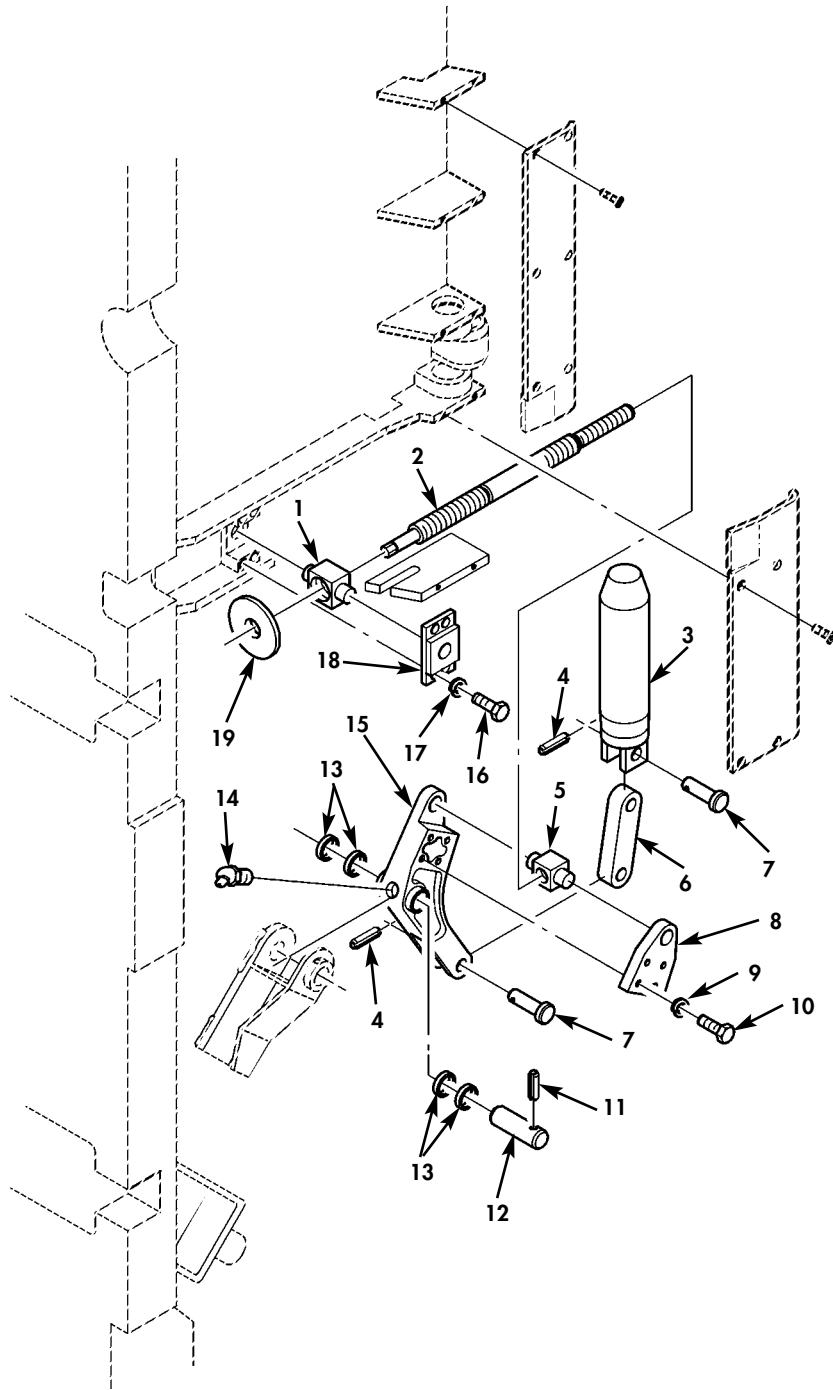


Figure 42. Lower Lock-Drive Assembly.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3402 LOWER LOCK-DRIVE ASSEMBLY						
FIG. 42 LOWER LOCK-DRIVE ASSEMBLY						
1	PAOZZ	5420-12-179-0326	D9913	027073802	TRUNNION NUT,UPPER..... UOC:EIB	2
2	PAOZZ	5420-12-179-0325	D9913	027071801	SCREW,PIN DRIVE..... UOC:EIB	2
3	PAOZZ	5420-12-179-0323	D9913	027073602	PIN,CONNECTING..... UOC:EIB	2
4	PAOZZ	5315-12-180-3624	D8286	DIN1481-5X40-A3C	PIN,SPRING..... UOC:EIB	4
5	PAOZZ	5420-12-179-0324	D9913	027073803	TRUNNION NUT,LOWER..... UOC:EIB	2
6	PAOZZ	5420-12-179-0314	D9913	027074802	CONNECTING LINK..... UOC:EIB	2
7	PAOZZ	5315-12-180-3625	D9913	027073603	PIN,STRAIGHT,HEADLE..... UOC:EIB	4
8	PAOZZ	5420-12-179-0322	D9913	027072101	LEVER,REMOTE CONTRO..... UOC:EIB	2
9	PAOZZ	5310-12-142-0650	D8286	DIN127-B12-FST-A 3P	WASHER,LOCK..... UOC:EIB	8
10	PAOZZ	5305-12-142-8266	D8286	DIN931-M12X60-10 .9-A3P	SCREW,CAP,HEXAGON H..... UOC:EIB	8
11	PAOZZ	5315-12-180-3623	D8286	DIN1481-6X55-A3C	PIN,STRAIGHT,HEADLE..... UOC:EIB	2
12	PAOZZ	5315-12-180-3622	D9913	027073601	SHAFT,STRAIGHT..... UOC:EIB	2
13	PAOZZ		D9913	938668	SHIM..... UOC:EIB	16
14	PAOZZ	4730-12-125-0310	D8286	DIN71412-AM6	FITTING,LUBRICATION..... UOC:EIB	2
15	PAOZZ	5420-12-179-0321	D9913	027071901	BELL CRANK..... UOC:EIB	2
16	PAOZZ	5305-12-141-9891	D8286	DIN933-M10X25-10 .9-A3P	SCREW,CAP,HEXAGON H..... UOC:EIB	8
17	PAOZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A 3P	WASHER,LOCK..... UOC:EIB	8
18	PAOZZ	5420-12-179-8843	D9913	027072901	RETAINER,TRUNNION..... UOC:EIB	2
19	PAOZZ	5330-12-179-7655	D9913	027072801	WASHER,FLAT..... UOC:EIB	2

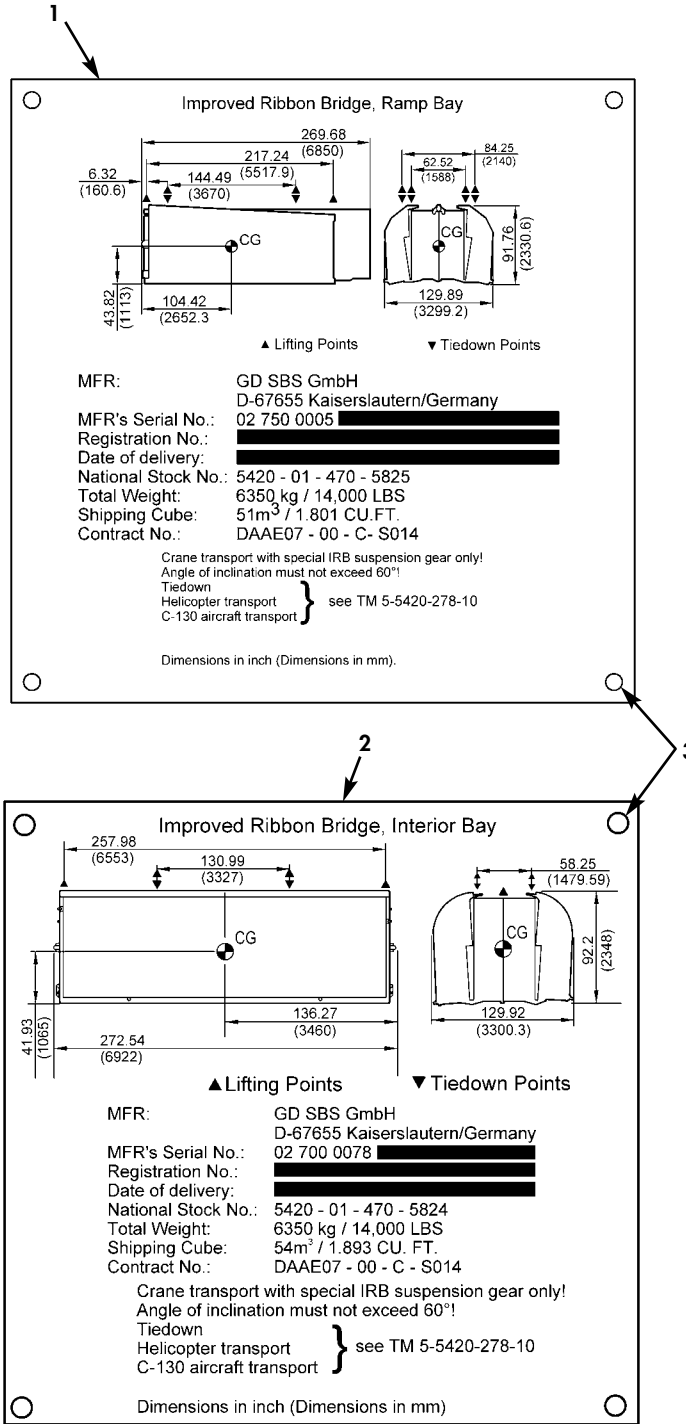
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0128 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 43. Data Plates.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3403 DATA PLATES						
FIG. 43 DATA PLATES						
1	PAOZZ	9905-12-356-1919	D9913	029271684	PLATE, INSTRUCTION..... UOC:ERB	1
2	PAOZZ	9905-12-356-1918	D9913	029271689	PLATE, INSTRUCTION..... UOC:EIB	2
3	PAOZZ	5305-12-142-0049	D8286	DIN84-M3X8-5.8-A 2P	SCREW, MACHINE.....	12

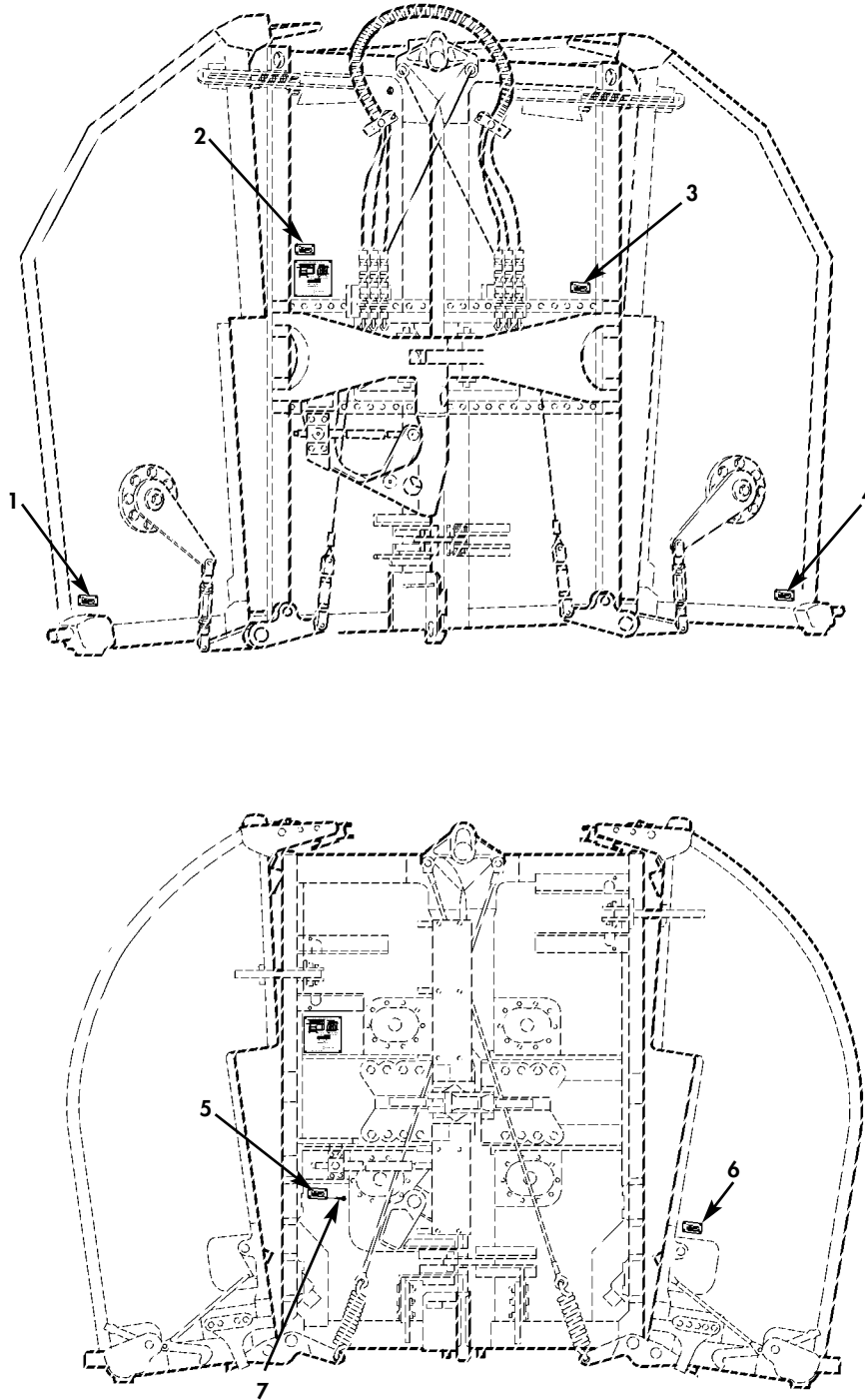
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0129 00, DATED 8 APRIL 2003



30 October 2003 Change 1

Figure 44. Data Plates.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3403 DATA PLATES						
FIG. 44 DATA PLATES						
1	PAOZZ	9905-12-357-2519	D9913	029271687	PLATE, IDENTIFICATIO..... UOC:ERB	1
2	PAOZZ	9905-12-357-2520	D9913	029271685	PLATE, IDENTIFICATIO..... UOC:EIB	1
3	PAOZZ	9905-12-357-2521	D9913	029271686	PLATE, IDENTIFICATIO..... UOC:	1
4	PAOZZ	9905-12-357-2522	D9913	029271688	PLATE, IDENTIFICATIO UOC:	1
5	PAOZZ	9905-12-357-2523	D9913	029271690	PLATE, IDENTIFICATIO..... UOC:	2
6	PAOZZ	9905-12-357-2518	D9913	029271691	PLATE, IDENTIFICATIO..... UOC:	2
7	PAOZZ	5305-12-142-0049	D8286	DIN84-M3X8-5.8-A 2P	SCREW..... UOC:	32
END OF FIGURE						

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
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GROUP 94 KITS
9401 REPAIR PARTS KITS

FIG. KITS

1	PAHZZ	5330-12-356-2205	D9913	024009402	KIT, SEAL.....	1
					UOC:ERB	
					GASKET (1) 23-20	
					GASKET (1) 23-61	
					GASKET (1) 23-73	
					O-RING (2) 21-4	
					O-RING (1) 23-18	
					O-RING (1) 23-23	
					O-RING (1) 23-24	
					O-RING (1) 23-27	
					O-RING (1) 23-35	
					O-RING (1) 23-37	
					O-RING (2) 23-47	
					O-RING (1) 23-76	
					RING, SCRAPER (1) 23-22	

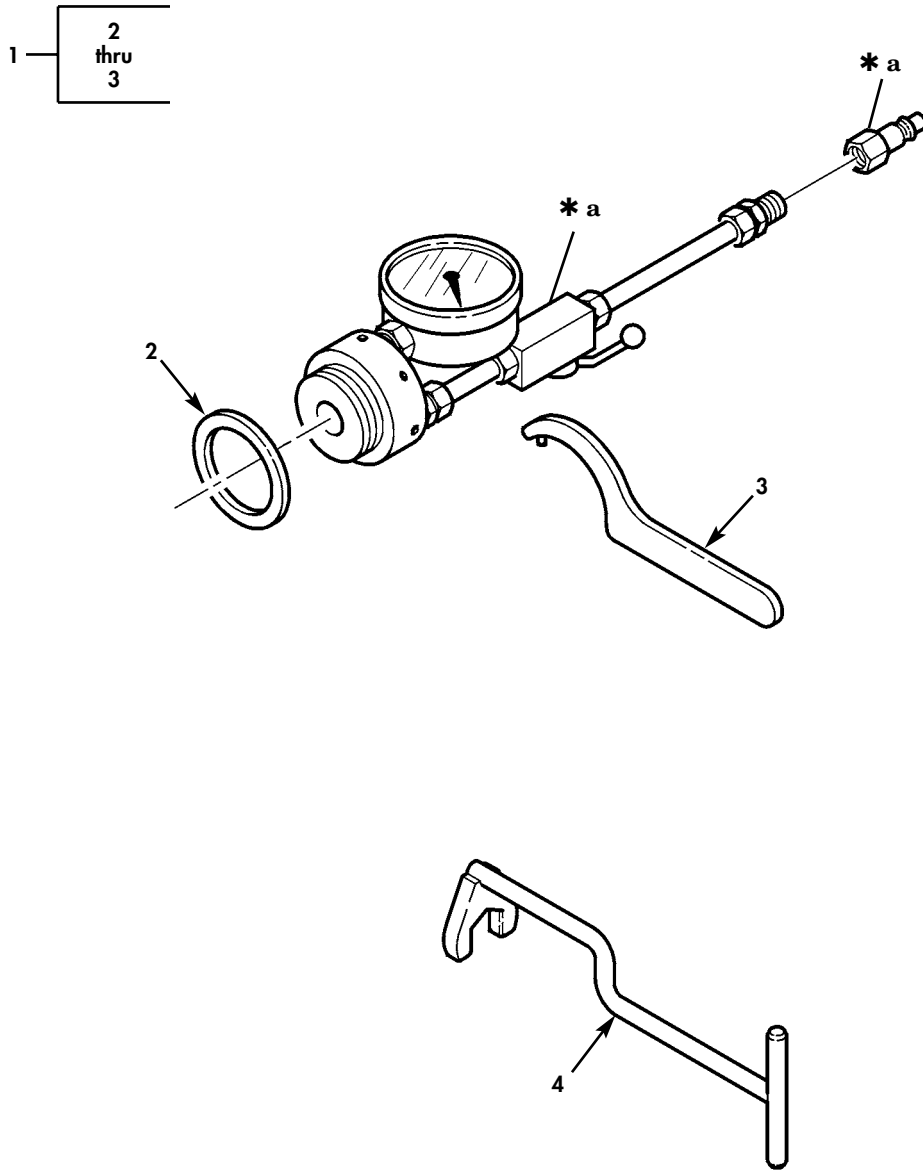
END OF FIGURE

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).

THIS WORK PACKAGE SUPERSEDES WP 0131 00, DATED 8 APRIL 2003



* a PART OF ITEM 1

30 October 2003 Change 1

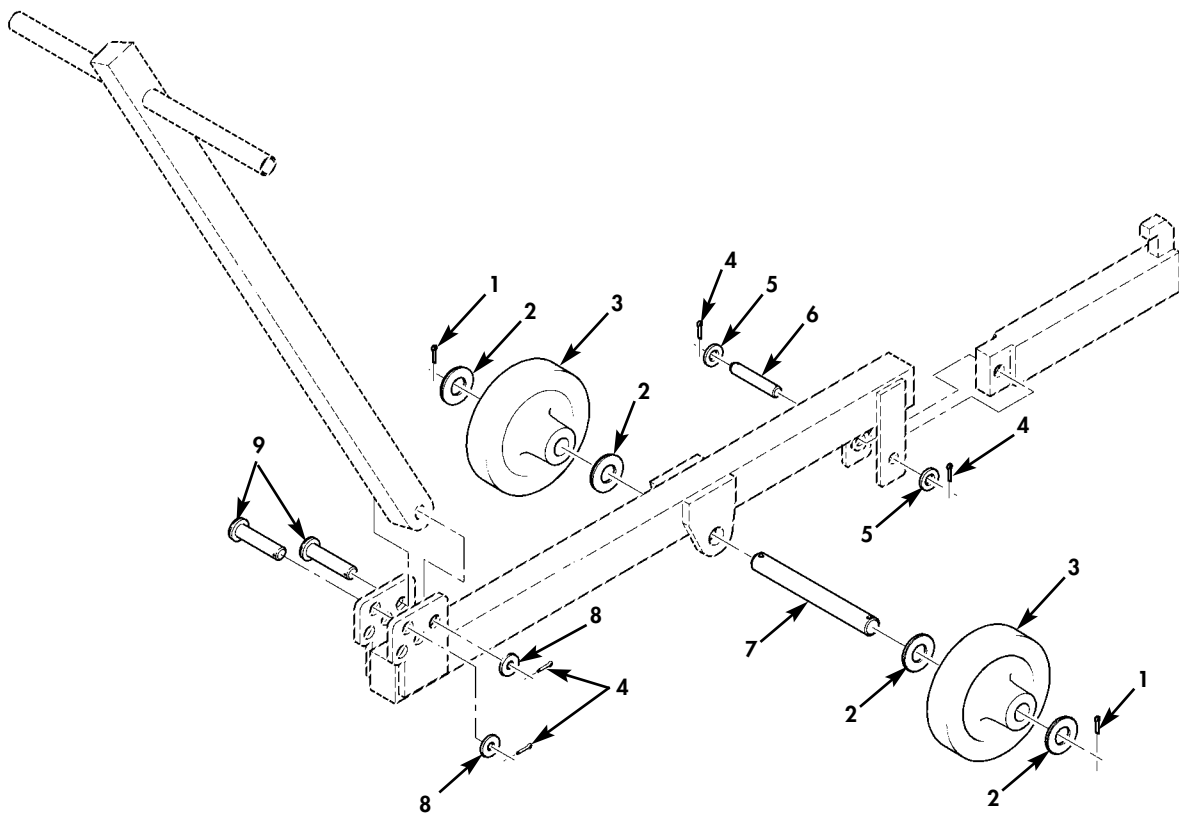
Figure 45. Special Tools.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 35 SPECIAL TOOLS						
3501 SPECIAL TOOLS						
FIG. 45 SPECIAL TOOLS						
1	PEOZZ	6685-12-357-2615	D9913	029107606	LEAK TESTING EQUIPM..... UOC:ERB	1
2	PEOZZ	5330-12-356-3027	D9913	027018703	.GASKET..... UOC:ERB	1
3	PEOZZ	5120-12-156-9348	D8286	DIN1810-B80-90	.WRENCH, SPANNER..... UOC:ERB	1 *
4	PEOZZ		C0856	595146	WRENCH, OPEN END..... UOC:ERB	1
END OF FIGURE						

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST

IMPROVED RIBBON BRIDGE (IRB)

RAMP BAY M16 (NSN 5420-01-470-5825);
INTERIOR BAY M17 (NSN 5420-01-470-5824).



30 October 2003 Change 1

Figure 46. Special Tools BII Repair Parts.

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 35 SPECIAL TOOLS 3501 SPECIAL TOOLS						
FIG. 46 SPECIAL TOOLS BII REPAIR PARTS						
1	PEOZZ	5315-12-139-9743	IREF0	NO PRIMARY REF 1 21399743	PIN,COTTER..... UOC:ERB	2 *
2	PEOZZ	5310-12-140-9515	D8286	DIN125-B21-140HV -A2	WASHER,FLAT..... UOC:ERB	4 *
3	PEOZZ		D9913	909149206	WHEEL,SOLID,NONMETA..... UOC:ERB	2 *
4	PEOZZ	5315-12-139-9742	D8286	DIN94-4X28-ST-A3 P	PIN,COTTER..... UOC:ERB	4 *
5	PEOZZ	5310-12-196-2837	D8286	DIN1440-14-ST-A3 P	WASHER,FLAT..... UOC:ERB	2 *
6	PEOZZ		D9913	029155004	BAR,METAL..... UOC:ERB	1 *
7	PEOZZ		D9913	029154601	BAR,METAL..... UOC:ERB	1 *
8	PEOZZ	5310-12-193-8599	D8286	DIN125-B17-140HV -A2	WASHER,FLAT..... UOC:ERB	2 *
9	PEOZZ	5315-12-190-2775	IREF0	NO PRIMARY REF 1 21902775	PIN,STRAIGHT,HEADED..... UOC:ERB	2 *

END OF FIGURE

CROSS REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIGURE NO	ITEM NO	STOCK NUMBER	FIGURE NO	ITEM NO
5120-	45	4	5310-12-142-0649	20	13
4730-00-011-8537	22	3	5310-12-142-0649	37	2
5310-01-129-6737	7	3	5310-12-142-0649	42	17
5310-01-328-7657	8	7	5310-12-142-0650	20	9
5310-01-328-7657	36	7	5310-12-142-0650	42	9
5305-01-338-8012	7	7	5310-12-142-0658	28	2
5310-01-418-2337	3	13	5310-12-142-0658	29	2
5310-01-418-2337	32	13	5305-12-142-0989	17	10
5305-01-461-2723	10	3	5305-12-142-5728	7	15
5330-12-124-0973	23	52	5305-12-142-5852	8	12
5330-12-124-0973	23	66	5305-12-142-5852	36	12
4730-12-125-0310	5	20	5305-12-142-5854	8	11
4730-12-125-0310	20	19	5305-12-142-5854	36	11
4730-12-125-0310	42	14	5305-12-142-5914	17	6
5330-12-125-2535	23	61	5305-12-142-5931	5	8
5330-12-125-2535	23	71	5305-12-142-5941	24	3
5365-12-125-5213	23	74	5340-12-142-8193	26	8
5315-12-125-7770	15	8	5340-12-142-8210	8	19
5315-12-125-7770	16	8	5340-12-142-8210	36	19
5330-12-131-4119	23	73	5305-12-142-8229	17	17
5315-12-131-7424	13	4	5340-12-142-8233	9	4
5315-12-131-7424	34	8	5340-12-142-8249	5	6
5315-12-131-7424	37	4	5340-12-142-8249	33	2
5315-12-132-0855	23	3	5305-12-142-8257	9	1
5315-12-139-9742	46	4	5305-12-142-8266	20	10
5315-12-139-9743	46	1	5305-12-142-8266	42	10
5310-12-140-9515	46	2	5305-12-142-8325	35	8
5305-12-141-9870	39	1	5305-12-142-8329	33	22
5305-12-141-9891	6	8	5305-12-142-8497	15	6
5305-12-141-9891	13	7	5305-12-142-8497	16	6
5305-12-141-9891	20	14	5310-12-144-3934	9	2
5305-12-141-9891	37	7	5340-12-144-4037	6	10
5305-12-141-9891	42	16	5310-12-144-4164	35	14
5305-12-141-9893	13	16	5310-12-144-6134	33	18
5305-12-141-9893	37	16	5310-12-144-6214	28	1
5305-12-141-9963	1A	4	5310-12-144-6214	29	1
5305-12-141-9963	27	10	5310-12-145-2077	27	4
5305-12-142-0049	43	3	5305-12-145-2079	14	12
5305-12-142-0049	44	7	5305-12-145-2079	38	12
5310-12-142-0481	17	14	5310-12-145-2243	26	2
5310-12-142-0640	10	4	5310-12-145-2655	3	8
5310-12-142-0640	1A	5	5310-12-145-2655	4	2
5310-12-142-0640	27	11	5310-12-145-2655	32	8
5310-12-142-0642	35	3	5310-12-145-2843	3	7
5310-12-142-0644	17	3	5310-12-145-2843	32	7
5310-12-142-0649	13	2	5305-12-146-2633	17	4
5310-12-142-0649	17	16	5305-12-146-8156	25	1

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5310-12-146-8397	12	14	5310-12-156-5471	16	10
5310-12-146-8397	17	13	5310-12-156-5471	33	17
5305-12-147-0295	6	21	5310-12-156-5471	37	8
5310-12-147-2103	13	5	5120-12-156-9348	45	3
5310-12-147-2103	34	7	5305-12-158-0033	6	22
5310-12-147-2103	37	5	5340-12-162-8470	27	1
5325-12-147-9354	1A	7	4730-12-162-8809	26	6
5315-12-147-9381	23	40	5305-12-164-0266	5	22
5331-12-148-8843	23	18	5310-12-164-6571	23	7
5331-12-148-8843	23	35	5305-12-165-1261	33	16
2590-12-148-9613	25	11	5315-12-166-3517	23	30
5340-12-150-8958	35	26	5315-12-166-3517	23	81
5310-12-152-2147	12	3	5310-12-166-7736	35	25
5310-12-153-5036	40	3	5305-12-167-5376	5	1
5325-12-153-6230	25	24	5305-12-167-5376	22	7
5310-12-154-1380	39	2	5305-12-167-5389	6	5
5305-12-155-0838	14	1	5310-12-169-7096	11	4
5305-12-155-0838	38	1	5305-12-173-0258	11	6
5340-12-156-2814	6	28	5310-12-174-3877	2	2
5330-12-156-4527	28	7	5310-12-175-0141	8	6
5330-12-156-4527	29	11	5310-12-175-0141	36	6
5315-12-156-4700	6	4	5315-12-178-5636	7	17
5355-12-156-4791	23	44	5315-12-178-5636	12	2
5305-12-156-4870	28	6	5420-12-179-0314	20	6
5305-12-156-4870	29	6	5420-12-179-0314	42	6
5305-12-156-4873	8	16	5420-12-179-0315	3	1
5305-12-156-4873	10	2	5420-12-179-0315	32	1
5305-12-156-4873	26	1	5420-12-179-0316	3	11
5305-12-156-4873	36	16	5420-12-179-0316	32	11
5305-12-156-4875	11	11	5420-12-179-0317	3	3
5305-12-156-4876	5	18	5420-12-179-0317	32	3
5310-12-156-4899	5	2	5420-12-179-0318	3	9
5310-12-156-4899	11	10	5420-12-179-0318	4	3
5310-12-156-4899	22	8	5420-12-179-0318	32	9
5310-12-156-4899	22	11	5420-12-179-0320	4	1
5305-12-156-4902	33	6	5420-12-179-0321	20	2
5310-12-156-4905	7	16	5420-12-179-0321	42	15
5305-12-156-4949	8	13	5420-12-179-0322	20	8
5305-12-156-4949	36	13	5420-12-179-0322	42	8
5315-12-156-4958	35	11	5420-12-179-0323	20	4
5305-12-156-4962	39	6	5420-12-179-0323	42	3
5310-12-156-4982	11	9	5420-12-179-0324	20	7
5310-12-156-4982	22	12	5420-12-179-0324	42	5
5310-12-156-4984	35	10	5420-12-179-0325	20	11
5310-12-156-5471	12	9	5420-12-179-0325	42	2
5310-12-156-5471	13	8	5420-12-179-0326	20	16
5310-12-156-5471	15	10	5420-12-179-0326	42	1

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5420-12-179-0330	37	15	5315-12-180-3615	3	6
5420-12-179-0331	13	17	5315-12-180-3615	32	6
5420-12-179-0331	37	17	5315-12-180-3616	1A	2
5420-12-179-0332	13	1	5315-12-180-3616	30	2
5420-12-179-0332	37	1	5315-12-180-3616	32	16
5420-12-179-0333	34	1	5315-12-180-3618	2	6
5420-12-179-0337	17	9	5315-12-180-3622	42	12
4730-12-179-1386	28	12	5315-12-180-3623	20	18
4730-12-179-1386	29	8	5315-12-180-3623	42	11
4010-12-179-1461	7	14	5315-12-180-3624	20	3
5340-12-179-7652	2	1	5315-12-180-3624	42	4
5340-12-179-7654	2	5	5315-12-180-3625	20	5
5310-12-179-7655	20	15	5315-12-180-3625	42	7
5310-12-179-7655	42	19	5315-12-180-3626	14	4
5305-12-179-8250	3	12	5315-12-180-3626	38	4
5305-12-179-8250	32	12	5315-12-180-4460	13	10
5305-12-179-8251	3	10	5315-12-180-4460	34	6
5305-12-179-8251	4	4	5315-12-180-4460	37	10
5305-12-179-8251	32	10	5315-12-180-4461	13	6
5310-12-179-8252	3	14	5315-12-180-4461	34	9
5310-12-179-8252	32	14	5315-12-180-4461	37	6
5310-12-179-8253	2	4	5315-12-180-4462	13	14
5360-12-179-8255	14	7	5315-12-180-4462	34	2
5360-12-179-8255	38	7	5315-12-180-4462	37	14
5360-12-179-8256	13	12	5315-12-180-4463	17	15
5360-12-179-8256	34	4	5315-12-180-4468	18	4
5360-12-179-8256	37	12	5315-12-180-4468	19	2
5360-12-179-8257	12	11	5315-12-180-4468	24	8
5360-12-179-8258	12	10	5315-12-180-4471	12	6
5420-12-179-8843	20	12	5305-12-184-2236	14	5
5420-12-179-8843	42	18	5305-12-184-2236	38	5
5315-12-179-8844	7	13	4730-12-186-9990	28	13
5305-12-179-8847	17	8	4730-12-186-9990	29	9
4730-12-180-1202	27	3	5305-12-190-0318	25	18
5315-12-180-1372	31	4	5315-12-190-2775	46	9
5365-12-180-1654	13	11	5315-12-192-5816	14	3
5365-12-180-1654	34	5	5315-12-192-5816	38	3
5365-12-180-1654	37	11	5305-12-193-3664	6	13
5365-12-180-1655	9	3	5310-12-193-8599	46	8
4730-12-180-1656	27	2	5310-12-196-2389	40	2
4730-12-180-1657	26	7	5310-12-196-2837	46	5
5340-12-180-3179	28	17	5315-12-196-2838	12	7
5340-12-180-3179	29	12	5315-12-199-2959	18	1
5315-12-180-3613	3	2	5315-12-199-2959	19	4
5315-12-180-3613	32	2	5310-12-300-8139	15	4
5315-12-180-3614	3	5	5310-12-300-8139	16	4

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4820-12-302-4275	28	3	5310-12-356-0257	38	6
4820-12-302-4275	29	3	5310-12-356-0258	18	5
5310-12-305-3868	8	14	5310-12-356-0258	19	1
5310-12-305-3868	36	14	5310-12-356-0258	24	7
4730-12-305-4824	23	29	5315-12-356-0490	23	39
5305-12-305-7892	6	17	5310-12-356-0681	18	2
5342-12-312-8842	33	14	5310-12-356-0681	19	5
5315-12-313-2591	35	28	5315-12-356-1911	35	6
5340-12-314-0989	25	23	5315-12-356-1912	35	12
5315-12-314-3888	20	17	5315-12-356-1913	35	13
5306-12-314-4873	31	5	4010-12-356-1914	1A	1
5315-12-314-9043	3	4	4020-12-356-1915	8	2
5315-12-314-9043	32	4	5315-12-356-1916	12	4
5315-12-315-0187	18	3	5315-12-356-1917	12	12
5315-12-315-0187	19	3	9905-12-356-1918	43	2
5315-12-315-0187	24	6	9905-12-356-1919	43	1
5340-12-317-2253	31	2	5310-12-356-1920	15	5
5360-12-317-7984	31	6	5310-12-356-1920	16	5
5310-12-318-7526	24	4	5310-12-356-1921	15	5
5315-12-320-4071	13	13	5310-12-356-1921	16	5
5315-12-320-4071	34	3	5310-12-356-1922	15	5
5315-12-320-4071	37	13	5310-12-356-1922	16	5
4820-12-320-5594	23	26	5315-12-356-2079	35	17
5310-12-327-0721	5	14	4720-12-356-2080	26	5
5310-12-327-0721	31	1	4720-12-356-2081	27	5
5330-12-331-4476	25	10	4720-12-356-2081	27	14
5330-12-331-4477	25	14	4720-12-356-2081	28	15
4730-12-340-4132	25	2	4720-12-356-2082	22	5
5315-12-341-6612	1A	3	4720-12-356-2082	27	7
5315-12-341-6612	30	3	4720-12-356-2082	27	16
5315-12-341-6612	32	17	4720-12-356-2082	28	8
5305-12-342-0255	41	2	4710-12-356-2083	25	3
5331-12-352-5127	25	15	3120-12-356-2084	25	25
5330-12-352-5129	25	16	4720-12-356-2085	22	9
5331-12-354-3124	25	8	4720-12-356-2085	27	12
5310-12-355-8440	23	2	4720-12-356-2085	28	4
5310-12-355-8440	23	55	4720-12-356-2085	29	4
5310-12-355-8644	23	32	4720-12-356-2086	22	1
4010-12-355-9346	8	22	5365-12-356-2196	35	1
4010-12-355-9346	8	31	5365-12-356-2197	35	7
4010-12-355-9346	36	22	5365-12-356-2198	35	9
4010-12-355-9346	36	31	5365-12-356-2199	1A	6
5305-12-355-9726	40	7	5365-12-356-2200	7	10
5305-12-355-9727	40	8	5365-12-356-2201	8	17
5305-12-355-9728	40	10	5365-12-356-2201	36	17
5305-12-355-9907	23	1	5365-12-356-2203	12	13
5310-12-356-0257	14	6	5365-12-356-2204	23	58

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5330-12-356-2205	KITS	1	5310-12-356-2888	23	65
5305-12-356-2240	8	15	5310-12-356-2889	23	53
5305-12-356-2240	36	15	5310-12-356-2889	23	64
5360-12-356-2241	8	5	5331-12-356-2890	5	19
5360-12-356-2241	36	5	3040-12-356-2891	24	9
5360-12-356-2242	23	42	5331-12-356-2892	25	20
5315-12-356-2355	6	16	3040-12-356-2893	3	15
5365-12-356-2551	1A	6	3040-12-356-2893	32	15
5310-12-356-2552	5	16	5330-12-356-3027	8	25
5310-12-356-2553	5	16	5330-12-356-3027	36	25
3990-12-356-2554	7	1	5330-12-356-3027	45	2
3990-12-356-2555	7	4	9905-12-356-3028	17	7
4720-12-356-2557	26	4	5330-12-356-3029	8	28
4730-12-356-2558	25	4	5330-12-356-3029	36	28
4730-12-356-2559	28	11	9905-12-356-3030	23	33
4730-12-356-2560	28	14	5330-12-356-3031	39	8
4730-12-356-2560	29	10	5365-12-356-3032	5	5
5315-12-356-2730	6	25	5365-12-356-3033	6	29
5315-12-356-2731	6	11	5365-12-356-3034	6	29
5315-12-356-2732	15	9	5365-12-356-3035	6	3
5315-12-356-2732	16	9	5365-12-356-3036	6	9
5315-12-356-2733	15	13	5365-12-356-3037	6	3
5315-12-356-2733	16	13	5365-12-356-3038	6	3
5315-12-356-2734	15	14	5365-12-356-3039	15	5
5315-12-356-2734	16	14	5365-12-356-3039	16	5
5315-12-356-2777	8	18	5315-12-356-3213	7	18
5315-12-356-2777	36	18	5315-12-356-3214	6	27
5315-12-356-2778	18	7	5330-12-356-3215	15	3
5315-12-356-2778	19	6	5330-12-356-3215	16	3
5315-12-356-2779	33	4	5365-12-356-3360	23	6
4010-12-356-2780	30	1	5365-12-356-3362	33	3
5310-12-356-2781	23	13	5365-12-356-3363	33	3
5310-12-356-2782	6	20	5310-12-356-3365	33	12
5310-12-356-2783	6	6	5310-12-356-3366	33	13
5310-12-356-2784	6	12	5315-12-356-3367	33	19
5310-12-356-2785	6	23	5365-12-356-3368	10	5
5310-12-356-2785	10	1	4820-12-356-3464	23	28
5310-12-356-2786	10	8	3040-12-356-3465	23	15
3040-12-356-2787	10	7	3040-12-356-3466	33	11
5310-12-356-2788	5	16	4820-12-356-3467	23	49
5315-12-356-2882	23	5	4820-12-356-3467	23	69
5310-12-356-2883	33	5	3040-12-356-3468	5	4
5310-12-356-2884	40	1	3040-12-356-3469	5	17
5310-12-356-2885	40	4	3040-12-356-3470	7	12
5310-12-356-2886	40	5	3040-12-356-3471	6	1
5310-12-356-2887	40	6	3040-12-356-3472	6	24
5310-12-356-2888	23	54	3040-12-356-3473	6	24

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5315-12-356-3474	6	2	3040-12-356-3859	33	11
3040-12-356-3475	6	1	5305-12-356-3860	35	18
4820-12-356-3476	25	7	5305-12-356-3957	23	14
3040-12-356-3477	15	7	5315-12-356-3958	2	7
3040-12-356-3478	15	7	3040-12-356-3959	25	13
3040-12-356-3479	16	7	5310-12-356-4163	8	9
3040-12-356-3480	16	7	5310-12-356-4163	36	9
5330-12-356-3481	23	22	5310-12-356-4164	39	5
5315-12-356-3483	5	10	5310-12-356-4433	5	12
4820-12-356-3484	23	63	5310-12-356-4433	31	3
4030-12-356-3614	8	23	5310-12-356-4434	5	9
4030-12-356-3614	8	30	5310-12-356-4435	35	27
4030-12-356-3614	36	23	5305-12-356-4630	23	51
4030-12-356-3614	36	30	5305-12-356-4630	23	67
3040-12-356-3615	35	24	5305-12-356-4631	23	10
3040-12-356-3616	35	4	5305-12-356-4631	23	56
3040-12-356-3617	33	9	5305-12-356-4632	21	2
3040-12-356-3618	33	10	5305-12-356-4632	23	77
2040-12-356-3619	8	8	5305-12-356-4633	23	59
2040-12-356-3619	36	8	5305-12-356-4634	23	45
5310-12-356-3620	23	8	5305-12-356-4635	23	31
3040-12-356-3621	35	4	5340-12-356-4945	17	1
5310-12-356-3622	25	6	5340-12-356-4946	17	11
5310-12-356-3623	21	1	5340-12-356-4947	24	2
5310-12-356-3623	23	11	5340-12-356-4948	33	21
5310-12-356-3623	23	46	5340-12-356-5115	23	41
5310-12-356-3623	23	78	5340-12-356-5116	23	9
5310-12-356-3623	25	17	5340-12-356-5117	23	4
5330-12-356-3624	23	20	5365-12-356-5118	6	9
2040-12-356-3625	8	8	5305-12-356-5296	35	23
5331-12-356-3626	22	2	5305-12-356-5297	6	15
5331-12-356-3626	22	6	5305-12-356-5297	33	1
5331-12-356-3626	22	10	5325-12-356-5393	33	20
5331-12-356-3626	27	6	5325-12-356-5395	10	6
5331-12-356-3626	27	8	5325-12-356-5396	14	11
5331-12-356-3626	27	13	5325-12-356-5396	38	11
5331-12-356-3626	27	15	5306-12-356-5567	35	5
5331-12-356-3626	27	17	5340-12-356-5568	11	2
5331-12-356-3626	28	5	5340-12-356-5790	39	3
5331-12-356-3626	28	9	5305-12-356-6171	6	31
5331-12-356-3626	28	10	5305-12-356-6172	25	5
5331-12-356-3626	28	16	5305-12-356-6173	25	22
5331-12-356-3626	29	5	5305-12-356-6174	15	1
5331-12-356-3626	29	7	5305-12-356-6174	16	1
2940-12-356-3627	21	5	5365-12-356-6358	8	32
2940-12-356-3627	23	75	5365-12-356-6358	36	32
5315-12-356-3858	24	5	5340-12-356-6359	5	13

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5340-12-356-6955	5	21	5360-12-356-8384	23	68
5340-12-356-6956	2	3	5360-12-356-8385	15	12
5340-12-356-6957	11	3	5360-12-356-8385	16	12
5340-12-356-6958	11	2	5340-12-356-9396	8	21
5340-12-356-6959	6	26	5340-12-356-9396	36	21
5340-12-356-6960	6	19	5340-12-356-9397	8	20
5340-12-356-6961	6	26	5340-12-356-9397	36	20
5340-12-356-6962	6	30	5340-12-356-9398	8	24
5340-12-356-6963	6	7	5340-12-356-9398	36	24
5340-12-356-6964	26	3	5340-12-356-9399	8	27
5340-12-356-6965	27	9	5340-12-356-9399	36	27
5340-12-356-6966	27	9	5340-12-356-9400	35	19
5340-12-356-6968	15	11	5340-12-356-9401	33	7
5340-12-356-6968	16	11	5340-12-356-9402	33	21
5340-12-356-6970	14	2	5340-12-356-9403	13	9
5340-12-356-6970	38	2	5340-12-356-9403	37	9
5340-12-356-6971	14	10	5340-12-357-0038	7	5
5340-12-356-6971	38	10	5340-12-357-0039	7	6
5340-12-356-6972	8	29	5340-12-357-0040	7	8
5340-12-356-6972	36	29	5315-12-357-2516	35	2
5340-12-356-6974	8	26	5330-12-357-2517	24	1
5340-12-356-6974	36	26	9905-12-357-2518	44	6
5340-12-356-6975	8	33	9905-12-357-2519	44	1
5340-12-356-6975	36	33	9905-12-357-2520	44	2
5340-12-356-6976	14	8	9905-12-357-2521	44	3
5340-12-356-6976	38	8	9905-12-357-2522	44	4
5340-12-356-6977	14	9	9905-12-357-2523	44	5
5340-12-356-6977	38	9	5310-12-357-2524	6	29
5340-12-356-6978	12	1	5310-12-357-2525	6	14
5340-12-356-6979	12	5	5310-12-357-2525	33	8
5340-12-356-6980	21	3	5365-12-357-2614	35	9
5340-12-356-6980	23	79	6685-12-357-2615	45	1
5340-12-356-6981	23	57	3040-12-357-2922	15	2
5340-12-356-6982	23	43	3040-12-357-2922	16	2
5340-12-356-6983	23	12	5340-12-357-3703	35	19
5340-12-356-6984	5	7	5360-12-357-3819	35	15
5340-12-356-6985	5	11	5340-12-357-4717	41	1
5340-12-356-6986	5	15	5340-12-357-4718	41	3
5340-12-356-6987	6	19	5340-12-359-2283	39	7
5340-12-356-6988	12	8	5365-12-359-2284	6	3
5340-12-356-6989	23	60	5365-12-359-2285	15	15
5340-12-356-7032	17	5	5365-12-359-2285	16	15
4320-12-356-7358	22	4	5310-12-359-2950	33	15
5340-12-356-7857	19	7	5310-12-359-2951	35	21
5340-12-356-7858	18	6	5310-12-359-2952	35	22
5360-12-356-8152	17	2	5310-12-359-2953	35	20
5360-12-356-8384	23	50	5340-12-359-3964	39	4

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5325-14-286-7580	6	18	5320-99-983-0535	7	2
5310-99-739-9500	13	3	5320-99-983-0535	11	1

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D0718	AS010-00	2940-12-356-3627	21	5
		2940-12-356-3627	23	75
D1333	A1 7005 N3587	2590-12-148-9613	25	11
80204	B18231B08040N	5305-01-338-8012	7	7
80204	B18241B080	5310-01-328-7657	8	7
		5310-01-328-7657	36	7
80204	B18241B120	5310-01-418-2337	3	13
		5310-01-418-2337	32	13
D1333	BA 115000030	5330-12-356-3624	23	20
D8286	DIN11023-5X32 VE RZINKT	5315-12-179-8844	7	13
D8286	DIN125-A10,5-140 HV-A2	5310-12-305-3868	8	14
		5310-12-305-3868	36	14
D8286	DIN125-A10,5-140 HV-A3P	5310-12-156-5471	12	9
		5310-12-156-5471	13	8
		5310-12-156-5471	15	10
		5310-12-156-5471	16	10
		5310-12-156-5471	33	17
		5310-12-156-5471	37	8
D8286	DIN125-A8,4-140H V-A3C	5310-12-175-0141	8	6
		5310-12-175-0141	36	6
D8286	DIN125-B10,5-140 HV-A3P	5310-12-142-0481	17	14
D8286	DIN125-B13-140HV -A3P	5310-12-156-4899	5	2
		5310-12-156-4899	11	10
		5310-12-156-4899	22	8
		5310-12-156-4899	22	11
D8286	DIN125-B17-140HV -A2	5310-12-193-8599	46	8
D8286	DIN125-B17-140HV -A3P	5310-12-142-0640	10	4
		5310-12-142-0640	1A	5
		5310-12-142-0640	27	11
D8286	DIN125-B21-140HV -A2	5310-12-140-9515	46	2
D8286	DIN125-B21-140HV -A3P	5310-12-156-4905	7	16
D8286	DIN125-B23-140HV -A3P	5310-12-142-0642	35	3
D8286	DIN125-B37-140HV -A3P	5310-12-145-2843	3	7
		5310-12-145-2843	32	7
D8286	DIN125-B6,4-140H V-A3P	5310-12-142-0644	17	3
D8286	DIN125-B8,4-140H V-A4	5310-12-154-1380	39	2

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D8286	DIN127-B10-FST-A 3P	5310-12-142-0649	13	2
		5310-12-142-0649	17	16
		5310-12-142-0649	20	13
		5310-12-142-0649	37	2
		5310-12-142-0649	42	17
D8286	DIN127-B12-FST-A 3P	5310-12-142-0650	20	9
		5310-12-142-0650	42	9
D8286	DIN127-B8-FST-A3 P	5310-12-142-0658	28	2
		5310-12-142-0658	29	2
D8286	DIN1440-14-ST-A3 P	5310-12-196-2837	46	5
D8286	DIN1440-20-ST	5310-12-147-2103	13	5
		5310-12-147-2103	34	7
		5310-12-147-2103	37	5
D8286	DIN1440-22-ST-A3 P	5310-12-152-2147	12	3
D8286	DIN1441-34-ST-A3 P	5310-12-356-0681	18	2
		5310-12-356-0681	19	5
D8286	DIN1445-10H11X61 -75-ST-A3P	5305-12-356-2240	8	15
		5305-12-356-2240	36	15
D8286	DIN1476-3X6-AL	5315-12-166-3517	23	30
		5315-12-166-3517	23	81
D8286	DIN1479-SP-M24-S T-A3P	5340-12-356-6956	2	3
D8286	DIN1479-SPM16-1. 3965	5340-12-150-8958	35	26
D8286	DIN1479-SPM20-X1 0CRNITI189	5340-12-317-2253	31	2
D8286	DIN1481-3X12	5315-12-156-4700	6	4
D8286	DIN1481-3X22	5315-12-156-4958	35	11
D8286	DIN1481-3X22-A3P	5315-12-320-4071	13	13
		5315-12-320-4071	34	3
		5315-12-320-4071	37	13
D8286	DIN1481-5X22-A3P	5315-12-314-9043	3	4
		5315-12-314-9043	32	4
D8286	DIN1481-5X40-1.4 310	5315-12-180-1372	31	4
D8286	DIN1481-5X40-A3C	5315-12-180-3624	20	3
		5315-12-180-3624	42	4
D8286	DIN1481-6X55-A3C	5315-12-180-3623	20	18
		5315-12-180-3623	42	11
D8286	DIN1810-B80-90	5120-12-156-9348	45	3
D8286	DIN3016-D1-17X20 -W1-2	5340-12-180-3179	28	17
		5340-12-180-3179	29	12

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D8286	DIN3901-L10B-M-S T-A3P	4730-12-186-9990	28	13
		4730-12-186-9990	29	9
D8286	DIN439-BM10-04-A 2P	5310-12-144-6134	33	18
D8286	DIN439-BM16-05-A 2P	5310-12-166-7736	35	25
D8286	DIN439-BM20-04-A 2P	5310-12-327-0721	5	14
		5310-12-327-0721	31	1
D8286	DIN439-BM24-05-A 2P	5310-12-174-3877	2	2
D8286	DIN439-BM24LH-05 -A2P	5310-12-179-8253	2	4
D8286	DIN609-M24X75-10 .9-A3P	5305-12-355-9728	40	10
D8286	DIN609-M30X110-1 0.9-A3P	5305-12-355-9727	40	8
D8286	DIN609-M30X120-1 0.9-A3P	5305-12-355-9726	40	7
D8286	DIN6925-M8-8-A2P	5310-12-300-8139	15	4
		5310-12-300-8139	16	4
D8286	DIN7-4M6X30-A4-7 0	5315-12-147-9381	23	40
D8286	DIN71412-AM6	4730-12-125-0310	20	19
		4730-12-125-0310	42	14
D8286	DIN71412AM6	4730-12-125-0310	5	20
D8286	DIN7349-10,5-ST- A3P	5310-12-145-2243	26	2
D8286	DIN7513-AM4X16-S T-A2A	5305-12-179-8847	17	8
D8286	DIN7603-A12X18-A L	5330-12-124-0973	23	52
		5330-12-124-0973	23	66
D8286	DIN7603-A18X24-C U	5330-12-156-4527	28	7
		5330-12-156-4527	29	11
D8286	DIN7603-D14X18-C U	5330-12-131-4119	23	73
D8286	DIN7604-A-M14X1, 5-ST	5365-12-125-5213	23	74
D8286	DIN7980-12-FST-A 3P	5310-12-144-3934	9	2
D8286	DIN7981-ST4,2X9, 5-C-H-A3P	5305-12-142-5728	7	15
D8286	DIN7984-M12X35-8 .8-A3P	5305-12-142-8257	9	1

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D8286	DIN7984-M6X16-8. 8-A2C	5305-12-184-2236	14	5
		5305-12-184-2236	38	5
D8286	DIN7991-M10X16-8 .8-A3P	5305-12-165-1261	33	16
D8286	DIN7991-M10X40-1 0.9-A3P	5305-12-342-0255	41	2
D8286	DIN7991-M5X16-8. 8-A2P	5305-12-173-0258	11	6
D8286	DIN7991-M6X12-8. 8-A2P	5305-12-142-5931	5	8
D8286	DIN7991-M6X25-8. 8-A2P	5305-12-142-5941	24	3
D8286	DIN80705-M16X1,5 -14H-A2P	5310-12-145-2077	27	4
D8286	DIN84-M3X8-5.8-A 2P	5305-12-142-0049	43	3
		5305-12-142-0049	44	7
D8286	DIN912-M10X45-8. 8-A3P	5305-12-142-5852	8	12
		5305-12-142-5852	36	12
D8286	DIN912-M10X50-8. 8-A3P	5305-12-142-5854	8	11
		5305-12-142-5854	36	11
D8286	DIN912-M16X65-8. 8-A3P	5305-12-145-2079	14	12
		5305-12-145-2079	38	12
D8286	DIN912-M16X70-8. 8-A3P	5305-12-155-0838	14	1
		5305-12-155-0838	38	1
D8286	DIN912-M20X60-8. 8-A3P	5305-12-147-0295	6	21
D8286	DIN912-M5X12-8.8 -A2P	5305-12-142-5914	17	6
D8286	DIN912-M8X25-8.8 -A2P	5305-12-142-0989	17	10
D8286	DIN912-M8X25-A2- 70	5305-12-190-0318	25	18
D8286	DIN913-M8X10-33H -A3P	5305-12-146-8156	25	1
D8286	DIN931-M10X80-8. 8-A3P	5305-12-142-8229	17	17
D8286	DIN931-M12X150-1 0.9-A3P	5305-12-179-8251	3	10
		5305-12-179-8251	4	4
		5305-12-179-8251	32	10
D8286	DIN931-M12X60-10 .9-A3P	5305-12-142-8266	20	10
		5305-12-142-8266	42	10

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D8286	DIN931-M12X90-8. 8-A3P	5305-12-156-4902	33	6
D8286	DIN931-M16X120-8 .8-A3C	5305-12-167-5389	6	5
D8286	DIN931-M16X65-10 .9-A3P	5305-12-142-8325	35	8
D8286	DIN931-M16X80-10 .9-A3P	5305-12-142-8329	33	22
D8286	DIN931-M8X55-8.8 -A2P	5305-12-156-4949	8	13
		5305-12-156-4949	36	13
D8286	DIN931-M8X70-8.8 -A2P	5305-12-142-8497	15	6
		5305-12-142-8497	16	6
D8286	DIN933-M10X16-8. 8-A3P	5305-12-158-0033	6	22
D8286	DIN933-M10X25-10 .9-A3C	5305-12-141-9891	6	8
		5305-12-141-9891	20	14
D8286	DIN933-M10X25-10 .9-A3P	5305-12-141-9891	13	7
		5305-12-141-9891	37	7
		5305-12-141-9891	42	16
D8286	DIN933-M10X30-10 .9-A3P	5305-12-141-9893	13	16
		5305-12-141-9893	37	16
D8286	DIN933-M10X30-8. 8-A3P	5305-12-156-4873	8	16
		5305-12-156-4873	10	2
		5305-12-156-4873	26	1
		5305-12-156-4873	36	16
D8286	DIN933-M12X25-8. 8-A3P	5305-12-156-4875	11	11
D8286	DIN933-M12X30-8. 8-A3D	5305-12-156-4876	5	18
D8286	DIN933-M12X35-8. 8-A3C	5305-12-167-5376	5	1
		5305-12-167-5376	22	7
D8286	DIN933-M16X70-8. 8-A3P	5305-12-141-9963	1A	4
		5305-12-141-9963	27	10
D8286	DIN933-M20X20-8. 8-A3P	5305-12-305-7892	6	17
D8286	DIN933-M6X16-8.8 -A2P	5305-12-146-2633	17	4
D8286	DIN933-M8X18-8.8 -A2P	5305-12-156-4962	39	6
D8286	DIN933-M8X20-A2- 70	5305-12-164-0266	5	22
D8286	DIN933-M8X35-8.8 -A2P	5305-12-141-9870	39	1

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		5310-12-156-4982	22	12
D8286	DIN934-M16-8-A2P	5310-12-156-4984	35	10
D8286	DIN934-M24-8-A2P	5310-12-196-2389	40	2
D8286	DIN934-M30-8-A2P	5310-12-153-5036	40	3
D8286	DIN934-M6-A2-70	5310-12-169-7096	11	4
D8286	DIN934-M8-8-A2P	5310-12-144-6214	28	1
		5310-12-144-6214	29	1
D8286	DIN94-1,6X14-ST-A3P	5315-12-192-5816	14	3
		5315-12-192-5816	38	3
D8286	DIN94-10X80-ST-A3P	5315-12-315-0187	18	3
		5315-12-315-0187	19	3
		5315-12-315-0187	24	6
D8286	DIN94-2X20-CU2	5315-12-132-0855	23	3
D8286	DIN94-3,2X18-ST-A3P	5315-12-125-7770	15	8
		5315-12-125-7770	16	8
D8286	DIN94-3,2X32-ST-A3P	5315-12-196-2838	12	7
D8286	DIN94-4X28-ST-A3P	5315-12-139-9742	46	4
D8286	DIN94-4X40-ST-A3P	5315-12-131-7424	13	4
		5315-12-131-7424	34	8
		5315-12-131-7424	37	4
D8286	DIN94-4X63-ST-A3P	5315-12-341-6612	1A	3
		5315-12-341-6612	30	3
		5315-12-341-6612	32	17
D8286	DIN94-5X32-ST-A3P	5315-12-178-5636	7	17
		5315-12-178-5636	12	2
D8286	DIN94-5X56-ST-A3P	5315-12-313-2591	35	28
D8286	DIN94-8X50-ST-A3P	5315-12-180-3614	3	5
		5315-12-180-3614	32	5
D8286	DIN94-8X63-ST-A3P	5315-12-199-2959	18	1
		5315-12-199-2959	19	4
D8286	DIN980-VM8-10-A2C	5310-12-164-6571	23	7
D8286	DIN985-M10-8-A2P	5310-12-146-8397	12	14
		5310-12-146-8397	17	13
D8286	DIN985-M12-8-A2P	5310-12-145-2655	3	8
		5310-12-145-2655	4	2
I9006	EN24017-M8X30-8-A2P	5305-12-156-4870	28	6
		5305-12-156-4870	29	6

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D8134	EVT10-LOMDK-A3L	4730-12-179-1386	28	12
		4730-12-179-1386	29	8
I9008	ISO4017-M16X40-8 .8-A2A	5305-01-461-2723	10	3
		5310-12-145-2655	32	8
I9008	ISO4035-M16LH-05 -A2P	5310-12-356-4435	35	27
D8442	LN9039-13180	5340-12-142-8233	9	4
D8442	LN9039-18160	5340-12-156-2814	6	28
D8442	LN9039-18320	5340-12-144-4037	6	10
D2040	LT1504-C6-10	4010-12-179-1461	7	14
IREF0	NO PRIMARY REF 1 21399743	5315-12-139-9743	46	1
IREF0	NO PRIMARY REF 1 21902775	5315-12-190-2775	46	9
D2480	OR25X2-72NBR/872	5331-12-148-8843	23	18
		5331-12-148-8843	23	35
D2480	U21,5X28,7X2,5-7 2NBR/99041	5330-12-125-2535	23	61
		5330-12-125-2535	23	71
A1587	VG75073		11	7
D7040	WEM300180-T46N	5330-12-356-3481	23	22
D9728	0130 0100 015	5340-12-142-8193	26	8
D9728	0130 0120 024	5340-12-142-8249	5	6
		5340-12-142-8249	33	2
F1699	01300080016	5325-14-212-9249	17	12
F1699	01300200025	5325-14-286-7580	6	18
D9913	024000304		23	48
D9913	024000603		23	72
D9913	024000802	4820-12-302-4275	28	3
		4820-12-302-4275	29	3
D9913	024000804	4820-12-356-3464	23	28
D9913	024000805	4820-12-356-3484	23	63
D9913	024002017	3040-12-356-2891	24	9
D9913	024002018	3040-12-356-3465	23	15
D9913	024004012	4320-12-356-7358	22	4
D9913	024005701		23	36
D9913	024006102	5340-12-356-6983	23	12
D9913	024008201		23	62
D9913	024008501	5340-12-356-6989	23	60
D9913	024009401	4820-12-356-3467	23	49
		4820-12-356-3467	23	69
D9913	024009402	5330-12-356-2205	KITS	1
D9913	024010302	5340-12-356-6966	27	9
D9913	024010303	5340-12-356-6965	27	9
D9913	024012602	5340-12-356-5116	23	9
D9913	024012704	4820-12-320-5594	23	26
D9913	024012705		23	70
D9913	024012806	5340-12-356-6980	21	3
		5340-12-356-6980	23	79

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D9913	024013504	5365-12-356-2204	23	58
D9913	024013505		23	34
D9913	024013802		23	19
D9913	024013904	5365-12-356-3360	23	6
D9913	024014102	5340-12-356-6981	23	57
D9913	024015002	5340-12-356-5117	23	4
D9913	024015003	5340-12-356-6982	23	43
D9913	024017005	5315-12-356-2882	23	5
D9913	024017403	5305-12-356-4630	23	51
		5305-12-356-4630	23	67
D9913	024017505		23	17
D9913	024017905		23	21
D9913	024017906	5340-12-356-5115	23	41
D9913	024018101	5305-12-356-3957	23	14
D9913	024062602	4710-12-356-2083	25	3
D9913	024063801	3120-12-356-2084	25	25
D9913	024501103	2040-12-356-3619	8	8
		2040-12-356-3619	36	8
D9913	024501104	2040-12-356-3625	8	8
D9913	024502601		36	1
D9913	024502602		8	1
D9913	024522601	4010- - -	36	2
D9913	024522603	4020-12-356-1915	8	2
D9913	027000203		29A	2
D9913	027000205		29A	1
D9913	027000601	3040-12-356-3466	33	11
D9913	027000602	3040-12-356-3859	33	11
D9913	027001001	5340-12-356-5790	39	3
D9913	027004301	5315-12-356-1913	35	13
D9913	027006703	5420-12-179-0320	4	1
D9913	027007313	5340-12-356-9397	8	20
		5340-12-356-9397	36	20
D9913	027007314	5340-12-356-9399	8	27
		5340-12-356-9399	36	27
D9913	027008404	5420-12-179-0331	13	17
		5420-12-179-0331	37	17
D9913	027008405	5420-12-179-0330	13	15
		5420-12-179-0330	37	15
D9913	027009504	5340-12-356-9403	13	9
		5340-12-356-9403	37	9
D9913	027010337	5365-12-356-2197	35	7
D9913	027010357	5340-12-359-3964	39	4
D9913	027010368	5365-12-356-3363	33	3
D9913	027010386	5340-12-357-4718	41	3
D9913	027010387	5340-12-357-4717	41	1
D9913	027010388	5365- - -	33	3
D9913	027011201	3040-12-356-3617	33	9
D9913	027011303		40	9
D9913	027011901	3040-12-356-3621	35	4

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D9913	027011902	3040-12-356-3616	35	4
D9913	027013001	5340-12-356-9398	8	24
		5340-12-356-9398	36	24
D9913	027013401	5340-12-356-9400	35	19
D9913	027013402	5340-12-357-3703	35	19
D9913	027013404	5340-12-356-6972	8	29
		5340-12-356-6972	36	29
D9913	027014003	5365-12-356-2198	35	9
D9913	027014007	5365-12-357-2614	35	9
D9913	027014302	5340-12-356-6977	14	9
		5340-12-356-6977	38	9
D9913	027015001	5305-12-356-3860	35	18
D9913	027015002	5315-12-356-1911	35	6
D9913	027015004	5315-12-356-1912	35	12
D9913	027015007	5315-12-356-3367	33	19
D9913	027015008	5315-12-356-2779	33	4
D9913	027015009	3040-12-356-2893	3	15
		3040-12-356-2893	32	15
D9913	027015010	5315-12-356-2079	35	17
D9913	027015011	5315-12-357-2516	35	2
D9913	027015105	5340-12-356-9401	33	7
D9913	027015702	5340-12-356-6976	14	8
		5340-12-356-6976	38	8
D9913	027016001	5340-12-356-6974	8	26
		5340-12-356-6974	36	26
D9913	027016002	5340-12-356-6975	8	33
		5340-12-356-6975	36	33
D9913	027016701	5306-12-356-5567	35	5
D9913	027016702	3040-12-356-3615	35	24
D9913	027016704		40	11
D9913	027017101	5340-12-356-9402	33	21
D9913	027017102	5340-12-356-4948	33	21
D9913	027017203	5340-12-356-6971	14	10
		5340-12-356-6971	38	10
D9913	027017204	5340-12-356-6970	14	2
		5340-12-356-6970	38	2
D9913	027017301	5340-12-356-9396	8	21
		5340-12-356-9396	36	21
D9913	027017302	5365-12-356-6358	8	32
		5365-12-356-6358	36	32
D9913	027017409	5340-12-359-2283	39	7
D9913	027017601	3040-12-356-3618	33	10
D9913	027018101	5365-12-356-2196	35	1
D9913	027018102	5310-12-356-2885	40	4
D9913	027018103	5310-12-356-2887	40	6
D9913	027018104	5310-12-356-2884	40	1
D9913	027018105	5310-12-356-2886	40	5
D9913	027018106	5310-12-356-2883	33	5
D9913	027018108	5310-12-357-2525	6	14
		5310-12-357-2525	33	8

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D9913	027018109	5310-12-359-2952	35	22
D9913	027018110	5310-12-359-2951	35	21
D9913	027018111	5310-12-359-2953	35	20
D9913	027018112		35	16
D9913	027018501	5305-12-356-5296	35	23
D9913	027018703	5330-12-356-3027	8	25
		5330-12-356-3027	36	25
		5330-12-356-3027	45	2
D9913	027019303	5330-12-356-3031	39	8
D9913	027070301	5365-12-356-3362	33	3
D9913	027071701	5315-12-180-4460	13	10
		5315-12-180-4460	34	6
		5315-12-180-4460	37	10
D9913	027071801	5420-12-179-0325	20	11
		5420-12-179-0325	42	2
D9913	027071901	5420-12-179-0321	20	2
		5420-12-179-0321	42	15
D9913	027071903	5420-12-179-0317	3	3
		5420-12-179-0317	32	3
D9913	027072101	5420-12-179-0322	20	8
		5420-12-179-0322	42	8
D9913	027072401	5360-12-179-8256	13	12
		5360-12-179-8256	34	4
		5360-12-179-8256	37	12
D9913	027072402	5360-12-179-8255	14	7
		5360-12-179-8255	38	7
D9913	027072801	5310-12-179-7655	20	15
		5310-12-179-7655	42	19
D9913	027072901	5420-12-179-8843	20	12
		5420-12-179-8843	42	18
D9913	027072902	5315-12-180-4462	13	14
		5315-12-180-4462	34	2
		5315-12-180-4462	37	14
D9913	027073601	5315-12-180-3622	42	12
D9913	027073602	5420-12-179-0323	20	4
		5420-12-179-0323	42	3
D9913	027073603	5315-12-180-3625	20	5
		5315-12-180-3625	42	7
D9913	027073604	5315-12-180-4461	13	6
		5315-12-180-4461	34	9
		5315-12-180-4461	37	6
D9913	027073606	5315-12-180-3626	14	4
		5315-12-180-3626	38	4
D9913	027073610	5315-12-180-4463	17	15
D9913	027073611	5315-12-180-3615	3	6
		5315-12-180-3615	32	6
D9913	027073612	5315-12-180-3613	3	2
		5315-12-180-3613	32	2
D9913	027073613	5315-12-180-3616	1A	2
		5315-12-180-3616	30	2
		5315-12-180-3616	32	16

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D9913	027073616	5315-12-180-4471	12	6
D9913	027073621	5315-12-180-4468	18	4
		5315-12-180-4468	19	2
		5315-12-180-4468	24	8
D9913	027073623	5315-12-314-3888	20	17
D9913	027073627	5315-12-180-3618	2	6
D9913	027073802	5420-12-179-0326	20	16
		5420-12-179-0326	42	1
D9913	027073803	5420-12-179-0324	20	7
		5420-12-179-0324	42	5
D9913	027074001	5420-12-179-0318	3	9
		5420-12-179-0318	4	3
		5420-12-179-0318	32	9
D9913	027074201	5420-12-179-0333	34	1
D9913	027074502	5310-12-179-8252	3	14
		5310-12-179-8252	32	14
D9913	027074603	5365-12-180-1655	9	3
D9913	027074802	5420-12-179-0314	20	6
		5420-12-179-0314	42	6
D9913	027074803	5365-12-180-1654	13	11
		5365-12-180-1654	34	5
		5365-12-180-1654	37	11
D9913	027074804	5420-12-179-0332	13	1
		5420-12-179-0332	37	1
D9913	027074805	5420-12-179-0316	3	11
		5420-12-179-0316	32	11
D9913	027074806	5420-12-179-0315	3	1
		5420-12-179-0315	32	1
D9913	027075201	5420-12-179-0337	17	9
D9913	027075603	4010-12-356-2780	30	1
D9913	027076601	5340-12-179-7652	2	1
D9913	027076602	5340-12-179-7654	2	5
D9913	027077108	5360-12-317-7984	31	6
D9913	027077201	5306-12-314-4873	31	5
D9913	027078101	5310-12-356-3366	33	13
D9913	027078102	5310-12-356-3365	33	12
D9913	027078103	5310-12-359-2950	33	15
D9913	027078504	5305-12-356-5297	6	15
		5305-12-356-5297	33	1
D9913	027500201		1	2
D9913	027500203		1	3
D9913	027500205		1	1
D9913	027500207		1	4
D9913	027500401	3040-12-356-3471	6	1
D9913	027500402	3040-12-356-3475	6	1
D9913	027501003	5340-12-356-4947	24	2
D9913	027501008	5340-12-356-6958	11	2
D9913	027501009	5340-12-356-5568	11	2
D9913	027501205	5340-12-356-7858	18	6
D9913	027501901	3040-12-356-3468	5	4

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D9913	027503803	3990-12-356-2555	7	4
D9913	027503804		11	8
D9913	027503805		11	12
D9913	027504001	3990-12-356-2554	7	1
D9913	027504002		7	9
D9913	027504301	5340-12-356-6964	26	3
D9913	027505002	5315-12-356-3858	24	5
D9913	027505502	3040-12-356-3469	5	17
D9913	027507401	5340-12-356-6968	15	11
		5340-12-356-6968	16	11
D9913	027508603	5340-12-356-6988	12	8
D9913	027508901	5340-12-356-6984	5	7
D9913	027510305	5340-12-356-6962	6	30
D9913	027510379	5365-12-356-2199	1A	6
D9913	027510380	5365-12-356-2551	1A	6
D9913	027510381	5310-12-356-4434	5	9
D9913	027510395	5365-12-356-2201	8	17
		5365-12-356-2201	36	17
D9913	027511015	5340-12-356-4945	17	1
D9913	027511202	3040-12-356-3479	16	7
D9913	027511203	3040-12-356-3480	16	7
D9913	027511204	3040-12-356-3477	15	7
D9913	027511205	3040-12-356-3478	15	7
D9913	027511304	3040-12-356-3472	6	24
D9913	027511305	3040-12-356-3473	6	24
D9913	027511308	5340-12-356-7857	19	7
D9913	027511311	5340-12-356-6985	5	11
D9913	027511312	5340-12-356-6986	5	15
D9913	027511709	5340-12-357-0040	7	8
D9913	027511710	5340-12-357-0039	7	6
D9913	027511902	5340-12-356-6978	12	1
D9913	027513001	5360-12-356-8385	15	12
		5360-12-356-8385	16	12
D9913	027513002	5360-12-356-8152	17	2
D9913	027513301	5340-12-357-0038	7	5
D9913	027513803		11	14
D9913	027514001	5365-12-356-5118	6	9
D9913	027514002	5365-12-356-3036	6	9
D9913	027514003	5330-12-356-3215	15	3
		5330-12-356-3215	16	3
D9913	027514011	5330-12-357-2517	24	1
D9913	027514303	5340-12-356-6979	12	5
D9913	027514601	3040-12-357-2922	15	2
		3040-12-357-2922	16	2
D9913	027514603	3040-12-356-2787	10	7
D9913	027515001	5315-12-356-2731	6	11
D9913	027515002	5315-12-356-2730	6	25
D9913	027515003	5315-12-356-3474	6	2
D9913	027515004	5315-12-356-2355	6	16
D9913	027515007	5315-12-356-2732	15	9
		5315-12-356-2732	16	9

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D9913	027515008	5315-12-356-2733	15	13
		5315-12-356-2733	16	13
D9913	027515009	5315-12-356-2778	18	7
		5315-12-356-2778	19	6
D9913	027515011	5315-12-356-3483	5	10
D9913	027515012	5315-12-356-1916	12	4
D9913	027515013	5315- - -	7	11
D9913	027515014	5315-12-356-2777	8	18
		5315-12-356-2777	36	18
D9913	027515016	5315-12-356-1917	12	12
D9913	027516004	5365-12-356-3032	5	5
D9913	027516008	5365-12-359-2285	15	15
		5365-12-359-2285	16	15
D9913	027516201	5340-12-356-6957	11	3
D9913	027516901	5315-12-356-2734	15	14
		5315-12-356-2734	16	14
D9913	027517103	5340-12-356-4946	17	11
D9913	027517601	5340-12-356-6963	6	7
D9913	027517606	3040-12-356-3470	7	12
D9913	027517701	5340-12-356-6959	6	26
D9913	027517702	5340-12-356-6960	6	19
D9913	027517703	5340-12-356-6961	6	26
D9913	027517704	5340-12-356-6987	6	19
D9913	027518101	5365-12-356-3035	6	3
D9913	027518102	5365-12-356-3037	6	3
D9913	027518103	5365-12-356-3038	6	3
D9913	027518106	5310-12-356-2784	6	12
D9913	027518107	5310-12-356-2783	6	6
D9913	027518110	5310-12-356-2785	6	23
		5310-12-356-2785	10	1
D9913	027518111	5365-12-356-3034	6	29
D9913	027518112	5365-12-356-3033	6	29
D9913	027518113	5310-12-356-2782	6	20
D9913	027518114	5365-12-356-3368	10	5
D9913	027518115	5365-12-356-3039	15	5
		5365-12-356-3039	16	5
D9913	027518116	5310-12-356-2786	10	8
D9913	027518119	5310- - -	5	3
D9913	027518120	5310-12-356-2552	5	16
D9913	027518121	5310-12-356-2553	5	16
D9913	027518122	5310-12-356-2788	5	16
D9913	027518123	5365-12-356-2203	12	13
D9913	027518124	5310-12-356-1920	15	5
		5310-12-356-1920	16	5
D9913	027518125	5310-12-356-1921	15	5
		5310-12-356-1921	16	5
D9913	027518126	5310-12-356-1922	15	5
		5310-12-356-1922	16	5
D9913	027518127	5310-12-357-2524	6	29
D9913	027518128	5365-12-359-2284	6	3

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D9913	027518701	5330-12-356-3029	8	28
		5330-12-356-3029	36	28
D9913	027518901	5340-12-356-6955	5	21
D9913	029107606	6685-12-357-2615	45	1
D9913	029154601		46	7
D9913	029155504		46	6
D9913	029271681		23	80
D9913	029271682	9905-12-356-3030	23	33
D9913	029271683	9905-12-356-3028	17	7
D9913	029271684	9905-12-356-1919	43	1
D9913	029271685	9905-12-357-2520	44	2
D9913	029271686	9905-12-357-2521	44	3
D9913	029271687	9905-12-357-2519	44	1
D9913	029271688	9905-12-357-2522	44	4
D9913	029271689	9905-12-356-1918	43	2
D9913	029271690	9905-12-357-2523	44	5
D9913	029271691	9905-12-357-2518	44	6
D9913	029660102	4010-12-356-1914	1A	1
D2497	05.017-8.5X1.5	5331-12-356-3626	22	2
		5331-12-356-3626	22	6
		5331-12-356-3626	22	10
		5331-12-356-3626	27	6
		5331-12-356-3626	27	8
		5331-12-356-3626	27	13
		5331-12-356-3626	27	15
		5331-12-356-3626	27	17
		5331-12-356-3626	28	5
		5331-12-356-3626	28	9
		5331-12-356-3626	28	10
		5331-12-356-3626	28	16
		5331-12-356-3626	29	5
		5331-12-356-3626	29	7
72582	11502811	5310-01-129-6737	7	3
D9913	115215	5305-12-355-9907	23	1
D9913	117510	5315-12-356-3213	7	18
D9913	117768	5305-12-356-6173	25	22
D9913	119196	4730-12-356-2559	28	11
D9913	129453	5315-12-356-3214	6	27
D2497	15-006-10-6	4730-12-162-8809	26	6
D2497	15-006-10-6-1	4730-12-180-1202	27	3
C0551	2102-01-14.48	4730-12-305-4824	23	29
D9728	23311060065	5310-12-318-7526	24	4
C0856	310833	5331-12-352-5127	25	15
C0856	313377	5330-12-352-5129	25	16
81343	4-010111B	4730-00-011-8537	22	3
U0759	41031420	5310-99-739-9500	13	3
		5310-99-739-9500	37	3
D8905	461 0067		11	5
D2497	5601-6-6S	4730-12-180-1656	27	2
D2497	5602-6-6S	4730-12-180-1657	26	7

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CAGE	PART NUMBER	STOCK NUMBER	FIGURE NO	ITEM NO
D2497	5659-6	5340-12-162-8470	27	1
C0856	595146	5120- - -	45	4
D9913	701718701	5365-12-356-2200	7	10
D9913	904061101		25	21
D9913	904065503		25	9
D9913	904066111		25	12
D9913	904067007		25	19
D9913	909149206		46	3
D9913	909413810	4820-12-356-3476	25	7
D9913	909414033		23	25
D9913	909414034		23	16
D9913	909511604	5305-12-179-8250	3	12
		5305-12-179-8250	32	12
D9913	909550594	5320-99-983-0535	7	2
		5320-99-983-0535	11	1
D9913	909553138	5310-12-356-4163	8	9
		5310-12-356-4163	36	9
D9913	909553174	5310-12-356-4164	39	5
D9913	909565746	5325-12-153-6230	25	24
D9913	909571259	5360-12-356-2241	8	5
		5360-12-356-2241	36	5
D9913	909571801	5340-12-356-7032	17	5
D9913	909572038	5360-12-179-8257	12	11
D9913	909572039	5360-12-179-8258	12	10
D9913	909572069	5360-12-356-2242	23	42
D9913	909572070	5360-12-356-8384	23	50
		5360-12-356-8384	23	68
D9913	909573027	5360-12-357-3819	35	15
D9913	909591014	5340-12-142-8210	8	19
		5340-12-142-8210	36	19
D9913	909591099	5325-12-147-9354	1A	7
D9913	909591289	5325-12-356-5393	33	20
D9913	909591430	5325-12-356-5395	10	6
D9913	909591449	5325-12-356-5396	14	11
		5325-12-356-5396	38	11
D9913	909610267	4730-12-356-2558	25	4
D9913	909610338	4730-12-340-4132	25	2
D9913	909617880	4730-12-356-2560	28	14
		4730-12-356-2560	29	10
D9913	909621916		8	10
			36	10
D9913	909621917		8	10
			36	10
D9913	909775212		23	27
D9913	909823011	3040-12-356-3959	25	13
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		4030-12-356-3614	36	23
		4030-12-356-3614	36	30
D9913	909661080		8	4
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D9913	909667518	4010-12-355-9346	8	22
		4010-12-355-9346	8	31
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D9913	909721607	4720-12-356-2557	26	4
D9913	909724854	4720-12-356-2080	26	5
D9913	909724855	4720-12-356-2086	22	1
D9913	909724856	4720-12-356-2081	27	5
		4720-12-356-2081	27	14
		4720-12-356-2081	28	15
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D9913	909775199	5331-12-356-2892	25	10
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		5310-12-355-8440	23	55
		5310-12-356-0258	18	5
D9913	938115	5310-12-356-0258	19	1
		5310-12-356-0258	24	7
		5310-12-356-0258	11	15
D9913	938263		11	15
D9913	938315	5310-12-144-4164	35	14
D9913	938351	5310-12-356-0257	14	6
		5310-12-356-0257	38	6
		5310-12-356-0257	20	1
D9913	938668		42	13
D9913	939237	5310-12-355-8644	23	32
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		5310-12-356-3623	23	46
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EXPENDABLE AND DURABLE ITEMS LIST

THIS WORK PACKAGE SUPERSEDES WP 0134 00, DATED 8 APRIL 2003

INTRODUCTION

This work package lists expendable and durable items required to operate and maintain the Improved Ribbon Bridge (IRB). This list is for information only and is not authority to requisition the listed items. These items are authorized 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

Column (1) - Item Number. Number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., Use cap and plug set (Item 05, WP 0134 00).

Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item (C = Operator/Crew, O = Unit, F = Direct Support, H = General Support, D = Depot).

Column (3) - National Stock Number (NSN). The NSN assigned to the item to be used to requisition it.

Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N). This column provides information necessary to identify the item.

Column (5) - Unit of Measure (U/M). This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List.

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER	(5) U/M
1	O	8040-01-038-5043	ADHESIVE: cement (11083) 5H2471 8-Ounce Can	OZ
2	O	8040-01-275-2531	ADHESIVE: Permabond 102 (61078) 1-Kit	KT
3	O	8040-00-833-9563	ADHESIVE: silicone rubber, Non-Hardening (94833) 52498 1-Kit	KT
3.1	O	TBD	ANTI-CORROSIVE COMPOUND: Tectyl 5720W	KT
4	O	8030-00-155-6444	ANTISEIZE COMPOUND: (15145) NSA16 16-Ounce Can	OZ
5	O	5340-00-450-5718	CAP AND PLUG SET: (19207) 10935405 1 Set	SET
6	C	6850-01-381-4423	CLEANING SOLVENT COMPOUND: SKYSOL-100 (0K209) 5-Gallon Can	GAL.
7	C	7920-00-044-9281	CLOTH: cleaning, lint-free, general purpose, white (58536) A-A-59323 10-Pound Box	LB
8	O	8030-00-244-1297	CORROSION PREVENTIVE COMPOUND: grade II, soft film (81349) MIL-PRF-16173 1-Gallon Can	GAL.
9	C	7930-00-282-9699	DETERGENT, GENERAL: liquid (81349) MIL-D-16791 1-Gallon Can	GAL.
10	C	9150-01-197-7693	GREASE: automotive and artillery: (81349) MIL-PRF-10924 14-Ounce Cartridge	OZ
11	C	9150-01-197-7690	GREASE: automotive and artillery: (81349) MIL-PRF-10924 1-3/4-Pound Can	LB
12	C	9150-00-145-0268	GREASE: aircraft general purpose (81349) MIL-PRF-81322 6.5-Pound Can	LB

Table 1. Expendable and Durable Items List (Contd).

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER	(5) U/M
13	C	9150-00-234-5197	LUBRICATING OIL, WIRE ROPE AND EXPOSED GEAR: (81348) VV-L-751 5-Pound Can	LB
14	C	9150-00-188-9862	LUBRICATING OIL, ENGINE: OE/HDO 15W40, multi-purpose (81349) MIL-PRF-2104 55-Gallon Drum	GAL.
15	O	8030-01-218-0321	SEALANT, PIPE, TEFLON (sealing compound) (02570) MS-PTS-50 Paste or (61603) 392030 Liquid 50-cc Tube	TU
		8030-01-054-0740	6 50-cc Bottles	BX
16	O	8030-01-025-1692	SEALING COMPOUND thread-locking, medium strength (81349) MIL-S-46163, type II, grade N 250-CC Bottle	CC
17	C	TBD	ULTRA-SAFE 271 (Pump Fluid) (D9913) 029102714 10 Liter Can	L
18	O	TBD	UNLIKE METAL COMPOUND (660 421) GD677	QT
19	O	TBD	NON-SKID SURFACE COMPOUND ARDOPEN - KS55	TBD
20	O	6260-01-196-0637	CHEM-LITE HOLDER (OBY83) 9-06370	BX
21	O	6260-01-074-4229	CHEM-LITE TUBE GREEN (A-A-55134-B) 10 Per box	BX
		6260-01-175-5559	RED (A-A-55134-E) 10 Per box	BX
22	C	9150-00-935-4018	GREASE: MOLYBDENUM (07950) MIL-G-21164 14 oz Tube	TU
23	F	9535-00-855-6919	PLATE, METAL (ALUMINUM) (81343) AMS-QQ-A-250/11	IN
24	F	8010-00-281-7399	ALUMINUM OXIDE PRIMER (81349) DOD-P-17545	QT
25	F	8010-01-260-7481	POLYURETHANE COATING, GREEN (81349) MIL-C-46168	QT

Table 1. Expendable and Durable Items List (Contd).

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGE, PART NUMBER	(5) U/M
26	F	8010-01-260-0913	POLYURETHANE COATING, BLACK (81349) M46168-4-37030-1Q1/2P	QT
27	F	8010-01-260-7482	POLYURETHANE COATING, BROWN (81349) M46168-4-30051-1Q1/2P	QT
28	F	8010-01-306-9681	POLYURETHANE COATING, TAN (81349) M46168-4-33446-1Q1/2P	QT
29	F	8010-01-144-9883	POLYURETHANE COATING, WHITE (81349) M46168-4-37875-1Q1/2P	QT

END OF WORK PACKAGE

TOOL IDENTIFICATION LIST

THIS WORK PACKAGE SUPERSEDES WP 0135 00, DATED 8 APRIL 2003

SCOPE

This work package lists all common tools and supplements and special tools/fixtures needed to maintain the Improved Ribbon Bridge (IRB).

EXPLANATION OF COLUMNS

Column (1) - Item Number. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Disc Grinder (Item 02, WP 0135 00)).

Column (2) - Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gauge, depth micrometer).

Column (3) - National Stock Number. This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

Column (4) - Part Number/CAGEC. 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. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) - Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this work package.

Table 1. Common Tool Identification List.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NO./ CAGEC	(5) REFERENCE
1	Deleted			
2	Disc Grinder	5130-00-596-9728	6112-90	4910-95-A62
3	General Mechanic's Tool Kit	5180-00-177-7033		SC5180-90-CL-N26
4	Common No. 2 Tool Kit	4910-00-754-0650		SC4910-95-CLA-72
5	Tool Kit, Coil Thread Insert	5120-01-113-1544		SC4910-95-A72
6	IRB Hoisting Gear (BII)	3940-12-359-3444	029186806 D9913	
7	Forward Repair System (FRS)	4940-01-463-7940		

Table 2. Special Tool and Test Equipment Identification List.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NO./ CAGEC	(5) REFERENCE
1	Leak Testing Equipment	6685-12-357-2615	D9913/029107606	
2	Flat Spanner Filter Wrench	5120-12-356-7965	595146/C086	

END OF WORK PACKAGE

GLOSSARY

The following is a list of abbreviations/acronyms and their definitions appearing in this manual. Other terms found in this manual are defined in the paragraph from where they first appear. Refer to MIL-STD-12 for a complete list of standard military abbreviations.

BAP – Bridge Adapter Pallet
BII – Basic Issue Items
CAGEC – Commercial and Government Entity Code
CBT – Common Bridge Transporter
cm – centimeter
DS – Direct Support
EIC – End Item Code
EIR – Equipment Improvement Recommendation
FCG – Functional Group Code
ft – foot
GDSBS – General Dynamics Santa Bárbara Sistemas
GS – General Support
HEMTT – Heavy Expanded Mobility Tactical Truck
in. – inch
IBC – Improved Boat Cradle
IFB – Improved Float Bridge
IRB – Improved Ribbon Bridge
IRB-I – Improved Ribbon Bridge Interior Bay
IRB-R – Improved Ribbon Bridge Ramp Bay
kg – kilogram
lb – pound
MAC – Maintenance Allocation Chart
MLC – Military Load Class
MM – Millimeters
N•m – Newton-millimeters
NSN – National Stock Number
PLS – Palletized Load System
PMCS – Preventive Maintenance Checks and Services
POC – Point of Contact
PQDR – Product Quality Deficiency Report
RMC – Remote Control Unit
RPSTL – Repair Parts and Special Tools List
SMR – Sources, Maintenance, and Recoverability
TM – Technical Manual
TMDE – Test, Measuring, and Diagnostic Equipment
WARCO – Warranty Coordinator

GLOSSARY (Contd)

The following is a list of nomenclature used in this manual and the corresponding common nomenclature used in the field.

TM NOMENCLATURE	COMMON NOMENCLATURE
Bay trunnions	Bay tiedown pins
Bellcrank	Lifting lug or lifting eye
Connector link	Crowfoot
Coupling device	Ramp dolly
Crowbar	Tanker bar
Foldlock	Foldlock latch
Inner ponton	Roadway ponton
IRB hoisting gear	Lifting sling
Lifting lug	Lifting eye
Lower lock-drive pin	Lower lockdrive
Lower main coupling	Yoke
Outer ponton lock	Roadway to bow ponton latch
Outer ponton trunnion	Front/rear bay tie-down pin
Outer ponton	Bow ponton
Receptacle block	Connector receptacle
Roadway tool	J-hook
Striker receptacle	Strike catch
T-wrench	T-bar
Travel latch locating receptacle	Latch receptacle
Upper coupling lever, longitudinal	Bay-to-bay connector/dogbone
Upper coupling lever, transverse	Roadway connector/dogbone
Upper coupling receptacle block	Connector receptacle
Upper coupling receptacle	Connector receptacle

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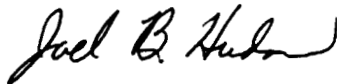
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By Order of the Secretary of the Army:

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Administrative Assistant to the
Secretary of the Army
0300805

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 256763, requirements for TM 5-5420-278-24&P.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.	Use Part II (reverse) for Repair Parts and Special Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE: 14 Sept. 2002
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TO: <i>(Forward to proponent of publication or form) (include ZIP code)</i> AMSTA-LC-CI Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: <i>(Activity and location) (include ZIP code)</i> Co. B, 1st BN, 2nd Brigade Ft. Hood, TX 76445
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PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER TM 5-5420-278-24&P	DATE Dec 2003	TITLE IMPROVED RIBBON BRIDGE (IRB)
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ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON <i>(Provide exact wording of recommended changes, if possible).</i>
	0032 00-7					Illustration in upper right corner needs to show O-ring.
	0036 00-4					Need to fill fluid system after installing pump in step 9, and before installing or lowering yoke.
<h1>SAMPLE</h1>						

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE, OR TITLE Pat Smith	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION AV272-4162	SIGNATURE <i>Pat Smith</i>
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TO: <i>(Forward direct to addressee listed in publication)</i> AMSTA-LC-CI Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: <i>(Activity and location)</i> <i>(include ZIP code)</i>	DATE:
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PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER TM 5-5420-278-24&P	DATE Dec 2003	TITLE IMPROVED RIBBON BRIDGE (IRB)
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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	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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TO: <i>(Forward direct to addressee listed in publication)</i> AMSTA-LC-CI Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: <i>(Activity and location)</i> <i>(include ZIP code)</i>	DATE:
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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

- 1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
- 1 Meter = 100 Centimeters = 1,000 Millimeters = 39.37 Inches
- 1 Kilometer = 1,000 Meters = 0.621 Miles

SQUARE MEASURE

- 1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
- 1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
- 1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

- 1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches
- 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

LIQUID MEASURE

- 1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
- 1 Liter = 1,000 Milliliters = 33.82 Fluid Ounces

TEMPERATURE

- Degrees Fahrenheit (F) = $^{\circ}\text{C} \cdot 9 \div 5 + 32$
- Degrees Celsius (C) = $\text{F}^{\circ} - 32 \cdot 5 \div 9$
- 212° Fahrenheit is equivalent to 100° Celsius
- 90° Fahrenheit is equivalent to 32.2° Celsius
- 32° Fahrenheit is equivalent to 0° Celsius

WEIGHTS

- 1 Gram = 0.001 Kilograms = 1,000 Milligrams = 0.035 Ounces
- 1 Kilogram = 1,000 Grams = 2.2 Lb
- 1 Metric Ton = 1,000 Kilograms = 1 Megagram = 1.1 Short Tons

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Millimeters	25.4
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.4536
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds Per Square Inch	Kilopascals	6.895
Miles Per Gallon	Kilometers Per Liter	0.425
Miles Per Hour	Kilometers Per Hour	1.609
TO CHANGE	TO	MULTIPLY BY
Millimeters	Inches	0.03937
Centimeters	Inches	0.3937
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.2046
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds Per Square Inch	0.145
Kilometers Per Liter	Miles Per Gallon	2.354
Kilometers Per Hour	Miles Per Hour	0.621

