

TM 5-5420-278-23&P

FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR

**IMPROVED RIBBON BRIDGE (IRB)
RAMP BAY**

M16

NSN 5420-01-470-5825 (EIC XMT)

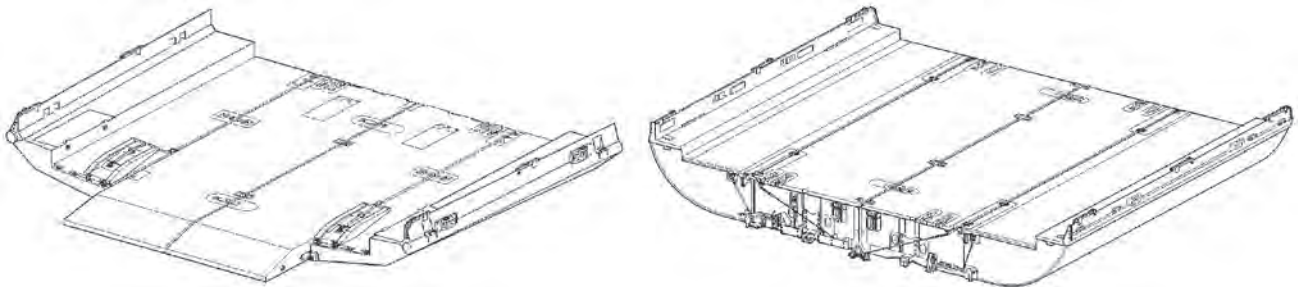
P/N 12478918

INTERIOR BAY

M17

NSN 5420-01-470-5824 (EIC XMS)

P/N 12478919



SUPERSEDURE NOTICE: TM 5-5420-278-23&P dated 30 December 2015 supersedes TM 5-5420-278-24&P dated 8 April 2003, including all changes.

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

**HEADQUARTERS, DEPARTMENT OF THE ARMY
30 December 2015**

WARNING SUMMARY

FIRST AID

For first aid information, refer to FM 4-25.11.

For hazardous materials, refer to the label and/or Material Safety Data Sheet (MSDS).

EXPLANATION OF SAFETY WARNING ICONS



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



FALLING PARTS - Arrow bouncing off human shoulder and head shows that falling parts present a danger to life or limb.



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



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



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



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



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



HEAVY PARTS - Heavy object pinning human figure against wall shows that heavy, moving parts present a danger to life or limb.



HELMET PROTECTION - Arrow bouncing off head with helmet shows that falling parts present a danger.

WARNING SUMMARY - Continued

EXPLANATION OF SAFETY WARNING ICONS - Continued



SHARP OBJECT - Pointed object in hand shows that a sharp object presents a danger to limb.

GENERAL SAFETY WARNING DESCRIPTIONS

WARNING

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

WARNING



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

WARNING



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

WARNING



Connecting link will drop down suddenly once pin is removed. Ensure connecting link is held or secured. Failure to comply may result in personnel injury or death and/or damage to equipment.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTIONS - Continued

WARNING



Ensure proper lifting techniques are followed when removing or installing heavy components. Use assistants and/or suitable lifting device when lifting heavy parts of components. Failure to comply may result in personnel injury or death and/or damage to equipment.

WARNING



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

WARNING



Relieve residual pressure on fluid system before disconnecting lines. Failure to comply may result in personnel injury or death and/or damage to equipment.

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 comply may result in personnel injury or death and/or damage to equipment.

WARNING



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

WARNING



Eye shields must be worn when grinding, drilling and/or cleaning with a wire brush. Flying rust and metal particles may result in personnel injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTIONS - Continued

WARNING



Ensure longitudinal and transverse couplings and swivel hooks are engaged before performing inspection. Failure to comply may result in personnel injury or death and/or damage to equipment.

WARNING



Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum. Failure to comply may result in personnel injury or death and/or damage to equipment.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNING DESCRIPTIONS - Continued

EXPLANATION OF HAZARDOUS MATERIALS ICONS



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



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



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



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



POISON - Skull and crossbones shows that a material is poisonous or is a danger to life.



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

HAZARDOUS MATERIALS WARNING DESCRIPTIONS

WARNING



Improper cleaning methods and use of unauthorized cleaning solvents may result in personnel injury or death and/or damage to equipment.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS WARNING DESCRIPTIONS - Continued

WARNING



Wear leather gloves when mixing or coating with non-slip material. Skin irritation may occur if procedure is performed without leather gloves.

- Ensure proper ventilation in workshops and confined areas.
- Wash hands and wrists and rub with skin protectant ointment before and after performing task.

Failure to comply may result in personnel injury or death.

WARNING



Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Seek medical attention in the event of an injury. Failure to comply may result in personnel injury, death and/or damage to equipment.

WARNING



Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

WARNING SUMMARY - Continued

HAZARDOUS MATERIALS WARNING DESCRIPTIONS - Continued

WARNING



Vehicles are finished with a Chemical Agent Resistant Coating (CARC). CARC contains isocyanates, which are highly irritating to the skin and respiratory system. Breathing CARC vapor or dried paint dust can cause coughing, shortness of breath, burning sensation in throat and nose, watering of eyes, pain during respiration, and chest tightness. Skin contact with particulates can cause itching or redness of skin. Sensitivity to isocyanates may increase from repeated exposure. Use the following precautions to prevent injury from exposure:

- Never weld or cut CARC-coated surfaces. Grinding or sanding CARC-coated surfaces will create harmful dust.
- Personnel who have lung or breathing problems or who have had a reaction to isocyanates must not be in any area where CARC painting operations are performed or CARC dust particles are present.
- CARC painting operations must be performed only by qualified painters wearing protective gear and respirators and working in fully equipped facilities. All personnel in the area must wear high-efficiency air purifying respirators, protective goggles, gloves, and other protective clothing. Thoroughly wash all clothing before reuse.

Failure to comply may result in personnel injury or death.

WARNING



Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supersedes TM 5-5420-278-24&P dated 08 April 2003. Zero in the "Change No." column indicates an original page or work package.

Date of issue for the revised manual is:

Original 30 December 2015

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 46 AND TOTAL NUMBER OF WORK PACKAGES IN THIS MANUAL IS 131 CONSISTING OF THE FOLLOWING:

Page/WP No.	Change No.	Page/WP No.	Change No.
Front Cover	0	WP 0033 (4 pages)	0
a-g/h blank	0	WP 0034 (2 pages)	0
i-xix/blank	0	WP 0035 (6 pages)	0
Chapter 1 Title Page (2 pages)	0	WP 0036 (8 pages)	0
WP 0001 (8 pages)	0	WP 0037 (6 pages)	0
WP 0002 (12 pages)	0	WP 0038 (4 pages)	0
WP 0003 (2 pages)	0	WP 0039 (6 pages)	0
Chapter 2 Title Page (2 pages)	0	WP 0040 (4 pages)	0
WP 0004 (2 pages)	0	WP 0041 (4 pages)	0
WP 0005 (4 pages)	0	WP 0042 (6 pages)	0
WP 0006 (4 pages)	0	WP 0043 (6 pages)	0
WP 0007 (2 pages)	0	WP 0044 (8 pages)	0
WP 0008 (2 pages)	0	WP 0045 (8 pages)	0
WP 0009 (2 pages)	0	WP 0046 (4 pages)	0
WP 0010 (2 pages)	0	WP 0047 (4 pages)	0
WP 0011 (4 pages)	0	WP 0048 (6 pages)	0
WP 0012 (2 pages)	0	WP 0049 (6 pages)	0
WP 0013 (4 pages)	0	WP 0050 (10 pages)	0
WP 0014 (4 pages)	0	WP 0051 (6 pages)	0
WP 0015 (2 pages)	0	WP 0052 (4 pages)	0
WP 0016 (2 pages)	0	WP 0053 (4 pages)	0
WP 0017 (2 pages)	0	WP 0054 (4 pages)	0
WP 0018 (2 pages)	0	WP 0055 (8 pages)	0
WP 0019 (2 pages)	0	WP 0056 (4 pages)	0
Chapter 3 Title Page (2 pages)	0	WP 0057 (4 pages)	0
WP 0020 (4 pages)	0	WP 0058 (6 pages)	0
WP 0021 (34 pages)	0	WP 0059 (4 pages)	0
WP 0022 (36 pages)	0	WP 0060 (6 pages)	0
Chapter 4 Title Page (2 pages)	0	WP 0061 (2 pages)	0
WP 0023 (2 pages)	0	WP 0062 (4 pages)	0
WP 0024 (4 pages)	0	WP 0063 (8 pages)	0
WP 0025 (14 pages)	0	WP 0064 (10 pages)	0
WP 0026 (6 pages)	0	WP 0065 (4 pages)	0
WP 0027 (6 pages)	0	WP 0066 (4 pages)	0
WP 0028 (8 pages)	0	WP 0067 (26 pages)	0
WP 0029 (8 pages)	0	WP 0068 (8 pages)	0
WP 0030 (6 pages)	0	WP 0069 (4 pages)	0
WP 0031 (6 pages)	0	WP 0070 (2 pages)	0
WP 0032 (4 pages)	0	WP 0071 (12 pages)	0

LIST OF EFFECTIVE PAGES/WORK PACKAGES - CONTINUED

Page/WP No.	Change No.	Page/WP No.	Change No.
WP 0072 (6 pages)	0	WP 0122 (4 pages)	0
Chapter 5 Title Page (2 pages)	0	WP 0123 (4 pages)	0
WP 0073 (10 pages)	0	WP 0124 (8 pages)	0
WP 0074 (4 pages)	0	WP 0125 (8 pages)	0
WP 0075 (4 pages)	0	Chapter 6 Title Page (2 pages)	0
WP 0076 (4 pages)	0	WP 0126 (4 pages)	0
WP 0077 (4 pages)	0	WP 0127 (4 pages)	0
WP 0078 (4 pages)	0	WP 0128 (8 pages)	0
WP 0079 (4 pages)	0	WP 0129 (4 pages)	0
WP 0080 (6 pages)	0	WP 0130 (4 pages)	0
WP 0081 (4 pages)	0	WP 0131 (4 pages)	0
WP 0082 (4 pages)	0	INDEX-1 – INDEX-4	0
WP 0083 (4 pages)	0	Back Cover	0
WP 0084 (4 pages)	0		
WP 0085 (4 pages)	0		
WP 0086 (4 pages)	0		
WP 0087 (4 pages)	0		
WP 0088 (4 pages)	0		
WP 0089 (4 pages)	0		
WP 0090 (4 pages)	0		
WP 0091 (4 pages)	0		
WP 0092 (4 pages)	0		
WP 0093 (4 pages)	0		
WP 0094 (4 pages)	0		
WP 0095 (4 pages)	0		
WP 0096 (4 pages)	0		
WP 0097 (4 pages)	0		
WP 0098 (6 pages)	0		
WP 0099 (4 pages)	0		
WP 0100 (4 pages)	0		
WP 0101 (4 pages)	0		
WP 0102 (4 pages)	0		
WP 0103 (4 pages)	0		
WP 0104 (4 pages)	0		
WP 0105 (4 pages)	0		
WP 0106 (4 pages)	0		
WP 0107 (4 pages)	0		
WP 0108 (4 pages)	0		
WP 0109 (4 pages)	0		
WP 0110 (4 pages)	0		
WP 0111 (4 pages)	0		
WP 0112 (4 pages)	0		
WP 0113 (4 pages)	0		
WP 0114 (4 pages)	0		
WP 0115 (4 pages)	0		
WP 0116 (4 pages)	0		
WP 0117 (4 pages)	0		
WP 0118 (4 pages)	0		
WP 0119 (4 pages)	0		
WP 0120 (4 pages)	0		
WP 0121 (4 pages)	0		

HEADQUARTERS, DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 December 2015

TECHNICAL MANUAL
FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR
IMPROVED RIBBON BRIDGE (IRB)
FOR
RAMP BAY
M16
NSN 5420-01-470-5825 (EIC XMT)
P/N 12478918
INTERIOR BAY
M17
NSN 5420-01-470-5824 (EIC XMS)
P/N 12478919

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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

Current as of January 2013

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TABLE OF CONTENTS

	Page No.
	<u>WP Sequence No.</u>
HOW TO USE THIS MANUAL.....	xviii
Chapter 1 - GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION	
General Information.....	WP 0001
Figure 1. M16 Ramp Bay on CBT, Typical.....	0001-1
Figure 2. M16 Ramp Bay, Folded and Unfolded.....	0001-2
Figure 3. M17 Interior Bay, Folded and Unfolded.....	0001-2
Equipment Description and Data.....	WP 0002
Figure 1. Ramp Bay, Unfolded.....	0002-2
Table 1. Ramp Bay Equipment Features.....	0002-2
Figure 2. Interior Bay, Unfolded.....	0002-4
Table 2. Interior Bay Equipment Features.....	0002-4
Table 3. IRB Equipment Data.....	0002-5
Figure 3. M16 Ramp Bay Dimensions, Folded and Unfolded.....	0002-8
Figure 4. M17 Interior Bay Dimensions, Folded and Unfolded.....	0002-8
Figure 5. Pump Operation Data Plate.....	0002-9
Figure 6. Pump Control Valve Data Plate.....	0002-10
Figure 7. Ramp Bay Data Plate Locations.....	0002-11
Figure 8. Interior Bay Data Plate Locations.....	0002-12
Theory of Operation.....	WP 0003
Chapter 2 - TROUBLESHOOTING PROCEDURES	
Troubleshooting Index.....	WP 0004
Troubleshooting Procedure – Bay Will Not Fold Automatically During Retrieval.....	WP 0005
Troubleshooting Procedure - Bay Will Not Unfold Automatically When Launched.....	WP 0006
Troubleshooting Procedure - Foldlock Will Not Engage or Hold When Engaged.....	WP 0007
Troubleshooting Procedure - Handrail Stanchion Does Not Hold When Set.....	WP 0008
Troubleshooting Procedure - Inner or Outer Pontoon Leaking.....	WP 0009
Troubleshooting Procedure - Lower Coupling Jammed and Will Not Line Up.....	WP 0010
Troubleshooting Procedure - Lower Lock-Drive Will Not Engage.....	WP 0011

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Troubleshooting Procedure - Outer Pontoon Lock Will Not Engage or Hold When Engaged (Interior Bay Only).....	WP 0012
Troubleshooting Procedure - Pump System Will Not Hold Bay in Raised Position (Ramp Bay Only).....	WP 0013
Troubleshooting Procedure - Pump System Will Not Raise Bay (Ramp Bay Only).....	WP 0014
Troubleshooting Procedure - Ramp or Interior Bay Trunnions Damaged.....	WP 0015
Troubleshooting Procedure - Swivel Hook Will Not Engage or Hold When Engaged (Ramp Bay Only).....	WP 0016
Troubleshooting Procedure - Travel Latch Will Not Release.....	WP 0017
Troubleshooting Procedure - Upper Coupling Will Not Engage in Receptacle Block.....	WP 0018
Troubleshooting Procedure - Upper Coupling Will Not Release From Receptacle Block.....	WP 0019
 Chapter 3 - PREVENTIVE MAINTENANCE CHECKS AND SERVICES	
Preventive Maintenance Checks and Services (PMCS) Introduction.....	WP 0020
Table 1. Visual Detection of Corrosion.....	0020-2
Ramp Bay Preventive Maintenance Checks and Services (PMCS).....	WP 0021
Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay.....	0021-1
Figure 1. PMCS for Ramp Bay.....	0021-2
Figure 2. Left Front Trunnion.....	0021-3
Figure 3. Left Outer Pontoon.....	0021-4
Figure 4. Left Rear Trunnion and Wear Cap.....	0021-5
Figure 5. Left Drain Plug.....	0021-5
Figure 6. Left Ramp Plate.....	0021-6
Figure 7. Left Stabilizer Assembly.....	0021-6
Figure 8. Left Stowage Compartment.....	0021-7
Figure 9. Left and Right Lower Roadway Pontoon Drain Plugs.....	0021-7
Figure 10. Right Stabilizer Assembly.....	0021-8
Figure 11. Right Stowage Compartment.....	0021-8
Figure 12. Right Ramp Plate.....	0021-9

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 13. Right Drain Plug.....	0021-9
Figure 14. Right Rear Trunnion and Wear Cap.....	0021-10
Figure 15. Right Outer Pontoon.....	0021-10
Figure 16. Right Front Trunnion.....	0021-11
Figure 17. Right Outer Pontoon, Connecting End.....	0021-12
Figure 18. Right Foldlock Assembly.....	0021-13
Figure 19. Right Unfolding Mechanism and Torsion Bar.....	0021-13
Figure 20. Right Double-Eye Yoke.....	0021-14
Figure 21. Right Hydraulic Hoses.....	0021-15
Figure 22. Unfolding Cable Assembly.....	0021-16
Figure 23. Right Inner Pontoon, Connecting End.....	0021-16
Figure 24. PMCS for Ramp Bay, Top View.....	0021-17
Figure 25. Load Receiving Pin, Front.....	0021-18
Figure 26. Handrail Assemblies.....	0021-19
Figure 27. Load Receiving Pin, Rear.....	0021-19
Figure 28. Rear Lifting Lug.....	0021-20
Figure 29. Front Lifting Lug.....	0021-20
Figure 30. Left Inner Pontoon, Connecting End.....	0021-21
Figure 31. Left Unfolding Cable Assembly.....	0021-21
Figure 32. Left Single Yoke.....	0021-22
Figure 33. Travel Latch.....	0021-23
Figure 34. Left Unfolding Mechanism and Torsion Bar.....	0021-23
Figure 35. Left Outer Pontoon, Connecting End.....	0021-24
Figure 36. Left Foldlock Assembly.....	0021-25
Figure 37. PMCS, Ramp Bay Unfolded.....	0021-25
Figure 38. Right Front Swivel Hook Assembly and Bilge Plugs.....	0021-26
Figure 39. Right Front Longitudinal Upper Coupling.....	0021-27
Figure 40. Front Transverse Upper Coupling.....	0021-27

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 41. Fluid Pump Covers (Right Pump Shown).....	0021-28
Figure 42. Left Front Longitudinal Upper Coupling.....	0021-29
Figure 43. Left Front Swivel Hook Assembly and Bilge Plugs.....	0021-30
Figure 44. Left Belay Cleat.....	0021-30
Figure 45. Left Personnel Walkway and Roadway.....	0021-31
Figure 46. Rear Transverse Upper Coupling.....	0021-32
Figure 47. Left and Right Rear Swivel Plates.....	0021-32
Figure 48. Right Personnel Walkway and Roadway.....	0021-33
Figure 49. Right Belay Cleat.....	0021-34
Interior Bay Preventive Maintenance Checks and Services (PMCS).....	WP 0022
Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay.....	0022-1
Figure 1. PMCS for Interior Bay.....	0022-2
Figure 2. Left Front Trunnion.....	0022-3
Figure 3. Left Outer Pontoon.....	0022-4
Figure 4. Left Rear Trunnion.....	0022-4
Figure 5. Left Drain Plug.....	0022-5
Figure 6. Left Outer Pontoon Lock Assembly.....	0022-5
Figure 7. Left Outer Pontoon, Rear End.....	0022-6
Figure 8. Left Foldlock Assembly, Rear End.....	0022-6
Figure 9. Left Double-Eye Yoke.....	0022-7
Figure 10. Left Unfolding Cable Assembly.....	0022-8
Figure 11. Left Inner Pontoon, Rear End.....	0022-9
Figure 12. Left Unfolding Mechanism.....	0022-9
Figure 13. Right Inner Pontoon, Front End.....	0022-10
Figure 14. Right Single-Eye Yoke.....	0022-11
Figure 15. Travel Latch.....	0022-11
Figure 16. Cable Guide.....	0022-12

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 17. Left and Right Roadway Drain Plugs.....	0022-12
Figure 18. Right Unfolding Cable Assembly.....	0022-13
Figure 19. Right Outer Pontoon Lock Assembly.....	0022-13
Figure 20. Right Outer Pontoon, Rear End.....	0022-14
Figure 21. Right Foldlock Assembly, Rear End.....	0022-14
Figure 22. Right Drain Plug.....	0022-15
Figure 23. Right Rear Trunnion.....	0022-15
Figure 24. Right Outer Pontoon.....	0022-16
Figure 25. Right Front Trunnion.....	0022-16
Figure 26. Right Outer Pontoon, Front End.....	0022-17
Figure 27. Right Foldlock Assembly, Front End.....	0022-17
Figure 28. Right Double-Eye Yoke.....	0022-18
Figure 29. Right Unfolding Cable Assembly.....	0022-19
Figure 30. Right Inner Pontoon, Front End.....	0022-20
Figure 31. Left Inner Pontoon, Front End.....	0022-20
Figure 32. Left Single-Eye Yoke.....	0022-21
Figure 33. Travel Latch.....	0022-22
Figure 34. Cable Guide.....	0022-22
Figure 35. Left Unfolding Mechanism.....	0022-23
Figure 36. Left Unfolding Cable Assembly.....	0022-23
Figure 37. Left Foldlock Assembly, Front End.....	0022-24
Figure 38. Left Outer Pontoon, Front End.....	0022-24
Figure 39. Left Outer Pontoon Lock Assembly.....	0022-25
Figure 40. PMCS for Interior Bay, Top View.....	0022-25
Figure 41. Load Receiving Pin, Front.....	0022-26
Figure 42. Load Receiving Pin, Rear.....	0022-27
Figure 43. Rear Lifting Lug.....	0022-28

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 44. Front Lifting Lug.....	0022-29
Figure 45. PMCS Interior Bay, Unfolded.....	0022-29
Figure 46. Right Outer Pontoon Lock.....	0022-30
Figure 47. Right and Inner Pontoon Bilge Plugs.....	0022-30
Figure 48. Receptacle Blocks - Longitudinal Upper Coupling Inboard.....	0022-31
Figure 49. Handrail Assemblies.....	0022-31
Figure 50. Transverse Upper Coupling.....	0022-32
Figure 51. Receptacle Blocks - Longitudinal Upper Coupling Outboard.....	0022-33
Figure 52. Left Inner and Outer Pontoon Bilge Plugs.....	0022-33
Figure 53. Left Outer Pontoon Lock.....	0022-34
Figure 54. Belay Cleat.....	0022-34
Figure 55. Left Personnel Walkway and Roadway.....	0022-35
 Chapter 4 - MAINTENANCE INSTRUCTIONS	
Service Upon Receipt.....	WP 0023
Pontoon Leak Test.....	WP 0024
Figure 1. Pontoon, Bilge Plug, and Leak Tester.....	0024-1
Figure 2. Transporter Emergency Air Supply.....	0024-2
Figure 3. Pontoon, Bilge Plug, and Leak Tester.....	0024-3
Figure 4. Transporter Emergency Air Supply.....	0024-3
Ramp Bay Inner Pontoon and Outer Pontoon Separation (M16).....	WP 0025
Figure 1. Transporter Unloading Bay.....	0025-2
Figure 2. Attach Suitable Lifting Device.....	0025-2
Figure 3. Hydraulic Hose Removal.....	0025-3
Figure 4. Separating Inner pontoons.....	0025-5
Figure 5. Separating Outer pontoons.....	0025-7
Figure 6. Connecting Outer pontoons.....	0025-10
Figure 7. Lifting Pontoon.....	0025-11
Figure 8. Connecting Inner Pontoon.....	0025-12

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 9. Hydraulic Hose Installation.....	0025-13
Ramp Bay Cable Assembly Service.....	WP 0026
Figure 1. Transporter Unloading Bay.....	0026-2
Figure 2. Turnbuckle and Bell Crank.....	0026-2
Figure 3. Hydraulic Hoses.....	0026-3
Figure 4. Hydraulic Hoses and Bell Crank.....	0026-4
Figure 5. Turnbuckle.....	0026-5
Bell Crank and Eyebolt (Front and Rear) Replacement.....	WP 0027
Figure 1. Front Eyebolt and Bell Crank Removal.....	0027-3
Figure 2. Front Eyebolt and Bell Crank Installation.....	0027-5
Torsion Bar Replacement.....	WP 0028
Figure 1. Inner and Outer Pontoons.....	0028-2
Figure 2. Torsion Bar and Torsion Bar Housing.....	0028-3
Figure 3. Torsion Bar and Torsion Bar Lever.....	0028-5
Figure 4. Turnbuckle Pre-set.....	0028-6
Figure 5. Turnbuckle and Torsion Bar Adjustment.....	0028-7
Ramp Bay Unfolding Stabilizer and Brackets Replacement.....	WP 0029
Figure 1. Ramp Bay Unfolding Stabilizer and Brackets Removal.....	0029-4
Figure 2. Ramp Bay Unfolding Stabilizer and Brackets Installation.....	0029-6
Ramp Plate and Strap Repair.....	WP 0030
Figure 1. Ramp Plate Strap.....	0030-2
Figure 2. Ramp Plate.....	0030-3
Figure 3. Ramp Plate Hinges.....	0030-3
Figure 4. Ramp Plate Hinge.....	0030-4
Figure 5. Ramp Plate Installation.....	0030-4
Figure 6. Ramp Plate Strap Installation.....	0030-5
Handrail Repair.....	WP 0031

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 1. Handrail Removal.....	0031-2
Figure 2. Handrail Stanchion Removal.....	0031-3
Figure 3. Handrail Installation.....	0031-4
Figure 4. Handrail Stanchion Installation.....	0031-5
Bilge and Drain Plugs Repair.....	WP 0032
Figure 1. Bilge Plugs.....	0032-3
Figure 2. Drain Plugs.....	0032-4
Load Receiving Pin and Rafting Bracket Pin Repair.....	WP 0033
Figure 1. Rafting Bracket and Pin.....	0033-3
Trunnion Wear Cap Replacement.....	WP 0034
Figure 1. Wear Cap, Ramp Bay Only.....	0034-2
Trunnion Repair Preparation and Welding.....	WP 0035
Figure 1. Damaged Trunnion.....	0035-3
Figure 2. Trunnion Dimensions.....	0035-4
Swivel Hook and Retainer Shaft Replacement.....	WP 0036
Figure 1. Inner and Outer Pontoon.....	0036-2
Figure 2. Tension Spring and Holder.....	0036-3
Figure 3. Outer Pontoon.....	0036-3
Figure 4. Swivel Hook and Retainer Shaft Removal.....	0036-5
Figure 5. Swivel Hook and Retainer Shaft Installation.....	0036-7
Stowage Compartment Access Cover and Tiedown Straps Replacement.....	WP 0037
Figure 1. Stowage Compartment and Access Cover Removal.....	0037-3
Figure 2. Stowage Compartment and Access Cover Installation.....	0037-5
Ramp Bay Foldlock Replacement.....	WP 0038
Figure 1. Ramp Bay Foldlock.....	0038-3
Travel Latch and Receptacle Replacement.....	WP 0039
Figure 1. Travel Latch and Receptacle Removal.....	0039-3
Figure 2. Travel Latch and Receptacle Installation/Adjustment.....	0039-5

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Transverse Upper Coupling and Receptacle Blocks Replacement.....	WP 0040
Figure 1. Upper Coupling and Receptacle Blocks.....	0040-3
Swivel Plate Replacement (Ramp Only).....	WP 0041
Figure 1. Swivel Plate.....	0041-3
Pump Access Cover Replacement.....	WP 0042
Figure 1. Data Plate Replacement.....	0042-2
Figure 2. Pump Access Cover.....	0042-4
Ramp Bay Lower Lock-Drive Repair.....	WP 0043
Figure 1. Pump Selector Valve.....	0043-1
Figure 2. Lower Lock-Drive Removal.....	0043-3
Figure 3. Lower Lock-Drive Installation.....	0043-5
Draining and Filling Pump System.....	WP 0044
Figure 1. Pump and Hoses.....	0044-2
Figure 2. Attach Drain Hose.....	0044-3
Figure 3. Pump Handle and Pump Selector Handle.....	0044-4
Figure 4. Reservoir, Filler Cap, and Dipstick.....	0044-5
Figure 5. Drain Hose.....	0044-5
Figure 6. Drain Hose.....	0044-6
Figure 7. Pump Selector Handle and Filler Cap.....	0044-7
Bleeding Pump System.....	WP 0045
Figure 1. Pump and Filler Cap.....	0045-3
Figure 2. Bleed Cylinder.....	0045-5
Figure 3. Cylinder Assembly.....	0045-6
Pump Filter Element Replacement.....	WP 0046
Figure 1. Pump Hoses and Filter.....	0046-3
Pump Replacement.....	WP 0047
Figure 1. Pump Replacement.....	0047-3

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Cylinder Replacement.....	WP 0048
Figure 1. Cylinder Removal.....	0048-3
Figure 2. Cylinder Installation.....	0048-5
Hose Assemblies and Fittings Repair.....	WP 0049
Figure 1. Hose Assemblies and Fittings Removal.....	0049-3
Figure 2. Hose Assemblies and Fittings Installation.....	0049-5
Interior Bay Inner Pontoon and Outer Pontoon Separation (M17).....	WP 0050
Figure 1. Inner Pontoon Separation.....	0050-3
Figure 2. Outer Pontoon Separation.....	0050-5
Figure 3. Connecting Outer Pontoon.....	0050-7
Figure 4. Connecting Inner Pontoon.....	0050-9
Interior Bay Cable Assembly Service.....	WP 0051
Figure 1. Interior Bay Cable Removal.....	0051-3
Figure 2. Cable Assembly Installation and Adjustment.....	0051-5
Interior Bay Eyebolt Replacement.....	WP 0052
Figure 1. Eyebolt Replacement.....	0052-3
Interior Bay Unfolding Stabilizer and Brackets Replacement.....	WP 0053
Figure 1. Unfolding Stabilizer and Bracket.....	0053-3
Interior Bay Bumper Stop Replacement.....	WP 0054
Figure 1. Bumper Stop Replacement.....	0054-3
Interior Bay Outer Pontoon Lock Repair.....	WP 0055
Figure 1. Outer Pontoon Lock Removal.....	0055-3
Figure 2. Outer Pontoon Lock Installation.....	0055-5
Figure 3. Lock Lever Link Adjustment.....	0055-6
Figure 4. Lock Lever Adjustment.....	0055-7
Interior Bay Foldlock Repair.....	WP 0056
Figure 1. Interior Bay Foldlock.....	0056-3
Interior Bay Access Cover Repair.....	WP 0057

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 1. Access Cover.....	0057-3
Interior Bay Lower Main Coupling Repair.....	WP 0058
Figure 1. Lower Main Coupling Removal.....	0058-3
Figure 2. Lower Main Coupling Installation.....	0058-5
Interior Bay Bumper Replacement.....	WP 0059
Figure 1. Bumper Replacement.....	0059-3
Interior Bay Lower Lock-Drive Repair.....	WP 0060
Figure 1. Lower Lock-Drive Removal.....	0060-3
Figure 2. Lower Lock-Drive Installation.....	0060-5
Data Plate Replacement.....	WP 0061
Figure 1. Data Plate Replacement.....	0061-2
Coupling Device Wheels and Pins Repair.....	WP 0062
Figure 1. Coupling Device.....	0062-3
Preparation for Storage or Shipment.....	WP 0063
Figure 1. Top View, M16 Ramp Bay.....	0063-6
Figure 2. Top View, M17 Interior Bay.....	0063-6
General Maintenance.....	WP 0064
Threaded Insert Replacement.....	WP 0065
Figure 1. Threaded Insert Removal and Insert Preparation.....	0065-2
Figure 2. Threaded Insert Installation.....	0065-3
Crack Repair Preparation and Welding.....	WP 0066
Figure 1. Crack Repair.....	0066-2
Figure 2. V-Seam and Pool Retainer.....	0066-3
Painting.....	WP 0067
Figure 1. Lever Grease Fitting.....	0067-6
Figure 2. Bell Crank and Hydraulic Fittings.....	0067-7
Figure 3. Lock-Drive Lever Grease Fitting.....	0067-8
Figure 4. Bracket.....	0067-9

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Figure 5. Handrail Area.....	0067-10
Figure 6. Eyebolt/Lifting Lug.....	0067-11
Figure 7. Ramp Bay and Pontoon Locks.....	0067-12
Figure 8. Bay and Pontoon Lock.....	0067-13
Figure 9. Belay Cleat Area.....	0067-14
Figure 10. Lift/Tiedown Lug.....	0067-15
Figure 11. Front View, M16 Ramp Bay.....	0067-16
Figure 12. Rear View, M16 Ramp Bay.....	0067-17
Figure 13. Right Side View, M16 Ramp Bay.....	0067-18
Figure 14. Left Side View, M16 Ramp Bay.....	0067-19
Figure 15. Top View, M16 Ramp Bay.....	0067-20
Figure 16. Front View, M17 Interior Bay.....	0067-21
Figure 17. Rear View, M17 Interior Bay.....	0067-22
Figure 18. Right Side View, M17 Interior Bay.....	0067-23
Figure 19. Left Side View, M17 Interior Bay.....	0067-24
Figure 20. Top View, M17 Interior Bay.....	0067-25
Lubrication Instructions.....	WP 0068
Table 1. Symbols and Method of Application.....	0068-4
Table 2. Lubricants.....	0068-4
Table 3. Intervals and Locations — Ramp Bay.....	0068-5
Figure 1. Ramp Bay.....	0068-5
Table 4. Intervals and Locations — Interior Bay.....	0068-6
Figure 2. Interior Bay.....	0068-7
Pump System Hydraulic Schematic.....	WP 0069
Figure 1. Pump System Hydraulic Schematic.....	0069-2
Table 1. Pump System Hydraulic Schematic System Components.....	0069-3
Figure 2. Pump System Hydraulic Hose Connections.....	0069-4

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Illustrated List of Manufactured Items Introduction.....	WP 0070
Table 1. Manufactured Items Part Number Index.....	0070-2
Illustrated List of Manufactured Items.....	WP 0071
Figure 1. Handrail Guide Rope Assembly.....	0071-1
Figure 2. Bilge or Drain Plug Retainer Assembly.....	0071-2
Figure 3. Connecting Link Tool.....	0071-3
Figure 4. Setup Wedge.....	0071-4
Figure 5. Torsion Bar Pre-Adjusting Tool.....	0071-5
Figure 6. Torsion Bar Pre-Stressing Tool.....	0071-6
Figure 7. Drain Hose Assembly and Quick-Coupling Half.....	0071-7
Figure 8. Clevis Cleaning Hook.....	0071-8
Figure 9. Deflation Hose Assembly.....	0071-9
Figure 10. Coupling Device Hook (Top View).....	0071-10
Figure 11. Coupling Device Hook (Side View).....	0071-11
Torque Limits.....	WP 0072
Figure 1. Standard Fastener Threads Per Inch.....	0072-1
Figure 2. Standard and Metric Capscrew Head Marks.....	0072-2
Figure 3. Torque Wrench Drive Centerline (Decreasing Distance).....	0072-3
Figure 4. Torque Wrench Drive Centerline (Increasing Distance).....	0072-3
Table 1. Standard Fastener Torque Table.....	0072-4
Table 2. Metric Fastener Torque Table.....	0072-5
Table 3. Metric Fastener Torque Table.....	0072-6
Chapter 5 - PARTS INFORMATION	
Repair Parts and Special Tools List (RPSTL) Introduction.....	WP 0073
Table 1. SMR Code Explanation.....	0073-2
GROUP 2600 RAMP BAY, INNER AND OUTER PONTOONS.....	WP 0074
GROUP 2601 RAMP BAY CABLE ASSEMBLY.....	WP 0075
GROUP 2601 RAMP BAY CABLE ASSEMBLY.....	WP 0076

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
GROUP 2603 BELL CRANK AND EYEBOLT.....	WP 0077
GROUP 2603 BELL CRANK AND EYEBOLT.....	WP 0078
GROUP 2605 TORSION BAR.....	WP 0079
GROUP 2701 RAMP BAY UNFOLDING STABILIZER AND BRACKETS.....	WP 0080
GROUP 2702 RAMP PLATE AND STRAP.....	WP 0081
GROUP 2703 RAMP BAY HANDRAIL.....	WP 0082
GROUP 2704 RAMP BAY BILGE/DRAIN PLUGS AND INSERTS.....	WP 0083
GROUP 2705 RAMP BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN.....	WP 0084
GROUP 2706 TRUNION WEAR CAP.....	WP 0085
GROUP 2707 SWIVEL HOOK AND RETAINER SHAFT.....	WP 0086
GROUP 2708 STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS.....	WP 0087
GROUP 2801 RAMP BAY FOLDLOCK.....	WP 0088
GROUP 2802 TRAVEL LATCH AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY).....	WP 0089
GROUP 2803 UPPER COUPLING AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY).....	WP 0090
GROUP 2804 SWIVEL PLATE.....	WP 0091
GROUP 2805 PUMP ACCESS COVER.....	WP 0092
GROUP 2901 LOWER LOCK-DRIVE.....	WP 0093
GROUP 2901 LOWER LOCK-DRIVE.....	WP 0094
GROUP 2901 LOWER LOCK-DRIVE.....	WP 0095
GROUP 3002 PUMP FILTER ELEMENT.....	WP 0096
GROUP 3003 PUMP.....	WP 0097
GROUP 3003 PUMP.....	WP 0098
GROUP 3004 CYLINDER.....	WP 0099
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS.....	WP 0100
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS.....	WP 0101
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS.....	WP 0102

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS.....	WP 0103
GROUP 3100 INTERIOR BAY INNER AND OUTER PONTOONS.....	WP 0104
GROUP 3101 INTERIOR BAY CABLE ASSEMBLY.....	WP 0105
GROUP 3101 INTERIOR BAY CABLE ASSEMBLY.....	WP 0106
GROUP 3103 EYEBOLT.....	WP 0107
GROUP 3201 INTERIOR BAY UNFOLDING STABILIZER AND BRACKET.....	WP 0108
GROUP 3203 OUTER PONTOON LOCK.....	WP 0109
GROUP 3204 INTERIOR BAY FOLDLOCK.....	WP 0110
GROUP 3205 INTERIOR BAY HANDRAIL.....	WP 0111
GROUP 3206 INTERIOR BAY BILGE/DRAIN PLUGS AND INSERTS.....	WP 0112
GROUP 3207 INTERIOR BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN.....	WP 0113
GROUP 3304 ACCESS COVER.....	WP 0114
GROUP 3305 LOWER MAIN COUPLING.....	WP 0115
GROUP 3401 BUMPERS.....	WP 0116
GROUP 3402 INTERIOR BAY LOWER LOCK-DRIVE.....	WP 0117
GROUP 3403 DATA PLATES.....	WP 0118
GROUP 3403 DATA PLATES.....	WP 0119
GROUP 3501 COUPLING DEVICE.....	WP 0120
GROUP 9401 REPAIR PARTS KITS.....	WP 0121
GROUP 9501 BULK MATERIAL.....	WP 0122
GROUP 3501 SPECIAL TOOLS.....	WP 0123
NATIONAL STOCK NUMBER (NSN) INDEX.....	WP 0124
PART NUMBER (P/N) INDEX.....	WP 0125
 Chapter 6 - SUPPORTING INFORMATION	
References.....	WP 0126
Maintenance Allocation Chart (MAC) Introduction.....	WP 0127
Maintenance Allocation Chart (MAC).....	WP 0128
Table 1. MAC for Improved Ribbon Bridge (IRB).....	0128-1

TABLE OF CONTENTS - Continued

	Page No.
	<u>WP Sequence No.</u>
Table 2. Tools and Test Equipment for Improved Ribbon Bridge (IRB).....	0128-7
Table 3. Remarks for Improved Ribbon Bridge (IRB).....	0128-7
Expendable and Durable Items List (EDIL).....	WP 0129
Table 1. Expendable and Durable Items List (EDIL).....	0129-2
Tool Identification List (TIL).....	WP 0130
Table 1. Tool Identification List (TIL).....	0130-1
Mandatory Replacement Parts (MRP) List.....	WP 0131
Table 1. Mandatory Replacement Parts (MRP) List.....	0131-1

Index

HOW TO USE THIS MANUAL

SCOPE

This manual provides you with the information you will need to operate and maintain the Improved Ribbon Bridge (IRB) M16 Ramp Bay and M17 Interior Bay.

MANUAL CONTENT

The Front Matter in this manual consists of a Warning Summary, Title Block Page, and Table of Contents.

This manual contains six chapters. Each chapter is divided into Work Packages (WP) that provide Field Maintenance Procedures, Troubleshooting Procedures, and other information for specific systems or components. Each WP starts on a right-side page. Page numbers consist of the WP number followed by a dash and another number. For example, "0008-9" means WP 0008, page 9.

The manual also contains an Index, DA Form 2028s, and Metric Conversion Chart.

FRONT MATTER

The Warning Summary starts on the first right-side page and should be read before performing any maintenance on the equipment.

The Title Block Page includes the Reporting Errors and Recommending Improvements statement, which describes how to report problems with the manual.

The Table of Contents lists the chapters, figures, tables, and WPs in this manual.

CHAPTERS

Chapter 1 provides General Information, Equipment Description and Data, and Theory of Operation.

Chapter 2 provides Troubleshooting Procedures Introduction and Troubleshooting Procedures.

Chapter 3 provides Preventive Maintenance Checks and Services (PMCS) Introduction and PMCS.

Chapter 4 provides Service Upon Receipt, Field Maintenance Instructions and Lubrication Instructions.

Chapter 5 provides Parts Information, including the Repair Parts and Special Tools List (RPSTL) Introduction and RPSTL.

Chapter 6 provides Supporting Information, including the titles of documents and publications referenced in this manual (References), Maintenance Allocation Chart (MAC) Introduction, MAC, Expendable and Durable Items List (EDIL), Tool Identification List (TIL), and Mandatory Replacement Parts (MRP) List.

WARNINGS, CAUTIONS, AND NOTES

You must read and understand this manual **BEFORE** servicing the IRB.

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

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

HOW TO USE THIS MANUAL - Continued

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

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

Warnings and cautions appear immediately preceding the step to which they pertain. It is important to read and thoroughly understand the warnings and/or cautions before beginning maintenance. Notes may precede or follow the steps to which they pertain, depending on what makes the most sense.

NOMENCLATURE

Nomenclature (names given to individual parts and components) used in this manual may differ from the common terminology currently used in the field. A cross-reference list of TM nomenclature and common terminology is provided in the first WP of this manual.

ABBREVIATIONS/ACRONYMS

A list of abbreviations/acronyms that are unique to this equipment are provided in the first WP of this manual.

INITIAL SETUP

Before starting a task, you must obtain all the tools, supplies, and personnel listed in the Initial Setup. Ensure that you read the task before performing the maintenance. If any other tasks are referenced, you must go to the Initial Setup page for each of those tasks to find out which tools, supplies, and personnel will be needed.

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

The RPSTL Introduction (WP 0073) explains how to use the RPSTL. Repair parts, special tools, and support equipment are listed and illustrated in the RPSTL.

INDEX

An Index, located after the last WP in this manual provides an alphabetical listing of WPs.

DA FORM 2028

DA Form 2028 is used to report errors and to recommend improvements to this manual.

METRIC CONVERSION CHART

The Metric Conversion Chart converts U.S. measurements to metric equivalents. Measurements in this manual are provided in both U.S. and metric units.

CHAPTER 1

**GENERAL INFORMATION, EQUIPMENT DESCRIPTION,
AND THEORY OF OPERATION**

FIELD GENERAL INFORMATION

SCOPE

This Technical Manual (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). Operation of the IRB is covered in TM 5-5420-278-10.

Type of Manual

Field Maintenance Manual, Including Repair Parts and Special Tools List, for Improved Ribbon Bridge.

Model Number and Equipment Names

The IRB consists of two major components: the M16 Ramp Bay and the M17 Interior Bay.

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.

Special Inclusions

For operation and maintenance of the basic M1977 Common Bridge Transporter (CBT) truck chassis, refer to TM 9-2320-425-10, TM 9-2320-435-10, TM 9-2320-346-10 and TM 9-2320-279-14&P.

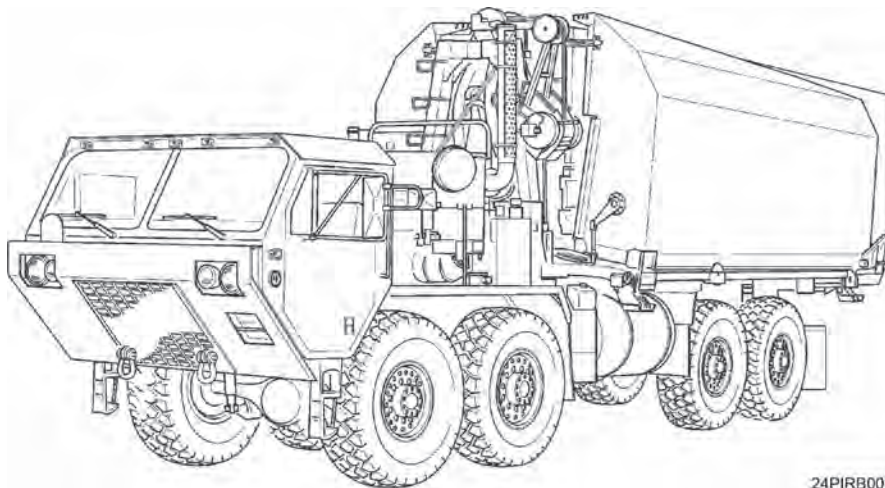


Figure 1. M16 Ramp Bay on CBT, Typical.

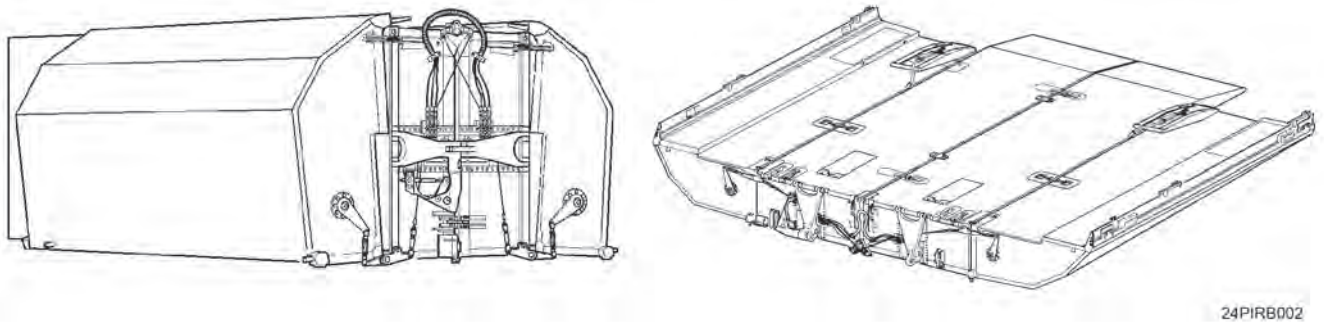
SCOPE - Continued

Figure 2. M16 Ramp Bay, Folded and Unfolded.

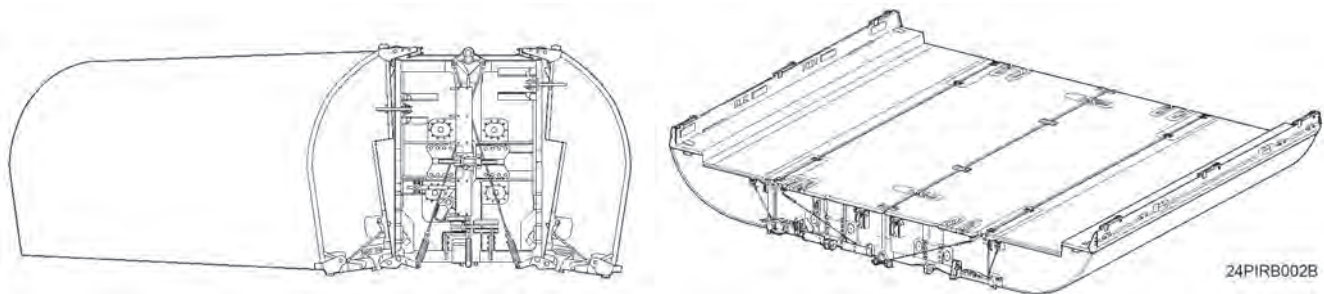


Figure 3. M17 Interior Bay, Folded and Unfolded.

MAINTENANCE FORMS, RECORDS, AND REPORTS

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

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your Improved Ribbon Bridge (IRB) needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance.

All non-Aviation/Missile EIRs and PQDRs must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The PDREP site is: <https://www.pdrep.csd.disa.mil/>.

If you do not have Internet access, you may submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 using e-mail, regular mail, or fax using the addresses/fax numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

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 and are marked "duricoatent" or "DNC 450 IOMY."

Corrosion prevention and control of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. The term "corrosion" means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The US Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It's usually identified by a black powder corrosion product or pits on the surface.

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue.

Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/performing maintenance.

SF Form 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

OZONE DEPLETING SUBSTANCES (ODS)

The use of Class 1 ODS for new acquisitions has been curtailed by Section 326 of the National Defense Authorization Act of Fiscal Year 1993 (Public Law 102, 484) and related Army policy. Ozone depleting substances are listed in Title VI of the Clean Air Act. For systems procured and fielded prior to the effectiveness of the above law (June 1993) that use a Class 1 ODS, a listing of those substances required to operate and maintain the system shall be included in the manual. This requirement applies to any system procured or fielded after June 1993 that requires the use of a Class 1 ODS, where the use of the ODS has been properly documented and waived. The procuring activity will provide a list of Class 1 ODS on request.

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 US 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 (WP 0063) for storage and shipment instructions. Additional information can be found in TM 746-10, General Packaging Instructions for Field Units.

HAZARDOUS WASTE DISPOSAL INFORMATION

When servicing this equipment, performing maintenance, or disposing of materials such as: cleaning fluids, dry cleaning solvents, lubricants, waste thread locking compounds, and waste Chemical Agent Resistant Coating (CARC) mixtures (or items, such as cleaning rags, contaminated with these substances), consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance.

NOMENCLATURE CROSS-REFERENCE LIST

The following is a list of nomenclature used in this manual and the corresponding common nomenclature in the field:

<u>TM NOMENCLATURE</u>	<u>COMMON NOMENCLATURE</u>
Bay bridge drawbar	Coupling device
Bay trunnions	Bay tiedown pins
Bell crank	Lifting lug or lifting eye
Inner pontoon	Roadway pontoon
IRB hoisting gear	Lifting sling
Lifting lug	Lifting eye
Lock holder	Roadway tool
Lower lock-drive pin	Lower lockdrive
Lower main coupling	Yoke
Outer pontoon	Bow pontoon
Outer pontoon lock	Roadway to bow pontoon latch
Outer pontoon trunnion	Front/rear bay tie-down pin
Pinch bar	Crowbar
Receptacle block	Connector receptacle
Striker receptacle	Strike catch
Socket wrench	T-wrench
Travel latch locating receptacle	Travel latch receptacle
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

LIST OF ABBREVIATIONS/ACRONYMS**NOTE**

Refer to ASME Y14.38, Abbreviations and Acronyms for Use on Drawings and Related Documents, for other standard abbreviations.

AAL	Additional Authorization List
AL	Adapter Length
AOAP	Army Oil Analysis Program
ASME	American Society of Mechanical Engineers
AT	Applied Torque
BAP	Bridge Adapter Pallet
BD	Bundle
BE	Bale
BEB	Bridge Erection Boat
BOI	Basis of Issue
BT	Bottle
BX	Box
BII	Basic Issue Items
CA	Cartridge
CAA	Clean Air Act
CAC	Common Access Card
CAGEC	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
CBT	Common Bridge Transporter

LIST OF ABBREVIATIONS/ACRONYMS - Continued

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm	Centimeter
CN	Can
COEI	Components of End Item
CPC	Corrosion Prevention and Control
CTA	Common Table of Allowance
DA	Department of the Army
DR	Drum
DT	Desired Torque
EA	Each
EDIL	Expendable and Durable Items List
EIC	End Item Code
EIR	Equipment Improvement Recommendation
EMP	Electromagnetic Pulse
EPCRA	Emergency Planning and Community Right-to-Know Act
FGC	Functional Group Code
FIG	Figure
FM	Field Manual
ft	Foot
ft ³	Cubic Feet
GAA	Grease, Artillery and Automotive
GL	Gallon
gal.	Gallon
GDELS-G	General Dynamics European Land Systems - Germany
GDSBS	General Dynamics Santa Barbara Sistemas
GMTK	General Mechanic's Tool Kit
GVW	Gross Vehicle Weight
GVWR	Gross Vehicle Weight Rating
HCL	Hardness Critical Item
IBC	Improved Boat Cradle
in.	inch
IRB	Improved Ribbon Bridge
IRB-I/B	Improved Ribbon Bridge Interior Bay
IRB-R/B	Improved Ribbon Bridge Ramp Bay
IPS	Improved Plough Steel
kg	Kilogram
KY	Kit
lb	Pound
L	Liter
LHS	Load Handling System
LT	Length of Torque Wrench
m	Meter
m ³	Cubic Meters
MAC	Maintenance Allocation Chart
MLC	Military Load Class
mm	Millimeters
MSDS	Material Data Safety Sheet
NBC	Nuclear, Biological, and Chemical
MRP	Mandatory Replacement Part
N•m	Newton-meters
NEPA	National Environmental Policy Act
NIIN	National Item Identification Number
NSN	National Stock Number
ODS	Ozone Depleting Substances

LIST OF ABBREVIATIONS/ACRONYMS - Continued

OSHA	Occupational Safety and Health Act
PDREP	Product Data Reporting and Evaluation Program
PG	Package
PLS	Palletized Load System
PM	Plate Metal
PMCS	Preventive Maintenance Checks and Services
P/N	Part Number
POL	Petroleum, Oil, and Lubricants
PQDR	Product Quality Deficiency Report
PR	Pair
PTF	Poly-Tube Fitting
QT	Quart
Qty	Quantity
RCRA	Resource Conservation and Recovery Act
RCU	Remote Control Unit
RPSTL	Repair Parts and Special Tools List
SMR	Source, Maintenance, and Recoverability
SRA	Specialized Repair Activity
TAMMS	The Army Maintenance Management System
TIL	Tool Identification List
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TSCA	Toxic Substances Control Act
TU	Tube
U/I	Unit of Issue
UOC	Usable On Code
USAEHA	US Army Environmental Hygiene Agency
WP	Work Package

QUALITY OF MATERIAL

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

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

FIELD EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

Improved Ribbon Bridge (IRB)

The IRB is a modular bridge having a roadway surface supported by a floating integral superstructure made of aluminum that functions as a pontoon. 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 total roadway width of the IRB is 22 ft 8 in. (6.92 m). This will accommodate two-lane traffic for Military Load Class (MLC) 20(T)/14(W), or for single lane traffic MLC 80(T)/95(W). Adjacent to the roadway is a 2 ft 7.5 in. (0.8 m) walkway on the bow pontoons. 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 Improved Ribbon Bridge Ramp Bay (IRB-R/B) and Improved Ribbon Bridge Interior Bay (IRB-I/B) 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. An IRB bay is retrievable in 5 minutes or less. Each bay is transported, launched, and retrieved in a folded condition on a Common Bridge Transporter (CBT).

IRB Interior Bay (IRB-I/B)

The IRB-I/B is a four-pontoon folding bridge bay consisting of two inner pontoons and two outer pontoons. Each inner pontoon is divided into two watertight compartments. The IRB-I/B unfolds automatically once released and afloat. IRB-I/Bs are connected to each other by first manually engaging four upper couplings, followed by two lock pins on the inner pontoons. The lock pins 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/B)

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

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Major components and equipment features of the IRB-R/B and IRB-I/B are identified and described in this Work Package (WP) on the following pages. Locate the desired component by matching its illustration callout number with the item number in the corresponding table.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

RAMP BAY EQUIPMENT FEATURES

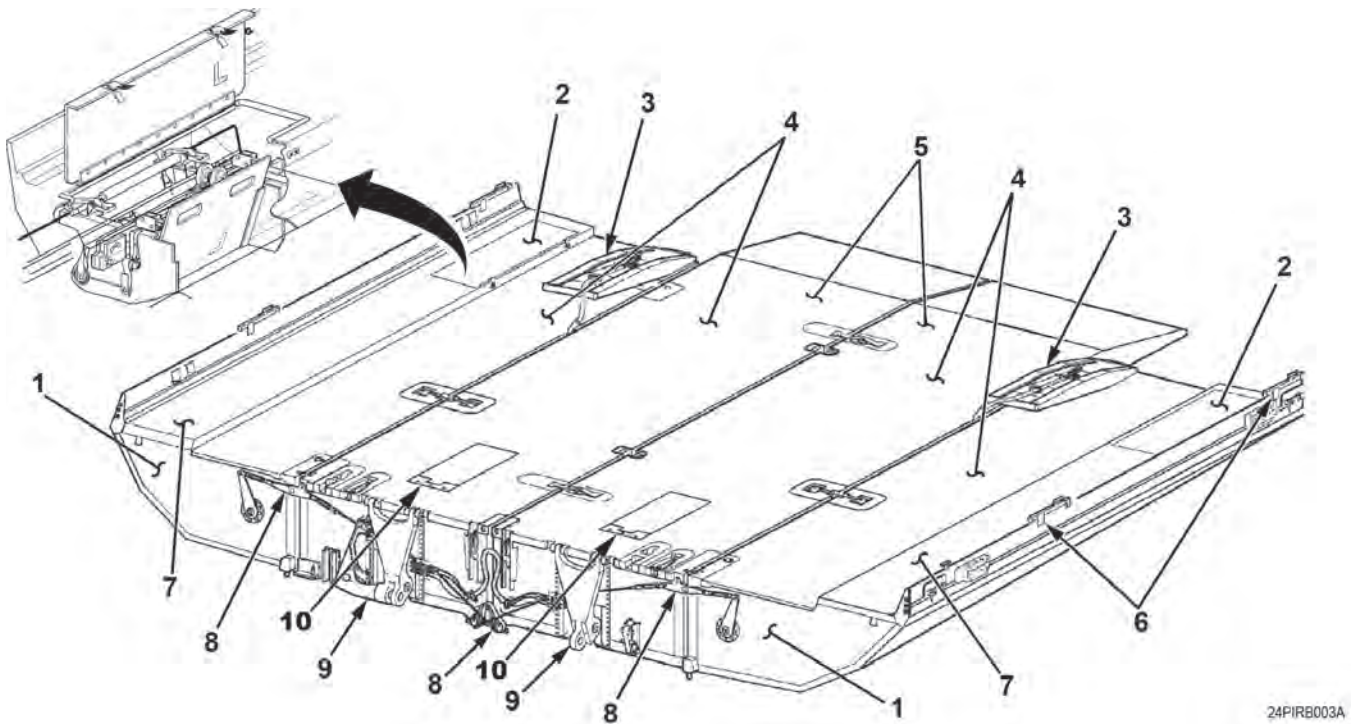


Figure 1. Ramp Bay, Unfolded.

Table 1. Ramp Bay Equipment Features.

ITEM	NOMENCLATURE	FUNCTION
1	OUTER PONTOON	A non-compartmentalized structure that functions as a float to support loads placed on its top (roadway and walkway) surface, and provides additional buoyancy to the inner pontoon. The outer pontoon contains a stowage compartment for equipment and tools. Left and right outer pontoons are not interchangeable.
2	STOWAGE COMPARTMENT	<p>A compartment in each outer pontoon (ramp bay only) in the walkway 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:</p> <ul style="list-style-type: none"> • Two ropes for securing bay. • Two hand levers for operation of pumps. • IRB hoisting gear (lifting sling) for high-bank launch. • Spare chemiluminescent tubes. • Roadway tool for closing gap between inner-to-inner pontoons.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

Table 1. Ramp Bay Equipment Features - Continued.

ITEM	NOMENCLATURE	FUNCTION
		<ul style="list-style-type: none"> • 19-mm wrench for removing pontoon drain plugs. • Coupling device for bay-to-bay connection. • Two cover plates for preventing debris from entering hinge points on IRB-R/B. • Two cleaning hooks for removing debris jammed in hinge points.
3	RAMP PLATES	The two plates mounted on the outer pontoons used to increase the width of the roadway approach ramp.
4	ROADWAY	The total roadway width of the IRB is 22 ft 8 in. (6.92 m). This will accommodate two-lane traffic for Military Load Class (MLC) 20(T)/14(W), or for single lane traffic MLC 80(T)/95(W).
5	INNER PONTOON	A non-compartmentalized structure that functions as a float to support loads placed on its top (roadway) surface. The inner pontoon contains a pump and cylinder. Left and right inner pontoons are not interchangeable.
6	HANDRAIL	A retractable railing, extending the full length of the bay, consisting of two stanchions and a cable mounted on each outer pontoon splash plate.
7	WALKWAY	The 2 ft 7.5 in. (0.8 m) wide top surface of the outer pontoon for personnel crossing.
8	UNFOLDING MECHANISM	A system of cables, levers, and torsion bars, located at the rear of the IRB-R/B, that automatically control the unfolding of the inner and outer pontoons once the bay is launched. During retrieval, this mechanism works in reverse by pulling the outer pontoons up into the folded position simultaneously, as the entire bay is lifted from the water via the transporter.
9	RAISING MECHANISM	The pump, cylinder, and yoke assembly contained in each of the two inner pontoons, used for raising and lowering the ramp bay.
10	PUMP ACCESS COVER	Provides access to the pump and control valve.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

INTERIOR BAY EQUIPMENT FEATURES

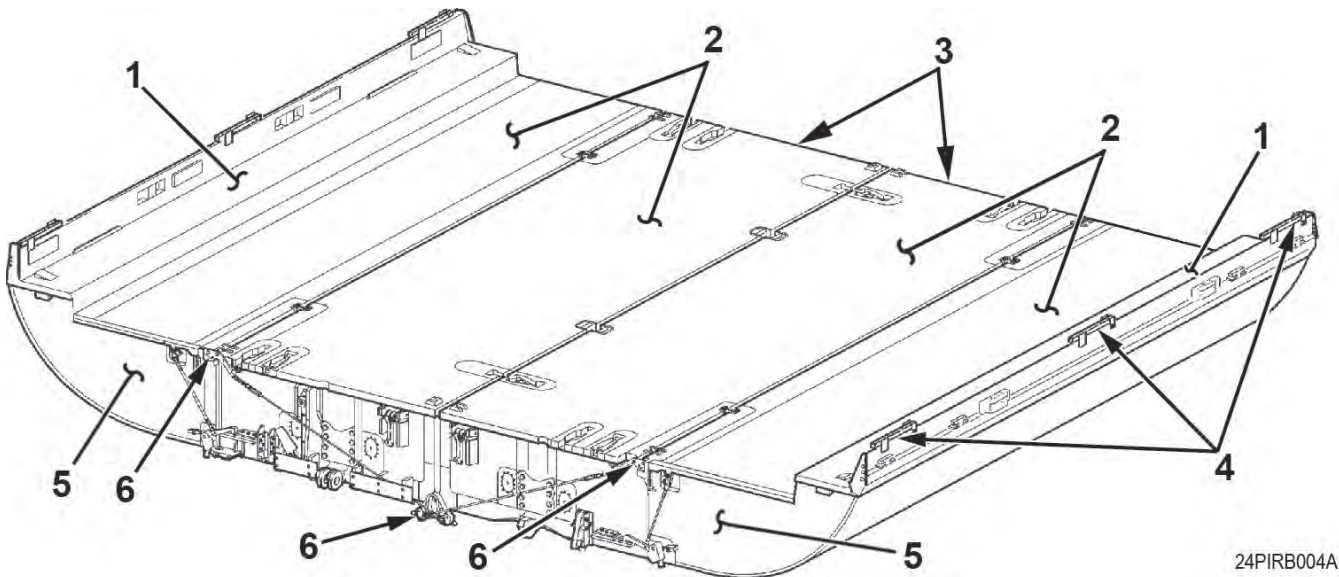


Figure 2. Interior Bay, Unfolded.

Table 2. Interior Bay Equipment Features.

ITEM	NOMENCLATURE	FUNCTION
1	WALKWAY	The 2 ft 7.5 in. (0.8 m) wide top surface of the outer pontoon for personnel crossing.
2	ROADWAY	The total roadway width of the IRB is 22 ft 8 in. (6.92 m). This will accommodate two-lane traffic for Military Load Class (MLC) 20(T)/14(W), or for single lane traffic MLC 80(T)/95(W).
3	INNER PONTOON	A non-compartmentalized structure that functions as a float to support loads placed on its top (roadway) surface. Left and right inner pontoons are interchangeable.
4	HANDRAIL	A retractable railing, extending the full length of the bay, consisting of three stanchions and a rope mounted on each outer pontoon splash plate.
5	OUTER PONTOON	A non-compartmentalized structure that functions as a float to support loads placed on its top (roadway and walkway) surface, and provides additional buoyancy to the inner pontoon. Left and right outer pontoons are interchangeable.
6	UNFOLDING MECHANISM	A system of cables, springs, and levers, located on both ends of the IRB-I/B, that automatically control the unfolding of the inner and outer pontoons once the bay is launched. During retrieval, this mechanism works in reverse by pulling the outer pontoons up into

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

Table 2. Interior Bay Equipment Features - Continued.

ITEM	NOMENCLATURE	FUNCTION
		the folded position simultaneously, as the entire bay is lifted from the water via the transporter.

EQUIPMENT DATA

The following table has been prepared to assist in referencing equipment data. Actual dimension may differ from Data Plates. Refer to Table 3 for updated information.

Table 3. IRB Equipment Data.

	STANDARD	METRIC
CAPACITIES		
Ramp Bay Pump		
Reservoir Propylene Glycol (MIL-P-83800/GL)	0.8 gal.	3.03 L
Ramp Bay Cylinder	2 gal.	7.72 L
RAMP BAY		
Length	22 ft 8 in.	6.92 m
Width		
Folded	10 ft 6 in.	3.19 m
Unfolded	28 ft 4 in.	8.63 m
Roadway Width		
Single-Lane Traffic	14 ft 9 in.	4.50 m
Two-Lane Traffic	22 ft 2 in.	6.75 m
Walkway Width		
	2 ft 7.5 in.	0.8 m
Height		
Folded	7 ft 9 in.	2.35 m
Unfolded	4 ft 3 in.	1.30 m
Stowage Compartment Opening		
Length	3 ft 7 in.	1.1 m

EQUIPMENT DATA - Continued

Table 3. IRB Equipment Data - Continued.

Width	1 ft 1 in.	33.5 cm
Depth	1 ft 6 in.	46 cm
Weight	14,000 lb	6,350 kg
Outer Pontoon		
Length	18 ft 4.5 in.	5.60 m
Width	7 ft 4 in.	2.24 m
Height	4 ft 2 in.	1.26 m
Weight	2072 lb	940 Kg
Inner Pontoon (Roadway section)		
Length	22 ft 8 in.	6.92 m
Width	6 ft 9 in.	2.05 m
Height	2.4–29.3 in.	60–745 mm
Weight	4,925 lb	2,234 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.	2.64 m
Cubage	1,801 ft ³	51 m ³
INTERIOR BAY		
Length	22 ft 8 in.	6.92 m
Width		
Folded	10 ft 10 in.	3.30 m
Unfolded	28 ft 4 in.	8.63 m
Roadway Width		
Single-Lane Traffic	14 ft 9 in.	4.50 m
Two-Lane Traffic	22 ft 2 in.	6.75 m

EQUIPMENT DATA - Continued

Table 3. IRB Equipment Data - Continued.

Walkway Width	2 ft 7.5 in.	0.80 m
Height		
Folded	7 ft 9 in.	2.35 m
Unfolded	4 ft 3 in.	1.30 m
Weight	14,000 lb	6,350 kg
Outer Pontoon		
Length	22 ft 8 in.	6.92 m
Width	7 ft 4 in.	2.24 m
Height	4 ft 3 in.	1.30 m
Weight	4,925 lb	1,054 Kg
Inner Pontoon (Roadway section)		
Length	22 ft 8 in.	6.92 m
Width	6 ft 9 in.	2.05 m
Height	2 ft 5in.	0.74 m
Weight	4,676 lb	2,121 Kg
Center of Gravity (inboard of connecting lock pin)	11 ft 6 in.	3.5 m
Cubage	1,907 ft ³	54 m ³

EQUIPMENT CONFIGURATION

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

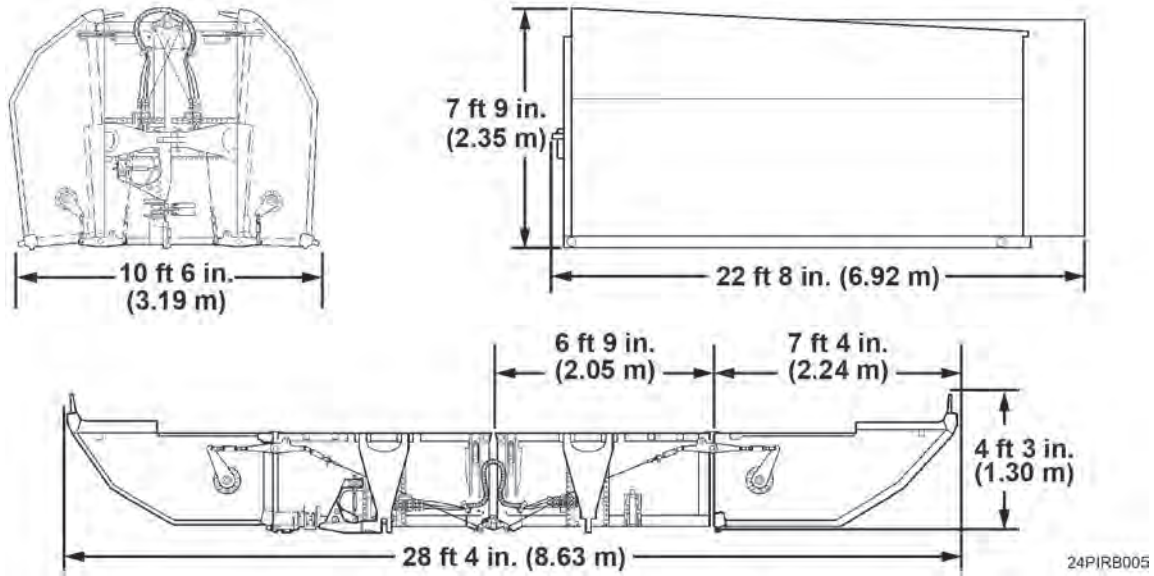


Figure 3. M16 Ramp Bay Dimensions, Folded and Unfolded.

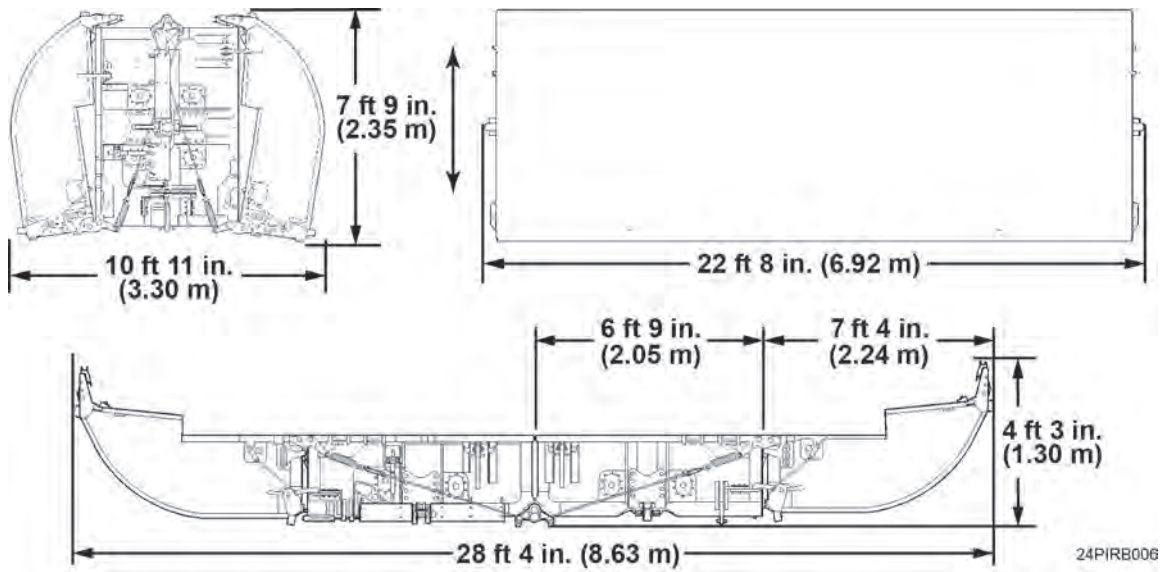


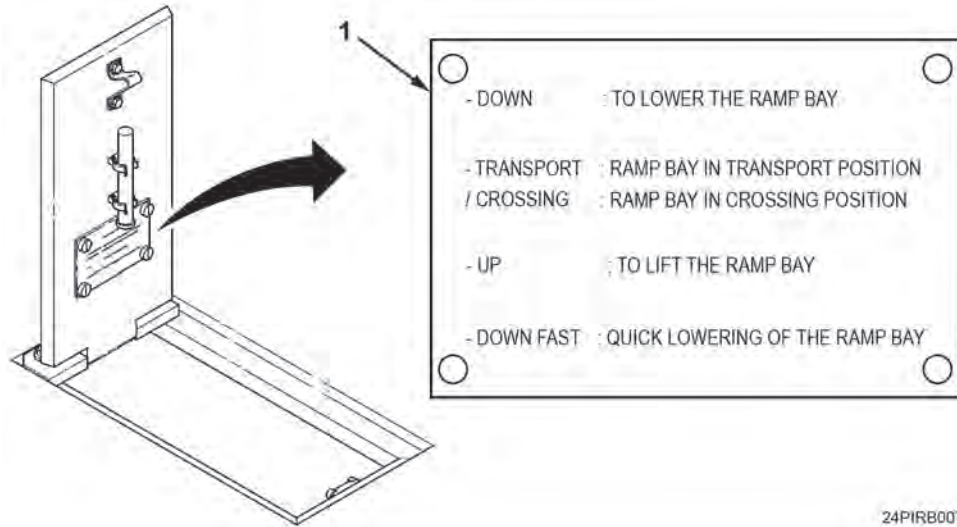
Figure 4. M17 Interior Bay Dimensions, Folded and Unfolded.

LOCATION AND DESCRIPTION OF DATA PLATES

NOTE

General Dynamics European Land Systems-Germany (GDELS-G), formerly General Dynamics Santa Barbara Sistemas (GDSBS), formerly EWK, are the manufacturers of the IRB. Due to the company name changes, IRB bays may contain data plates having GDELS-G, GDSBS, or EWK listed as the manufacturer.

All data plates and mounting screws can be found in the Repair Parts and Special Tools List (RPSTL) (WP 0073). If any plate is worn, broken, painted over, missing, or unreadable, it must be replaced (WP 0061).



24PIRB007

Figure 5. Pump Operation Data Plate.

ITEM	NOMENCLATURE	FUNCTION
1	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.

LOCATION AND DESCRIPTION OF DATA PLATES - Continued

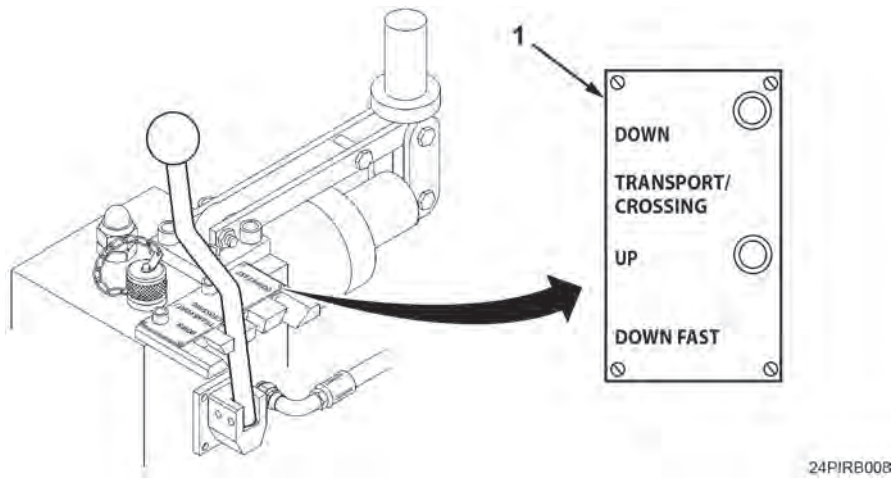


Figure 6. Pump Control Valve Data Plate.

ITEM	NOMENCLATURE	FUNCTION
1	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 - Continued

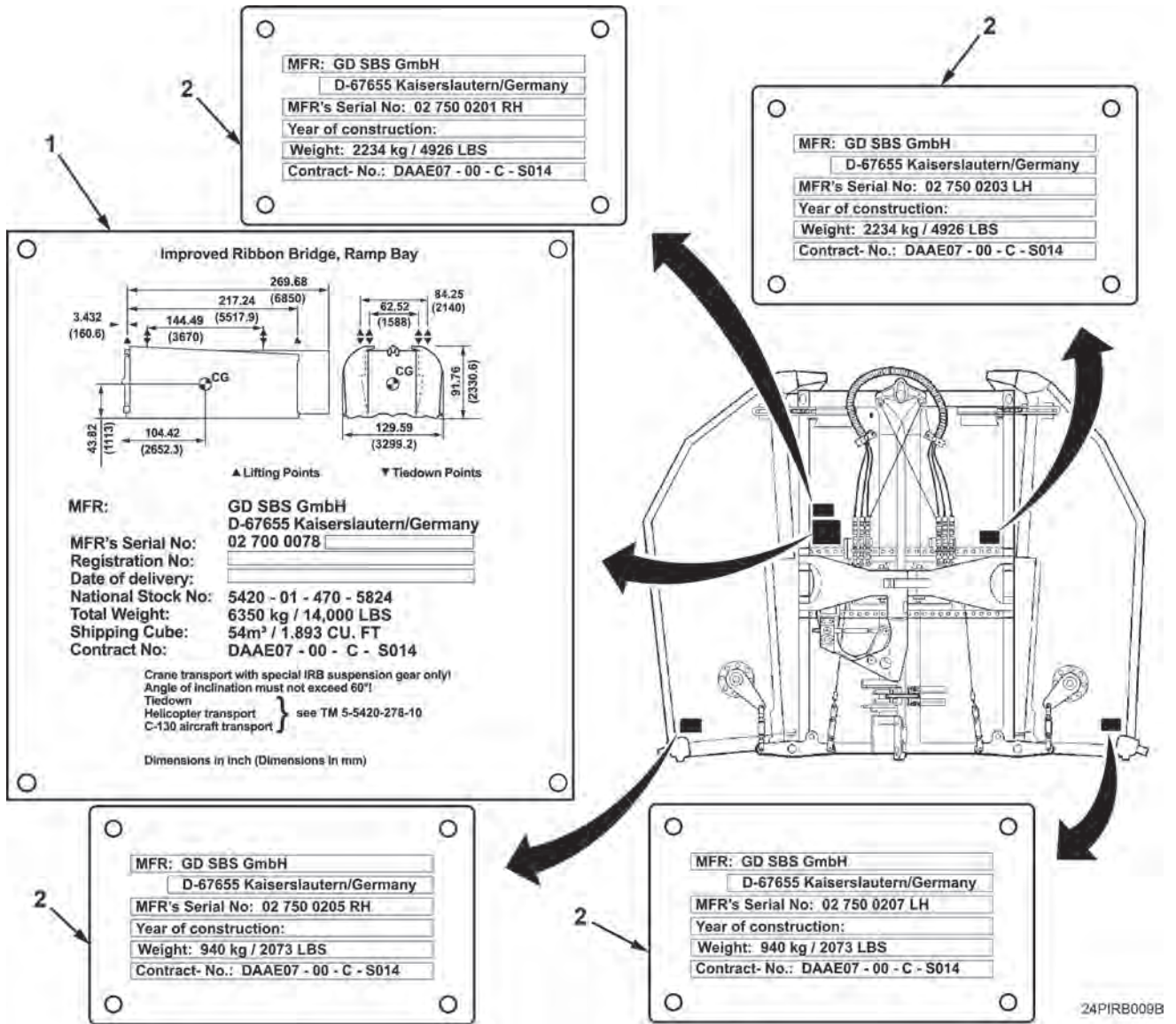


Figure 7. Ramp Bay Data Plate Locations.

ITEM	NOMENCLATURE	FUNCTION
1	IMPROVED RIBBON BRIDGE, RAMP BAY	This data plate, located on the left side inner pontoon at the connecting end (front), is the manufacturer's identification and shipping data plate for the IRB-R/B.
2	MFR	This data plate, located on each inner and outer pontoon at the connecting end (front) of the ramp bay, is the manufacturer's identification data plate for each pontoon.

LOCATION AND DESCRIPTION OF DATA PLATES - Continued

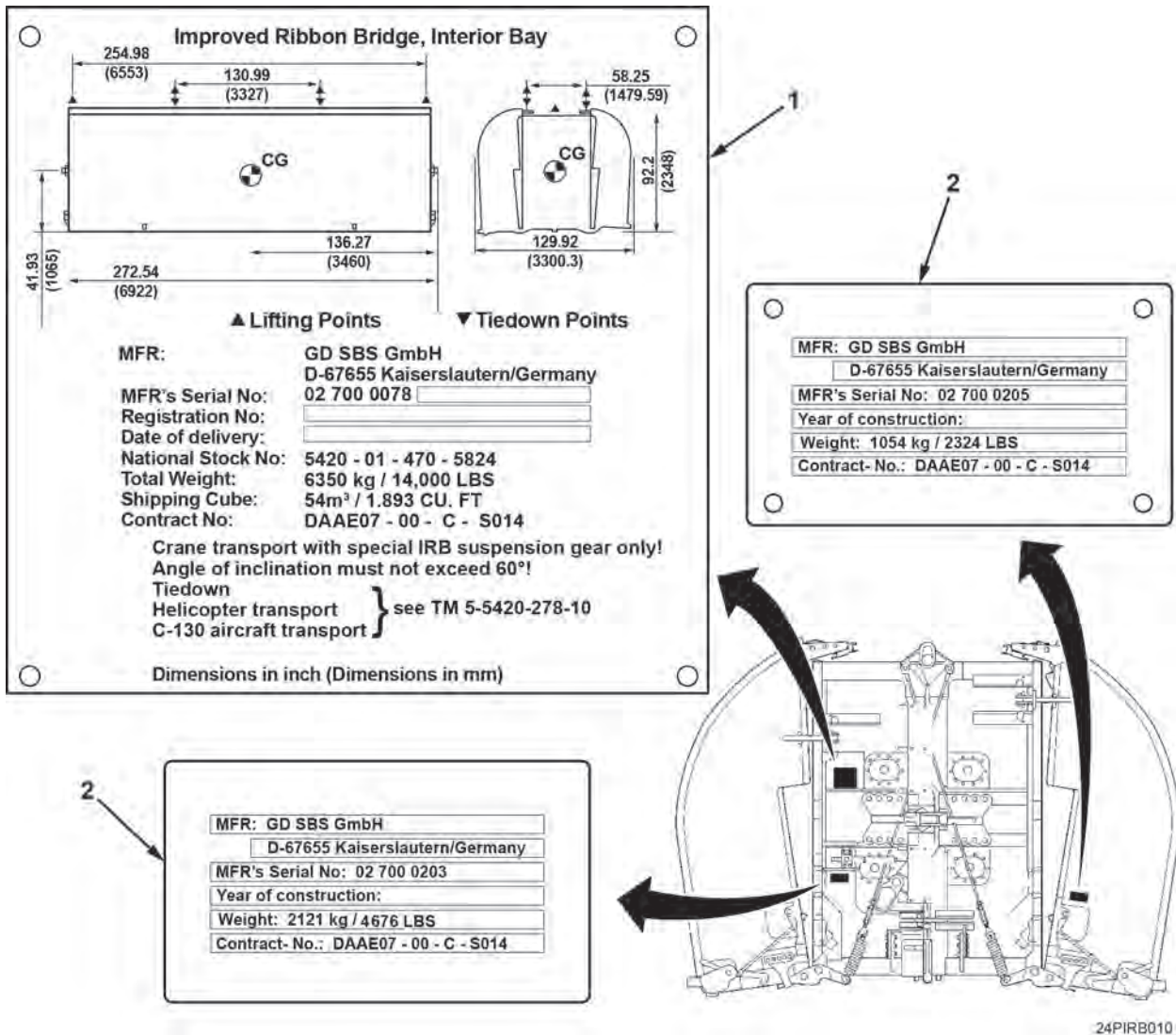


Figure 8. Interior Bay Data Plate Locations.

ITEM	NOMENCLATURE	FUNCTION
1	IMPROVED RIBBON BRIDGE, INTERIOR BAY	This data plate, located on the left-side inner pontoon at the connecting end (front), is the manufacturer's identification and shipping data plate for the IRB-I/B.
2	MFR	This data plate, located on each inner and outer pontoon at the connecting end (front) of the interior bay, is the manufacturer's identification data plate for each pontoon.

END OF WORK PACKAGE

FIELD THEORY OF OPERATION

GENERAL

This section explains how components of the Improved Ribbon Bridge Interior Bay (IRB-I/B) and Improved Ribbon Bridge Ramp Bay (IRB-R/B) work. A functional description of the IRB components and their operation is covered in the following paragraphs.

HOW THE BAY UNFOLDS/FOLDS

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/B) or torsion bars (IRB-R/B) to simultaneously pull the outer pontoons up, about their hinged joints, thus folding the bay.

FUNCTION OF THE PONTOON LOCKS

The pontoon locks are designed to hold the bay in the folded or unfolded position. When an IRB-R/B or IRB-I/B 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/B or IRB-I/B 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/B or four outer pontoon locks on the IRB-I/B. Once secured in the unfolded position, the bay is ready for bridge or raft construction.

FUNCTION OF THE PONTOON COUPLINGS

The pontoon 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 pontoon 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 pontoon and a steel tie. The steel tie extends longitudinally the full length of the inner pontoon. 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 pontoon 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/B hinges upward against the weight of the adjoining IRB-I/B.

END OF WORK PACKAGE

CHAPTER 2
TROUBLESHOOTING PROCEDURES

FIELD TROUBLESHOOTING TROUBLESHOOTING INDEX

INTRODUCTION

This chapter provides the necessary troubleshooting procedures to diagnose Improved Ribbon Bridge (IRB) mechanical and hydraulic system malfunctions.

This symptom index has its own work package number and is used to identify the malfunction and locate the troubleshooting procedure to diagnose the problem.

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.

Prior to performing any troubleshooting procedure, the following recommendations should be observed:

- Check the Equipment Inspection and Maintenance Worksheet, DA Form 2404/5988-E, and Maintenance Request Form, DA Form 2407, 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.
- 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.
- Always first isolate the system where the malfunction occurs, then locate the component and perform corrective action in the order listed.
- Use approved mechanical and hydraulic system repair practices provided in technical manuals, field manuals, and technical bulletins listed in this manual. Refer to References (WP 0126).
- Use the approved special tools and test equipment to determine the known parameters for isolating a fault.
- Fill out and attach a Maintenance Tag, DA Form 2402, to any component that will be exchanged as a core and turned in for repair or rebuilding at the sustainment maintenance level.

This chapter lists the most common malfunctions that may occur. When a malfunction occurs that is not listed in this Troubleshooting Index, notify your supervisor.

MALFUNCTION INDEX

<u>Malfunction/Symptom</u>	<u>Troubleshooting Procedure</u>
1. Bay will not fold automatically during retrieval.....	WP 0005
2. Bay will not unfold automatically when launched.....	WP 0006
3. Foldlock will not engage or hold when engaged.....	WP 0007
4. Handrail stanchion does not hold when set.....	WP 0008
5. Inner or outer pontoon leaking.....	WP 0009
6. Lower coupling jammed and will not line up.....	WP 0010
7. Lower lock-drive will not engage.....	WP 0011
8. Outer pontoon lock will not engage or hold when engaged (interior bay only)	WP 0012
9. Pump system will not hold bay in raised position (ramp bay only)	WP 0013
10. Pump system will not raise bay (ramp bay only)	WP 0014
11. Ramp or interior bay trunnions damaged.....	WP 0015
12. Swivel hook will not engage or hold when engaged (ramp bay only).	WP 0016
13. Travel latch will not release.....	WP 0017
14. Upper coupling will not engage in receptacle block.....	WP 0018
15. Upper coupling will not release from receptacle block.....	WP 0019

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE – BAY WILL NOT FOLD AUTOMATICALLY DURING RETRIEVAL**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

References (cont.)

WP 0004
WP 0026
WP 0028
WP 0051

Personnel Required

Mechanic
Assistant

Equipment Condition

Bay open in water (TM 5-5420-278-10)

References

TM 5-5420-278-10

TROUBLESHOOTING PROCEDURE**BAY WILL NOT FOLD AUTOMATICALLY DURING RETRIEVAL****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

NOTE

A Common Bridge Transporter (CBT) and Bridge Adaptor Pallet (BAP) are needed to perform this procedure.

STEP

1. Verify transverse upper couplings are unlatched.

Unlatch transverse upper couplings (TM 5-5420-278-10). Attempt to raise bay.

CONDITION/INDICATION

Does bay fold automatically?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Verify pontoon swivel hooks are disengaged (ramp bay only).

Disengage swivel hooks (TM 5-5420-278-10). Attempt to raise bay.

BAY WILL NOT FOLD AUTOMATICALLY DURING RETRIEVAL - Continued**CONDITION/INDICATION**

Does bay fold automatically?

DECISION

NO - Step 3.

YES - END OF TESTING.

STEP

3. Verify outer pontoon locks are released (interior bay only).
Release outer pontoon locks (TM 5-5420-278-10). Attempt to raise bay.

CONDITION/INDICATION

Does bay fold automatically?

DECISION

NO - Step 4.

YES - END OF TESTING.

STEP

4. Check for loose or broken cable assembly (Interior and Ramp bay).
 - a. If loose, adjust cable (WP 0026) or (WP 0051).
 - b. If broken or stretched, replace cable (WP 0026) or (WP 0051).
 - c. Attempt to raise bay.

CONDITION/INDICATION

Does bay fold automatically?

DECISION

NO - Step 5.

YES - END OF TESTING.

STEP

5. Check for obstructions or jamming caused by rocks or debris between the pontoons.
 - a. Remove debris and obstructions from bay.
 - b. Attempt to raise bay.

CONDITION/INDICATION

Does bay fold automatically?

DECISION

NO - Step 6.

YES - END OF TESTING.

BAY WILL NOT FOLD AUTOMATICALLY DURING RETRIEVAL - Continued**STEP**

6. Check for broken torsion bar turnbuckle (ramp bay only).
 - a. Replace broken or damaged torsion bar and/or turnbuckle (WP 0028).
 - b. Attempt to raise bay.

CONDITION/INDICATION

Does bay fold automatically?

DECISION

NO - Step 7.
YES - END OF TESTING.

STEP

7. Check for water in outer pontoons.
 - a. Pump water out of pontoons (TM 5-5420-278-10).
 - b. Attempt to raise bay.

CONDITION/INDICATION

Does bay fold automatically?

DECISION

NO - Bay is unserviceable. Remove bay from inventory.
YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - BAY WILL NOT UNFOLD AUTOMATICALLY WHEN LAUNCHED**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1, Item 29)

Personnel Required

Mechanic
Assistant

References (cont.)

WP 0026
WP 0028
WP 0029
WP 0039
WP 0051
WP 0053

References

TM 5-5420-278-10
WP 0004

Equipment Condition

Bay mounted on BAP and CBT
(TM 5-5420-278-10)

TROUBLESHOOTING PROCEDURE**BAY WILL NOT UNFOLD AUTOMATICALLY WHEN LAUNCHED****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

- Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).
- A Common Bridge Transporter (CBT) and Bridge Adaptor Pallet (BAP) are needed to perform this procedure.

STEP

1. Check for loose or broken cable assemblies.
 - a. Repair malfunctioning or broken cable assemblies (WP 0026) or (WP 0051).
 - b. Attempt to launch bay.

CONDITION/INDICATION

Does bay unfold automatically?

DECISION

NO - Step 2.
YES - END OF TESTING.

BAY WILL NOT UNFOLD AUTOMATICALLY WHEN LAUNCHED - Continued**STEP**

2. Verify all foldlocks and travel latches are unlatched.
 - a. Unlatch foldlock and/or travel latch levers (TM 5-5420-278-10).
 - b. Attempt to launch bay.

CONDITION/INDICATION

Does bay unfold automatically?

DECISION

NO - Step 3.
YES - END OF TESTING.

STEP

3. Check travel latch for damage.
 - a. Repair malfunctioning or broken travel latch (WP 0039).
 - b. Attempt to launch bay.

CONDITION/INDICATION

Does bay unfold automatically?

DECISION

NO - Step 4.
YES - END OF TESTING.

STEP

4. Check for obstructions or jamming caused by rocks or debris.
 - a. Remove debris and obstructions from foldlocks and travel latches (TM 5-5420-278-10).
 - b. Attempt to launch bay.

CONDITION/INDICATION

Does bay unfold automatically?

DECISION

NO - Step 5.
YES - END OF TESTING.

STEP

5. Check unfolding stabilizers for damage (WP 0029) or (WP 0053).
 - a. Repair malfunctioning, bent, or broken ramp bay unfolding stabilizer and brackets (WP 0029).
 - b. Replace malfunctioning, bent, or broken interior bay unfolding stabilizer and brackets (WP 0053).
 - c. Attempt to launch bay.

BAY WILL NOT UNFOLD AUTOMATICALLY WHEN LAUNCHED - Continued**CONDITION/INDICATION**

Does bay unfold automatically?

DECISION

NO - Step 6.

YES - END OF TESTING.

NOTE

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

STEP

6. Check for broken torsion bar (Ramp Bay only).
 - a. Replace broken torsion bar (WP 0028).
 - b. Attempt to launch bay.

CONDITION/INDICATION

Does bay unfold automatically?

DECISION

NO - Bay is unserviceable. Remove bay from inventory.

YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - FOLDLOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

References (cont.)

WP 0038
WP 0041
WP 0056

References

WP 0004

TROUBLESHOOTING PROCEDURE**FOLDLOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check for bent foldlock spring holder.
Repair or replace foldlock spring holder (WP 0038) or (WP 0056).

CONDITION/INDICATION

Does foldlock engage and hold?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check for missing or damaged foldlock springs.
Replace missing or damaged springs (WP 0038) or (WP 0056).

CONDITION/INDICATION

Does foldlock engage and hold?

DECISION

NO - Step 3.
YES - END OF TESTING.

FOLDLOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED - Continued**STEP**

3. Check for bent foldlock lever and/or support brackets.

Straighten support brackets if bent or binding, and replace bent lever (WP 0038) or (WP 0056).

CONDITION/INDICATION

Does foldlock engage and hold?

DECISION

NO - Step 4.

YES - END OF TESTING.

STEP

4. Check foldlock catch on outer pontoon for wear, or if bent or damaged.

Repair catch if worn or damaged (WP 0038) or (WP 0056).

CONDITION/INDICATION

Does foldlock engage and hold?

DECISION

NO - Bay is unserviceable. Remove bay from inventory.

YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - HANDRAIL STANCHION DOES NOT HOLD WHEN SET**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Equipment Condition

Bay open (TM 5-5420-278-10)

References

WP 0004
WP 0031

TROUBLESHOOTING PROCEDURE**HANDRAIL STANCHION DOES NOT HOLD WHEN SET****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

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

CONDITION/INDICATION

Does handrail stanchion hold?

DECISION

NO - Step 2.
YES - END OF TESTING.

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 0031).

CONDITION/INDICATION

Does handrail stanchion hold?

DECISION

NO - Bay is unserviceable. Remove bay from inventory.

HANDRAIL STANCHION DOES NOT HOLD WHEN SET - Continued

YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - INNER OR OUTER PONTOON LEAKING**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1, Item 29)

References (cont.)

WP 0024
WP 0032
WP 0066

References

TM 5-5420-278-10
WP 0004

Equipment Condition

Bay open (TM 5-5420-278-10)

TROUBLESHOOTING PROCEDURE**INNER OR OUTER PONTOON LEAKING****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check for loose, damaged, or missing bilge plugs and bilge plug seals. Inspect pontoon for structural damage such as cracks, broken welds, or holes.
 - a. Tighten loose bilge plugs (TM 5-5420-278-10).
 - b. Replace missing or damaged bilge plugs and seals (WP 0032).
 - c. Repair visible structural damage by welding (WP 0066).
 - d. Perform pontoon leak test (WP 0024).

CONDITION/INDICATION

Is inner or outer pontoon leaking?

DECISION

NO - END OF TESTING.
YES - Repeat Step 1.

STEP

- 2.

CONDITION/INDICATION

INNER OR OUTER PONTOON LEAKING - Continued

DECISION

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - LOWER COUPLING JAMMED AND WILL NOT LINE UP**

INITIAL SETUP:**Tools and Special Tools**

Crowbar (WP 0130, Table 1, Item 4)
 General mechanic's tool kit (WP 0130, Table 1,
 Item 29)
 Lock holder (WP 0130, Table 1, Item 16)

References (cont.)

WP 0004
 WP 0011

Equipment Condition

Bay in water (TM 5-5420-278-10)

References

TM 5-5420-278-10

TROUBLESHOOTING PROCEDURE**LOWER COUPLING JAMMED AND WILL NOT LINE UP****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check for obstruction between bays.

Remove obstruction from between bays using crowbar.

CONDITION/INDICATION

Does lower coupling line up?

DECISION

NO - Step 2.
 YES - END OF TESTING.

STEP

2. Check alignment of top surface of adjoining roadways.
 - a. Level top surface of roadways using lock holder (TM 5-5420-278-10).
 - b. Draw adjoining bays closer together using rope (TM 5-5420-278-10).
 - c. Extend yokes (ramp bay only) until lower lock-drive pins can be engaged (TM 5-5420-278-10).

CONDITION/INDICATION

Does lower coupling line up?

LOWER COUPLING JAMMED AND WILL NOT LINE UP - Continued

DECISION

- NO - Replace Lower Coupling ((WP 0058)).
- YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - LOWER LOCK-DRIVE WILL NOT ENGAGE**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

References (cont.)

WP 0010
WP 0043
WP 0058
WP 0060
WP 0068

References

WP 0004

TROUBLESHOOTING PROCEDURE**LOWER LOCK-DRIVE WILL NOT ENGAGE****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check for possible misalignment of lower couplings.
 - a. Align bay lower couplings.
 - b. Perform WP 0010 (WP 0010) then return to this WP.

CONDITION/INDICATION

Does lower lock-drive engage?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check for seized jackscrew at upper and lower trunnion nuts.
Lubricate jackscrew (WP 0068).

CONDITION/INDICATION

Does lower lock-drive engage?

LOWER LOCK-DRIVE WILL NOT ENGAGE - Continued**DECISION**

- NO - Step 3.
- YES - END OF TESTING.

STEP

3. Check for bent jackscrew or damaged threads.
If threads are damaged or jackscrew is bent, replace jackscrew (WP 0043) or (WP 0060).

CONDITION/INDICATION

Does lower lock-drive engage?

DECISION

- NO - Step 4.
- YES - END OF TESTING.

STEP

4. Check lower lock-drive assembly for jamming due to debris or damage resulting in misalignment.
Remove debris or replace damaged parts (WP 0043) or (WP 0060).

CONDITION/INDICATION

Does lower lock-drive engage?

DECISION

- NO - Step 5.
- YES - END OF TESTING.

STEP

5. Check for bent or damaged connecting eyes on yokes (ramp bay only).
Replace yoke if bent or damaged (WP 0043).

CONDITION/INDICATION

Does lower lock-drive engage?

DECISION

- NO - Step 6.
- YES - END OF TESTING.

STEP

6. Check for bent or damaged connecting eyes on inner pontoon main lower coupling (interior bay only).
Replace lower main coupling (WP 0058).

CONDITION/INDICATION

Does lower lock-drive engage?

LOWER LOCK-DRIVE WILL NOT ENGAGE - Continued

DECISION

NO - Bay is unserviceable. Remove bay from inventory.
YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - OUTER PONTOON LOCK WILL NOT ENGAGE OR HOLD WHEN
ENGAGED (INTERIOR BAY ONLY)**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1,
Item 29)

Equipment Condition

Bay in water (TM 5-5420-278-10)

References

WP 0004
WP 0055

TROUBLESHOOTING PROCEDURE**OUTER PONTOON LOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED (INTERIOR BAY ONLY)****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check for bent or damaged outer pontoon lock/release lever, receiver plate, or turnbuckle.
If bent or damaged, straighten or replace lock/release lever, receiver plate, or turnbuckle (WP 0055).

CONDITION/INDICATION

Does outer pontoon lock engage and hold?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check for correct outer pontoon lock adjustment.
Perform outer pontoon lock adjustment (WP 0055).

**OUTER PONTOON LOCK WILL NOT ENGAGE OR HOLD WHEN ENGAGED (INTERIOR BAY ONLY) -
Continued**

CONDITION/INDICATION

Does outer pontoon lock engage and hold?

DECISION

NO - Bay is unserviceable. Remove bay from inventory.
YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - PUMP SYSTEM WILL NOT HOLD BAY IN RAISED POSITION
(RAMP BAY ONLY)**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1,
Item 29)

References

TM 5-5420-278-10
WP 0004
WP 0045
WP 0047

References (cont.)

WP 0048
WP 0049
WP 0069
WP 0071

Equipment Condition

Bay in water (TM 5-5420-278-10)

TROUBLESHOOTING PROCEDURE**PUMP SYSTEM WILL NOT HOLD BAY IN RAISED POSITION (RAMP BAY ONLY)****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check hose connections for proper installation.
Observe color coding on hose connections and check for proper connection (WP 0069).

CONDITION/INDICATION

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check for disconnected quick-disconnect couplings (WP 0069).
Connect quick-disconnect couplings.

PUMP SYSTEM WILL NOT HOLD BAY IN RAISED POSITION (RAMP BAY ONLY) - Continued**CONDITION/INDICATION**

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 3.

YES - END OF TESTING.

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).

CONDITION/INDICATION

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 4.

YES - END OF TESTING.

STEP

4. Check pump tubes and hoses for leaks.

- a. If leak is found, repair or replace damaged tube or hose (WP 0049).
- b. Bleed pump system (WP 0045).

CONDITION/INDICATION

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 5.

YES - END OF TESTING.

STEP

5. Check pump control valves for leaks.

Replace pump if control valves are leaking (WP 0047).

CONDITION/INDICATION

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 6.

YES - END OF TESTING.

PUMP SYSTEM WILL NOT HOLD BAY IN RAISED POSITION (RAMP BAY ONLY) - Continued**STEP**

6. Check cylinder valve block for leaks.
Replace cylinder if cylinder valve block is leaking (WP 0048).

CONDITION/INDICATION

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 7.
YES - END OF TESTING.

STEP

7. Check cylinder for leaks.
Replace cylinder if leaking (WP 0048).

CONDITION/INDICATION

Does pump system hold ramp bay in raised position?

DECISION

NO - Step 8.
YES - END OF TESTING.

STEP

8. Conduct a pressure test using Maintenance Deflation Hose Assembly (WP 0045) and (WP 0071) to ensure 5.8 psi. (400 millibars) of pressure is achieved.

CONDITION/INDICATION

Is 5.8 psi (400 millibars) of pressure achieved?

DECISION

NO - Replace pump (WP 0047).
YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY)**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1, Item 29)

References

TM 5-5420-278-10
WP 0004

References (cont.)

WP 0045
WP 0047
WP 0048
WP 0049
WP 0069

TROUBLESHOOTING PROCEDURE**PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY)****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check hose connections for proper installation.

Observe color coding on hose connections and check for proper connection (WP 0069).

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check for disconnected quick-disconnect couplings (WP 0069).

Connect quick-disconnect couplings.

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 3.
YES - END OF TESTING.

PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY) - Continued**STEP**

3. Verify 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.

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 4.
YES - END OF TESTING.

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 0045).

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 5.
YES - END OF TESTING.

STEP

5. Check pump tubes and hoses for leaks.
 - a. If leak is found, repair or replace damaged tube or hose (WP 0049).
 - b. Bleed pump system (WP 0045).
 - c. If no leaks can be found, check hoses for correct installation (WP 0049).

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 6.
YES - END OF TESTING.

STEP

6. Check cylinder for external leak.
Replace cylinder if leaking (WP 0048).

PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY) - Continued**CONDITION/INDICATION**

Does pump system raise bay?

DECISION

NO - Step 7.

YES - END OF TESTING.

STEP

7. Check pump for external leaks.
Replace pump if leaking (WP 0047).

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 8.

YES - END OF TESTING.

STEP

8. Check pump control valves for leaks.
Replace pump if pump control valves are leaking (WP 0047).

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 9.

YES - END OF TESTING.

STEP

9. Check cylinder valve block for leaks.
Replace cylinder if valve block is leaking (WP 0048).

CONDITION/INDICATION

Does pump system raise bay?

DECISION

NO - Step 10.

YES - END OF TESTING.

STEP

10. Conduct a pressure test using Maintenance Deflation Hose Assembly (WP 0045) and (WP 0070) to ensure 5.8 psi (400 millibars) of pressure is achieved.

PUMP SYSTEM WILL NOT RAISE BAY (RAMP BAY ONLY) - Continued

CONDITION/INDICATION

Is 5.8 psi (400 millibars) of pressure achieved?

DECISION

NO - Replace pump (WP 0047).
YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - RAMP OR INTERIOR BAY TRUNNIONS DAMAGED**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1, Item 29)

References (cont.)

WP 0035
WP 0050

References

WP 0004
WP 0025
WP 0034

Equipment Condition

Bay in closed or transport position
(TM 5-5420-278-10)

TROUBLESHOOTING PROCEDURE**RAMP OR INTERIOR BAY TRUNNIONS DAMAGED****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check trunnion for excessive wear, damage, or if bent (WP 0035).
Repair or replace trunnion if worn, bent, or damaged; refer to (WP 0034) and (WP 0035).

CONDITION/INDICATION

Are ramp or interior bay trunnions operational?

DECISION

NO - If trunnion is not repairable, replace pontoon. See Ramp Bay (WP 0025) or Interior Bay (WP 0050).
YES - END OF TESTING.

RAMP OR INTERIOR BAY TRUNNIONS DAMAGED - Continued

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - SWIVEL HOOK WILL NOT ENGAGE OR HOLD WHEN ENGAGED
(RAMP BAY ONLY)**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

References (cont.)

WP 0036
WP 0041

References

WP 0004

Equipment Condition

Bay in open position (TM 5-5420-278-10)

TROUBLESHOOTING PROCEDURE**SWIVEL HOOK WILL NOT ENGAGE OR HOLD WHEN ENGAGED (RAMP BAY ONLY)****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

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.

CONDITION/INDICATION

Does swivel hook engage and hold?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

SWIVEL HOOK WILL NOT ENGAGE OR HOLD WHEN ENGAGED (RAMP BAY ONLY) - Continued

2. Check retainer pin for proper adjustment.

Adjust retainer pin (WP 0036).

CONDITION/INDICATION

Does swivel hook engage and hold?

DECISION

NO - Step 3.

YES - END OF TESTING.

STEP

3. Check for bent or damaged tension spring assembly.

If bent or damaged, straighten or replace tension spring assembly (WP 0041) or (WP 0036).

CONDITION/INDICATION

Does swivel hook engage and hold?

DECISION

NO - Notify maintenance supervisor.

YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - TRAVEL LATCH WILL NOT RELEASE**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Equipment Condition

Bay closed (TM 5-5420-278-10)

References

WP 0004
WP 0039

TROUBLESHOOTING PROCEDURE**TRAVEL LATCH WILL NOT RELEASE****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

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 0039).

CONDITION/INDICATION

Does travel latch release?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

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

Adjust travel latch clearance (WP 0039).

TRAVEL LATCH WILL NOT RELEASE - Continued

CONDITION/INDICATION

Does travel latch release?

DECISION

NO - Replace travel latch (WP 0039).
YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - UPPER COUPLING WILL NOT ENGAGE IN RECEPTACLE BLOCK**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit (WP 0130, Table 1, Item 29)

References (cont.)

WP 0004
WP 0040

References

TM 5-5420-278-10

Equipment Condition

Bay in open position (TM 5-5420-278-10)

TROUBLESHOOTING PROCEDURE**UPPER COUPLING WILL NOT ENGAGE IN RECEPTACLE BLOCK****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Check for obstructions such as rocks or debris lodged in receptacle blocks.
Free and remove debris from area.

CONDITION/INDICATION

Does upper coupling engage?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check gap between transverse upper couplings.
Change gap using roadway tool and crowbar until transverse upper coupling can be engaged (TM 5-5420-278-10).

CONDITION/INDICATION

Does upper coupling engage?

UPPER COUPLING WILL NOT ENGAGE IN RECEPTACLE BLOCK - Continued**DECISION**

- NO - Step 3.
- YES - END OF TESTING.

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 rope (TM 5-5420-278-10).

CONDITION/INDICATION

Does upper coupling engage?

DECISION

- NO - Step 4.
- YES - END OF TESTING.

STEP

4. Check for bent or heavily worn lever or receptacle block.
 - a. Replace bent or worn lever or removable receptacle block (WP 0040).
 - b. Replace worn or damaged transverse receptacle block (WP 0040).

CONDITION/INDICATION

Does upper coupling engage?

DECISION

- NO - If upper coupling is not repairable, replace pontoon. See Ramp Bay (WP 0025) or Interior Bay (WP 0050)
- YES - END OF TESTING.

END OF WORK PACKAGE

**FIELD TROUBLESHOOTING
TROUBLESHOOTING PROCEDURE - UPPER COUPLING WILL NOT RELEASE FROM RECEPTACLE
BLOCK**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Crowbar (WP 0130, Table 1, Item 4)
Lock holder (WP 0130, Table 1, Item 16)

Equipment Condition

Bay in open position (TM 5-5420-278-10)

References

TM 5-5420-278-10
WP 0004

TROUBLESHOOTING PROCEDURE**UPPER COUPLING WILL NOT RELEASE FROM RECEPTACLE BLOCK****WARNING**

Operation of a deadlined Improved Ribbon Bridge (IRB) may result in personnel injury or death and/or damage to equipment.

NOTE

Refer to Troubleshooting introduction prior to performing troubleshooting procedures (WP 0004).

STEP

1. Verify that lower lock-drive pins were not inadvertently disengaged before the upper couplings.
Use ropes and pull bays together until bay-to-bay upper couplings can be released (TM 5-5420-278-10).

CONDITION/INDICATION

Does upper coupling release from receptacle block?

DECISION

NO - Step 2.
YES - END OF TESTING.

STEP

2. Check for obstructions between inner-to-inner pontoons.
Change gap using roadway tool and crowbar until transverse upper coupling can be engaged.

UPPER COUPLING WILL NOT RELEASE FROM RECEPTACLE BLOCK - Continued**CONDITION/INDICATION**

Does upper coupling release from receptacle block?

DECISION

NO - Step 3.

YES - END OF TESTING.

STEP

3. Check for bent or heavily worn lever or receptacle block.
 - a. Replace bent or worn lever or removable receptacle block (WP 0040).
 - b. Replace worn or damaged transverse receptacle block (WP 0040).

CONDITION/INDICATION

Does upper coupling engage?

DECISION

NO - If upper coupling is not repairable, replace pontoon. See Ramp Bay (WP 0025) or Interior Bay (WP 0050)

YES - END OF TESTING.

END OF WORK PACKAGE

CHAPTER 3

PREVENTIVE MAINTENANCE CHECKS AND SERVICES

FIELD MAINTENANCE PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

Field Maintenance PMCS are performed at regular intervals to ensure the equipment is fully operational and ready at all times. Maintaining the Improved Ribbon Bridge Ramp Bay (IRB-R/B) and Improved Ribbon Bridge Interior Bay (IRB-I/B) 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.

GENERAL SERVICE AND INSPECTION PROCEDURES

Always perform PMCS in the same order. If a component does not pass PMCS inspection, troubleshoot it with the instructions in this manual. If a problem is found that is beyond your echelon of repair, notify Maintenance Supervisor.

Inspect the IRB for the following items:

- Cleanliness – Dirt, grease, oil, and debris get in the way and may cover up a serious problem.
- Nuts and Screws – Check for obvious looseness, missing parts, and bent or broken conditions. Look for chipped paint, bare metal, or rust around screw heads. If a loose screw or nut is found, tighten it or report it to Maintenance Supervisor.
- Welds – Look for loose or chipped paint, rust, or gaps where parts are welded together. If a cracked weld is found, report it to Maintenance Supervisor.
- Fluid Lines, Fittings, and Air Lines – Look for wear, damage, or leaks, and ensure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can also identify a leak. If a leak comes from a loose fitting or connector, tighten it. Operate the pump (ramp bay only) and listen for air leaks. If any part is broken or worn out, or you hear a leak, report the leak to Maintenance Supervisor.
- Damage – Damage is defined as any condition that affects safety or would render the bridge unserviceable for mission requirements.
- Fluid Leakage – It is necessary for you to know how fluid leakage affects the status of the IRB. Following are types/classes of leakage you need to know to be able to determine the status of the IRB. Learn these leakage definitions and remember - when in doubt, notify your supervisor. Equipment operation is allowed with minor leakage (Class I or II). Consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor. When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS. Class III leaks should be reported immediately to your supervisor.

Class I: Seepage of fluid indicated by wetness or discoloration that is not great enough to form drops.

GENERAL SERVICE AND INSPECTION PROCEDURES - Continued

Class II: Leakage of fluid great enough to form drops but not enough to cause drops to fall from item being checked/inspected.

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

- Corrosion Control – Corrosion control maintenance is a requirement of the bridge. While performing PMCS, look for rust, peeling paint, blistering, damage that can cause corrosion, or other signs of corrosion. Inspect the entire bridge as well as the specific areas mentioned in the PMCS. Also look for and always be aware of missing or damaged corrosion preventive compounds. Report problem areas as soon as possible to Maintenance Supervisor. Correcting problem areas as soon as possible will maximize the life of the bridge. Appearance and color of corrosion is dependent on the metal/components involved. Use the following table to aid in visual detection of corrosion.

Table 1. Visual Detection of Corrosion.

METAL/COMPONENT	CORROSION
Steel	Powdery, Reddish-Brown Film
Aluminum	Powdery, White Film
Brass	Green Film

REPORTING DEFICIENCIES

If any problem with the equipment is discovered during PMCS or while it is being operated that cannot be corrected at the Field Maintenance level, it must be reported. Refer to DA PAM 750-8 and report the deficiency on Equipment Inspection and Maintenance Worksheet, DA Form 2404/5988-E.

OIL FILTERS

Oil filters shall be serviced/cleaned/changed, as applicable, when:

- They are known to be contaminated or clogged,
- Service is recommended by AOAP laboratory analysis, or
- At prescribed hardtime intervals.

ARMY OIL ANALYSIS PROGRAM (AOAP)

The Improved Ribbon Bridge (IRB) is not enrolled in the Army Oil Analysis Program. HARDTIME INTERVALS APPLY.

PAINTING

Paint touch-up of the IRB should be performed as needed during PMCS. Refer to painting instructions (WP 0067).

EXPLANATION OF PMCS TABLE

The following columns appear left to right in PMCS tables (WP 0021) and (WP 0022):

- ITEM NO: Provides logical order for PMCS performance and is used as a source number for DA Form 2404, on which your PMCS results will be recorded.
- INTERVAL: Indicates when check or service is to be performed.

EXPLANATION OF PMCS TABLE - Continued

Semi-Annually — performed twice a year.

ITEM TO BE CHECKED/SERVICED: Lists the system, common name, or location of the item to be inspected.

PROCEDURE: Provides instructions for inspecting and servicing items. If a defect is found, repair, fill, remove, or adjust as indicated, or have item repaired or replaced at higher maintenance level.

EQUIPMENT NOT READY/AVAILABLE IF: Provides information for deadlining a bridge when checks or services reveal a defect or deficiency of a component(s) of the bridge.

END OF WORK PACKAGE

**FIELD MAINTENANCE
RAMP BAY PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

References (cont.)

WP 0020
WP 0067

References

TM 5-5420-278-10

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay.


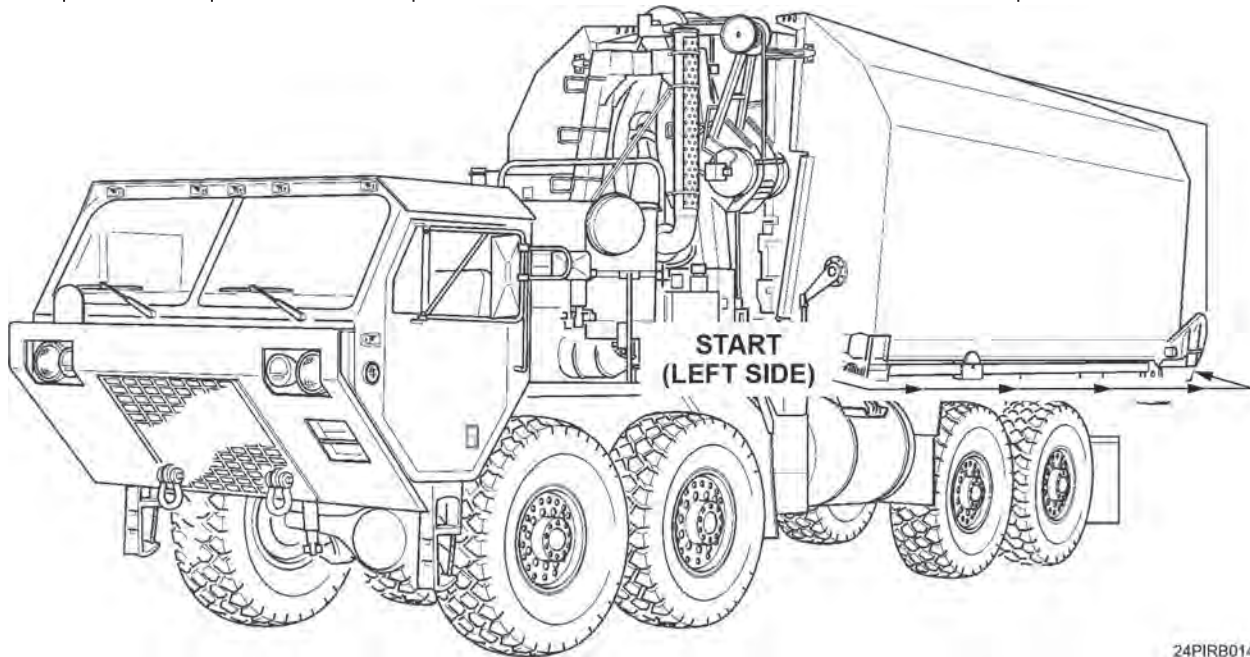
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p align="center">WARNING</p>  <ul style="list-style-type: none"> • When checking/servicing an item, ensure that all attaching/mounting hardware is properly secured. Loose, cracked, broken, or missing hardware may result in personnel injury or death and/or damage to equipment. • Ensure longitudinal and transverse couplings and swivel hooks are engaged before performing inspection. Failure to comply may result in personnel injury or death and/or damage to equipment. <p align="center">CAUTION</p> <p>During PMCS, ensure that components and assemblies are correctly installed. Incorrect installation may result in damage to equipment.</p>	

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p style="text-align: center;">NOTE</p> <ul style="list-style-type: none"> • This PMCS uses the one-look format. With bay on the transporter, start at the left outer pontoon nearest the driver's side of cab, connecting end of bay, proceeding counterclockwise. • Remove rust and accumulated corrosion during PMCS. Corrosion not removed promptly will degrade equipment performance. • Start PMCS inspections at left front corner of bay. 	



24PIRB014

Figure 1. PMCS for Ramp Bay.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Semi-annually	Left front trunnion	1. Inspect left front trunnion (Figure 2, Item 1) for cracks or broken welds. 2. Ensure trunnion (Figure 2, Item 1) will properly secure in lock.	Cracked or broken welds noted. Any visible hole will deadline bay. Trunnion will not properly secure in lock.

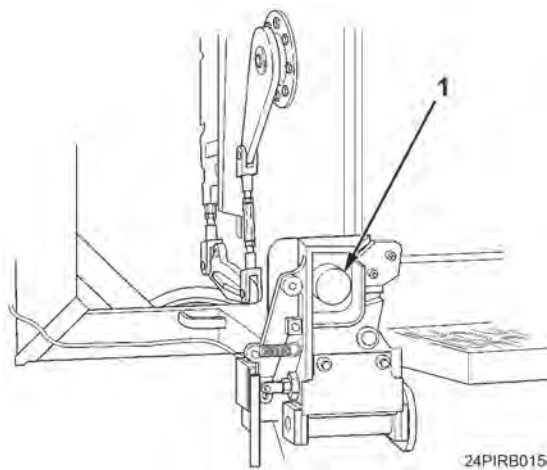


Figure 2. Left Front Trunnion.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Semi-annually	Left outer pontoon skin surface	<p>1. Inspect left outer pontoon skin surface along side (Figure 3, Item 1) for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>2. Inspect seams for cracked or broken welds.</p> <div style="text-align: center;"> <p>24PIRB016</p> </div>	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>
3	Semi-annually	Left rear trunnion and wear cap	Inspect left rear trunnion (Figure 4, Item 2) and wear cap (Figure 4, Item 1) for cracks, broken welds, or missing wear cap.	Cracked, broken welds, or missing wear cap noted. Any visible hole will deadline bay.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

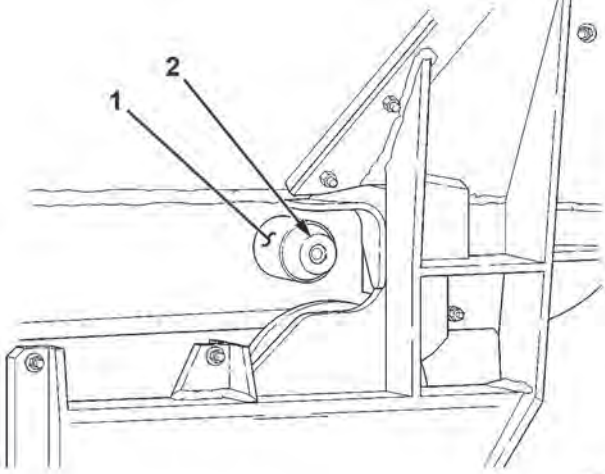
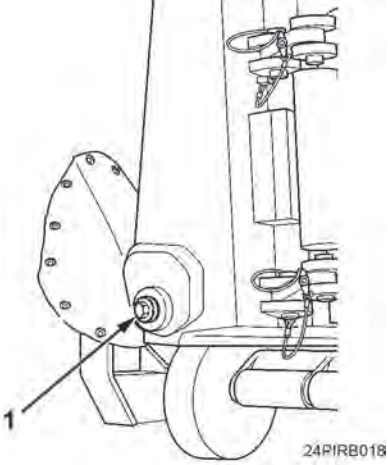
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p style="text-align: right; margin-right: 50px;">24PIRB017</p> <p>Figure 4. Left Rear Trunnion and Wear Cap.</p>				
4	Semi-annually	Left drain plug	Inspect left drain plug (Figure 5, Item 1) for cracks or broken welds.	Cracked or broken welds noted.
 <p style="text-align: right; margin-right: 50px;">24PIRB018</p> <p>Figure 5. Left Drain Plug.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
5	Semi-annually	Left ramp plate and strap	<ol style="list-style-type: none"> 1. Inspect left ramp plate (Figure 6, Item 1) for cracks, broken welds, and condition of non-skid coating. Refer to (WP 0067) for application of non-skid coating. 2. Inspect pins and hinges for cracks, broken welds, or deformation of pin mounting holes. 3. Inspect strap (Figure 6, Item 2) for tears or missing hook. 4. Inspect ratchet for proper operation. 	<p>Cracked or broken welds noted.</p> <p>Pins and hinges are cracked, broken welds are noted, or hole deformation greater than 50 percent hole diameter noted.</p>
<p>Figure 6. Left Ramp Plate.</p>				
6	Semi-annually	Left stabilizer assembly	Inspect left stabilizer assembly (Figure 7, Item 1) for cracks, if bent, or if pins are loose or missing.	Stabilizer is cracked or bent, or pins are loose or missing.
<p>Figure 7. Left Stabilizer Assembly.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
7	Semi-annually	Left stowage compartment latches, lid, and compartment seal	<p>Check for loose, damaged, or missing mounting hardware, left stowage compartment latches (Figure 8, Item 2), lid (Figure 8, Item 1), compartment seal (Figure 8, Item 4), and BII (Figure 8, Item 3).</p> <div> </div> <p>Figure 8. Left Stowage Compartment.</p>	Lid and latches are loose, will not close, or are missing.
8	Semi-annually	Left and right lower roadway pontoon drain plugs	<p>Inspect left and right lower roadway pontoon drain plugs (Figure 9, Item 1) for cracks or broken welds.</p> <div> </div> <p>Figure 9. Left and Right Lower Roadway Pontoon Drain Plugs.</p>	Cracked or broken welds noted.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

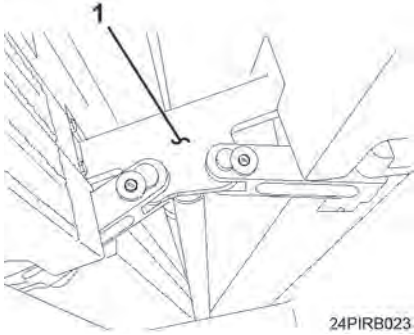
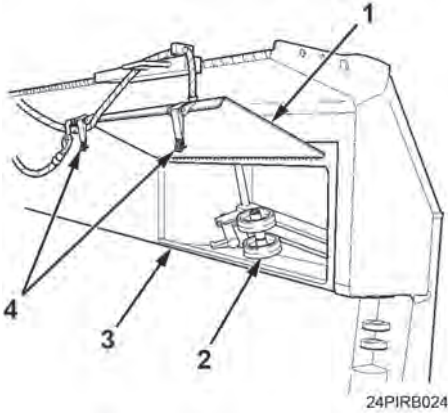
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
9	Semi-annually	Right stabilizer assembly	Inspect right stabilizer assembly (Figure 10, Item 1) for cracks, if bent, or if pins are loose or missing. <div style="text-align: center;">  <p>24PIRB023</p> </div> <p style="text-align: center;">Figure 10. Right Stabilizer Assembly.</p>	Stabilizer is cracked or bent, or pins are loose or missing.
10	Semi-annually	Right stowage compartment latches, lid and compartment seal	Check for loose, damaged, or missing mounting hardware, compartment latches (Figure 11, Item 4), lid (Figure 11, Item 1), compartment seal (Figure 11, Item 3), and Bll (Figure 11, Item 2). <div style="text-align: center;">  <p>24PIRB024</p> </div> <p style="text-align: center;">Figure 11. Right Stowage Compartment.</p>	Lid and latches are loose, will not close, or are missing.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
11	Semi-annually	Right ramp plate and strap	<ol style="list-style-type: none"> 1. Inspect ramp plate (Figure 12, Item 2) for cracks, broken welds, and condition of non-skid coating. Refer to (WP 0067) for application of non-skid coating. 2. Inspect pins and hinges for cracks, broken welds, or deformation of pin mounting holes. 3. Inspect straps (Figure 12, Item 1) for tears or missing hook. 4. Inspect ratchet for proper operation. 	<p>Cracked or broken welds noted.</p> <p>Pins and hinges are cracked, broken welds are noted, or hole deformation of greater than 50 percent hole diameter noted.</p>
<p>24PIRB025</p>				
<p>Figure 12. Right Ramp Plate.</p>				
12	Semi-annually	Right drain plug	Inspect right drain plug (Figure 13, Item 1) for cracks or broken welds.	Cracks or broken welds noted.
<p>24PIRB026</p>				
<p>Figure 13. Right Drain Plug.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

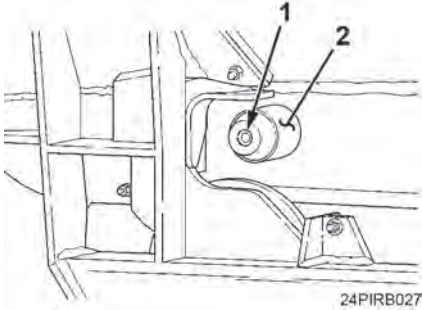
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
13	Semi-annually	Right rear trunnion and wear cap	Inspect right rear trunnion (Figure 14, Item 1) and wear cap (Figure 14, Item 2) for cracks, broken welds, or missing wear cap. 	Cracked, broken welds, or missing wear cap noted. Any visible hole will deadline bay.
14	Semi-annually	Right outer pontoon skin surface	1. Inspect right outer pontoon skin surface along side (Figure 15, Item 1) for punctures, holes, tears, seam ruptures, cracks, and broken welds. 2. Inspect seams for cracked or broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.

Figure 14. Right Rear Trunnion and Wear Cap.

Figure 15. Right Outer Pontoon.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
15	Semi-annually	Right front trunnion	<ol style="list-style-type: none"> 1. Inspect trunnion (Figure 16, Item 1) for cracks or broken welds. 2. Ensure trunnion (Figure 16, Item 1) will properly secure in lock. 	<p>Cracked or broken welds noted. Any visible hole will deadline bay.</p> <p>Trunnion will not properly secure in lock.</p>

Figure 16. Right Front Trunnion.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
16	Semi-annually	Right outer pontoon skin surface	1. Inspect right outer pontoon skin surface (Figure 17, Item 1) at end for punctures, holes, tears, seam ruptures, cracks, and broken welds. 2. Inspect seams for cracked or broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.

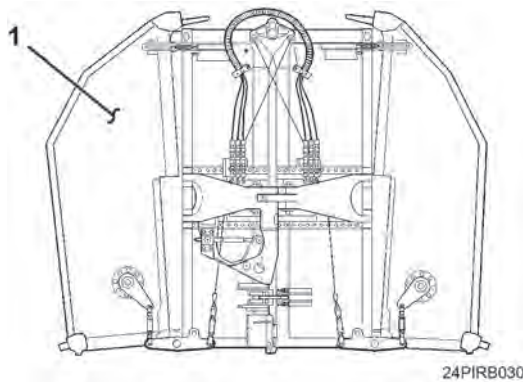


Figure 17. Right Outer Pontoon, Connecting End.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

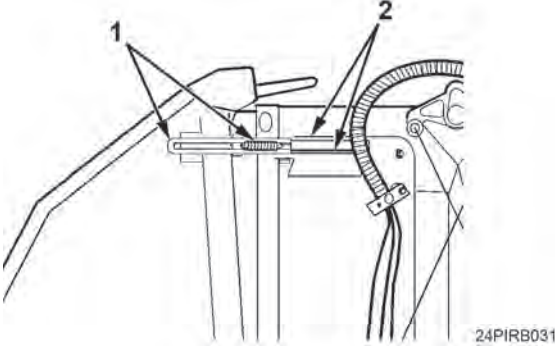
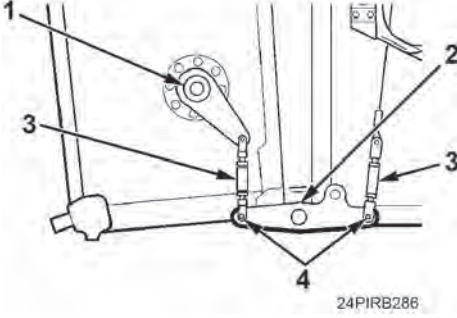
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
17	Semi-annually	Right foldlock assembly and brackets	Inspect right foldlock assembly (Figure 18, Item 1) and brackets (Figure 18, Item 2) for structural damage and proper movement. <div style="text-align: center;">  <p>24PIRB031</p> </div> <p style="text-align: center;">Figure 18. Right Foldlock Assembly.</p>	Damage prevents foldlock from securing pontoon.
18	Semi-annually	Right unfolding mechanism and torsion bar	Check right unfolding mechanism – stabilizer lever (Figure 19, Item 2), retaining pins (Figure 19, Item 4), turnbuckle (Figure 19, Item 3), and torsion bar (Figure 19, Item 1) – for structural damage. <div style="text-align: center;">  <p>24PIRB286</p> </div> <p style="text-align: center;">Figure 19. Right Unfolding Mechanism and Torsion Bar.</p>	Turnbuckle is binding, cracked, or deformation is noted, or mounting hardware is missing or loose.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
19	Semi-annually	Right double-eye yoke, cylinder, and lower lock-drive assembly	<ol style="list-style-type: none"> 1. Inspect lower lock-drive assembly (Figure 20, Item 2) jackscrew threads for cracks, burrs, nicks, and deformation. 2. Inspect trunnions and pin for cracks. 3. Inspect cylinder for leaks. 4. Inspect hoses and fittings for cracks, compression, and leakage. 5. Inspect right double-eye yoke (Figure 20, Item 1) for cracks, deformation, and elongation of eye. 	<p>Jackscrew will not extend or retract pin properly.</p> <p>Cracks or broken welds noted.</p> <p>Any Class III fluid leak noted (WP 0020).</p> <p>Any Class III fluid leak noted (WP 0020).</p> <p>Cracks noted or deformation prevents proper operation. Hole elongation greater than 50 percent of hole diameter noted.</p>

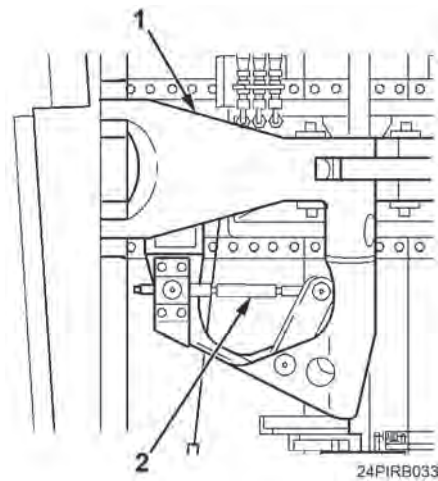


Figure 20. Right Double-Eye Yoke.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
20	Semi-annually	Right hydraulic hoses, loom, and connectors	<ol style="list-style-type: none"> 1. Inspect for proper seating of connectors (Figure 21, Item 2). 2. Inspect hydraulic hoses (Figure 21, Item 3) for fluid leaks or physical damage. 3. Inspect loom (Figure 21, Item 1) for physical damage. 	<p>Connectors are not seated properly.</p> <p>Any Class III fluid leak is noted (WP 0020).</p>

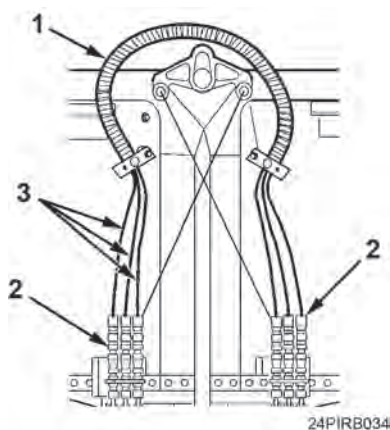


Figure 21. Right Hydraulic Hoses.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

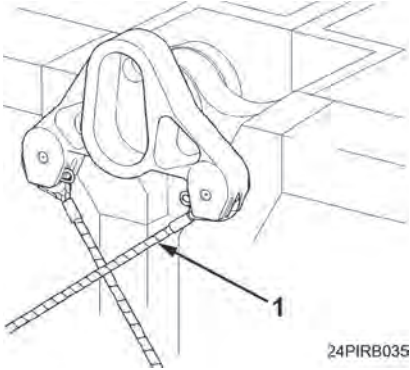
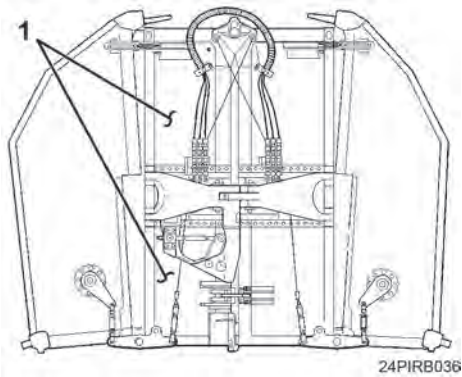
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
21	Semi-annually	Right unfolding cable assemblies	<p>1. Inspect right unfolding cable assembly (Figure 22, Item 1) for kinks, compression, flat surfaces, and broken or frayed strands.</p> <p>2. Inspect turnbuckle for binding, loose, or missing hardware.</p>  <p>Figure 22. Unfolding Cable Assembly.</p>	<p>Cable kinked, compressed, flattened, or any strands broken.</p> <p>Turnbuckle binding, loose, or missing hardware.</p>
22	Semi-annually	Right inner pontoon skin surface	<p>1. Inspect right inner pontoon skin surface (Figure 23, Item 1) for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>2. Inspect seams for cracked or broken welds.</p>  <p>Figure 23. Right Inner Pontoon, Connecting End.</p>	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p style="text-align: center;">WARNING</p> <p>Perform below inspections while bay is on the ground. Failure to comply may result serious injury or death to personnel.</p> <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 (Figure 24).</p>	

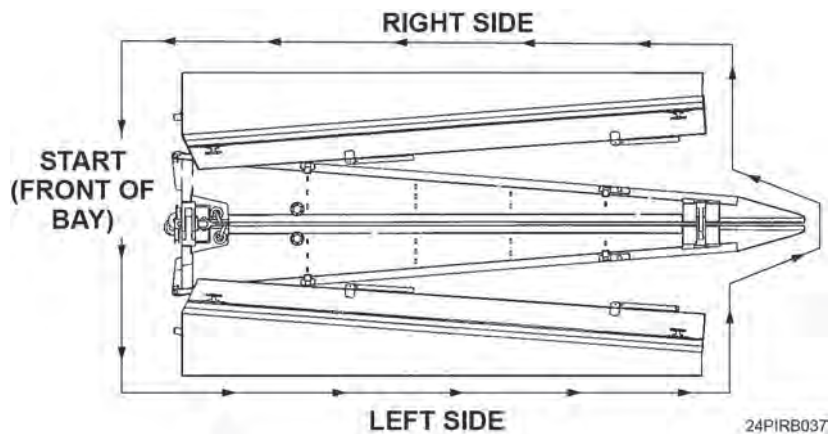


Figure 24. PMCS for Ramp Bay, Top View.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
23	Semi-annually	Left and right front load receiving pin, recess, cleat, and splash plate	<ol style="list-style-type: none"> 1. Inspect left and right front load receiving pin (Figure 25, Item 3) and mounting hardware for cracks or if missing. 2. Inspect recess (Figure 25, Item 4) for cracks and broken welds. 3. Check splash plate (Figure 25, Item 2) for cracks and other damage. 4. Inspect cleat (Figure 25, Item 1) for broken welds or if missing. 	<p>Pin or hardware is missing or damaged preventing use.</p> <p>Cracks or broken welds noted.</p> <p>Cracks or damage noted.</p> <p>Cracks or damage noted.</p>
<p>Figure 25. Load Receiving Pin, Front.</p>				
24	Semi-annually	Left and right handrail assemblies, chain extension, and threaded connector	<ol style="list-style-type: none"> 1. Check left and right handrail assemblies (Figure 26, Item 1) for missing or damaged mounting hardware, damaged or deteriorated rope (Figure 26, Item 2), missing or damaged snap hooks (Figure 26, Item 5), chain extensions (Figure 26, Item 4), and threaded connector (Figure 26, Item 3). 2. Check if stanchion will lock in stowed and set positions. 	<p>Missing or damaged parts are found.</p> <p>Stanchion is not operational.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

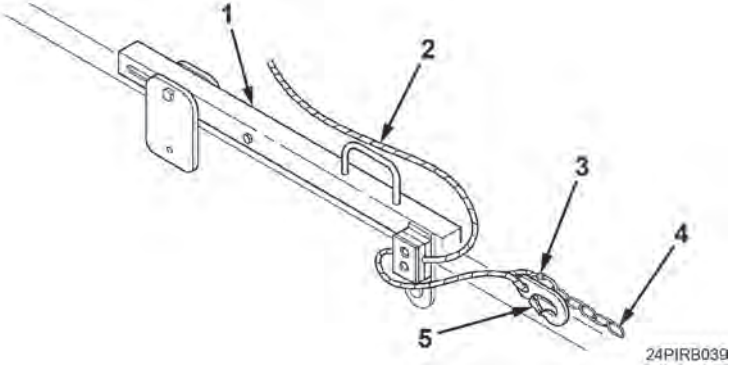
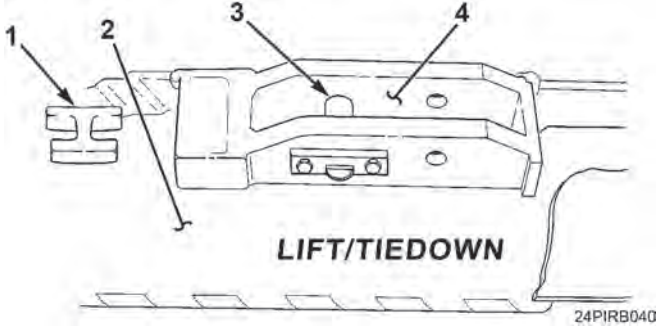
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 26. Handrail Assemblies.</p>				
25	Semi-annually	Left and right rear load receiving pin, recess, cleat, and splash plate	<ol style="list-style-type: none"> 1. Inspect left and right rear load receiving pin (Figure 27, Item 3) and mounting hardware for cracks or if missing. 2. Inspect recess (Figure 27, Item 4) for cracks and broken welds. 3. Check splash plate (Figure 27, Item 2) for cracks and other damage. 4. Inspect cleat (Figure 27, Item 1) for broken welds or if missing. 	<p>Pin or hardware is missing or damaged preventing use.</p> <p>Cracks or broken welds noted.</p> <p>Cracks or damage noted.</p> <p>Cracks or damage noted.</p>
 <p>Figure 27. Load Receiving Pin, Rear.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

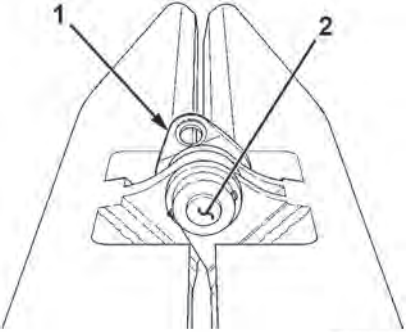
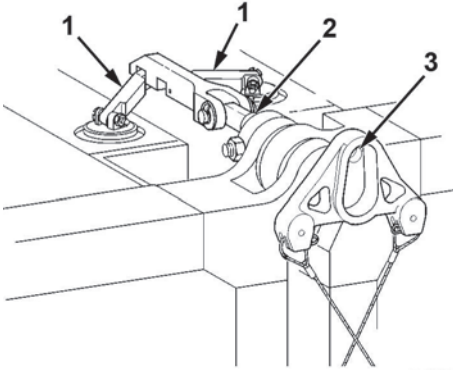
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
26	Semi-annually	Rear lifting lug and eyebolt	Inspect rear lifting lug (Figure 28, Item 1) for cracks, deformation of eyebolt (Figure 28, Item 2), and proper assembly.	Any cracks noted or eyebolt elongation of more than 0.50 in. (12.7 mm), or not assembled properly.
 <p style="text-align: right; margin-right: 50px;">24PIRB041</p>				
<p>Figure 28. Rear Lifting Lug.</p>				
27	Semi-annually	Front lifting lug, eyebolt and lever assembly	<ol style="list-style-type: none"> 1. Inspect front lifting lug (Figure 29, Item 3) and lever assembly (Figure 29, Item 1) for damaged, loose, or missing parts. 2. Inspect eyebolt (Figure 29, Item 2) for cracks, deformation of eyebolt, and proper shim assembly. 	<p>Any damaged, loose, or missing parts.</p> <p>Any cracks noted or eyebolt elongation of more than 50 percent of hole diameter noted. Shims are not assembled properly.</p>
 <p style="text-align: right; margin-right: 50px;">24PIRB274</p>				
<p>Figure 29. Front Lifting Lug.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
28	Semi-annually	Left inner pontoon skin surface	<ol style="list-style-type: none"> 1. Inspect left inner pontoon skin surface (Figure 30, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds. 2. Inspect seams for cracked or broken welds. 	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>
<p style="text-align: right; margin-right: 50px;">24PIRB043</p>				
<p>Figure 30. Left Inner Pontoon, Connecting End.</p>				
29	Semi-annually	Left unfolding cable assemblies	<ol style="list-style-type: none"> 1. Inspect left unfolding cable assembly (Figure 31, Item 1) for kinks, compression, flat surfaces, and broken or frayed strands. 2. Inspect turnbuckle for binding, loose, or missing hardware. 	<p>Cable kinked, compressed, flattened, or any strands broken.</p> <p>Turnbuckle binding, loose, or missing hardware.</p>
<p style="text-align: right; margin-right: 50px;">24PIRB044</p>				
<p>Figure 31. Left Unfolding Cable Assembly.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
30	Semi-annually	Left single yoke and cylinder	<ol style="list-style-type: none"> 1. Inspect trunnions and pin of left single yoke (Figure 32, Item 1) for cracks. 2. Inspect cylinders for leaks. 3. Inspect hoses and fittings for cracks, compression, and leakage. 4. Inspect for cracks, deformation, and elongation of eye. 	<p>Cracks or broken welds noted.</p> <p>Any Class III fluid leak noted (WP 0020).</p> <p>Any Class III fluid leak noted (WP 0020).</p> <p>Cracks noted or deformation prevents proper operation. Hole elongation greater than 50 percent of hole diameter noted.</p>

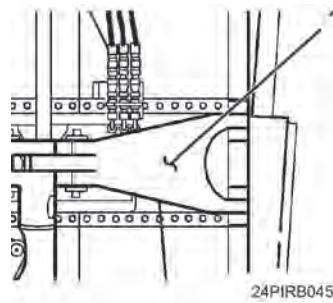


Figure 32. Left Single Yoke.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
31	Semi-annually	Travel latch, receptacle, and cable guide	<p>1. Ensure travel latch (Figure 33, Item 1) is adjusted properly.</p> <p>2. Inspect brackets, receptacle (Figure 33, Item 3), cable guide (Figure 33, Item 2), shims, and service catches for cracks, broken welds, binding, and deformation.</p>	<p>Latch does not engage.</p> <p>Cracks, broken welds, binding, or deformation noted.</p>
<p>The diagram shows a mechanical assembly with three numbered callouts: 1 points to a horizontal latch arm, 2 points to a vertical cable guide, and 3 points to a bracket/receptacle. The part number 24PIRB046 is visible in the bottom right corner of the diagram.</p>				
<p>Figure 33. Travel Latch.</p>				
32	Semi-annually	Left unfolding mechanism and torsion bar	<p>Check left unfolding mechanism – stabilizer lever (Figure 34, Item 1), retaining pins (Figure 34, Item 4), turnbuckle (Figure 34, Item 3), and torsion bar (Figure 34, Item 2) – for structural damage.</p>	<p>Turnbuckle is binding, cracked, or deformation is noted, or mounting hardware is missing or loose.</p>
<p>The diagram shows a mechanical linkage system with four numbered callouts: 1 points to a stabilizer lever, 2 points to a torsion bar, 3 points to a turnbuckle, and 4 points to a retaining pin. The part number 24PIRB287 is visible in the bottom right corner of the diagram.</p>				
<p>Figure 34. Left Unfolding Mechanism and Torsion Bar.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
33	Semi-annually	Left outer pontoon skin surface	1. Inspect left outer pontoon skin surface (Figure 35, Item 1) at ends for punctures, holes, tears, seam ruptures, cracks, and broken welds. 2. Inspect seams for cracked or broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.

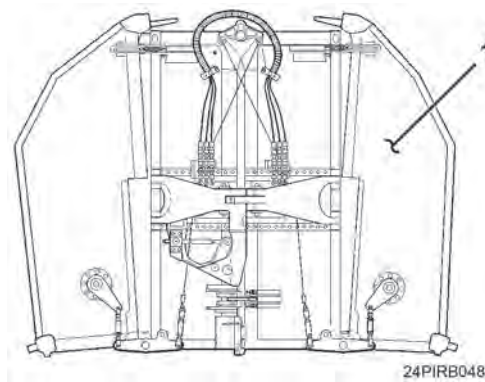


Figure 35. Left Outer Pontoon, Connecting End.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
34	Semi-annually	Left foldlock assembly and brackets	Inspect left foldlock assembly (Figure 36, Item 2) and brackets (Figure 36, Item 1) for structural damage and proper movement.	Damage prevents foldlock from securing pontoon.

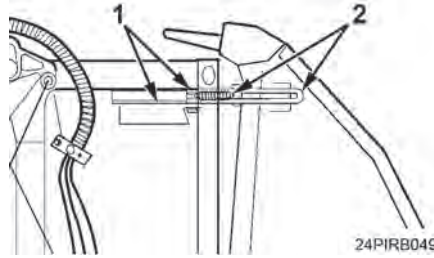


Figure 36. Left Foldlock Assembly.

NOTE

Perform Items 35 through 46 with ramp bay unfolded and secured, starting at front (connecting end), proceeding counterclockwise (Figure 37).

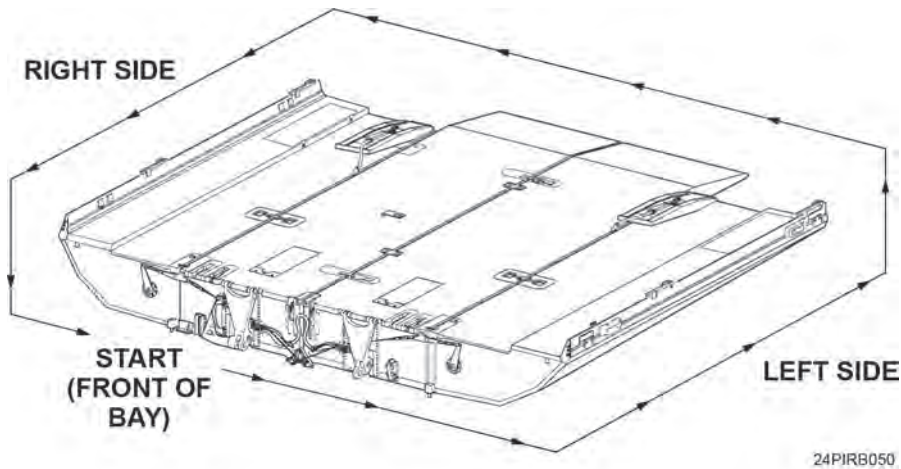


Figure 37. PMCS, Ramp Bay Unfolded.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

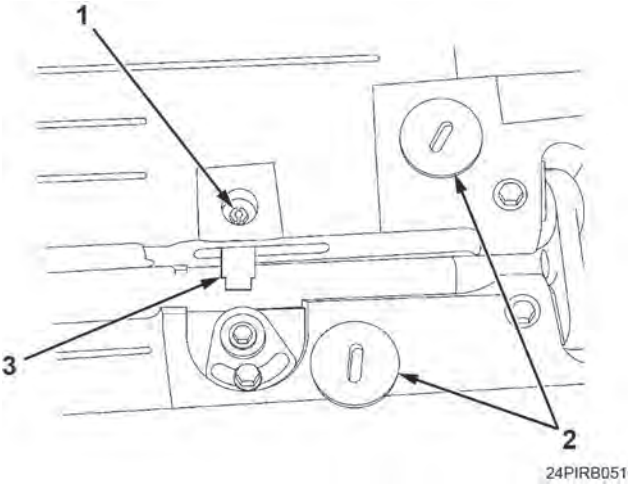
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
35	Semi-annually	Right front swivel hook assembly, indicator, and bilge plugs	<ol style="list-style-type: none"> 1. Inspect right front swivel hook assembly (Figure 38, Item 1) for structural damage. 2. Ensure bilge plugs (Figure 38, Item 2) are secured and not cracked or broken. 3. Ensure indicator (Figure 38, Item 3) is present. 	<p>Damage prevents proper hook operation.</p> <p>Any plug is missing, cracked, or broken.</p> <p>Indicator missing.</p>
36	Semi-annually	Right front longitudinal upper coupling and receptacle blocks	<p style="text-align: center;">NOTE</p> <p>Receptacle consists of entire housing (block) in which connector is seated.</p> <ol style="list-style-type: none"> 1. Inspect seams on receptacle for cracks or broken welds. 2. Inspect right front longitudinal upper coupling (Figure 39, Item 1) and receptacle block (Figure 39, Item 2) area for cracks, broken welds, elongation, and deformation. 	<p>Cracks or broken welds noted.</p> <p>Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

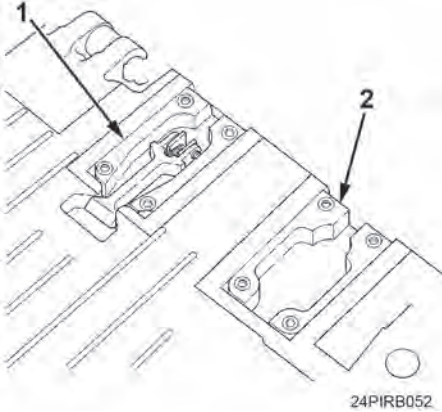
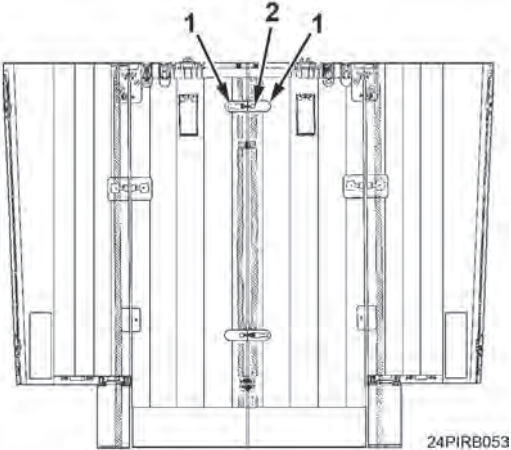
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 39. Right Front Longitudinal Upper Coupling.</p>				
37	Semi-annually	Front transverse upper coupling and receptacle blocks	Inspect front transverse upper coupling (Figure 40, Item 2) and receptacle blocks (Figure 40, Item 1) area for cracks, broken welds, elongation, and deformation.	Cracks, broken welds, elongation, or deformation prevents proper seating of connector.
 <p>Figure 40. Front Transverse Upper Coupling.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
38	Semi-annually	Left and right fluid pump cover, pump, and hoses	<p style="text-align: center;">NOTE</p> <p>PMCS for right and left fluid pump assemblies is the same. Right pump is shown.</p> <ol style="list-style-type: none"> 1. Inspect right fluid pump cover (Figure 41, Item 1), pump (Figure 41, Item 3), and hoses (Figure 41, Item 2) for structural damage. 2. Inspect fluid pump (Figure 41, Item 3) for proper fluid level and leaks. Fill as required (WP 0044). 3. Inspect fluid pump (Figure 41, Item 3) for proper operation. 4. Inspect all hoses (Figure 41, Item 2) for leaks. 5. Ensure direction lever and air vent function properly. 	<p>Pump cover is missing.</p> <p>Any Class III fluid leak is noted (WP 0020).</p> <p>Pump is not operational.</p> <p>Any Class III fluid leak is noted (WP 0020).</p> <p>Vent or lever does not function properly.</p>

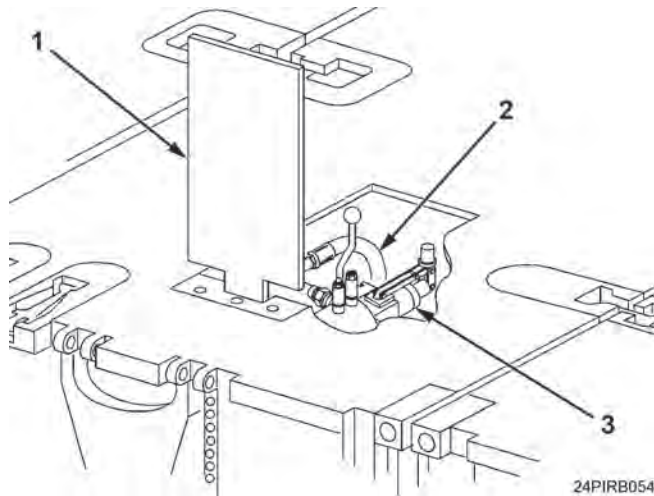


Figure 41. Fluid Pump Covers (Right Pump Shown).

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
39	Semi-annually	Left front longitudinal upper coupling and receptacle blocks	<p style="text-align: center;">NOTE</p> <p>Receptacle consists of entire housing (block) in which connector is seated.</p> <p>1. Inspect seams on receptacle blocks for cracks or broken welds.</p> <p>2. Inspect left front longitudinal upper coupling (Figure 42, Item 1) and receptacle blocks (Figure 42, Item 2) area for cracks, broken welds, elongation, and deformation.</p>	<p>Cracks or broken welds noted.</p> <p>Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>

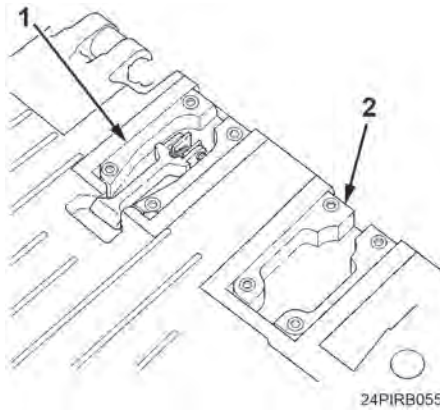


Figure 42. Left Front Longitudinal Upper Coupling.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

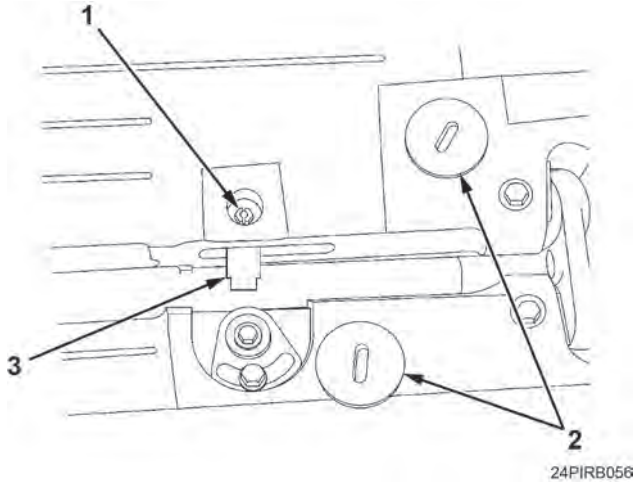
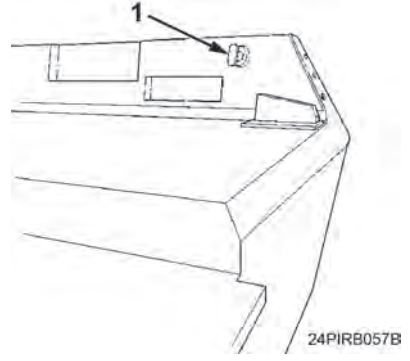
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
40	Semi-annually	Left front swivel hook assembly, indicator, and bilge plugs	<ol style="list-style-type: none"> 1. Inspect left front swivel hook assembly (Figure 43, Item 1) for structural damage. 2. Ensure bilge plugs (Figure 43, Item 2) are secured and not cracked or broken. 3. Ensure indicator (Figure 43, Item 3) is present.  <p style="text-align: right; font-size: small;">24PIRB056</p>	<p>Damage prevents proper hook operation.</p> <p>Any plug is missing, cracked, or broken.</p> <p>Indicator missing.</p>
41	Semi-annually	Left belay cleat	<p>Inspect left belay cleat (Figure 44, Item 1) for damage, cracks, or if missing.</p>  <p style="text-align: right; font-size: small;">24PIRB057B</p>	<p>Left belay cleat damaged, cracked, or missing.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
42	Semi-annually	Left and right personnel walkway and roadway surfaces	<ol style="list-style-type: none"> 1. Inspect left personnel walkway (Figure 45, Item 2) and roadway (Figure 45, Item 1) for structural damage, deformity, holes, and tears. 2. Inspect for punctures, cracks, tears, dents, holes, and broken welds. 3. Ensure that non-skid coating adequately covers walkways. Refer to (WP 0067) for application of non-skid coating. 	<p>Damage prevents safe traffic crossing or causes personnel safety hazard.</p> <p>Damage which punctures the entire deck (both top and bottom deck skins) and cumulatively adds up to a hole approximately 6 in. (15.2 cm) in diameter).</p>

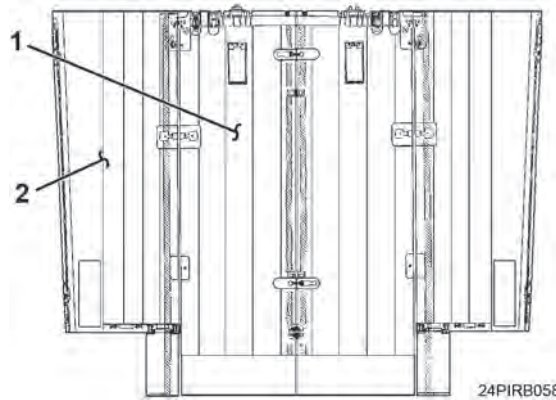


Figure 45. Left Personnel Walkway and Roadway.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
43	Semi-annually	Rear transverse upper coupling and receptacle blocks	Inspect rear transverse upper coupling (Figure 46, Item 1) and receptacle blocks (Figure 46, Item 2) area for cracks, broken welds, elongation, and deformation.	Cracks, broken welds, elongation, or deformation prevents proper seating of connector.
Figure 46. Rear Transverse Upper Coupling.				
44	Semi-annually	Left and right rear swivel plates and indicators	<ol style="list-style-type: none"> 1. Inspect hooks of left and right rear swivel plates (Figure 47, Item 1) for structural damage. 2. Ensure indicator (Figure 47, Item 2) is present. 	Damage prevents proper hook operation. Indicator missing/broken.
Figure 47. Left and Right Rear Swivel Plates.				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
45	Semi-annually	Right roadway and walkway surfaces	<ol style="list-style-type: none"> 1. Inspect right roadway (Figure 48, Item 1) and walkway (Figure 48, Item 2) for structural damage, deformity, holes, and tears. 2. Inspect for punctures, cracks, tears, dents, holes, and broken welds. 3. Ensure that non-skid coating adequately covers walkways. Refer to (WP 0067) for application of non-skid coating. 	<p>Damage prevents safe traffic crossing or causes personnel safety hazard.</p> <p>Damage which punctures the entire deck (both top and bottom deck skins) and cumulatively adds up to a hole approximately 6 in. (15.2 cm) in diameter.</p> <p>Non-skid coating is deteriorated or missing.</p>

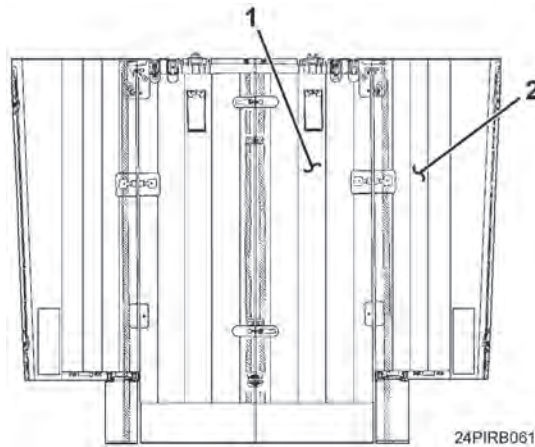
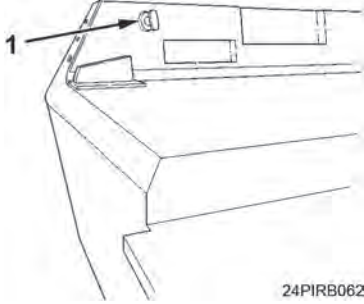


Figure 48. Right Personnel Walkway and Roadway.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Ramp Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
46	Semi-annually	Right belay cleat	Inspect right belay cleat (Figure 49, Item 1) for damage, cracks, or if missing.	Right belay cleat damaged, cracked, or missing.
 <p>Figure 49. Right Belay Cleat.</p>				

PMCS Mandatory Replacement Parts List

There are no mandatory replacement parts required for these PMCS procedures.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
INTERIOR BAY PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Equipment Condition

Bay closed

References

WP 0055
WP 0067

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay.


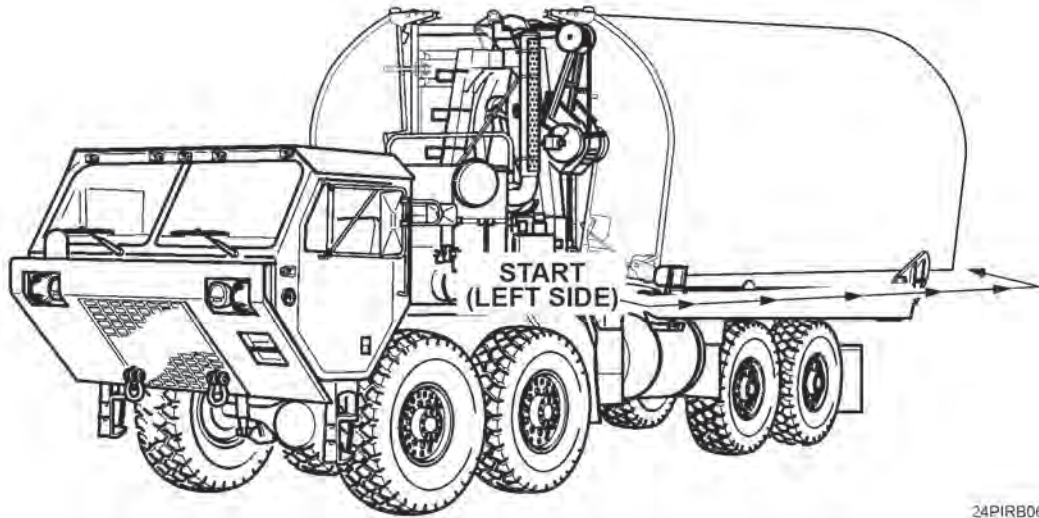
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p align="center">WARNING</p>  <ul style="list-style-type: none"> When checking/servicing an item, ensure that all attaching/mounting hardware is properly secured. Loose, cracked, broken, or missing hardware may result in personnel injury or death and/or damage to equipment. Perform below inspections while bay is on the ground. Failure to comply may result in personnel injury or death and/or damage to equipment. <p align="center">CAUTION</p> <p>During PMCS, ensure that components and assemblies are correctly installed. Incorrect installation may result in damage to equipment.</p>	

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p style="text-align: center;">NOTE</p> <ul style="list-style-type: none"> • This PMCS uses the one-look format. With bay on the transporter, start at the left outer pontoon nearest the driver's side of cab, proceeding counterclockwise. • Remove rust and accumulated corrosion during PMCS. Corrosion not removed promptly will degrade equipment performance. • Start PMCS inspections at left front corner of bay. 	



24PIRB063

Figure 1. PMCS for Interior Bay.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Semi-annually	Left front trunnions on left outer pontoon	Inspect left front trunnions (Figure 2, Item 1) for cracks or broken welds, or if bent.	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.

24PIRB064

Figure 2. Left Front Trunnion.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Semi-annually	Left outer pontoon skin surface and trunnions along side	<p>1. Inspect trunnions (Figure 3, Item 2) and left outer pontoon skin surface (Figure 3, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>2. Inspect seams for cracked or broken welds.</p> <div> </div> <p style="text-align: right;">24PIRB065</p>	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>
3	Semi-annually	Left rear trunnion on left outer pontoon	<p>Inspect left rear trunnion (Figure 4, Item 1) for cracks or broken welds, or if bent.</p> <div> </div> <p style="text-align: right;">24PIRB066</p>	<p>Cracked or broken welds are found or if bent enough to prevent securing bay to transporter.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

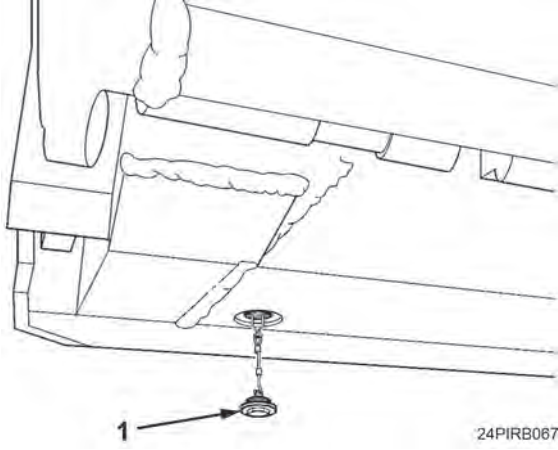
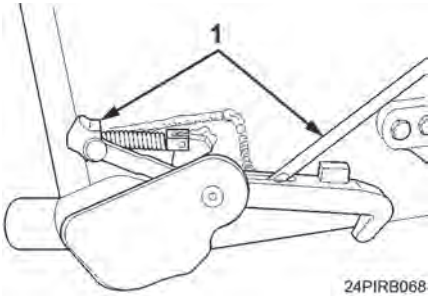
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Semi-annually	Left drain plug	Inspect left drain plug (Figure 5, Item 1) for cracked or broken welds. <div style="text-align: center;">  <p>Figure 5. Left Drain Plug.</p> </div>	Cracked or broken welds noted.
5	Semi-annually	Left outer pontoon lock assembly and brackets	<ol style="list-style-type: none"> 1. Ensure left outer pontoon lock assembly (Figure 6, Item 1) is assembled properly. 2. Inspect brackets, spring pins, pins, spacers, lever, and connecting link for cracks, broken welds, binding, and deformation. <div style="text-align: center;">  <p>Figure 6. Left Outer Pontoon Lock Assembly.</p> </div>	Outer pontoon lock not functioning properly. Broken welds or deformation noted.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
6	Semi-annually	Left outer pontoon skin surface at end	<p>1. Inspect left outer pontoon skin surface (Figure 7, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>2. Inspect seams for cracked or broken welds.</p> <div> <p style="text-align: right; margin-right: 50px;">24PIRB069</p> </div> <p style="text-align: center;">Figure 7. Left Outer Pontoon, Rear End.</p>	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>
7	Semi-annually	Left foldlock assembly and brackets	<p>Inspect left foldlock assembly (Figure 8, Item 1) and brackets (Figure 8, Item 2) for structural damage and proper movement.</p> <div> <p style="text-align: right; margin-right: 50px;">24PIRB070</p> </div> <p style="text-align: center;">Figure 8. Left Foldlock Assembly, Rear End.</p>	<p>Damage prevents foldlock from securing pontoon.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
8	Semi-annually	Left double-eye yoke, lower lock-drive assembly, and bumpers	<ol style="list-style-type: none"> 1. Inspect left double-eye yoke (Figure 9, Item 1), lower lock-drive assembly (Figure 9, Item 3), and main lower coupling for cracks or broken welds. 2. Inspect for loose or missing hardware. 3. Inspect jackscrew threads for cracks, burrs, nicks, and deformation. 4. Inspect trunnions and pin for cracks. 5. Inspect bumpers (Figure 9, Item 2) and support brackets for cracks, broken welds, and deformation. 6. Inspect for structural damage or missing or loose mounting hardware. 	<p>Cracks or broken welds noted.</p> <p>Loose or missing hardware.</p> <p>Jackscrew will not extend or retract pin properly.</p> <p>Cracks or broken welds noted.</p> <p>Cracks, broken welds, or deformation noted.</p> <p>Missing or loose mounting hardware preventing use of lock-drive.</p>

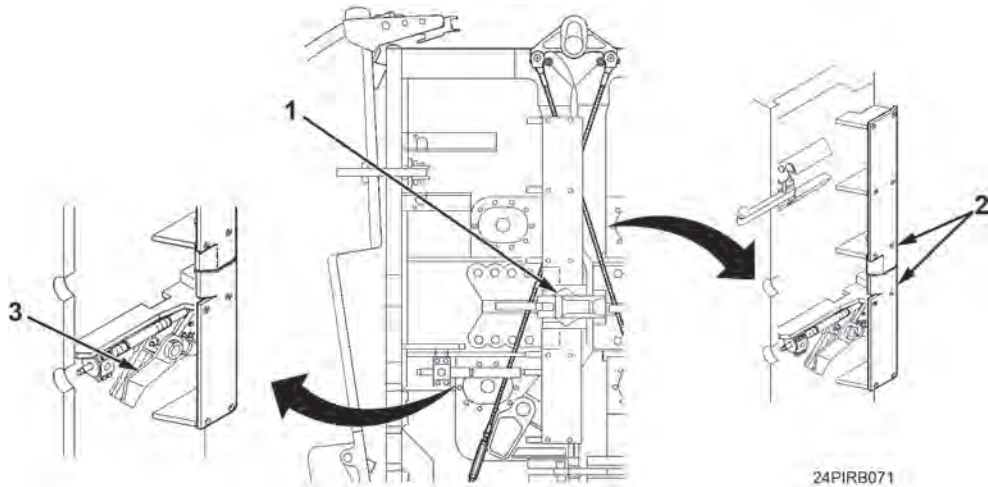


Figure 9. Left Double-Eye Yoke.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

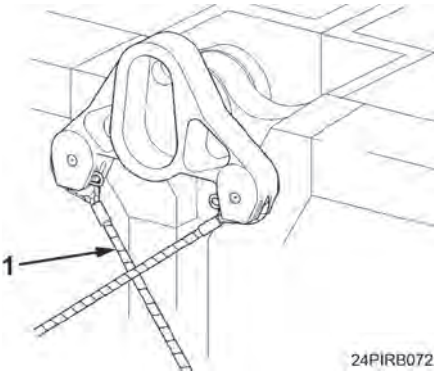
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
9	Semi-annually	Left unfolding cable assembly	<ol style="list-style-type: none"> 1. Inspect left unfolding cable assembly cable (Figure 10, Item 1) for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension. 2. Inspect spring for deformation. 3. Inspect turnbuckle for binding and loose or missing hardware. <div style="text-align: center;">  <p>24PIRB072</p> </div> <p style="text-align: center;">Figure 10. Left Unfolding Cable Assembly.</p>	<p>Cable kinked, compressed, flattened, or any strands broken.</p> <p>Spring stretched.</p> <p>Turnbuckle binding or loose, or hardware missing.</p>
10	Semi-annually	Left inner pontoon skin surface	<ol style="list-style-type: none"> 1. Inspect left inner pontoon skin surface (Figure 11, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds. 2. Inspect seams for cracked or broken welds. 	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

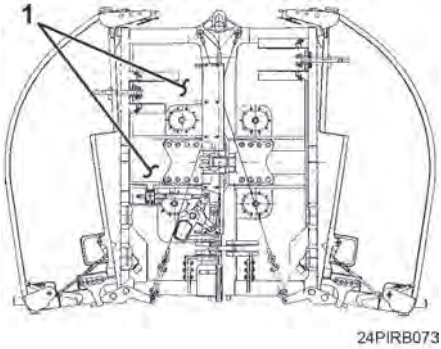
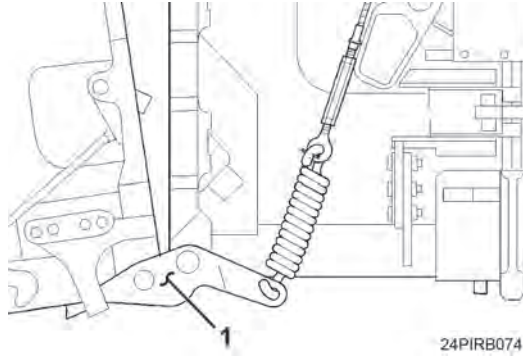
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>24PIRB073</p> <p>Figure 11. Left Inner Pontoon, Rear End.</p>				
11	Semi-annually	Left unfolding mechanism	<ol style="list-style-type: none"> 1. Inspect left unfolding mechanism (Figure 12, Item 1) bracket, stabilizer lever, rubber bumper, spring, and turnbuckle for cracks, broken welds, or missing hardware. 2. Inspect cable for looseness, kinks, broken strands, or compression. 	<p>Cracks, broken welds, or missing hardware preventing proper unfolding operation.</p> <p>Cable is loose, kinked, or compressed, or broken strands are noted.</p>
 <p>24PIRB074</p> <p>Figure 12. Left Unfolding Mechanism.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	Semi-annually	Right inner pontoon skin surface	<p>1. Inspect right inner pontoon skin surface (Figure 13, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds.</p> <p>2. Inspect seams for cracked or broken welds.</p> <div> <p style="text-align: center;">24PIRB075</p> </div> <p style="text-align: center;">Figure 13. Right Inner Pontoon, Front End.</p>	<p>Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil).</p> <p>Cracked or broken welds noted.</p>
13	Semi-annually	Right single-eye yoke	<p>1. Inspect right single-eye yoke (Figure 14, Item 1) for cracks or broken welds.</p> <p>2. Inspect for loose or missing hardware.</p>	<p>Cracked or broken welds noted.</p> <p>Loose or missing hardware.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

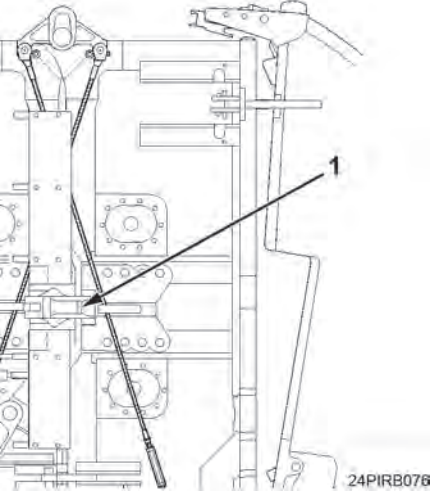
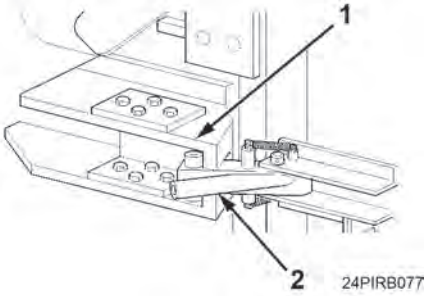
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 14. Right Single-Eye Yoke.</p>				
14	Semi-annually	Travel latch and receptacle	<p style="text-align: center;">NOTE</p> <p>Receptacle (Figure 15, Item 1), when properly adjusted, will allow latch to seat snugly in strike catches.</p> <p>Inspect travel latch (Figure 15, Item 2) brackets, shims, and strike catches for cracks, broken welds, binding, and deformation.</p>	Cracks, broken welds, binding, or deformation prevents engaging latch.
 <p>Figure 15. Travel Latch.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

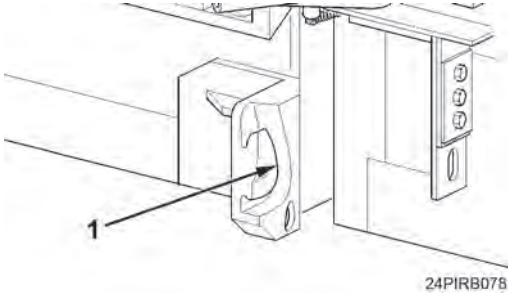
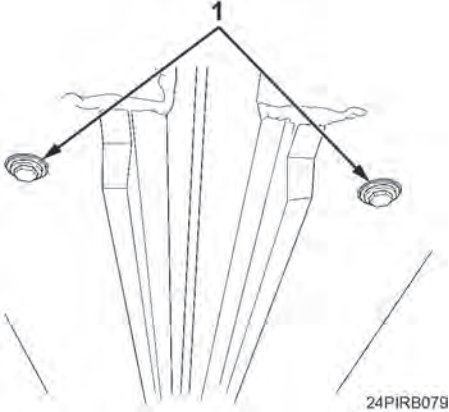
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
15	Semi-annually	Cable guide	Inspect cable guide (Figure 16, Item 1) for structural damage, cracked welds, or missing guide. <div style="text-align: center;">  <p>Figure 16. Cable Guide.</p> </div>	Cracked welds noted or damage prevents using guide.
16	Semi-annually	Left and right roadway pontoon drain plugs	Inspect left and right roadway drain plugs (Figure 17, Item 1) for cracked or broken welds. <div style="text-align: center;">  <p>Figure 17. Left and Right Roadway Drain Plugs.</p> </div>	Cracked or broken welds noted.
17	Semi-annually	Right unfolding cable assembly	<ol style="list-style-type: none"> 1. Inspect right unfolding cable assembly (Figure 18, Item 1) cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension. 2. Inspect spring for deformation. 3. Inspect turnbuckle for binding and loose or missing hardware. 	Cable kinked, compressed, flattened, or any strands broken. Spring stretched. Turnbuckle binding or loose, or hardware missing.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

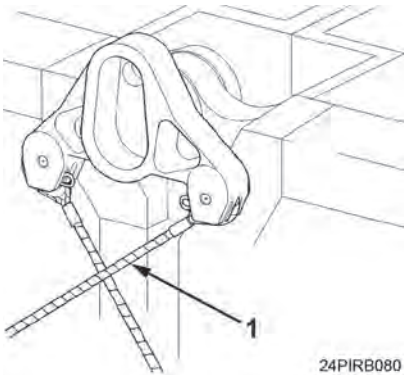
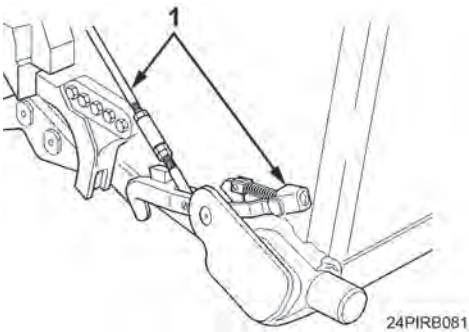
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 18. Right Unfolding Cable Assembly.</p>				
18	Semi-annually	Right outer pontoon lock assembly and brackets	<p>1. Ensure outer pontoon lock (Figure 19, Item 1) is assembled properly.</p> <p>2. Inspect brackets, spring pins, pins, spacers, lever, and connecting link for cracks, broken welds, binding, and deformation.</p>	<p>Outer pontoon lock not functioning properly.</p> <p>Broken welds or deformation noted.</p>
 <p>Figure 19. Right Outer Pontoon Lock Assembly.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

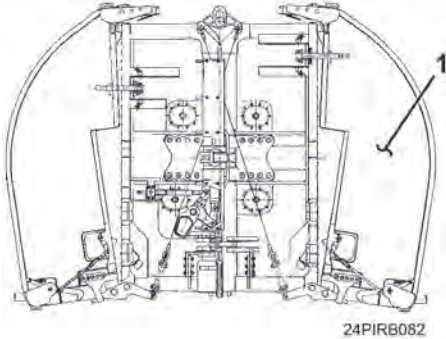
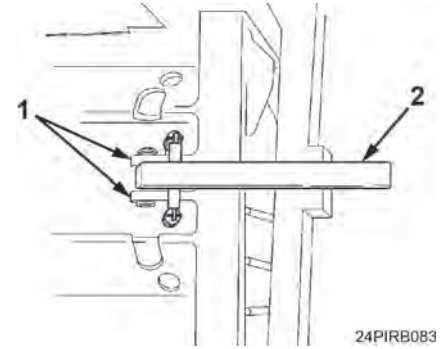
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
19	Semi-annually	Right outer pontoon skin surface at end	Inspect right outer pontoon (Figure 20, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds. <div style="text-align: center;">  <p>24PIRB082</p> </div>	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.
20	Semi-annually	Right foldlock assembly and brackets	Inspect right foldlock assembly (Figure 21, Item 2) and brackets (Figure 21, Item 1) for structural damage, and foldlocks for proper movement. <div style="text-align: center;">  <p>24PIRB083</p> </div>	Damage prevents foldlock from securing pontoon.
21	Semi-annually	Right drain plug	Inspect right drain plug (Figure 22, Item 1) for cracked or broken welds.	Cracked or broken welds noted.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

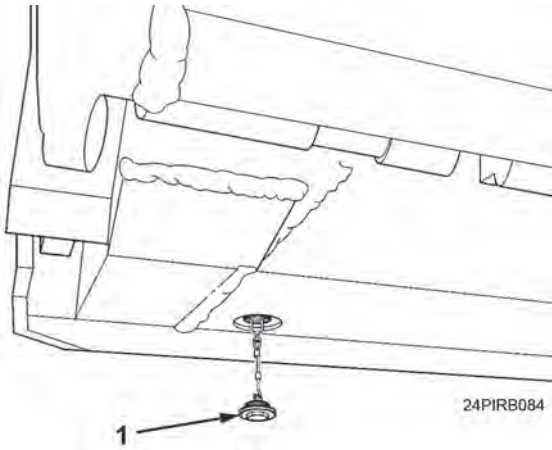
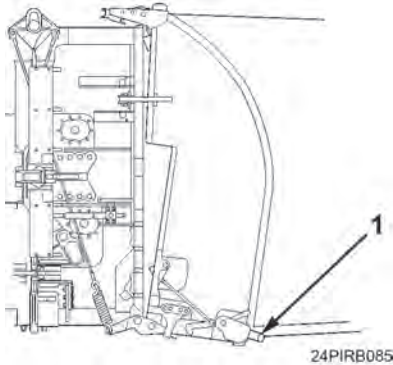
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 22. Right Drain Plug.</p>				
22	Semi-annually	Right rear trunnions on right outer pontoon	Inspect right rear trunnions (Figure 23, Item 1) for cracks or broken welds, or if bent.	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.
 <p>Figure 23. Right Rear Trunnion.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
23	Semi-annually	Right outer pontoon skin surface and trunnions along side	Inspect right outer pontoon skin surface (Figure 24, Item 1) and trunnions (Figure 24, Item 2) for cracks or broken welds, or if bent. <div style="text-align: center;"> <p>24PIRB086</p> </div> <p style="text-align: center;">Figure 24. Right Outer Pontoon.</p>	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.
24	Semi-annually	Right front trunnion on right outer pontoon	Inspect right front trunnion (Figure 25, Item 1) for cracks or broken welds, or if bent. <div style="text-align: center;"> <p>24PIRB087</p> </div> <p style="text-align: center;">Figure 25. Right Front Trunnion.</p>	Cracked or broken welds are found, or if bent enough to prevent securing bay to transporter.
25	Semi-annually	Right outer pontoon skin surface at end	Inspect right outer pontoon skin surface (Figure 26, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

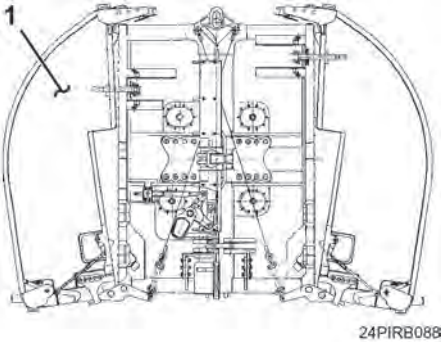
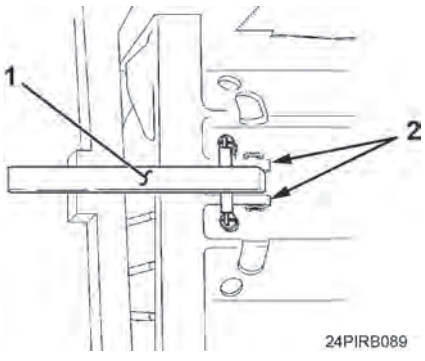
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>24PIRB088</p> <p>Figure 26. Right Outer Pontoon, Front End.</p>				
26	Semi-annually	Right foldlock assembly and brackets	Inspect right foldlock assembly (Figure 27, Item 1) and brackets (Figure 27, Item 2) for structural damage and proper movement.	Damage prevents foldlock from securing pontoon.
 <p>24PIRB089</p> <p>Figure 27. Right Foldlock Assembly, Front End.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
27	Semi-annually	Right double-eye yoke, lower lock-drive assembly, and bumpers	<ol style="list-style-type: none"> 1. Inspect right double-eye yoke (Figure 28, Item 1), lower lock-drive assembly (Figure 28, Item 3), and main lower coupling for cracks or broken welds. 2. Inspect for loose or missing hardware. 3. Inspect jackscrew threads for cracks, burrs, nicks, and deformation. 4. Inspect trunnions and pin for cracks. 5. Inspect bumpers (Figure 28, Item 2) and support brackets for cracks, broken welds, and deformation. 6. Inspect for structural damage or missing or loose mounting hardware. 	<p>Cracks or broken welds noted.</p> <p>Loose or missing hardware.</p> <p>Jackscrew will not extend or retract pin properly.</p> <p>Cracks or broken welds noted.</p> <p>Cracks, broken welds, or deformation noted.</p> <p>Missing or loose mounting hardware preventing use of lock-drive.</p>

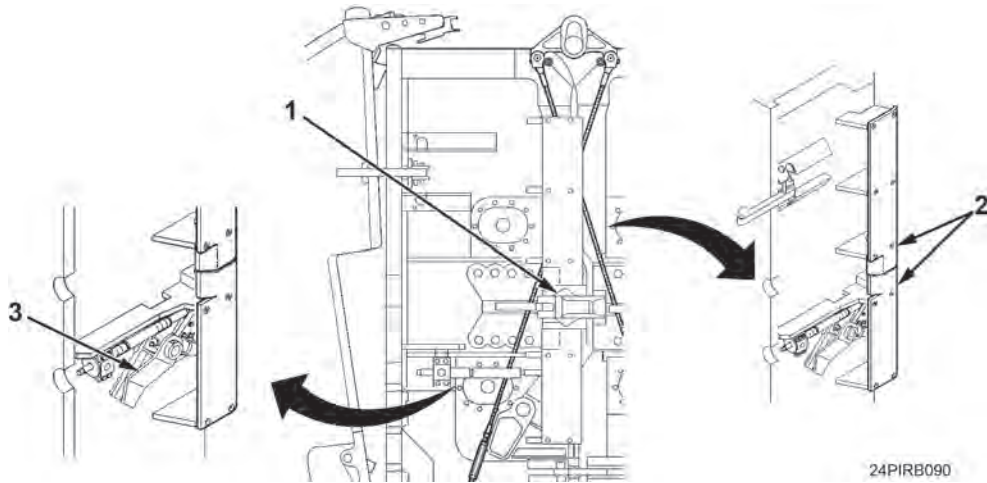


Figure 28. Right Double-Eye Yoke.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
28	Semi-annually	Right unfolding cable assembly	<ol style="list-style-type: none"> 1. Inspect right unfolding cable assembly (Figure 29, Item 1) cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension. 2. Inspect spring for deformation. 3. Inspect turnbuckle for binding and loose or missing hardware. 	<p>Cable kinked, compressed, flattened, or any strands broken.</p> <p>Spring stretched.</p> <p>Turnbuckle binding or loose, or hardware missing.</p>

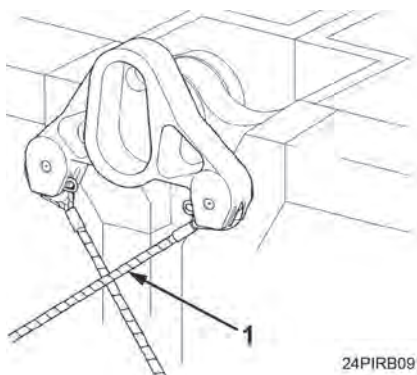


Figure 29. Right Unfolding Cable Assembly.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

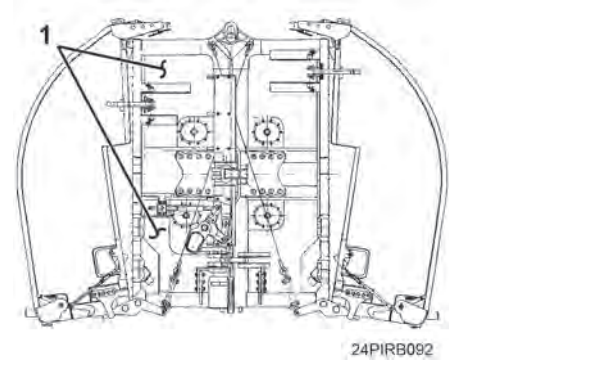
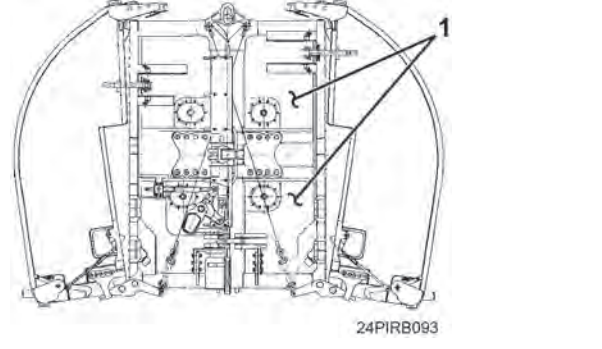
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
29	Semi-annually	Right inner pontoon skin surface	Inspect right inner pontoon skin surface (Figure 30, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.
 <p>24PIRB092</p>				
<p>Figure 30. Right Inner Pontoon, Front End.</p>				
30	Semi-annually	Left inner pontoon skin surface	Inspect left inner pontoon skin surface (Figure 31, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.
 <p>24PIRB093</p>				
<p>Figure 31. Left Inner Pontoon, Front End.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
31	Semi-annually	Left single-eye yoke	1. Inspect left single-eye yoke (Figure 32, Item 1) for cracks or broken welds. 2. Inspect for loose or missing hardware.	Cracked or broken welds noted. Loose or missing hardware.

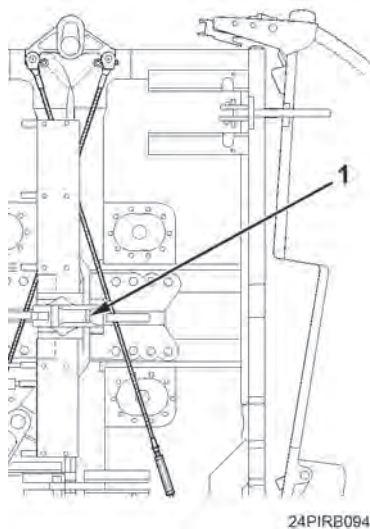


Figure 32. Left Single-Eye Yoke.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

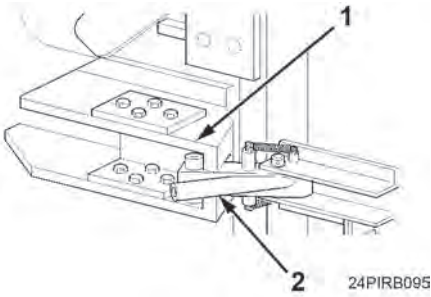
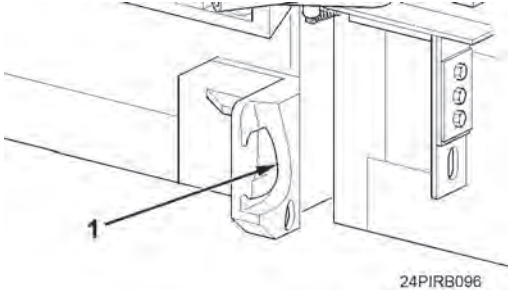
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
32	Semi-annually	Travel latch and receptacle	<p style="text-align: center;">NOTE</p> <p>Receptacle (Figure 33, Item 1), when properly adjusted, will allow latch to seat snugly in strike catches.</p> <p>Inspect travel latch (Figure 33, Item 2) brackets, shims, and strike catches for cracks, broken welds, binding, and deformation.</p> <div style="text-align: center;">  <p>Figure 33. Travel Latch.</p> </div>	Cracks, broken welds, binding, or deformation prevents engaging latch.
33	Semi-annually	Cable guide	<p>Inspect cable guide (Figure 34, Item 1) for structural damage, cracked welds, or missing guide.</p> <div style="text-align: center;">  <p>Figure 34. Cable Guide.</p> </div>	Cracked welds noted or damage prevents using guide.
34	Semi-annually	Left unfolding mechanism	<ol style="list-style-type: none"> 1. Inspect left unfolding mechanism (Figure 35, Item 1) bracket, stabilizer lever, rubber bumper, spring, and turnbuckle for cracks, broken welds, or missing hardware. 2. Inspect cable for looseness, kinks, broken strands, or compression. 	<p>Cracks, broken welds, or missing hardware preventing proper unfolding operation.</p> <p>Cable is loose, kinked, or compressed, or broken strands are noted.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

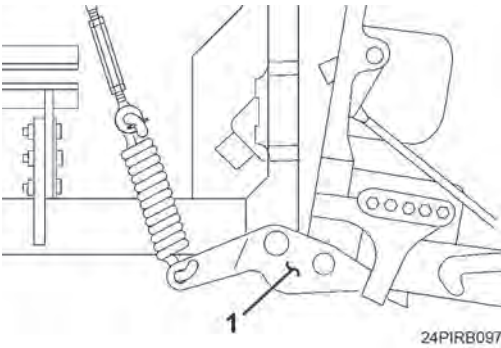
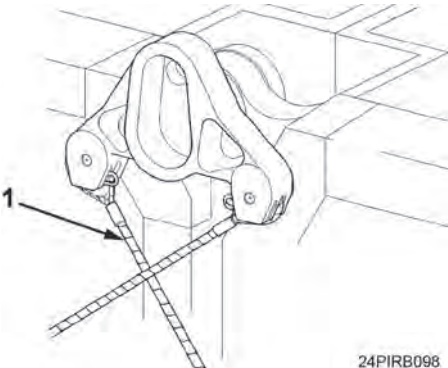
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>Figure 35. Left Unfolding Mechanism.</p>				
35	Semi-annually	Left unfolding cable assembly	<ol style="list-style-type: none"> 1. Inspect left unfolding cable assembly (Figure 36, Item 1) cable for kinks, compression, flat surfaces, broken or frayed strands, and for proper tension. 2. Inspect spring for deformation. 3. Inspect turnbuckle for binding and loose or missing hardware. 	<p>Cable kinked, compressed, flattened, or any strands broken.</p> <p>Spring stretched.</p> <p>Turnbuckle binding or loose, or hardware missing.</p>
 <p>Figure 36. Left Unfolding Cable Assembly.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

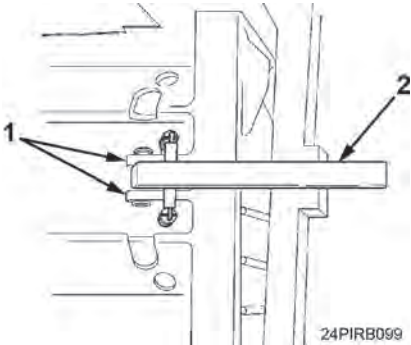
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
36	Semi-annually	Left foldlock assembly and brackets	Inspect left foldlock assembly (Figure 37, Item 2) and brackets (Figure 37, Item 1) for structural damage and proper movement. <div style="text-align: center;">  </div>	Damage prevents foldlock from securing pontoon.
37	Semi-annually	Left outer pontoon skin surface at end	1. Inspect left outer pontoon skin surface (Figure 38, Item 1) area for punctures, holes, tears, seam ruptures, cracks, and broken welds. 2. Inspect seams for cracked or broken welds.	Damage which cumulatively adds up to a hole approximately 0.26 in. (6.6 mm) in cm) in diameter (the size of a typical pen or pencil). Cracked or broken welds noted.
38	Semi-annually	Left outer pontoon lock assembly and brackets	1. Ensure left outer pontoon lock assembly (Figure 39, Item 1) is assembled properly.	Outer pontoon lock not functioning properly.

Figure 37. Left Foldlock Assembly, Front End.

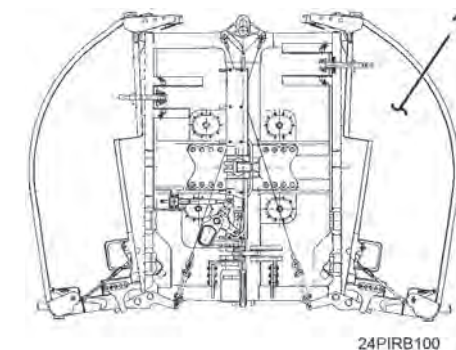


Figure 38. Left Outer Pontoon, Front End.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			2. Inspect left outer pontoon lock assembly (Figure 39, Item 1) brackets, spring pins, pins, spacers, lever, and connecting link for cracks, broken welds, binding, and deformation.	Broken welds or deformation noted.

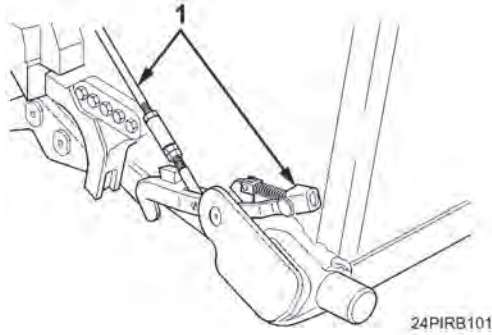


Figure 39. Left Outer Pontoon Lock Assembly.

NOTE

Perform Items 39 through 43 from top of interior bay, starting at either end, proceeding counterclockwise (Figure 40).

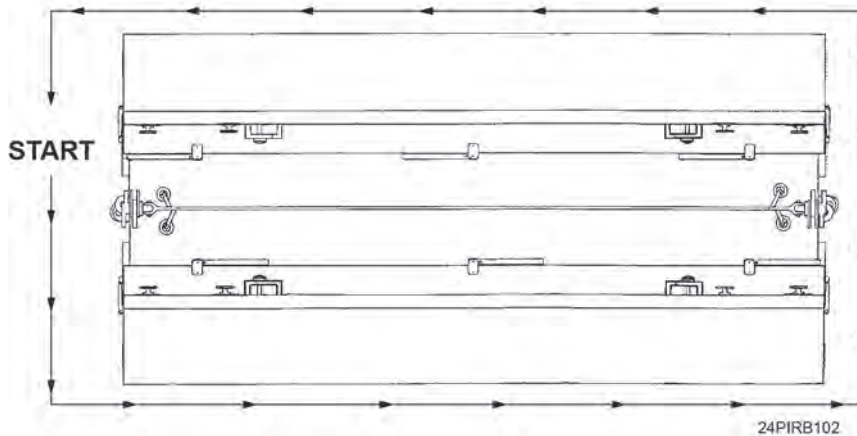


Figure 40. PMCS for Interior Bay, Top View.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
39	Semi-annually	Left and right front load receiving pin, recess, cleats, and splash plate	<ol style="list-style-type: none"> 1. Inspect left and right front load receiving pin (Figure 41, Item 2) and mounting hardware for cracks or if missing. 2. Inspect recess (Figure 41, Item 3) for cracks and broken welds. 3. Check splash plate (Figure 41, Item 1) for cracks and other damage. 4. Inspect cleat (Figure 41, Item 4) for broken welds or if missing. 	<p>Pin is missing or damage prevents pin use.</p> <p>Cracks or broken welds noted.</p> <p>Plate is cracked or damaged.</p> <p>Cleat has broken welds or is missing.</p>
<p style="text-align: center;">LIFT/TIEDOWN</p> <p style="text-align: right; font-size: small;">24PIRB103</p>				
<p>Figure 41. Load Receiving Pin, Front.</p>				
40	Semi-annually	Left and right rear load receiving pin, recess, cleats, and splash plate	<ol style="list-style-type: none"> 1. Inspect left and right rear load receiving pin (Figure 42, Item 3) and mounting hardware for cracks or if missing. 2. Inspect recess (Figure 42, Item 2) for cracks and broken welds. 3. Check splash plate (Figure 42, Item 4) for cracks and other damage. 4. Inspect cleat (Figure 42, Item 1) for broken welds or if missing. 	<p>Pin is missing or damage prevents pin use.</p> <p>Cracks or broken welds noted.</p> <p>Plate is cracked or damaged.</p> <p>Cleat has broken welds or is missing.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

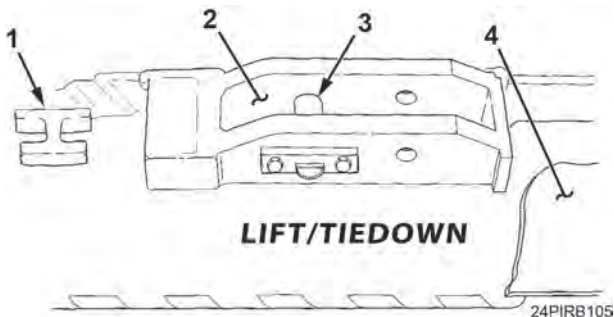
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>LIFT/TIEDOWN</p> <p>24PIRB105</p>				
<p>Figure 42. Load Receiving Pin, Rear.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
41	Semi-annually	Rear lifting lug, eyebolt, and lever assembly	<p>1. Inspect rear lifting lug (Figure 43, Item 3), eyebolt (Figure 43, Item 2), and lever assembly (Figure 43, Item 1) for damaged, loose, or missing parts.</p> <p>2. Inspect for cracks, deformation of eyebolt (Figure 43, Item 2), or proper shim assembly.</p> <div style="text-align: center;"> <p>24PIRB274</p> </div> <p>Figure 43. Rear Lifting Lug.</p>	<p>Any damaged, loose, or missing parts.</p> <p>Any cracks noted or eyebolt elongation of more than 50 percent of hole diameter noted. Shims are not assembled properly.</p>
42	Semi-annually	Front lifting lug, eyebolt, and lever assembly	<p>1. Inspect front lifting lug (Figure 44, Item 3), eyebolt (Figure 44, Item 2), and lever assembly (Figure 44, Item 1) for damaged, loose, or missing parts.</p> <p>2. Inspect for cracks, deformation of eyebolt (Figure 44, Item 2), and proper shim assembly.</p>	<p>Any damaged, loose, or missing parts.</p> <p>Any cracks noted or eyebolt elongation of more than 50 percent of hole diameter noted. Shims are not assembled properly.</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<div> <p>A technical drawing of a front lifting lug assembly. It shows a metal bracket with a hook and a handle. Three callout numbers are present: '1' points to the hook, '2' points to the handle, and '3' points to the base of the handle where it connects to the main structure.</p> </div> <p>24PIRB274</p> <p>Figure 44. Front Lifting Lug.</p> <div> <p>CAUTION</p> </div> <p>Ensure longitudinal and transverse couplings and outer pontoon locks are engaged before performing inspection. Failure to comply may result in damage to equipment.</p> <div> <p>NOTE</p> </div> <p>Perform Items 44 through 53 with interior bay unfolded and secured, starting at either end, proceeding counterclockwise (Figure 46).</p>	

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
43	Semi-annually	Left and right outer pontoon lock at end of bay	Inspect engagement of right outer pontoon lock (Figure 46, Item 1).	Outer pontoon lock will not engage.
<p>Figure 46. Right Outer Pontoon Lock.</p>				
44	Semi-annually	Left and right inner pontoon bilge plugs	Ensure right and inner pontoon bilge plugs (Figure 47, Item 1) are secured and not cracked or broken.	Any bilge plug missing, cracked, or broken.
<p>Figure 47. Right and Inner Pontoon Bilge Plugs.</p>				
45	Semi-annually	Longitudinal upper coupling and receptacle blocks	<p style="text-align: center;">NOTE</p> <p>Receptacle consists of entire housing (block) in which connector is seated.</p> <p>1. Inspect longitudinal upper coupling (Figure 48, Item 2) and seams on welded insert blocks for cracks or broken welds.</p>	Cracks or broken welds noted.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

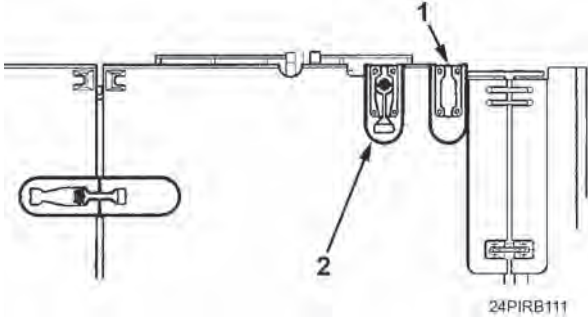
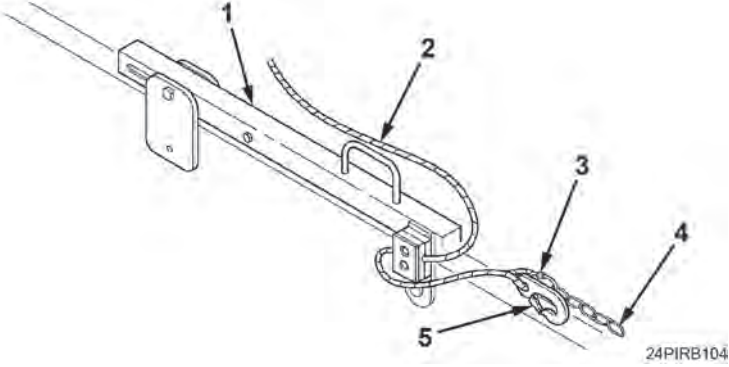
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p>2. Inspect receptacle block (Figure 48, Item 1) area for cracks, elongation, broken welds, and deformation.</p> 	<p>Cracks, elongation, broken welds, or deformation prevents proper seating of connector.</p>
46	Semi-annually	Left, right, and center handrail assemblies, chain extension, and threaded connector	<p>Inspect left, right, and center handrail assemblies (Figure 49, Item 1) for missing or damaged mounting hardware, damaged or deteriorated rope (Figure 49, Item 2), snap hooks (Figure 49, Item 5), chain extensions (Figure 49, Item 4), threaded connector (Figure 49, Item 3), and if stanchion will lock in stowed and set positions.</p> 	<p>Missing or damaged parts are found or stanchion is not operational.</p>
47	Semi-annually	Transverse upper coupling and receptacle blocks	<p>Inspect transverse upper coupling (Figure 50, Item 1) and receptacle block (Figure 50, Item 2) area for cracks, broken welds, elongation, and deformation.</p>	<p>Cracks, broken welds, elongation, or deformation prevents</p>

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

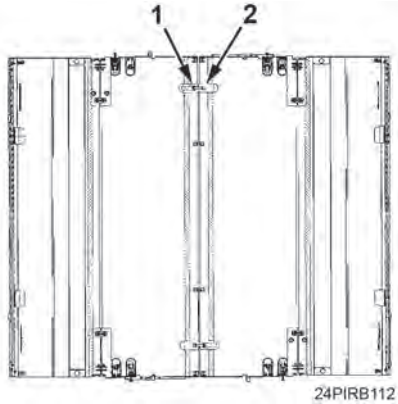
ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			 <p style="text-align: right; margin-right: 50px;">24PIRB112</p>	proper seating of connector.

Figure 50. Transverse Upper Coupling.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
48	Semi-annually	Longitudinal upper coupling and receptacle blocks	<p style="text-align: center;">NOTE</p> <p>Receptacle consists of entire housing (block) in which connector is seated.</p> <ol style="list-style-type: none"> 1. Inspect longitudinal upper coupling (Figure 51, Item 2) and seams on welded insert blocks for cracks or broken welds. 2. Inspect receptacle blocks (Figure 51, Item 1) area for cracks, broken welds, elongation, and deformation. 	<p>Cracks or broken welds noted.</p> <p>Cracks, broken welds, elongation, or deformation prevents proper seating of connector.</p>
<p>Figure 51. Receptacle Blocks - Longitudinal Upper Coupling Outboard.</p>				
49	Semi-annually	Left and right inner and outer pontoon bilge plugs	Ensure left inner and outer pontoon bilge plugs (Figure 52, Item 1) are secured and not cracked or broken.	Any bilge plug missing, cracked, or broken.
<p>Figure 52. Left Inner and Outer Pontoon Bilge Plugs.</p>				

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
50	Semi-annually	Left and right outer pontoon lock at end of bay	Inspect engagement of left outer pontoon lock (Figure 53, Item 1). <div> </div> <p>Figure 53. Left Outer Pontoon Lock.</p>	Outer pontoon lock will not engage.
51	Semi-annually	Left and right belay cleat	Inspect belay cleat (Figure 54, Item 1) for damage, cracked welds, or if missing. <div> </div> <p>Figure 54. Belay Cleat.</p>	Cleat is damaged, cracked, or missing.

Table 1. Preventive Maintenance Checks and Services (PMCS) for Improved Ribbon Bridge Interior Bay - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
52	Semi-annually	Left and right outer pontoon personnel walkway surface and inner pontoon roadway surface	<ol style="list-style-type: none"> 1. Inspect left outer pontoon personnel walkway surface (Figure 55, Item 2) and inner pontoon roadway surface (Figure 55, Item 1) for structural damage, deformity, holes, and tears. 2. Inspect for punctures, cracks, tears, dents, holes, and broken welds. 3. Ensure that non-skid coating adequately covers walkways. 	<p>Damage prevents safe traffic crossing or causes personnel safety hazard.</p> <p>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> <p>Non-skid coating is deteriorated or missing.</p>

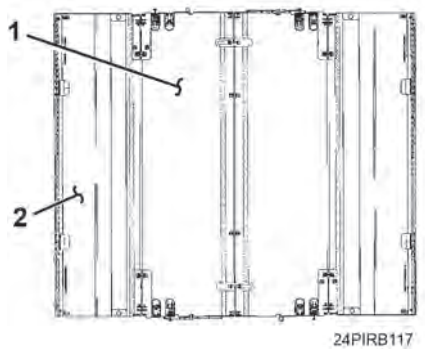


Figure 55. Left Personnel Walkway and Roadway.

PMCS Mandatory Replacement Parts List

There are no mandatory replacement parts required for these PMCS procedures.

END OF TASK

END OF WORK PACKAGE

CHAPTER 4
MAINTENANCE INSTRUCTIONS

**FIELD MAINTENANCE
SERVICE UPON RECEIPT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

References

DA PAM 750-8
SF 361
TM 5-5420-278-10

References (cont.)

WP 0020
WP 0021
WP 0022
WP 0031
WP 0064
WP 0068

SERVICE UPON RECEIPT

When an Improved Ribbon Bridge (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 750-8).
3. Verify whether the equipment has been modified.

END OF TASK**INSTALLATION INSTRUCTIONS**

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

1. Install ramp plates and straps (ramp bay only) (TM 5-5420-278-10).
2. Install handrails on bay (if removed) (WP 0031).
3. Install bilge plugs on bay (if removed) (TM 5-5420-278-10).
4. Add pump fluid to pumps as required (ramp bay only) (TM 5-5420-278-10).
5. Install Basic Issue Items (BII) items on ramp bay in storage boxes (TM 5-5420-278-10).

END OF TASK

PRELIMINARY SERVICING OF EQUIPMENT

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

1. Perform Preventive Maintenance Checks and Services (PMCS) (WP 0020).
2. Check all exterior surfaces of equipment for dirt, grease, oil, or any other existing debris. Refer to (WP 0064) and clean as necessary.
3. Check all BII (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. For more information, refer to TM 5-5420-278-10, (WP 0020)>, (WP 0020)>, , and (WP 0068) .

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE PONTOON LEAK TEST

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Leak tester
(WP 0130, Table 1, Item 26)

Equipment Condition

Ramp bay or interior bay removed from
transporter (TM 5-5420-278-10)
Ramp bay or interior bay unfolded
(TM 5-5420-278-10)

NOTE

Transporter may be used to supply air pressure for leak test.

INSTALLATION

1. Remove bilge plug (Figure 1, Item 1) from pontoon (Figure 1, Item 7).
2. Install gasket (Figure 1, Item 6) and pontoon leak tester (Figure 1, Item 5).
3. Place pontoon leak tester control valve lever (Figure 1, Item 4) to closed position.
4. Connect air supply hose (Figure 1, Item 2) to pontoon leak tester fitting (Figure 1, Item 3).

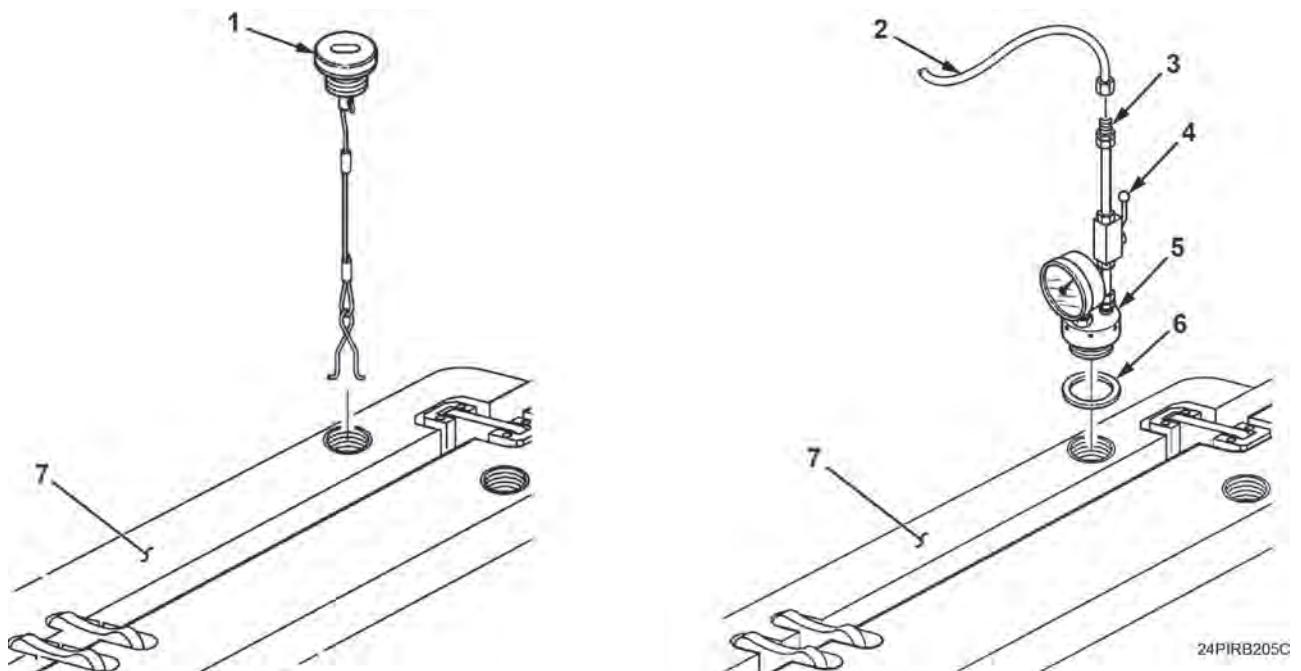


Figure 1. Pontoon, Bilge Plug, and Leak Tester.

INSTALLATION - Continued

5. Connect air supply hose (Figure 2, Item 1) to transporter emergency air supply.
6. Start engine on transporter and open transporter emergency air supply valve lever (Figure 2, Item 2) to pressurize air supply hose (Figure 2, Item 1).

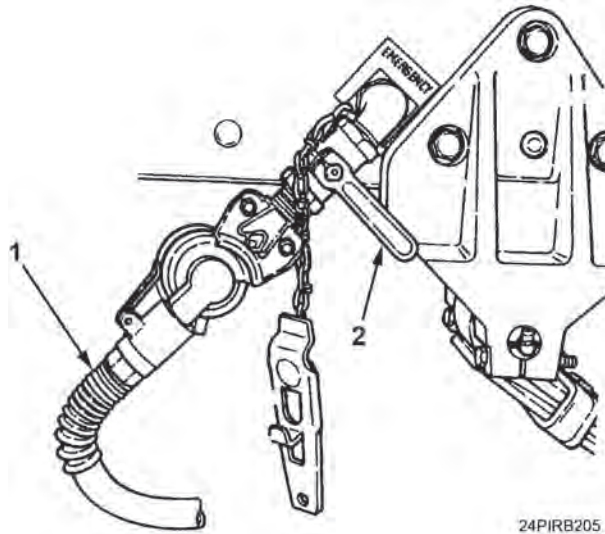


Figure 2. Transporter Emergency Air Supply.

7. Move pontoon leak tester control lever (Figure 3, Item 4) to open position and fill pontoon (Figure 3, Item 7) with air, until leak tester pressure gauge reads 1.6 ± 0.1 psi (110 ± 7 mbar).
8. Move pontoon leak tester control lever (Figure 3, Item 4) to closed position. Leak tester pressure gauge must not drop within 5 minutes. If necessary, apply soapy solution to pontoon surfaces and check for leaks.
9. Repair or replace gaskets, sealing compound, or cracks as necessary.

END OF TASK**REMOVAL**

1. Disconnect air supply hose (Figure 3, Item 2) from leak tester fitting (Figure 3, Item 3) and move leak tester control lever (Figure 3, Item 4) to open position.
2. Remove pontoon leak tester (Figure 3, Item 5) and gasket (Figure 3, Item 6) from pontoon (Figure 3, Item 7).
3. Install bilge plug (Figure 3, Item 1) on pontoon (Figure 3, Item 7).

REMOVAL - Continued

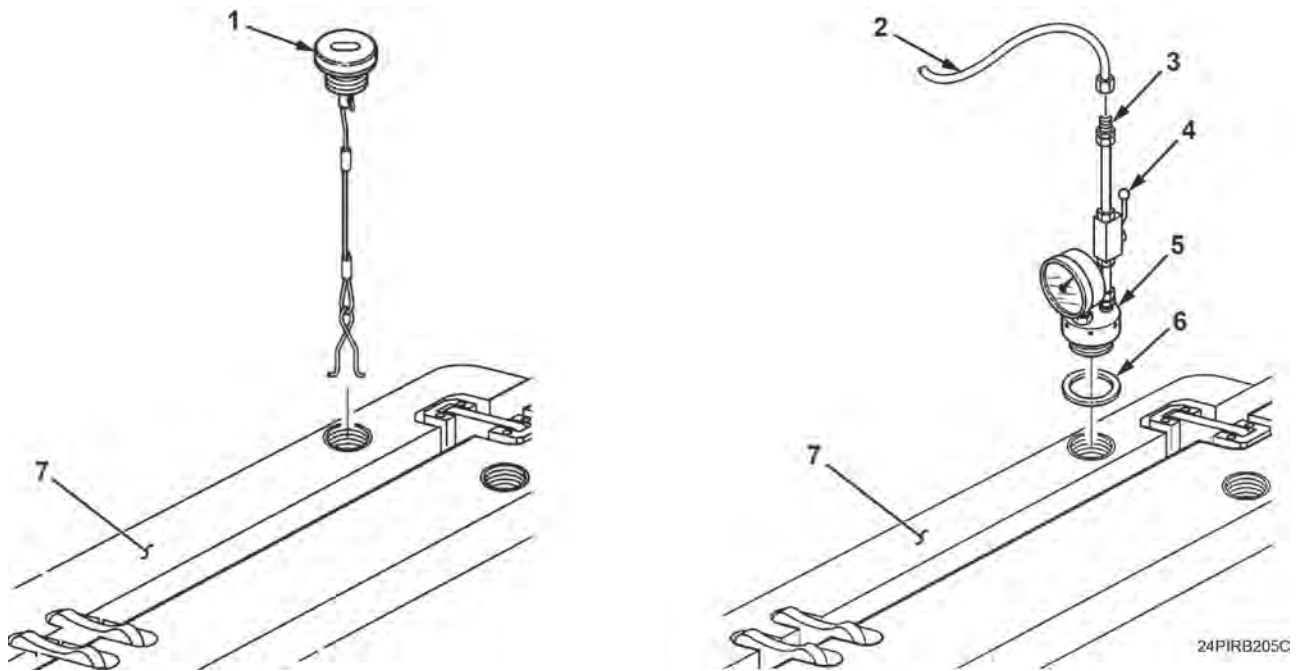


Figure 3. Pontoon, Bilge Plug, and Leak Tester.

4. Close transport emergency air supply valve (Figure 4, Item 2) and disconnect air hose (Figure 4, Item 1) from transporter.

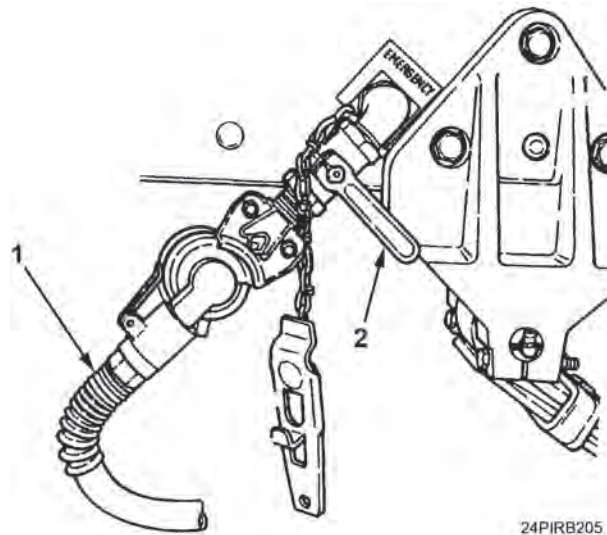


Figure 4. Transporter Emergency Air Supply.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Fold ramp bay or interior bay (TM 5-5420-278-10).
2. Load ramp bay or interior bay on transporter (TM 5-5420-278-10).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
RAMP BAY INNER PONTOON AND OUTER PONTOON SEPARATION (M16)

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Hammer, slide (WP 0130, Table 1, Item 14)
Multiple leg sling (WP 0130, Table 1, Item 24)
Suitable lifting device
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)

Materials/Parts

Adhesive (WP 0129, Table 1, Item 1)
Cap and plug set (WP 0129, Table 1, Item 6)
Grease (WP 0129, Table 1, Item 17)
Marker tags (WP 0129, Table 1, Item 27)

Materials/Parts (cont.)

Cotter pin Qty: 2 (WP 0131, Table 1, Item 12)
Locknut Qty: 2 (WP 0131, Table 1, Item 32)
Dunnage

References

WP 0026
WP 0072

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 0026)

WARNING

- Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum.
- All nonessential personnel must stand clear during lifting operations. Ensure pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay.

Failure to comply may result in personnel injury or death and/or damage to equipment.

SEPARATING INNER PONTOONS

- Using transporter (Figure 1, Item 2) or suitable lifting device, raise ramp bay (Figure 1, Item 1), position dunnage (Figure 1, Item 4) under inner pontoons (Figure 1, Item 3), and lower bay on dunnage.

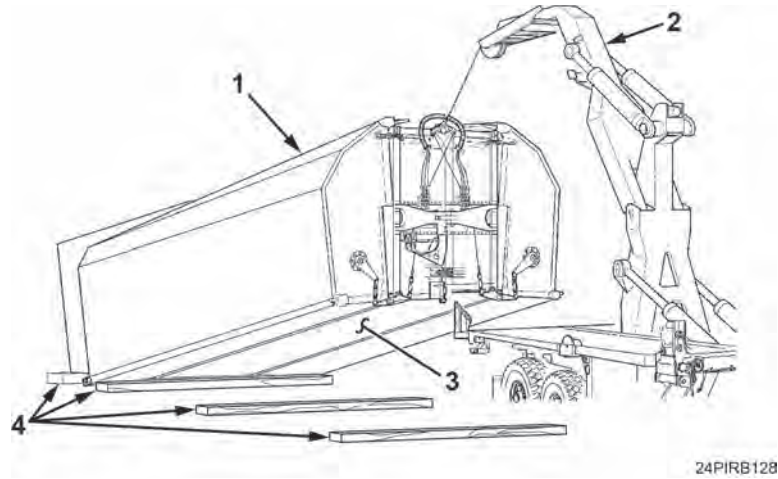


Figure 1. Transporter Unloading Bay.

NOTE

- Bay must be lifted from center of gravity (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.
- Attach suitable lifting device and Improved Ribbon Bridge (IRB) hoisting gear (Figure 2, Item 2) to outer pontoon (Figure 2, Item 1) at load receiving pins (Figure 2, Item 3), and take up slack.

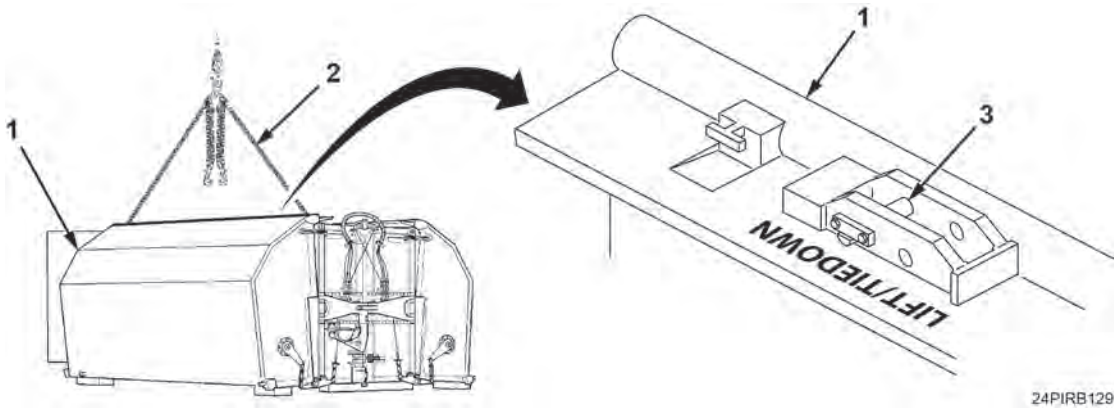


Figure 2. Attach Suitable Lifting Device.

SEPARATING INNER PONTOONS - Continued**NOTE**

- Tag hoses for installation.
 - Cap and plug all hoses and fittings immediately after disconnecting.
3. Disconnect hoses (Figure 3, Items 4, 5, and 6) from quick-disconnects (Figure 3, Items 8, 9, and 10) at inner pontoon bracket (Figure 3, Item 7).
 4. Remove four screws (Figure 3, Item 11), washers (Figure 3, Item 12), two clamps (Figure 3, Item 3), hoses (Figure 3, Items 4, 5, and 6), and loom tubing (Figure 3, Item 1) from mounting supports (Figure 3, Item 2).

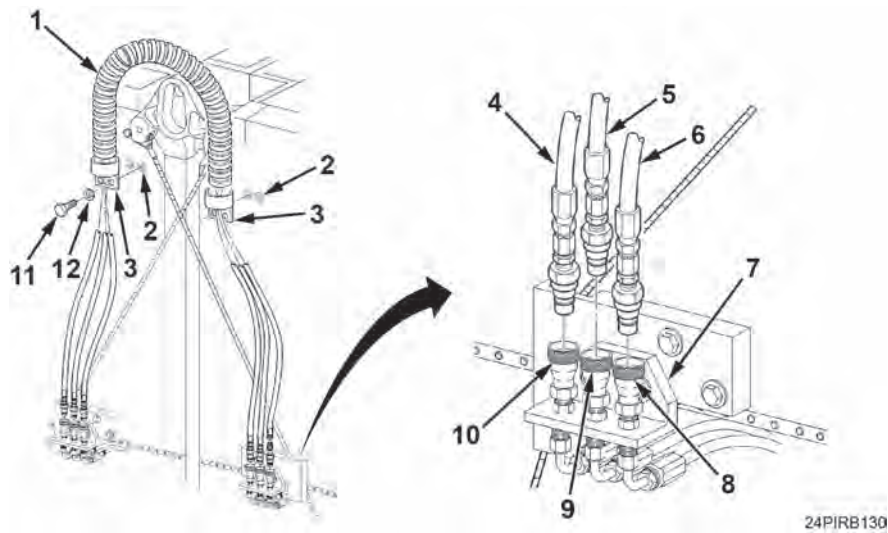


Figure 3. Hydraulic Hose Removal.

SEPARATING INNER PONTOONS - Continued

5. Remove two cotter pins (Figure 4, Item 1) and washers (Figure 4, Item 4) from pin (Figure 4, Item 24). Discard cotter pins.
6. Drive pin (Figure 4, Item 24) out from cover (Figure 4, Item 3) and bell crank (Figure 4, Item 13).
7. Remove two nuts (Figure 4, Item 10), screws (Figure 4, Item 8), and connecting links (Figure 4, Item 2) with cover (Figure 4, Item 3) from inner pontoon brackets (Figure 4, Item 9).
8. Remove locknut (Figure 4, Item 25) and screw (Figure 4, Item 6) from front collar (Figure 4, Item 5), Discard locknut.
9. Drive bell crank (Figure 4, Item 13) forward and remove collar (Figure 4, Item 5) from bell crank.

NOTE

Note location and quantity of washers for installation.

10. Drive bell crank (Figure 4, Item 13) completely out of inner pontoon hinges (Figure 4, Items 7 and 12), and remove washers (Figure 4, Item 11). Retain washers for installation.
11. Remove locknut (Figure 4, Item 26), screw (Figure 4, Item 20), and rear collar (Figure 4, Item 19) from pin (Figure 4, Item 23). Discard locknut.
12. Drive pin (Figure 4, Item 23) out of inner pontoon hinges (Figure 4, Items 21 and 22).

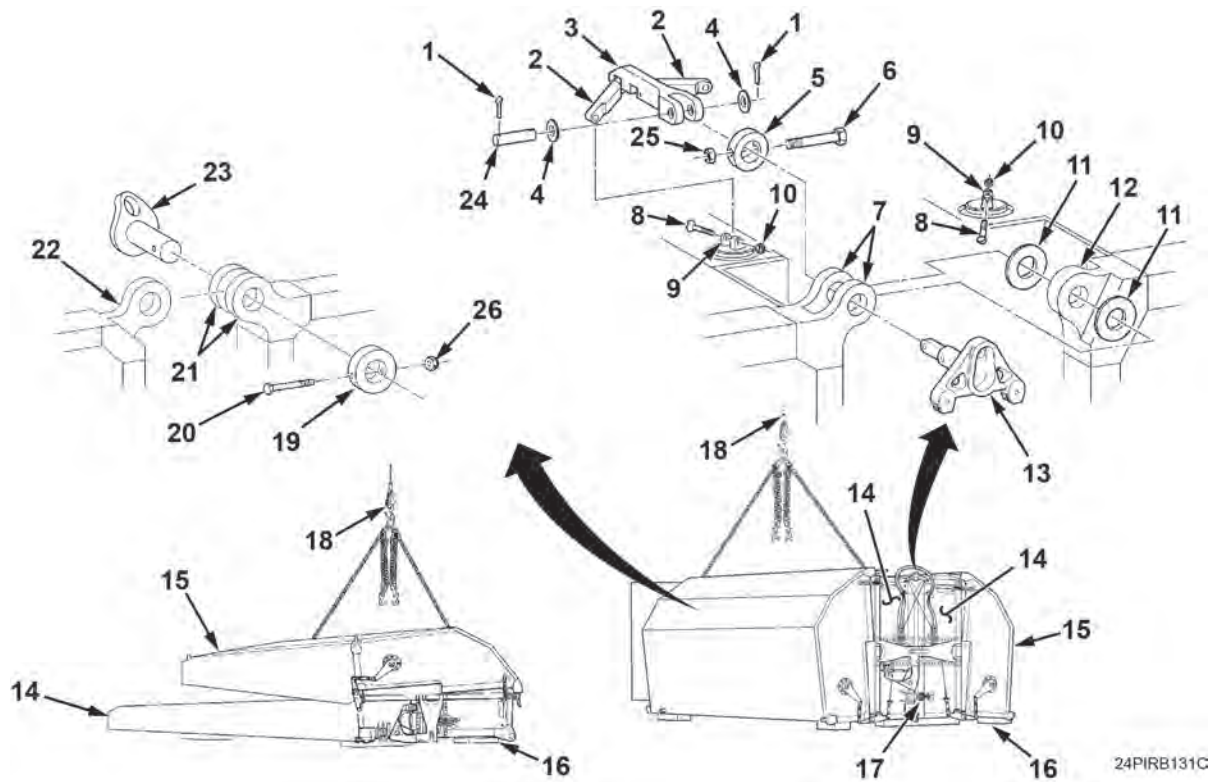
WARNING

- Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum.
- All nonessential personnel must stand clear during lifting operations. Ensure pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay.

Failure to comply may result in personnel injury or death and/or damage to equipment.

13. Unlock travel latch (Figure 4, Item 17), and lift and separate inner pontoons (Figure 4, Item 14) using suitable lifting device (Figure 4, Item 18).
14. Set inner pontoon (Figure 4, Item 14) and outer pontoon (Figure 4, Item 15) down, with roadway surface of inner pontoon on dunnage (Figure 4, Item 16).

SEPARATING INNER PONTOONS - Continued



24PIRB131C

Figure 4. Separating Inner Pontoons.

END OF TASK

SEPARATING OUTER PONTOONS FROM INNER PONTOONS**WARNING**

- Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum.
- All nonessential personnel must stand clear during lifting operations. Ensure pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay.

Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

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

1. Remove screw (Figure 5, Item 21), washer (Figure 5, Item 20), and pin (Figure 5, Item 19) from connecting link (Figure 5, Item 18) and stabilizer lever (Figure 5, Item 16), and lay connecting link down.

NOTE

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

2. Attach suitable lifting device (Figure 5, Item 2) and IRB hoisting gear (Figure 5, Item 1) to load receiving pins on outer pontoon (Figure 5, Item 3).
3. Unlock foldlock (Figure 5, Item 4) and raise outer pontoon (Figure 5, Item 3) from inner pontoon (Figure 5, Item 17) until preload tension on torsion bar lever (Figure 5, Item 29) is off turnbuckle (Figure 5, Item 6).
4. Remove two screws (Figure 5, Item 7), washers (Figure 5, Item 8), pins (Figure 5, Item 9), and turnbuckle (Figure 5, Item 6) from torsion bar lever (Figure 5, Item 29) and stabilizer bracket (Figure 5, Item 10).
5. Secure outer pontoon (Figure 5, Item 3) by installing tag lines (Figure 5, Item 5) prior to lifting.
6. Using suitable lifting device (Figure 5, Item 2), lift and swing outer pontoon (Figure 5, Item 3) to open vertical position.
7. Remove bolt (Figure 5, Item 26) from outer pontoon (Figure 5, Item 3) and pin (Figure 5, Item 25).
8. Remove screw (Figure 5, Item 24) from pin (Figure 5, Item 25).
9. Using slide hammer, remove pin (Figure 5, Item 25) and two spacer plates (Figure 5, Item 22) from outer pontoon (Figure 5, Item 3) and stabilizer bracket (Figure 5, Item 23).
10. Turn stopscrew (Figure 5, Item 11) clockwise until head of stop screw contacts hinge bracket (Figure 5, Item 14).
11. Remove four screws (Figure 5, Item 12) and washers (Figure 5, Item 13) from hinge bracket (Figure 5, Item 14) and outer pontoon (Figure 5, Item 3).

SEPARATING OUTER PONTOONS FROM INNER PONTOONS - Continued

WARNING



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

NOTE

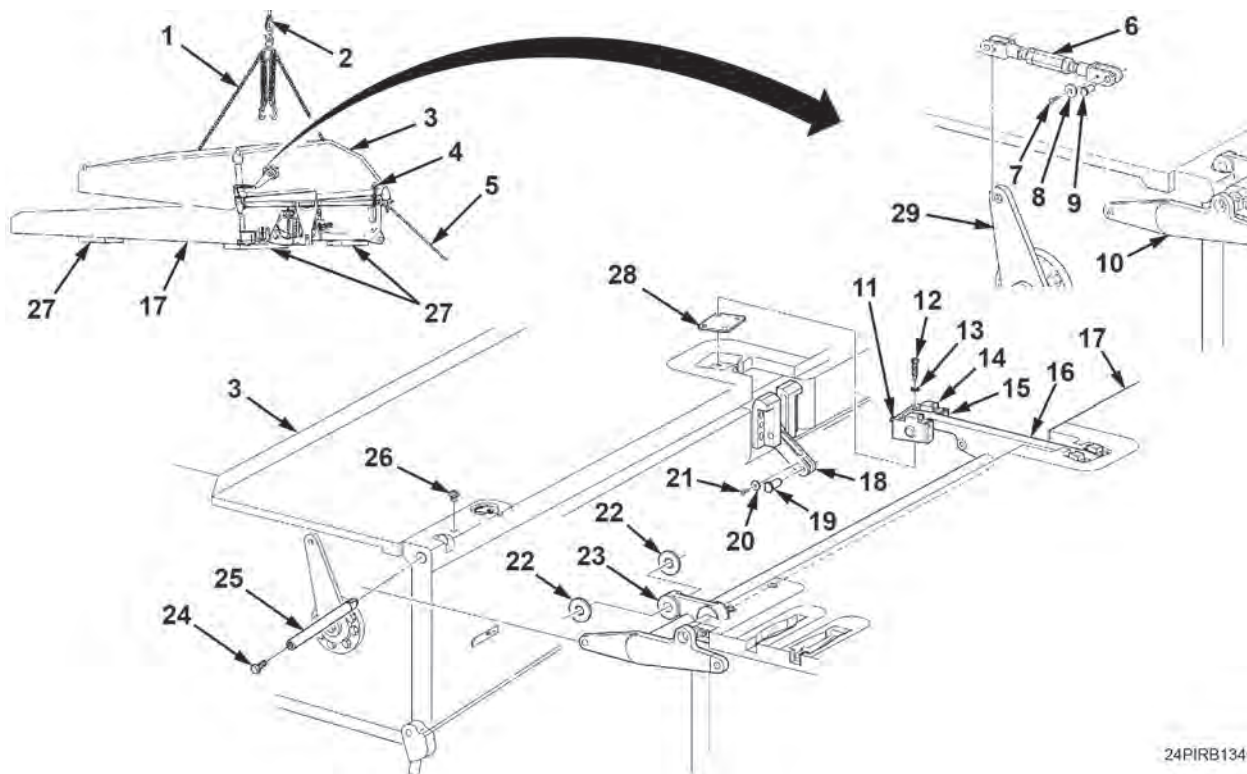
Note location and quantity of spacers for installation.

12. Lift hinge bracket (Figure 5, Item 14) out of outer pontoon (Figure 5, Item 3), and secure in vertical position. Remove spacers (Figure 5, Items 15 and 28). Retain spacers for installation in same order removed.
13. Using suitable lifting device (Figure 5, Item 2), remove outer pontoon (Figure 5, Item 3) from inner pontoon (Figure 5, Item 17) and set on dunnage (Figure 5, Item 27).

NOTE

Perform Step 14 if inner pontoon(s) will be moved.

14. Using suitable lifting device (Figure 5, Item 2) and IRB hoisting gear (Figure 5, Item 1) attached to two deck pins, lift inner pontoon (Figure 5, Item 17) from dunnage (Figure 5, Item 27).



24PIRB134C

Figure 5. Separating Outer Pontoons.

END OF TASK

CONNECTING OUTER PONTOONS TO INNER PONTOONS**WARNING**

- Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum.
- All nonessential personnel must stand clear during lifting operations. Ensure pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay.

Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - Connecting of left and right outer pontoons is performed the same way. Right side is shown.
1. Secure stabilizer bracket (Figure 6, Item 8) in vertical position.

NOTE

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

2. Attach IRB hoisting gear (Figure 6, Item 18) and suitable lifting device (Figure 6, Item 30) to load receiving pins on outer pontoon (Figure 6, Item 1).

WARNING

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

3. Using suitable lifting device (Figure 6, Item 30), raise and position outer pontoon (Figure 6, Item 1) next to inner pontoon (Figure 6, Item 9).

CAUTION

To avoid top of screws from wearing, ensure spacers total 3mm thick, with the surface of the hardware below the deck. Failure to comply may result in damage to equipment.

NOTE

- Use adhesive to hold spacers in place.
 - Reuse the same spacers that were removed. If spacers are not flush, adjust accordingly.
4. Position spacers (Figure 6, Item 2) on outer pontoon (Figure 6, Item 1) and spacers (Figure 6, Item 7) on hinge bracket (Figure 6, Item 6).

CONNECTING OUTER PONTOONS TO INNER PONTOONS - Continued

5. Position outer pontoon (Figure 6, Item 1), and install hinge bracket (Figure 6, Item 6) on outer pontoon with four washers (Figure 6, Item 5) and screws (Figure 6, Item 4). Do not tighten screws.

NOTE

Apply a light coat of grease to pins at installation.

6. Align outer pontoon (Figure 6, Item 1), and install pin (Figure 6, Item 20) on outer pontoon and stabilizer bracket (Figure 6, Item 23).
7. Lower outer pontoon (Figure 6, Item 1) to fully open position, and level with dunnage until pin (Figure 6, Item 20) can be easily removed and installed.
8. Remove pin (Figure 6, Item 20) and install two spacer plates (Figure 6, Item 22) and pin on outer pontoon (Figure 6, Item 1) and stabilizer bracket (Figure 6, Item 23).
9. Align pin (Figure 6, Item 20) and install screw (Figure 6, Item 21) on outer pontoon (Figure 6, Item 1) and pin.
10. Install screw (Figure 6, Item 19) on end of pin (Figure 6, Item 20).
11. Turn stopscrew (Figure 6, Item 3) counterclockwise until spacers (Figure 6, Item 7) contact edge of recess on outer pontoon (Figure 6, Item 1), then tighten four screws (Figure 6, Item 4).
12. If jamnuts (Figure 6, Item 10) and nut (Figure 6, Item 11) on turnbuckle (Figure 6, Item 17) were moved, adjust length of turnbuckle to 12.85 in. (326 mm) by measuring from center-to-center from holes in clevises and turning nut (WP 0026). Tighten two jamnuts.
13. Using suitable lifting device (Figure 6, Item 30), lift outer pontoon (Figure 6, Item 1) and swing and lower outer pontoon down until turnbuckle (Figure 6, Item 17) can be installed on torsion bar lever (Figure 6, Item 16) and stabilizer bracket (Figure 6, Item 15) with two pins (Figure 6, Item 14), washers, (Figure 6, Item 13), and screws (Figure 6, Item 12).
14. Lower outer pontoon (Figure 6, Item 1) down until resting on inner pontoon (Figure 6, Item 9).
15. Close foldlock (Figure 6, Item 29) on outer pontoon (Figure 6, Item 1).
16. Connect connecting link (Figure 6, Item 27) to stabilizer bracket (Figure 6, Item 8) with pin (Figure 6, Item 26), washer (Figure 6, Item 25), and screw (Figure 6, Item 24).

CONNECTING OUTER PONTOONS TO INNER PONTOONS - Continued

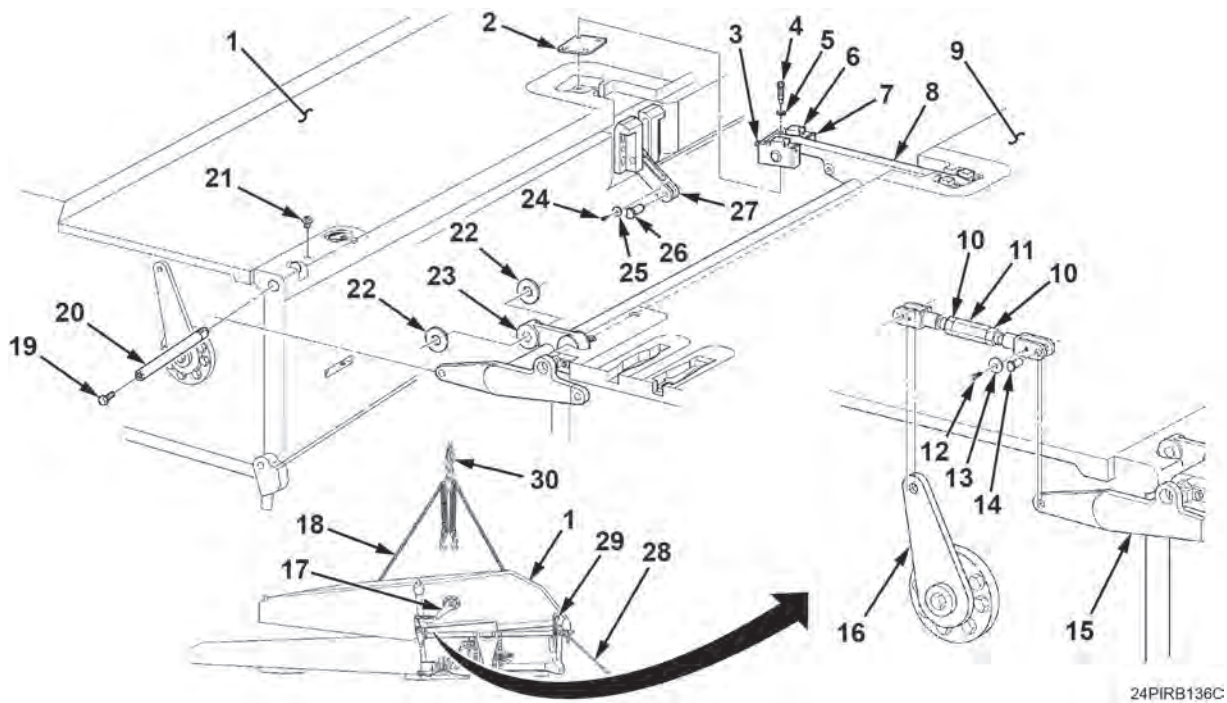


Figure 6. Connecting Outer Pontoons.

END OF TASK

CONNECTING INNER PONTOONS

WARNING



- Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum.
- All nonessential personnel must stand clear during lifting operations. Ensure pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in personnel injury or death and/or damage to equipment.
- Ensure tag lines are held tight to prevent outer pontoon from swinging.

Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
- Apply a light coat of grease to shims and shafts of eyebolts at installation.

CONNECTING INNER PONTOONS - Continued

1. Using suitable lifting device (Figure 7, Item 2) and IRB hoisting gear (Figure 7, Item 1), lift outer pontoon (Figure 7, Item 3) and inner pontoon (Figure 7, Item 4) off dunnage (Figure 7, Item 5).

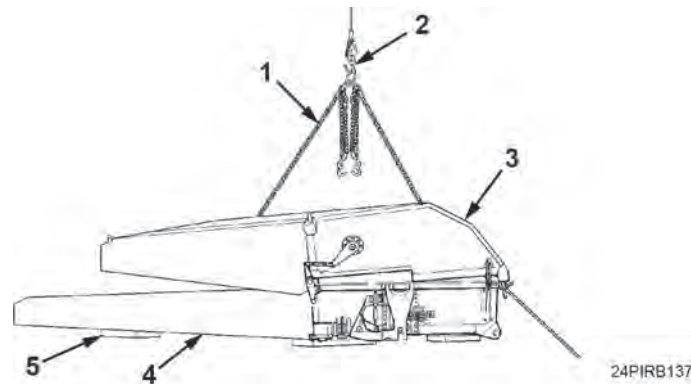
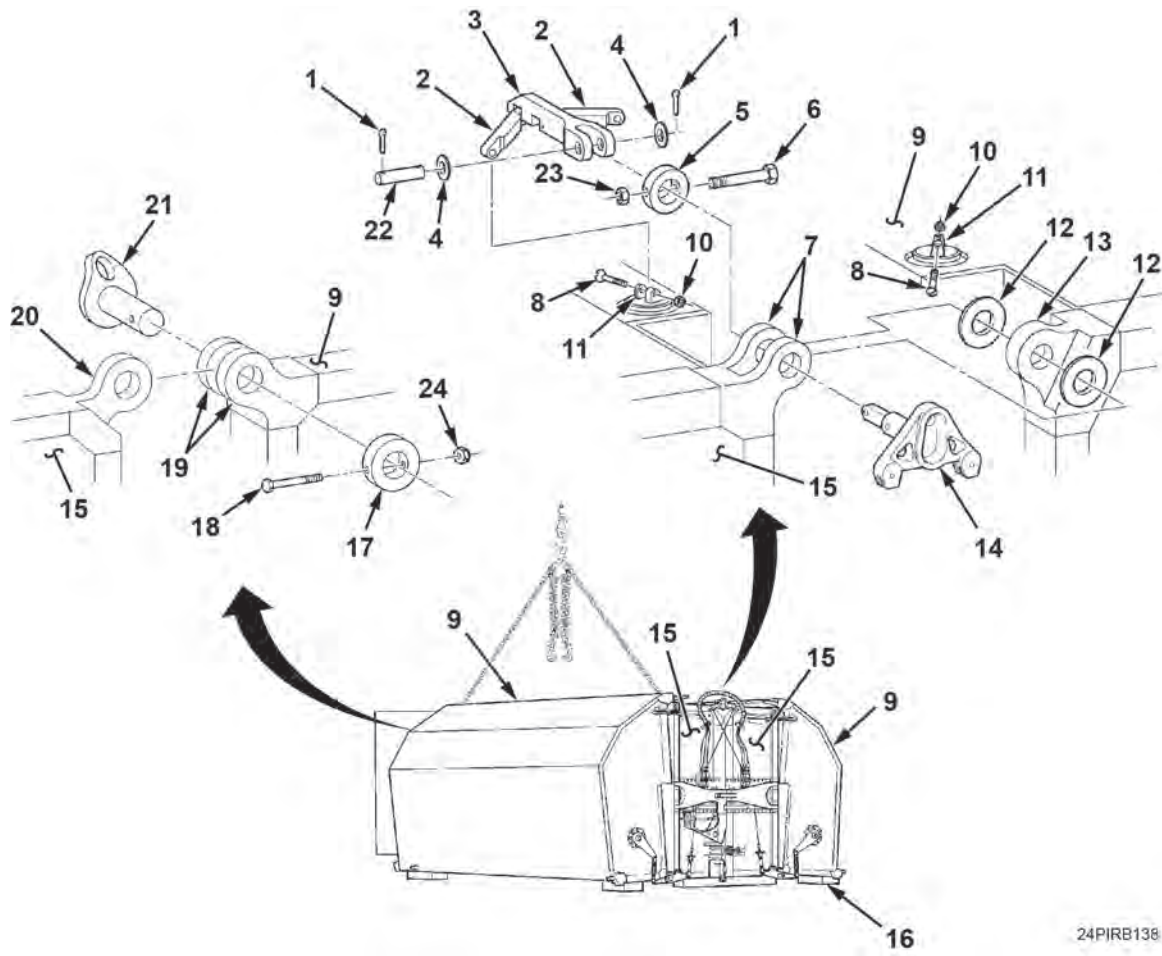


Figure 7. Lifting Pontoon.

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

CONNECTING INNER PONTOONS - Continued

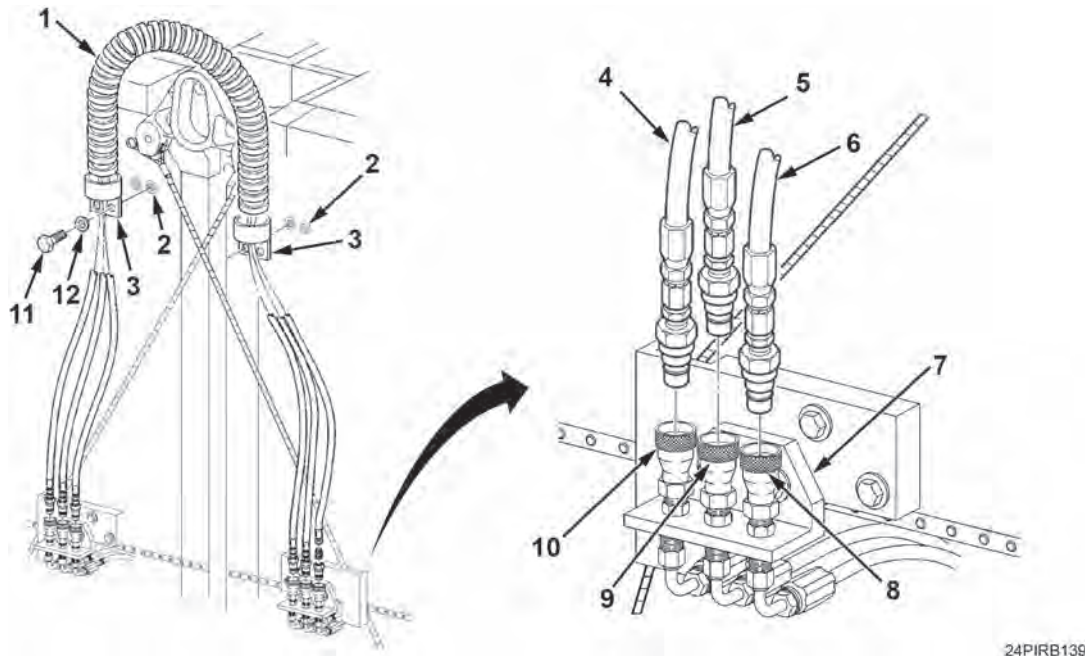


24PIRB138

Figure 8. Connecting Inner Pontoon.

CONNECTING INNER PONTOONS - Continued

9. Secure three hoses (Figure 9, Items 4, 5 and 6) and loom tubing (Figure 9, Item 1) to inner pontoon mounting supports (Figure 9, Item 2) with two clamps (Figure 9, Item 3), four washers (Figure 9, Item 12), and screws (Figure 9, Item 11).
10. Connect hoses (Figure 9, Items 4, 5 and 6) to quick-disconnects (Figure 9, Items 8, 9 and 10) at inner pontoon brackets (Figure 9, Item 7) as tagged during disassembly.



24PIRB139

Figure 9. Hydraulic Hose Installation.

END OF TASK**FOLLOW-ON MAINTENANCE**

1. Install cable assemblies (WP 0026).
2. Lock travel latch and foldlock (TM 5-5420-278-10).
3. Load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
RAMP BAY CABLE ASSEMBLY SERVICE**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench 3/8 in. drive 0-100 lb-ft
(0-136 N•m) (WP 0130, Table 1, Item 35)
Suitable lifting device

Materials/Parts

Cap and plug set (WP 0129, Table 1, Item 6)
Marker tags (WP 0129, Table 1, Item 27)
Cotter pin Qty: 4 (WP 0131, Table 1, Item 25)
Dunnage

References

WP 0068
WP 0072

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)
Bay is on level ground and in closed position
(TM 5-5420-278-10)

WARNING

- Suitable lifting device must be capable of hoisting 14,000 lb (6350 kg) minimum.
- All nonessential personnel must stand clear during lifting operations. Ensure pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay.

Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

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

REMOVAL

1. Using transporter (Figure 1, Item 2) or suitable lifting device, raise bay (Figure 1, Item 1) and position dunnage (Figure 1, Item 4) lengthwise and on an angle under center of inner pontoons (Figure 1, Item 3). Lower bay on dunnage.

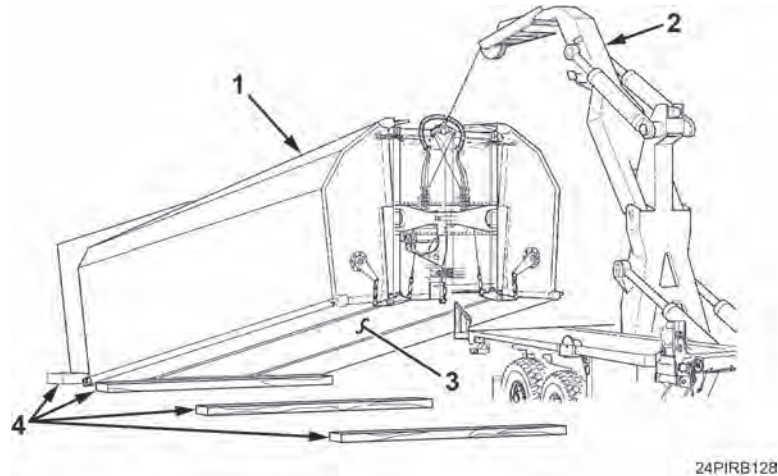


Figure 1. Transporter Unloading Bay.

2. Loosen two jamnuts (Figure 2, Item 7) on clevis rods (Figure 2, Item 8), and turn nut (Figure 2, Item 9) counterclockwise until tension is removed from cable (Figure 2, Item 1).

NOTE

Ends of cotter pins are bent for safety.

3. Straighten and remove cotter pin (Figure 2, Item 5) and pin (Figure 2, Item 6) from clevis (Figure 2, Item 10) and cable (Figure 2, Item 1). Discard cotter pin.
4. Straighten and remove cotter pin (Figure 2, Item 3) and pin (Figure 2, Item 4) from bell crank (Figure 2, Item 2) and cable (Figure 2, Item 1). Discard cotter pin.
5. Move control valve lever to all positions and then place lever in TRANSPORT/CROSSING position.

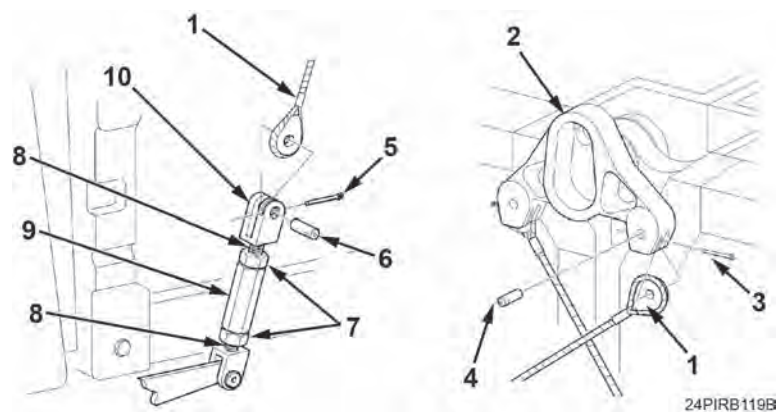


Figure 2. Turnbuckle and Bell Crank.

REMOVAL - Continued**WARNING**

Relieve residual pressure on fluid system before disconnecting lines. Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

- Tag hoses for installation.
 - Cap and plug all hoses and fittings immediately after disconnecting.
6. Disconnect three hoses (Figure 3, Item 1) from quick-disconnects (Figure 3, Item 5), and secure out of way.
 7. Loosen two screws (Figure 3, Item 4), and move cable guide (Figure 3, Item 6) away from inner pontoon (Figure 3, Item 2) until end of cable (Figure 3, Item 3) can be removed. Remove cable from bay.
 8. Perform Steps 2 through 6 to remove cable assembly from opposite side.

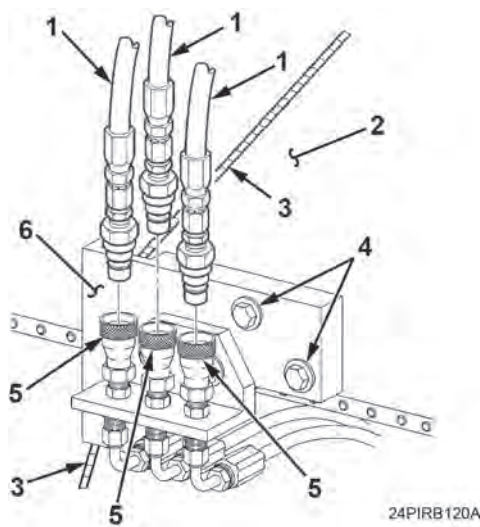


Figure 3. Hydraulic Hoses.

END OF TASK**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 bell crank must pass in front of cable connected to left side of front bell crank.
- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072) .

INSTALLATION - Continued

1. Route cable (Figure 4, Item 4) behind cable guide (Figure 4, Item 6), yoke, and outside piston rod of cylinder.
2. Connect end of cable (Figure 4, Item 4) to bell crank (Figure 4, Item 2) with pin (Figure 4, Item 9) and new cotter pin (Figure 4, Item 3). Bend end of cotter pin.
3. Tighten two screws (Figure 4, Item 8) on cable guide (Figure 4, Item 6) and inner pontoon (Figure 4, Item 7).
4. Remove caps and plugs, and connect three hoses (Figure 4, Item 1) to quick-disconnects (Figure 4, Item 5) as tagged during removal.

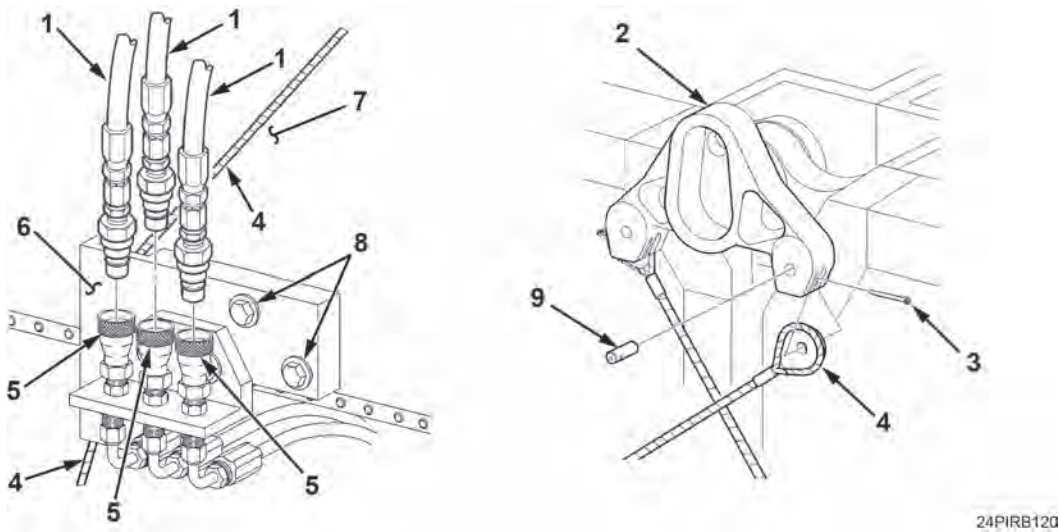


Figure 4. Hydraulic Hoses and Bell Crank.

5. Connect end of cable (Figure 5, Item 1) to clevis (Figure 5, Item 2) with pin (Figure 5, Item 4) and new cotter pin (Figure 5, Item 3).
6. Slightly bend protruding end of cotter pin (Figure 5, Item 3).
7. Perform Steps 1 through 6 to install opposite cable assembly.

END OF TASK

ADJUSTMENT**NOTE**

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

1. Loosen two jamnuts (Figure 5, Item 5) on clevis rods (Figure 5, Item 7), and turn nut (Figure 5, Item 6) clockwise until cable (Figure 5, Item 1) is tensioned. Tighten jamnuts.
2. Perform Step 1 to adjust tension of opposite cable.

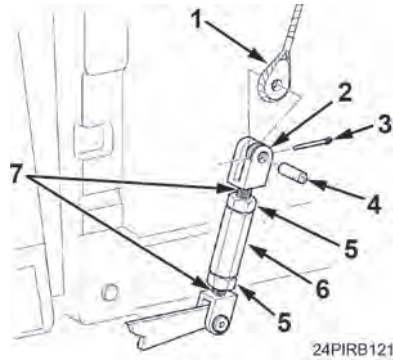


Figure 5. Turnbuckle.

END OF TASK**FOLLOW-ON MAINTENANCE**

1. Lubricate cable assemblies (WP 0068)
2. Load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
BELL CRANK AND EYEBOLT (FRONT AND REAR) REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench 3/8 in. drive 0-100 lb-ft
(0-136 N•m) (WP 0130, Table 1, Item 35)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Cotter pin Qty: 2 (WP 0131, Table 1, Item 12)
Locknut Qty: 2 (WP 0131, Table 1, Item 32)

References

WP 0072

Equipment Condition

Travel latch and foldlock locked
(TM 5-5420-278-10)
Cable assemblies removed (WP 0026)

FRONT BELL CRANK REMOVAL

1. Remove two cotter pins (Figure 1, Item 1) and washers (Figure 1, Item 4) from pin (Figure 1, Item 17), and drive pin out from lever (Figure 1, Item 3) and front eyebolt (Figure 1, Item 13). Discard cotter pins.
2. Remove two nuts (Figure 1, Item 9), screws (Figure 1, Item 8), and shackles (Figure 1, Item 2) with lever (Figure 1, Item 3) from inner pontoons (Figure 1, Item 12).
3. Remove locknut (Figure 1, Item 14) and screw (Figure 1, Item 6) from front collar (Figure 1, Item 5), and drive front bell crank (Figure 1, Item 13) forward and remove collar. Discard locknut.

NOTE

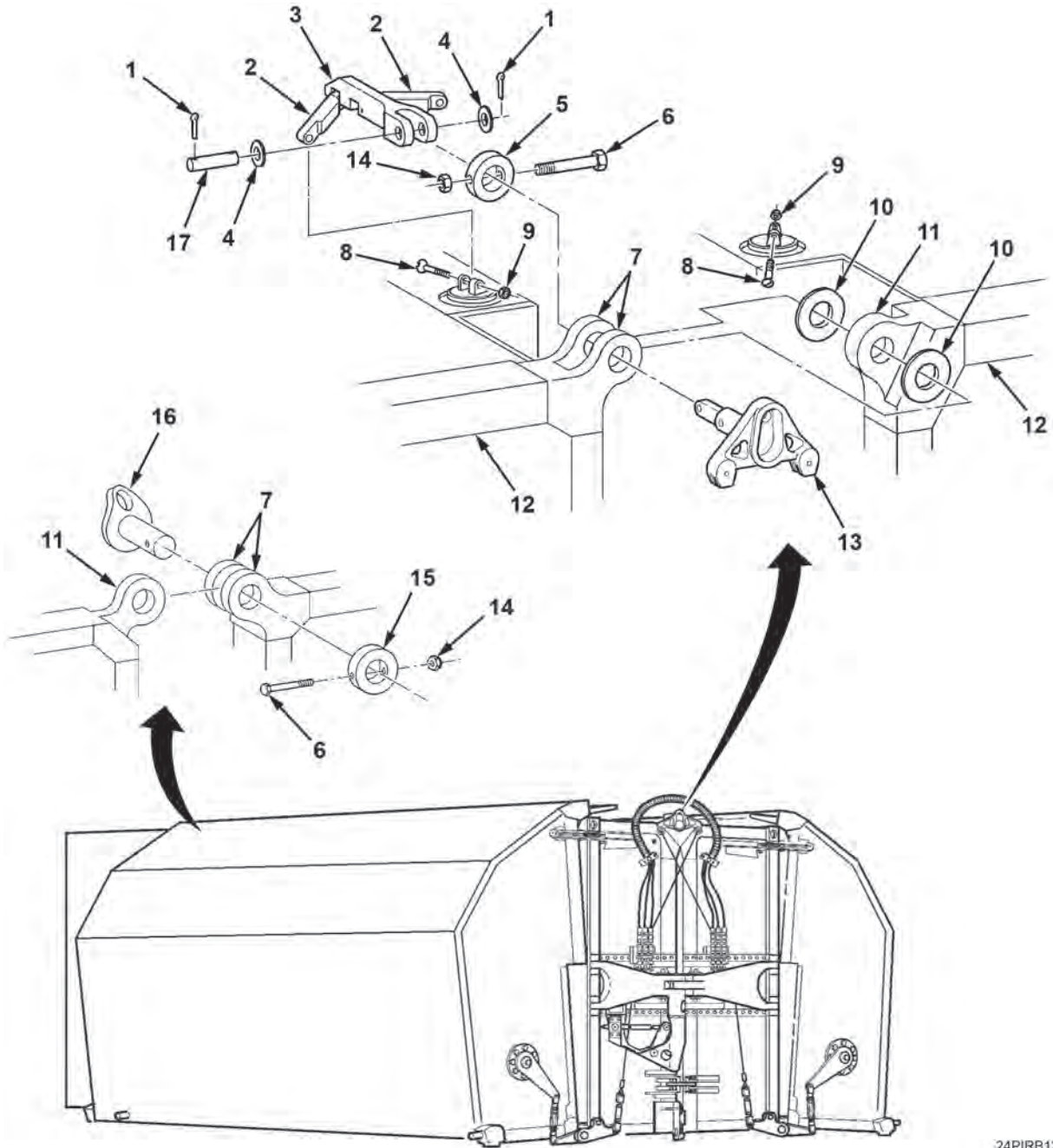
Note location and number of shim(s) for installation; quantity may vary between bays.

4. Drive front bell crank (Figure 1, Item 13) completely out of inner pontoon front hinges (Figure 1, Items 7 and 11) and remove shim(s) (Figure 1, Item 10). Retain shim(s) for installation.

END OF TASK**REAR EYEBOLT REMOVAL**

1. Remove locknut (Figure 1, Item 14), screw (Figure 1, Item 6), and rear collar (Figure 1, Item 15) from rear eyebolt (Figure 1, Item 16). Discard locknut.
2. Drive rear eyebolt (Figure 1, Item 16) completely out of inner pontoon rear hinges (Figure 1, Items 7 and 11).

REAR EYEBOLT REMOVAL - Continued



24PIRB122

Figure 1. Front Eyebolt and Bell Crank Removal.

END OF TASK

REAR EYEBOLT INSTALLATION**NOTE**

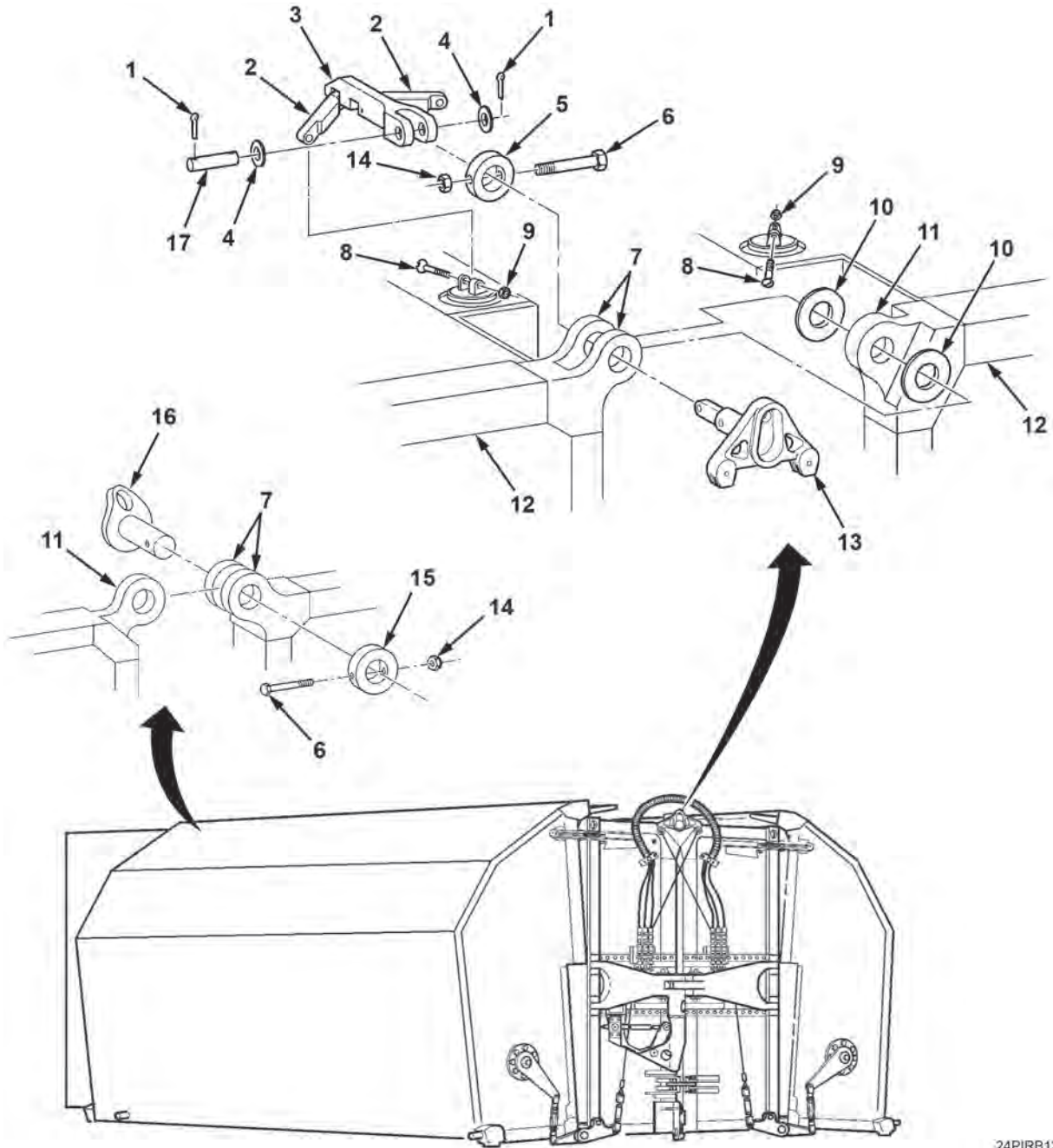
- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
- Apply grease to shaft of eyebolt at installation.

Install rear eyebolt (Figure 2, Item 16) on inner pontoon rear hinges (Figure 2, Items 7 and 11) with rear collar (Figure 2, Item 15), screw (Figure 2, Item 6), and new locknut (Figure 2, Item 14).

END OF TASK**FRONT BELL CRANK INSTALLATION****NOTE**

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - Apply a light coat of grease to shims and shaft of bell crank at installation.
1. Install two shims (Figure 2, Item 10) between front hinges (Figure 2, Items 7 and 11) and push front bell crank (Figure 2, Item 13) halfway in.
 2. Install front collar (Figure 2, Item 5) over shaft of front bell crank (Figure 2, Item 13) and push front bell crank all the way in.
 3. Install front collar (Figure 2, Item 5) on front bell crank (Figure 2, Item 13) with screw (Figure 2, Item 6) and new locknut (Figure 1, Item 14).
 4. Install shackles (Figure 2, Item 2) on inner pontoons (Figure 2, Item 12) with two screws (Figure 2, Item 8) and nuts (Figure 2, Item 9).
 5. Install lever (Figure 2, Item 3) with shackles (Figure 2, Item 2) on front bell crank (Figure 2, Item 13) with two washers (Figure 2, Item 4), pin (Figure 2, Item 17), and two new cotter pins (Figure 2, Item 1).

FRONT BELL CRANK INSTALLATION - Continued



24PIRB122

Figure 2. Front Eyebolt and Bell Crank Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install cable assemblies (WP 0026).
2. Lock travel latch and foldlock (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE TORSION BAR REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit
(WP 0130, Table 1, Item 29)
Connecting Link Tool (WP 0130, Table 1, Item 3)
Multiple Leg Sling (WP 0130, Table 1, Item 24)
Pre-adjusting Tool
Pre-stressing Tool (WP 0130, Table 1, Item 32)
Torque Wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Suitable Lifting Device

Personnel Required

Mechanic
Assistant

References

WP 0068
WP 0072

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10)
Inner pontoons separated (WP 0025)
Dunnage placed under Ramp Bay

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Grease (WP 0129, Table 1, Item 18)
Sealing compound (WP 0129, Table 1, Item 26)
O-ring (WP 0131, Table 1, Item 21)

WARNING

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

CAUTION

- Ensure dunnage or blocks are under Ramp Bay prior to starting this procedure. Failure to comply may cause damage to equipment.
- To avoid top of screws from wearing, ensure spacers total 3mm thick, with the surface of the hardware below the deck. Failure to comply may cause damage to equipment.
- Avoid overlifting outer pontoon from inner pontoon. Lift only far enough to relieve pre-load tension on torsion bar. Failure to comply may result in damage to equipment.

NOTE

- Take note of spacers prior to removal and reuse. If spacers are not flush when reusing, adjust accordingly.
- Removal and installation of right and left torsion bars are performed the same way. Left side is shown.

REMOVAL**CAUTION**

Avoid overlifting outer pontoon from inner pontoon. Lift far enough to relieve pre-load tension on torsion bar. Failure to comply may result in damage to equipment.

- Using suitable lifting device (Figure 1, Item 3), unlock foldlock (Figure 1, Item 5), and lift outer pontoon (Figure 1, Item 4) from inner pontoon (Figure 1, Item 6) until preload tension on torsion bar lever (Figure 1, Item 2) is off turnbuckle (Figure 1, Item 1).

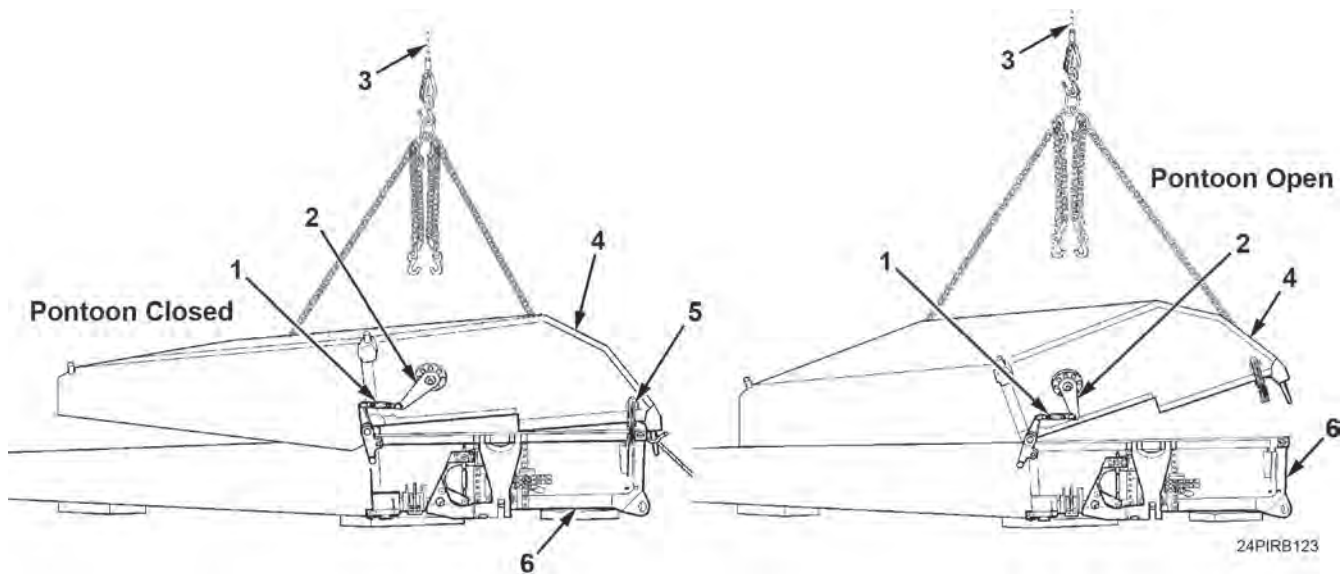


Figure 1. Inner and Outer Pontoons.

- Remove screw (Figure 2, Item 7), washer (Figure 2, Item 8), and pin (Figure 2, Item 9) from turnbuckle (Figure 2, Item 6) and torsion bar lever (Figure 2, Item 4), and slide turnbuckle clevis (Figure 2, Item 11) off torsion bar lever.
- Remove screw (Figure 2, Item 1), washer (Figure 2, Item 2), and washer (Figure 2, Item 3) from torsion bar lever (Figure 2, Item 4) and torsion bar (Figure 2, Item 22).
- Mark position of torsion bar lever (Figure 2, Item 4) on outer pontoon (Figure 2, Item 10) and remove torsion bar lever from torsion bar (Figure 2, Item 22).
- Mark position of flange (Figure 2, Item 17) and outer pontoon (Figure 2, Item 10), and remove eight screws (Figure 2, Item 19), washers (Figure 2, Item 18), and torsion bar housing (Figure 2, Item 16) from outer pontoon.
- Remove screw (Figure 2, Item 5) from torsion bar housing (Figure 2, Item 16) and washer (Figure 2, Item 14).

NOTE

Note location, quantity, and thickness of flat washer(s) (Figure 2, Item 15) for installation.

- Remove screw (Figure 2, Item 12), washer (Figure 2, Item 13), washer (Figure 2, Item 14), and flat washer(s) (Figure 2, Item 15) from torsion bar housing (Figure 2, Item 16) and torsion bar (Figure 2, Item 22). Retain flat washer(s) for installation.
- Push torsion bar (Figure 2, Item 22) out of torsion bar housing (Figure 2, Item 16).

REMOVAL - Continued**NOTE**

Perform Step 9 if removing sleeve (Figure 2, Item 23) from torsion bar.

9. Using puller, remove sleeve (Figure 2, Item 23) from torsion bar (Figure 2, Item 22).
10. Remove O-ring (Figure 2, Item 20) and lube fitting (Figure 2, Item 21) from flange (Figure 2, Item 17). Discard O-ring.

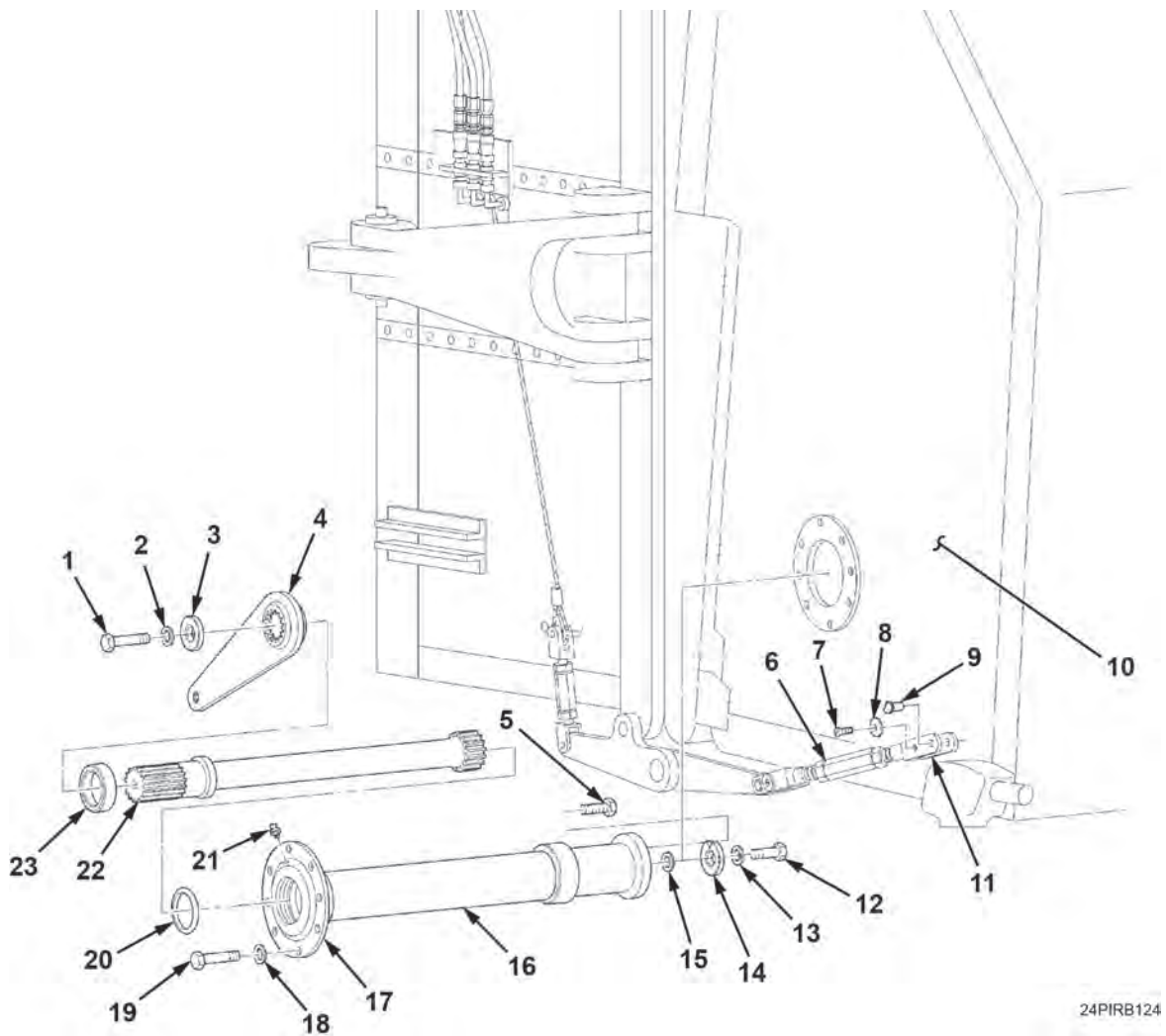


Figure 2. Torsion Bar and Torsion Bar Housing.

END OF TASK

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 ((WP 0072)).
1. Install new O-ring (Figure 3, Item 16) and lube fitting (Figure 3, Item 17) on flange (Figure 3, Item 14) of torsion bar housing (Figure 3, Item 24).

NOTE

Perform Step 2 if sleeve (Figure 3, Item 18) was removed from torsion bar.

2. Install sleeve (Figure 3, Item 18) on torsion bar (Figure 3, Item 12) until seated.
3. Slide torsion bar (Figure 3, Item 12) in torsion bar housing (Figure 3, Item 24) and install flat washer(s) (Figure 3, Item 22), washer (Figure 3, Item 21), washer (Figure 3, Item 20), and screw (Figure 3, Item 19) on torsion bar (Figure 3, Item 12) and torsion bar housing (Figure 3, Item 24).
4. Torsion bar end-play should be no more than 6mm. Adjust play by adding or subtracting washers (Figure 3, Item 22).
5. Loosen screw (Figure 3, Item 19) and align notch in washer (Figure 3, Item 21) with hole in torsion bar housing (Figure 3, Item 24), apply sealing compound to threads of screw (Figure 3, Item 5) and install screw on washer and torsion bar housing. Tighten screws (Figure 3, Items 5 and 19).

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.

6. Install torsion bar housing (Figure 3, Item 24) on outer pontoon (Figure 3, Item 10) with one screw (Figure 3, Item 13). Do not tighten screw.
7. Position pre-adjusting tool (Figure 3, Item 23), flat edge against deck overhang (Figure 3, Item 15), on outer pontoon (Figure 3, Item 10).

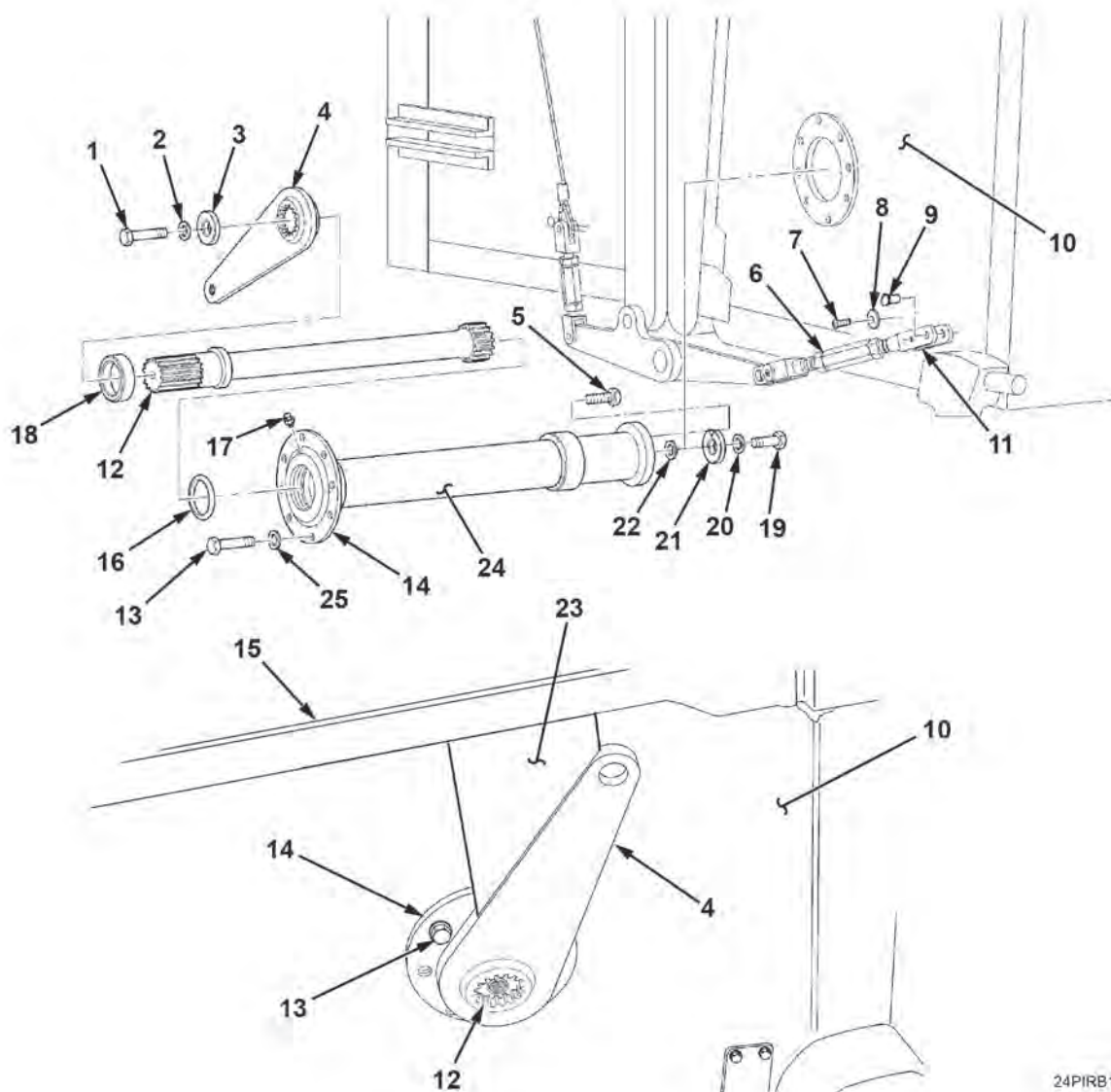
NOTE

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

8. Install torsion bar lever (Figure 3, Item 4) on torsion bar (Figure 3, Item 12) and check alignment of lever with pre-adjusting tool (Figure 3, Item 23).
9. If necessary, adjust position of lever (Figure 3, Item 4) by moving lever one tooth up or down on torsion bar spline. This will move lever 10 degrees.
10. If necessary, remove screw (Figure 3, Item 13) and turn torsion bar housing flange (Figure 3, Item 14) one screw position up or down. This will move lever (Figure 3, Item 4) 45 degrees.
11. Mark position of torsion bar lever (Figure 3, Item 4) and torsion bar housing flange (Figure 3, Item 14) on outer pontoon (Figure 3, Item 10), loosen or remove screw (Figure 3, Item 13) and slide torsion bar housing flange part way out of outer pontoon.
12. Apply grease to mating surfaces of outer pontoon (Figure 3, Item 10) and bar housing flange (Figure 3, Item 14), align marks, and install torsion bar housing (Figure 3, Item 24) on outer pontoon with eight washers (Figure 3, Item 25) and eight screws (Figure 3, Item 13).

INSTALLATION - Continued

13. Align marks, and install torsion bar lever (Figure 3, Item 4) on torsion bar (Figure 3, Item 12) with washer (Figure 3, Item 3), washer (Figure 3, Item 2), and screw (Figure 3, Item 1).
14. If a new turnbuckle (Figure 3, Item 6) or clevis ends (Figure 3, Item 11) are being replaced, remove two screws (Figure 3, Item 7), washers (Figure 3, Item 8), and pins (Figure 3, Item 9) from turnbuckle and perform Step 14 to pre-set turnbuckle.



24PIRB125

Figure 3. Torsion Bar and Torsion Bar Lever.

INSTALLATION - Continued**NOTE**

- Adjustment of left or right turnbuckle is performed the same way. Right side is shown.
- Threads on turnbuckle clevis ends must have the same number of threads showing \pm two threads.

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

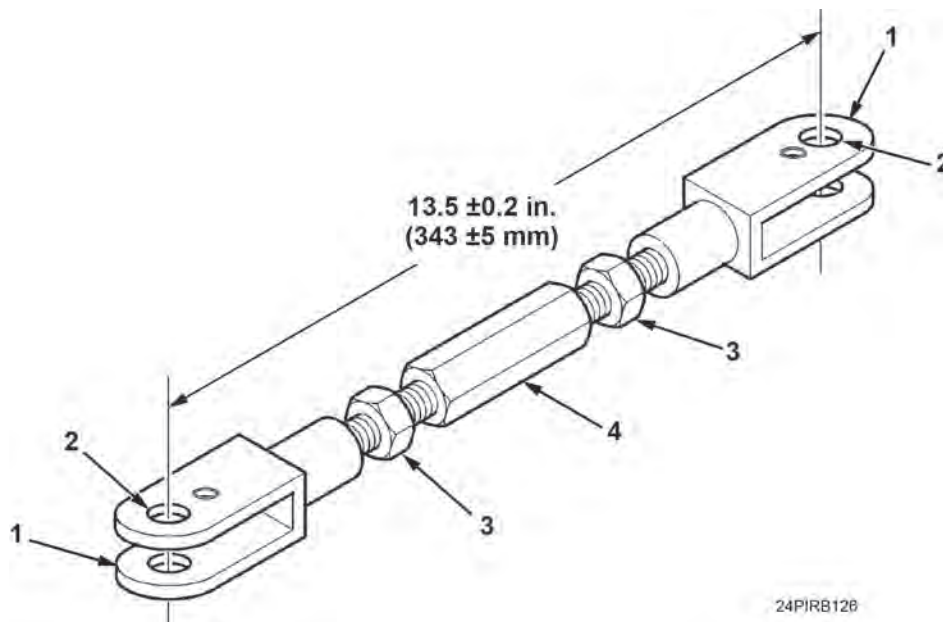


Figure 4. Turnbuckle Pre-set.

WARNING

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

16. Lift outer pontoon (Figure 5, Item 2) and install connecting link tool (Figure 5, Item 3) in position under connect link (Figure 5, Item 1) and lower outer pontoon until turnbuckle clevis (Figure 5, Item 6) aligns with hole in torsion bar lever (Figure 5, Item 5), and install turnbuckle clevis on torsion bar lever with pin (Figure 5, Item 7), washer (Figure 5, Item 8), and screw (Figure 5, Item 9). Remove block.

INSTALLATION - Continued

17. Lower outer pontoon (Figure 5, Item 2) down on inner pontoon (Figure 5, Item 10) and install pre-stressing tool (Figure 5, Item 11), flat edge against deck overhang (Figure 5, Item 12), on outer pontoon and adjust turnbuckle (Figure 5, Item 4) until torsion bar lever (Figure 5, Item 5) aligns with pre-stressing tool (Figure 5, Item 11) and tighten two nuts (Figure 5, Item 13). Remove pre-stressing tool.

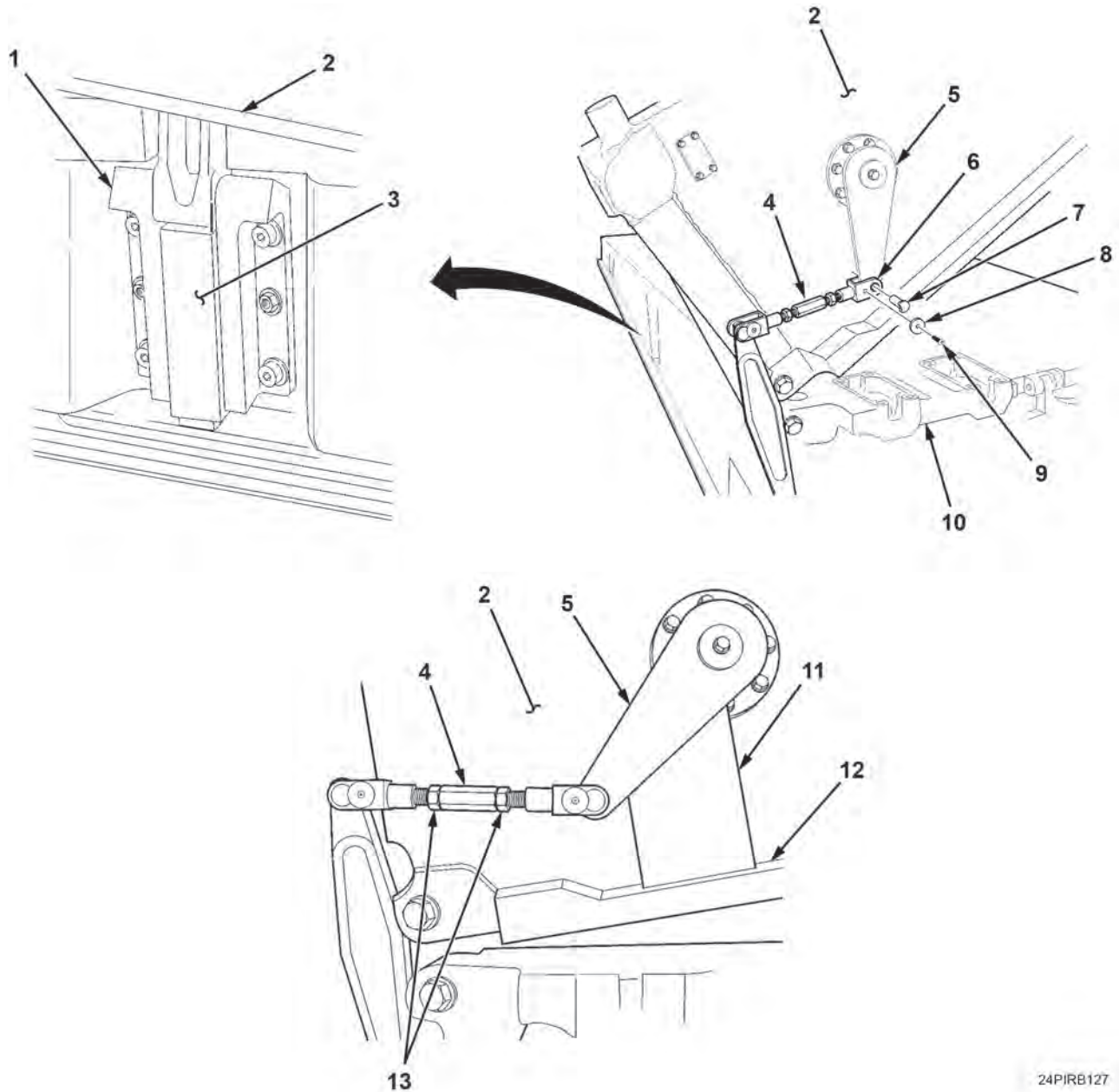


Figure 5. Turnbuckle and Torsion Bar Adjustment.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Apply grease to lube fitting (WP 0068).
2. Engage foldlocks (TM 5-5420-278-10).
3. Connect inner pontoons (WP 0025).
4. Load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
RAMP BAY UNFOLDING STABILIZER AND BRACKETS REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Slide hammer (WP 0130, Table
1, Item 14)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)

References

WP 0072

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10)
Outer pontoon separated from inner pontoon
(WP 0025)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)

Personnel Required

Mechanic
Assistant

CAUTION

To avoid top of screws from wearing, ensure spacers total 3mm thick, with the surface of the hardware below the deck. Failure to comply may result in damage to equipment.

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.
- Take note of the number of spacers prior to removal.
- Reuse the same spacers that were removed. If spacers are not flush, adjust accordingly.

REMOVAL

1. Raise stabilizer bracket (Figure 1, Item 5) up and secure in vertical position.

WARNING

Connecting link will drop down suddenly once pin is removed. Ensure connecting link is held or secured. Failure to comply may result in personnel injury or death and/or damage to equipment.

2. Remove screw (Figure 1, Item 26), washer (Figure 1, Item 27), pin (Figure 1, Item 28), and connecting link (Figure 1, Item 16) from stabilizer bracket (Figure 1, Item 5).
3. Turn stopscrew (Figure 1, Item 8) clockwise until head of stopscrew contacts hinge bracket (Figure 1, Item 4).
4. Remove four screws (Figure 1, Item 6) and washers (Figure 1, Item 7) from hinge bracket (Figure 1, Item 4), spacer (Figure 1, Item 9), and inner pontoon (Figure 1, Item 10).

NOTE

Assistant will help with Steps 5 and 6.

5. Remove bolt (Figure 1, Item 22), screw (Figure 1, Item 25), and, using slide hammer, remove pin (Figure 1, Item 23), and two spacers (Figure 1, Item 24) from inner pontoon (Figure 1, Item 10) and stabilizer bracket (Figure 1, Item 1).

CAUTION

Reinstall with same number of spacers as removed. Use three 1.0mm or two 1.5mm spacers. Also ensure hexagon screw cap and mounting bracket are both below roadway surface of bay. Failure to comply may result in damage to equipment.

NOTE

Note location and thickness of spacers for installation.

6. Lift hinge bracket (Figure 1, Item 4) off of spacer (Figure 1, Item 9) and out of recess in inner pontoon (Figure 1, Item 10), and remove stabilizer (Figure 1, Item 2). Retain spacers for installation.
7. Remove two pins (Figure 1, Item 3) and hinge brackets (Figure 1, Item 4) from stabilizer bracket (Figure 1, Item 5).
8. Remove four screws (Figure 1, Item 13), washers (Figure 1, Item 12), two inner pontoon rail brackets (Figure 1, Item 11), and connecting link (Figure 1, Item 16) from inner pontoon (Figure 1, Item 10).
9. Remove pin (Figure 1, Item 17) from connecting link (Figure 1, Item 16).

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.
- Take note of the number of spacers prior to removal.
- Reuse the same spacers that were removed. If spacers are not flush, adjust accordingly.

REMOVAL - Continued

10. Remove screw (Figure 1, Item 19), bumper (Figure 1, Item 20), and spacer plates (Figure 1, Item 21) from inner pontoon (Figure 1, Item 10). Retain spacer plates for installation.
11. Remove two screws (Figure 1, Item 14) and washers (Figure 1, Item 15) from dowel pins (Figure 1, Item 18) on inner pontoon rail brackets (Figure 1, Item 11). Remove dowel pins (Figure 1, Item 18) from rail brackets (Figure 1, Item 11) if necessary.
12. Repeat Steps 8 through 11 to remove bumper, rail brackets, and connecting link from outer pontoon (not shown).

REMOVAL - Continued

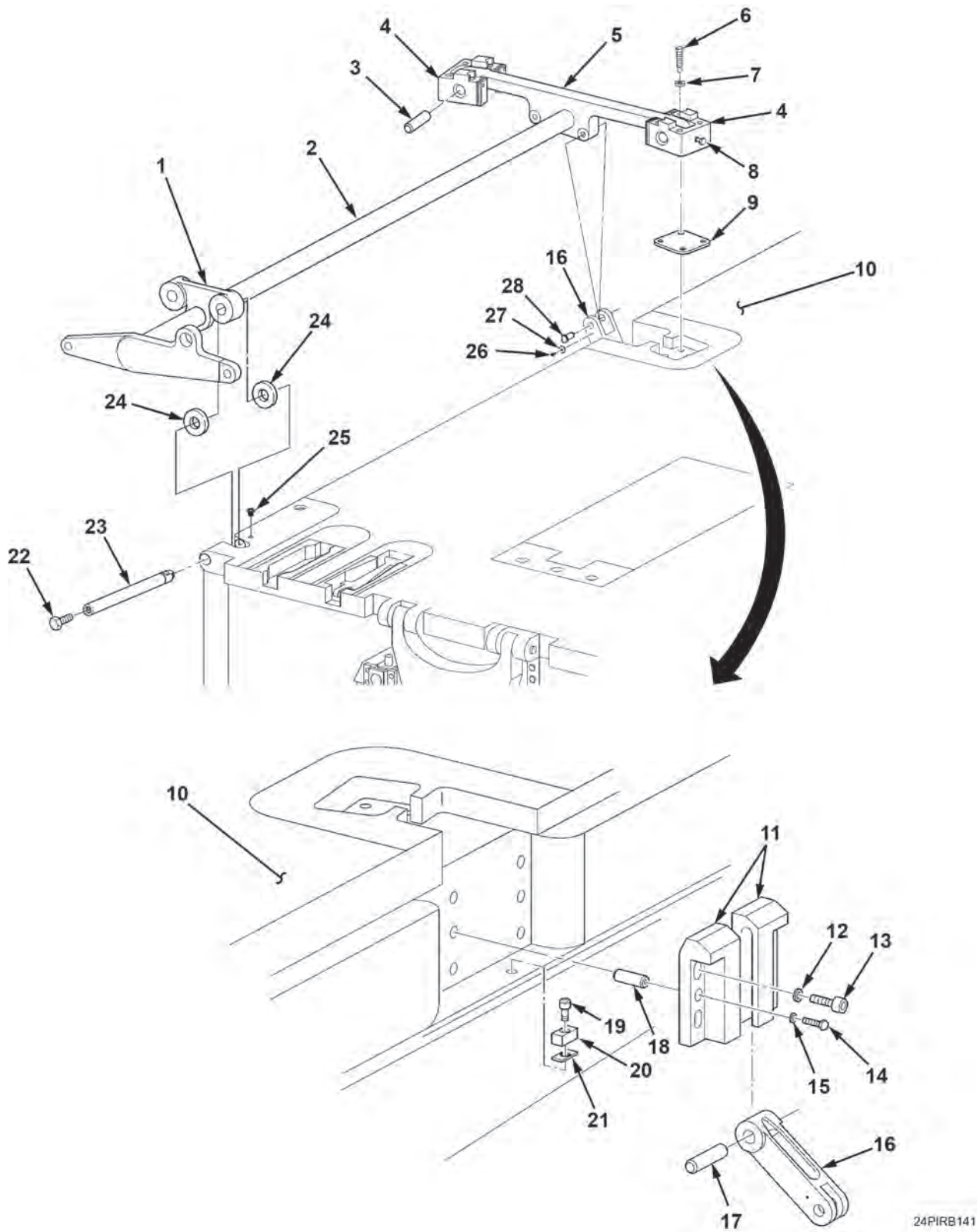


Figure 1. Ramp Bay Unfolding Stabilizer and Brackets Removal.

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.
1. Install spacer plates (Figure 2, Item 21) and bumper (Figure 2, Item 22) on inner pontoon (Figure 2, Item 1) with screw (Figure 2, Item 23).
 2. Install pin (Figure 2, Item 25) on connecting link (Figure 2, Item 7).
 3. If removed, install two dowel pins (Figure 2, Item 24) on each rail bracket (Figure 2, Item 2).
 4. Install two inner pontoon rail brackets (Figure 2, Item 2) and connecting link (Figure 2, Item 7) on inner pontoon (Figure 2, Item 1) with four washers (Figure 2, Item 3) and screws (Figure 2, Item 4).
 5. Install washer (Figure 2, Item 6) and screw (Figure 2, Item 5) on each dowel pin (Figure 2, Item 25).
 6. Repeat Steps 1 through 5 to install bumper, rail brackets, and connecting link on outer pontoon.
 7. Install two hinge brackets (Figure 2, Item 10) on stabilizer bracket (Figure 2, Item 27) with two pins (Figure 2, Item 29).
 8. Position spacer(s) (Figure 2, Item 12) in recess of inner pontoon (Figure 2, Item 1).

CAUTION

Reinstall with same number of spacers as removed. Use three 1.0 mm or two 1.5 mm spacers. Also ensure hexagon screw cap and mounting bracket are both below roadway surface of bay. Failure to comply may result in damage to equipment.

NOTE

- Assistant will help with Steps 9 and 10.
 - Reuse the same spacers that were removed. If spacers are not flush, adjust accordingly.
9. Install stabilizer (Figure 2, Item 28) on inner pontoon (Figure 2, Item 1) by positioning hinge bracket (Figure 2, Item 10) and spacers (Figure 2, Item 26) in recess on inner pontoon (Figure 2, Item 1) and installing four washers (Figure 2, Item 9) and screws (Figure 2, Item 8). Do not tighten screws.
 10. Align stabilizer bracket (Figure 2, Item 20) and inner pontoon (Figure 2, Item 1), and install pin (Figure 2, Item 17) and two spacers (Figure 2, Item 19) on inner pontoon and stabilizer bracket.
 11. Align hole in pin (Figure 2, Item 17) with hole in inner pontoon (Figure 2, Item 1), and install screw (Figure 2, Item 16) on pin (Figure 2, Item 17).
 12. Install screw (Figure 2, Item 18) on pin (Figure 2, Item 17).
 13. Turn stopscrew (Figure 2, Item 11) counterclockwise until spacers (Figure 2, Item 26) contact edge of recess on inner pontoon (Figure 2, Item 1), then tighten four screws (Figure 2, Item 8).
 14. Connect inner pontoon connecting link (Figure 2, Item 7) to stabilizer bracket (Figure 2, Item 27) with pin (Figure 2, Item 13), washer (Figure 2, Item 14), and screw (Figure 2, Item 15).

INSTALLATION - Continued

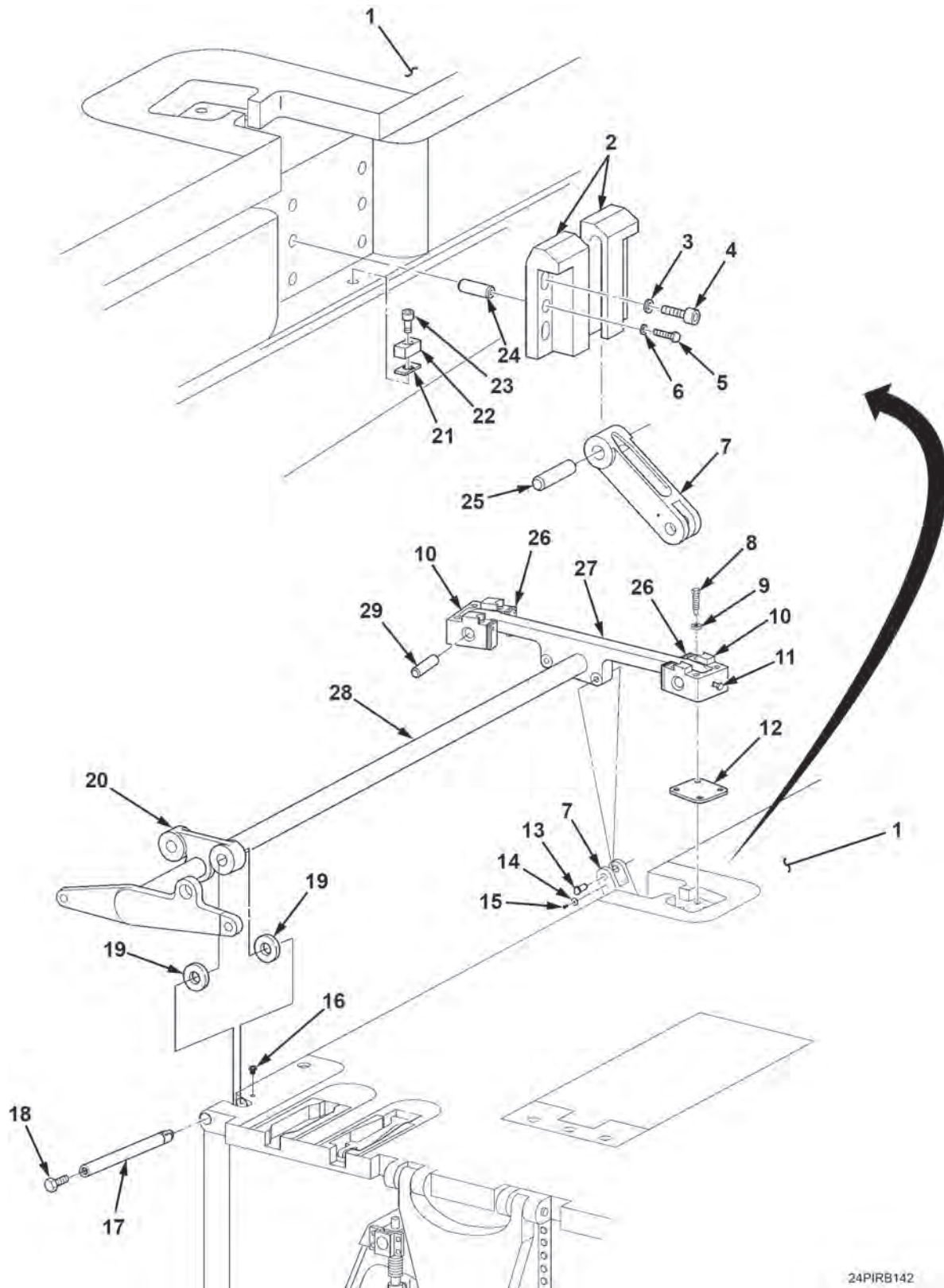


Figure 2. Ramp Bay Unfolding Stabilizer and Brackets Installation.

FOLLOW-ON MAINTENANCE

Connect outer pontoon to inner pontoon (WP 0025) .

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
RAMP PLATE AND STRAP REPAIR**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Rivet gun (WP 0130, Table 1, Item 28)
Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)

Personnel Required

Mechanic
Assistant (2)

References

WP 0072

Materials/Parts

Cotter pin Qty: 2 (WP 0131, Table 1, Item 10)
Rivet Qty: 8 (WP 0131, Table 1, Item 19)

WARNING

Ensure proper lifting techniques are followed when removing or installing heavy components. Use assistants and/or suitable lifting device when lifting heavy parts of components. Failure to comply may result in personnel injury or death and/or damage to equipment.

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 (Figure 1, Item 3) and strap (Figure 1, Item 5) on ramp plate (Figure 1, Item 10) and disconnect hook (Figure 1, Item 6) from catch (Figure 1, Item 8) on outer pontoon (Figure 1, Item 9).
2. Remove nut (Figure 1, Item 2), screw (Figure 1, Item 12), and binder ratchet (Figure 1, Item 3) from angle brackets (Figure 1, Item 11) on ramp plate (Figure 1, Item 10).
3. If angle brackets (Figure 1, Item 11) are damaged, remove four rivets (Figure 1, Item 1) and angle brackets from ramp plate (Figure 1, Item 10). Discard rivets.
4. If strap guide bracket (Figure 1, Item 4) is damaged, remove four rivets (Figure 1, Item 7) and strap guide bracket from ramp plate (Figure 1, Item 10). Discard rivets.

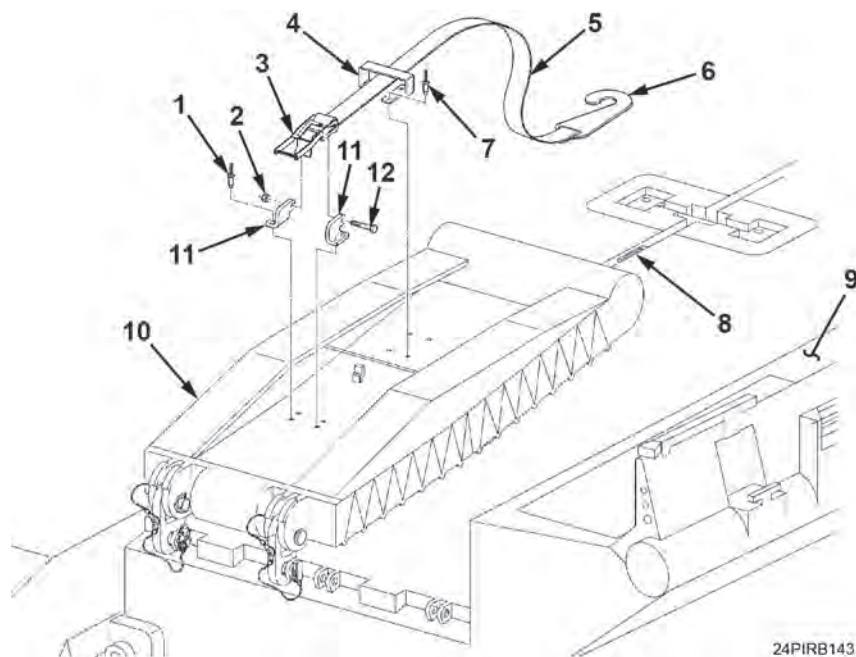


Figure 1. Ramp Plate Strap.

5. Lift locking rings (Figure 2, Item 6) to open position on two pins (Figure 2, Item 7), and remove pins from two pins (Figure 2, Item 5).

NOTE

Assistants will help with Steps 6 and 7.

6. Support ramp plate (Figure 2, Item 1) and remove two pins (Figure 2, Item 5) from four outer pontoon hinges (Figure 1, Item 4) and two connecting links (Figure 2, Item 2).
7. Remove ramp plate (Figure 2, Item 1) from outer pontoon hinge (Figure 2, Item 3).

REMOVAL - Continued

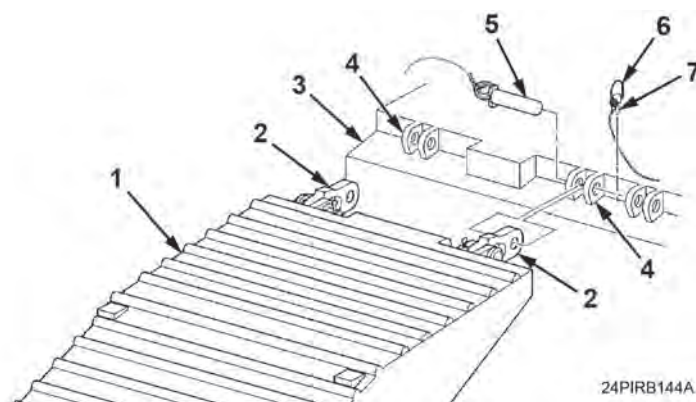


Figure 2. Ramp Plate.

8. Remove two cotter pins (Figure 3, Item 11), washers (Figure 3, Item 10), pins (Figure 3, Item 2), and connecting links (Figure 3, Item 5) from ramp plate (Figure 3, Item 1) hinges (Figure 3, Item 3). Discard cotter pins.
9. Remove two screws (Figure 3, Item 8) and wire ropes (Figure 3, Item 7) from two connecting links (Figure 3, Item 5).
10. Remove rings (Figure 3, Item 9) from pins (Figure 3, Item 4), pins (Figure 3, Item 6), and wire ropes (Figure 3, Item 7).

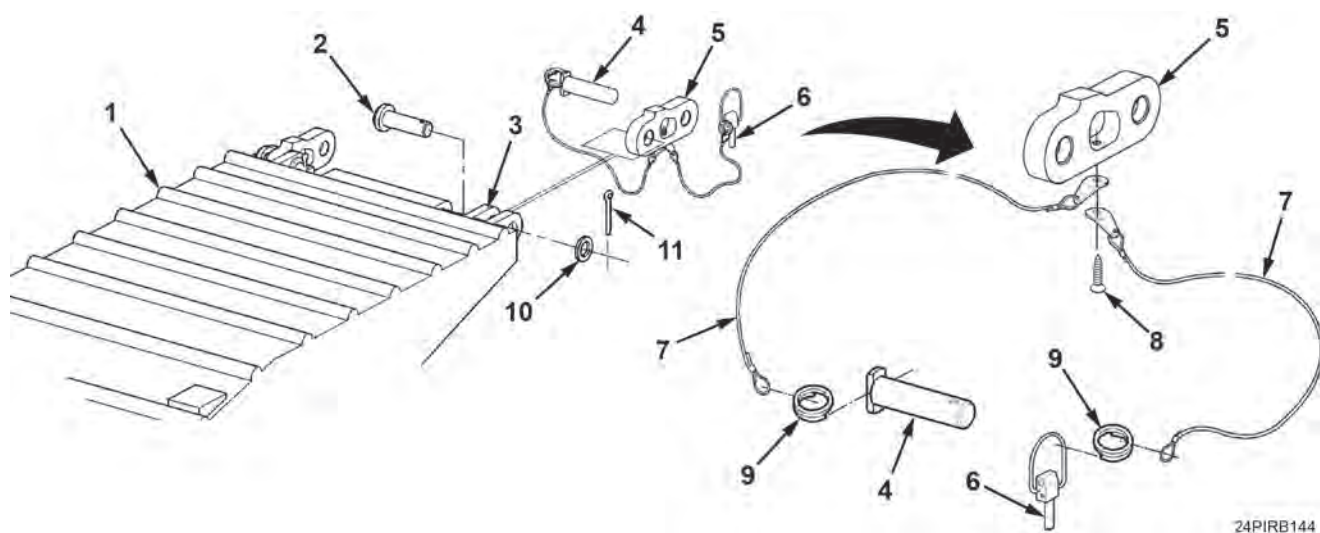


Figure 3. Ramp Plate Hinges.

END OF TASK

INSTALLATION

NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted. ((WP 0072)).

1. Install wire ropes (Figure 4, Item 7) on pins (Figure 1, Item 4) and pins (Figure, Item 6) with rings (Figure 4, Item 9).
2. Install wire ropes (Figure 4, Item 7) on two connecting links (Figure 4, Item 5) with screw (Figure 4, Item 8).
3. Install two connecting links (Figure 4, Item 5) on ramp plate (Figure 4, Item 1) hinges (Figure 4, Item 3) with two pins (Figure 4, Item 2), washers (Figure 4, Item 10), and new cotter pins (Figure 4, Item 11).

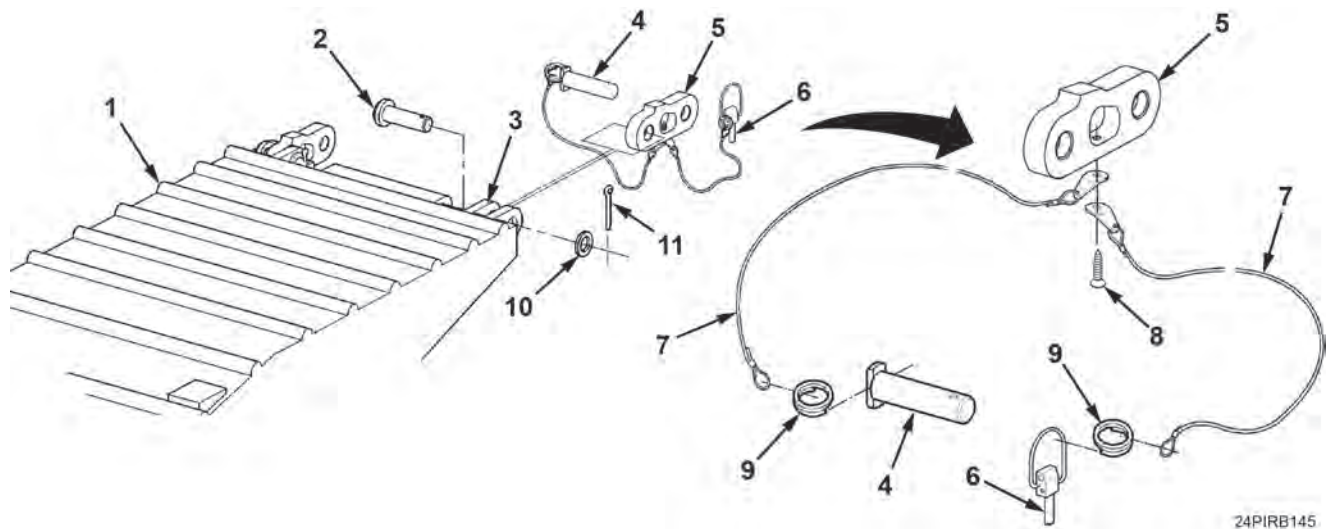


Figure 4. Ramp Plate Hinge.

NOTE

Assistants will help with Steps 4 and 5.

4. Position ramp plate (Figure 5, Item 1) on outer pontoon (Figure 5, Item 3).
5. Support ramp plate (Figure 5, Item 1) and connect two connecting links (Figure 5, Item 2) to outer pontoon hinges (Figure 1, Item 4) with two pins (Figure 5, Item 5) and pins (Figure 5, Item 7). Close locking rings (Figure 1, Item 6) on pins (Figure 1, Item 7).

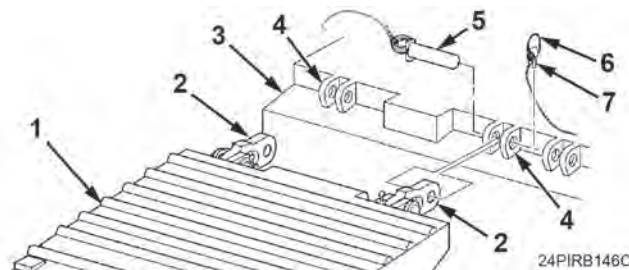


Figure 5. Ramp Plate Installation.

INSTALLATION - Continued

6. If removed, install strap guide bracket (Figure 6, Item 4) on ramp plate (Figure 6, Item 8) with four new rivets (Figure 6, Item 7).
7. If removed, install angle brackets (Figure 1, Item 11) on ramp plate (Figure 6, Item 8) with four new rivets (Figure 6, Item 1).

CAUTION

Do not overtighten nut. Failure to comply may result in damage to equipment.

8. Install binder ratchet (Figure 6, Item 3) on angle brackets (Figure 6, Item 11) with screw (Figure 6, Item 12) and nut (Figure 6, Item 2).
9. Route strap (Figure 6, Item 5) through strap guide bracket (Figure 6, Item 4), and connect hook (Figure 6, Item 6) to catch (Figure 6, Item 9) on outer pontoon (Figure 6, Item 10).
10. Operate binder ratchet (Figure 6, Item 3) and tighten strap (Figure 6, Item 5).

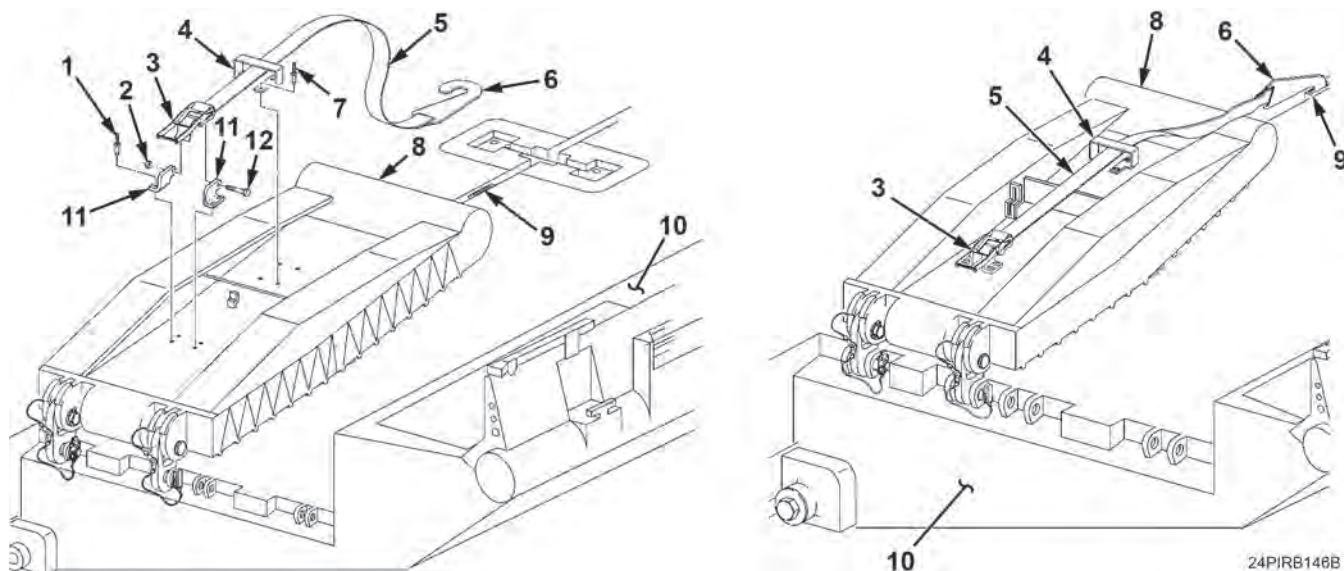


Figure 6. Ramp Plate Strap Installation.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
HANDRAIL REPAIR**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)

References

TM 5-5420-278-10
WP 0072

Materials/Parts

Grease (WP 0129, Table 1, Item 17)

NOTE

- All handrail stanchions, ropes, chains, and threaded connector are removed and installed the same way. There are four handrail stanchions, two ropes, and chains with threaded connectors on each ramp bay, and six handrail stanchions, two ropes, and four chains with threaded connectors on each interior bay.
- Handrail stanchions, ropes, and chains with threaded connectors can be accessed with bay either folded or unfolded.
- Perform Steps 1 through 3 to remove threaded connector and rope only.
- Perform Steps 4 through 8 to remove handrail stanchion.
- Mark fairlead block locations during removal to ensure fairlead blocks are NOT interchanged. Each fairlead block must be re-attached to the same handrail bracket that it was removed from.

REMOVAL

1. Loosen nut on threaded connector (Figure 1, Item 4) and remove threaded connector and chain (Figure 1, Item 5) from snap hook (Figure 1, Item 3).
2. Position all handrail stanchions (Figure 1, Item 1) in the upright position (TM 5-5420-278-10), and note length of rope (Figure 1, Item 6) from fairlead blocks (Figure 1, Item 7) to hook end of rope.
3. Remove two screws (Figure 1, Item 8), two fairlead blocks (Figure 1, Item 7), and rope (Figure 1, Item 6) from each handrail bracket (Figure 1, Item 2) on handrail stanchions (Figure 1, Item 1).

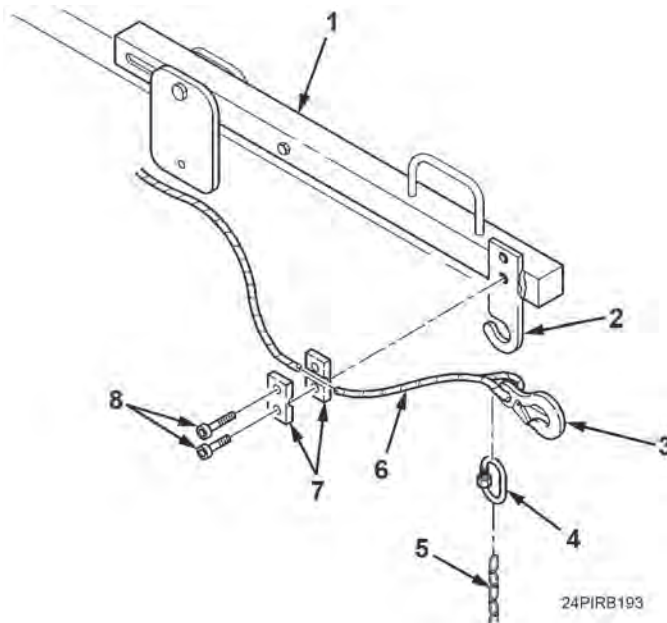


Figure 1. Handrail Removal.

4. Unhook handrail stanchion (Figure 2, Item 1) from stowed position on outer pontoon (Figure 2, Item 8), and lift and place handrail stanchion in upright position between brackets (Figure 2, Item 6).
5. Remove nut (Figure 2, Item 5), washer (Figure 2, Item 4), and bolt (Figure 2, Item 7) from brackets (Figure 2, Item 6), handrail stanchion (Figure 2, Item 1), slot (Figure 2, Item 10), and spring (Figure 2, Item 9).
6. Remove handrail stanchion (Figure 2, Item 1) from brackets (Figure 2, Item 6).
7. Remove nut (Figure 2, Item 2), washer (Figure 2, Item 3), screw (Figure 2, Item 11), washer (Figure 2, Item 12), and spring (Figure 2, Item 9) from handrail stanchion (Figure 2, Item 1).
8. Perform Steps 1 through 7 to remove remaining threaded connector, rope, or handrail stanchions.

REMOVAL - Continued

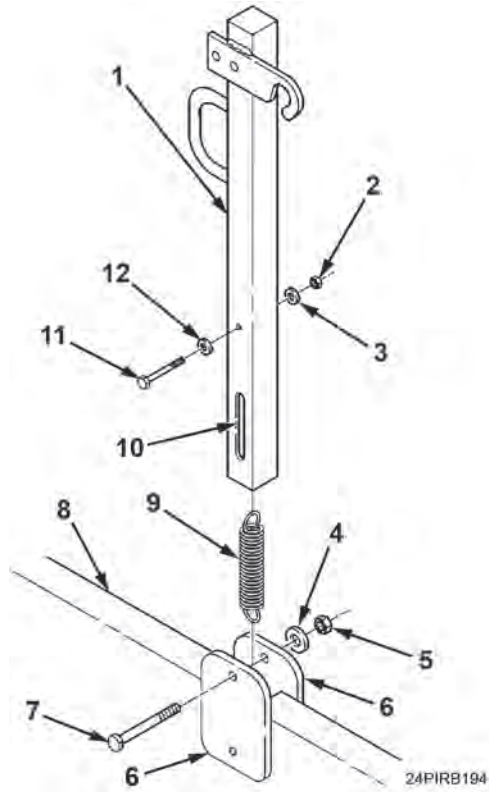


Figure 2. Handrail Stanchion Removal.

END OF TASK

INSTALLATION

NOTE

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).
 - 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 threaded connector and rope only.
1. Slide spring (Figure 3, Item 9) inside of handrail stanchion (Figure 3, Item 1).
 2. Align hook of spring (Figure 3, Item 9) with holes on handrail stanchion (Figure 3, Item 1), and install spring, washer (Figure 3, Item 12), screw (Figure 3, Item 11), washer (Figure 3, Item 3), and nut (Figure 3, Item 2) on handrail stanchion. Tighten nut to 71 lb-in (8 N•m).
 3. Place handrail stanchion (Figure 3, Item 1) in stowed position on outer pontoon (Figure 3, Item 8) (TM 5-5420-278-10).
 4. Install handrail stanchion (Figure 3, Item 1) and spring (Figure 3, Item 9) on brackets (Figure 3, Item 6) with slot (Figure 3, Item 10) aligned with holes in brackets.
 5. Align hook of spring (Figure 3, Item 9) with holes in brackets (Figure 3, Item 6), and install bolt (Figure 3, Item 7) on brackets and spring with washer (Figure 3, Item 4) and nut (Figure 3, Item 5). Tighten nut to 97 lb-in (11 N•m).

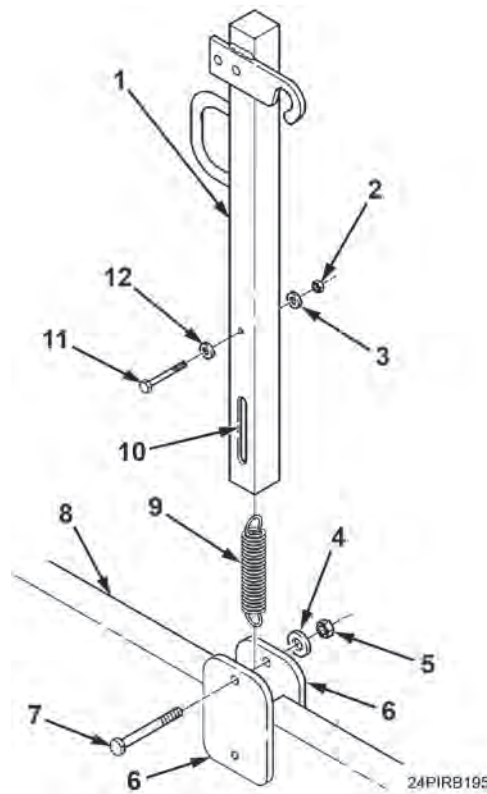


Figure 3. Handrail Installation.

INSTALLATION - Continued

6. Install rope (Figure 4, Item 6) on each handrail bracket (Figure 4, Item 2) with two fairlead blocks (Figure 4, Item 7) and two screws (Figure 4, Item 8). Do not tighten screws.

NOTE

- Clamping block is installed on center stanchion of interior bay and one end of ramp bay.
 - Ensure fairlead blocks are installed in the locations noted during removal.
7. Adjust length of rope (Figure 4, Item 6) from end to stanchion (Figure 4, Item 1) as noted during removal. Tighten screws (Figure 4, Item 8) on each handrail stanchion to 177 lb-in (20 N•m).
 8. Install chain (Figure 4, Item 5) and threaded connector (Figure 4, Item 4) on snap hook (Figure 4, Item 3) at each end of rope (Figure 4, Item 6) and tighten nut on threaded connector.
 9. Perform Steps 1 through 8 to install remaining handrail stanchions, rope, chain, or threaded connector.

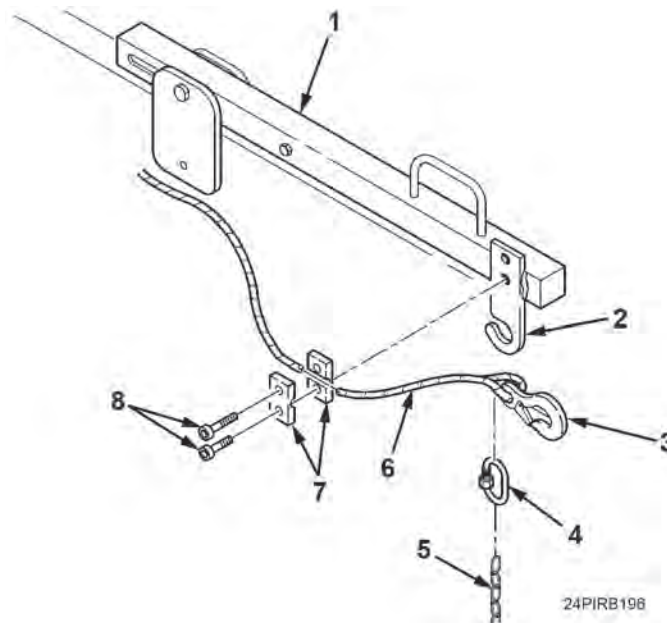


Figure 4. Handrail Stanchion Installation.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
BILGE AND DRAIN PLUGS REPAIR**

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit
(WP 0130, Table 1, Item 29)
Heat Gun (WP 0130, Table 1, Item 15)

Materials/Parts (cont.)

Sealing compound (WP 0129, Table 1, Item 25)
Sealing compound (WP 0129, Table 1, Item 26)
Gasket (WP 0131, Table 1, Item 18)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)

NOTE

- Drain plugs on bottom of inner and outer pontoons of Improved Ribbon Bridge-Interior Bay (IRB-I/B) are accessed with bay in the folded position only.
- Bilge plugs on roadway decks are accessible with bay in unfolded position only.
- Bilge and drain plugs on ramp bay and interior bay are removed and installed the same way.

REMOVAL

1. Remove bilge plug (Figure 1, Item 1) and clasp (Figure 1, Item 4) from pontoon (Figure 1, Item 6).
2. Remove clamp (Figure 1, Item 7) and cable (Figure 1, Item 5) from bilge plug (Figure 1, Item 1).
3. Remove clamp (Figure 1, Item 7) and cable (Figure 1, Item 5) from clasp (Figure 1, Item 4).
4. Remove gasket (Figure 1, Item 3) from bilge plug (Figure 1, Item 1). Discard gasket.

CAUTION

Do not overheat area around insert or damage to aluminum may occur.

NOTE

Heat pontoon inserts to loosen sealing compound before removing insert.

5. Remove insert (Figure 1, Item 2) from pontoon (Figure 1, Item 6), using a large extractor or steel plate.

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

Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

NOTE

Apply sealing compound to threads of insert.

1. Using a bilge plug (Figure 1, Item 1) installed in insert (Figure 1, Item 2), install insert in pontoon (Figure 1, Item 6). Do not remove bilge plug until sealing compound has hardened.
2. Install new gasket (Figure 1, Item 3) on bilge plug (Figure 1, Item 1).
3. Install cable (Figure 1, Item 5) and clamp (Figure 1, Item 7) on clasp (Figure 1, Item 4).
4. Install cable (Figure 1, Item 5) and clamp (Figure 1, Item 7) on bilge plug (Figure 1, Item 1).

NOTE

Apply a light coat of grease to threads of bilge plugs at installation.

5. Install clasp (Figure 1, Item 4) and bilge plug (Figure 1, Item 1) on pontoon (Figure 1, Item 6).

INSTALLATION - Continued

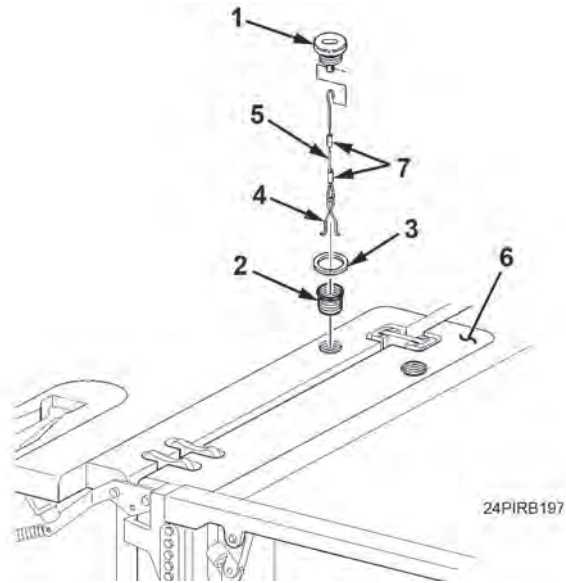


Figure 1. Bilge Plugs.

INSTALLATION - Continued

6. Using a drain plug (Figure 2, Item 1) installed in insert (Figure 2, Item 2), install insert in pontoon (Figure 2, Item 6). Do not remove drain plug until sealing compound has hardened.
7. Install new gasket (Figure 2, Item 3) on drain plug (Figure 2, Item 1).
8. Install cable (Figure 2, Item 5) and clamp (Figure 2, Item 7) on clasp (Figure 2, Item 4).
9. Install cable (Figure 2, Item 5) and clamp (Figure 2, Item 7) on drain plug (Figure 2, Item 1).
10. Install clasp (Figure 2, Item 4) and drain plug (Figure 2, Item 1) on pontoon (Figure 2, Item 6).

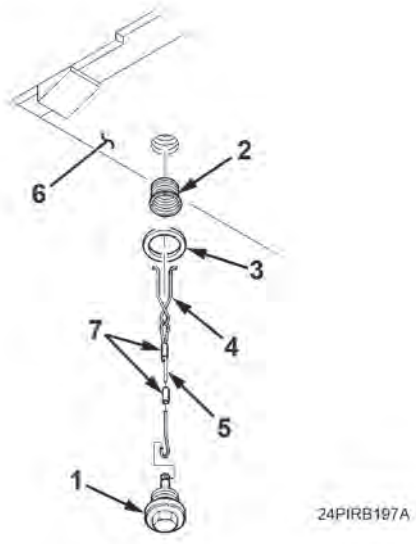


Figure 2. Drain Plugs.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
LOAD RECEIVING PIN AND RAFTING BRACKET PIN REPAIR

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

References

WP 0072

NOTE

There are four load receiving pins on each Improved Ribbon Bridge-Interior Bay (IRB-I/B) and each Improved Ribbon Bridge-Ramp Bay (IRB-R/B). All load receiving pins on ramp and interior bays are removed and installed the same way.

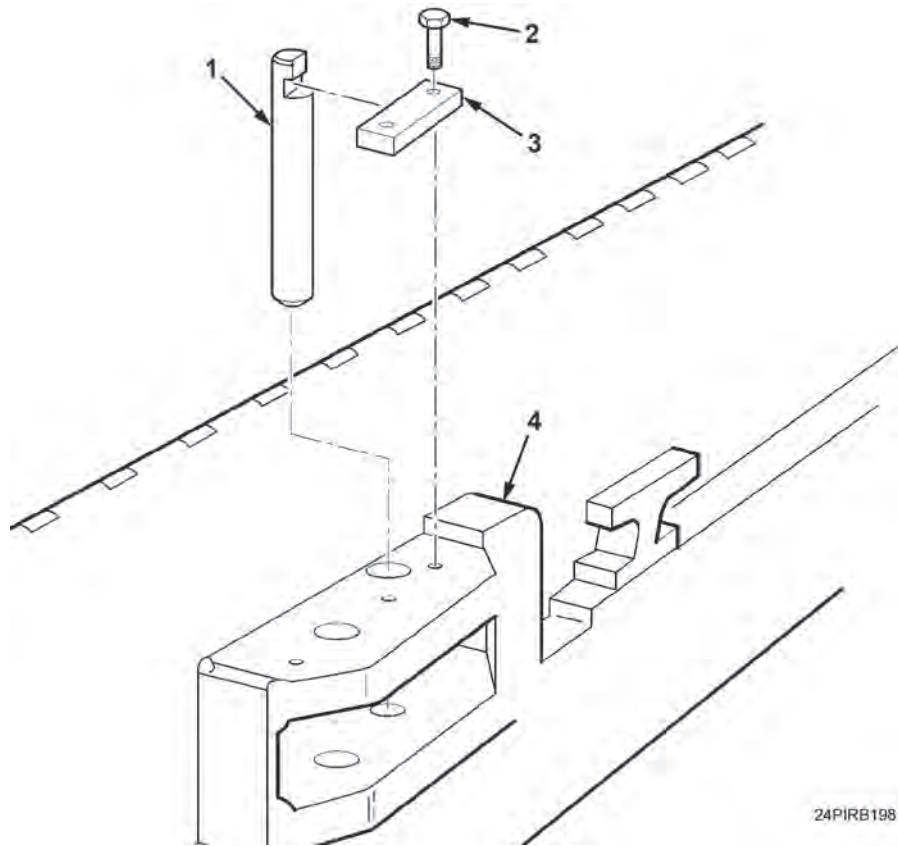
REMOVAL

1. Remove two screws (Figure 1, Item 2) and retainer strap (Figure 1, Item 3) from load receiving pin (Figure 1, Item 1) and recess block (Figure 1, Item 4).
2. Remove load receiving pin (Figure 1, Item 1) from recess block (Figure 1, Item 4).
3. Perform Steps 1 and 2 to remove remaining load receiving pins.

END OF TASK**INSTALLATION**

1. Install load receiving pin (Figure 1, Item 1) on recess block (Figure 1, Item 4).
2. Install retainer strap (Figure 1, Item 3) on load receiving pin (Figure 1, Item 1) and recess block (Figure 1, Item 4) with two screws (Figure 1, Item 2).
3. Perform Steps 1 and 2 to install remaining load receiving and rafting bracket pins.

INSTALLATION - Continued



24PIRB198

Figure 1. Rafting Bracket and Pin.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
TRUNNION WEAR CAP REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

References

WP 0072

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Lockwasher Qty: 2 (WP 0131, Table 1, Item 23)

NOTE

There are two wear caps on the ramp bay only.

REMOVAL

1. Remove screw (Figure 1, Item 1), lockwasher (Figure 1, Item 2), and cap (Figure 1, Item 3) from outer pontoon trunnion (Figure 1, Item 4). Discard lockwasher.
2. Perform Step 1 to remove cap (Figure 1, Item 3) on opposite outer pontoon.

END OF TASK**INSTALLATION**

1. Apply a light coat of grease to outer pontoon trunnion (Figure 1, Item 4) and inside of cap (Figure 1, Item 3).
2. Install cap (Figure 1, Item 3) on outer pontoon trunnion (Figure 1, Item 4) with new lockwasher (Figure 1, Item 2) and screw (Figure 1, Item 1).
3. Perform Steps 1 and 2 to install cap (Figure 1, Item 3) on opposite outer pontoon.

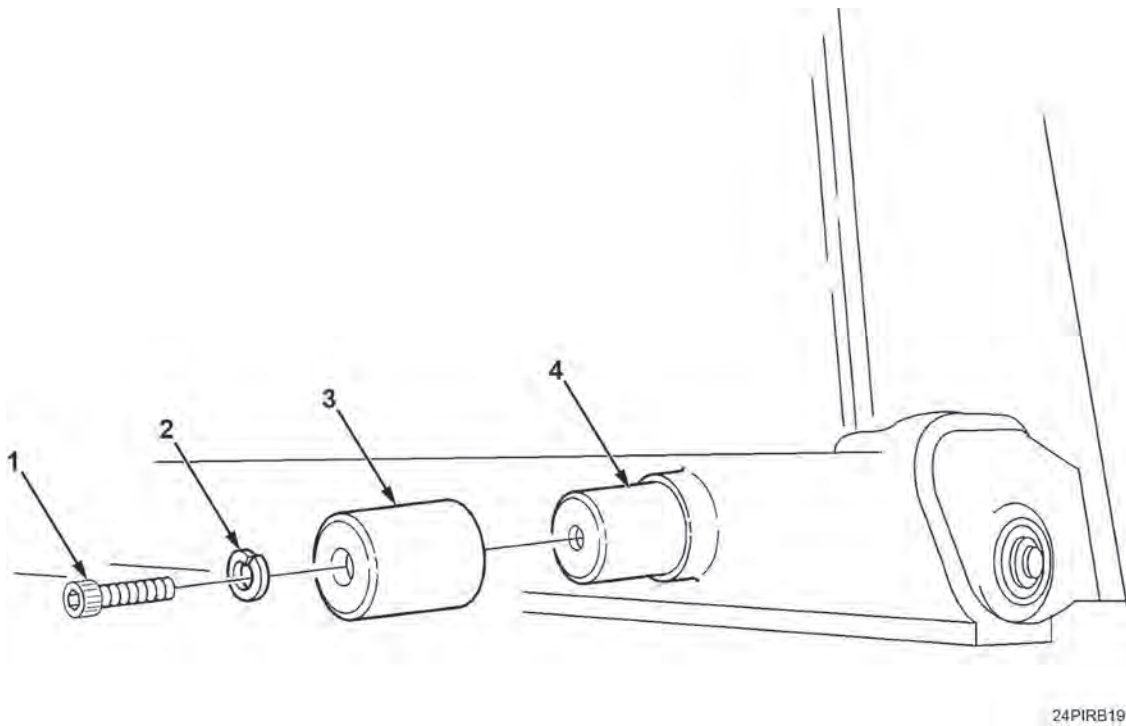


Figure 1. Wear Cap, Ramp Bay Only.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
TRUNNION REPAIR PREPARATION AND WELDING**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drill-driver (WP 0130, Table 1, Item 7)
Drill set (WP 0130, Table 1, Item 6)
Grinder (WP 0130, Table 1, Item 13)
Industrial goggles (WP 0130, Table 1, Item 11)
MIG welder (WP 0130, Table 1, Item 1)
Thread insert kit (WP 0130, Table 1, Item 27)
Welding apron
(WP 0130, Table 1, Item 2)
Welding gloves (WP 0130, Table 1, Item 10)

Materials/Parts

Gloves (WP 0129, Table 1, Item 13)
Respirator (WP 0129, Table 1, Item 24)
Rotary wire brush (WP 0129, Table 1, Item 5)

Personnel Required

Welder

References

MIL-DTL-53072
TC 9-237
WP 0065

Equipment Condition

Ramp bay or interior bay removed from
transporter (TM 5-5420-278-10)
Wear cap removed (ramp bay only) (WP 0034)

WARNING

If trunnion is bent or severely worn, it must be completely replaced.

Vehicles are finished with a Chemical Agent Resistant Coating (CARC). CARC contains isocyanates, which are highly irritating to skin and respiratory system. Breathing CARC vapor or dried paint dust can cause coughing, shortness of breath, burning sensation in throat and nose, watering of eyes, pain during respiration, and chest tightness. Skin contact with particulates can cause itching or redness of skin. Sensitivity to isocyanates may increase from repeated exposure. Use the following precautions to prevent injury from exposure:

- Never weld or cut CARC-coated surfaces. Grinding or sanding CARC-coated surfaces will create harmful dust.
- Personnel who have lung or breathing problems or who have had a reaction to isocyanates must not be in any area where CARC painting operations are performed or CARC dust particles are present.
- CARC painting operations must be performed only by qualified painters wearing protective gear and respirators and working in fully equipped facilities. All personnel in the area must wear high-efficiency air purifying respirators, protective goggles, gloves, and other protective clothing. Thoroughly wash all clothing before reuse.
- Eye shields must be worn when grinding, drilling, and/or cleaning with a wire brush. Flying rust and metal particles may result in personnel injury.

Failure to comply may result in personnel injury or death.

NOTE

- Build-up welding on trunnion is performed if wear does not exceed 1.18 in. (30 mm). The abrasion or wear may display a variety of inclinations or crack-like features.
- Improved Ribbon Bridge (IRB) bays are made from corus aluminum.

PREPARATION

1. Grind off to beyond ends of cracks on trunnion (Figure 1, Item 1).
2. Clean welding area with a 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) to trunnion (Figure 1, Item 1) from inside towards the outside, and position welding beads closely. Depending upon the required build-up thickness, several circular welding beads must be applied.

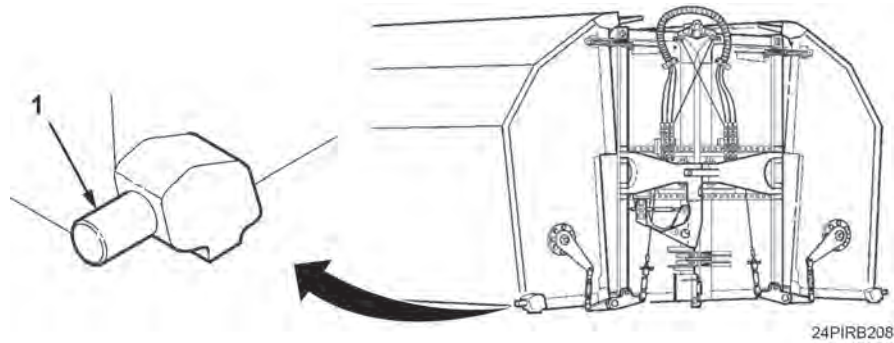
WELDING - Continued

Figure 1. Damaged Trunnion.

2. After welding trunnion, work diameter and length of trunnion to dimensions provided in Figure 2. Chamfer end of trunnion.
3. Clean, treat, and paint area per MIL-DTL-53072.

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 (Figure 2).
5. Install new thread insert (WP 0065).

WELDING - Continued

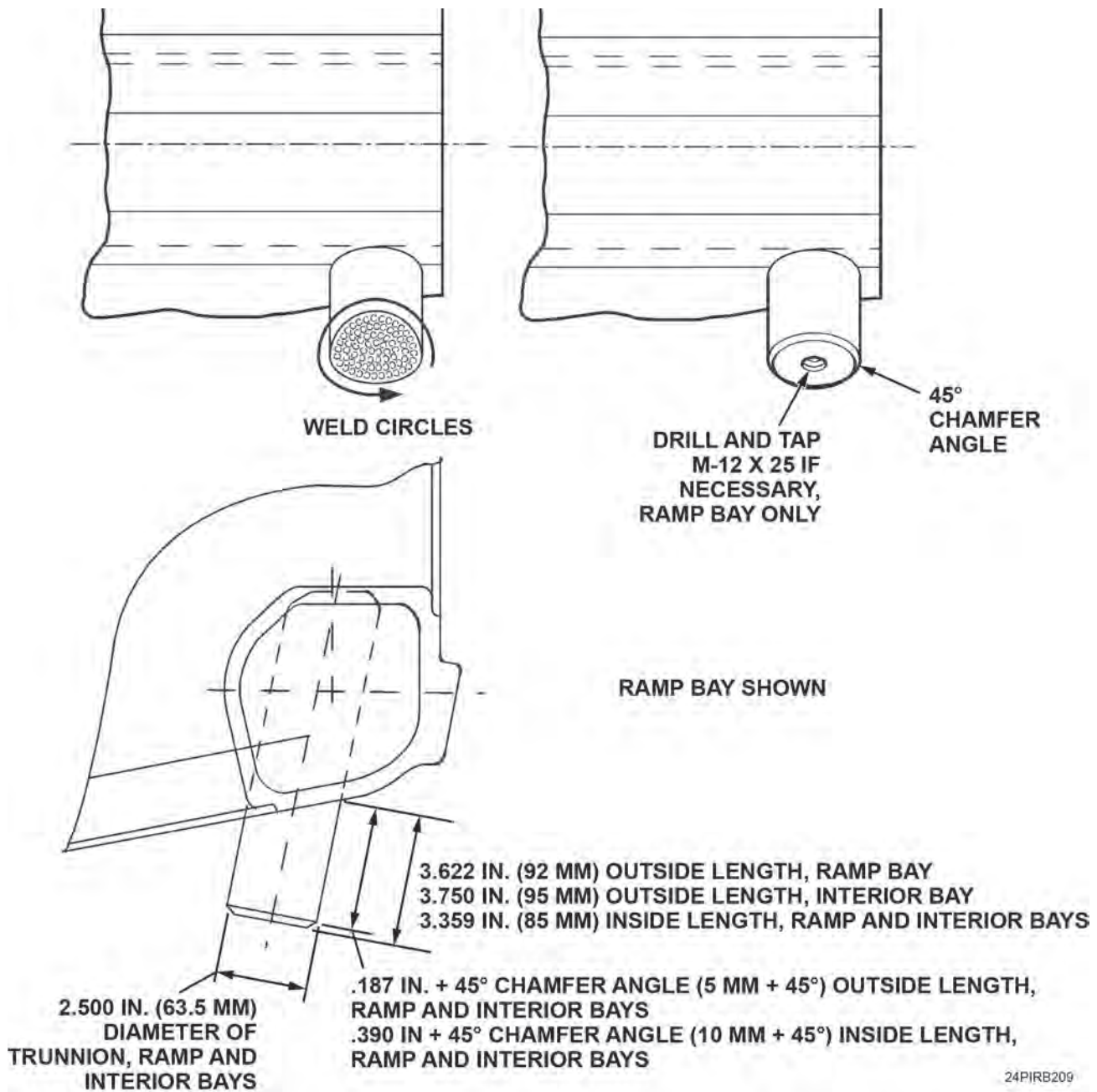


Figure 2. Trunnion Dimensions.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install wear cap (ramp bay only) (WP 0034).
2. Load ramp bay or interior bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
SWIVEL HOOK AND RETAINER SHAFT REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Multiple leg sling (WP 0130, Table 1, Item 24)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)
Suitable lifting device

Personnel Required

Mechanic
Assistant

References

WP 0072

Equipment Condition

Inner pontoons separated (WP 0025)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Cotter pin Qty: 4 (WP 0131, Table 1, Item 13)
Locknut (WP 0131, Table 1, Item 34)
Dunnage

NOTE

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

SWIVEL HOOK REMOVAL

1. Using a suitable lifting device (Figure 1, Item 2) and sling (Figure 1, Item 1), lower bay (Figure 1, Item 3) down so that roadway deck of inner pontoon (Figure 1, Item 4) is resting on dunnage (Figure 1, Item 5).

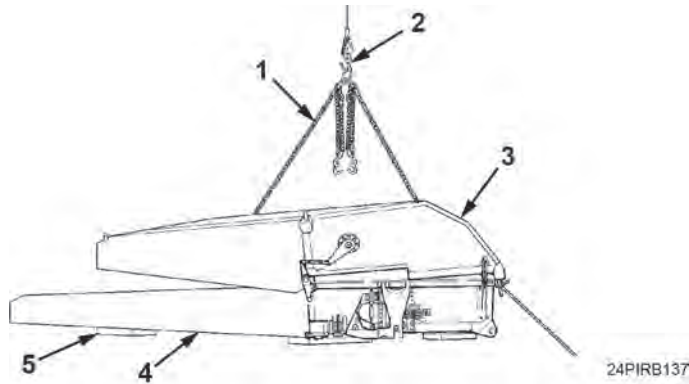
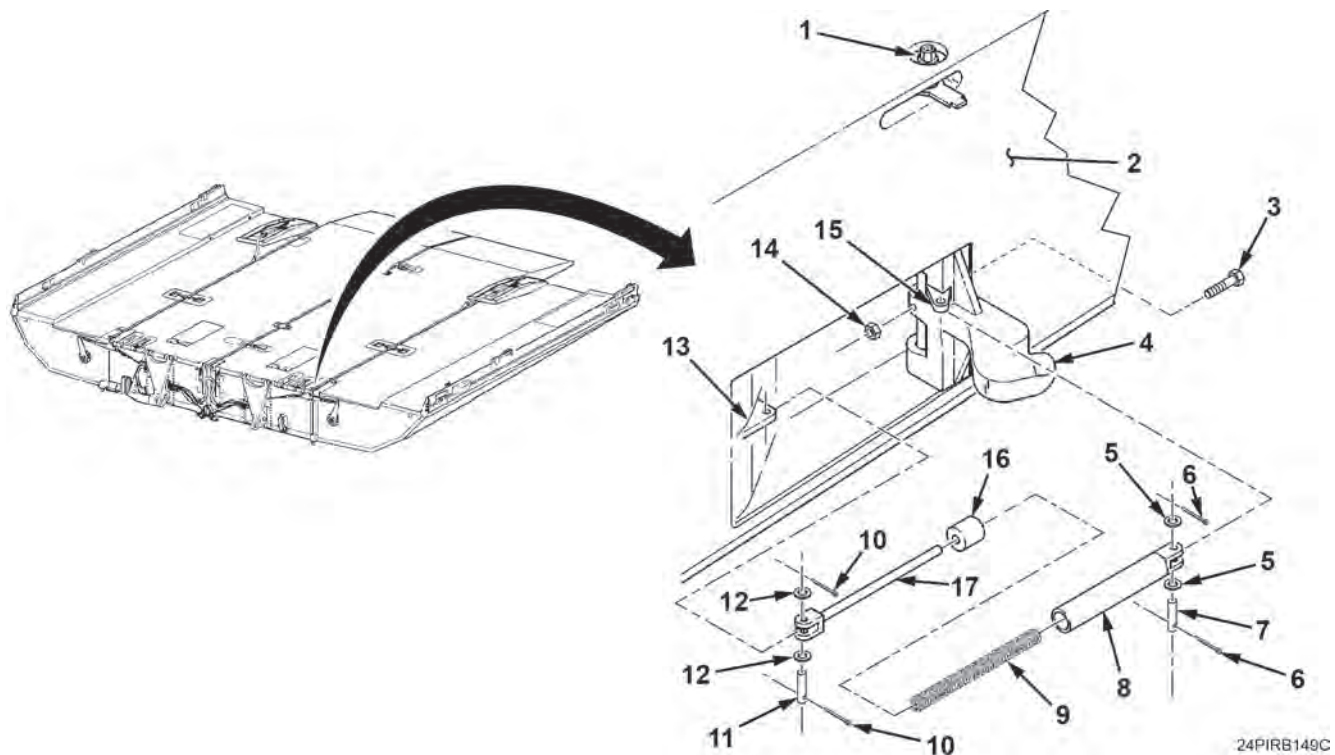


Figure 1. Inner and Outer Pontoons.

2. Place swivel hook lever (Figure 2, Item 4) in closed position.
3. Remove two cotter pins (Figure 2, Item 6), washers (Figure 2, Item 5), and pin (Figure 2, Item 7) from tension spring holder (Figure 2, Item 8) and swivel hook lever (Figure 2, Item 4), and disconnect tension spring holder from bracket (Figure 2, Item 15). Discard cotter pins.
4. Remove tension spring holder (Figure 2, Item 8), spring (Figure 2, Item 9), and spacer (Figure 2, Item 16) from tension spring pin (Figure 2, Item 17).
5. Remove two cotter pins (Figure 2, Item 10), washers (Figure 2, Item 12), pin (Figure 2, Item 11), and tension spring pin (Figure 2, Item 17) from bracket (Figure 2, Item 13) on inner pontoon (Figure 2, Item 2). Discard cotter pins.
6. Remove locknut (Figure 2, Item 14) and screw (Figure 2, Item 3) from swivel hook lever (Figure 2, Item 4) and swivel hook pin (Figure 2, Item 1). Discard locknut.

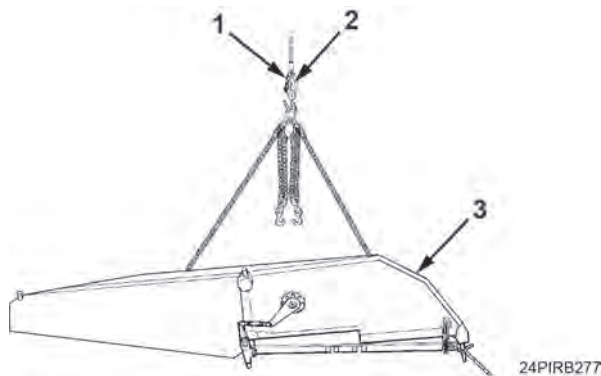
SWIVEL HOOK REMOVAL - Continued



24PIRB149C

Figure 2. Tension Spring and Holder.

7. Unlock foldlock then, using suitable lifting device (Figure 3, Item 1) and IRB hoisting gear (Figure 3, Item 2), raise outer pontoon (Figure 3, Item 3) to vertical position and lower bay on dunnage.



24PIRB277

Figure 3. Outer Pontoon.

SWIVEL HOOK REMOVAL - Continued

8. Remove setscrew (Figure 4, Item 1) and indicator plate (Figure 4, Item 2) from swivel hook pin (Figure 4, Item 12).

NOTE

Note location and quantity of spacers for installation.

9. Pull swivel hook pin (Figure 4, Item 12) out of swivel hook lever (Figure 4, Item 9) and inner pontoon (Figure 4, Item 11), and remove swivel hook lever and two spacers (Figure 4, Item 10) from inner pontoon. Retain spacers for installation.

END OF TASK**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 (Figure 4, Item 7), and remove screw (Figure 4, Item 5) and washer (Figure 4, Item 6) from outer pontoon (Figure 1, Item 8).
2. Remove screw (Figure 4, Item 4) and washer (Figure 4, Item 3) from control rod (Figure 4, Item 14), and mark position of swivel plate (Figure 4, Item 7) on control rod before removing swivel plate.

NOTE

Note location and quantity of hex washers for installation.

3. Remove swivel plate (Figure 4, Item 7) and three hex washers (Figure 4, Item 13) from control rod (Figure 4, Item 14). Retain hex washers for installation.
4. Remove control rod (Figure 4, Item 14) from outer pontoon (Figure 4, Item 8).

RETAINER SHAFT REMOVAL - Continued

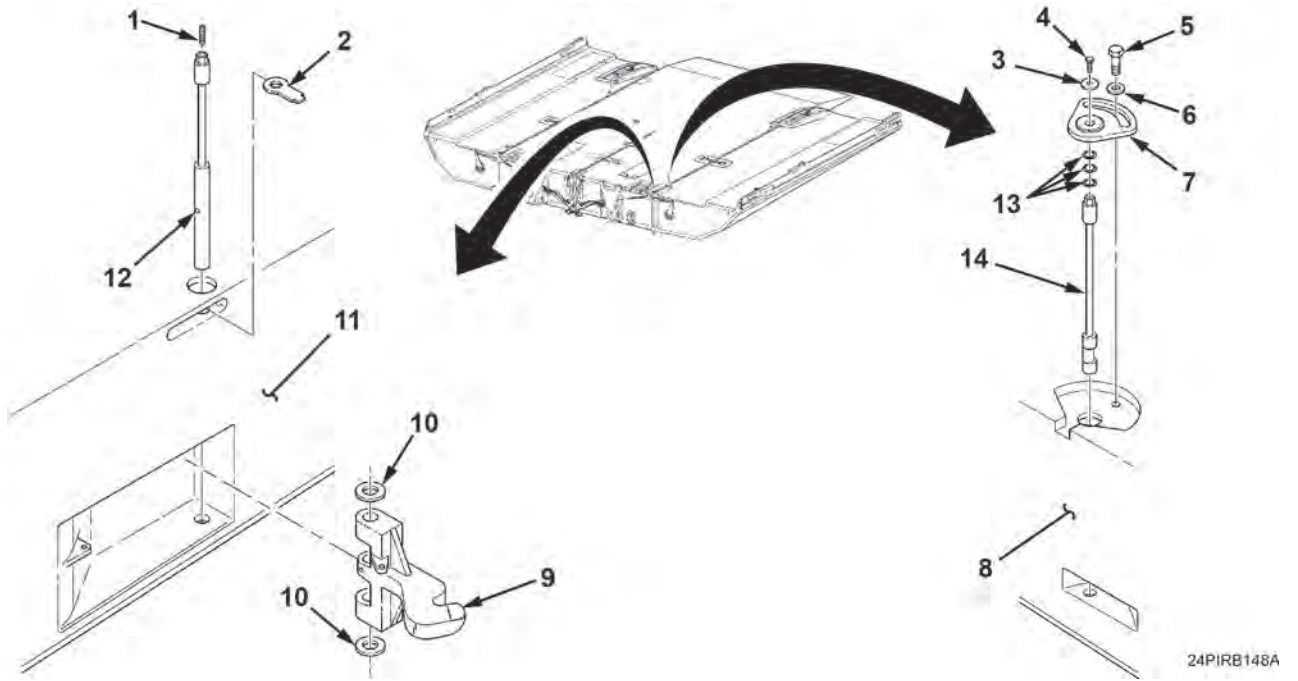


Figure 4. Swivel Hook and Retainer Shaft Removal.

END OF TASK

RETAINER SHAFT INSTALLATION

NOTE

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

1. Install control rod (Figure 5, Item 23) and three hex washers (Figure 5, Item 22) on outer pontoon (Figure 5, Item 7).
2. As marked, install swivel plate (Figure 5, Item 6) on control rod (Figure 5, Item 23) with washer (Figure 5, Item 21) and screw (Figure 5, Item 3).
3. Install washer (Figure 5, Item 5) and screw (Figure 5, Item 4) on outer pontoon (Figure 5, Item 7). Do not tighten screw.
4. Turn control rod (Figure 5, Item 23) until marks on swivel plate (Figure 5, Item 6) and outer pontoon (Figure 5, Item 7) line up, then tighten screw (Figure 5, Item 4).

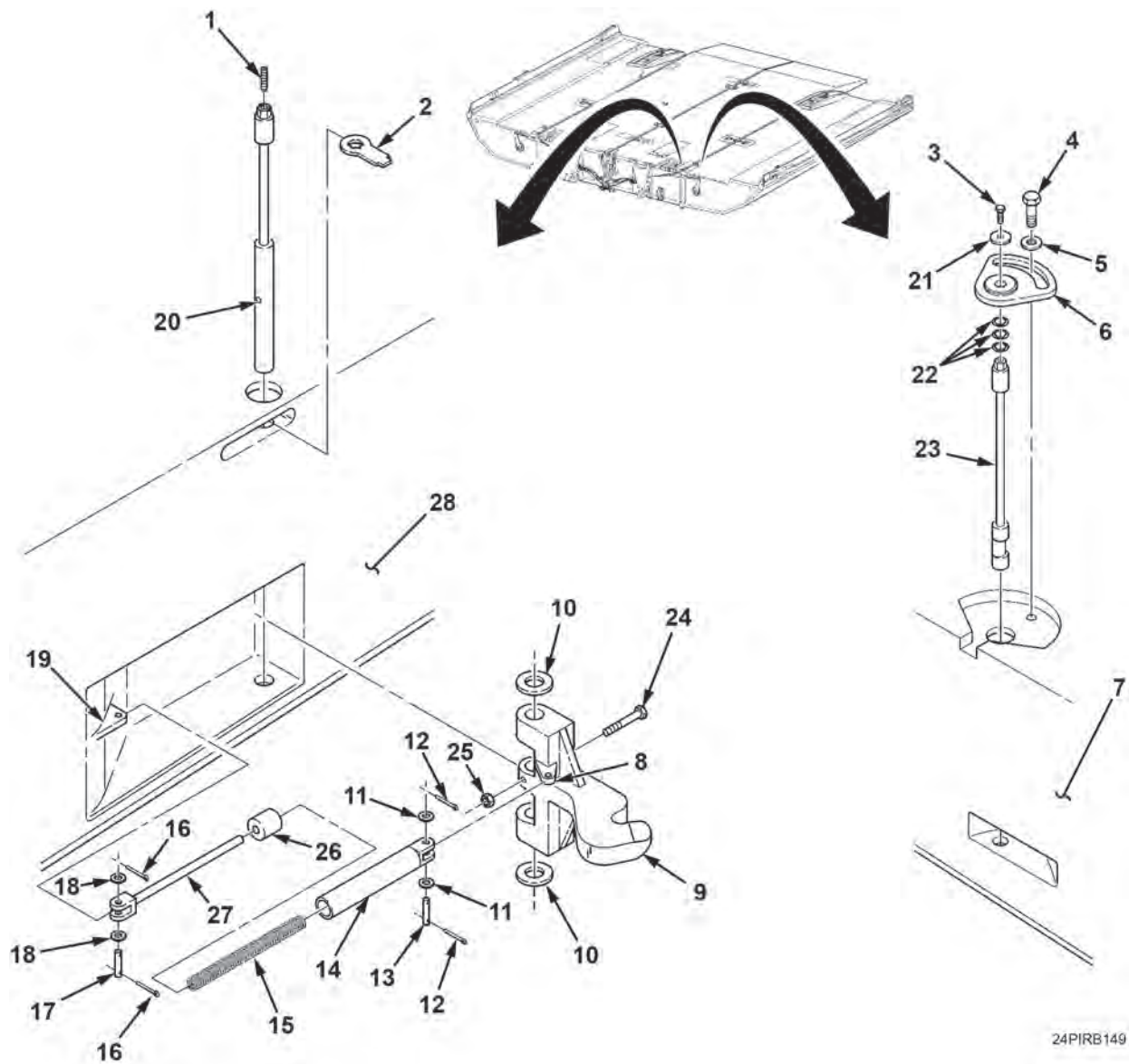
END OF TASK

SWIVEL HOOK INSTALLATION

NOTE

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - Apply a light coat of grease to swivel hook pin and tension spring holder prior to installation.
1. Position swivel hook lever (Figure 5, Item 9) and two spacers (Figure 5, Item 10) on inner pontoon (Figure 5, Item 28), and slide swivel hook pin (Figure 5, Item 20) through spacers and swivel hook lever.
 2. Place swivel hook lever (Figure 5, Item 9) in closed position, and install indicator plate (Figure 5, Item 2) on swivel hook pin (Figure 5, Item 20) with pointer in line with swivel hook lever and groove in swivel hook pin.
 3. Align hole in swivel hook pin (Figure 5, Item 20) with hole in swivel hook lever (Figure 5, Item 9), and install screw (Figure 5, Item 24) and new locknut (Figure 5, Item 25).
 4. Install setscrew (Figure 5, Item 1) on indicator plate (Figure 5, Item 2) and swivel hook pin (Figure 5, Item 20).
 5. Lower outer pontoon (Figure 5, Item 7) down on inner pontoon (Figure 5, Item 28), and close foldlock.
 6. Install tension spring pin (Figure 5, Item 27) on bracket (Figure 5, Item 19) with two washers (Figure 5, Item 18), pin (Figure 5, Item 17), and two new cotter pins (Figure 5, Item 16).
 7. Position spacer (Figure 5, Item 26), spring (Figure 5, Item 15), and tension spring holder (Figure 5, Item 14) on tension spring pin (Figure 5, Item 27), and install tension spring holder on bracket (Figure 5, Item 8) with two washers (Figure 5, Item 11), pin (Figure 5, Item 13), and two new cotter pins (Figure 5, Item 12).
 8. Place swivel hook lever (Figure 5, Item 9) in open position.

SWIVEL HOOK INSTALLATION - Continued



24PIRB149

Figure 5. Swivel Hook and Retainer Shaft Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

Connect inner pontoons (WP 0025).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drill-driver (WP 0130, Table 1, Item 7)
Drill set (WP 0130, Table 1, Item 6)
Rivet tool (WP 0130, Table 1, Item 28)
Torque wrench 3/8 in. drive 0-100 lb-ft
(0-136 N•m) (WP 0130, Table 1, Item 35)

References

WP 0072

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10)
Basic Issue Items (BII) tools removed
(TM 5-5420-278-10)

Materials/Parts

Face shield (WP 0129, Table 1, Item 12)
Respirator (WP 0129, Table 1, Item 24)
Rivet Qty: 26 (WP 0131, Table 1, Item 19)

NOTE

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

REMOVAL

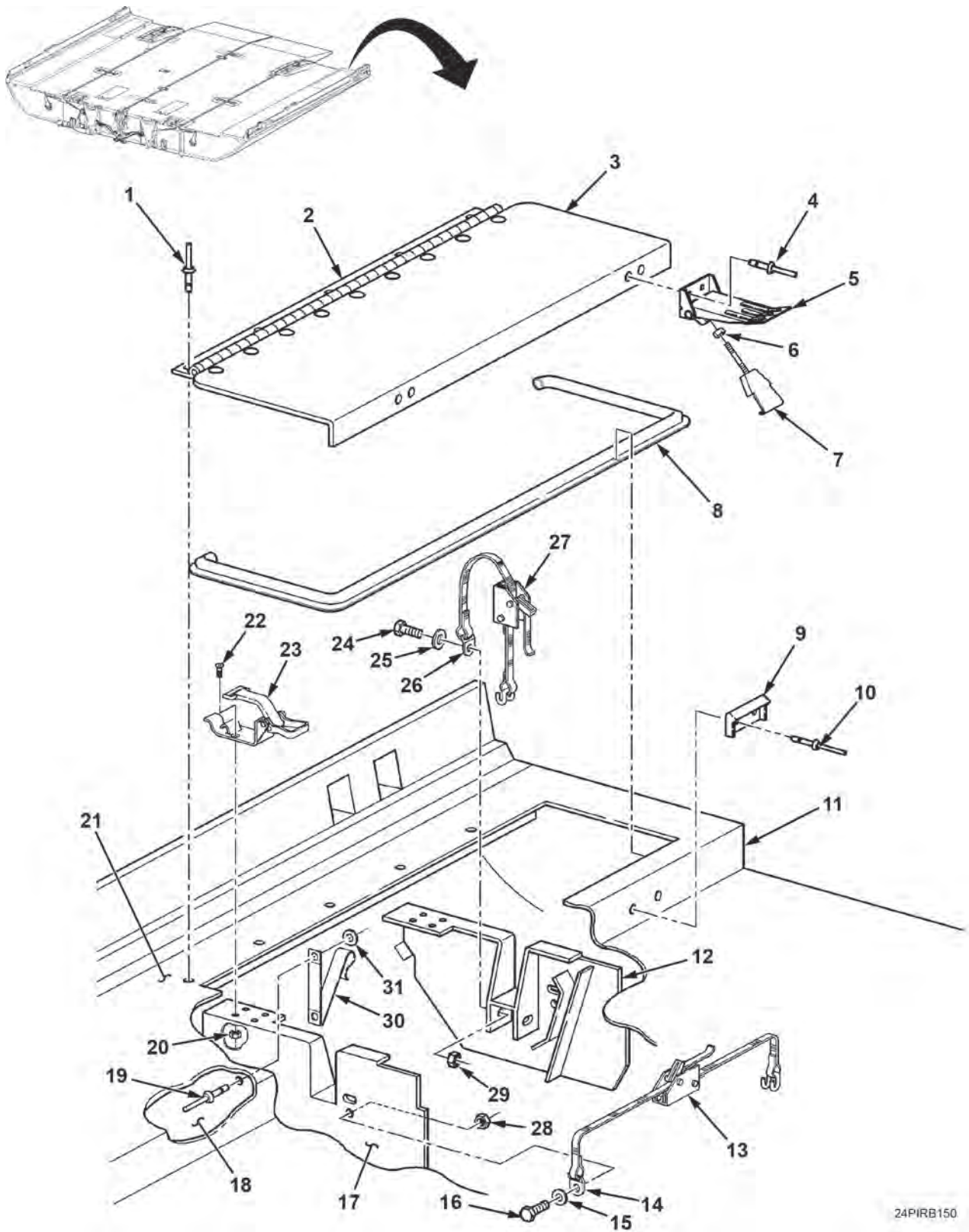
1. Unlock two adjustable latches (Figure 1, Item 5) on stowage compartment access cover (Figure 1, Item 3).

WARNING

Eye shields must be worn when grinding, drilling, and/or cleaning with a wire brush. Flying rust and metal particles may result in personnel injury.

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

REMOVAL - Continued



24PIRB150

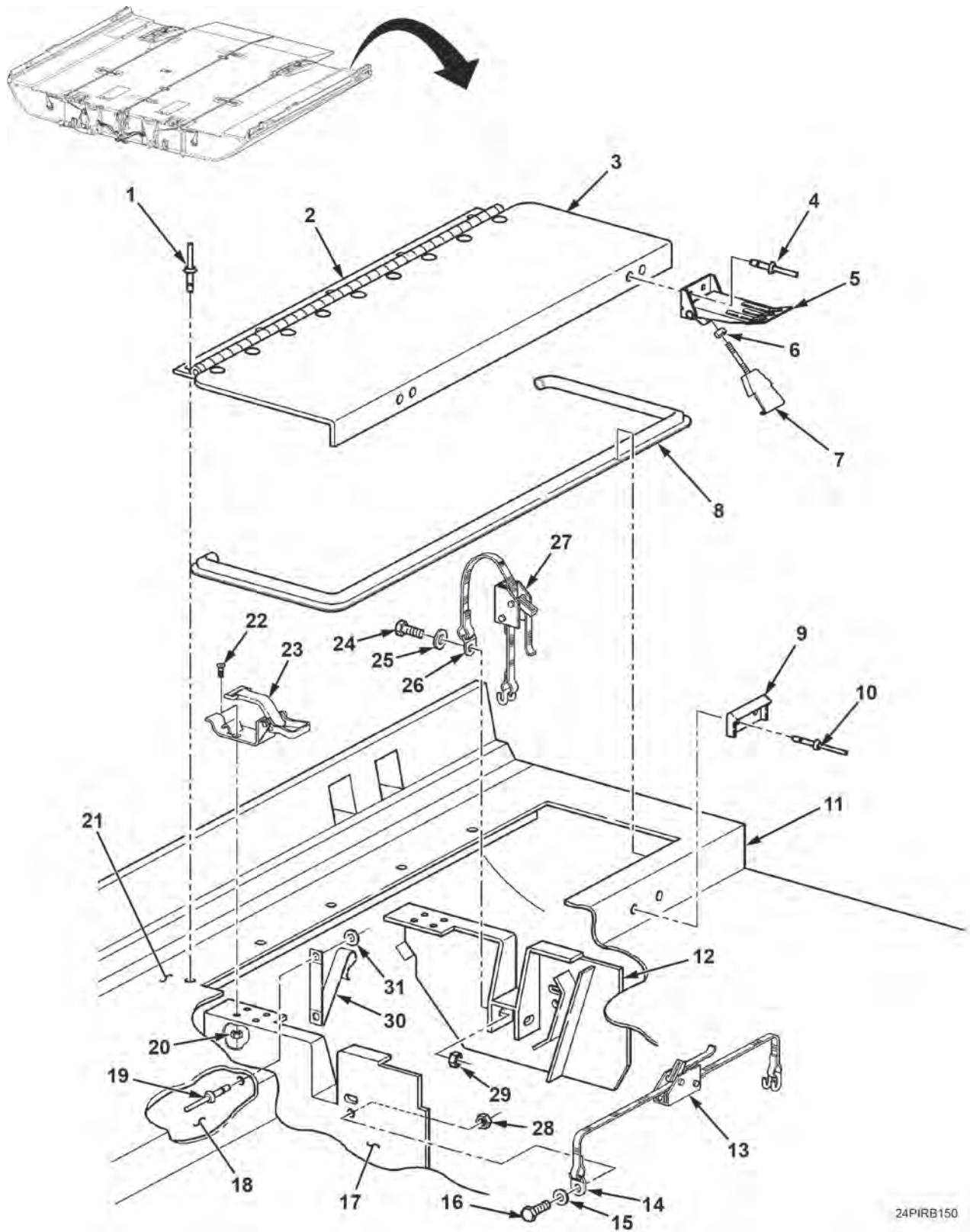
Figure 1. Stowage Compartment and Access Cover Removal.

INSTALLATION**NOTE**

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).

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

INSTALLATION - Continued



24PIRB150

Figure 2. Stowage Compartment and Access Cover Installation.

FOLLOW-ON MAINTENANCE

1. Install BII tools (TM 5-5420-278-10).
2. Load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
RAMP BAY FOLDLOCK REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Materials/Parts (cont.)

Cotter pin Qty: 4 (WP 0131, Table 1, Item 10)
Locknut Qty: 2 (WP 0131, Table 1, Item 31)

Materials/Parts

Cotter pin Qty: 2 (WP 0131, Table 1, Item 27)

NOTE

- Removal and installation of foldlocks are performed the same way for left and right sides. Right side is shown.
- Inspect and replace parts as needed.

REMOVAL

1. Remove cotter pin (Figure 1, Item 9) from spring support (Figure 1, Item 10) and pin (Figure 1, Item 8), and remove pin from spring support and mounting block (Figure 1, Item 7). Discard cotter pin.
2. Remove locknut (Figure 1, Item 15) and spacer (Figure 1, Item 14) from spring support (Figure 1, Item 10). Retain spacer for installation and discard locknut.
3. Remove spring support (Figure 1, Item 10) and pin (Figure 1, Item 2) from lever (Figure 1, Item 1), and remove two washers (Figure 1, Item 12) and two springs (Figure 1, Items 11 and 13) from spring support.
4. Remove two cotter pins (Figure 1, Item 3) and two washers (Figure 1, Item 4) from pin (Figure 1, Item 6). Remove pin, lever (Figure 1, Item 1), and mounting block (Figure 1, Item 7) from inner pontoon supports (Figure 1, Item 5). Discard cotter pins.
5. Perform Steps 1 through 4 to remove opposite foldlock.

END OF TASK**INSTALLATION**

1. Install lever (Figure 1, Item 1) and mounting block (Figure 1, Item 7) on inner pontoon supports (Figure 1, Item 5) with pin (Figure 1, Item 6), two washers (Figure 1, Item 4), and two new cotter pins (Figure 1, Item 3).
2. Position two washers (Figure 1, Item 11) and two springs (Figure 1, Items 12 and 13) on spring support (Figure 1, Item 10), and position pin (Figure 1, Item 2) and spring support (Figure 1, Item 10) on lever (Figure 1, Item 1).
3. Compress springs (Figure 1, Items 12 and 13), and install spacer (Figure 1, Item 14) with new locknut (Figure 1, Item 15) on spring support (Figure 1, Item 10).
4. Connect spring support (Figure 1, Item 10) to mounting block (Figure 1, Item 7) with pin (Figure 1, Item 8) and new cotter pin (Figure 1, Item 9).
5. Perform Steps 1 through 4 to install opposite foldlock.

INSTALLATION - Continued

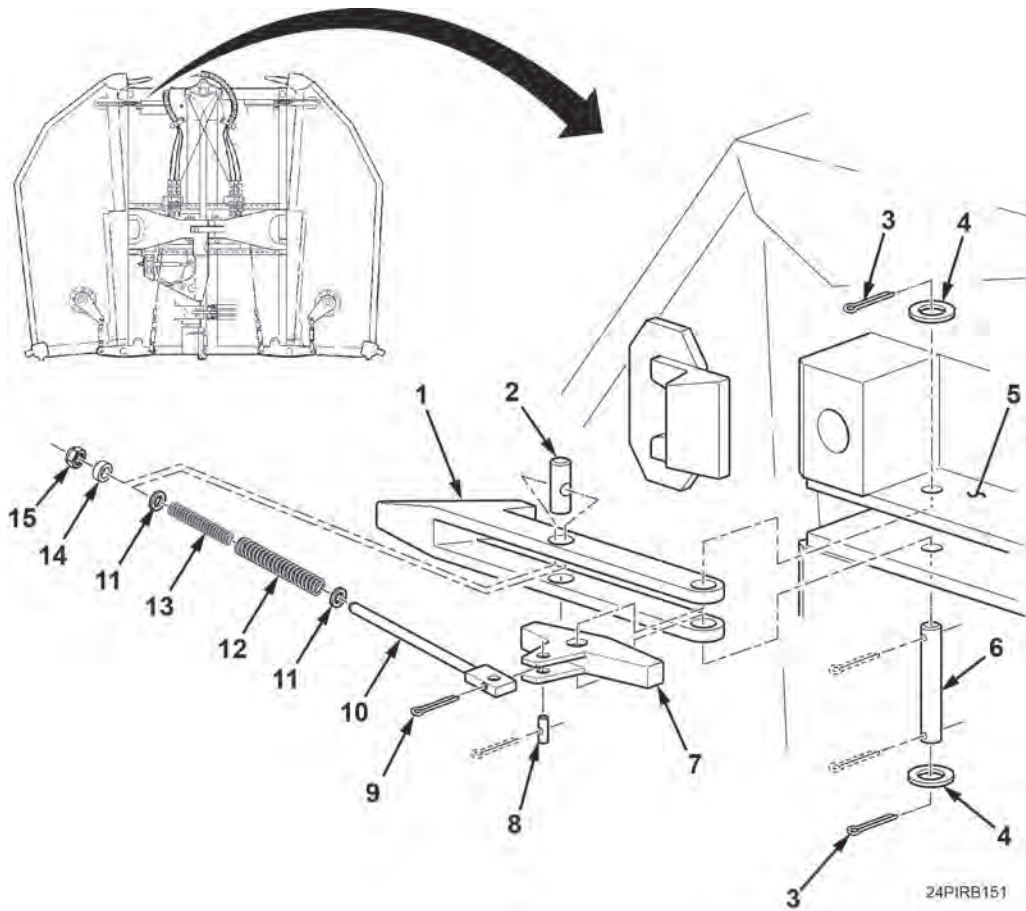


Figure 1. Ramp Bay Foldlock.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
TRAVEL LATCH AND RECEPTACLE REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

References

WP 0072

Equipment Condition

Bay removed from transporter
(TM 5-5420-278-10)

Materials/Parts

Cotter pin Qty: 2 (WP 0131, Table 1, Item 25)
Lockwasher Qty: 8 (WP 0131, Table 1, Item 30)
Spring pin Qty: 2 (WP 0131, Table 1, Item 5)

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 (Figure 1, Item 10) to open position.
2. Remove two springs (Figure 1, Item 7), spacers (Figure 1, Item 6), and pin (Figure 1, Item 5) from lever (Figure 1, Item 10).
3. Remove two cotter pins (Figure 1, Item 1), washers (Figure 1, Item 2), pin (Figure 1, Item 3), and lever (Figure 1, Item 10) from inner pontoon mounting brackets (Figure 1, Item 4). Discard cotter pins.
4. Remove two spring pins (Figure 1, Item 8) from pin (Figure 1, Item 9), and remove pin from lever (Figure 1, Item 10). Discard spring pins.

NOTE

- Perform Step 5 if replacing lever.
 - Note number of washers used on stopscrew for installation.
5. Remove stopscrew (Figure 1, Item 22) and washers (Figure 1, Item 23) from lever (Figure 1, Item 10). Retain washers for installation.

END OF TASK**RECEPTACLE REMOVAL**

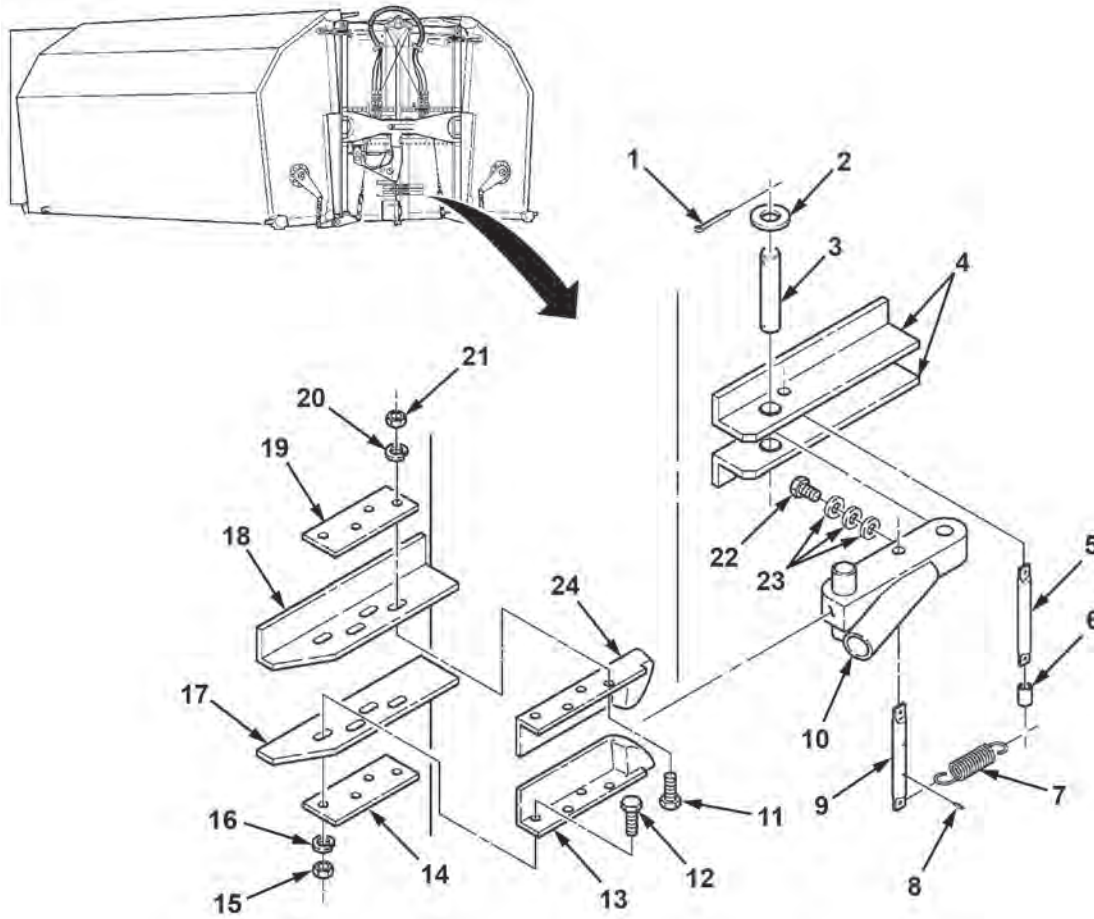
1. Position lever (Figure 1, Item 10) in open position, if not removed.

NOTE

Scribe marks on strike catches and inner pontoon mounting brackets for installation.

2. Remove four nuts (Figure 1, Item 21), lockwashers (Figure 1, Item 20), plate (Figure 1, Item 19), four screws (Figure 1, Item 11), and strike catch (Figure 1, Item 24) from inner pontoon mounting bracket (Figure 1, Item 18). Discard lockwashers.
3. Remove four nuts (Figure 1, Item 15), lockwashers (Figure 1, Item 16), plate (Figure 1, Item 14), four screws (Figure 1, Item 12), and strike catch (Figure 1, Item 13) from inner pontoon mounting bracket (Figure 1, Item 17). Discard lockwashers.

RECEPTACLE REMOVAL - Continued



24PIRB200

Figure 1. Travel Latch and Receptacle Removal.

END OF TASK

RECEPTACLE INSTALLATION**NOTE**

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).

1. Install strike catch (Figure 2, Item 25) on inner pontoon mounting bracket (Figure 2, Item 16) with four screws (Figure 2, Item 24), plate (Figure 2, Item 15), four new lockwashers (Figure 2, Item 14), and nuts (Figure 2, Item 13).
2. Install strike catch (Figure 2, Item 21) on inner pontoon mounting bracket (Figure 2, Item 17) with four screws (Figure 2, Item 26), plate (Figure 2, Item 18), four new lockwashers (Figure 2, Item 19), and nuts (Figure 2, Item 20).

END OF TASK**TRAVEL LATCH INSTALLATION****NOTE**

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).

1. Install washers (Figure 2, Item 9) and stopscrew (Figure 2, Item 10) on lever (Figure 2, Item 22).
2. Install pin (Figure 2, Item 23) on lever (Figure 2, Item 22) with two new spring pins (Figure 2, Item 8).
3. Install lever (Figure 2, Item 22) on inner pontoon mounting brackets (Figure 2, Item 4) with pin (Figure 2, Item 3), two washers (Figure 2, Item 2), and new cotter pins (Figure 2, Item 1).
4. Position pin (Figure 2, Item 5) and two spacers (Figure 2, Item 6) on inner pontoon mounting bracket (Figure 2, Item 4), and install springs (Figure 2, Item 7) on pins (Figure 2, Items 5 and 23).
5. Move lever (Figure 2, Item 22) to closed position.

END OF TASK**ADJUSTMENT****NOTE**

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).
- Adjustment of the travel latch and receptacle is performed with bay on transporter and with pontoon runners resting against guide rollers of transporter.

1. Close lever (Figure 2, Item 22) and loosen nuts (Figure 2, Items 13 and 20). Move upper and lower strike catches (Figure 2, Items 21 and 25) until there is 0.118 in. (3 mm) clearance between dowel pin (Figure 2, Item 12) on lever (Figure 2, Item 22) and strikers (Figure 2, Item 11) of strike catches.
2. Tighten eight nuts (Figure 2, Items 13 and 20) to 31 to 34 lb-ft (42 to 46 N•m).
3. Check clearance between pin (Figure 2, Item 12) and strikers (Figure 2, Item 11). Clearance should be 0.118 ± 0.060 in. (3 ± 1.5 mm). Adjust clearance by removing washers (Figure 2, Item 9) to increase clearance or adding washers to decrease clearance.

ADJUSTMENT - Continued

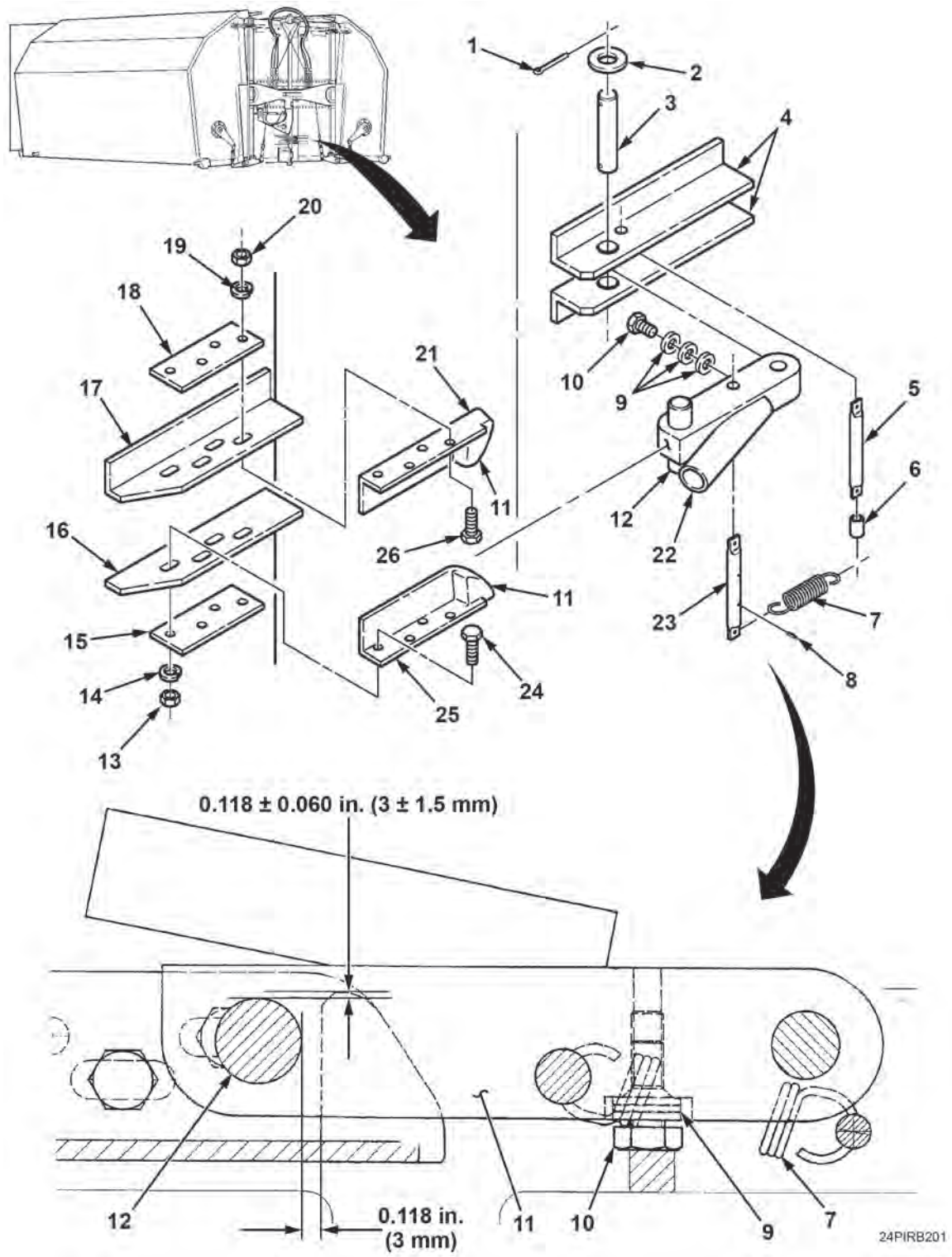


Figure 2. Travel Latch and Receptacle Installation/Adjustment.

END OF TASK

FOLLOW-ON MAINTENANCE

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

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
TRANSVERSE UPPER COUPLING AND RECEPTACLE BLOCKS REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Heat gun (WP 0130, Table 1, Item 15)
Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)

References

WP 0072

Equipment Condition

Bay removed from transporter and unfolded
(TM 5-5420-278-10)

Materials/Parts

Grease (WP 0129, Table 1, Item 18)
Cotter pin Qty: 2 (WP 0131, Table 1, Item 24)

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. Transverse upper coupling locating recesses are welded in place and will not be removed at Field Maintenance level.

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 (Figure 1, Item 6) from pin (Figure 1, Item 4) and lever (Figure 1, Item 7).
 2. Remove two screws (Figure 1, Item 13) and bracket (Figure 1, Item 8) from receptacle block (Figure 1, Item 9).
 3. Remove two cotter pins (Figure 1, Item 3), washers (Figure 1, Item 5), pin (Figure 1, Item 4), and lever (Figure 1, Item 7) from bracket (Figure 1, Item 8). Discard cotter pins.

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 (Figure 1, Item 11), screw (Figure 1, Item 12), and receptacle block (Figure 1, Item 9) from end of inner pontoon (Figure 1, Item 10).
5. Remove four screws (Figure 1, Item 1) and receptacle block (Figure 1, Item 2) from end of inner pontoon (Figure 1, Item 10).
6. Perform Steps 1 through 5 to remove remaining connector levers and receptacle blocks as necessary.

END OF TASK**INSTALLATION****NOTE**

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).
 - Perform Steps 1 and 2 to install receptacle blocks, if removed.
 - Apply grease to all screws and mating surfaces of receptacle blocks and inner pontoon prior to installation.
1. Install receptacle block (Figure 1, Item 2) on end of inner pontoon (Figure 1, Item 10) with four screws (Figure 1, Item 1). Tighten screws to 135 lb-ft (183 N•m).
 2. Install receptacle block (Figure 1, Item 9) on end of inner pontoon (Figure 1, Item 10) with three screws (Figure 1, Item 11) and screw (Figure 1, Item 12). Tighten screws to 135 lb-ft (183 N•m).

NOTE

Perform Steps 3 through 5 to install coupling lever and bracket.

3. Install lever (Figure 1, Item 7) on bracket (Figure 1, Item 8) with pin (Figure 1, Item 4), two washers (Figure 1, Item 5), and new cotter pins (Figure 1, Item 3).

INSTALLATION - Continued

4. Install bracket (Figure 1, Item 8) to receptacle block (Figure 1, Item 9) with two screws (Figure 1, Item 13). Tighten screws to 84-102 lb-in (9.5-11.5 N•m).
5. Install spring (Figure 1, Item 6) on pin (Figure 1, Item 4) and lever (Figure 1, Item 7).
6. Perform Steps 1 through 5 to install remaining receptacle blocks and connector levers.

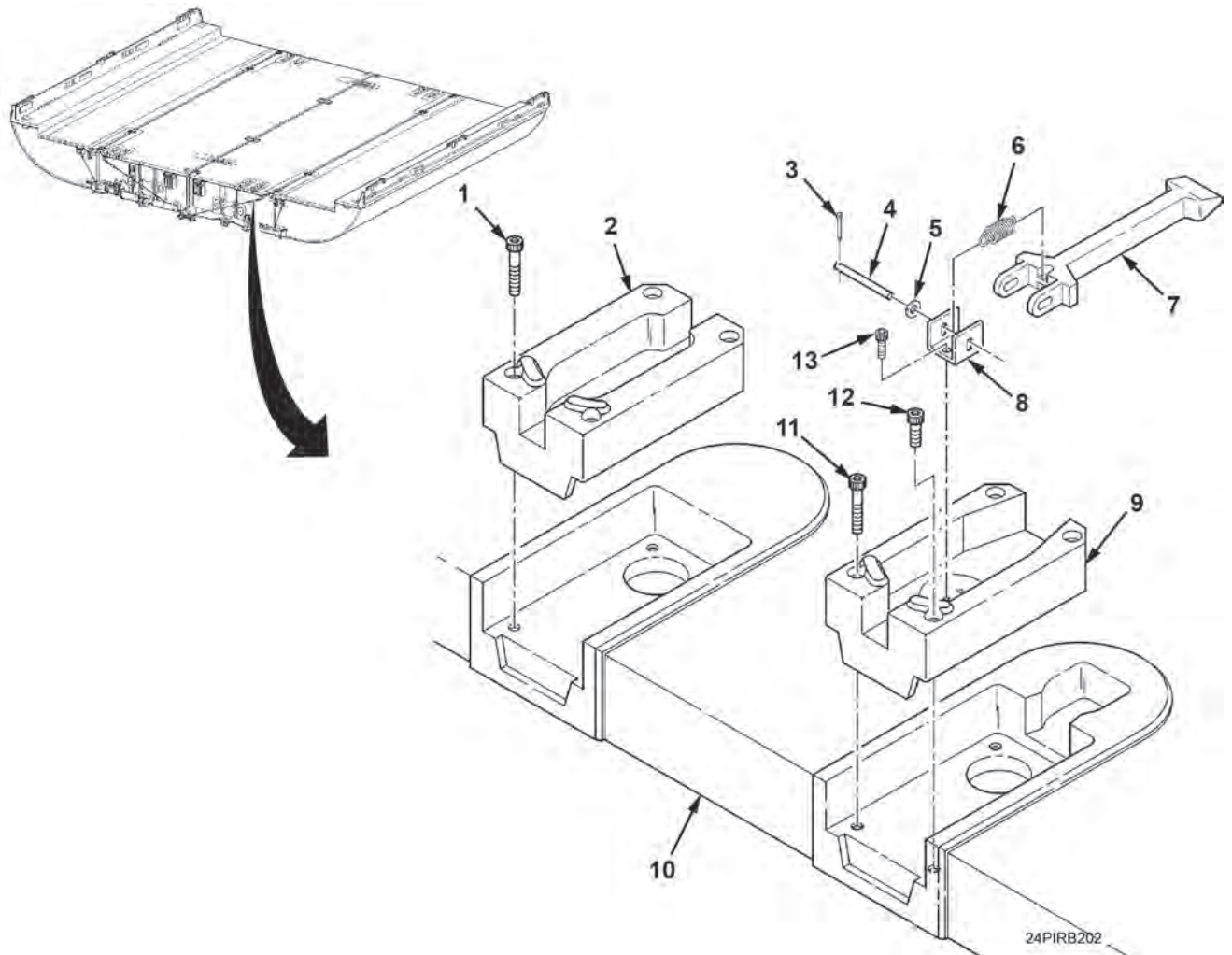


Figure 1. Upper Coupling and Receptacle Blocks.

END OF TASK

FOLLOW-ON MAINTENANCE

Fold bay and load bay on transporter (TM 5-5420-278-10).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
SWIVEL PLATE REPLACEMENT (RAMP ONLY)**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench 3/8 in. drive 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Cotter pin Qty: 4 (WP 0131, Table 1, Item 13)

Materials/Parts (cont.)

Locknut (WP 0131, Table 1, Item 34)
Dunnage

References

WP 0072

Equipment Condition

Inner pontoons separated (WP 0025)

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

NOTE

Note location and quantity of spacers for installation.

9. Pull swivel plate pin (Figure 1, Item 2) out of swivel plate (Figure 1, Item 8) and inner pontoon (Figure 1, Item 4), and remove swivel plate and two spacers (Figure 1, Item 5) from inner pontoon. Retain spacers for installation.

END OF TASK**INSTALLATION****NOTE**

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
- Apply a light coat of grease to swivel plate pin, spacer, and tension spring holder prior to installation.

1. With outer pontoon in vertical position, position swivel plate (Figure 1, Item 8) and two spacers (Figure 1, Item 5) on inner pontoon (Figure 1, Item 4), and slide swivel plate pin (Figure 1, Item 2) through spacers and swivel plate.
2. Swivel plate (Figure 1, Item 8) must be centered in pontoon opening. Adjust center alignment with spacers (Figure 1, Item 5), and ensure swivel plate (Figure 1, Item 8) moves freely with minimal play.
3. Place swivel plate (Figure 1, Item 8) in closed position, and install indicator plate (Figure 1, Item 3) on swivel plate pin (Figure 1, Item 2) with pointer in line with swivel plate and groove in swivel plate pin.
4. Align hole in swivel plate pin (Figure 1, Item 2) with hole in swivel plate (Figure 1, Item 8), and install screw (Figure 1, Item 6) and new locknut (Figure 1, Item 18).
5. Install setscrew (Figure 1, Item 1) on indicator plate (Figure 1, Item 3) and swivel plate pin (Figure 1, Item 2).
6. Lower outer pontoon down on inner pontoon (Figure 1, Item 4), and close foldlock.

INSTALLATION - Continued

7. Install tension spring pin (Figure 1, Item 20) on bracket (Figure 1, Item 17) with two washers (Figure 1, Item 16), pin (Figure 1, Item 15), and two new cotter pins (Figure 1, Item 14).
8. Position spacer (Figure 1, Item 19), spring (Figure 1, Item 13), and tension spring holder (Figure 1, Item 12) on tension spring pin (Figure 1, Item 20), and install tension spring holder on bracket (Figure 1, Item 7) on swivel plate (Figure 1, Item 8) with two washers (Figure 1, Item 9), pin (Figure 1, Item 11), and two new cotter pins (Figure 1, Item 10).
9. Place swivel plate (Figure 1, Item 8) in open position.

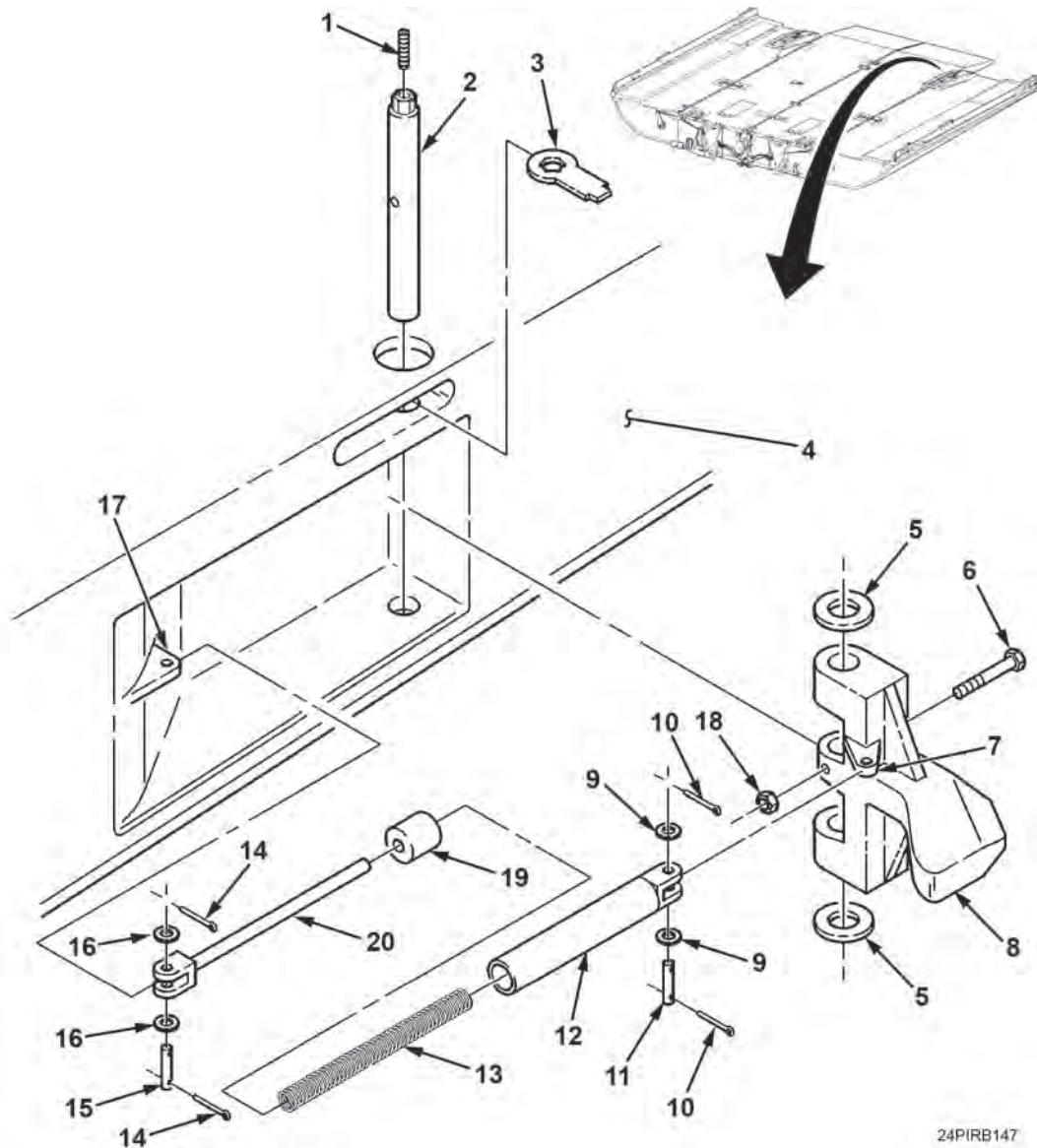


Figure 1. Swivel Plate.

END OF TASK

FOLLOW-ON MAINTENANCE

Connect inner pontoons (WP 0025).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
PUMP ACCESS COVER REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

- General mechanic's tool kit
(WP 0130, Table 1, Item 29)
- Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
- Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)

Materials/Parts

- Grease (WP 0129, Table 1, Item 17)
- Locknut Qty: 3 (WP 0131, Table 1, Item 31)

Materials/Parts (cont.)

- Lockwasher Qty: 3 (WP 0131, Table 1, Item 30)
- Dunnage

References

- WP 0072

Equipment Condition

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

NOTE

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

REMOVAL

1. Remove four screws (Figure 1, Item 1) from data plate (Figure 1, Item 2).
2. Remove data plate (Figure 1, Item 2).

END OF TASK**INSTALLATION**

1. Place data plate (Figure 1, Item 2) into position on the IRB.
2. Secure data plate (Figure 1, Item 2) with four screws (Figure 1, Item 1).

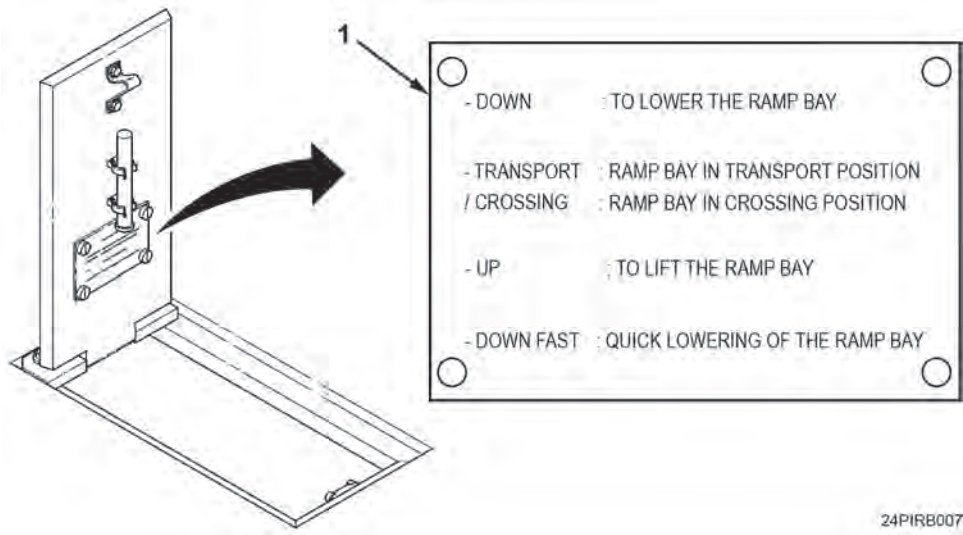
INSTALLATION - Continued

Figure 1. Data Plate Replacement.

END OF TASK**REMOVAL**

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

NOTE

Perform Step 5 if instruction plate is to be removed.

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

END OF TASK**INSTALLATION****NOTE**

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072) .

INSTALLATION - Continued

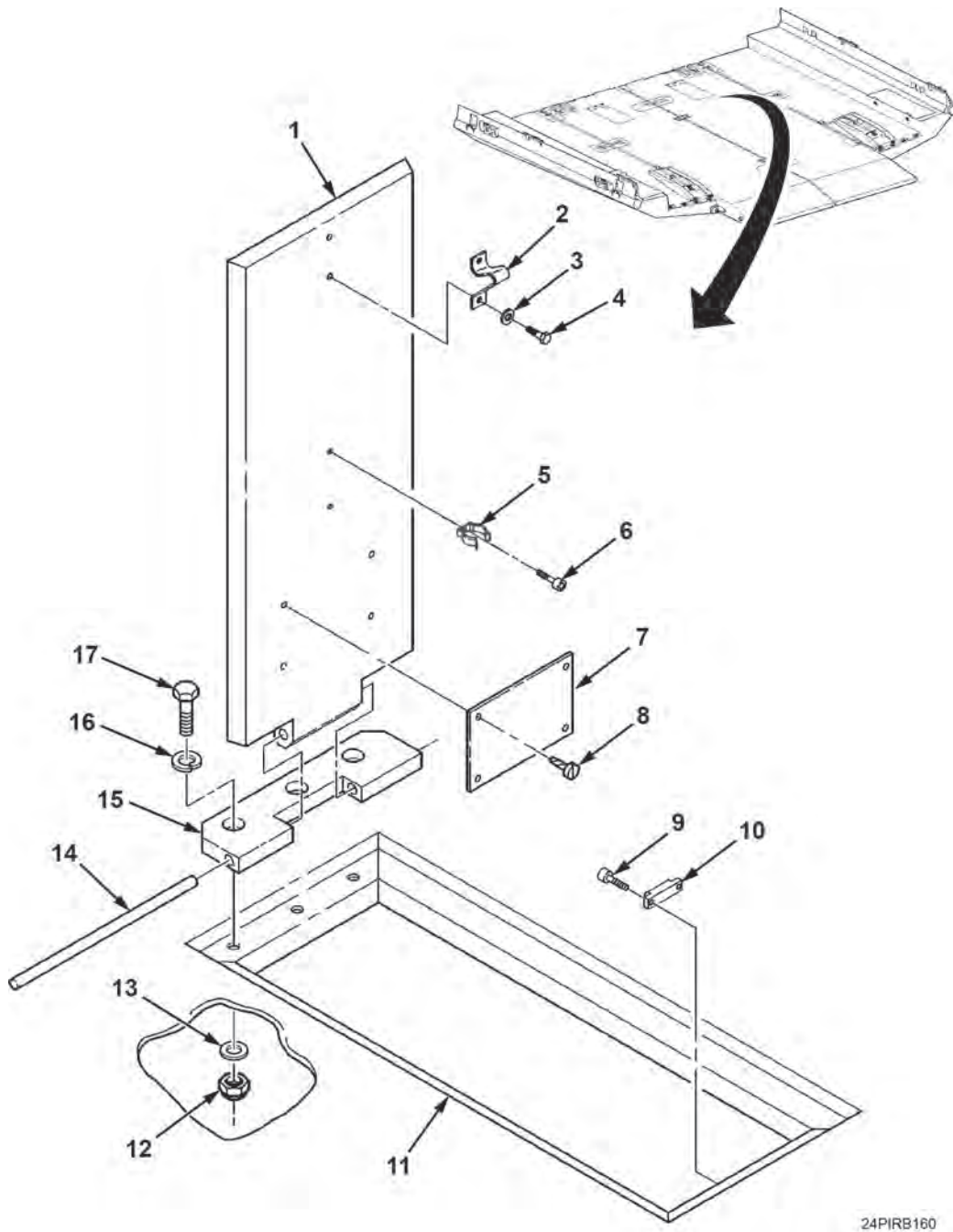
1. Install stop plate (Figure 1, Item 10) on roadway inner pontoon opening (Figure 1, Item 11) with two screws (Figure 1, Item 9).

NOTE

Perform Step 2 if instruction plate was removed.

2. Install instruction plate (Figure 1, Item 7) on access cover (Figure 1, Item 1) with four screws (Figure 1, Item 8).
3. Install two spring clips (Figure 1, Item 5) on access cover (Figure 1, Item 1) with screws (Figure 1, Item 6).
4. Install metal strap (Figure 1, Item 2) on access cover (Figure 1, Item 1) with two washers (Figure 1, Item 3) and screws (Figure 1, Item 4).
5. Apply a light coat of grease to pin (Figure 1, Item 14) and install access cover (Figure 1, Item 1) on hinge block (Figure 1, Item 15) with pin.
6. Install hinge block (Figure 1, Item 15) with access cover (Figure 1, Item 1) on roadway inner pontoon opening (Figure 1, Item 11) with three washers (Figure 1, Item 13), screws (Figure 1, Item 17), new lockwashers (Figure 1, Item 16), and new locknuts (Figure 1, Item 12).

INSTALLATION - Continued



24PIRB160

Figure 2. Pump Access Cover.

END OF TASK

FOLLOW-ON MAINTENANCE

Fold ramp bay and load ramp bay on transporter. TM 5-5420-278-10

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE RAMP BAY LOWER LOCK-DRIVE REPAIR

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench 3/8 in. drive 0–100 lb-ft
(0-136 N•m) (WP 0130, Table 1, Item 35)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Cotter pin Qty: 2 (WP 0131, Table 1, Item 14)
Cotter pin Qty: 2 (WP 0131, Table 1, Item 28)
Lockwasher Qty: 4 (WP 0131, Table 1, Item 2)

Materials/Parts (cont.)

Lockwasher Qty: 4 (WP 0131, Table 1, Item 30)
Dunnage

Personnel Required

Mechanic
Assistant

Equipment Condition

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

REMOVAL

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.
 - Extend cylinder rod to relieve tension from pin.
1. Place pump (Figure 1, Item 1) selector valve (Figure 1, Item 2) in UP position (Figure 1, Item 3).

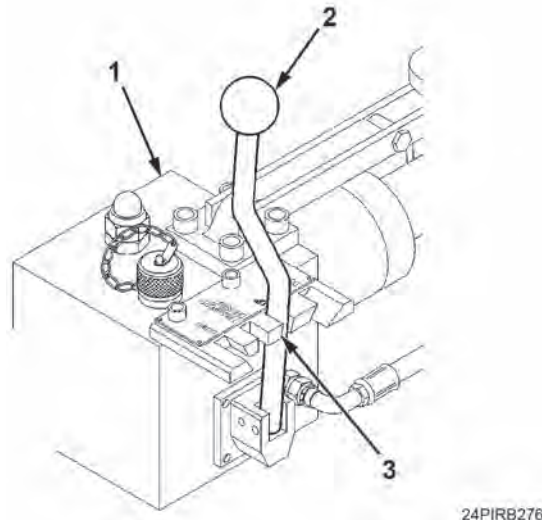


Figure 1. Pump Selector Valve.

REMOVAL - Continued

2. Extend cylinder rod end (Figure 2, Item 3) until pin (Figure 2, Item 5) is clear to be removed.
3. Support cylinder rod end (Figure 2, Item 3) and remove two cotter pins (Figure 2, Item 4), washers (Figure 2, Item 6), and pin (Figure 2, Item 5) from yoke (Figure 2, Item 7) and cylinder rod end. Discard cotter pins.
4. Support yoke (Figure 2, Item 7), and remove two cotter pins (Figure 2, Item 1), washers (Figure 2, Item 2), and pins (Figure 2, Item 25) from inner pontoon brackets (Figure 2, Items 23 and 24) and yoke brackets (Figure 2, Items 26 and 27). Discard cotter pins.
5. Lift yoke (Figure 2, Item 7) from pontoon brackets (Figure 2, Items 23 and 24).

END OF TASK**DISASSEMBLY**

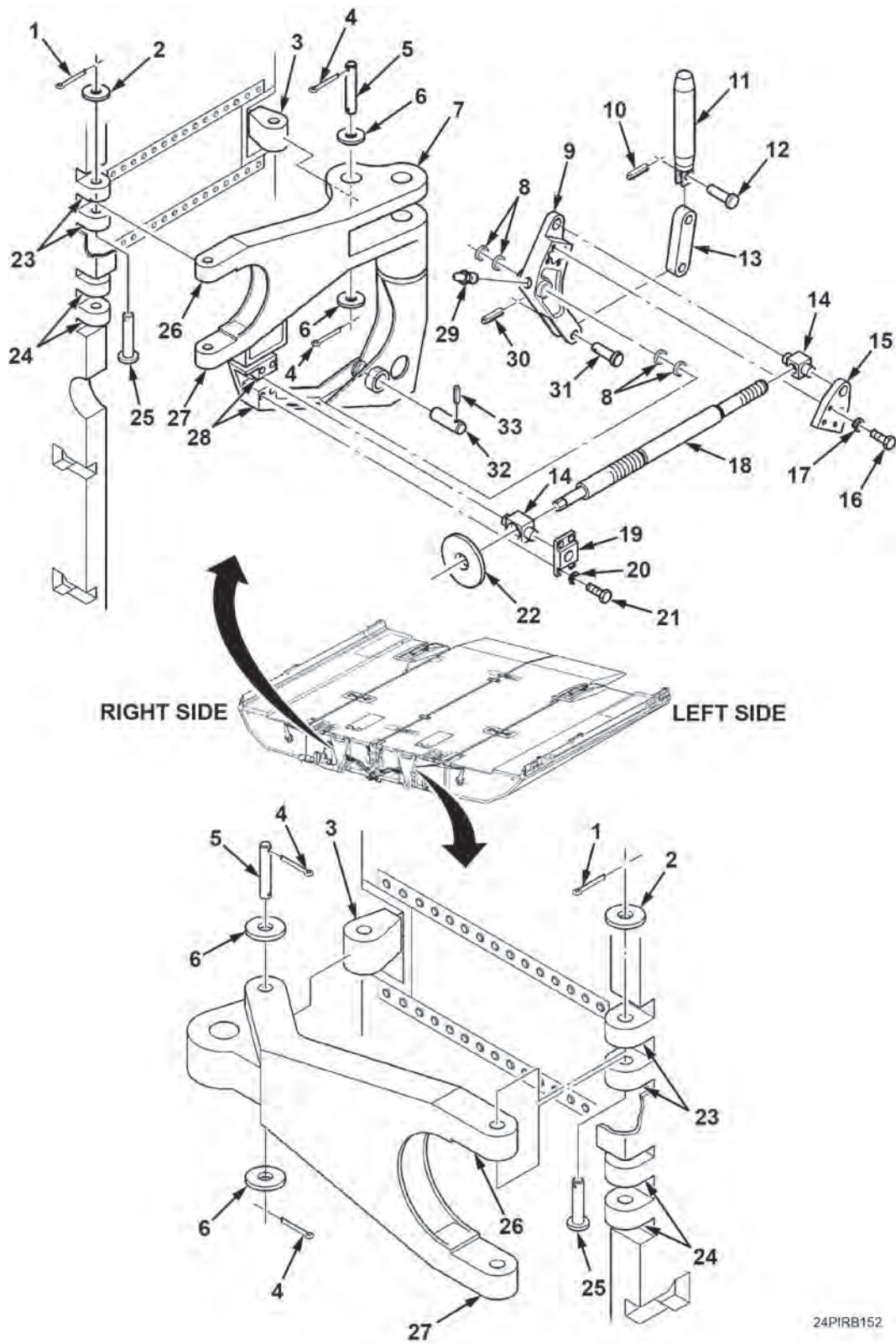
1. Remove four screws (Figure 2, Item 21), lockwashers (Figure 2, Item 20), and retainer (Figure 2, Item 19) from trunnion nut (Figure 2, Item 14) and yoke brackets (Figure 2, Item 28). Discard lockwashers.
2. Remove four screws (Figure 2, Item 16), lockwashers (Figure 2, Item 17), and lever retainer (Figure 2, Item 15) from trunnion nut (Figure 2, Item 14) and bell crank lever (Figure 2, Item 9). Discard lockwashers.
3. Remove jackscrew (Figure 2, Item 18), washer (Figure 2, Item 22), and trunnion nuts (Figure 2, Item 14) from yoke brackets (Figure 2, Item 28) and bell crank lever (Figure 2, Item 9).
4. Remove washer (Figure 2, Item 22) and both trunnion nuts (Figure 2, Item 14) from jackscrew (Figure 2, Item 18).

NOTE

Note location and quantity of shims for installation.

5. Remove spring pin (Figure 2, Item 33) from yoke (Figure 2, Item 7) and pin (Figure 2, Item 32).
6. Remove spring pin (Figure 2, Item 30), pin (Figure 2, Item 31), and connecting link (Figure 2, Item 13) from bell crank lever (Figure 2, Item 9).
7. Remove pin (Figure 2, Item 32), bell crank lever (Figure 2, Item 9), and shims (Figure 2, Item 8) from yoke (Figure 2, Item 7). Retain shims for assembly in the order in which removed.
8. Remove lube fitting (Figure 2, Item 29) from bell crank lever (Figure 2, Item 9).
9. Remove spring pin (Figure 2, Item 10), pin (Figure 2, Item 12), and link (Figure 2, Item 13) from connecting pin (Figure 2, Item 11).
10. Remove connecting pin (Figure 2, Item 11) from yoke (Figure 2, Item 7).

DISASSEMBLY - Continued



24PIRB152

Figure 2. Lower Lock-Drive Removal.

ASSEMBLY**NOTE**

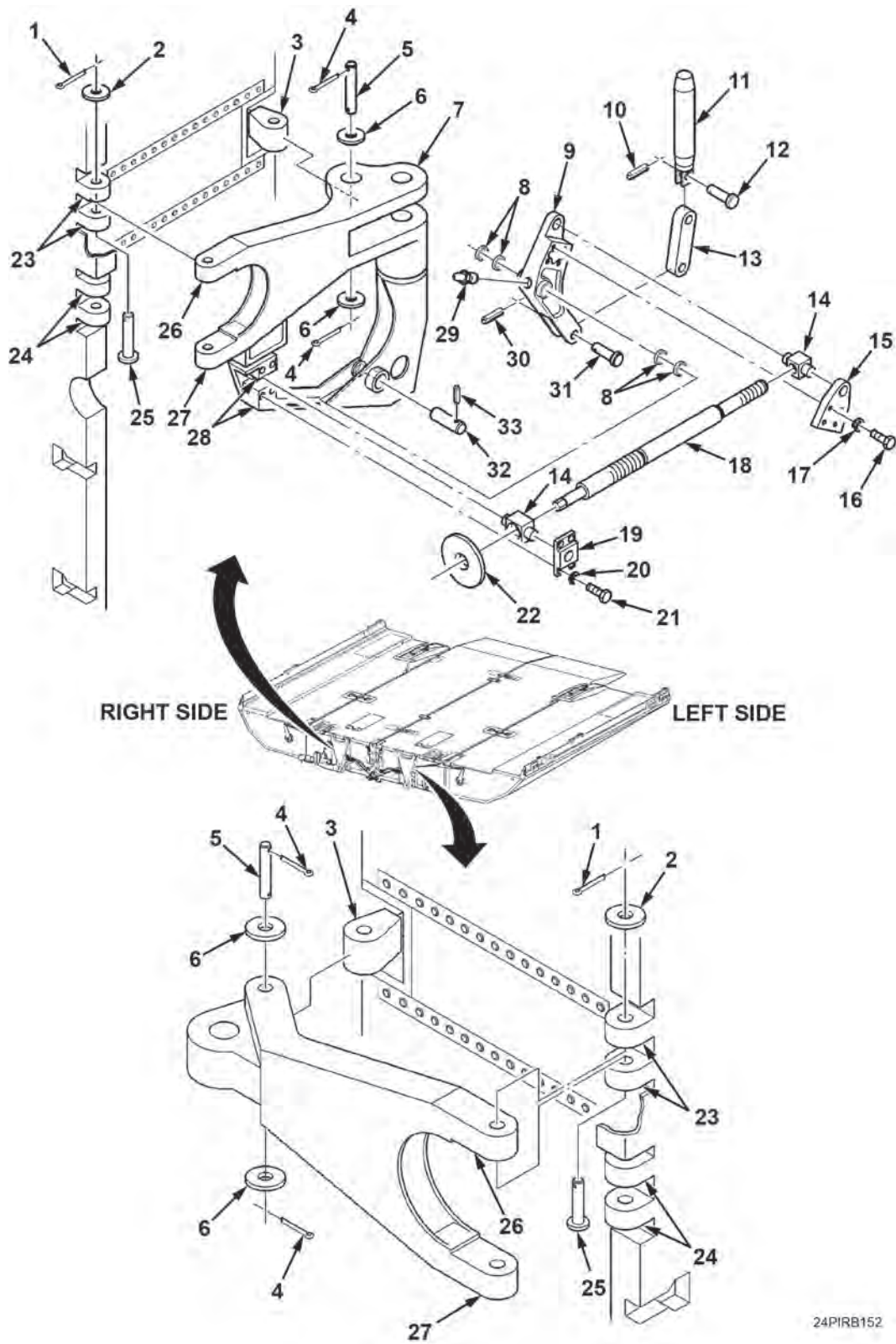
- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
- Apply a light coat of grease to all pins and threads of jackscrew prior to assembly.

1. Install connecting pin (Figure 3, Item 11) on yoke (Figure 3, Item 7).
2. Install connecting link (Figure 3, Item 13) on connecting pin (Figure 3, Item 11) with pin (Figure 3, Item 12) and spring pin (Figure 2, Item 10).
3. Install lube fitting (Figure 3, Item 29) on bell crank lever (Figure 3, Item 9).
4. Connect connecting link (Figure 3, Item 13) to bell crank lever (Figure 3, Item 9) with pin (Figure 3, Item 31) and spring pin (Figure 3, Item 30).
5. Install bell crank lever (Figure 3, Item 9) on yoke (Figure 3, Item 7) with shims (Figure 3, Item 8), pin (Figure 3, Item 32), and link (Figure 3, Item 13) aligned with slot on bell crank lever (Figure 3, Item 9).
6. Install spring pin (Figure 3, Item 33) through yoke (Figure 3, Item 7) and pin (Figure 3, Item 32).
7. Install both trunnion nuts (Figure 3, Item 14) and washer (Figure 3, Item 22) on jackscrew (Figure 3, Item 18).
8. Adjust trunnion nuts (Figure 3, Item 14) to fit mounting holes in bell crank lever (Figure 3, Item 9) and yoke brackets (Figure 3, Item 28).
9. Position jackscrew (Figure 3, Item 18) on yoke (Figure 3, Item 7) and install trunnion nut (Figure 3, Item 14) on bell crank lever (Figure 3, Item 9) with lever retainer (Figure 3, Item 15), four new lockwashers (Figure 3, Item 17), and screws (Figure 3, Item 16).
10. Install trunnion nut (Figure 3, Item 14) on yoke brackets (Figure 3, Item 28) with trunnion retainer (Figure 3, Item 19), four new lockwashers (Figure 3, Item 20), and screws (Figure 3, Item 21).

END OF TASK**INSTALLATION**

1. Place pump selector lever in UP position, and extend cylinder rod end (Figure 2, Item 3) until pin (Figure 2, Item 5) can be installed.
2. Lift yoke (Figure 3, Item 7) and install yoke brackets (Figure 3, Items 26 and 27) on inner pontoon brackets (Figure 3, Items 23 and 24) with two pins (Figure 3, Item 25), washers (Figure 3, Item 2), and new cotter pins (Figure 3, Item 1).
3. Connect yoke (Figure 3, Item 7) on cylinder rod end (Figure 3, Item 3) with pin (Figure 3, Item 5), two washers (Figure 3, Item 6), and new cotter pins (Figure 3, Item 4).

INSTALLATION - Continued



24PIRB152

Figure 3. Lower Lock-Drive Installation.

FOLLOW-ON MAINTENANCE

Fold and load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
DRAINING AND FILLING PUMP SYSTEM**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drain hose assembly
(WP 0130, Table 1, Item 18)
Drain pan (WP 0130, Table 1, Item 21)
Funnel (WP 0130, Table 1, Item 8)

Materials/Parts (cont.)

Propylene glycol (WP 0129, Table 1, Item 23)
Dunnage

References

WP 0045

Materials/Parts

Face shield (WP 0129, Table 1, Item 12)
Marker tags (WP 0129, Table 1, Item 27)
Nitrile gloves (WP 0129, Table 1, Item 14)

Equipment Condition

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

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Failure to comply may result in personnel injury or death and/or damage to the environment.

NOTE

- Draining and filling of fluids are the same for both pumps and cylinders. Right side pump and cylinder are shown.
- Tag hoses for installation.
- Have drain pan ready to catch fluid.

DRAIN PUMP

1. Open access cover (Figure 1, Item 12) on inner pontoon (Figure 1, Item 10).

WARNING

Relieve residual pressure on fluid system before disconnecting lines. Failure to comply may result in personnel injury or death and/or damage to equipment.

2. Move control valve lever to all positions and then place lever in TRANSPORT/CROSSING position.
3. Disconnect hose assemblies (Figure 1, Items 5, 6, and 7) from quick-disconnect couplings (Figure 1, Items 3, 4, and 8).
4. Place control lever (Figure 1, Item 2) to DOWN position (Figure 1, Item 13) on pump (Figure 1, Item 1), install handle (Figure 1, Item 11) on lever (Figure 1, Item 9), and operate handle until yoke is fully retracted.

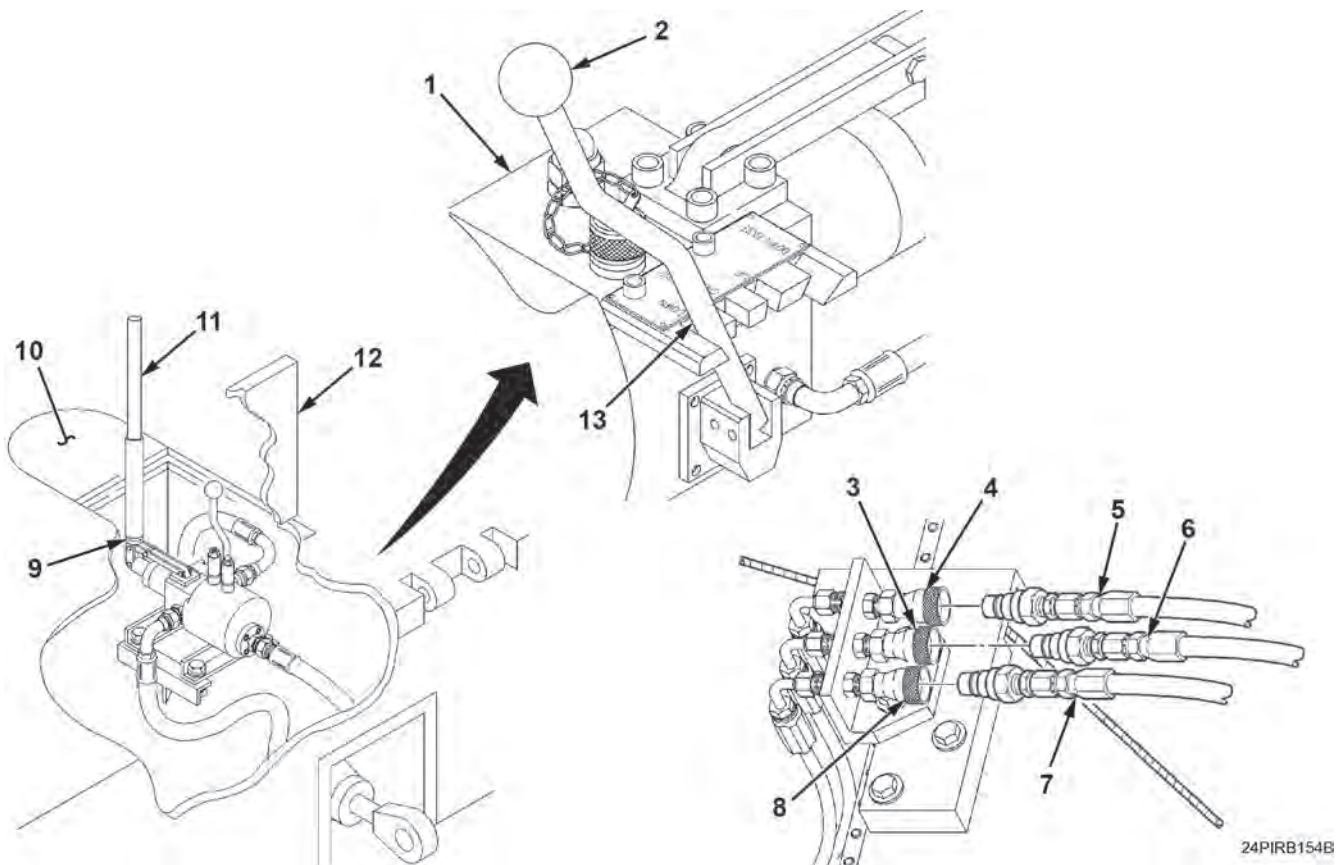


Figure 1. Pump and Hoses.

DRAIN PUMP - Continued

5. Remove quick-disconnect (Figure 2, Item 1) from drain hose assembly (Figure 2, Item 2) and place end of hose in a suitable drain pan (Figure 2, Item 5) to catch fluid.
6. Connect other end of hose (Figure 2, Item 2) with quick-connector (Figure 2, Item 4) to lower (red) quick-disconnect coupling (Figure 2, Item 6) on inner pontoon (Figure 2, Item 3).

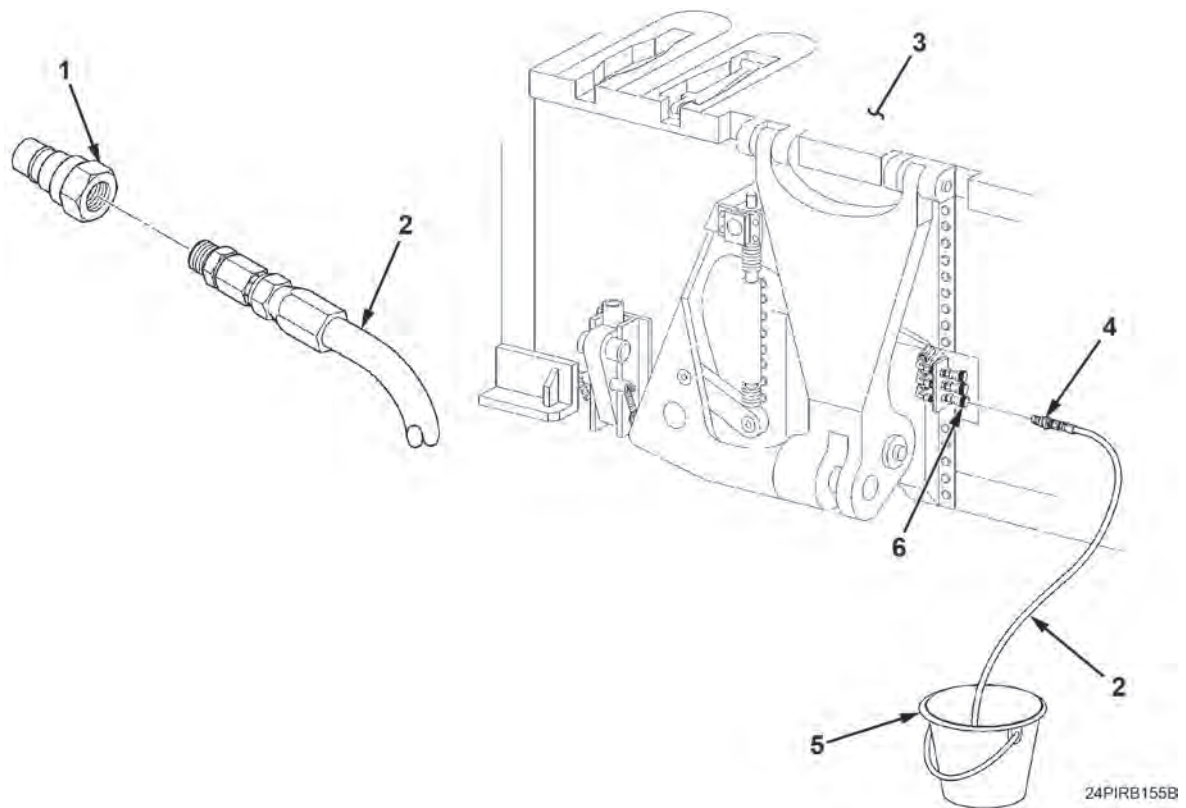


Figure 2. Attach Drain Hose.

DRAIN PUMP - Continued

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

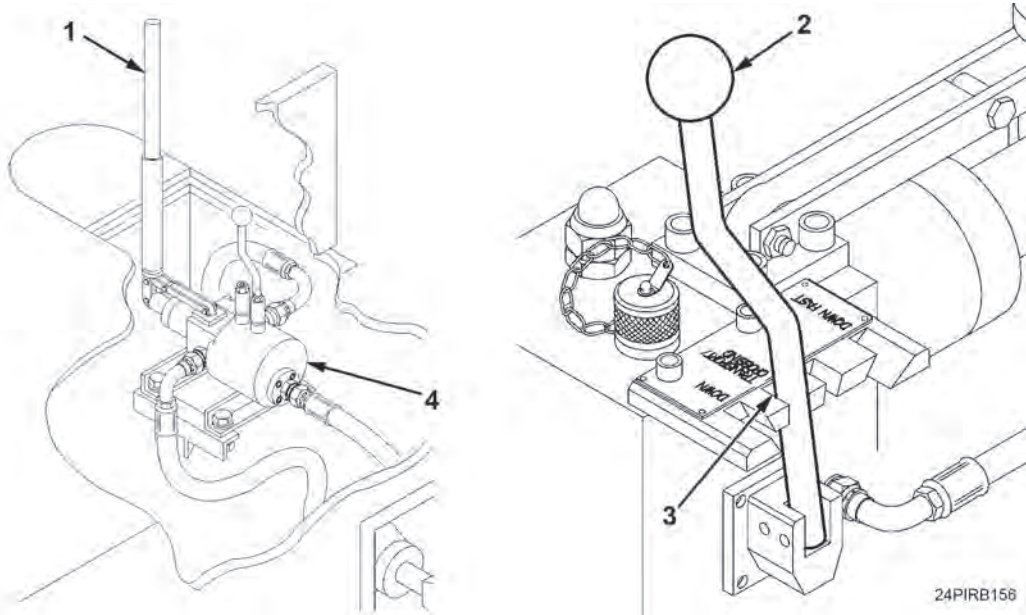


Figure 3. Pump Handle and Pump Selector Handle.

NOTE

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

9. Remove filler cap with dipstick (Figure 4, Item 1) and gasket (Figure 4, Item 7) from pump reservoir (Figure 4, Item 6). Discard gasket, if damaged.

NOTE

Do not thread filler cap on reservoir when checking fluid level.

10. Install funnel on pump reservoir (Figure 4, Item 6), fill reservoir with fluid, and check fluid level. Fluid level must be between the MIN (Figure 4, Item 4) and MAX (Figure 4, Item 3) mark on filler cap dipstick (Figure 4, Item 2) when dipstick is placed on top of pump reservoir opening (Figure 4, Item 5).
11. Install filler cap with dipstick (Figure 4, Item 1) on pump reservoir (Figure 4, Item 6).

DRAIN PUMP - Continued

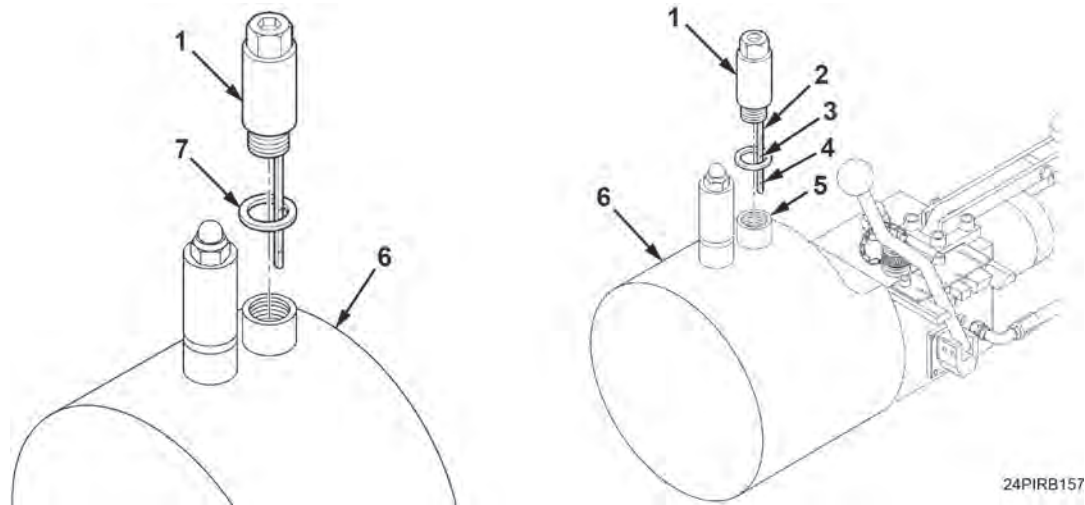


Figure 4. Reservoir, Filler Cap, and Dipstick.

12. Remove hose (Figure 5, Item 2) and quick-connector assembly from quick-disconnect coupling (Figure 5, Item 4) on inner pontoon (Figure 5, Item 1) and from drain pan/bucket (Figure 5, Item 3), if cylinder fluid is not being changed.

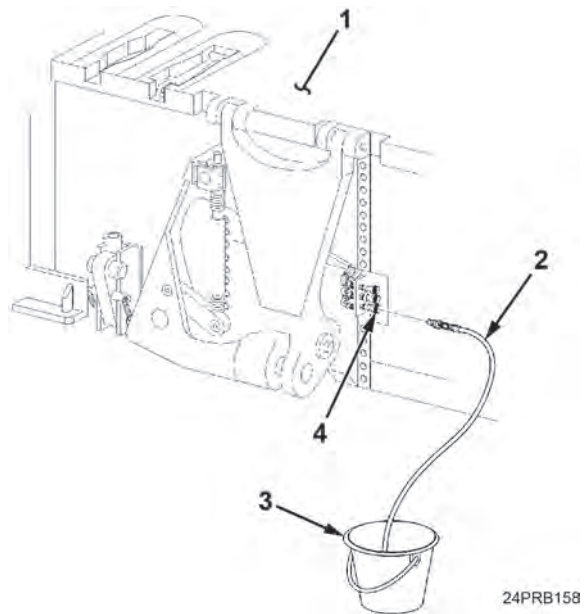


Figure 5. Drain Hose.

END OF TASK

DRAIN 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 (Figure 6, Item 2) quick-connector on inner pontoon (Figure 6, Item 1) lower (red) quick-disconnect coupling (Figure 6, Item 4) with other end of hose (Figure 6, Item 2) in a drain pan (Figure 6, Item 3) if not installed.

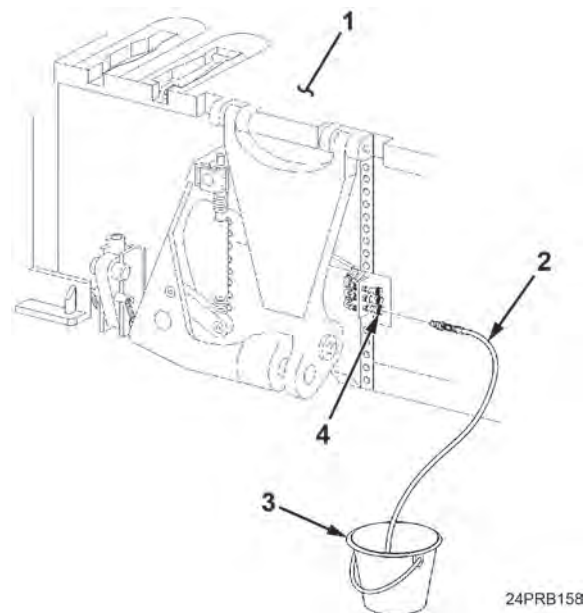


Figure 6. Drain Hose.

2. Remove filler cap with dipstick (Figure 7, Item 3) and gasket (Figure 7, Item 4) from inner pontoon pump (Figure 7, Item 2), install funnel, and fill reservoir (Figure 7, Item 5) with clean fluid.

NOTE

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

3. Place pump control lever (Figure 7, Item 1) to UP position (Figure 7, Item 6), and operate pump handle to extend piston rod or yoke from fully retracted position to fully extended position.
4. Disconnect hose quick-connector from quick-disconnect coupling on inner pontoon.

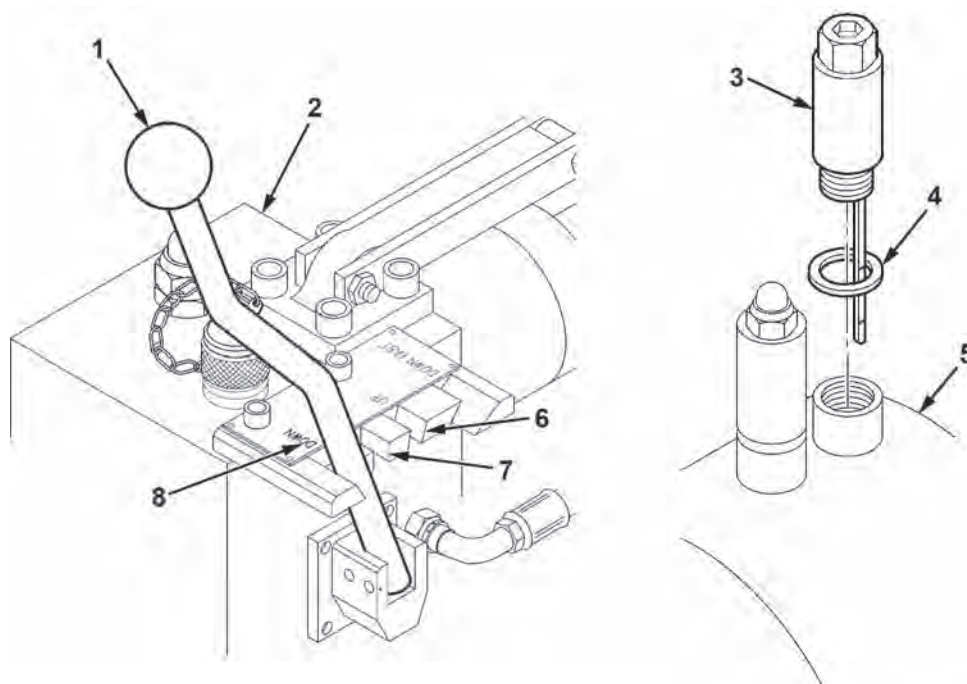
DRAIN CYLINDER - Continued

5. Place pump control lever (Figure 7, Item 1) on inner pontoon pump (Figure 7, Item 2) to DOWN position (Figure 7, Item 8) and operate pump handle to retract piston rod or yoke.
6. Place pump control lever (Figure 7, Item 1) to TRANSPORT/CROSSING position (Figure 7, Item 7).
7. Remove filler cap with dipstick (Figure 7, Item 3) and gasket (Figure 7, Item 4) from pump reservoir (Figure 7, Item 5). Discard gasket, if damaged.

NOTE

Do not thread filler cap on reservoir when checking fluid level.

8. Install funnel on pump reservoir (Figure 7, Item 5), fill reservoir with fluid, and check fluid level. Fluid level must be between the MIN and MAX mark on filler cap (Figure 7, Item 3) dipstick when filler cap is placed on top of pump reservoir opening (Figure 7, Item 5).
9. Install filler cap with dipstick (Figure 7, Item 3) on pump reservoir (Figure 7, Item 5).



24PIRB159A

Figure 7. Pump Selector Handle and Filler Cap.

END OF TASK**FOLLOW-ON MAINTENANCE**

1. Bleed pump fluid system (WP 0045).
2. Fold ramp bay and load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
BLEEDING PUMP SYSTEM**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Deflation hose assembly
(WP 0130, Table 1, Item 17)
Drain pan (WP 0130, Table 1, Item 21)

Materials/Parts

Face shield (WP 0129, Table 1, Item 12)
Nitrile gloves (WP 0129, Table 1, Item 14)

Materials/Parts (cont.)

Propylene glycol (WP 0129, Table 1, Item 23)
Dunnage

References

WP 0071

Equipment Condition

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

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Failure to comply may result in personnel injury or death and/or damage to the environment.

NOTE

- Bleeding of fluid on both pumps is performed the same way. Right side inner pontoon pump is shown.
- Have drain pan ready to catch fluid.
- Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.

BLEED PUMP

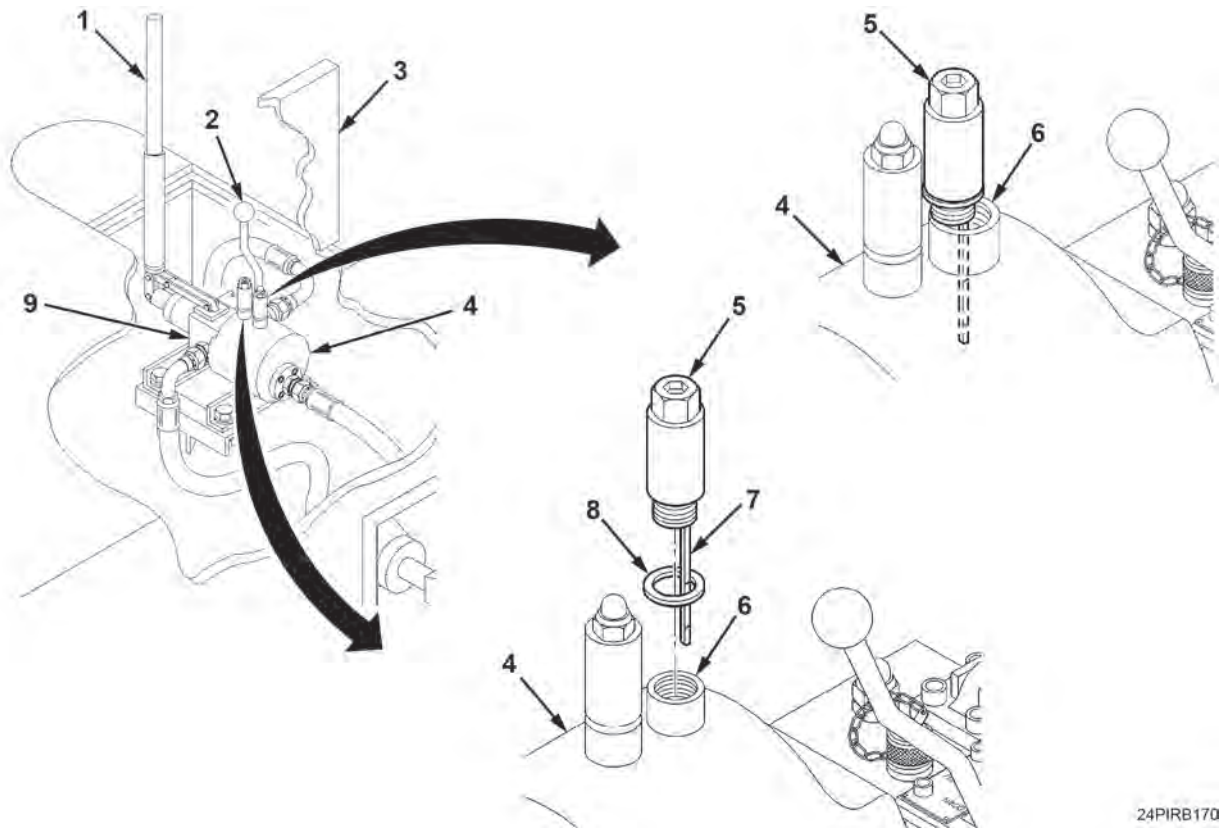
1. Open access cover (Figure 1, Item 3) and place control lever (Figure 1, Item 2) on pump (Figure 1, Item 9) to TRANSPORT/CROSSING position.
2. Install handle (Figure 1, Item 1) on pump (Figure 1, Item 9) and operate handle approximately 30 strokes to bleed pump.

NOTE

Do not thread filler cap on reservoir when checking fluid level.

3. Remove filler cap (Figure 1, Item 5) with dipstick (Figure 1, Item 7) from pump reservoir (Figure 1, Item 4) and check fluid level using filler cap dipstick.
4. Position filler cap (Figure 1, Item 5) threads onto reservoir opening (Figure 1, Item 6) with threads on top of opening to check level, and fill reservoir (Figure 1, Item 4) to MAX position on dipstick (Figure 1, Item 7), if necessary.
5. Check gasket seal (Figure 1, Item 8) on filler cap (Figure 1, Item 5) with dipstick (Figure 1, Item 7) for damage and replace, if necessary.
6. Install filler cap (Figure 1, Item 5) on pump reservoir (Figure 1, Item 4).

BLEED PUMP - Continued



24PIRB170

Figure 1. Pump and Filler Cap.

END OF TASK

BLEED CYLINDER**NOTE**

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

1. Place control lever (Figure 2, Item 2) to UP position (Figure 2, Item 10) on pump (Figure 2, Item 1).
2. Remove cap (Figure 2, Item 6) from valve (Figure 2, Item 5) and connect deflation hose (Figure 2, Item 7) to valve on cylinder (Figure 2, Item 9). Place other end of deflation hose in clean drain pan.

NOTE

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

3. Operate pump handle (Figure 2, Item 3) until piston rod or yoke (Figure 2, Item 8) is fully extended.
4. Disconnect deflation hose (Figure 2, Item 7) from valve (Figure 2, Item 5) on cylinder (Figure 2, Item 9) and install cap (Figure 2, Item 6) on valve.

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 comply may result in personnel injury or death and/or damage to equipment.

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

BLEED CYLINDER - Continued

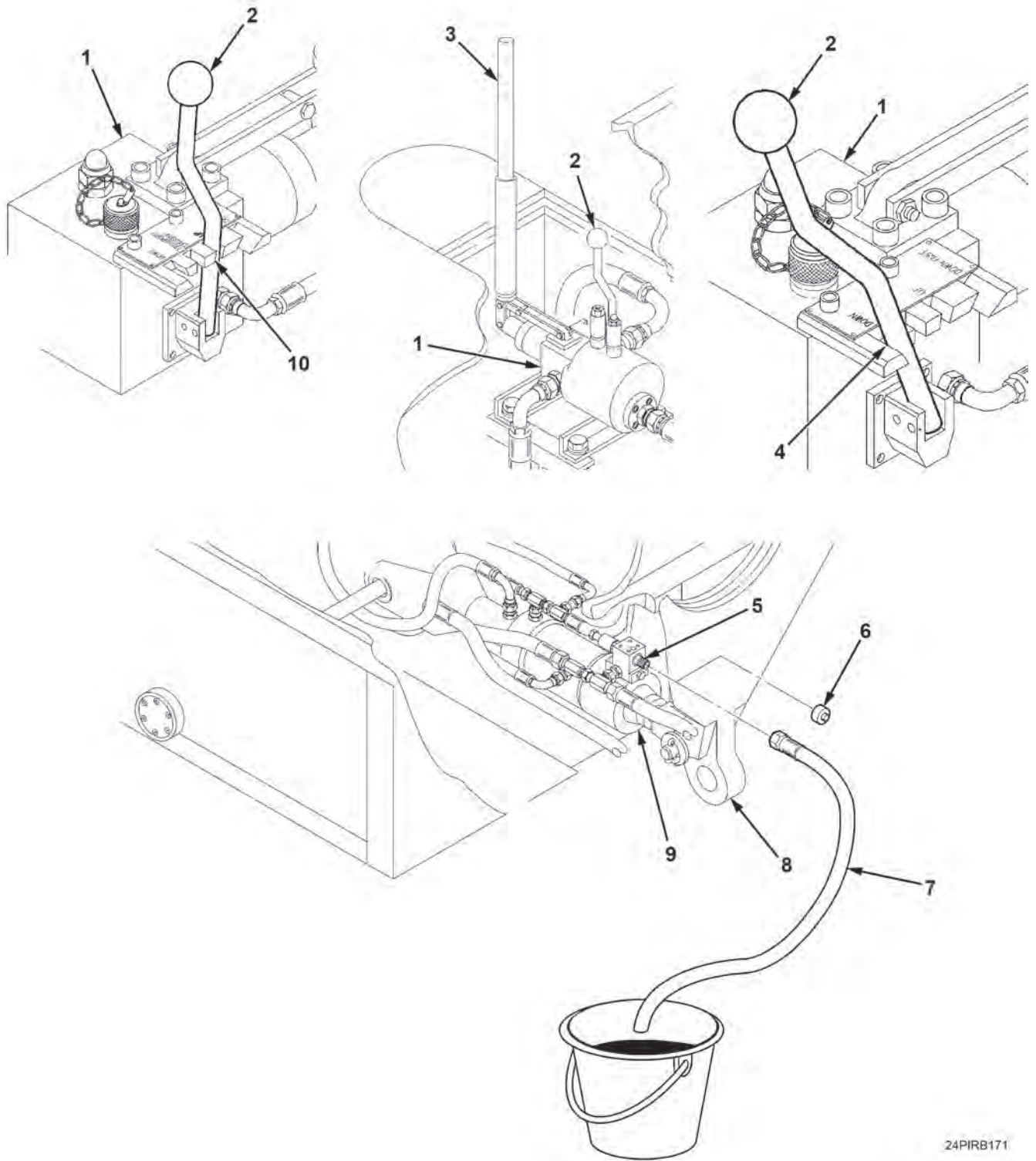


Figure 2. Bleed Cylinder.

24PIRB171

BLEED CYLINDER - Continued

7. Place control lever (Figure 3, Item 2) to TRANSPORT/CROSSING position (Figure 3, Item 7) on pump (Figure 3, Item 5).
8. Position pump handle (Figure 3, Item 1) in such a way that the piston rod (Figure 3, Item 8) on pump (Figure 3, Item 5) is retracted to the stop, and remove handle.
9. Check O-ring seal (Figure 3, Item 4) on filler cap with dipstick (Figure 3, Item 3) for damage and replace, if necessary.
10. Install filler cap with dipstick (Figure 3, Item 3) on pump reservoir (Figure 3, Item 6).
11. Check all hoses and connections for signs of leaks.

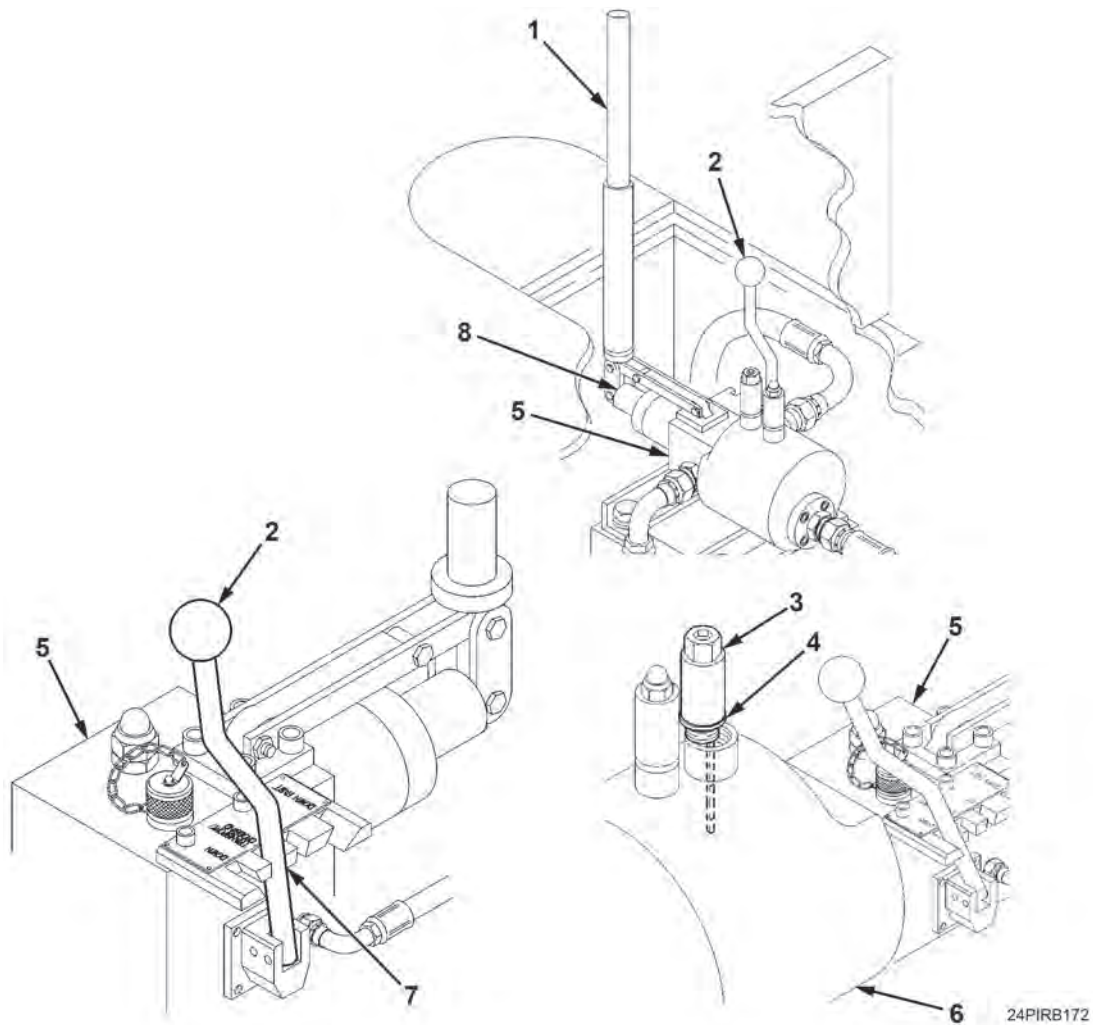


Figure 3. Cylinder Assembly.

END OF TASK

FOLLOW-ON MAINTENANCE

Fold pontoons and load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE PUMP FILTER ELEMENT REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drain pan (WP 0130, Table 1, Item 21)
Filter wrench (WP 0130, Table 1, Item 33)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

Materials/Parts (cont.)

O-ring (WP 0131, Table 1, Item 20)
Dunnage

References

WP 0045
WP 0072

Materials/Parts

Face shield (WP 0129, Table 1, Item 12)
Nitrile gloves (WP 0129, Table 1, Item 14)
Filter element (WP 0131, Table 1, Item 26)
Lockwasher Qty: 4 (WP 0131, Table 1, Item 4)

Equipment Condition

Bay removed from transporter and unfolded
(TM 5-5420-278-10)
Pump drained (WP 0044)

WARNING



Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Failure to comply may result in personnel injury or death and/or damage to the environment.

NOTE

- Both pumps have a filter element and are removed and installed the same way. This task covers only one filter element. Have drain pan ready to catch fluids.
- Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.

REMOVAL**WARNING**

Relieve residual pressure on fluid system before disconnecting lines. Failure to comply may result in personnel injury or death and/or damage to equipment.

1. Move control valve lever to all positions and then place lever in TRANSPORT/CROSSING position.
2. Remove hose assembly (Figure 1, Item 5) from neutral quick-disconnect coupling fitting (Figure 1, Item 7) on bracket (Figure 1, Item 6).
3. Remove four nuts (Figure 1, Item 12), eight washers (Figure 1, Item 3), and screws (Figure 1, Item 2) from two pump mounting brackets (Figure 1, Item 1) and support brackets (Figure 1, Item 9).
4. Stand pump assembly (Figure 1, Item 4) on end to access pump reservoir access cover (Figure 1, Item 16).
5. Remove four screws (Figure 1, Item 11), lockwashers (Figure 1, Item 10), and pump reservoir access cover (Figure 1, Item 16) with O-ring (Figure 1, Item 15) from pump reservoir (Figure 1, Item 4). Discard lockwashers.
6. Remove O-ring (Figure 1, Item 15) from access cover (Figure 1, Item 16). Discard O-ring.

NOTE

The single filter assembly is held in place by an O-ring seal that may require some twisting to remove.

7. Using filter wrench (Figure 1, Item 8), pull or untwist filter element (Figure 1, Item 14) from filter support tube (Figure 1, Item 13) inside pump reservoir (Figure 1, Item 4). Discard filter element.

END OF TASK**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.

1. Push or screw new filter element (Figure 1, Item 14) down on filter support tube (Figure 1, Item 13) inside pump reservoir (Figure 1, Item 4).
2. Apply fluid to new O-ring (Figure 1, Item 15) and install O-ring on pump reservoir access cover (Figure 1, Item 16).
3. Install access cover (Figure 1, Item 16) on pump reservoir (Figure 1, Item 4) with four new lockwashers (Figure 1, Item 10) and screws (Figure 1, Item 11).
4. Position pump assembly (Figure 1, Item 4) on two support brackets (Figure 1, Item 9) and install eight washers (Figure 1, Item 3), four screws (Figure 1, Item 2), and nuts (Figure 1, Item 12).
5. Install hose assembly (Figure 1, Item 5) on neutral quick-disconnect coupling fitting (Figure 1, Item 7).

FOLLOW-ON MAINTENANCE

1. Fill pump reservoir (WP 0044).
2. Bleed fluid system (WP 0045).
3. Fold bay and load on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE PUMP REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Drain pan (WP 0130, Table 1, Item 21)

Materials/Parts

Cap and plug set (WP 0129, Table 1, Item 6)
Face shield (WP 0129, Table 1, Item 12)
Marker tags (WP 0129, Table 1, Item 27)
Nitrile gloves (WP 0129, Table 1, Item 14)
Pipe sealant (WP 0129, Table 1, Item 25)

Materials/Parts (cont.)

Propylene glycol (WP 0129, Table 1, Item 23)
O-ring Qty: 3 (WP 0131, Table 1, Item 1)

References

WP 0045
WP 0072

Equipment Condition

Ramp bay removed from transporter and
unfolded (TM 5-5420-278-10)
Pump drained (WP 0044)

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Failure to comply may result in personnel injury or death and/or damage to the environment.

CAUTION

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

NOTE

- Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.
- Removal and installation of pumps are the same. Right side is shown.
- Tag all hoses for installation.
- Have drain pan ready to catch oil.

REMOVAL**WARNING**

Relieve residual pressure on fluid system before disconnecting lines. Failure to comply may result in personnel injury or death and/or damage to equipment.

1. Move control valve lever to all positions and then place lever in TRANSPORT/CROSSING position.
2. Remove hose assembly (Figure 1, Item 8) and O-ring (Figure 1, Item 3) from adapter (Figure 1, Item 2) on pump reservoir access cover (Figure 1, Item 7). Discard O-ring.
3. Remove hose assembly (Figure 1, Item 4) and O-ring (Figure 1, Item 3) from adapter (Figure 1, Item 2) on pump housing (Figure 1, Item 13). Discard O-ring.
4. Remove hose assembly (Figure 1, Item 12) and O-ring (Figure 1, Item 3) from adapter (Figure 1, Item 2) on pump housing (Figure 1, Item 13). Discard O-ring.
5. Remove four nuts (Figure 1, Item 11), screws (Figure 1, Item 5), eight washers (Figure 1, Item 6), and pump (Figure 1, Item 1) from two support brackets (Figure 1, Item 10) on inner pontoon (Figure 1, Item 9).
6. Remove two adapters (Figure 1, Item 2) from pump housing (Figure 1, Item 13).
7. Remove adapter (Figure 1, Item 2) from pump reservoir access cover (Figure 1, Item 7).

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

Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

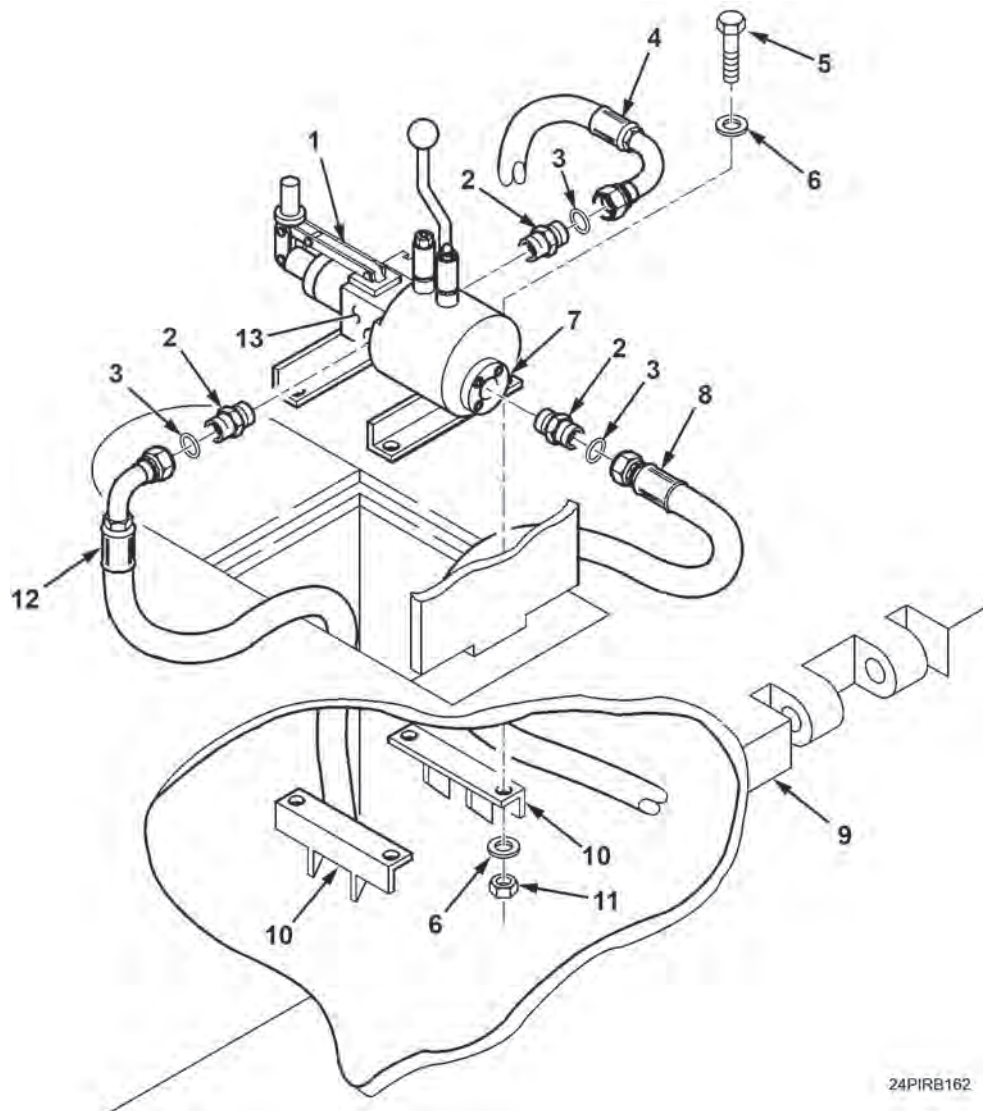
NOTE

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).

1. Apply sealant to male threads of adapters (Figure 1, Item 2).
2. Install adapter (Figure 1, Item 2) on pump reservoir access cover (Figure 1, Item 7).
3. Install adapters (Figure 1, Item 2) on pump housing (Figure 1, Item 13).
4. Install pump (Figure 1, Item 1) on two support brackets (Figure 1, Item 10) on inner pontoon (Figure 1, Item 9) with eight washers (Figure 1, Item 6), four screws (Figure 1, Item 5), and nuts (Figure 1, Item 11).
5. Apply fluid to three new O-rings (Figure 1, Item 3) and install O-rings on hose assemblies (Figure 1, Items 4, 8, and 12).

INSTALLATION - Continued

6. Connect hose assembly (Figure 1, Item 12) with O-ring (Figure 1, Item 3) to adapter (Figure 1, Item 2) on pump housing (Figure 1, Item 13).
7. Connect hose assembly (Figure 1, Item 4) with O-ring (Figure 1, Item 3) to adapter (Figure 1, Item 2) on pump housing (Figure 1, Item 13).
8. Connect hose assembly (Figure 1, Item 8) with O-ring (Figure 1, Item 3) to adapter (Figure 1, Item 2) on pump reservoir access cover (Figure 1, Item 7).



24PIRB162

Figure 1. Pump Replacement.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Fill pump reservoir system (WP 0044).
2. Bleed fluid system (WP 0045).
3. Fold bay and load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE CYLINDER REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drain pan (WP 0130, Table 1, Item 21)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)
Suitable lifting device
Suitable Strap

Personnel Required

Mechanic
Assistant (2)

References

WP 0044
WP 0045
WP 0072

Equipment Condition

Ramp bay removed from transporter
(TM 5-5420-278-10)
Inner and outer pontoons unfolded and separated
(WP 0025)
Yoke removed or lifted and secured in UP
position (WP 0043)
Pump removed (WP 0047)

Materials/Parts

Cap and plug set (WP 0129, Table 1, Item 6)
Face shield (WP 0129, Table 1, Item 12)
Marker tags (WP 0129, Table 1, Item 27)
Nitrile gloves (WP 0129, Table 1, Item 14)
Pipe sealant (WP 0129, Table 1, Item 25)
Propylene glycol (WP 0129, Table 1, Item 23)
Gasket (WP 0131, Table 1, Item 35)
O-ring (WP 0131, Table 1, Item 1)
Dunnage

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Failure to comply may result in personnel injury or death and/or damage to the environment.

CAUTION

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

REMOVAL**WARNING**

Relieve residual pressure on fluid system before disconnecting lines. Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

- Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.
 - Removal and installation of cylinders are the same. Left side is shown.
 - Tag all hoses for installation.
 - Have drain pan ready to catch fluid.
1. Move control valve lever to all positions and then place lever in TRANSPORT/CROSSING position.
 2. Loosen nut (Figure 1, Item 12) and remove tee fitting (Figure 1, Item 11) with hoses from adapter (Figure 1, Item 6) of cylinder (Figure 1, Item 4).
 3. Loosen nut (Figure 1, Item 13) and remove tee fitting (Figure 1, Item 7) with hoses from adapter (Figure 1, Item 6) on fluid lock assembly (Figure 1, Item 5).
 4. Remove hose assembly (Figure 1, Item 17) and O-ring (Figure 1, Item 16) from adapter (Figure 1, Item 15) on cylinder (Figure 1, Item 4). Discard O-ring.
 5. Remove six screws (Figure 1, Item 2), access cover (Figure 1, Item 3), and rubber stop pad (Figure 1, Item 1) from inner pontoon (Figure 1, Item 8).
 6. Support cylinder (Figure 1, Item 4) and cylinder end yoke (Figure 1, Item 9), and remove retainer pin (Figure 1, Item 10) from cylinder end yoke and inner pontoon (Figure 1, Item 8).

WARNING

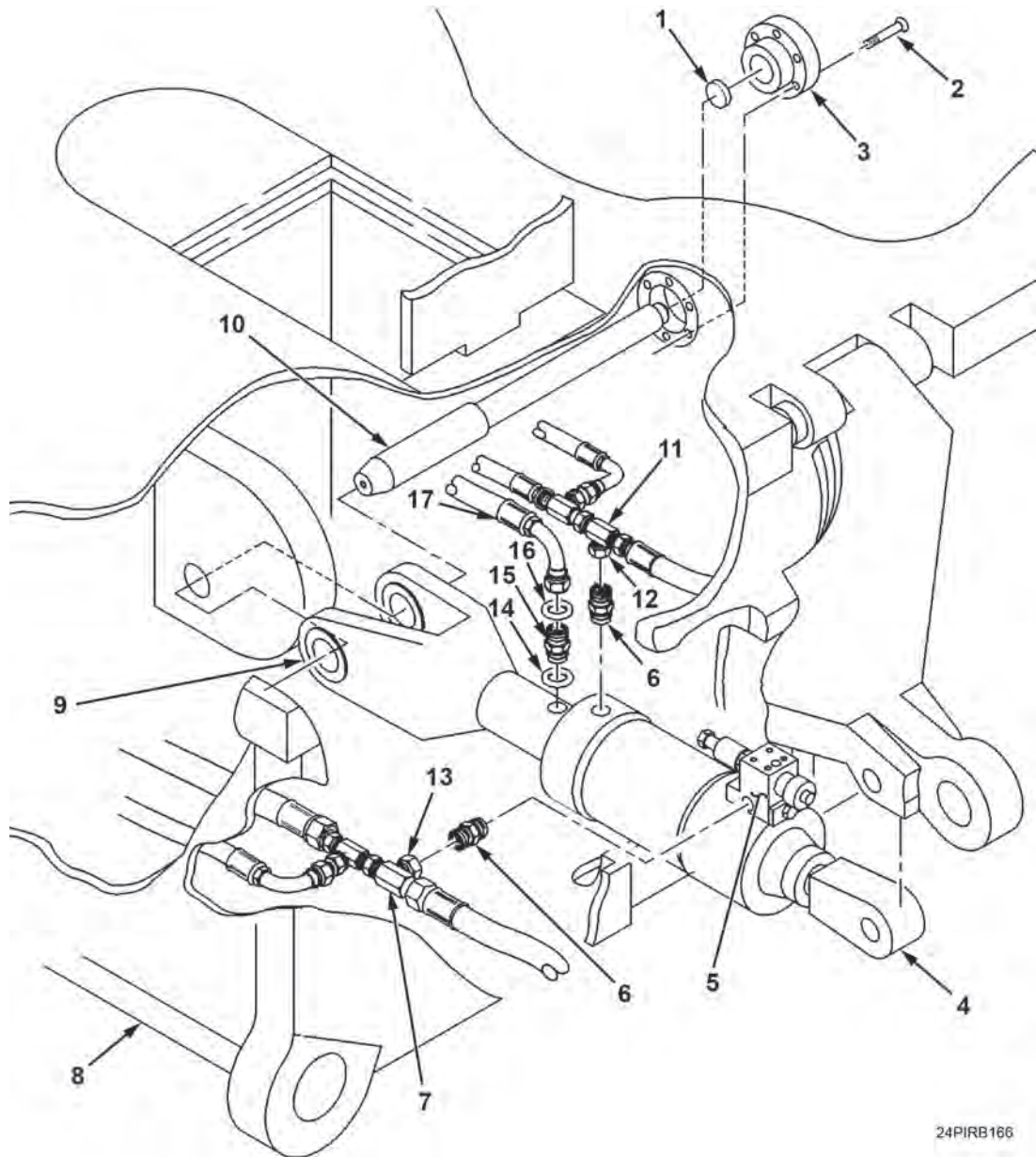
Ensure proper lifting techniques are followed when removing or installing heavy components. Use assistants and/or suitable lifting device when lifting heavy parts of components. Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

Assistant will help with Step 7 (each cylinder weighs 342 lbs or 155 kg).

7. Using lifting device, strap, and assistant, remove cylinder (Figure 1, Item 4) from opening in inner pontoon (Figure 1, Item 8).
8. Remove adapter (Figure 1, Item 6) from fluid lock assembly (Figure 1, Item 5).
9. Remove adapter (Figure 1, Item 6) from cylinder housing (Figure 1, Item 4).
10. Remove adapter (Figure 1, Item 15) and gasket (Figure 1, Item 14) from cylinder (Figure 1, Item 4). Discard gasket.

REMOVAL - Continued



24PIRB166

Figure 1. Cylinder Removal.

END OF TASK

INSTALLATION

1. Install new gasket (Figure 2, Item 14) and adapter (Figure 2, Item 15) on cylinder (Figure 2, Item 4).

WARNING

Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

2. Apply sealant to male threads of adapter (Figure 2, Item 6) and install adapter on cylinder (Figure 2, Item 4).
3. Apply sealant to male threads of adapter (Figure 2, Item 6) and install adapter on fluid lock assembly (Figure 2, Item 5).

WARNING

Ensure proper lifting techniques are followed when removing or installing heavy components. Use assistants and/or suitable lifting device when lifting heavy parts of components. Failure to comply may result in personnel injury or death and/or damage to equipment.

NOTE

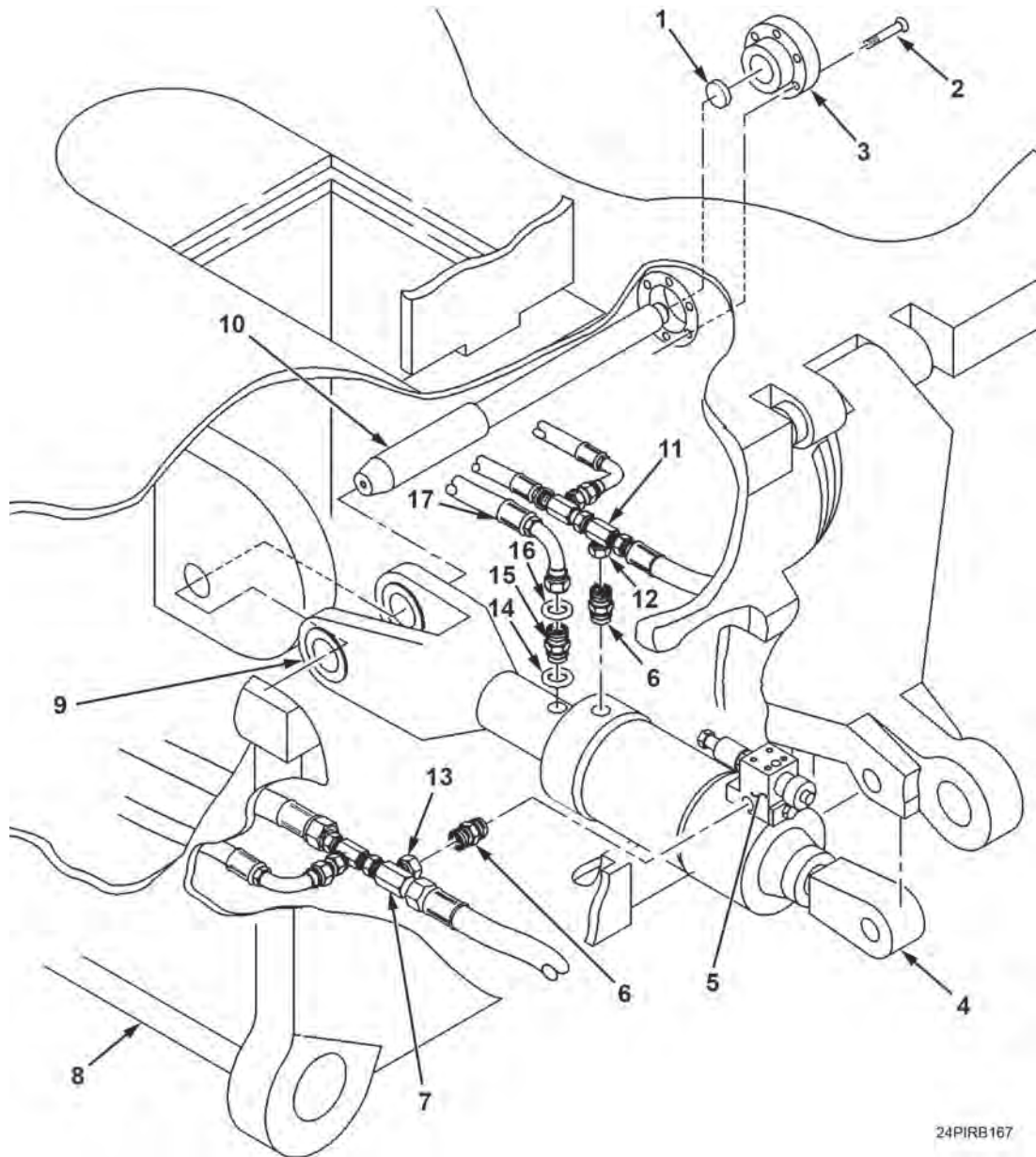
- Assistant will help with Step 4 (each cylinder weighs 342 lbs or 155 kg).
 - Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
4. Using lifting device, strap, and assistant, position cylinder (Figure 2, Item 4) and cylinder end yoke (Figure 2, Item 9) in opening on inner pontoon (Figure 2, Item 8) and install retainer pin (Figure 2, Item 10) through inner pontoon and cylinder end yoke.
 5. Install rubber stop pad (Figure 2, Item 1) and access cover (Figure 2, Item 3) on inner pontoon (Figure 2, Item 8) and retainer pin (Figure 2, Item 10) with six screws (Figure 2, Item 2).

NOTE

Apply a light coat of propylene glycol to new O-ring prior to installation.

6. Install new O-ring (Figure 2, Item 16) and hose assembly (Figure 2, Item 17) on adapter (Figure 2, Item 15) on cylinder (Figure 2, Item 4).
7. Install tee fitting (Figure 2, Item 7) with hoses attached on adapter (Figure 2, Item 6) of fluid lock assembly (Figure 2, Item 5) and tighten nut (Figure 2, Item 13).
8. Install tee fitting (Figure 2, Item 11) with hoses attached on adapter (Figure 2, Item 6) of cylinder (Figure 2, Item 4) and tighten nut (Figure 2, Item 12).

INSTALLATION - Continued



24PIRB167

Figure 2. Cylinder Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install pump (WP 0047).
2. Install lower yoke (WP 0043).
3. Fill fluid system (WP 0044).
4. If separated, connect outer and inner pontoons (WP 0025).
5. Bleed fluid system (WP 0045).
6. Fold and load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE HOSE ASSEMBLIES AND FITTINGS REPAIR

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drain pan (WP 0130, Table 1, Item 21)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)

Materials/Parts

Cap and plug set (WP 0129, Table 1, Item 6)
Grease (WP 0129, Table 1, Item 16)
Marker tags (WP 0129, Table 1, Item 27)
Nitrile gloves (WP 0129, Table 1, Item 14)
Pipe sealant (WP 0129, Table 1, Item 25)
Propylene glycol (WP 0129, Table 1, Item 23)

Materials/Parts (cont.)

Gasket (WP 0131, Table 1, Item 35)
Lockwasher Qty: 2 (WP 0131, Table 1, Item 29)
O-ring Qty: 13 (WP 0131, Table 1, Item 1)

References

WP 0045
WP 0072

Equipment Condition

Ramp bay removed from transporter and
unfolded (TM 5-5420-278-10)
Pump system drained (WP 0044)
Pump removed (WP 0047)

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids. Failure to comply may result in personnel injury or death and/or damage to the environment.

CAUTION

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

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.
- Fluid system must be bled whenever pumps, cylinders, or hoses are replaced.
- Tag all hoses for installation.
- Have drain pan ready to catch fluid.

REMOVAL

1. Remove two nuts (Figure 1, Item 5), lockwashers (Figure 1, Item 6), screws (Figure 1, Item 41), and clamps (Figure 1, Item 49) with hose assembly (Figure 1, Item 48) from support brackets (Figure 1, Item 50). Discard lockwashers.
2. Remove hose assembly (Figure 1, Item 48) and O-ring (Figure 1, Item 47) from adapter (Figure 1, Item 46) on end of cylinder (Figure 1, Item 19). Discard O-ring.
3. Remove adapter (Figure 1, Item 46) and gasket (Figure 1, Item 45) from end of cylinder (Figure 1, Item 19). Discard gasket.
4. Remove pressure-limiting valve (Figure 1, Item 8), O-ring (Figure 1, Item 7), and clamps (Figure 1, Item 49) from hose assembly (Figure 1, Item 48). Discard O-ring.
5. Remove hose assembly (Figure 1, Item 44) and O-ring (Figure 1, Item 43) from tee fitting (Figure 1, Item 24). Discard O-ring.
6. Remove hose assembly (Figure 1, Item 26) and O-rings (Figure 1, Items 25 and 38) from tee fitting (Figure 1, Item 24) and bulkhead fitting (Figure 1, Item 4) on support bracket (Figure 1, Item 39). Discard O-rings.
7. Remove hose assembly (Figure 1, Item 21) and O-rings (Figure 1, Items 22 and 31) from tee fitting (Figure 1, Item 23) and bulkhead fitting (Figure 1, Item 4) on support bracket (Figure 1, Item 34). Discard O-rings.

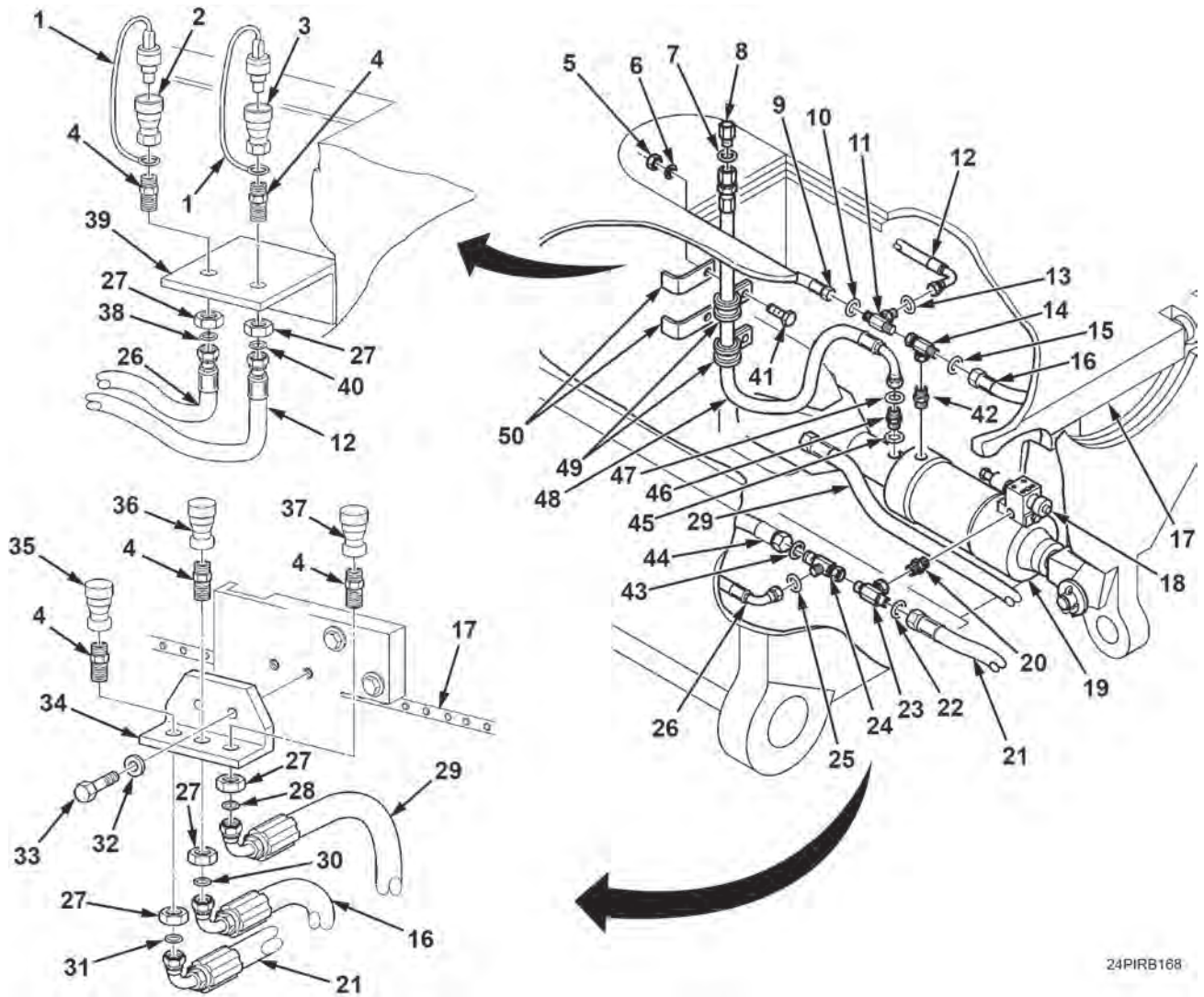
NOTE

Note position of tee fittings for installation.

8. Remove tee fittings (Figure 1, Items 23 and 24) from adapter (Figure 1, Item 20) on cylinder fluid lock assembly (Figure 1, Item 18).
9. Remove adapter (Figure 1, Item 20) from cylinder fluid lock assembly (Figure 1, Item 18).
10. Remove hose assembly (Figure 1, Item 9) and O-ring (Figure 1, Item 10) from tee fitting (Figure 1, Item 11). Discard O-ring.
11. Remove hose assembly (Figure 1, Item 12) and O-rings (Figure 1, Items 13 and 40) from tee fitting (Figure 1, Item 11) and bulkhead fitting (Figure 1, Item 4) on support bracket (Figure 1, Item 39). Discard O-rings.
12. Remove hose assembly (Figure 1, Item 16) and O-rings (Figure 1, Items 15 and 30) from tee fitting (Figure 1, Item 14) and bulkhead fitting (Figure 1, Item 4) on support bracket (Figure 1, Item 34). Discard O-rings.
13. Remove tee fittings (Figure 1, Items 11 and 14) from adapter (Figure 1, Item 42) on cylinder (Figure 1, Item 19).
14. Remove adapter (Figure 1, Item 42) from cylinder (Figure 1, Item 19).
15. Remove hose assembly (Figure 1, Item 29) and O-ring (Figure 1, Item 28) from bulkhead fitting (Figure 1, Item 4) on support bracket (Figure 1, Item 34). Discard O-ring.
16. Remove quick-disconnects (Figure 1, Items 2 and 3) with cap retainers (Figure 1, Item 1) from two bulkhead fittings (Figure 1, Item 4) on support bracket (Figure 1, Item 39).
17. Remove two nuts (Figure 1, Item 27) and bulkhead fittings (Figure 1, Item 4) from support bracket (Figure 1, Item 39).
18. Remove quick-disconnects (Figure 1, Items 35, 36, and 37) from three bulkhead fittings (Figure 1, Item 4) on support bracket (Figure 1, Item 34).
19. Remove three nuts (Figure 1, Item 27) and bulkhead fittings (Figure 1, Item 4) from support bracket (Figure 1, Item 34).

REMOVAL - Continued

20. Remove two screws (Figure 1, Item 33), washers (Figure 1, Item 32), and support bracket (Figure 1, Item 34) from end of inner pontoon (Figure 1, Item 17).



24PIRB168

Figure 1. Hose Assemblies and Fittings Removal.

END OF TASK

INSTALLATION

WARNING



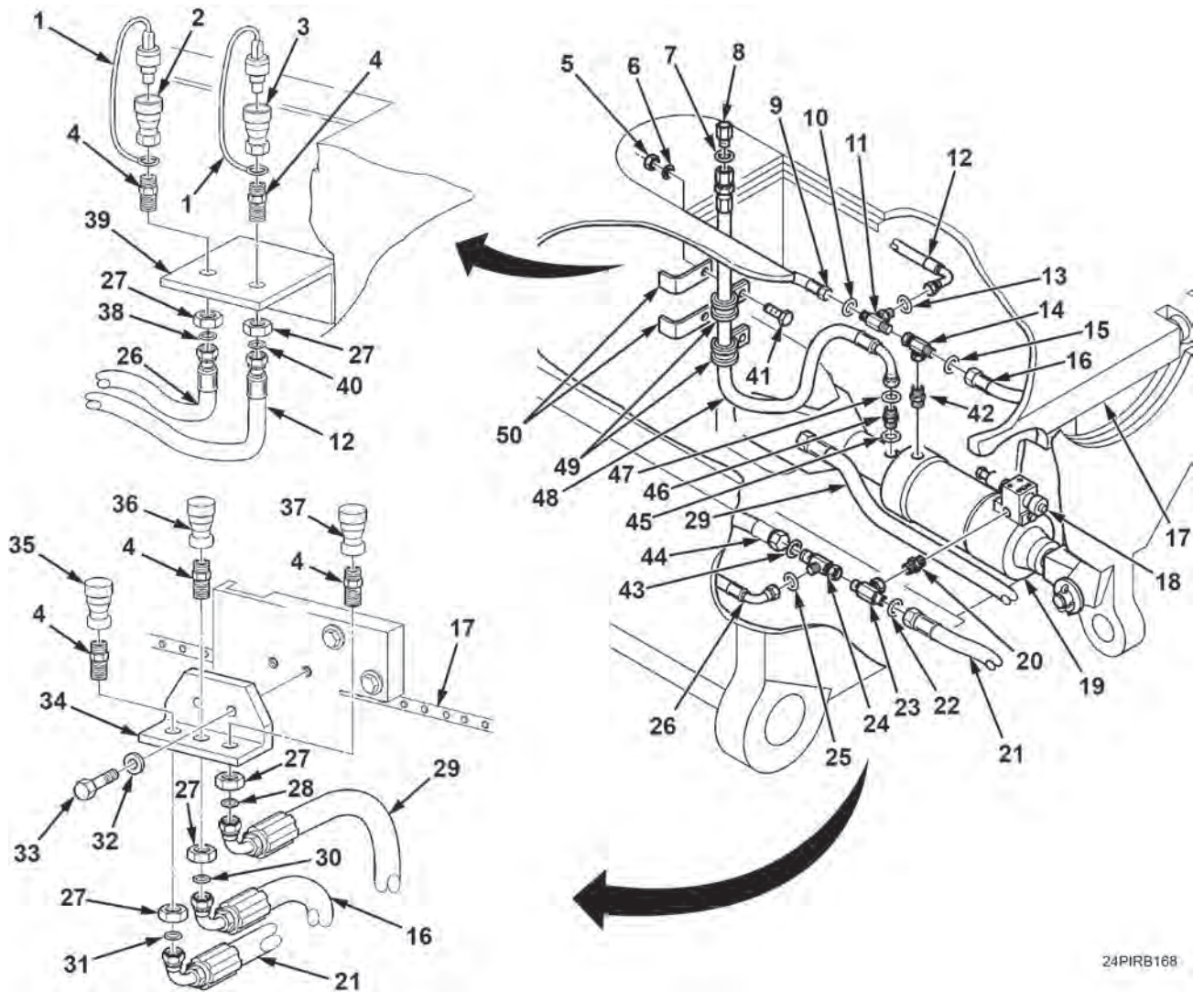
Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

NOTE

- Apply sealant to all male pipe threads at installation.
 - Apply a light coat of propylene glycol to all new O-rings at installation.
 - Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).
1. Install support bracket (Figure 2, Item 34) on end of inner pontoon (Figure 2, Item 17) with two washers (Figure 2, Item 32) and screws (Figure 2, Item 33).
 2. Install three bulkhead fittings (Figure 2, Item 4) on support bracket (Figure 2, Item 34) with three nuts (Figure 2, Item 27).
 3. Install quick-disconnects (Figure 2, Items 35, 36, and 37) on three bulkhead fittings (Figure 2, Item 4).
 4. Install two bulkhead fittings (Figure 2, Item 4) on support bracket (Figure 2, Item 39) with two nuts (Figure 2, Item 27).
 5. Install quick-disconnects (Figure 2, Items 2 and 3) with cap retainers (Figure 2, Item 1), if equipped, first on bulkhead fittings (Figure 2, Item 4).
 6. Install new O-ring (Figure 2, Item 28) and hose assembly (Figure 2, Item 29) on bulkhead fitting (Figure 2, Item 4).
 7. Install adapter (Figure 2, Item 42) on cylinder (Figure 2, Item 19).
 8. Install tee fittings (Figure 2, Items 11 and 14) on adapter (Figure 2, Item 42).
 9. Install new O-rings (Figure 2, Items 15 and 30) and hose assembly (Figure 2, Item 16) on tee fitting (Figure 2, Item 14) and bulkhead fitting (Figure 2, Item 4) on support bracket (Figure 2, Item 34).
 10. Install new O-rings (Figure 2, Items 13 and 40) and hose assembly (Figure 2, Item 12) on tee fitting (Figure 2, Item 11) and bulkhead fitting (Figure 2, Item 4) of support bracket (Figure 2, Item 39).
 11. Install new O-ring (Figure 2, Item 10) and hose assembly (Figure 2, Item 9) on tee fitting (Figure 2, Item 11).
 12. Install adapter (Figure 2, Item 20) on cylinder fluid lock assembly (Figure 2, Item 18).
 13. Install tee fittings (Figure 2, Items 23 and 24) on adapter (Figure 2, Item 20) on cylinder fluid lock assembly (Figure 2, Item 18).
 14. Install new O-rings (Figure 2, Items 22 and 31) and hose assembly (Figure 2, Item 21) on tee fitting (Figure 2, Item 24) and bulkhead fitting (Figure 2, Item 4) on support bracket (Figure 2, Item 34).
 15. Install new O-rings (Figure 2, Items 25 and 38) and hose assembly (Figure 2, Item 26) on tee fitting (Figure 2, Item 24) and bulkhead fitting (Figure 2, Item 4) on support bracket (Figure 2, Item 39).
 16. Install new O-ring (Figure 2, Item 43) and hose assembly (Figure 2, Item 44) on tee fitting (Figure 2, Item 24).

INSTALLATION - Continued

17. Apply a light coat of grease to top of pressure-limiting valve (Figure 2, Item 8) and install new O-ring (Figure 2, Item 7) and pressure-limiting valve on hose assembly (Figure 2, Item 48).
18. Install new gasket (Figure 2, Item 45) and adapter (Figure 2, Item 46) on end of cylinder (Figure 2, Item 19).
19. Install new O-ring (Figure 2, Item 47) and hose assembly (Figure 2, Item 48) on adapter (Figure 2, Item 46).
20. Install hose assembly (Figure 2, Item 48) on two support brackets (Figure 2, Item 50) with clamps (Figure 2, Item 49), screws (Figure 2, Item 41), new lockwashers (Figure 2, Item 6), and nuts (Figure 2, Item 5).



24PIRB168

Figure 2. Hose Assemblies and Fittings Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install pump (WP 0047).
2. Fill pump system (WP 0044).
3. Bleed pump system (WP 0045).
4. Fold and load ramp bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
INTERIOR BAY INNER PONTOON AND OUTER PONTOON SEPARATION (M17)

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Multiple leg sling (WP 0130, Table 1, Item 24)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)
Suitable lifting device

Personnel Required

Mechanic
Assistant

References

WP 0072

Equipment Condition

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

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Sealing compound (WP 0129, Table 1, Item 26)
Cotter pin Qty: 4 (WP 0131, Table 1, Item 12)
Locknut Qty: 2 (WP 0131, Table 1, Item 32)
Dunnage

WARNING

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

SEPARATING INNER PONTOONS

1. Use transporter (Figure 1, Item 2) or suitable lifting device (Figure 1, Item 9) and Improved Ribbon Bridge (IRB) hoisting gear sling (Figure 1, Item 10), raise bay (Figure 1, Item 1), position dunnage (Figure 1, Item 11) under inner pontoons (Figure 1, Item 4), and lower bay on dunnage.

NOTE

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

2. Attach suitable lifting device (Figure 1, Item 9) and IRB hoisting gear sling hooks (Figure 1, Item 12) to outer pontoon load receiving pins (Figure 1, Item 13) on outer pontoons (Figure 1, Item 3), and take up slack.
3. Remove two cotter pins (Figure 1, Item 18) and washers (Figure 1, Item 16) and pin (Figure 1, Item 17), from cover (Figure 1, Item 20) and shaft of bell crank (Figure 1, Item 24). Discard cotter pins.
4. Remove two nuts (Figure 1, Item 5), screws (Figure 1, Item 14), and connecting links (Figure 1, Item 19) and cover (Figure 1, Item 20) from inner pontoon brackets (Figure 1, Item 6).
5. Remove locknut (Figure 1, Item 15) and screw (Figure 1, Item 22) from front collar (Figure 1, Item 21), drive shaft of bell crank (Figure 1, Item 24) forward, and remove collar. Discard locknut.

NOTE

Note location and quantity of washers for installation.

6. Remove bell crank (Figure 1, Item 24) from inner pontoon hinges (Figure 1, Items 8 and 23), and remove washers (Figure 1, Item 7). Retain washers for installation.
7. Repeat Steps 1 through 6 to remove bell crank (Figure 1, Item 24) from opposite end.

WARNING



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

8. Open two travel latches and lift and separate inner pontoons (Figure 1, Item 4) using lifting device (Figure 1, Item 9).
9. Set inner pontoon (Figure 1, Item 4) down, resting on dunnage (Figure 1, Item 11).

SEPARATING INNER PONTOONS - Continued

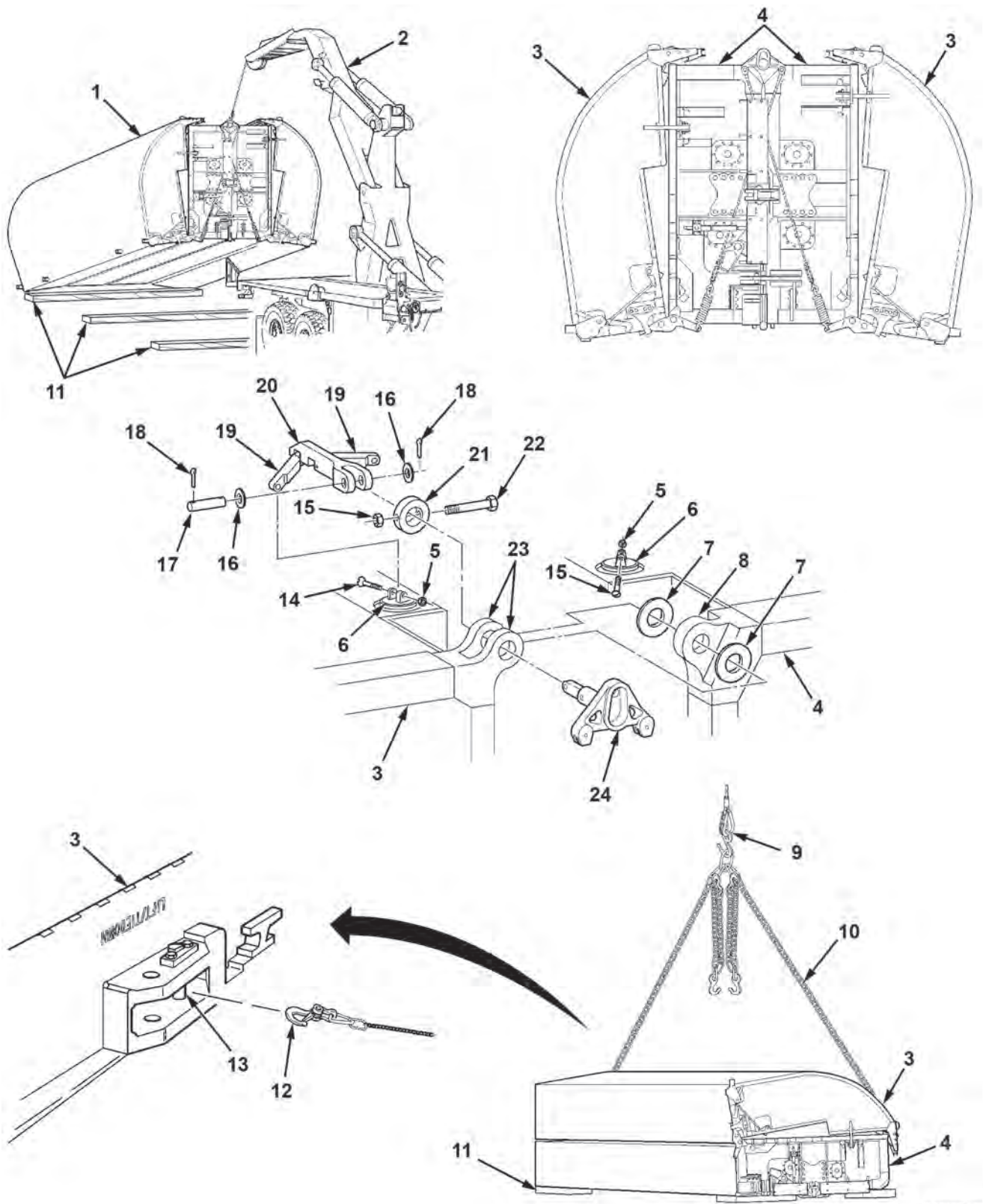


Figure 1. Inner Pontoon Separation.

SEPARATING OUTER PONTOONS FROM INNER PONTOONS**WARNING**

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

NOTE

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

1. Open two foldlocks (Figure 2, Item 6) from ends of outer pontoon (Figure 2, Item 4).

NOTE

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

2. Attach suitable lifting device (Figure 2, Item 2) and IRB hoisting gear sling (Figure 2, Item 3) hooks (Figure 2, Item 1) to load receiving pins (Figure 2, Item 17) of outer pontoon (Figure 2, Item 4). Lift and swing outer pontoon to open position, and lower outer pontoon down on dunnage (Figure 2, Item 16) so that outer pontoon is level with inner pontoon (Figure 2, Item 5).
3. Remove two screws (Figure 2, Item 7) and washers (Figure 2, Item 8) from bracket (Figure 2, Item 9), spacer (Figure 2, Item 18), and outer pontoon (Figure 2, Item 4).
4. Remove screw (Figure 2, Item 20) from pin (Figure 2, Item 13) and outer pontoon (Figure 2, Item 4).
5. Remove pin (Figure 2, Item 13), two connecting links (Figure 2, Item 11), and spacer plates (Figure 2, Item 19) from stabilizer (Figure 2, Item 12) and outer pontoon (Figure 2, Item 4).
6. Using suitable lifting device (Figure 2, Item 2), remove outer pontoon (Figure 2, Item 4) from inner pontoon (Figure 2, Item 5).
7. Remove spacer (Figure 2, Item 18) from outer pontoon (Figure 2, Item 4) and remove pin (Figure 2, Item 10) and bracket (Figure 2, Item 9) from stabilizer (Figure 2, Item 12). Save spacers for reassembly.
8. Remove five screws (Figure 2, Item 15) and bracket (Figure 2, Item 14) from outer pontoon (Figure 2, Item 4), if necessary.

NOTE

Perform Step 9 if inner pontoon will be moved.

9. Attach suitable lifting device (Figure 2, Item 2) and IRB hoisting gear sling (Figure 2, Item 3) hooks (Figure 2, Item 1) to two load receiving pins (Figure 2, Item 17) to lift inner pontoon (Figure 2, Item 5) from dunnage (Figure 2, Item 16).

SEPARATING OUTER PONTOONS FROM INNER PONTOONS - Continued

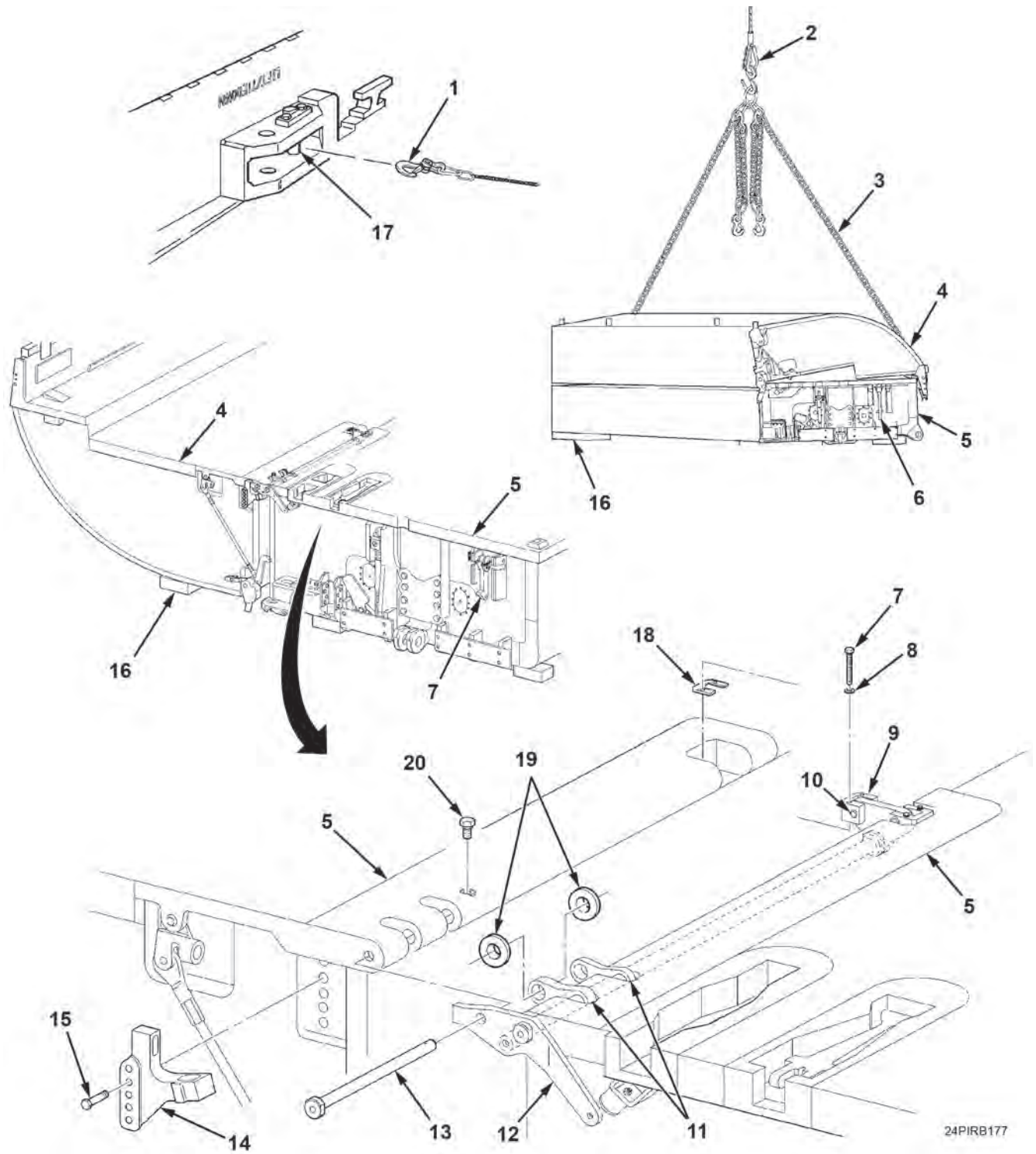


Figure 2. Outer Pontoon Separation.

END OF TASK

CONNECTING OUTER PONTOONS TO INNER PONTOONS**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 ((WP 0072)).
1. Install bracket (Figure 3, Item 3) on stabilizer lever (Figure 3, Item 20) with pin (Figure 3, Item 19).
 2. Position spacer (Figure 3, Item 4) in recess on outer pontoon (Figure 3, Item 5).
 3. Using lifting device (Figure 3, Item 11) and IRB hoisting gear sling (Figure 3, Item 12), position outer pontoon (Figure 3, Item 5) so that holes in stabilizer lever (Figure 3, Item 20) and bracket (Figure 3, Item 8) align with holes in outer pontoon.
 4. Using dunnage (Figure 3, Item 14), level and support outer pontoon (Figure 3, Item 5).
 5. Install pin (Figure 3, Item 21) and two spacer plates (Figure 3, Item 7) on stabilizer lever (Figure 3, Item 20), outer pontoon (Figure 3, Item 5), and two connecting links (Figure 3, Item 10).
 6. Install screw (Figure 3, Item 6) on outer pontoon (Figure 3, Item 5) and pin (Figure 3, Item 19) and install two washers (Figure 3, Item 2) and screws (Figure 3, Item 1) on bracket (Figure 3, Item 3), spacer (Figure 3, Item 4), and outer pontoon.
 7. Apply a light coat of sealing compound to back of bracket (Figure 3, Item 18), and install bracket on outer pontoon (Figure 3, Item 5) with five screws (Figure 3, Item 17).

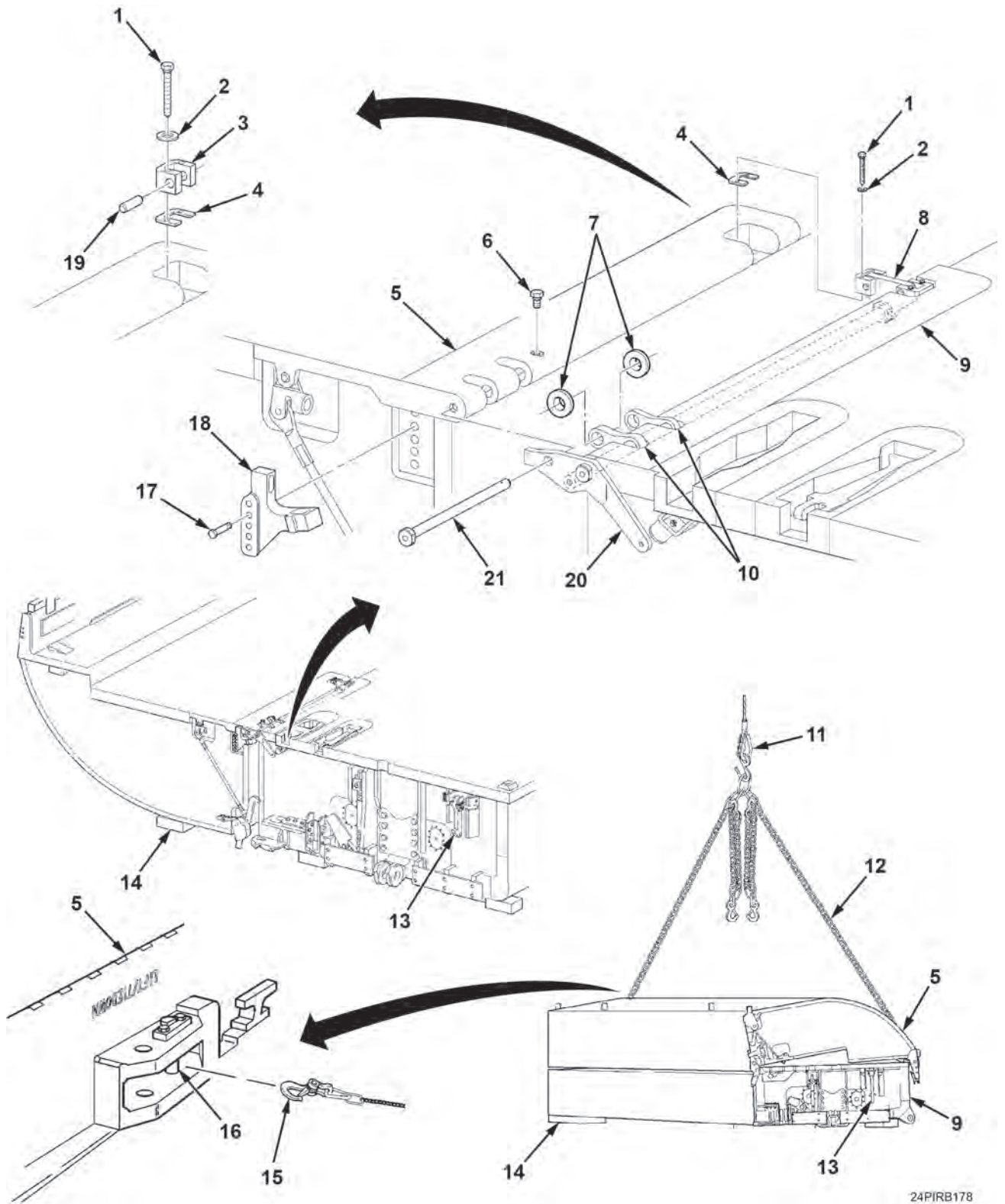
WARNING

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

NOTE

- Ensure the two long chains of the IRB hoisting gear sling are connected to the load receiving pins so pontoons will hang level during connection.
8. Attach lifting device (Figure 3, Item 11) and IRB hoisting gear sling hooks (Figure 3, Item 15) to load receiving pins (Figure 3, Item 16) on outer pontoon (Figure 3, Item 5), and lift and swing outer pontoon down on inner pontoon (Figure 3, Item 9).
 9. Close two foldlocks (Figure 3, Item 13) at ends of outer pontoon (Figure 3, Item 5).

CONNECTING OUTER PONTOONS TO INNER PONTOONS - Continued



24PIRB178

Figure 3. Connecting Outer Pontoon.

END OF TASK

0050-7

CONNECTING INNER PONTOONS**WARNING**

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

NOTE

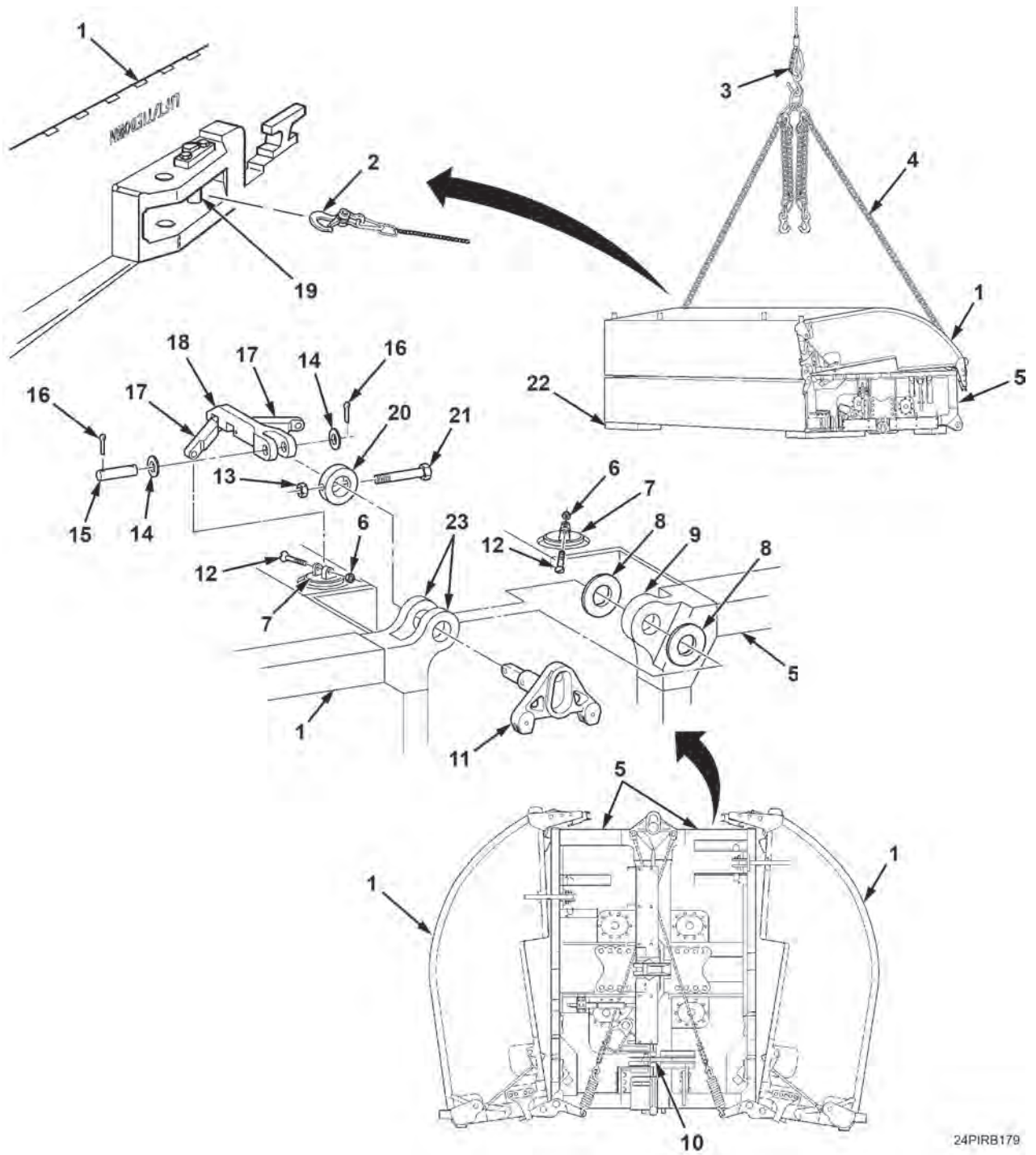
Ensure the two long chains of the IRB hoisting gear sling are connected to the load receiving pins so pontoons will hang level during connection.

1. Attach lifting device (Figure 4, Item 3) and IRB hoisting gear sling hooks (Figure 4, Item 2) to outer pontoon (Figure 4, Item 1) load receiving pins (Figure 4, Item 19), and lift outer pontoon and inner pontoon off dunnage (Figure 4, Item 22) 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 bell crank prior to installation.
 - Ensure that all mounting hardware is tightened to metric standards unless otherwise noted ((WP 0072)).
2. Using lifting device (Figure 4, Item 3) and IRB hoisting gear sling (Figure 4, Item 4), move inner pontoons (Figure 4, Item 5) together until hinges (Figure 4, Items 9 and 23) are aligned, then lock two travel latches (Figure 4, Item 10) on inner pontoons.
 3. Position two washers (Figure 4, Item 8) between hinges (Figure 4, Items 9 and 23) and push shaft of bell crank (Figure 4, Item 11) halfway in.
 4. Position collar (Figure 4, Item 20) over shaft of bell crank (Figure 4, Item 11) and push bell crank all the way in.
 5. Install collar (Figure 4, Item 20) on bell crank (Figure 4, Item 11) with screw (Figure 4, Item 21) and new locknut (Figure 4, Item 13).
 6. Install connecting links (Figure 4, Item 17) on inner pontoon brackets (Figure 4, Item 7) with two screws (Figure 4, Item 12) and nuts (Figure 4, Item 6).
 7. Connect cover (Figure 4, Item 18) to shaft of bell crank (Figure 4, Item 11) with two washers (Figure 4, Item 14), pin (Figure 4, Item 15), and two new cotter pins (Figure 4, Item 16).
 8. Repeat Steps 3 through 7 to install bell crank (Figure 4, Item 11) at opposite end of bay.

CONNECTING INNER PONTOONS - Continued



24PIRB179

Figure 4. Connecting Inner Pontoon.

END OF TASK

FOLLOW-ON MAINTENANCE

Fold and load interior bay on transporter (TM 5-5420-278-10).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
INTERIOR BAY CABLE ASSEMBLY SERVICE**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Suitable lifting device

Materials/Parts

Lubricating oil (WP 0129, Table 1, Item 21)
Lock pin Qty: 2 (WP 0131, Table 1, Item 16)
Spring pin Qty: 2 (WP 0131, Table 1, Item 7)
Dunnage

Personnel Required

Mechanic
Assistant

References

WP 0068

Equipment Condition

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

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 pontoon foldlocks and travel latches are in good mechanical condition and securely locked prior to lifting bay. Failure to comply may result in personnel injury or death and/or damage to equipment.

1. Using transporter (Figure 1, Item 2) or suitable lifting device, raise bay (Figure 1, Item 1) and position dunnage (Figure 1, Item 15) lengthwise under center of interior pontoons (Figure 1, Item 14). Lower bay on dunnage (Figure 1, Item 15).

NOTE

Perform Step 2 if replacing spring or turnbuckle bolt eye.

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

REMOVAL - Continued

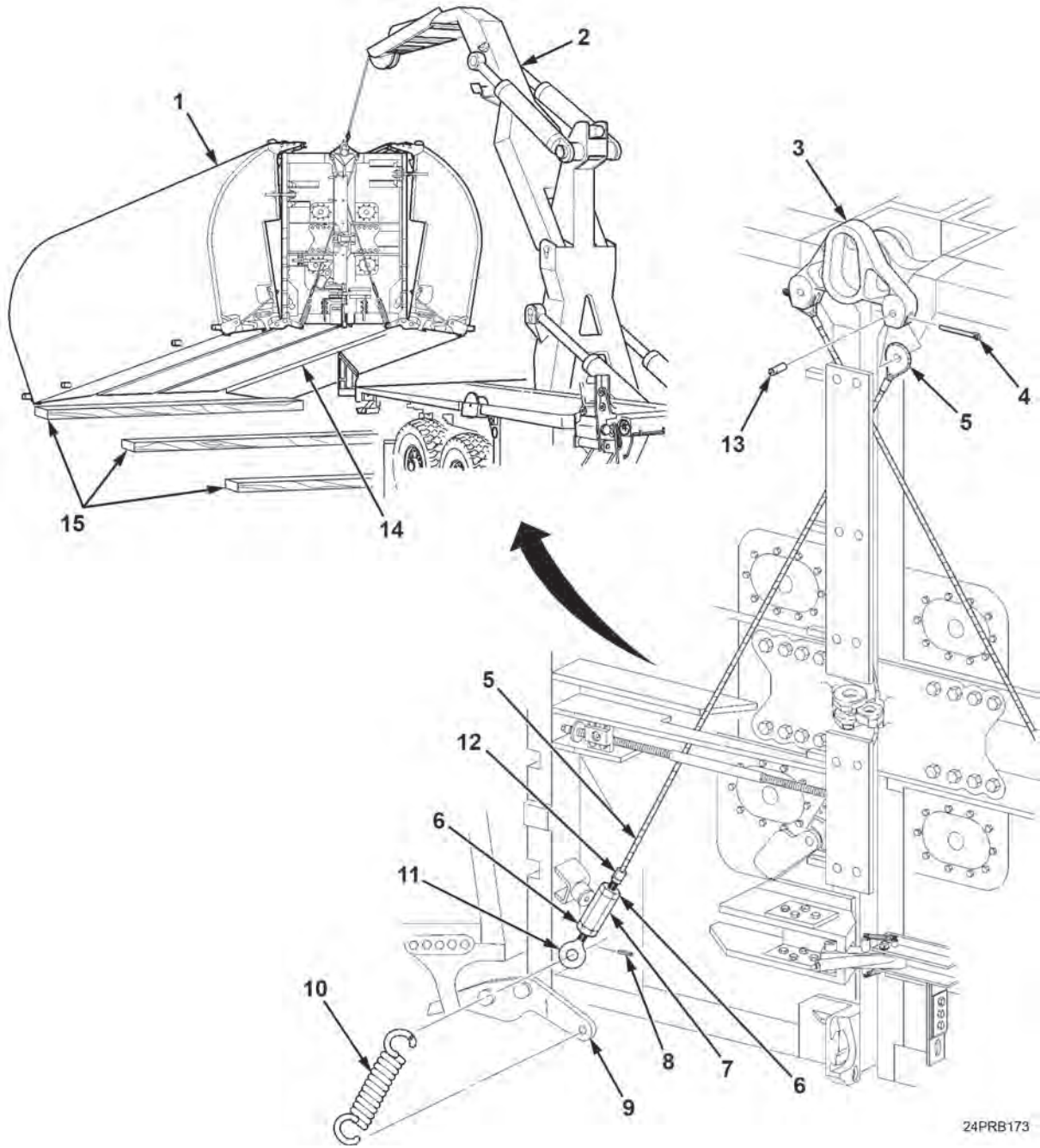


Figure 1. Interior Bay Cable Removal.

END OF TASK

INSTALLATION**NOTE**

- The cable connected to front right or rear left side of bell crank must pass in front of cable connected to rear left or front right side of bell crank.
 - Ensure cable is routed behind lower lock-drive jackscrew and bumper.
1. Route wire cable (Figure 2, Item 3) on inner pontoon (Figure 2, Item 11), and connect end of wire cable to bell crank (Figure 2, Item 1) with pin (Figure 2, Item 12) and new cotter pin (Figure 2, Item 2). Slightly bend protruding end of cotter pin.

NOTE

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

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

END OF TASK**ADJUSTMENT****NOTE**

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

1. Loosen two jamnuts (Figure 2, Item 4) on bolt eye (Figure 2, Item 9) and cable end (Figure 2, Item 10), and turn nut (Figure 2, Item 5) counterclockwise until wire cable (Figure 2, Item 3) is tensioned. Tighten two jamnuts (Figure 2, Item 4).
2. Repeat Step 1 to adjust tension of opposite cable.
3. Apply a light coat of lubricating oil to cable assemblies.

ADJUSTMENT - Continued

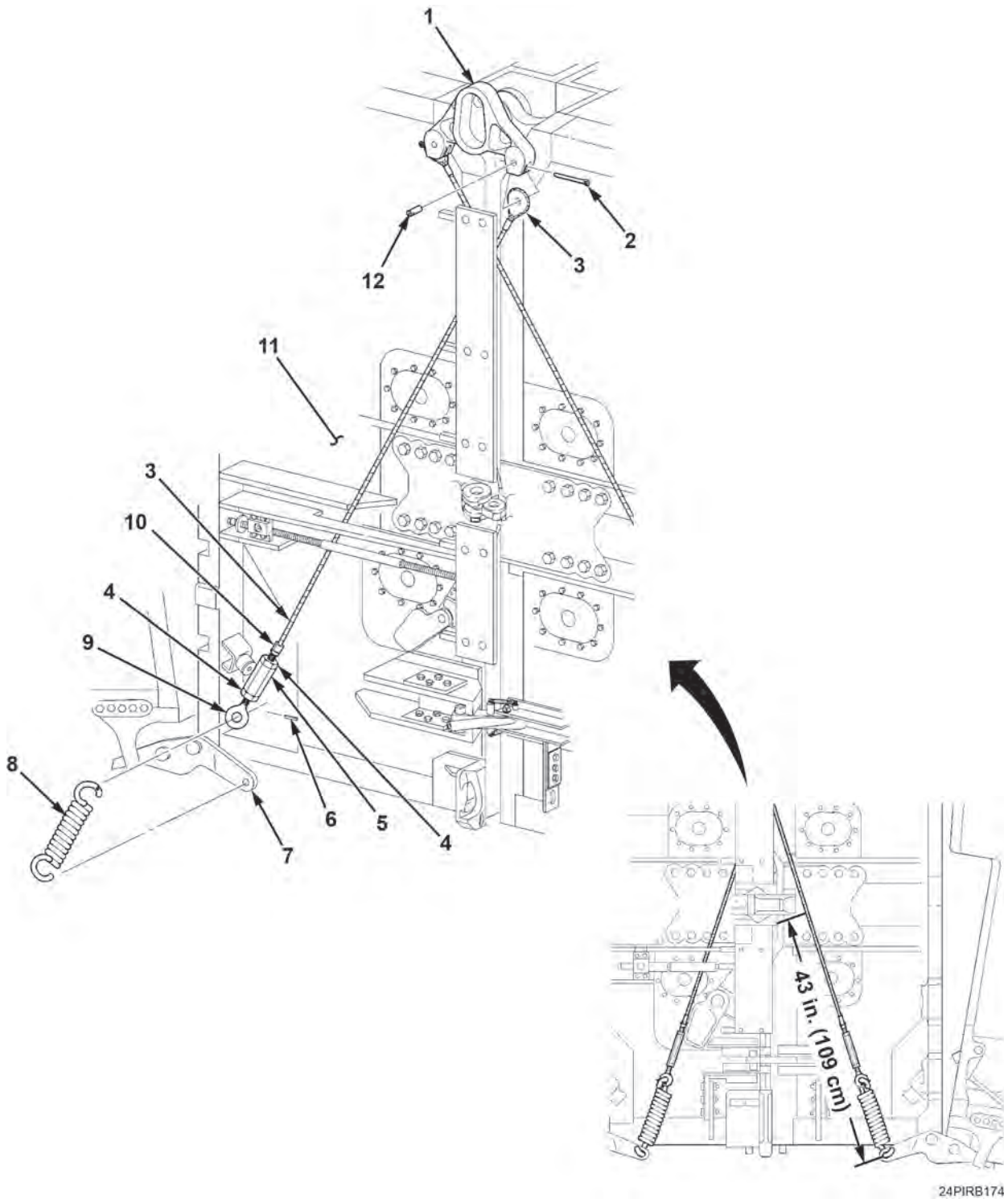


Figure 2. Cable Assembly Installation and Adjustment.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Lubricate cable assemblies (WP 0068).
2. Load interior bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
INTERIOR BAY EYEBOLT REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Multiple leg sling (WP 0130, Table 1, Item 24)
Torque wrench 3/8 in. drive 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)
Suitable lifting device

Personnel Required

Mechanic
Assistant

References

WP 0072

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Cotter pin Qty: 2 (WP 0131, Table 1, Item 12)
Spring pin (WP 0131, Table 1, Item 6)
Dunnage

Equipment Condition

Travel latch and foldlocks in locked position
(TM 5-5420-278-10)
Interior bay removed from transporter
(TM 5-5420-278-10)

NOTE

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

REMOVAL

1. Remove two cotter pins (Figure 1, Item 3), washers (Figure 1, Item 5), and pin (Figure 1, Item 17) from shaft of bell crank (Figure 1, Item 14). Discard cotter pins.
2. Remove two nuts (Figure 1, Item 10) and screws (Figure 1, Item 8) from links (Figure 1, Item 4), and remove cover (Figure 1, Item 2) from inner pontoon brackets (Figure 1, Item 9).
3. Remove locknut (Figure 1, Item 16) and screw (Figure 1, Item 6) from collar (Figure 1, Item 15) and shaft of bell crank (Figure 1, Item 14). Discard locknut.
4. Drive bell crank (Figure 1, Item 14) forward, and remove collar (Figure 1, Item 15) from bell crank.

NOTE

Note location and quantity of washers for installation.

5. Remove bell crank (Figure 1, Item 14) from inner pontoon hinges (Figure 1, Items 7 and 12) and remove shims (Figure 1, Item 11). Retain shims for installation.
6. Remove spring pin (Figure 1, Item 18), pin (Figure 1, Item 1), and two links (Figure 1, Item 4) from cover (Figure 1, Item 2).
7. Perform Steps 1 through 6 to remove eyebolt at opposite end of bay.

END OF TASK

INSTALLATION

1. Install two links (Figure 1, Item 4) on cover (Figure 1, Item 2) with pin (Figure 1, Item 1) and spring pin (Figure 1, Item 18).

WARNING



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

2. If moved, align inner pontoons (Figure 1, Item 13) using lifting device and sling.

NOTE

- Apply a light coat of grease to shims, pin, and shaft of bell crank at installation.
 - Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
3. Position two shims (Figure 1, Item 11) between hinges (Figure 1, Items 7 and 12), and install bell crank (Figure 1, Item 14) halfway.
 4. Position collar (Figure 1, Item 15) over shaft of bell crank (Figure 1, Item 14), and push bell crank in all the way.
 5. Install collar (Figure 1, Item 15) on bell crank (Figure 1, Item 14) with screw (Figure 1, Item 6) and new locknut (Figure 1, Item 16).

INSTALLATION - Continued

6. Install cover (Figure 1, Item 2) on shaft of bell crank (Figure 1, Item 14) with pin (Figure 1, Item 17), two washers (Figure 1, Item 5), and new cotter pins (Figure 1, Item 3).
7. Connect two links (Figure 1, Item 4) to inner pontoon brackets (Figure 1, Item 9) with two screws (Figure 1, Item 8) and nuts (Figure 1, Item 10).
8. Perform Steps 1 through 7 to install eyebolt at opposite end of bay.

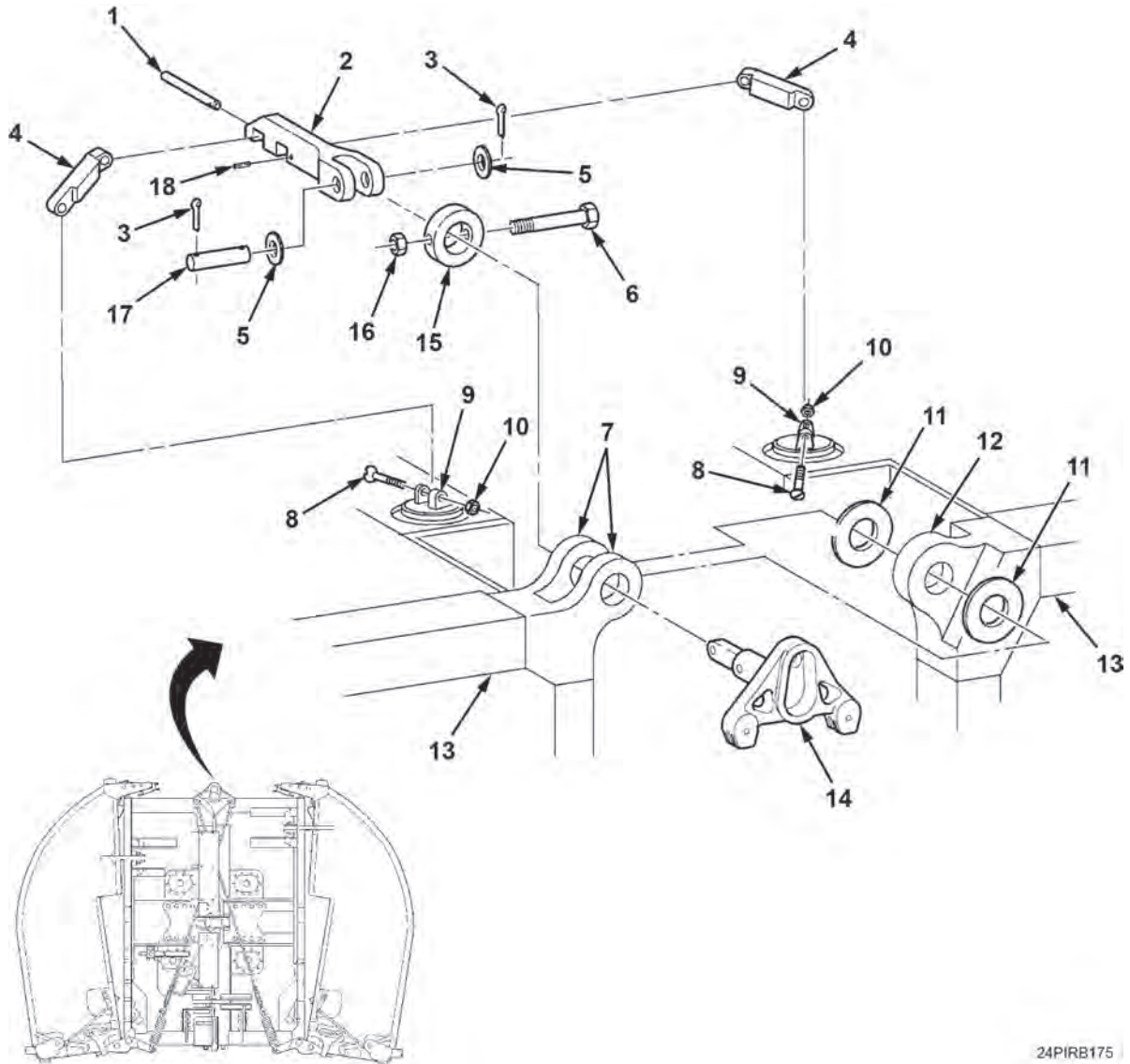


Figure 1. Eyebolt Replacement.

END OF TASK

FOLLOW-ON MAINTENANCE

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

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
INTERIOR BAY UNFOLDING STABILIZER AND BRACKETS REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

References

WP 0072

Equipment Condition

Outer pontoon separated from inner pontoon
(WP 0050)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)

Personnel Required

Mechanic
Assistant

REMOVAL**CAUTION**

To avoid top of screws from wearing, ensure spacers total 3mm thick, with the surface of the hardware below the deck. Failure to comply may result in damage to equipment.

NOTE

- Take note of the number of spacers prior to removal.
 - Reuse the same spacers that were removed. If spacers are not flush, adjust accordingly.
 - 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 (Figure 1, Item 3), washers (Figure 1, Item 4), and bracket (Figure 1, Item 5) from front and rear inner pontoon (Figure 1, Item 13).
 2. Remove screw (Figure 1, Item 12) from inner pontoon (Figure 1, Item 13) and pin (Figure 1, Item 8).

NOTE

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

3. Remove pin (Figure 1, Item 8), connecting links (Figure 1, Items 11 and 14), two shims (Figure 1, Item 10), and stabilizer bar (Figure 1, Item 9) from inner pontoon (Figure 1, Item 13). Retain shims for assembly.
4. Remove pin (Figure 1, Item 2) and bracket (Figure 1, Item 5) from stabilizer bracket (Figure 1, Item 1).

NOTE

Note location and quantity of spacer plates for installation.

5. Remove spacer plates (Figure 1, Item 6) from inner pontoon (Figure 1, Item 13). Retain spacer plates for installation.

END OF TASK**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 (Figure 1, Item 6) on inner pontoon (Figure 1, Item 13).
 2. Install bracket (Figure 1, Item 5) on stabilizer bracket (Figure 1, Item 1) with pin (Figure 1, Item 2).

NOTE

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
- Assistant will help with Steps 3 through 5.

INSTALLATION - Continued

3. Position stabilizer bar (Figure 1, Item 9) on inner pontoon (Figure 1, Item 13) with two shims (Figure 1, Item 10) and connecting links (Figure 1, Items 11 and 14), and install pin (Figure 1, Item 8) on lever (Figure 1, Item 7) and inner pontoon (Figure 1, Item 13).
4. Align hole in pin (Figure 1, Item 8) with hole in inner pontoon (Figure 1, Item 13), and install screw (Figure 1, Item 12).
5. Install bracket (Figure 1, Item 5) and spacer plates (Figure 1, Item 6) on inner pontoon (Figure 1, Item 13) with two washers (Figure 1, Item 4) and screws (Figure 1, Item 3).

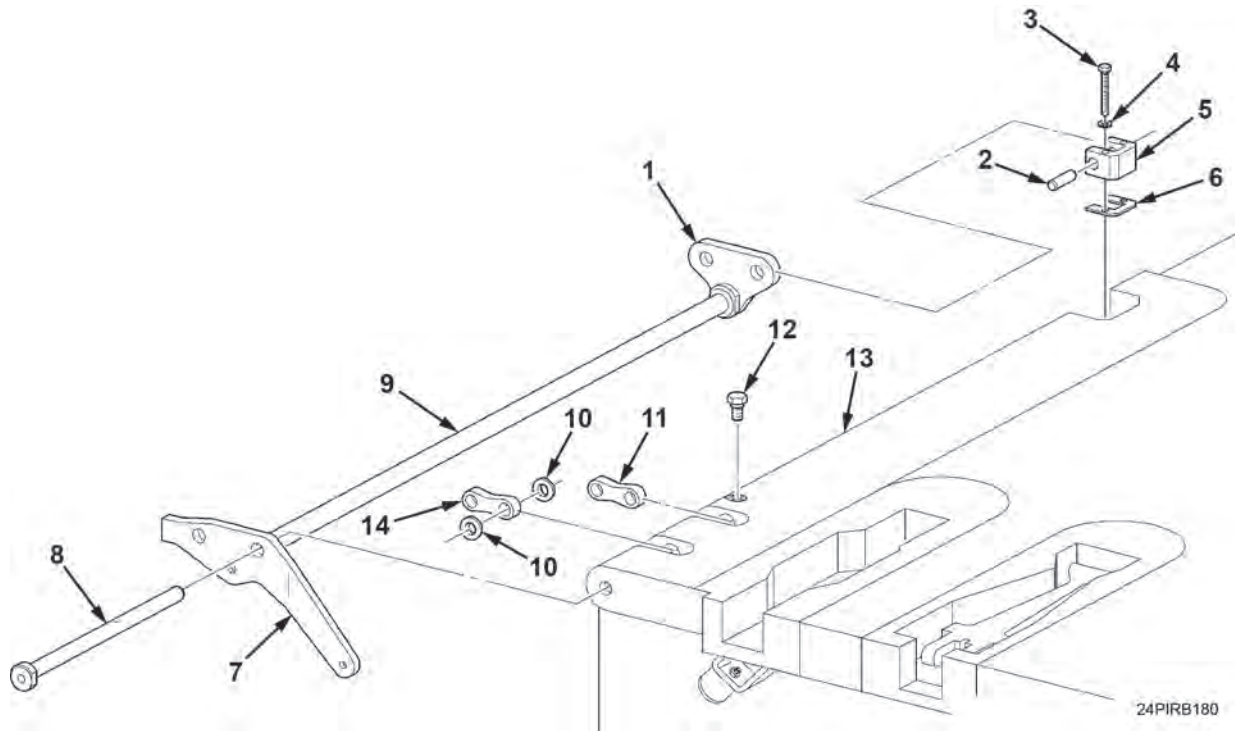


Figure 1. Unfolding Stabilizer and Bracket.

END OF TASK

FOLLOW-ON MAINTENANCE

Connect outer pontoon to inner pontoon (WP 0050).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
INTERIOR BAY BUMPER STOP REPLACEMENT**

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Equipment Condition

Interior bay in folded position
(TM 5-5420-278-10)

REMOVAL**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.
 - Note thickness of plate for installation.
1. Remove screw (Figure 1, Item 5) and plate (Figure 1, Item 4) from bumper stop (Figure 1, Item 6).
 2. Remove nut (Figure 1, Item 2), washer (Figure 1, Item 1), bumper stop (Figure 1, Item 6), and two washers (Figure 1, Item 3) from bracket (Figure 1, Item 7). Retain spacers for installation.
 3. Perform Steps 1 and 2 to remove remaining bumper stops.

END OF TASK**INSTALLATION**

1. Install spacer washers (Figure 1, Item 3), if present, and bumper stop (Figure 1, Item 6) on bracket (Figure 1, Item 7) with washer (Figure 1, Item 1) and nut (Figure 1, Item 2).
2. Install plate (Figure 1, Item 4) on bumper stop (Figure 1, Item 6) with screw (Figure 1, Item 5).
3. Perform Steps 1 and 2 to install remaining bumper stops.

INSTALLATION - Continued

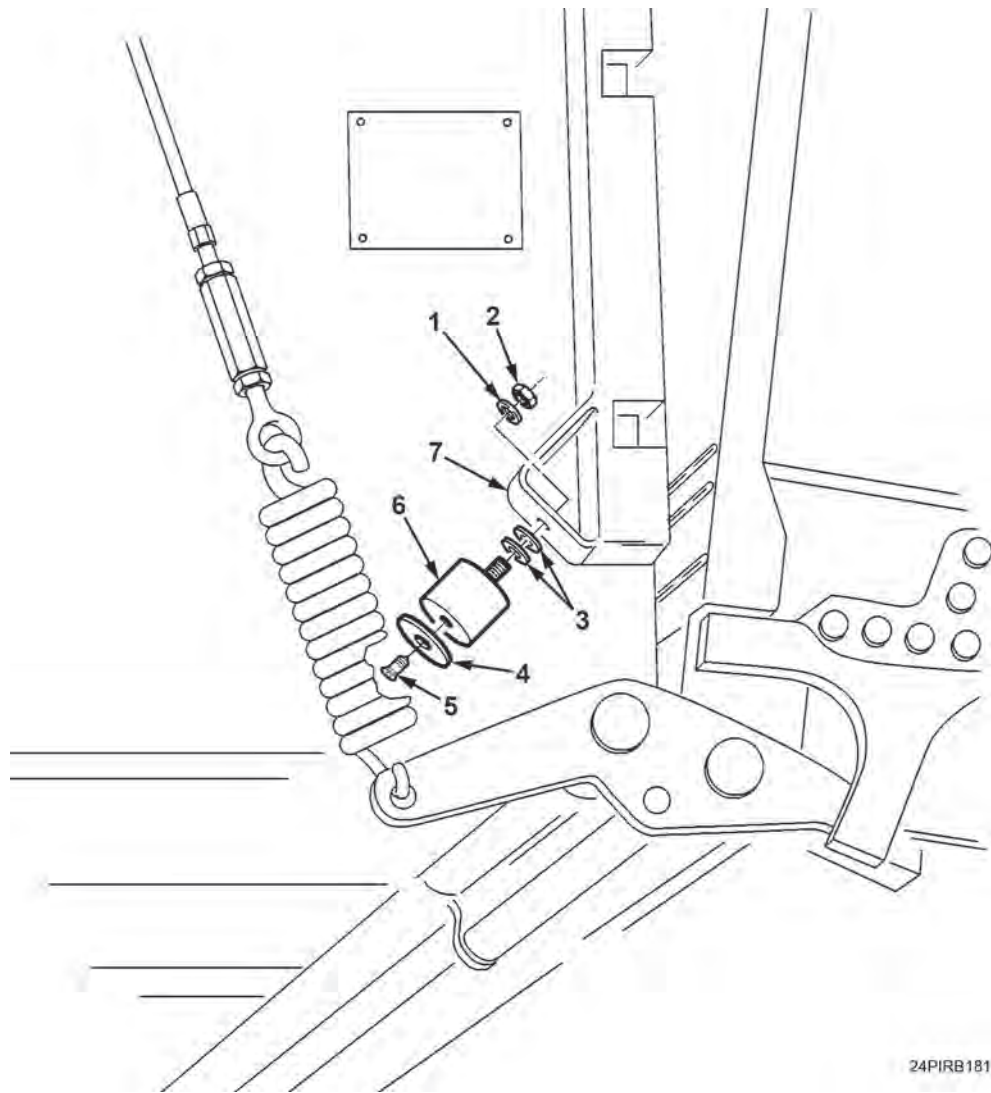


Figure 1. Bumper Stop Replacement.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
INTERIOR BAY OUTER PONTOON LOCK REPAIR

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit
(WP 0130, Table 1, Item 29)
Setup wedge (WP 0130, Table 1, Item 23)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)

References

WP 0050
WP 0072

Equipment Condition

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

Materials/Parts

Sealing compound (WP 0129, Table 1, Item 26)
Cotter pin (WP 0131, Table 1, Item 11)
Spring pin (WP 0131, Table 1, Item 33)
Dunnage

NOTE

Removal of outer pontoon lock assembly is the same for left and right sides. Left side is shown.

REMOVAL

1. Position outer pontoon lock in unlocked position (TM 5-5420-278-10).
2. Turn pin (Figure 1, Item 10) counterclockwise, and remove pin from lever (Figure 1, Item 9) and connector link (Figure 1, Item 20).

NOTE

If replacing turnbuckle, note length between rod ends for installation.

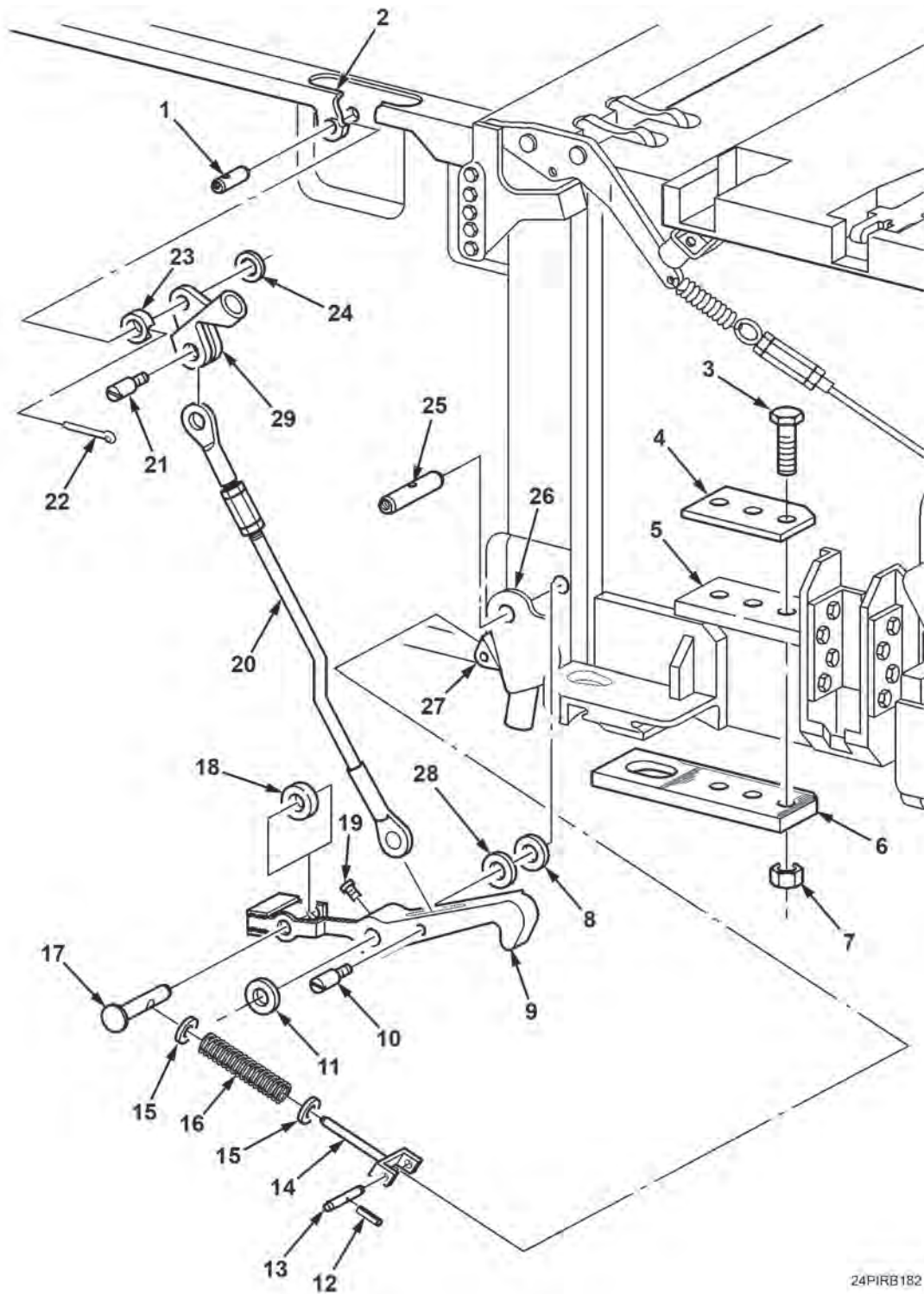
3. Turn pin (Figure 1, Item 21) counterclockwise, and remove pin and connector link (Figure 1, Item 20) from bell crank (Figure 1, Item 29).
4. Remove cotter pin (Figure 1, Item 22) from pin (Figure 1, Item 1), and remove pin, washer (Figure 1, Item 24), spacer (Figure 1, Item 23), and bell crank (Figure 1, Item 29) from pontoon support (Figure 1, Item 2). Discard cotter pin.

NOTE

Mark location of spacer plates prior to removal for installation.

5. Remove three nuts (Figure 1, Item 7), screws (Figure 1, Item 3), and spacer plates (Figure 1, Items 4 and 6) from pontoon support (Figure 1, Item 5). Retain spacer plates for installation.
6. Remove washer (Figure 1, Item 15), spring (Figure 1, Item 16), and washer (Figure 1, Item 15) from spring holder (Figure 1, Item 14) by slowly raising lever (Figure 1, Item 9) counterclockwise until end of spring holder drops free from pin (Figure 1, Item 17).
7. Remove pin (Figure 1, Item 17) and washer (Figure 1, Item 18) from lever (Figure 1, Item 9).
8. Remove setscrew (Figure 1, Item 19) from lever (Figure 1, Item 9), and remove pin (Figure 1, Item 25), washers (Figure 1, Items 8, 11, and 28), and lever from pontoon support (Figure 1, Item 26).
9. Remove spring pin (Figure 1, Item 12), pin (Figure 1, Item 13), and pin spring holder (Figure 1, Item 14) from pontoon support (Figure 1, Item 27). Discard spring pin.
10. Perform Steps 1 through 9 to remove remaining outer pontoon locks.

REMOVAL - Continued



24PIRB182

Figure 1. Outer Pontoon Lock Removal.

END OF TASK

INSTALLATION**NOTE**

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - Installation of outer pontoon 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 (Figure 2, Item 14) on pontoon support (Figure 2, Item 27) with pin (Figure 2, Item 13) and new spring pin (Figure 2, Item 12).

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 (Figure 2, Item 9) on pontoon support (Figure 2, Item 26) with pin (Figure 2, Item 25), washers (Figure 2, Items 8, 11, and 28), and setscrew (Figure 2, Item 19).
 3. Install pin (Figure 2, Item 17) and washer (Figure 2, Item 18) on lever (Figure 2, Item 9) with hole facing pontoon support (Figure 2, Item 27).
 4. Install bell crank (Figure 2, Item 29) on pontoon support (Figure 2, Item 2) with pin (Figure 2, Item 1), spacer (Figure 2, Item 23), washer (Figure 2, Item 24), and new cotter pin (Figure 2, Item 22).

NOTE

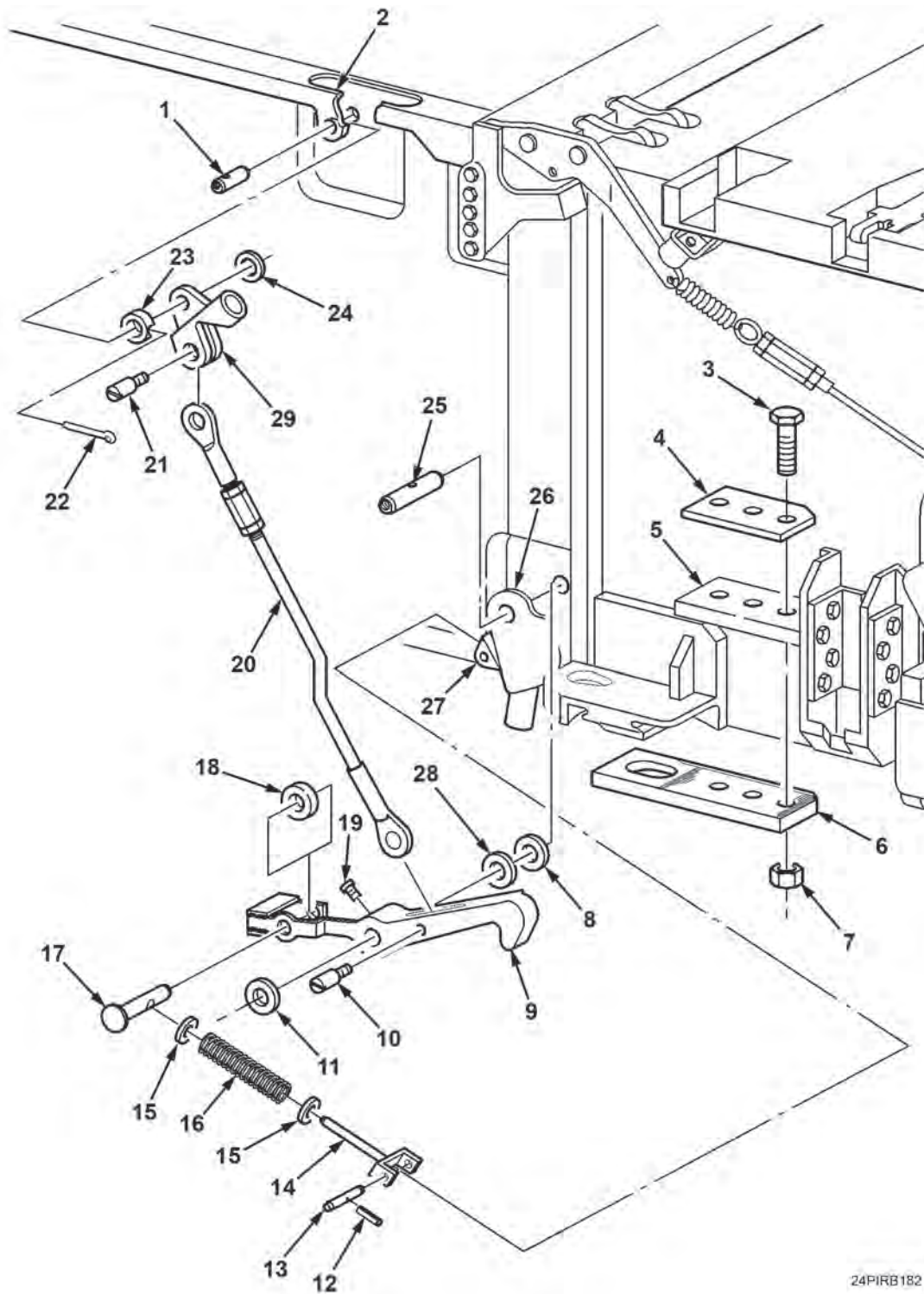
Apply sealing compound to threads of pin at installation.

5. Install connector link (Figure 2, Item 28) on bell crank (Figure 2, Item 29) with pin (Figure 2, Item 21) and tighten pin.
6. Install two washers (Figure 2, Item 15) and spring (Figure 2, Item 16) on spring holder (Figure 2, Item 14), and rotate lever (Figure 2, Item 9) clockwise until end of spring holder enters pin (Figure 2, Item 17), and lever 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 (Figure 2, Item 20) to lever (Figure 2, Item 9) with pin (Figure 2, Item 10) and tighten pin.
 8. Install spacer plates (Figure 2, Items 4 and 6) on pontoon support (Figure 2, Item 5) with three screws (Figure 2, Item 3) and nuts (Figure 2, Item 7). Tighten nuts to 144 lb-ft (195 N•m).
 9. Perform Steps 1 through 8 to install remaining outer pontoon locks.
 10. Perform outer pontoon lock adjustment.

INSTALLATION - Continued



24PIRB182

Figure 2. Outer Pontoon Lock Installation.

END OF TASK

ADJUSTMENT

NOTE

Adjustment is the same for left and right sides. Left side is shown.

1. Unfold interior bay (WP 0050).
2. Position outer pontoon lock in locked position (TM 5-5420-278-10).

NOTE

Outer pontoon 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.

3. Use a setup wedge (Figure 3, Item 7) to hold bell crank (Figure 3, Item 1) when checking alignment of all three pins (Figure 3, Items 2, 4, and 8).
4. Loosen two jamnuts (Figure 3, Item 9) and turn nut (Figure 3, Item 3) until bottom of lever (Figure 3, Item 5) rests on top of spacer plate (Figure 3, Item 6). Check that pins (Figure 3, Items 2 and 8) on bell crank (Figure 3, Item 1) are aligned with pin (Figure 3, Item 4) on connecting link (Figure 3, Item 10) with lever resting on spacer plate.
5. If not aligned, turn nut (Figure 3, Item 3) to move bell crank (Figure 3, Item 1) to align pins (Figure 3, Items 2, 4, and 8).
6. After pins (Figure 3, Items 2, 4, and 8) are aligned, remove setup wedge (Figure 3, Item 7) and adjust lever (Figure 3, Item 5) clearance on spacer plate (Figure 3, Item 6).

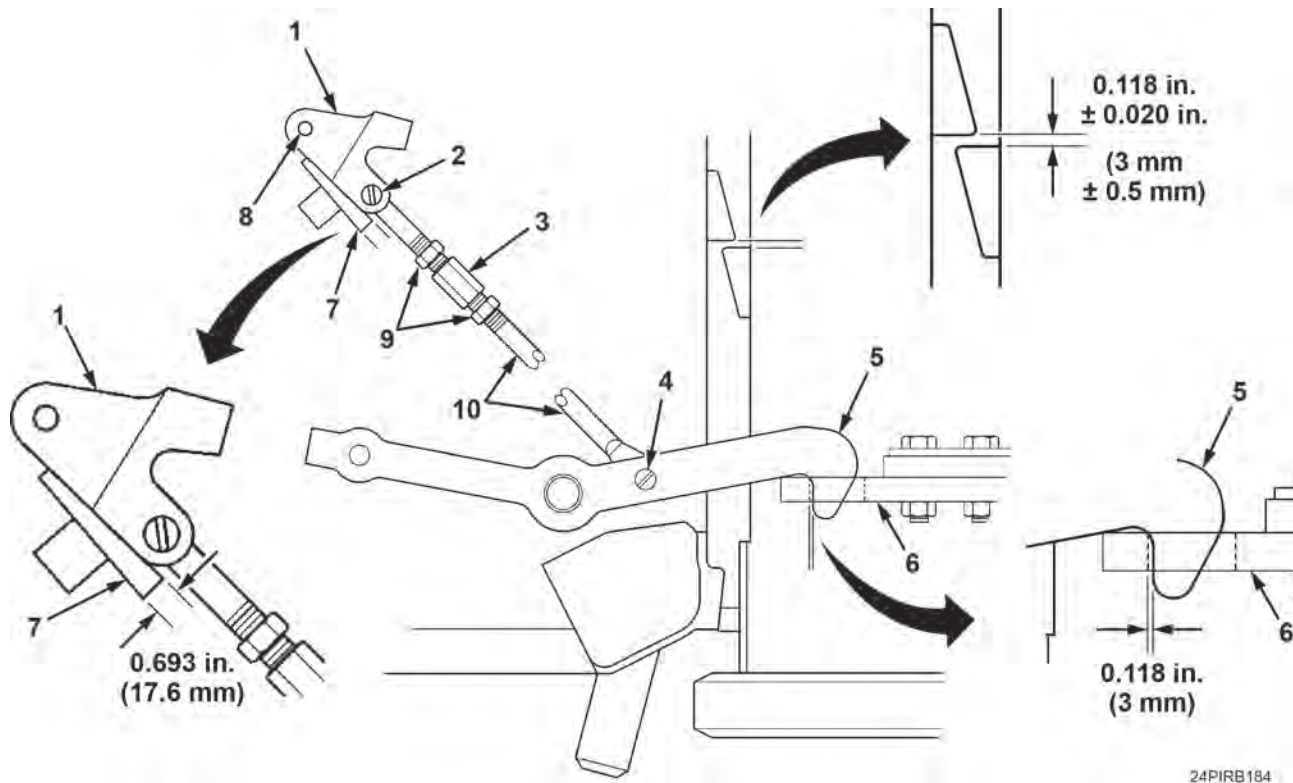


Figure 3. Lock Lever Link Adjustment.

ADJUSTMENT - Continued

7. Measure distance between bottom of lever (Figure 4, Item 3) and top of spacer plate (Figure 4, Item 6) with lever in lock position and bell crank (Figure 4, Item 1) resting on stop block (Figure 4, Item 9). Clearance must be 0.157 in. \pm 0.039 in. (4 mm \pm 1 mm). If necessary, turn nut (Figure 4, Item 2) until correct clearance is achieved and then tighten two jamnuts (Figure 4, Item 8).

NOTE

Outer pontoon must be fully open prior to lock adjustment.

8. Measure distance between inside edge (Figure 4, Item 7) on lever (Figure 4, Item 3) and spacer plate (Figure 4, Item 6); clearance must be 0.118 in. (3 mm). If necessary, loosen three nuts (Figure 4, Item 5) on screws (Figure 4, Item 4), and tap on spacer plate (Figure 4, Item 6) until correct clearance is achieved. Tighten nuts to 144 lb-ft (195 N•m).

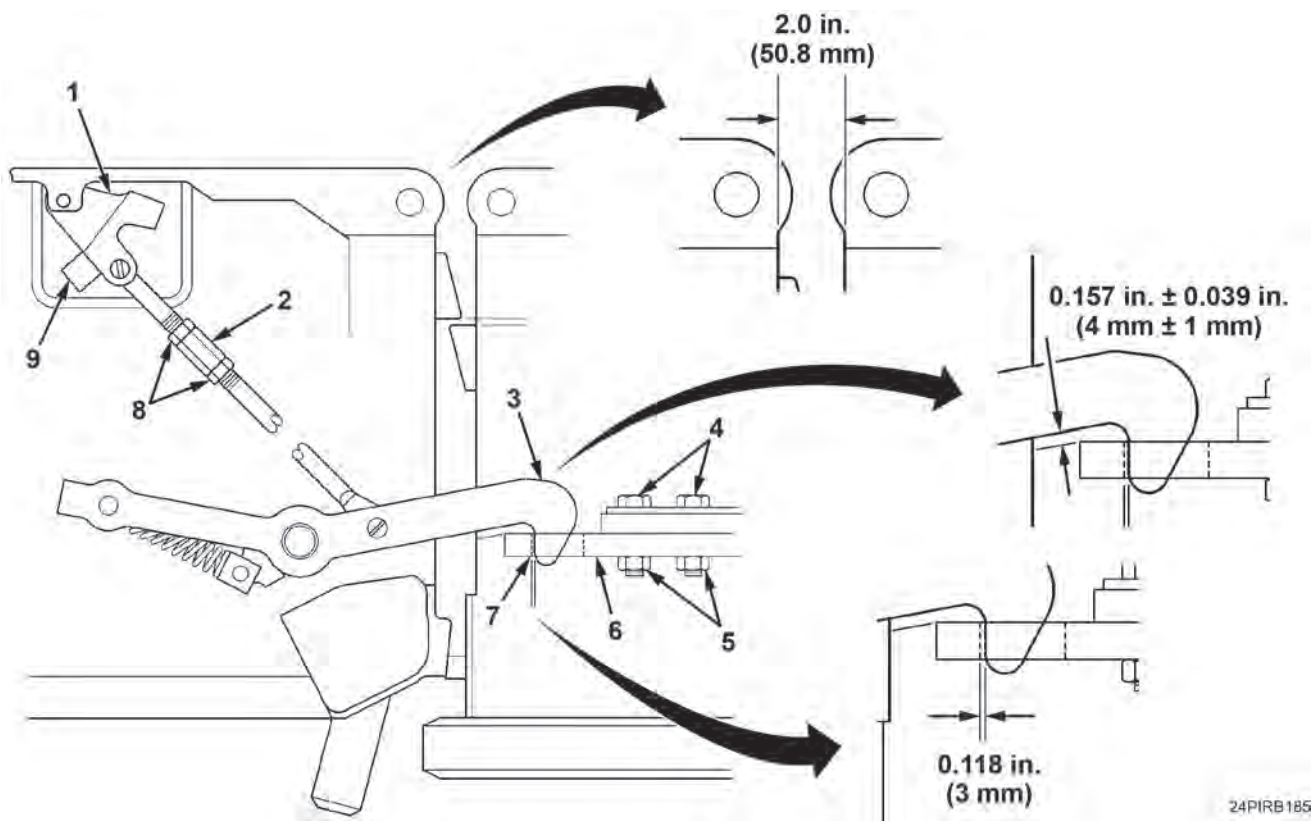


Figure 4. Lock Lever Adjustment.

END OF TASK**FOLLOW-ON MAINTENANCE**

Fold and load interior bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
INTERIOR BAY FOLDLOCK REPAIR**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Equipment Condition

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

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Cotter Pin Qty: 2 (WP 0131, Table 1, Item 11)
Spring pin Qty: 2 (WP 0131, Table 1, Item 33)

NOTE

- Removal and installation of foldlocks on left and right sides are performed the same way. Left side is shown.
- Inspect and replace parts as needed.

REMOVAL

1. Move lever (Figure 1, Item 5) to latched position.
2. Remove two springs (Figure 1, Item 1), spacers (Figure 1, Item 2), and pin (Figure 1, Item 3) from inner pontoon brackets (Figure 1, Item 4) and pin (Figure 1, Item 7).
3. Remove two cotter pins (Figure 1, Item 8), washers (Figure 1, Item 9), pin (Figure 1, Item 10), and lever (Figure 1, Item 5) from inner pontoon brackets (Figure 1, Item 4). Discard cotter pins.
4. Remove two spring pins (Figure 1, Item 6) and pin (Figure 1, Item 7) from lever (Figure 1, Item 5). Discard spring pins.

END OF TASK**INSTALLATION**

1. Apply a light coat of grease to pins (Figure 1, Items 3, 7, and 10).
2. Position pin (Figure 1, Item 7) on lever (Figure 1, Item 5), and install two new spring pins (Figure 1, Item 6) on pin.
3. Install lever (Figure 1, Item 5) on inner pontoon brackets (Figure 1, Item 4) with pin (Figure 1, Item 10), two washers (Figure 1, Item 9), and new cotter pins (Figure 1, Item 8).
4. Move lever (Figure 1, Item 5) to latched position.
5. Position pin (Figure 1, Item 3) and two spacers (Figure 1, Item 2) on inner pontoon brackets (Figure 1, Item 4), and install two springs (Figure 1, Item 1) on pins and (Figure 1, Items 3 and 7).

INSTALLATION - Continued

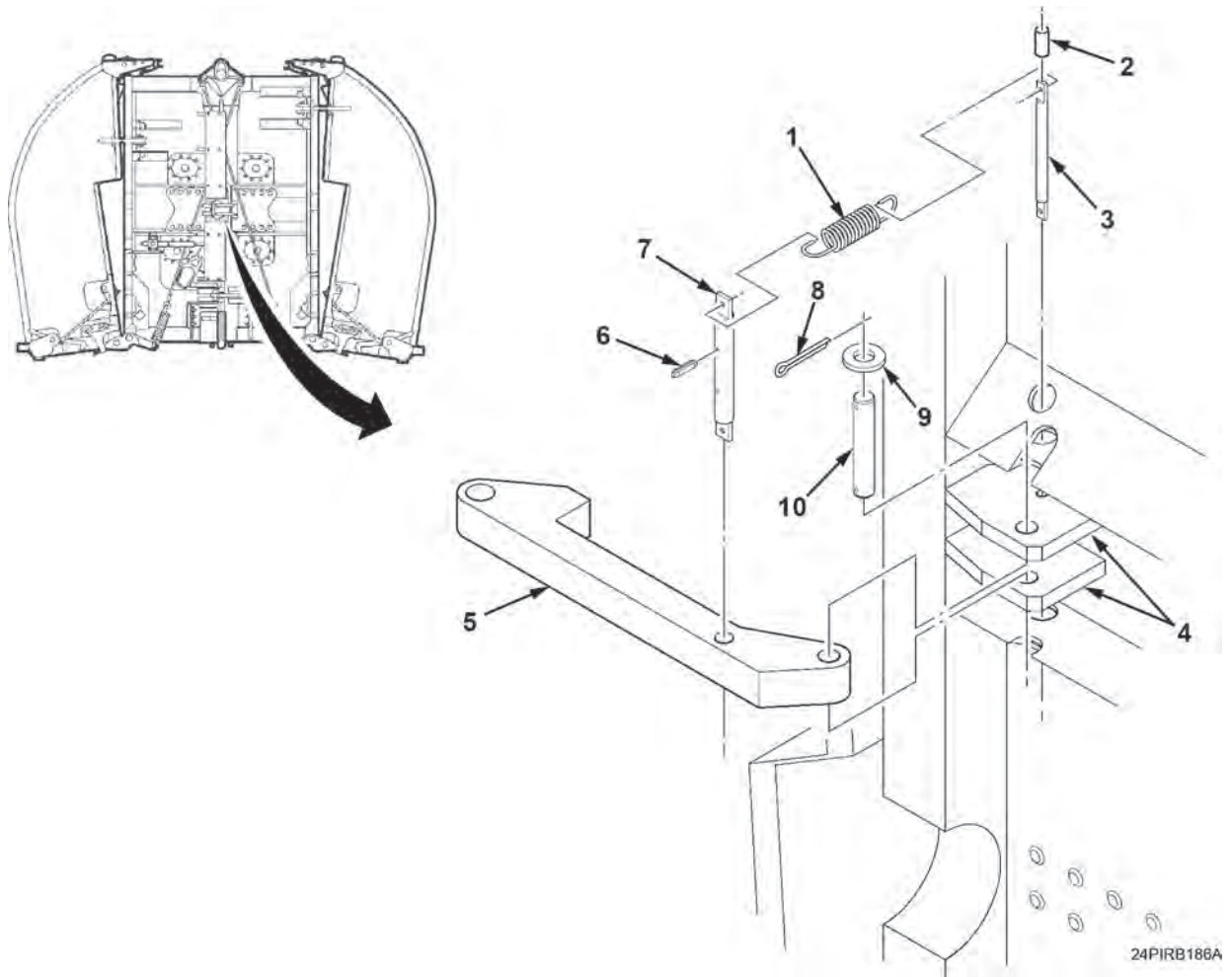


Figure 1. Interior Bay Foldlock.

END OF TASK

FOLLOW-ON MAINTENANCE

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

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
INTERIOR BAY ACCESS COVER REPAIR**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Heat gun (WP 0130, Table 1, Item 15)
Torque wrench, 3/8 in. drive, 30–200 lb-in.
(4–23 N•m) (WP 0130, Table 1, Item 36)

References

WP 0024
WP 0072

Equipment Condition

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

Materials/Parts

Adhesive (WP 0129, Table 1, Item 3)
Sealing compound (WP 0129, Table 1, Item 26)
Gasket (WP 0131, Table 1, Item 15)

REMOVAL**CAUTION**

Do not overheat area around access cover or damage to aluminum may occur.

NOTE

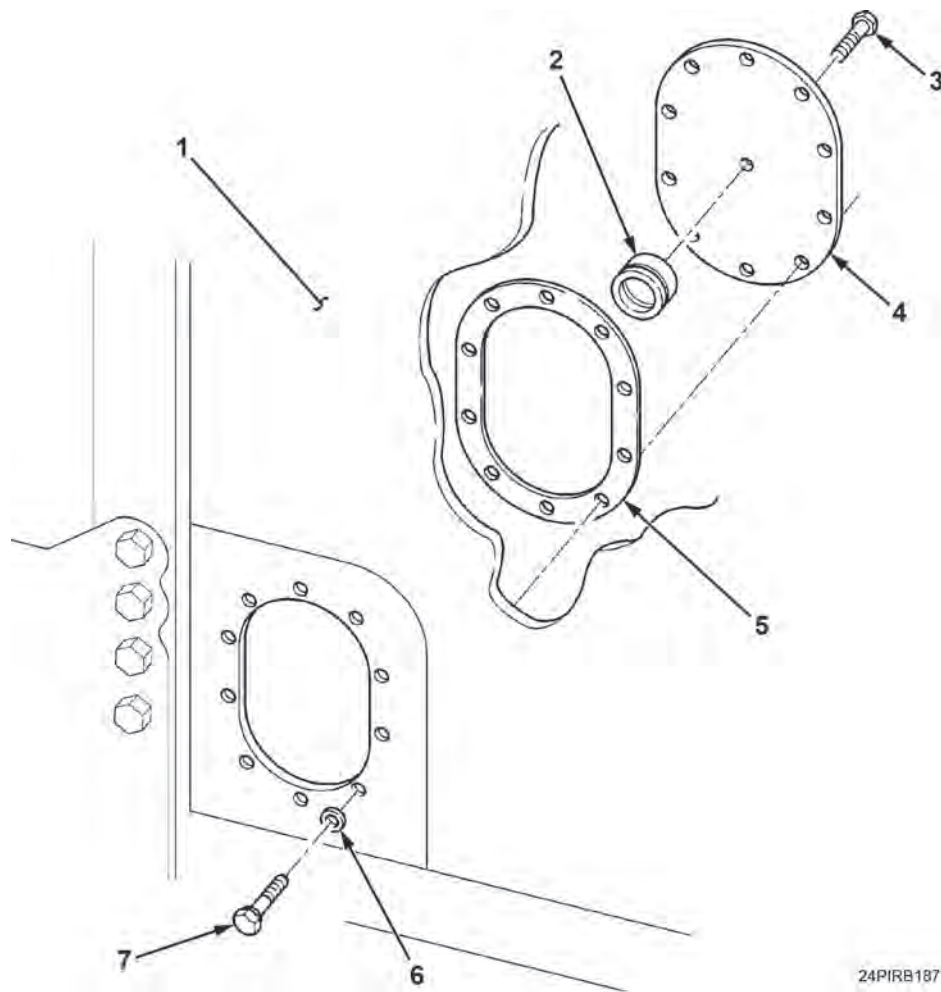
- Inner pontoon has four access covers; all are removed and installed the same way.
 - Heat access cover screws to loosen sealing compound before removing screws.
1. Remove ten screws (Figure 1, Item 7) and washers (Figure 1, Item 6) from inner pontoon (Figure 1, Item 1) and access cover (Figure 1, Item 4).
 2. Turn access cover (Figure 1, Item 4) and remove access cover from inside of inner pontoon (Figure 1, Item 1).
 3. Remove gasket (Figure 1, Item 5) from front of access cover (Figure 1, Item 4). Discard gasket.
 4. If necessary, remove screw (Figure 1, Item 3) and handle (Figure 1, Item 2) from access cover (Figure 1, Item 4).
 5. Repeat Steps 1 through 4 to remove other access covers (Figure 1, Item 4).

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

Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

NOTE

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - Apply sealing compound to threads of all screws at installation.
1. If removed, install handle (Figure 1, Item 2) on access cover (Figure 1, Item 4) with screw (Figure 1, Item 3).
 2. Apply adhesive to new gasket (Figure 1, Item 5) and install gasket on access cover (Figure 1, Item 4).
 3. Install access cover (Figure 1, Item 4) with gasket (Figure 1, Item 5) inside of inner pontoon (Figure 1, Item 1) and turn access cover.
 4. Align holes in access cover (Figure 1, Item 4) with holes in inner pontoon (Figure 1, Item 1) and install ten washers (Figure 1, Item 6) and screws (Figure 1, Item 7) on inner pontoon and access cover. Tighten screws to 180 lb-in. (20 N•m).
 5. Repeat Steps 1 through 4 to install other access covers (Figure 1, Item 4).

INSTALLATION - Continued

24PIRB187

Figure 1. Access Cover.

END OF TASK**FOLLOW-ON MAINTENANCE**

1. Leak test inner pontoons (WP 0024), and seal if necessary.
2. Load Interior bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
INTERIOR BAY LOWER MAIN COUPLING REPAIR

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Heat gun (WP 0130, Table 1, Item 15)
Torque multiplier (WP 0130, Table 1, Item 19)
Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)
Torque wrench, 1/2 in. drive, 30–250 lb-ft
(41–271 N•m) (WP 0130, Table 1, Item 34)

Materials/Parts

Adhesive (WP 0129, Table 1, Item 3)
Anti-corrosive compound
(WP 0129, Table 1, Item 11)
Grease (WP 0129, Table 1, Item 18)

Materials/Parts (cont.)

Sealing compound (WP 0129, Table 1, Item 26)
Gasket Qty: 2 (WP 0131, Table 1, Item 15)

Personnel Required

Mechanic
Assistant

References

WP 0024
WP 0072

Equipment Condition

Inner pontoons separated (WP 0050)
Access covers removed (WP 0057)

REMOVAL**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.

1. Remove eight nuts (Figure 1, Item 2), washers (Figure 1, Item 1), and bolts (Figure 1, Item 9) from inner pontoon (Figure 1, Item 3) and double hinge coupling (Figure 1, Item 10) or single hinge joint (Figure 1, Item 8).

NOTE

Note location of long screws and thick washers for installation.

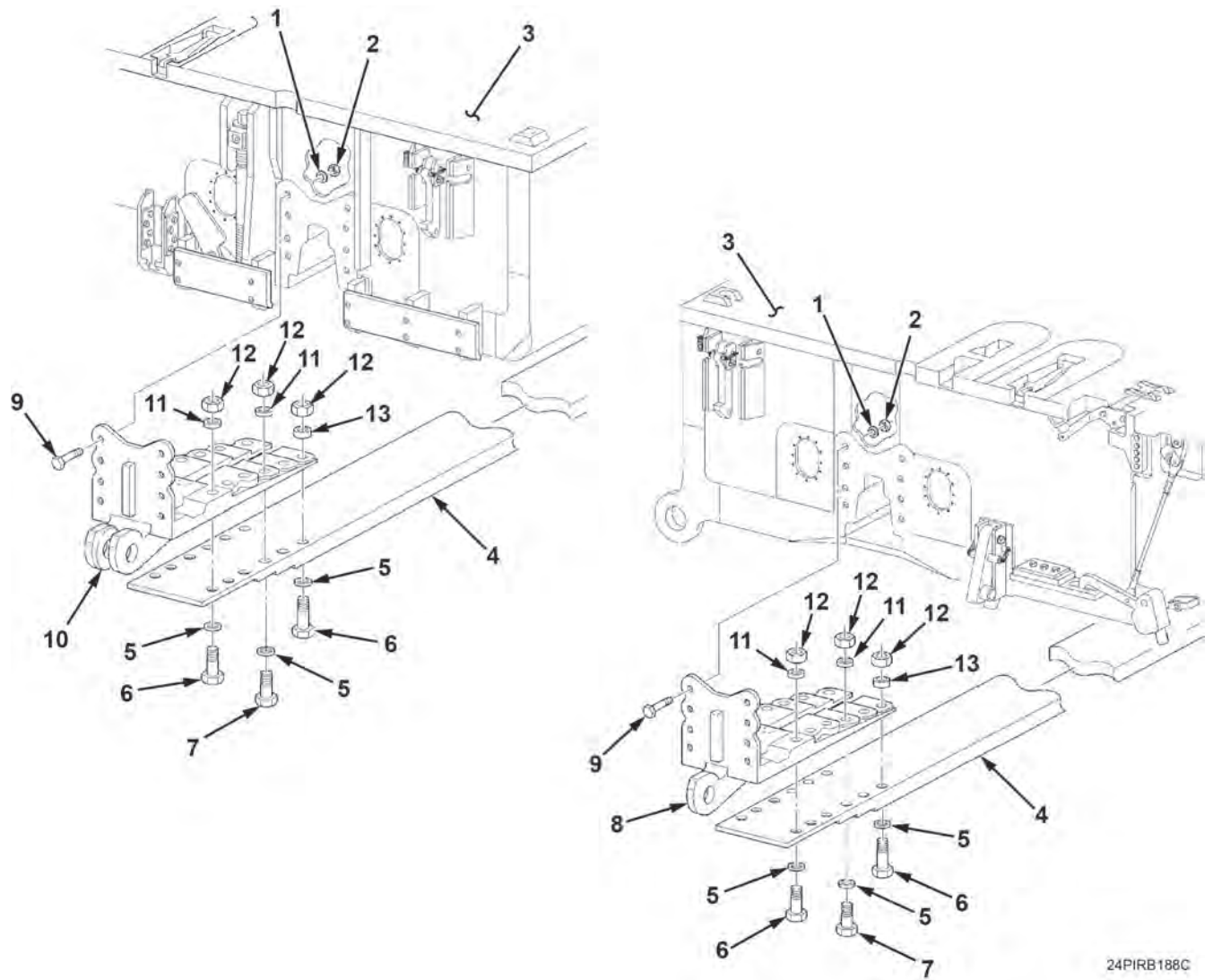
2. Remove 12 nuts (Figure 1, Item 12), two thick washers (Figure 1, Item 13), 10 washers (Figure 1, Item 11), eight bolts (Figure 1, Item 6), four bolts (Figure 1, Item 7), and 12 washers (Figure 1, Item 5) from inner pontoon (Figure 1, Item 3), plate (Figure 1, Item 4), and double hinge (Figure 1, Item 10) or single hinge coupling (Figure 1, Item 8).

NOTE

Assistant will help with Step 3.

3. Remove double or single hinge coupling (Figure 1, Item 8 or 10) from inner pontoon (Figure 1, Item 3).
4. Clean sealing compound from mating surfaces of double or single hinge coupling (Figure 1, Item 8 or 10) and inner pontoon (Figure 1, Item 3).

REMOVAL - Continued



24PIRB188C

Figure 1. Lower Main Coupling Removal.

END OF TASK

INSTALLATION**WARNING**

Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water. Failure to comply may result in personnel injury or death.

1. Apply grease to mating surface of double or single hinge coupling (Figure 2, Item 8 or 10), and inner pontoon (Figure 2, Item 3).

NOTE

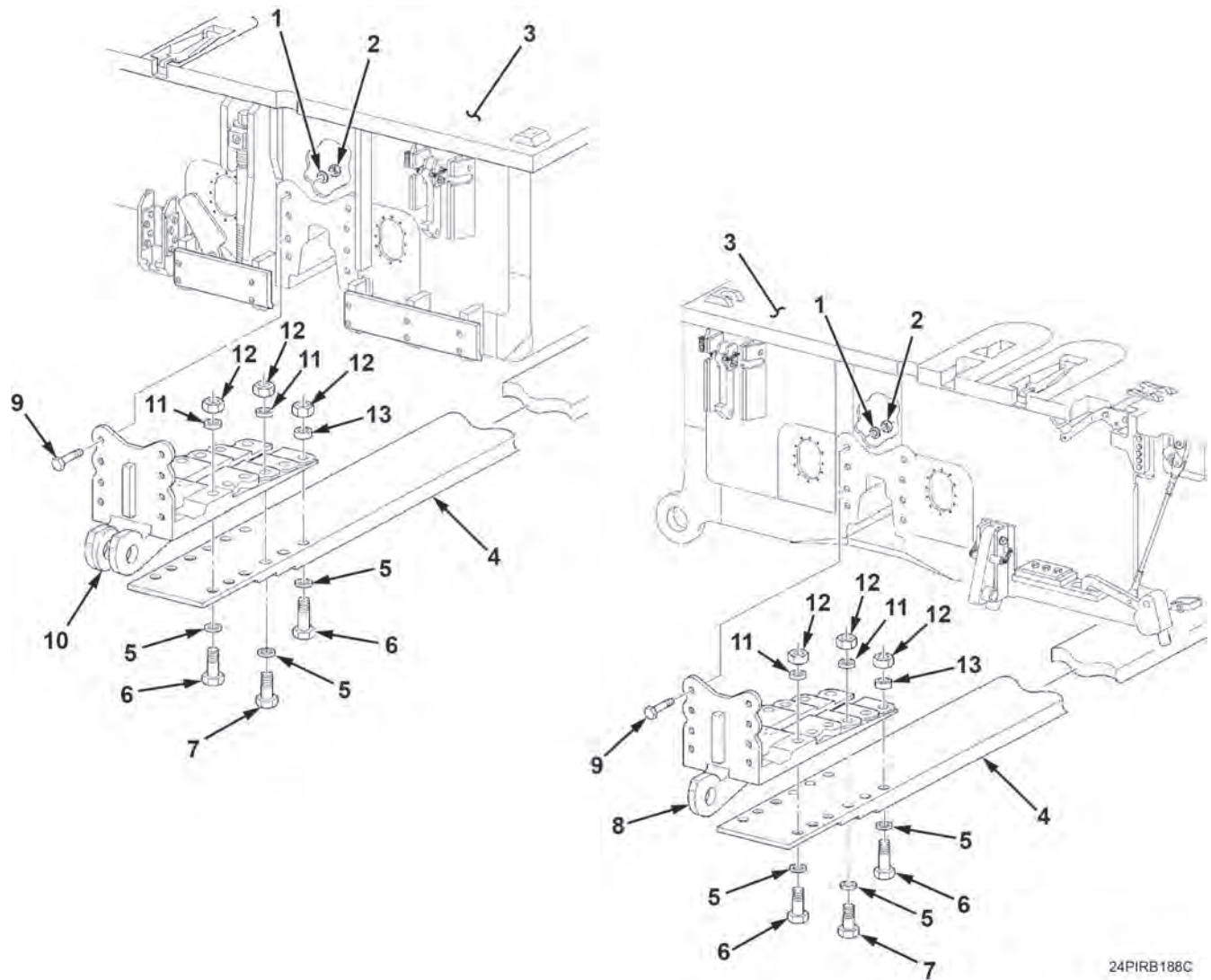
- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - Assistant will help with Step 2.
2. Install double or single hinge coupling (Figure 2, Item 8 or 10) on inner pontoon (Figure 2, Item 3).

NOTE

Apply grease to all bolts at installation.

3. Install 12 washers (Figure 2, Item 5), four bolts (Figure 2, Item 7), eight bolts (Figure 2, Item 6), 10 washers (Figure 2, Item 11), two thick washers (Figure 2, Item 13), and 12 nuts (Figure 2, Item 12) on double or single hinge coupling (Figure 2, Item 8 or 10), plate (Figure 2, Item 4), and inner pontoon (Figure 2, Item 3). Do not tighten bolts (Figure 2, Items 6 and 7).
4. Install eight bolts (Figure 2, Item 9), Washers (Figure 2, Item 1), and nuts (Figure 2, Item 2) on double or single hinge coupling (Figure 2, Item 8) or (Figure 2, Item 10) and inner pontoon (Figure 2, Item 3). Tighten screws (Figure 2, Items 6 and 7) to 996 lb-ft (1,350 N•m) and screws (Figure 2, Item 9) to 443 lb-ft (660 N•m).
5. Coat all nuts (Figure 2, Items 2 and 12) and steel surfaces with anti-corrosive compound after tightening.

INSTALLATION - Continued



24PIRB188C

Figure 2. Lower Main Coupling Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Install access covers (WP 0057).
2. Leak test inner pontoons (WP 0024), and seal if necessary.
3. Connect inner pontoons (WP 0050).

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
INTERIOR BAY BUMPER REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 0–100 lb-ft
(0–136 N•m) (WP 0130, Table 1, Item 35)

Equipment Condition

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

References

WP 0072

NOTE

There are two bumpers at each end of bay. Only one side is shown in this procedure. Removal and installation are performed the same way.

REMOVAL

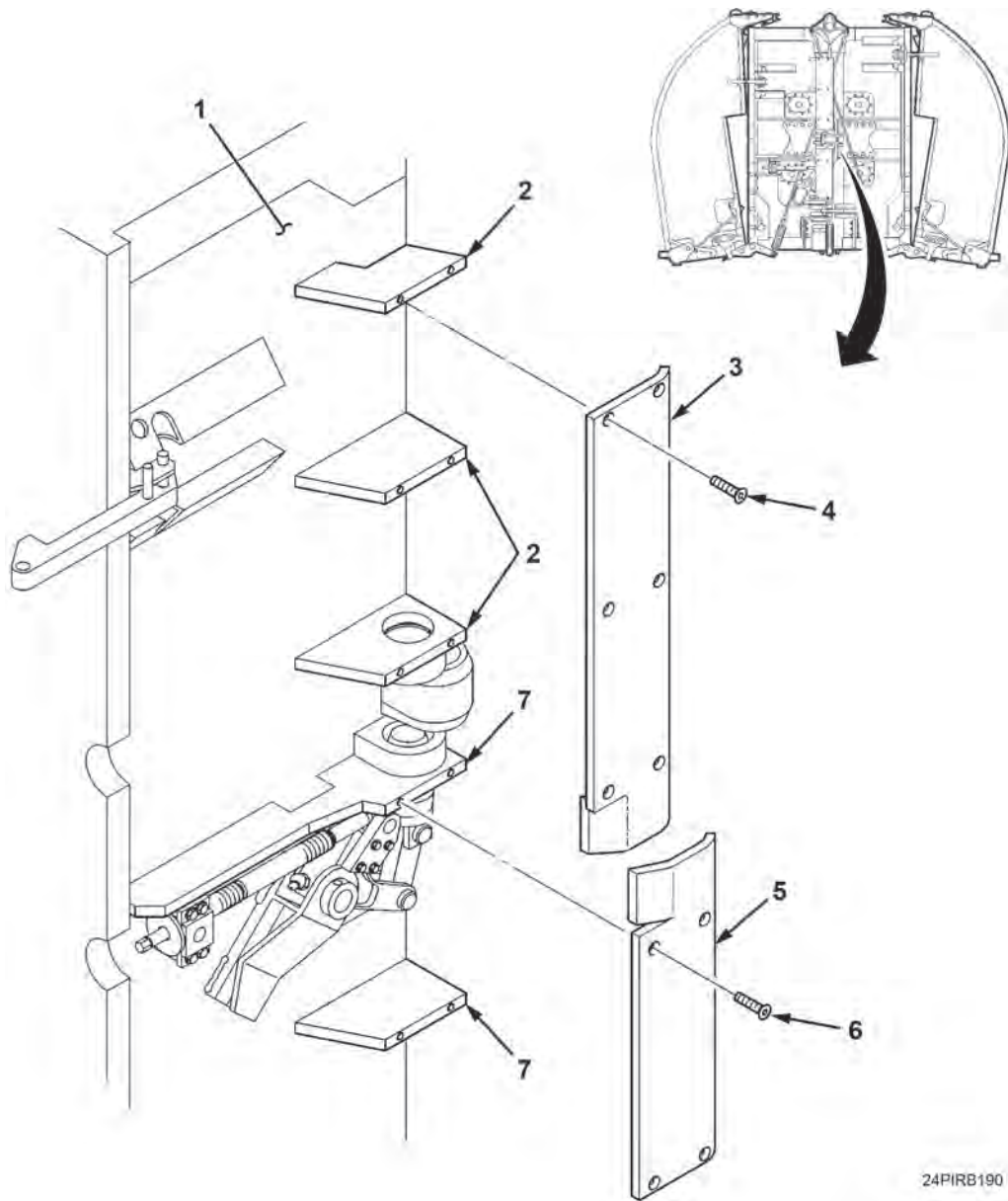
1. Remove six screws (Figure 1, Item 4) and bumper (Figure 1, Item 3) from three mounting brackets (Figure 1, Item 2) on inner pontoon (Figure 1, Item 1).
2. Remove four screws (Figure 1, Item 6) and bumper (Figure 1, Item 5) from two mounting brackets (Figure 1, Item 7) on inner pontoon (Figure 1, Item 1).

END OF TASK**INSTALLATION****NOTE**

Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).

1. Install bumper (Figure 1, Item 5) on two inner pontoon mounting brackets (Figure 1, Item 7) with four screws (Figure 1, Item 6).
2. Install bumper (Figure 1, Item 3) on three inner pontoon mounting brackets (Figure 1, Item 2) with six screws (Figure 1, Item 4).

INSTALLATION - Continued



24PIRB190

Figure 1. Bumper Replacement.

END OF TASK

FOLLOW-ON MAINTENANCE

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

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
INTERIOR BAY LOWER LOCK-DRIVE REPAIR

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Torque wrench, 3/8 in. drive, 30–200 lb-in
(4–23 N•m) (WP 0130, Table 1, Item 36)

Materials/Parts

Grease (WP 0129, Table 1, Item 17)
Lubricating oil (WP 0129, Table 1, Item 20)
Lockwasher Qty: 4 (WP 0131, Table 1, Item 2)
Lockwasher Qty: 4 (WP 0131, Table 1, Item 30)

Materials/Parts (cont.)

Spring pin (WP 0131, Table 1, Item 8)
Spring pin Qty: 2 (WP 0131, Table 1, Item 37)

References

WP 0072

Equipment Condition

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

REMOVAL

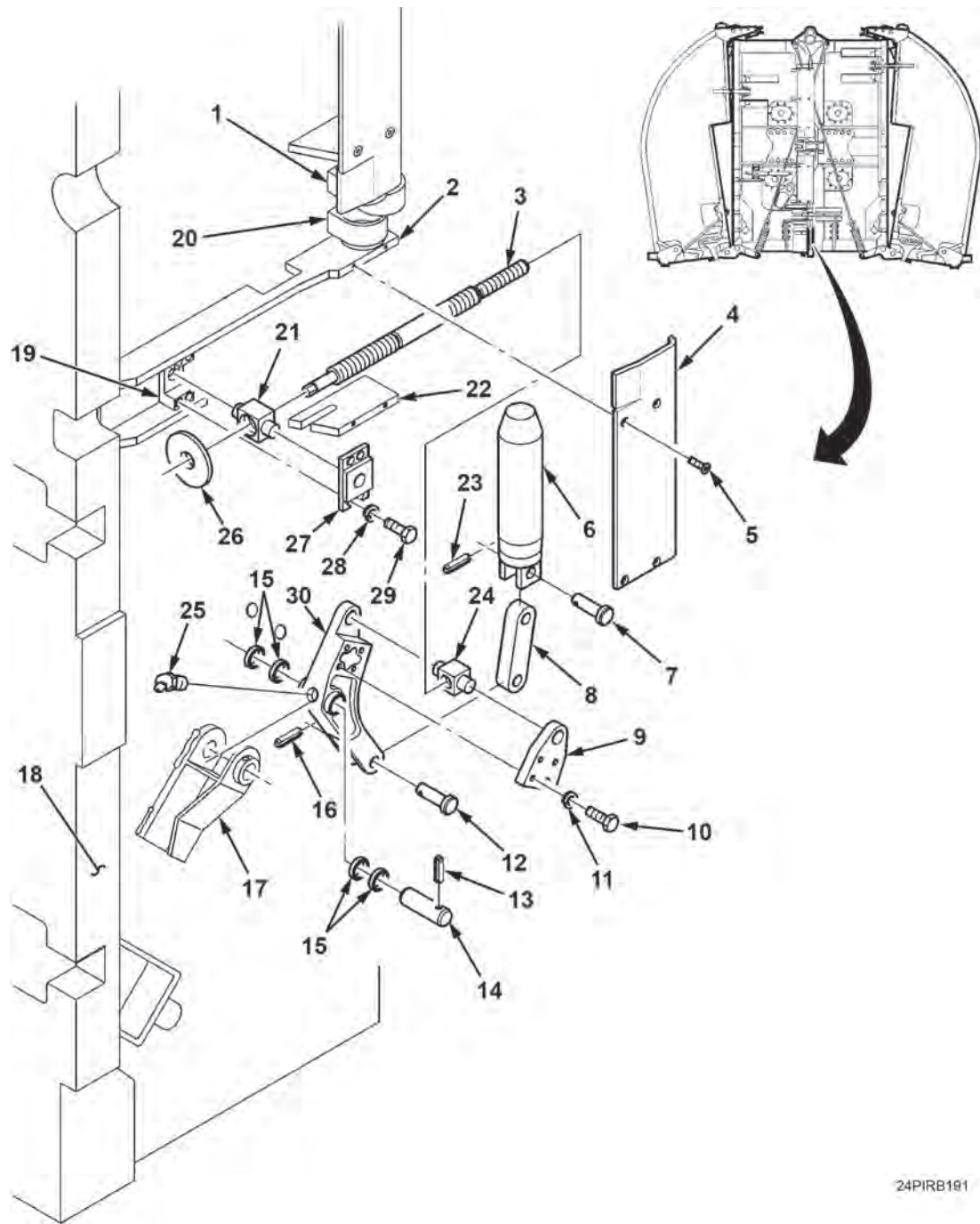
1. Remove four screws (Figure 1, Item 5) and bumper (Figure 1, Item 4) from inner pontoon mounting brackets (Figure 1, Items 2 and 22).
2. Remove four screws (Figure 1, Item 29), lockwashers (Figure 1, Item 11), and trunnion retainer (Figure 1, Item 27) from trunnion nut (Figure 1, Item 21) and bracket (Figure 1, Item 19). Discard lockwashers.
3. Remove four screws (Figure 1, Item 10), lockwashers (Figure 1, Item 28), and trunnion lever (Figure 1, Item 9) from trunnion nut (Figure 1, Item 24) and bell crank lever (Figure 1, Item 30). Discard lockwashers.
4. Remove jackscrew (Figure 1, Item 3), washer (Figure 1, Item 26), and trunnion nuts (Figure 1, Items 21 and 24) from upper bracket (Figure 1, Item 19) and bell crank lever (Figure 1, Item 30).
5. Remove washer (Figure 1, Item 26), trunnion nut (Figure 1, Item 21), and trunnion nut (Figure 1, Item 24) from jackscrew (Figure 1, Item 3).
6. Remove spring pin (Figure 1, Item 16), pin (Figure 1, Item 12), and connecting link (Figure 1, Item 8) from bell crank lever (Figure 1, Item 30). Discard spring pin.
7. Remove spring pin (Figure 1, Item 13) from bracket (Figure 1, Item 17) and pin (Figure 1, Item 14). Discard spring pin.

NOTE

Note location and quantity of shims for installation.

8. Remove pin (Figure 1, Item 14), bell crank lever (Figure 1, Item 30), and shims (Figure 1, Item 15) from bracket (Figure 1, Item 17) on inner pontoon (Figure 1, Item 18). Retain shims for installation.
9. Remove lube fitting (Figure 1, Item 25) from bell crank lever (Figure 1, Item 30).
10. Remove spring pin (Figure 1, Item 23), pin (Figure 1, Item 7), and connecting link (Figure 1, Item 8) from connecting pin (Figure 1, Item 6). Discard spring pin.
11. Remove connecting pin (Figure 1, Item 6) from inner pontoon bracket (Figure 1, Item 20) and yoke (Figure 1, Item 1).

REMOVAL - Continued



24PIRB191

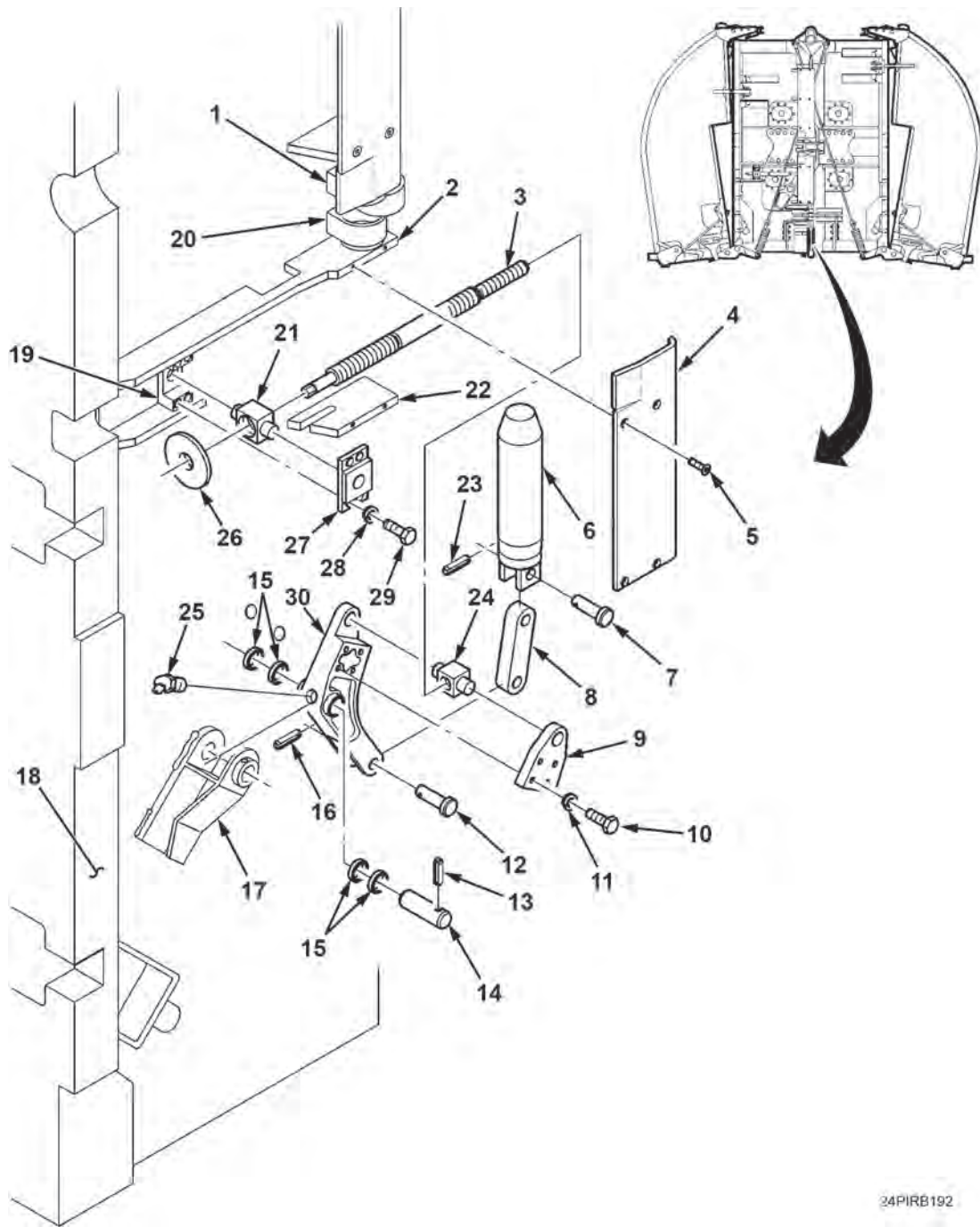
Figure 1. Lower Lock-Drive Removal.

END OF TASK

INSTALLATION**NOTE**

- Ensure that all mounting hardware is tightened to metric standards unless otherwise noted (WP 0072).
 - 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 (Figure 2, Item 6) on inner pontoon bracket (Figure 2, Item 20) and yoke (Figure 2, Item 1).
 2. Install connecting link (Figure 2, Item 8) on connecting pin (Figure 2, Item 6) with pin (Figure 2, Item 7) and new spring pin (Figure 2, Item 23).
 3. Install lube fitting (Figure 2, Item 25) on bell crank lever (Figure 2, Item 30).
 4. Install bell crank lever (Figure 2, Item 30) on bracket (Figure 2, Item 17) with shims (Figure 2, Item 15) and pin (Figure 2, Item 14).
 5. Install new spring pin (Figure 2, Item 13) through bracket (Figure 2, Item 17) and pin (Figure 2, Item 14).
 6. Connect link (Figure 2, Item 8) on bell crank lever (Figure 2, Item 30) with pin (Figure 2, Item 12) and new spring pin (Figure 2, Item 16) and retract connecting pin (Figure 2, Item 6) to its stop position.
 7. Install trunnion nut (Figure 2, Item 21), washer (Figure 2, Item 26), and trunnion nut (Figure 2, Item 24) on jackscrew (Figure 2, Item 3).
 8. Adjust trunnion nut (Figure 2, Item 24) so jackscrew threads are flush with bottom of trunnion nut and adjust trunnion nut (Figure 2, Item 21) to approximate distance between mounting holes in bell crank lever (Figure 2, Item 30) and bracket (Figure 2, Item 19).
 9. Position jackscrew (Figure 2, Item 3) on bell crank lever (Figure 2, Item 30) and install trunnion lever (Figure 2, Item 9) on trunnion nut (Figure 2, Item 24) and bell crank lever with four new lockwashers (Figure 2, Item 11) and screws (Figure 2, Item 10).
 10. Install upper trunnion nut (Figure 2, Item 21) on bracket (Figure 2, Item 19) with trunnion retainer (Figure 2, Item 27), four new lockwashers (Figure 2, Item 28), and screws (Figure 2, Item 29).
 11. Install bumper (Figure 2, Item 4) on inner pontoon (Figure 2, Item 18), mounting brackets (Figure 2, Items 2 and 22) with four screws (Figure 2, Item 5).

INSTALLATION - Continued



34PIRB192

Figure 2. Lower Lock-Drive Installation.

END OF TASK

FOLLOW-ON MAINTENANCE

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

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
DATA PLATE REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

NOTE

All instruction and identification data plates are removed and installed the same way. The number of fasteners required to secure each data plate may vary. Improved Ribbon Bridge (IRB) Interior Bay data plate is shown.

REMOVAL

1. Remove four screws (Figure 1, Item 1) from data plate (Figure 1, Item 2).
2. Remove data plate (Figure 1, Item 2).
3. Repeat Steps 1 and 2 for other data plates (Figure 1, Item 2), as required.

END OF TASK

INSTALLATION

1. Place data plate (Figure 1, Item 2) into position on the IRB.
2. Secure data plate (Figure 1, Item 2) with four screws (Figure 1, Item 1).
3. Repeat Steps 1 and 2 for other data plates (Figure 1, Item 2), as required.

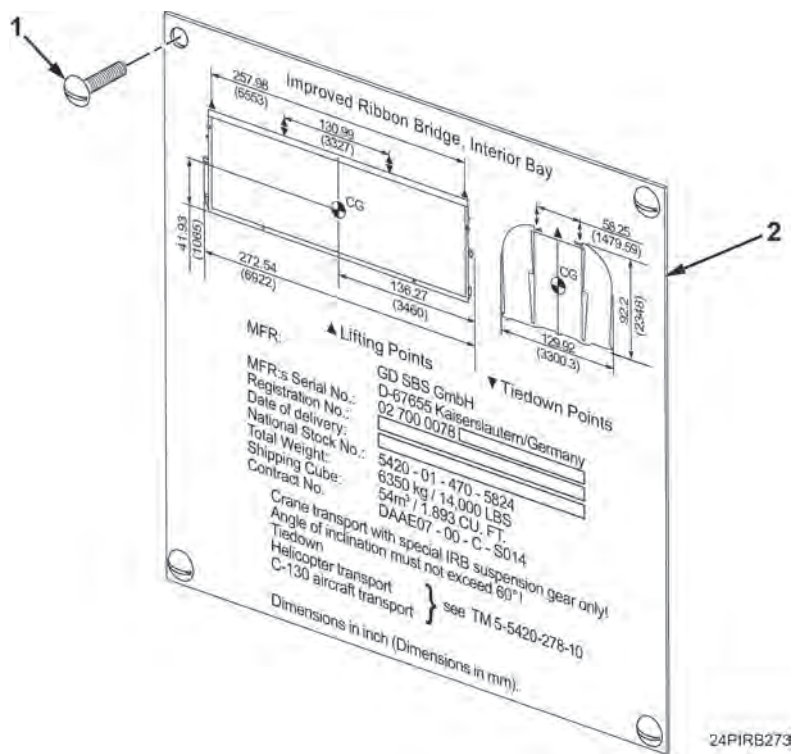


Figure 1. Data Plate Replacement.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
COUPLING DEVICE WHEELS AND PINS REPAIR**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Materials/Parts

Cotter pin Qty: 2 (WP 0131, Table 1, Item 36)
Cotter pin Qty: 4 (WP 0131, Table 1, Item 38)

REMOVAL

1. Remove two cotter pins (Figure 1, Item 2), washers (Figure 1, Item 3), and wheels (Figure 1, Item 4) from wheel shaft (Figure 1, Item 9). Discard cotter pins.
2. If damaged, remove wheel shaft (Figure 1, Item 9) and two washers (Figure 1, Item 3) from lever assembly (Figure 1, Item 11).

NOTE

Note position of handle assembly and pins for installation.

3. Remove two cotter pins (Figure 1, Item 5), washers (Figure 1, Item 10), pins (Figure 1, Item 12), and handle assembly (Figure 1, Item 1) from lever assembly (Figure 1, Item 11). Discard cotter pins.
4. Remove two cotter pins (Figure 1, Item 5), washers (Figure 1, Item 6), pin (Figure 1, Item 7), and hook (Figure 1, Item 8) from lever assembly (Figure 1, Item 11). Discard cotter pins.

END OF TASK**INSTALLATION**

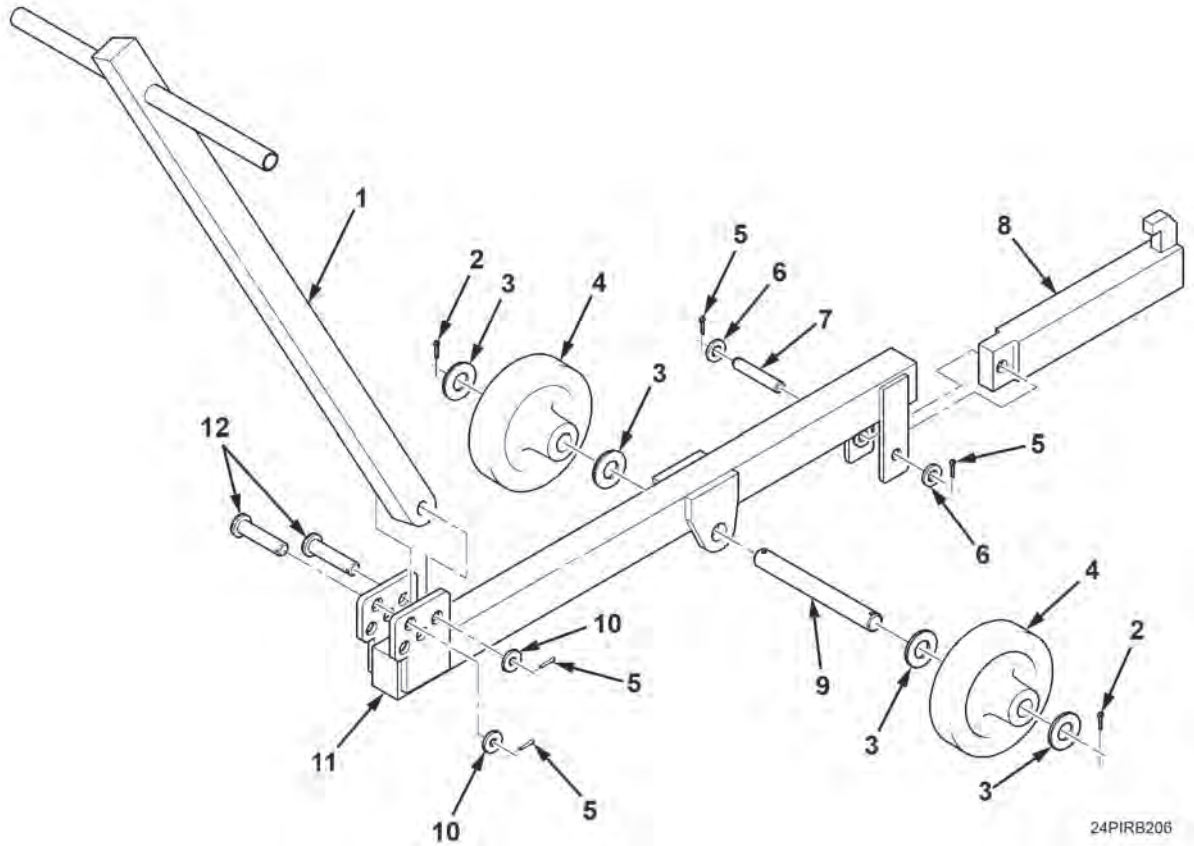
1. Install hook (Figure 1, Item 8) on lever assembly (Figure 1, Item 11) with pin (Figure 1, Item 7), two washers (Figure 1, Item 6), and new cotter pins (Figure 1, Item 5).

NOTE

Install pins and handle assembly as noted at removal.

2. Install handle assembly (Figure 1, Item 1) on lever assembly (Figure 1, Item 11) with two pins (Figure 1, Item 12), washers (Figure 1, Item 10), and new cotter pins (Figure 1, Item 5).
3. If removed, install wheel shaft (Figure 1, Item 9) and two washers (Figure 1, Item 3) on lever assembly (Figure 1, Item 11).
4. Install two washers (Figure 1, Item 3) and wheels (Figure 1, Item 4) on wheel shaft (Figure 1, Item 9) with two washers (Figure 1, Item 3) and new cotter pins (Figure 1, Item 2).

INSTALLATION - Continued



24PIRB206

Figure 1. Coupling Device.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
PREPARATION FOR STORAGE OR SHIPMENT**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)

Materials/Parts

Cleaning cloth (WP 0129, Table 1, Item 9)
Cleaning solvent (WP 0129, Table 1, Item 7)
Corrosion preventive compound
(WP 0129, Table 1, Item 10)
Face shield (WP 0129, Table 1, Item 12)
Nitrile gloves (WP 0129, Table 1, Item 14)
Respirator (WP 0129, Table 1, Item 24)

References

AR 750-1

References (cont.)

DA PAM 750-8
DD Form 250
TM 5-3990-263-13&P
TM 5-5420-278-10
TM 55-2200-001-12
TM 743-200-1
TM 746-10
TM 9-2320-346-10
TM 9-2320-425-10
TM 9-2320-435-10
WP 0025
WP 0050
WP 0067

SCOPE

This work package provides instructions on preserving and protecting Improved Ribbon Bridge Ramp Bay (IRB-R/B) and Improved Ribbon Bridge Interior Bay (IRB-I/B) for shipment and storage.

PREPARATION FOR SHIPMENT AND LIMITED STORAGE**WARNING**

- Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids.
- Adhesive, solvents, and sealing compounds can burn easily, give off harmful vapors, and harm skin. Keep away from open flames and use in a well-ventilated area. If adhesives, solvents, or sealing compounds contact skin or clothing, wash immediately with soap and water.
- Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:
 - Eyes, flush immediately with water.
 - Skin, wash with soap and water.

Failure to comply may result in personnel injury or death and/or damage to the environment.

Cleaning

Protection for IRB bays and accompanying equipment must be sufficient to protect the material against deterioration and physical damage.

NOTE

Prior to application of corrosion preventive compound, surfaces must be cleaned to ensure removal of corrosion, soil, grease, or vehicle acid and alkali residues.

Remove all dirt, grease, oil, and other foreign matter from all painted metal surfaces of the IRB bay by scrubbing with cloths soaked in MIL-PRF-680. Use warm water for cleaning rubber parts.

WARNING

- Compressed air source will not exceed 30 psi (207 kPa). When cleaning with compressed air, eye protection must be worn.
- Water is discharged from pump nozzle under extreme pressure. Avoid cleaning in direction of personnel; mud, small rocks, and debris may fly up. Wear personal protective equipment. Failure to comply may result in personnel injury or death.

PREPARATION FOR SHIPMENT AND LIMITED STORAGE - Continued

Clean exterior surfaces of IRB bays by powerwashing with water to ensure removal of all dirt and foreign matter (TM 5-5420-278-10).

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. Equipment must be inspected for signs of corrosion.

Packing

Pack all Basic Issue Items (BII) and Additional Authorization List (AAL) items to prevent physical damage.

Shipment Documents

Prepare all Army shipping documents accompanying IRB per DA PAM 750-8.

LIMITED STORAGE INSTRUCTIONS**NOTE**

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontoons.

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 the major command, place an IRB-R/B or IRB-I/B that is beyond the maintenance capability of the unit in administrative storage. For detailed information, refer to AR 750-1.

Time Limitations**NOTE**

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontoons.

Administrative storage is restricted to a period of 90 days and must not be extended unless the IRB bay(s) is reprocessed per "Inspection In Limited Storage" below.

PREPARATION FOR SHIPMENT AND LIMITED STORAGE - Continued

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.

- The IRB-R/B or IRB-I/B 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 to 160°F (-45.6°C to 71.1°C).
- Maintenance consists of inspecting, cleaning, servicing, preserving, lubricating, adjusting, and replacing mandatory repair parts as required.
- 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.

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.

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 as necessary. Thoroughly clean, dry, and repaint painted surfaces showing evidence of wear (WP 0067).

Removal From Limited Storage

NOTE

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontoons.

Material removed from administrative storage will be:

- Restored to normal operating conditions.
- Repaired as required.
- Returned to normal Preventive Maintenance Checks and Services (PMCS) schedule using last type service completed as a starting point.

PREPARATION FOR SHIPMENT AND LIMITED STORAGE - Continued**Storage of New IRB Bays****NOTE**

Ensure each bay is drained prior to removal from storage. Water may accumulate from condensation inside bay pontoons.

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 Material Inspection and Receiving Report, DD Form 250; whichever occurs first.

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 in accordance with the contractor's approved technical manual.

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.

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/B and IRB-I/B. 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, TM 9-2320-346-10, TM 9-2320-425-10 and TM 9-2320-435-10 for information on the Common Bridge Transporter (CBT) and TM 5-3990-263-13&P for the Bridge Adapter Pallet (BAP).

PREPARATION FOR SHIPMENT AND LIMITED STORAGE - Continued

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 pontoons 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 Figure 1 and 2 in this work package for measurements.

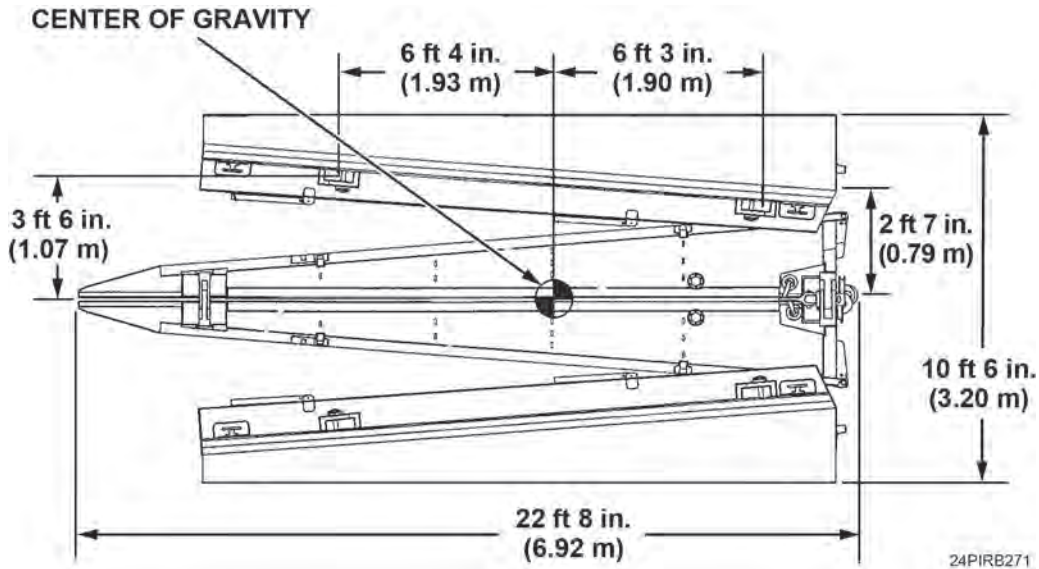


Figure 1. Top View, M16 Ramp Bay.

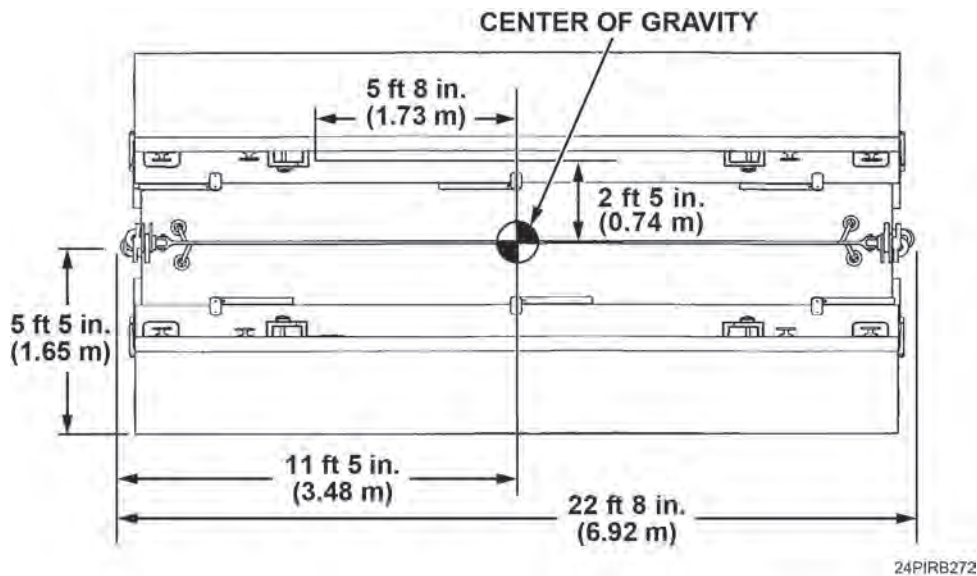


Figure 2. Top View, M17 Interior Bay.

PREPARATION FOR SHIPMENT AND LIMITED STORAGE - Continued**Transport of IRB Bays by C-130 Aircraft****NOTE**

Bays must be separated at inner pontoons for transport in C-130 aircraft. Refer to (WP 0025) and (WP 0050) for bay separation.

The IRB-R/B and IRB-I/B are transportable by C-130 aircraft. Refer to General Packaging Instructions for Field Units, TM 746-10, for shipping information.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
GENERAL MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Angle grinder (WP 0130, Table 1, Item 13)
Surface plate (WP 0130, Table 1, Item 22)
Straight edge (WP 0130, Table 1, Item 25)
Magnifying glass (WP 0130, Table 1, Item 9)

Materials/Parts

Abrasive cloth (WP 0129, Table 1, Item 8)
Anticorrosive compound
(WP 0129, Table 1, Item 11)
Antiseize (WP 0129, Table 1, Item 4)
Cleaning cloth (WP 0129, Table 1, Item 9)
Cleaning solvent (WP 0129, Table 1, Item 7)
Face shield (WP 0129, Table 1, Item 12)
Goggles (WP 0129, Table 1, Item 15)
Grease (WP 0129, Table 1, Item 19)

Materials/Parts (cont.)

Leather gloves (WP 0129, Table 1, Item 13)
Lubricating oil (WP 0129, Table 1, Item 20)
Nitrile gloves (WP 0129, Table 1, Item 14)
Respirator (WP 0129, Table 1, Item 24)
Rotary wire brush (WP 0129, Table 1, Item 5)

References

ASTM-E 1417
MIL-I-6868
TC 9-237
TM 9-214
TM 9-450
WP 0065
WP 0067
WP 0072
WP 0073
WP 0126

SCOPE

General maintenance instructions for cleaning, inspection, repair, assembly, and disassembly are provided in this Work Package (WP). Publications which provide additional information on general shop practice techniques, preservation, welding, sheet metal work, etc. are listed in References (WP 0126).

CLEANING

General Instructions

Cleaning procedures will be the same for the majority of parts and components which make up the Improved Ribbon Bridge (IRB) subassemblies. General cleaning procedures are detailed below.

The Importance of Cleaning

WARNING



Improper cleaning methods and use of unauthorized cleaning solvents may result in personnel injury or death and/or damage to equipment.

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:

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.

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.

Castings

WARNING



Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

1. Clean inner and outer surfaces of castings and all areas subject to grease and fluid with MIL-PRF-680.

CLEANING

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, eye shields must be worn. Failure to comply may result in personnel injury or death.

3. Use compressed air to blow out all tapped screw holes and to dry castings after cleaning.

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.

WARNING



Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

2. Wash passages by flushing with solvents.

WARNING



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

3. Dry passages with compressed air.

Seals and Flexible Hoses

CLEANING - Continued**CAUTION**

Do not allow MIL-PRF-680 to come in contact with seals or flexible hoses. Failure to comply will result in damage to parts.

Clean with soap and water.

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.

Machine Tooled Parts**WARNING**

Compressed air source will not exceed 30 psi (207 kPa). When cleaning with compressed air, eye shields must be worn. Failure to comply may result in personnel injury or death. Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

Clean with MIL-PRF-680 and dry with compressed air.

Machined Surfaces**WARNING**

Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

Clean with MIL-PRF-680 and dry with lint-free cloth.

CLEANING - Continued**Mated Surfaces****WARNING**

Eye shields must be worn when grinding, drilling, and/or cleaning with a wire brush. Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

Remove old gasket and/or sealing compound using wire brush and MIL-PRF-680.

Rusted Surfaces**WARNING**

Eye shields must be worn when grinding, drilling, and/or cleaning with a wire brush. Flying rust and metal particles may result in personnel injury.

NOTE

All parts subject to rusting must be lightly oiled and wrapped prior to storage.

Clean all rusted surfaces using wire brush and abrasive cloth.

Externally Exposed Parts

Wash with soap and water. Rinse thoroughly and air dry.

END OF TASK

INSPECTION

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 this WP. 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.

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.

Bearings

Refer to TM 9-214 for inspection of bearings. Check all bearings for conformance to applicable repair standards.

Studs, Bolts, and Screws

Replace if threads are damaged, bent, or stripped.

Seals

Seals are mandatory replacement items.

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.

Machined Tooled Parts

Inspect for cracks, breaks, elongated holes, wear, and chips.

INSPECTION - Continued

Machined Surfaces

Inspect for cracks, evidence of wear, galled or pitted surface, burrs, nicks, and scratches.

Mated Surfaces

Inspect for remains of old gasket, seal, secure fit, pitting, and evidence of leakage.

Rusted Surfaces

Inspect for pitting, holes, and severe damage.

Externally Exposed Parts

Inspect for breaks, cracks, rust damage, and wear.

Rivets

Inspect for loose, broken, and missing rivets in accordance with TM 9-450.

END OF TASK

REPAIR

General Instructions

Repair of parts and components is limited to procedures outlined in applicable maintenance tasks and the following general procedures detailed in the following General Instructions.

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.

WARNING



Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

REPAIR - Continued

- b. Abrasive cloth dipped in MIL-PRF-680.
- 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 (WP 0065).

Bearings

See TM 9-214 for repair of bearings. Check all bearings for conformance to applicable repair standards.

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 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 (WP 0073) for correct part numbers.
5. Replacement studs have a special coating and must have a small amount of antiseize compound applied on threads before stud is installed. Install replacement stud slowly to prevent heat buildup and snapping off.

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.

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.

Rivets

Replace rivets per TM 9-450.

END OF TASK

DISASSEMBLY

1. The work area for disassembly of any item must be kept as clean as possible. This will prevent contamination of internal parts.
2. 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.
3. 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.
4. When removing gaskets, O-rings, or seals, do not use any metal tool that will scratch the sealing surface next to these items.

END OF TASK**ASSEMBLY**

1. 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.
2. Lubricate all metal parts with lubricant or fluid used during operation. Refer to (WP 0067) for proper lubricants.
3. Installation of cotter pins and lockwires shall be accomplished as specified in assembly procedures.
4. 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 0072).
5. All fuel, air, and hydraulic components must be kept thoroughly clean at all times. Plug all open ports until the component is installed.
6. All pressing operations should be accomplished using a suitable press and adapters, unless otherwise specified.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
THREADED INSERT REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0130, Table 1, Item 29)
Cordless Drill (WP 0130, Table 1, Item 7)
Drill Set (WP 0130, Table 1, Item 6)
Thread Insert Kit (WP 0130, Table 1, Item 27)

Materials/Parts (cont.)

Grease (WP 0129, Table 1, Item 18)
Leather gloves (WP 0129, Table 1, Item 13)

Equipment Condition

Inner and outer pontoons unfolded, as necessary
(TM 5-5420-278-10)

Materials/Parts

Goggles (WP 0129, Table 1, Item 15)

WARNING

Eye shields must be worn when grinding, drilling, and/or cleaning with a wire brush. Flying rust and metal particles may result in personnel injury.

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.
2. Clean chips out of threaded insert hole.

END OF TASK**INSTALLATION**

1. Use drill bit that is specified for the size of threaded insert to be installed.
2. Use tap to thread hole for insert.

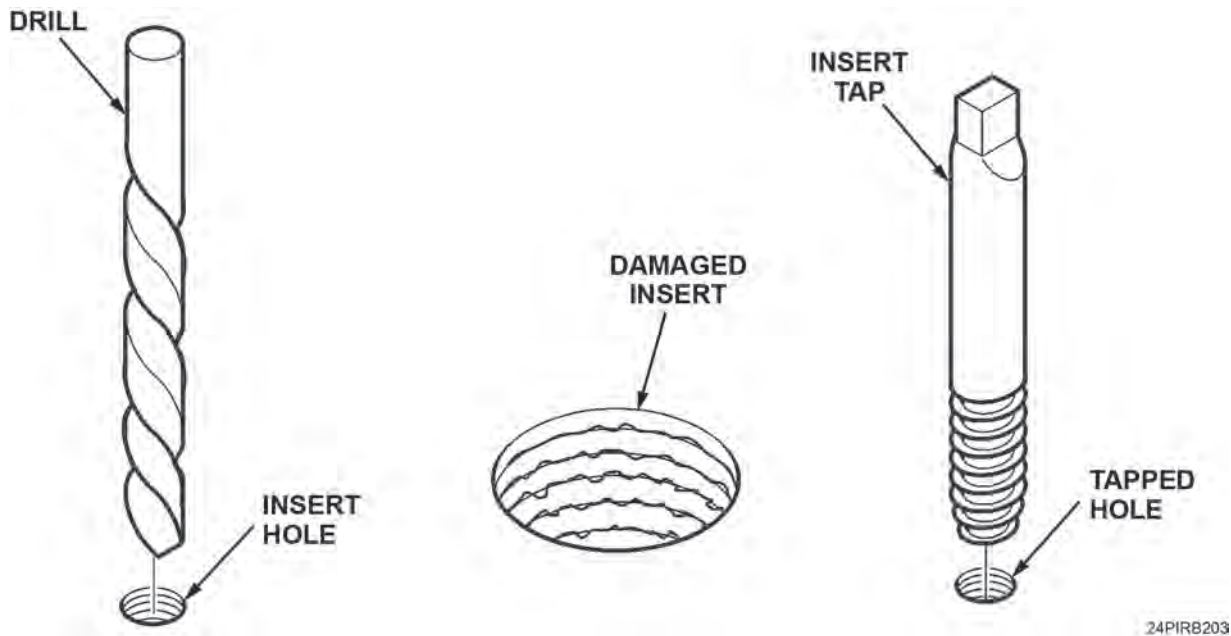


Figure 1. Threaded Insert Removal and Insert Preparation.

NOTE

- Fine threaded inserts must be prewound on fine thread insert mandrel to reduce insert diameter before installing insert into tapped hole.
 - Coarse threaded inserts can be installed without prewinding insert using coarse thread insert mandrel.
 - Coat insert with grease prior to installation.
3. Install threaded insert on insert mandrel with tang down.
 4. Using insert mandrel, install threaded insert in tapped hole.
 5. Using insert mandrel, break off tang on threaded insert and remove insert mandrel from threaded insert and tang from bottom of hole.

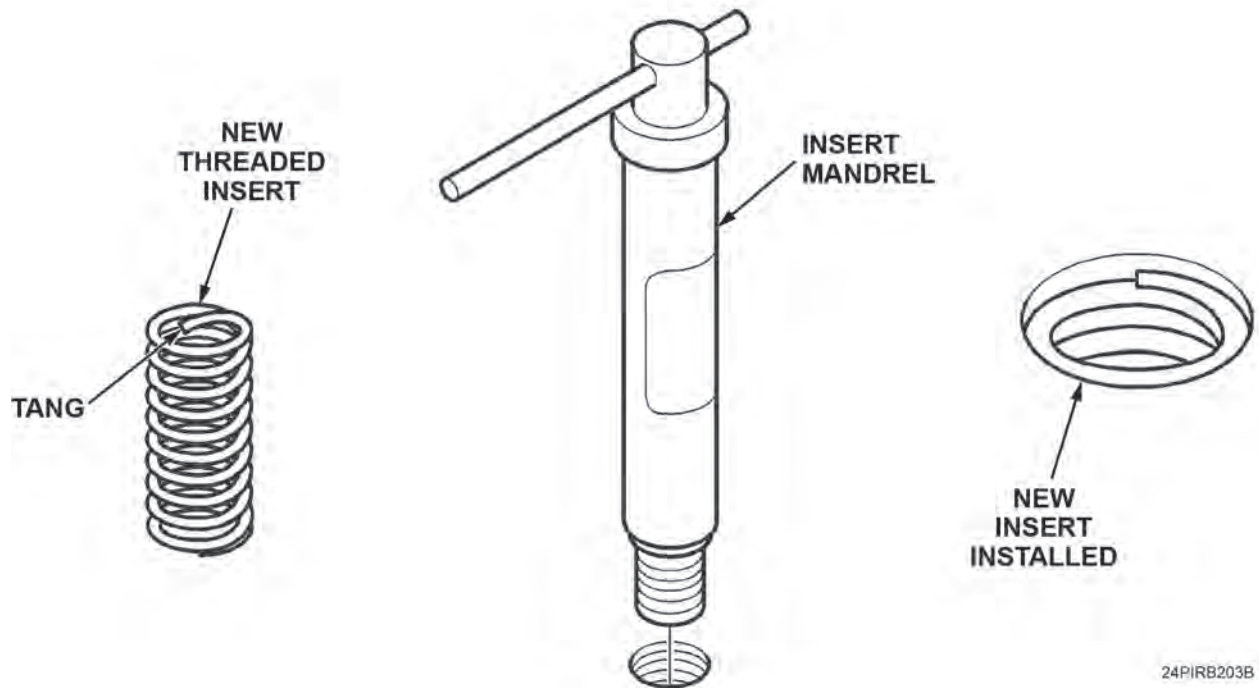
INSTALLATION - Continued

Figure 2. Threaded Insert Installation.

END OF TASK**FOLLOW-ON MAINTENANCE**

1. Fold inner and outer pontoons, as necessary (TM 5-5420-278-10).
2. Load ramp bay or interior bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE CRACK REPAIR PREPARATION AND WELDING

INITIAL SETUP:

Tools and Special Tools

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Cordless drill (WP 0130, Table 1, Item 7)
Drill set (WP 0130, Table 1, Item 6)
Grinder (WP 0130, Table 1, Item 13)
Industrial goggles (WP 0130, Table 1, Item 11)
Leak tester (WP 0130, Table 1, Item 26)
MIG welder (WP 0130, Table 1, Item 1)
Welding apron (WP 0130, Table 1, Item 2)
Welder's gloves (WP 0130, Table 1, Item 10)

Materials/Parts

Aluminum plate stock
(WP 0129, Table 1, Item 22)
Respirator (WP 0129, Table 1, Item 24)
Rotary wire brush (WP 0129, Table 1, Item 5)

Personnel Required

Welder

References

MIL-DTL-53072
TC 9-237
WP 0024

Equipment Condition

Ramp bay or interior bay removed from transporter (TM 5-5420-278-10)
Inner and outer pontoons unfolded (TM 5-5420-278-10), and separated if necessary (WP 0025 and WP 0050)

WARNING



Vehicles are finished with a Chemical Agent Resistant Coating (CARC). CARC contains isocyanates, which are highly irritating to skin and respiratory system. Breathing CARC vapor or dried paint dust can cause coughing, shortness of breath, burning sensation in throat and nose, watering of eyes, pain during respiration, and chest tightness. Skin contact with particulates can cause itching or redness of skin. Sensitivity to isocyanates may increase from repeated exposure. Use the following precautions to prevent injury from exposure:

- Never weld or cut CARC-coated surfaces. Grinding or sanding CARC-coated surfaces will create harmful dust.
- Personnel who have lung or breathing problems or who have had a reaction to isocyanates must not be in any area where CARC painting operations are performed or CARC dust particles are present.
- CARC painting operations must be performed only by qualified painters wearing protective gear and respirators and working in fully equipped facilities. All personnel in the area must wear high-efficiency air purifying respirators, protective goggles, gloves, and other protective clothing. Thoroughly wash all clothing before reuse.

Failure to comply may result in personnel injury or death.

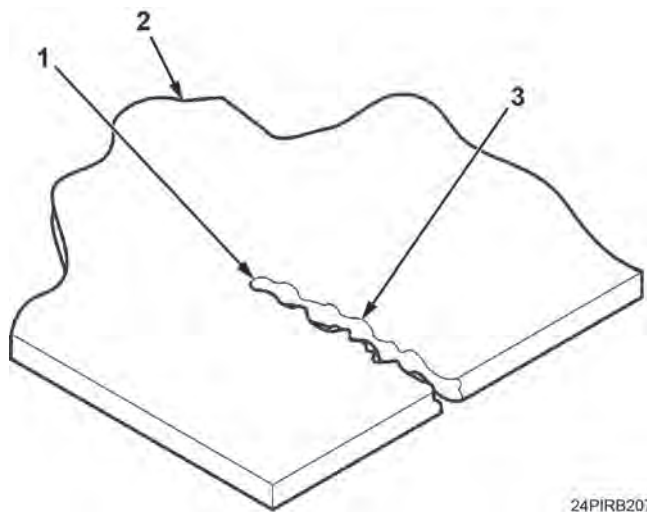
NOTE

- 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.
- Improved Ribbon Bridge (IRB) bays are made from corus aluminum.

PREPARATION**WARNING**

Eye shields must be worn when grinding, drilling, and/or cleaning with a wire brush. Flying rust and metal particles may result in personnel injury.

1. Position pontoon (Figure 1, Item 2) so crack (Figure 1, Item 3) is face-up for welding.
2. Grind area and find ends of crack (Figure 1, Item 3).
3. Use a drill with diameter corresponding to half the plate thickness. Drill a hole at ends of crack (Figure 1, Item 1) in order to prevent enlargement of crack (Figure 1, Item 3).



24PIRB207

Figure 1. Crack Repair.

NOTE

If crack is open 0.098 in. (2.5 mm) or more, an 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 with a groove angle of 70 degrees (Figure 2).
5. Clean area to be welded with a stainless steel wire brush.

END OF TASK

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 (Figure 2) (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 pontoon leak test (WP 0024). Reweld if necessary.

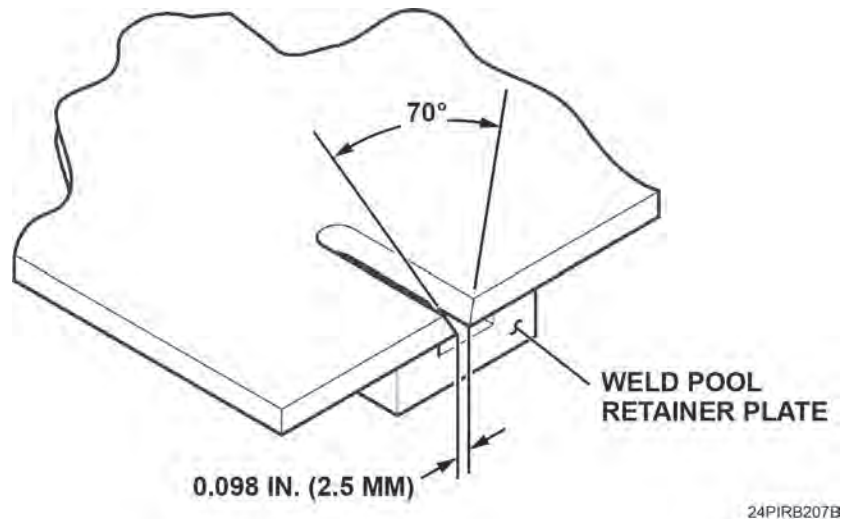


Figure 2. V-Seam and Pool Retainer.

END OF TASK**FOLLOW-ON MAINTENANCE**

1. Clean, treat, and paint area per MIL-DTL-53072.
2. Connect outer pontoon and inner pontoon (WP 0025) or (WP 0050), if separated, and fold pontoons (TM 5-5420-278-10).
3. Load ramp bay or interior bay on transporter (TM 5-5420-278-10).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE PAINTING

INITIAL SETUP:

Materials/Parts

Cleaning solvent (WP 0129, Table 1, Item 7)
Face shield (WP 0129, Table 1, Item 12)
Goggles (WP 0129, Table 1, Item 15)
Leather gloves (WP 0129, Table 1, Item 13)
Nitrile gloves (WP 0129, Table 1, Item 14)
Grease (WP 0129, Table 1, Item 18)
Respirator (WP 0129, Table 1, Item 24)

References (cont.)

FED-STD-595C
MIL-DTL-5541
MIL-DTL-53072
TB 43-0242
TM 43-0139
TT-C-490

References

E 02 005 0803

WARNING



- Improper cleaning methods and use of unauthorized cleaning solvents may result in personnel injury or death and/or damage to equipment.
- Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids.
- Vehicles are finished with a Chemical Agent Resistant Coating (CARC). CARC contains isocyanates, which are highly irritating to skin and respiratory system. Breathing CARC vapor or dried paint dust can cause coughing, shortness of breath, burning sensation in throat and nose, watering of eyes, pain during respiration, and chest tightness. Skin contact with particulates can cause itching or redness of skin. Sensitivity to isocyanates may increase from repeated exposure. Use the following precautions to prevent injury from exposure:
 - Never weld or cut CARC-coated surfaces. Grinding or sanding CARC-coated surfaces will create harmful dust.
 - Personnel who have lung or breathing problems or who have had a reaction to isocyanates must not be in any area where CARC painting operations are performed or CARC dust particles are present.
 - CARC painting operations must be performed only by qualified painters wearing protective gear and respirators and working in fully equipped facilities. All personnel in the area must wear high-efficiency air purifying respirators, protective goggles, gloves, and other protective clothing. Thoroughly wash all clothing before reuse.

Failure to comply may result in personnel injury or death and/or damage to the environment.

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-DTL-5541 if aluminum, and primed and painted with chemical agent resistance paint per MIL-DTL-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-DTL-53072. Refer to Camouflage Patterns in this Work Package (WP). The roadway/walkway and ramp plates are coated with a non-slip material.

APPLICATION AND REPAIR OF NON-SLIP COATING

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 to 0.8 in. (16 to 20 mm) to avoid contamination.

WARNING



Wear leather gloves when mixing or coating with non-slip material. Skin irritation may occur if procedure is performed without leather gloves.

- Ensure proper ventilation in workshops and confined areas.
- Wash hands and wrists and rub with skin protectant ointment before and after performing task.

Failure to comply may result in personnel injury or death.

NOTE

- Ensure area to be coated is dry.
 - Coat bridge in a temperature range of 64°F to 75°F (18°C to 24°C).
 - Coat roadway within 8 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°F to 77°F (20°C to 25°C).
2. With a 7 in. (18 cm) paint roller, apply a 0.04 in. (1 mm) layer of non-skid surface compound to roadway. Let compound dry for 1 hour at 72°F (22°C) or 2 hours at 64°F (18°C).
 3. Apply a special corundum mixture (aluminum oxide) with granulation 0.02 to 0.04 in. (0.5 to 1 mm).
 4. Let corundum mixture dry for 12 hours at temperatures of 59°F (15°C) or above.

APPLICATION AND REPAIR OF NON-SLIP COATING - Continued

5. Sweep off non-adhering corundum granulation and use for further application. Sieve out potential contamination.

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 7 days of normal temperatures. Coating may be damaged if exposed to stress before it is completely dry.

NOTE

Once non-slip coating has hardened, it cannot be removed and used for further application.

7. Store parts in the open after 48 hours of temperatures 64°F to 75°F (18°C to 24°C).

WARNING

Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:

- Eyes, flush immediately with water.
- Skin, wash with soap and water.

Failure to comply may result in personnel injury or death.

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 MIL-PRF-680 solvent.

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.

APPLICATION AND REPAIR OF NON-SLIP COATING - Continued**WARNING**

Wear leather gloves when mixing or coating with non-slip material. Skin irritation may occur if procedure is performed without leather gloves.

- Ensure proper ventilation in workshops and confined areas.
- Wash hands and wrists and rub with skin protectant ointment before and after performing task.

Failure to comply may result in personnel injury or death.

NOTE

- Ensure area to be coated is dry.
 - Coat bridge in a temperature range of 64°F to 75°F (18°C to 24°C).
 - Coat roadway within 8 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°F to 77°F (20°C to 25°C).
 - To adapt the repaired spot to existing coating, apply a second coat of non-slip material to the wet first coat.
3. Apply non-slip material with a brush to damaged area.
 4. Apply corundum mixture per Application of Coating instructions within this WP.
 5. Allow parts to dry and store per Application of Coating instructions within this WP.

END OF TASK**SURFACE TREATMENT WITH METAL SEPARATING AGENT****Preparation of Mixing Components****NOTE**

To ensure proper bonding, joint flanks or bonded surfaces must be dry, clean, and 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)).

SURFACE TREATMENT WITH METAL SEPARATING AGENT - Continued**CAUTION**

To avoid metal separating agent failure, do not process 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 10 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 at this time.

Application of Components

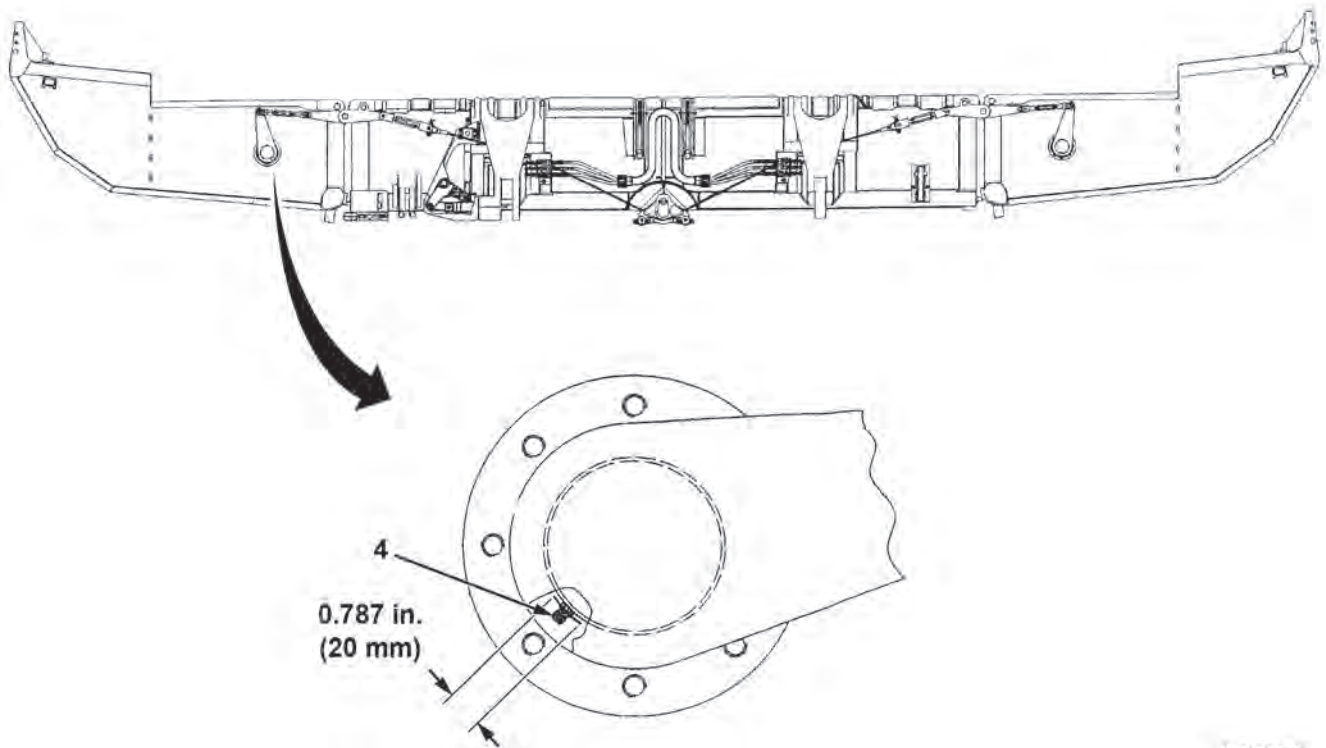
1. Coat all individual parts with separating agent on the sealing surfaces. Apply 0.04-in. (1-mm) thick layers until surface is smooth.
2. Assemble steel parts with prescribed torques. Separating agent must exude from all sides. Remove excess material.

END OF TASK**PAINTING INSTRUCTIONS**

Refer to TM 43-0139 for painting instructions.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000



24PIRB243

Figure 1. Lever Grease Fitting.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

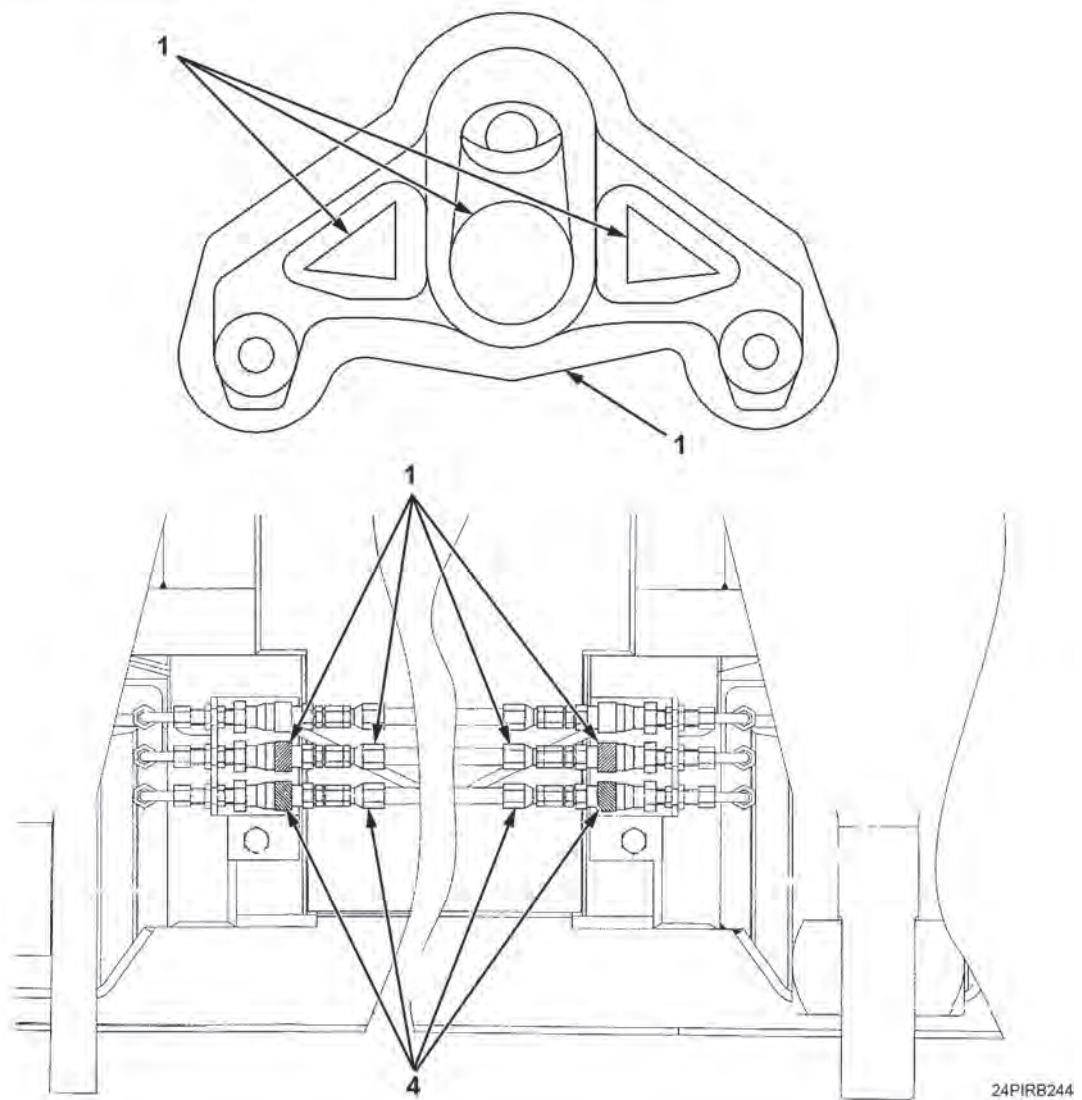
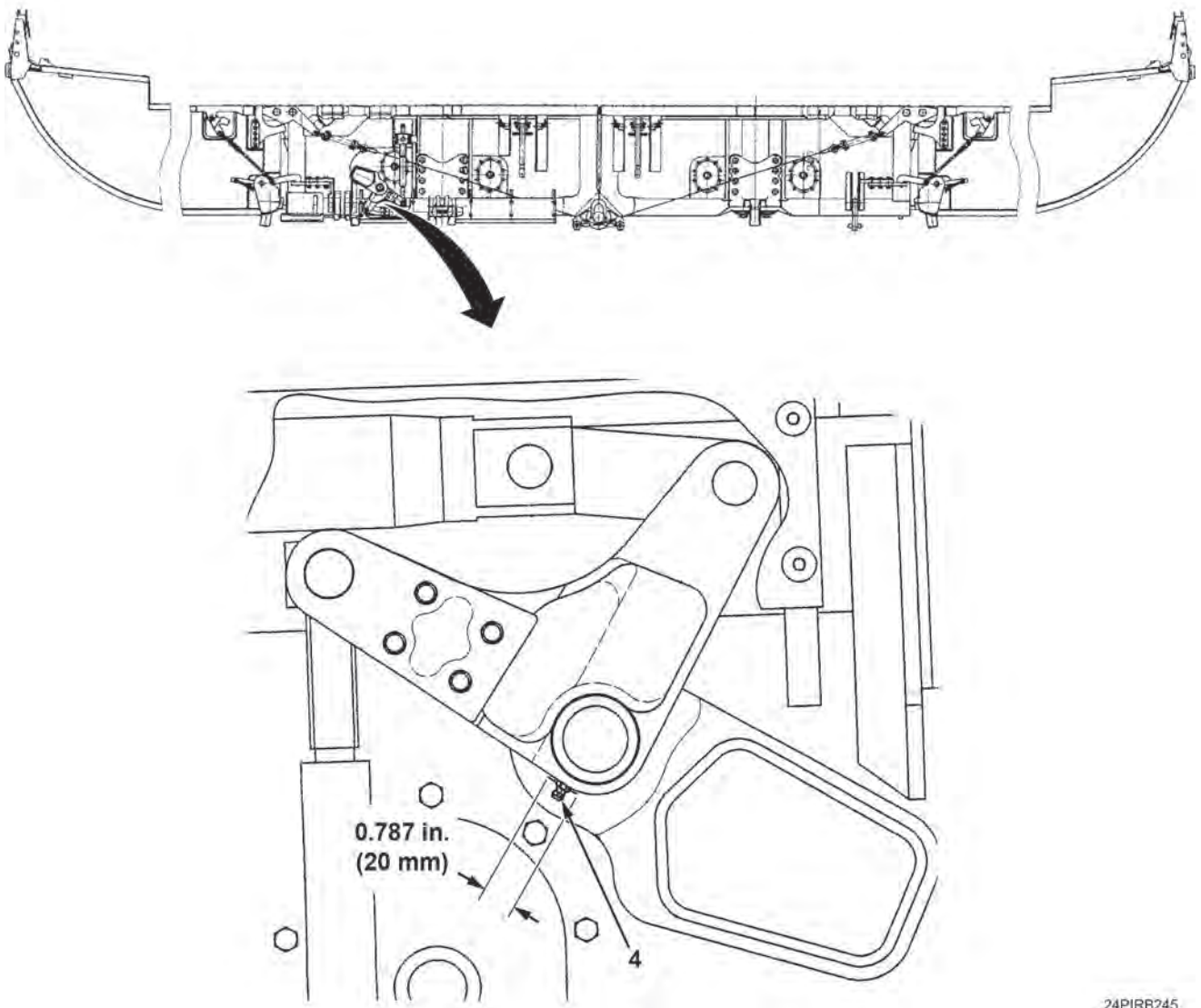


Figure 2. Bell Crank and Hydraulic Fittings.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW,AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED,RAL 3000



24PIRB245

Figure 3. Lock-Drive Lever Grease Fitting.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

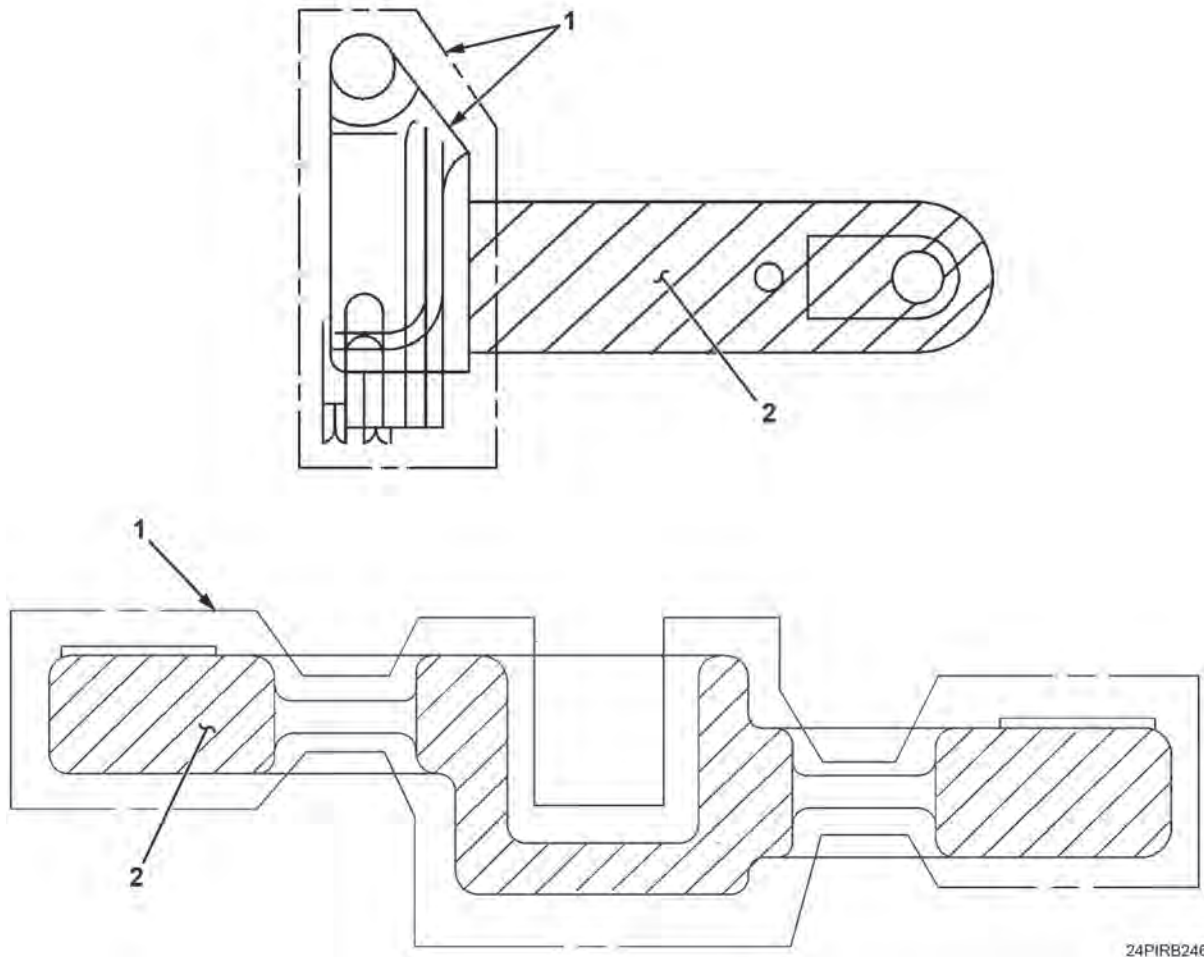
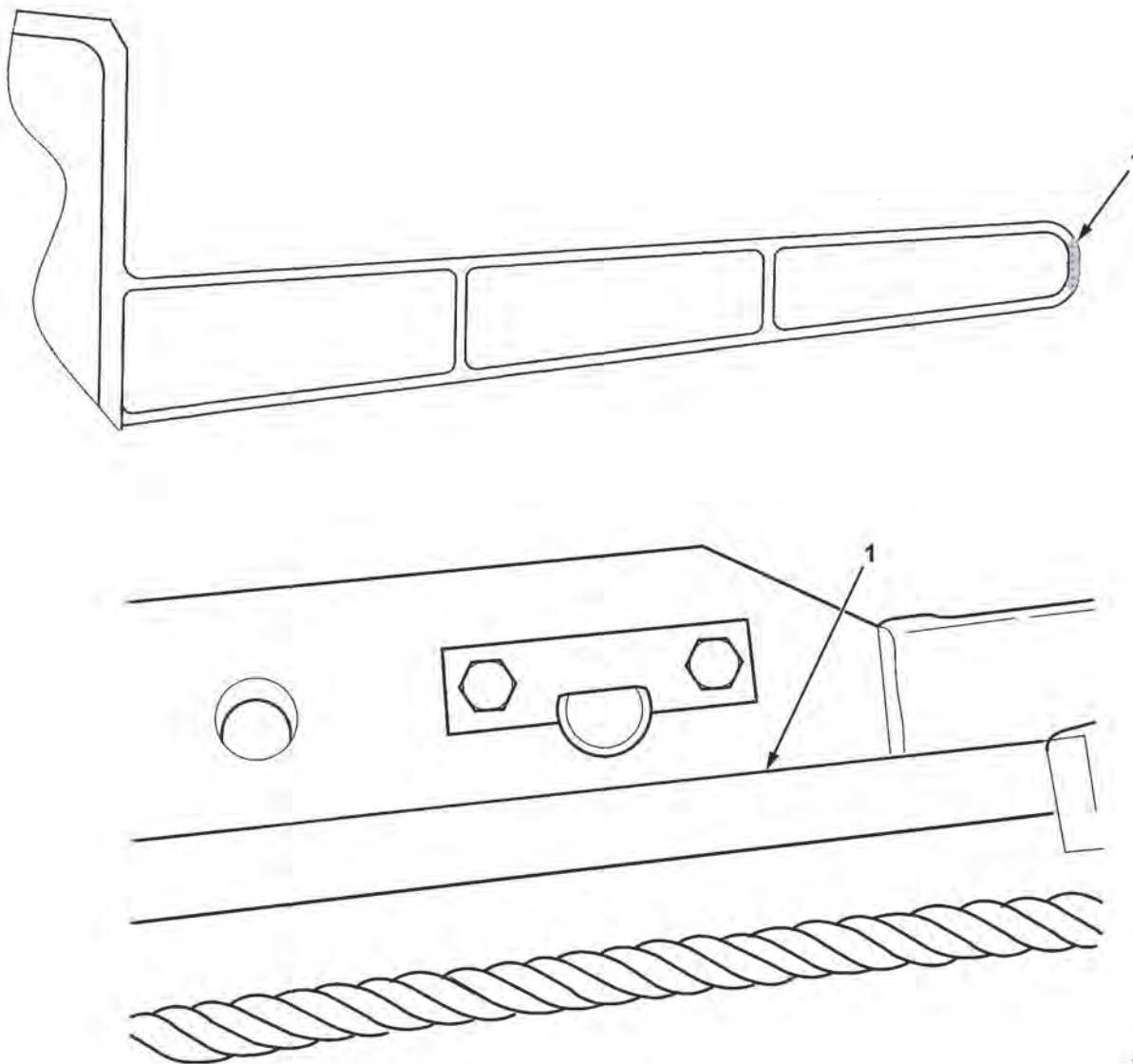


Figure 4. Bracket.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
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2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

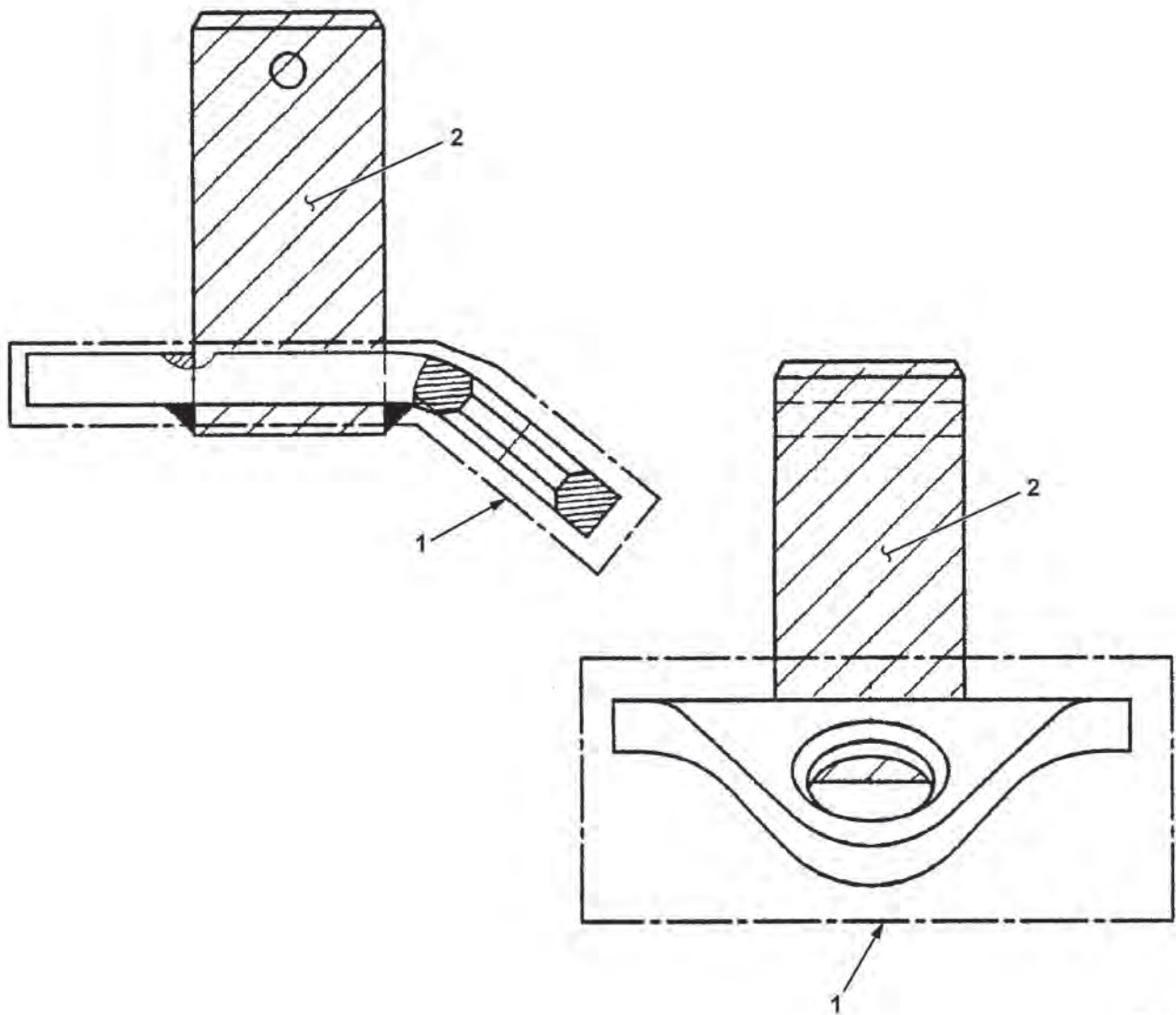


24PIRB247

Figure 5. Handrail Area.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

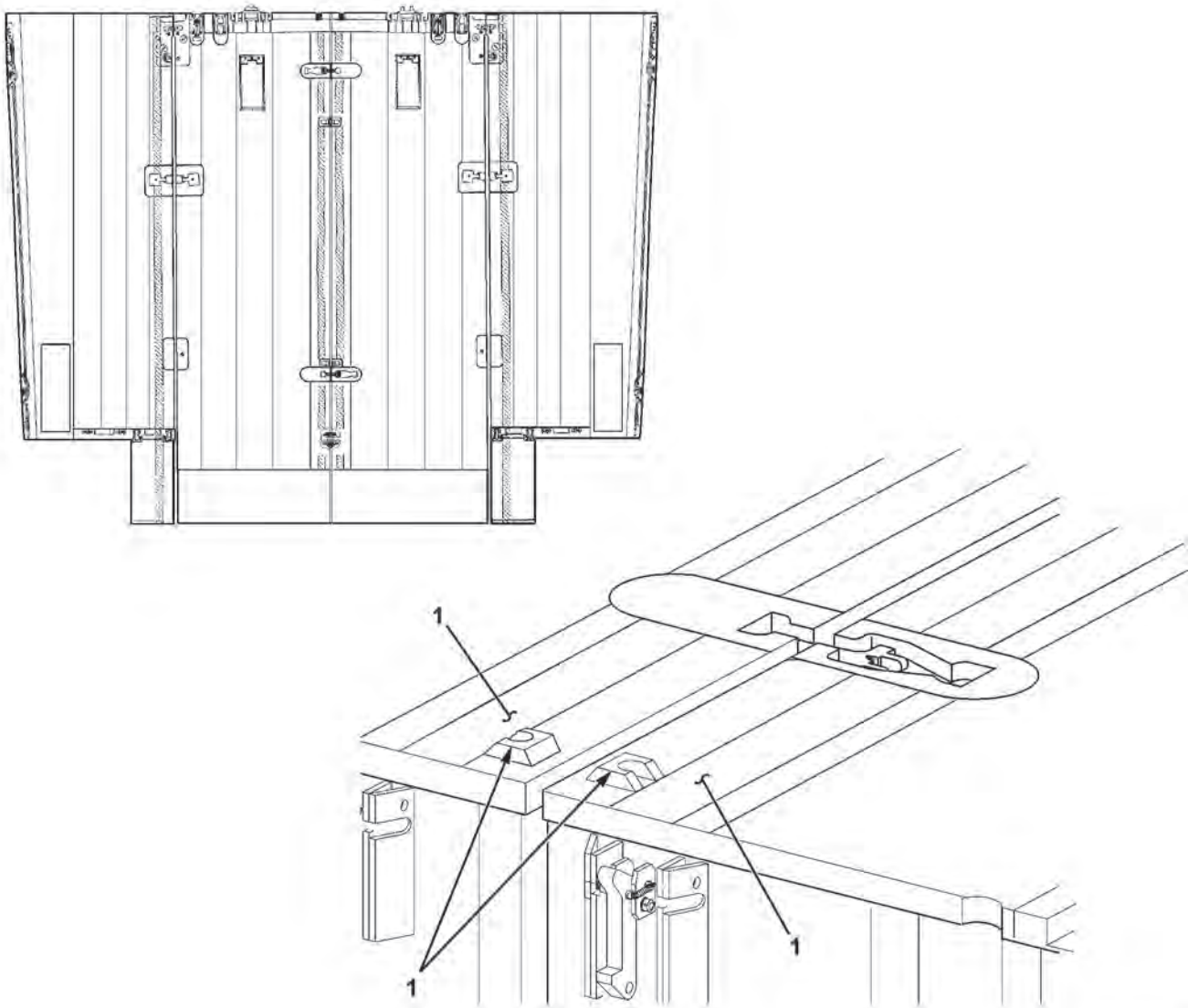


24PIRB248

Figure 6. Eyebolt/Lifting Lug.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

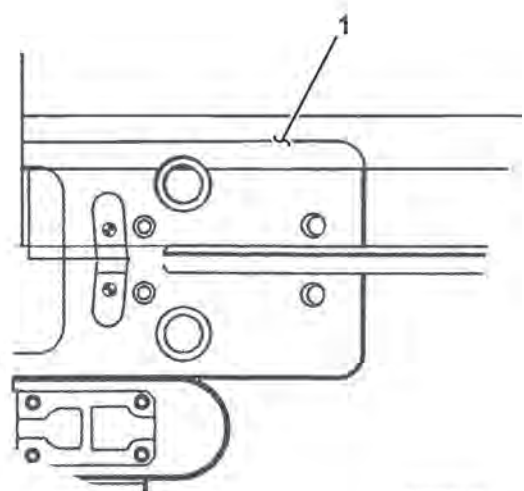
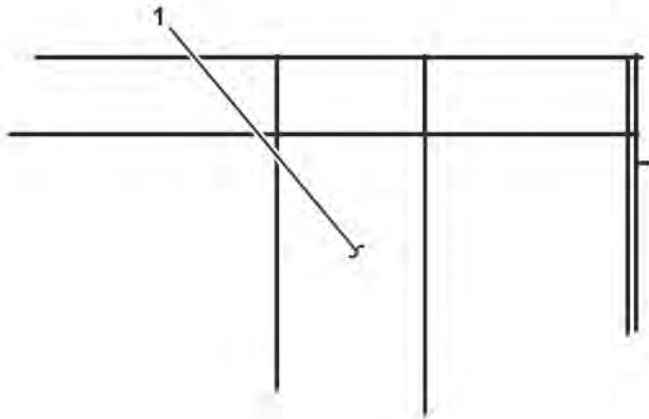


24PIRB249

Figure 7. Ramp Bay and Pontoon Locks.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

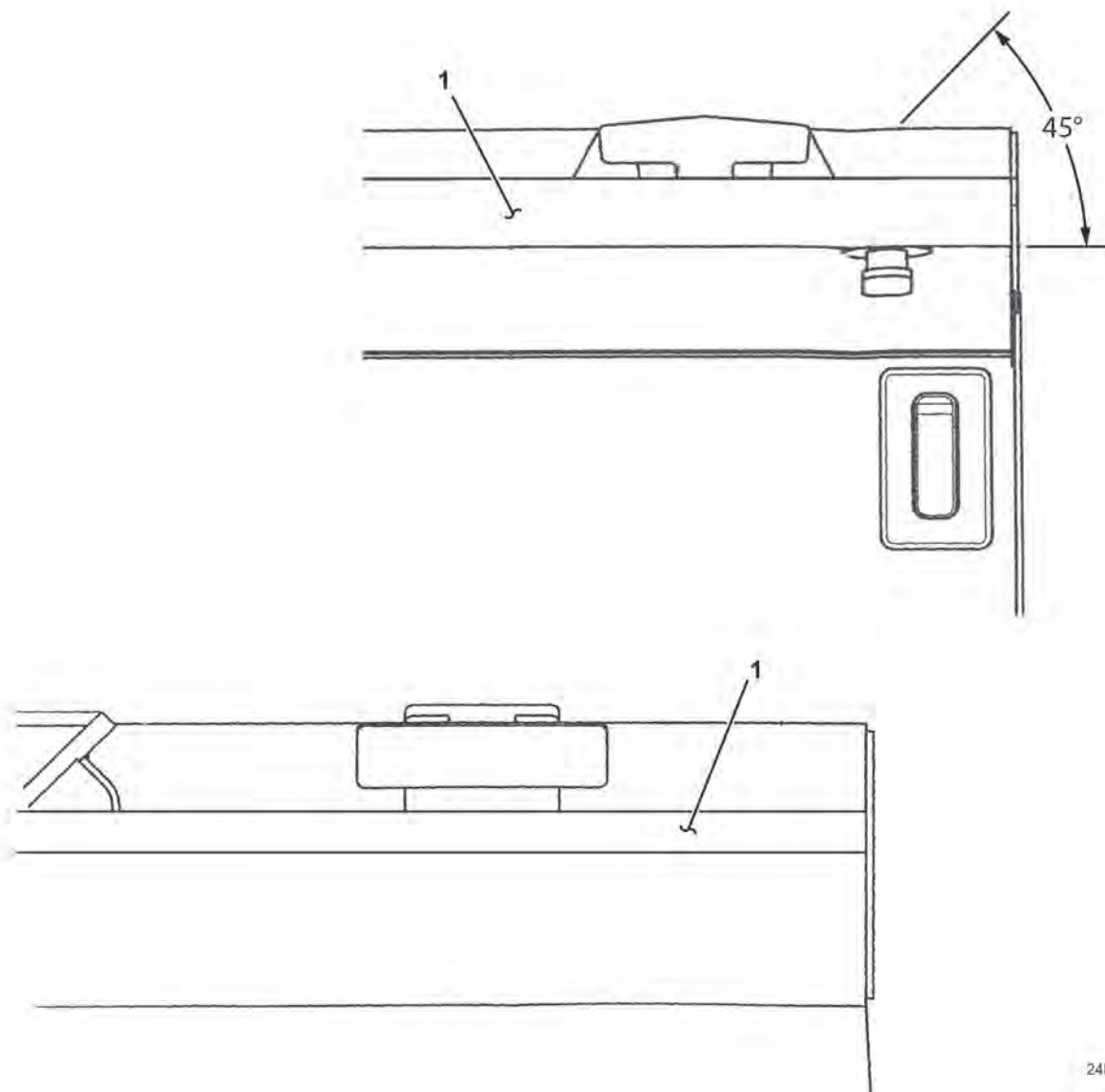


24PIRB250

Figure 8. Bay and Pontoon Lock.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
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1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

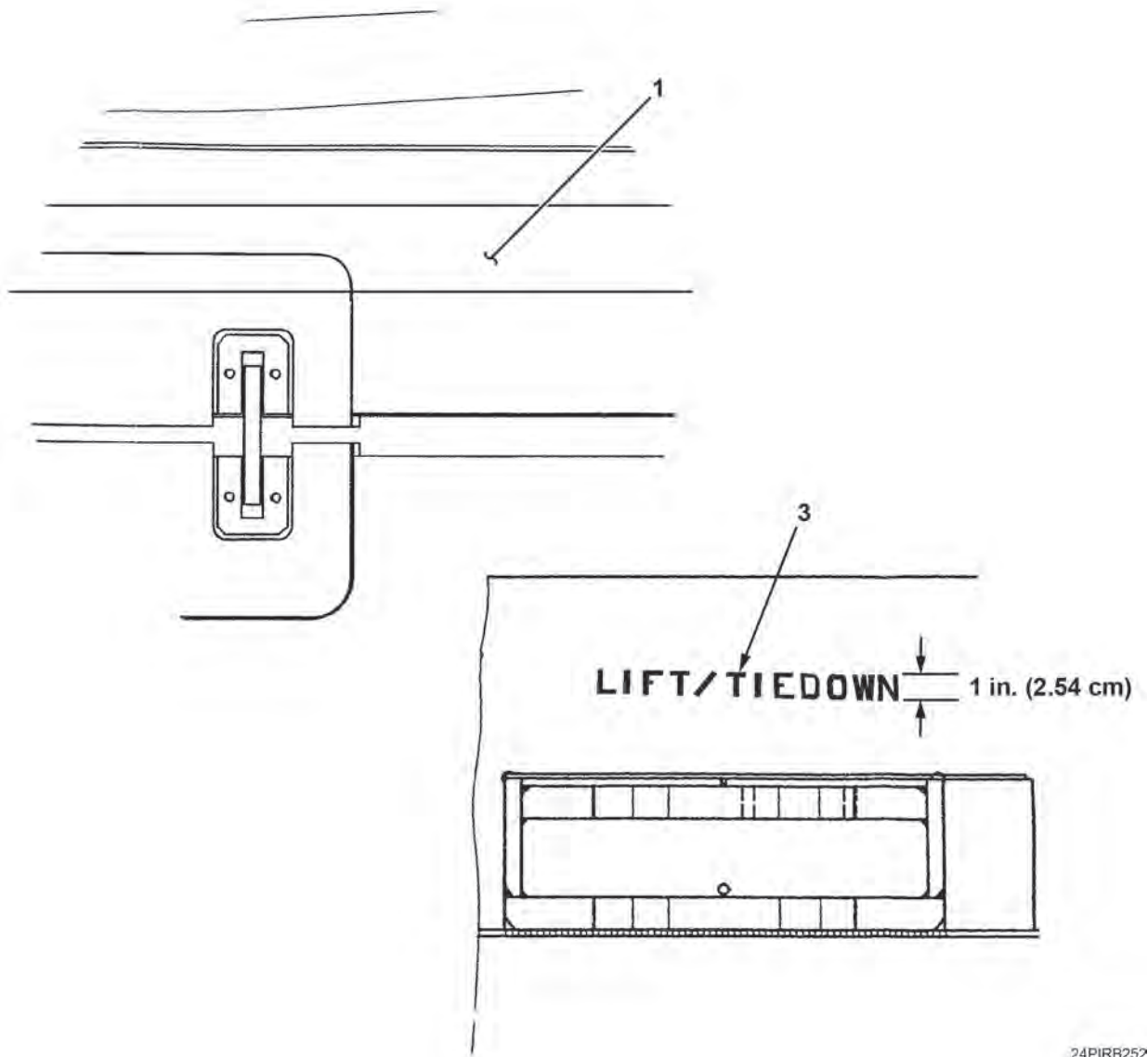


24PIRB251

Figure 9. Belay Cleat Area.

PAINTING INSTRUCTIONS - Continued

COLOR CODES	
NO.	COLOR
1	YELLOW, AIRCRAFT COLOR CHIP 33538
2	UNPAINTED
3	LETTERING ACCORDING TO TM 43-0139
4	RED, RAL 3000

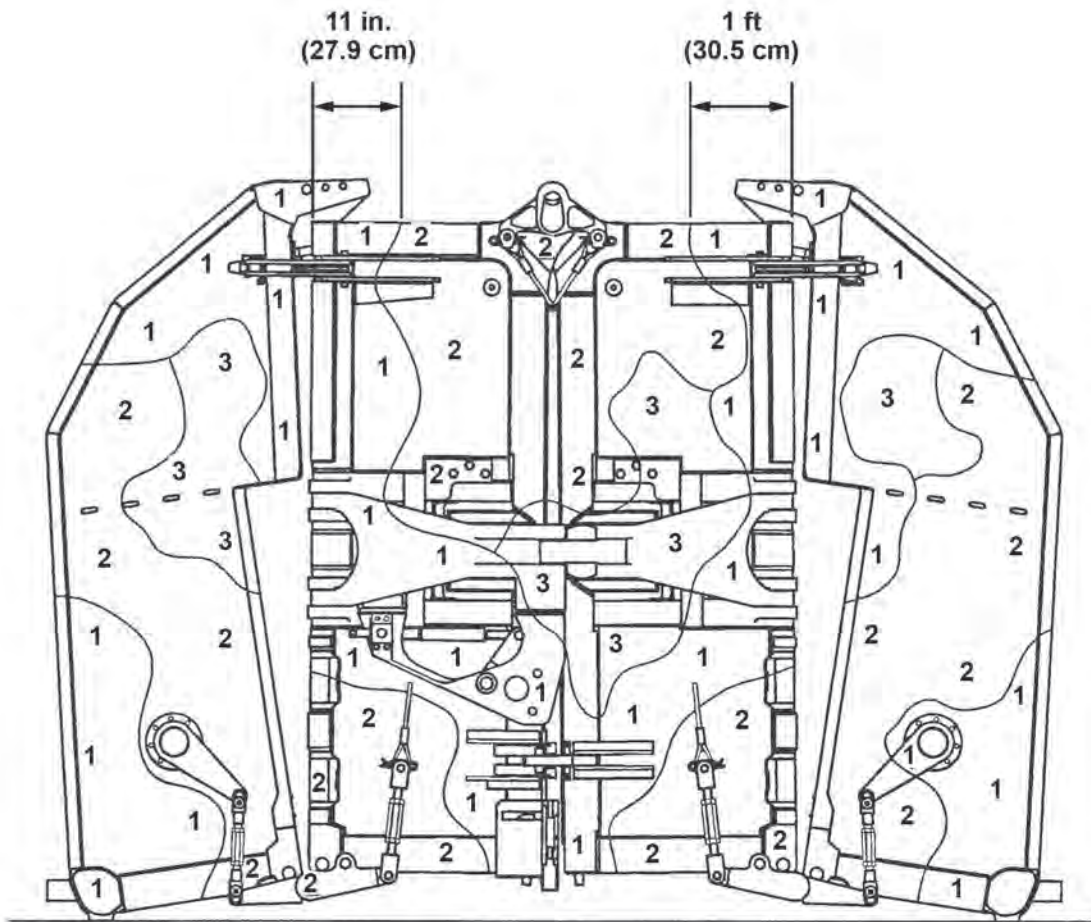


24PIRB252

Figure 10. Lift/Tiedown Lug.

CAMOUFLAGE 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

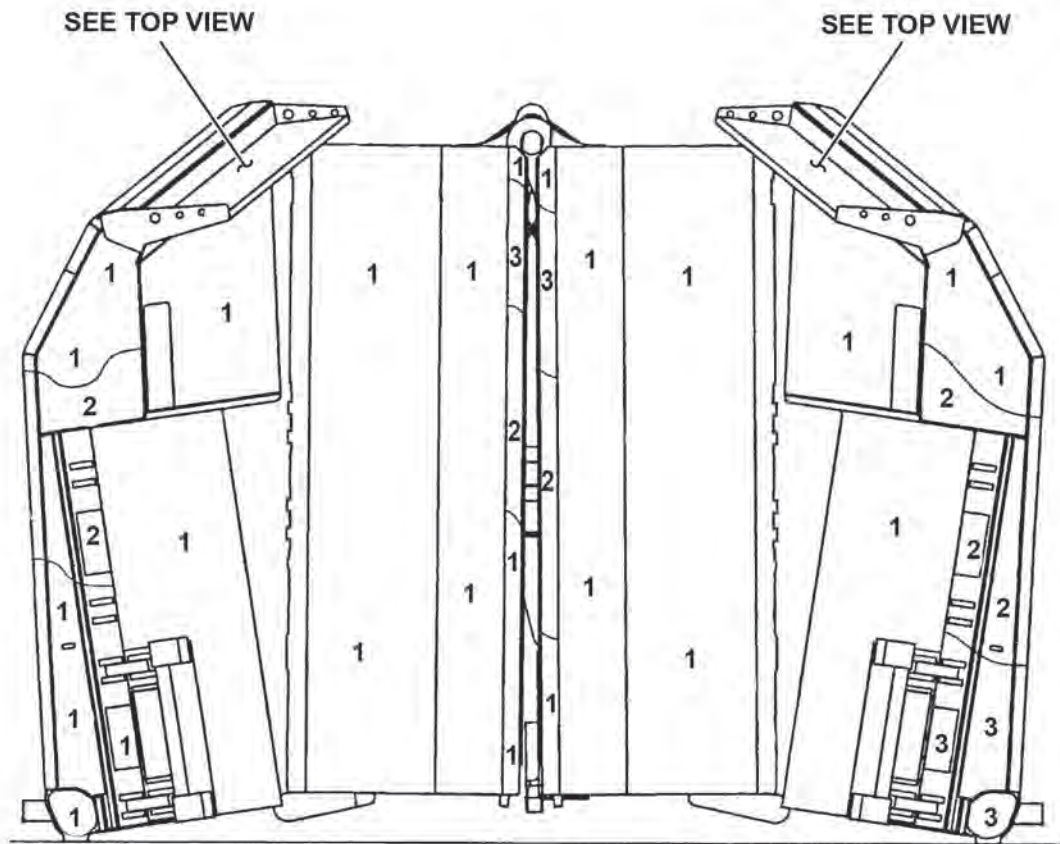


24PIRB253

Figure 11. Front View, M16 Ramp Bay.

CAMOUFLAGE PATTERNS - Continued

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

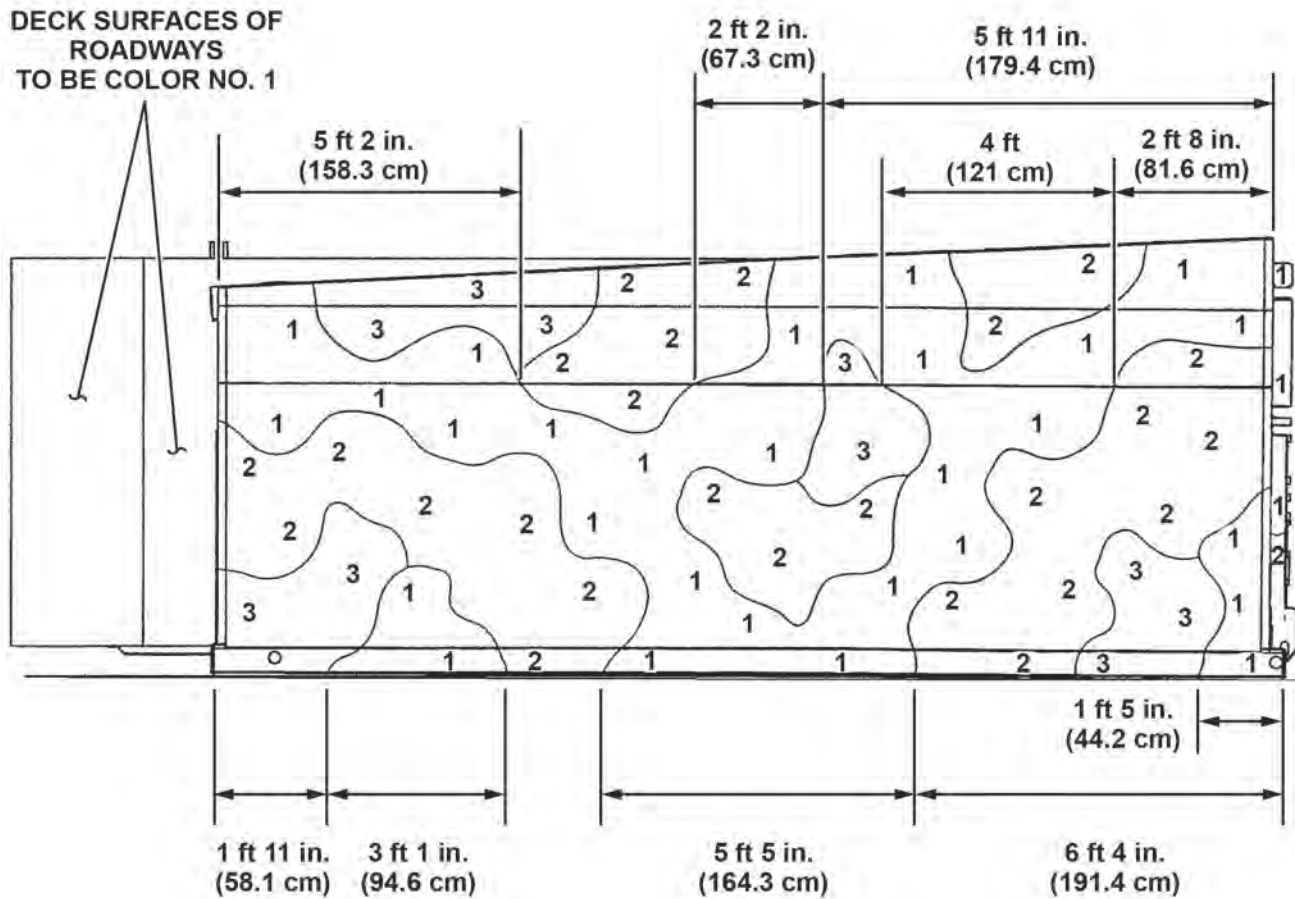


24PIRB254

Figure 12. Rear View, M16 Ramp Bay.

CAMOUFLAGE PATTERNS - Continued

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

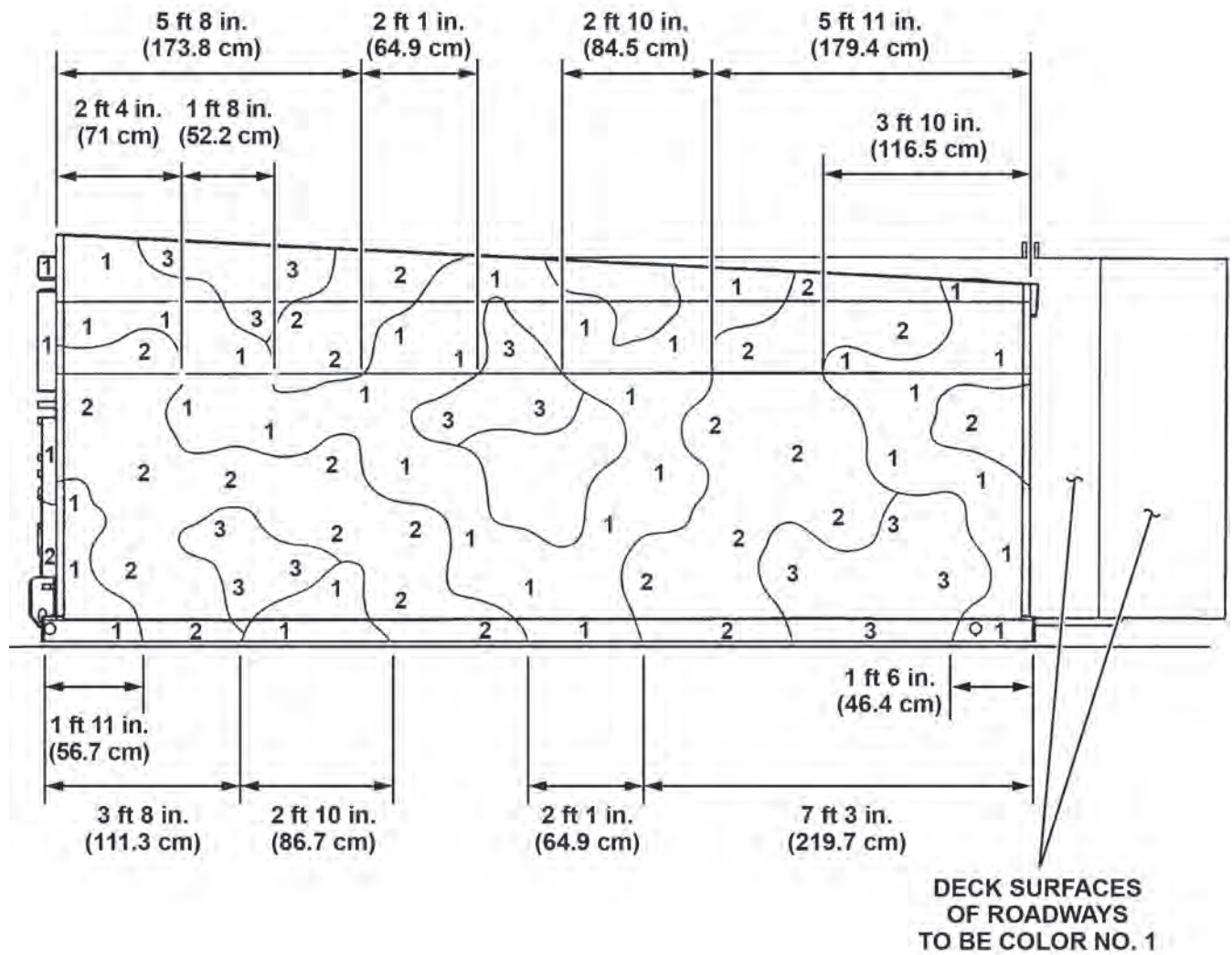


24PIRB255

Figure 13. Right Side View, M16 Ramp Bay.

CAMOUFLAGE PATTERNS - Continued

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



24PIRB256

Figure 14. Left Side View, M16 Ramp Bay.

CAMOUFLAGE PATTERNS - Continued

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

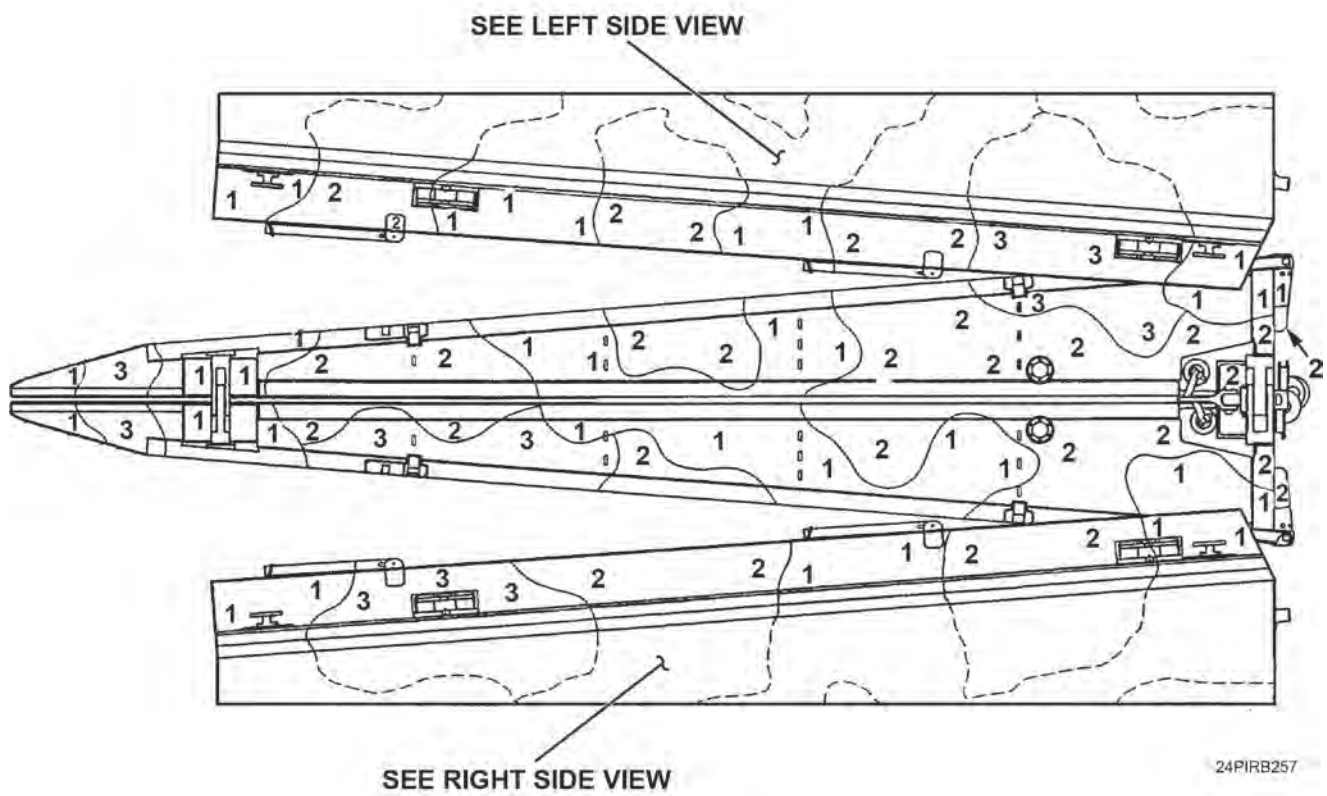


Figure 15. Top View, M16 Ramp Bay.

CAMOUFLAGE PATTERNS - Continued

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

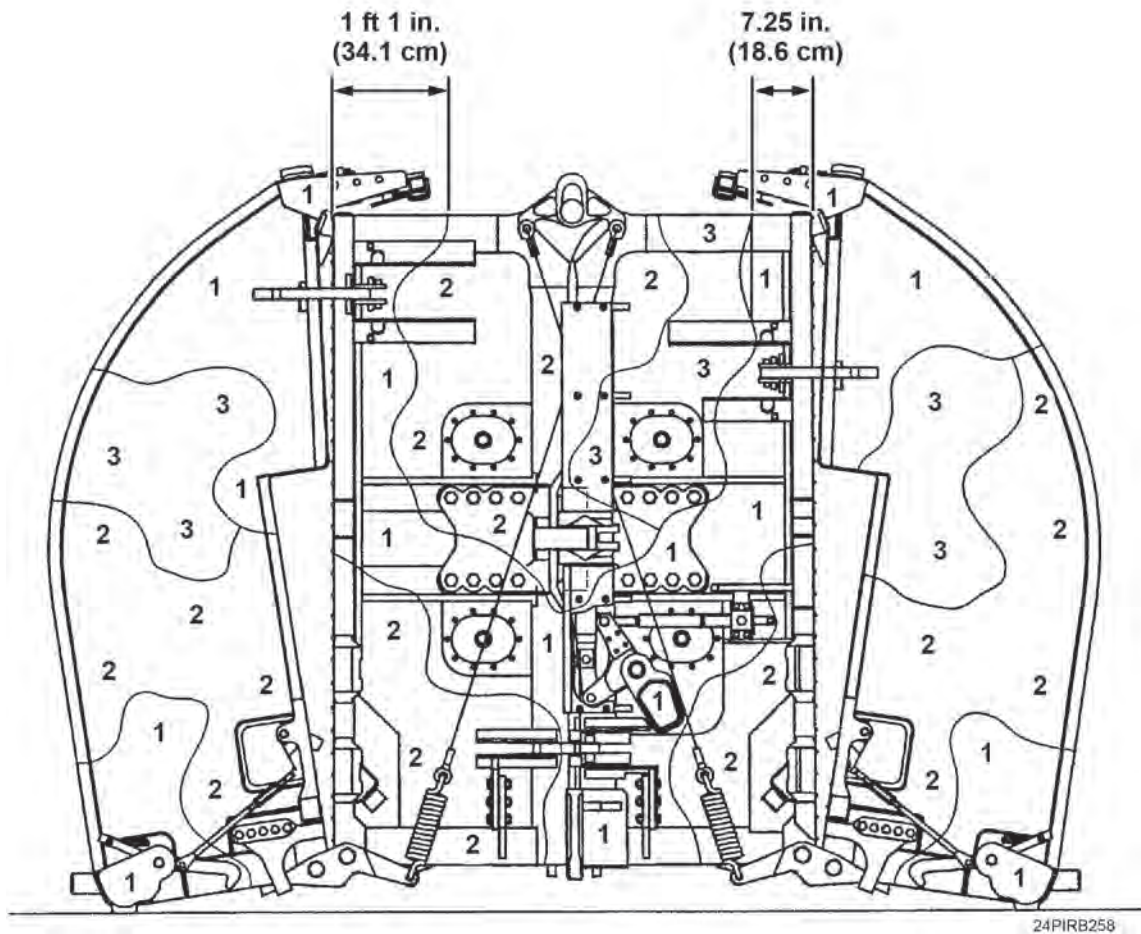


Figure 16. Front View, M17 Interior Bay.

CAMOUFLAGE PATTERNS - Continued

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

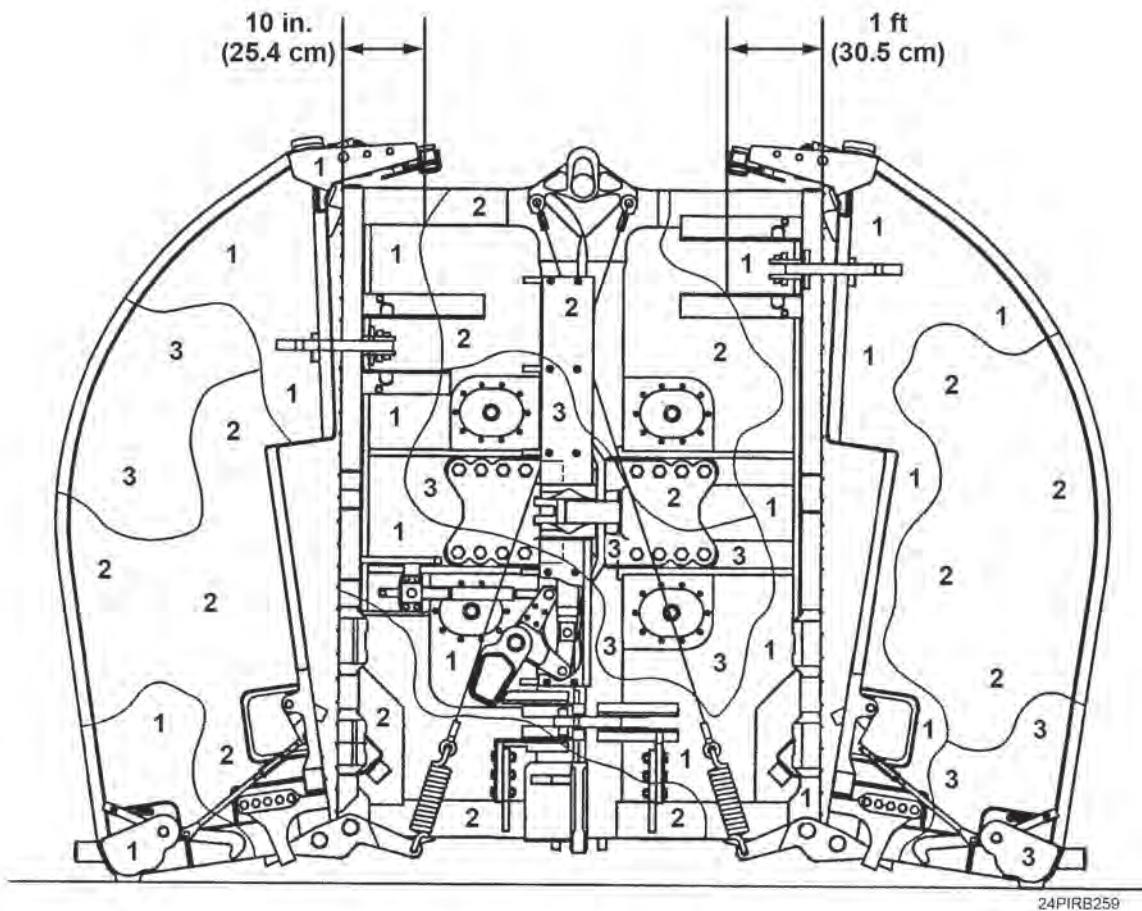
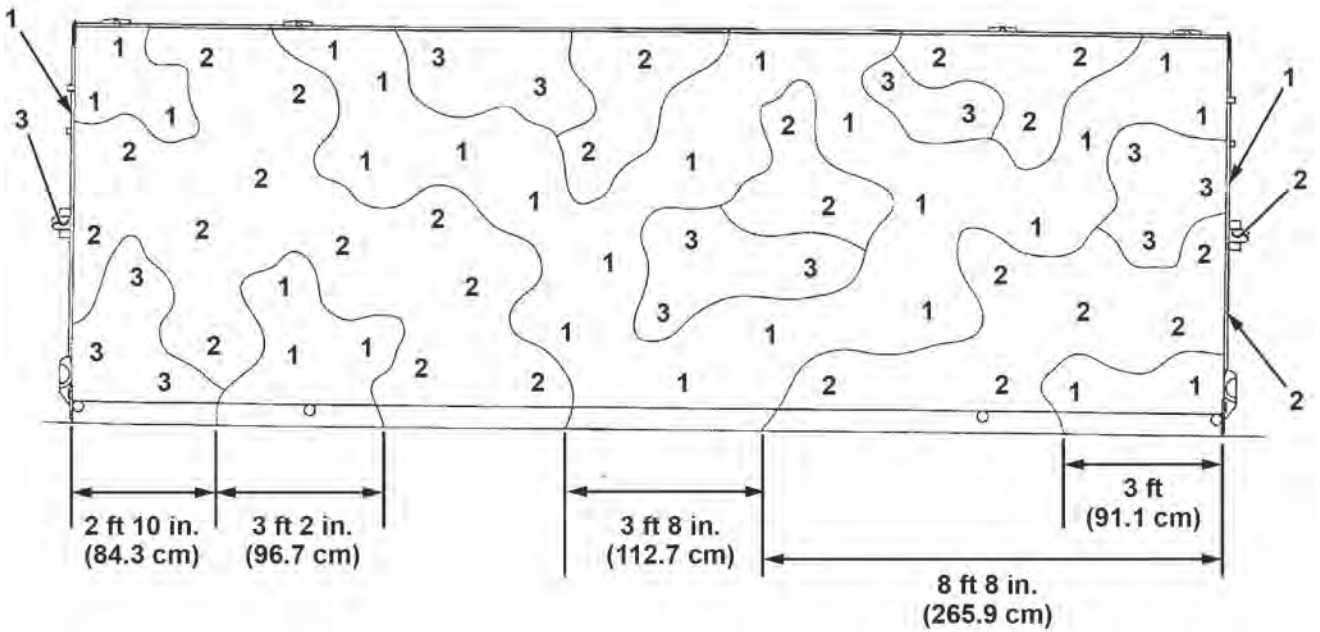


Figure 17. Rear View, M17 Interior Bay.

CAMOUFLAGE PATTERNS - Continued

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

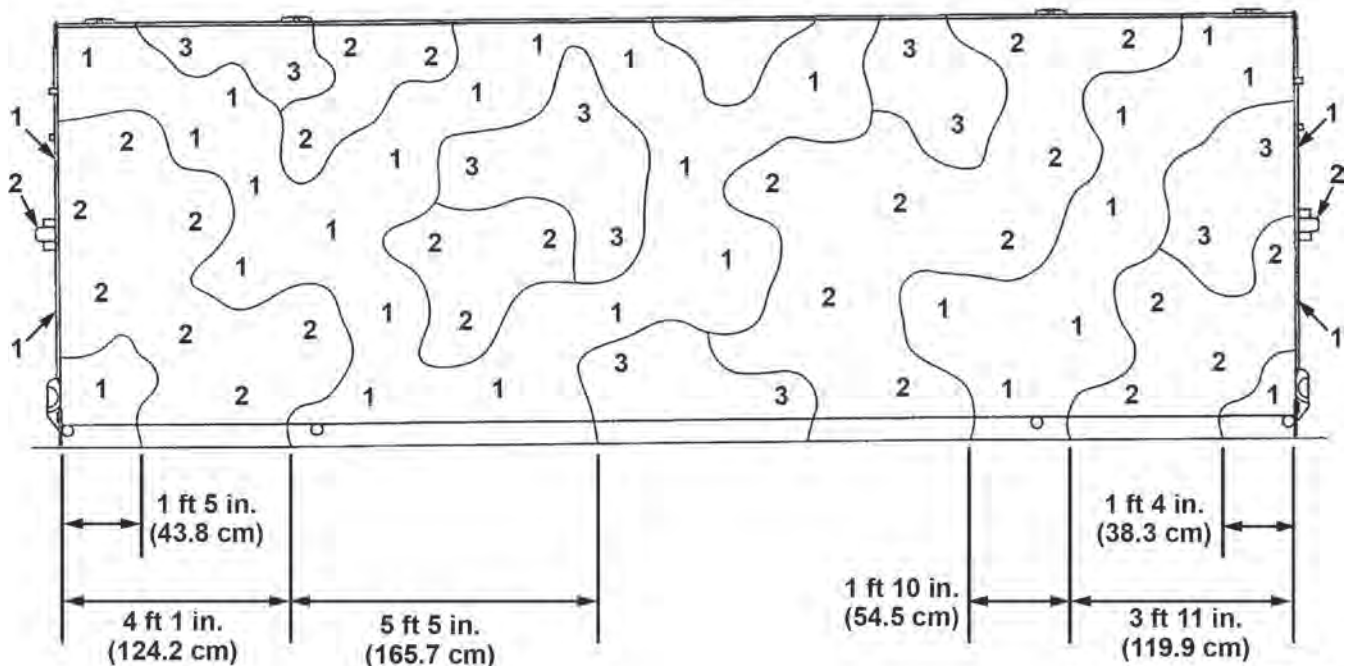


24PIRB260

Figure 18. Right Side View, M17 Interior Bay.

CAMOUFLAGE PATTERNS - Continued

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



24PIRB26|

Figure 19. Left Side View, M17 Interior Bay.

CAMOUFLAGE PATTERNS - Continued

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

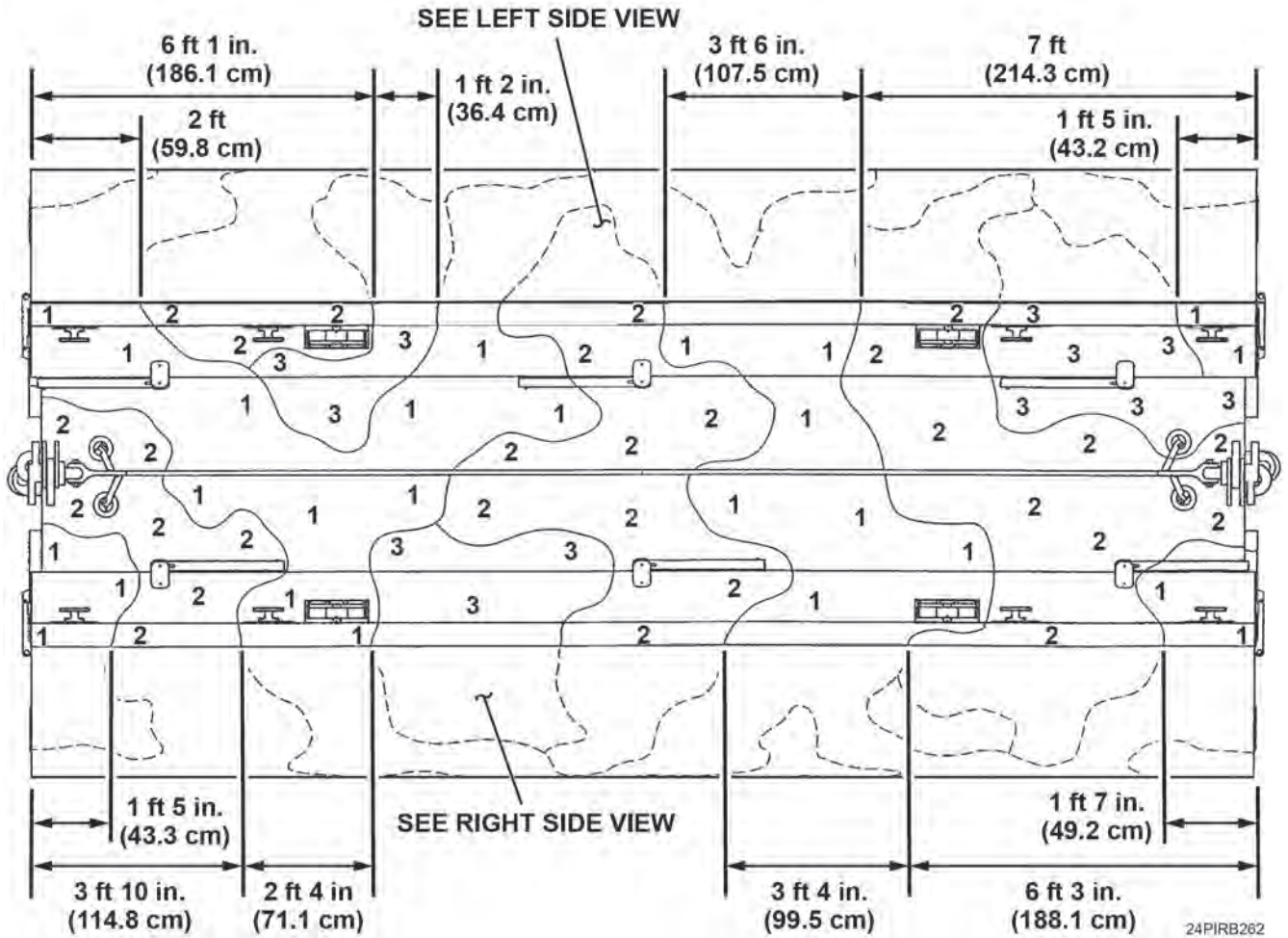


Figure 20. Top View, M17 Interior Bay.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
LUBRICATION INSTRUCTIONS**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Drain hose assembly
(WP 0130, Table 1, Item 18)
Funnel (WP 0130, Table 1, Item 8)
Grease gun (WP 0130, Table 1, Item 12)
Hand oiler (WP 0130, Table 1, Item 20)

Materials/Parts

Cap and plug set (WP 0129, Table 1, Item 7)
Cleaning solvent (WP 0129, Table 1, Item 6)
Grease (WP 0129, Table 1, Item 16)

Materials/Parts (cont.)

Grease (WP 0129, Table 1, Item 18)
Grease (WP 0129, Table 1, Item 19)
Grease (WP 0129, Table 1, Item 21)
Oil (WP 0129, Table 1, Item 20)
Propylene glycol (WP 0129, Table 1, Item 23)

References

WP 0001
WP 0044
WP 0045
WP 0046

GENERAL

This lubrication instruction is for Field Maintenance and provides the lubrication requirements needed to support the Improved Ribbon Bridge (IRB). Included are 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. Hardtime 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.

Symbols and method of application are shown in Table 1. Lubricants are shown in Table 2, and intervals and locations are shown in Tables 3 and 4.

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. For additional CPC information refer to (WP 0001).

FILTERS

Filters shall be changed as applicable, when:

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

CLEANING**WARNING**

- Accidental or intentional introduction of liquid contaminants into the environment is in violation of state, federal, and military regulations. Refer to local environmental office for information concerning storage, use, and disposal of these liquids.
- Cleaning solvent (MIL-PRF-680) is flammable and may cause irritation to the eyes or skin. Use in well-ventilated areas and keep away from heat and open flame. Eye protection, protective gloves, clothing, and/or respiratory equipment must be worn whenever caustic, toxic, or flammable cleaning solutions are used. If solvent comes in contact with:
 - Eyes, flush immediately with water.
 - Skin, wash with soap and water.

Failure to comply may result in personnel injury or death and/or damage to the environment.

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 MIL-PRF-680 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 0044) every 24 months.
2. Pump filter element: Change filter element (WP 0045) every 24 months.
3. Bleed pump system (WP 0046) whenever pumps, cylinders, or hoses are replaced.

Table 1. Symbols and Method of Application.







SYMBOLS	FREQUENCY	METHOD OF APPLICATION
	2 YEARS (24 MONTHS)	 Grease gun
	6 MONTHS	 Brush
	AFTER OPERATION OR 6 MONTHS	 Hand

Table 2. Lubricants.

SPECIFICATIONS	LUBRICANT	TEMPERATURE ABOVE +32°F (ABOVE 0°C)
Grease (MIL-PRF-18458)	Grease, 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 NOTES - Continued

Table 3. Intervals and Locations — Ramp Bay.

LOCATION	INTERVAL	LUBRICANT
Pump reservoirs, cylinders, and filter elements (drain and refill) (see lubrication notes 1, 2, and 3) (2 Pumps and Reservoirs)	24 months	MIL-P-83800
Torsion bars 2 fittings (2 Torsion bars, each with 1 lube fitting)	6 months	MIL-PRF-10924
Lower lock connecting pin lever (Lube fitting)	6 months	MIL-PRF-10924
Jackscrew (Apply to threads)	After operation or 6 months	MIL-PRF-2104
Hinge point	6 months	MIL-G-21164
Cable connections (2 cable connections)	6 months	MIL-G-10924

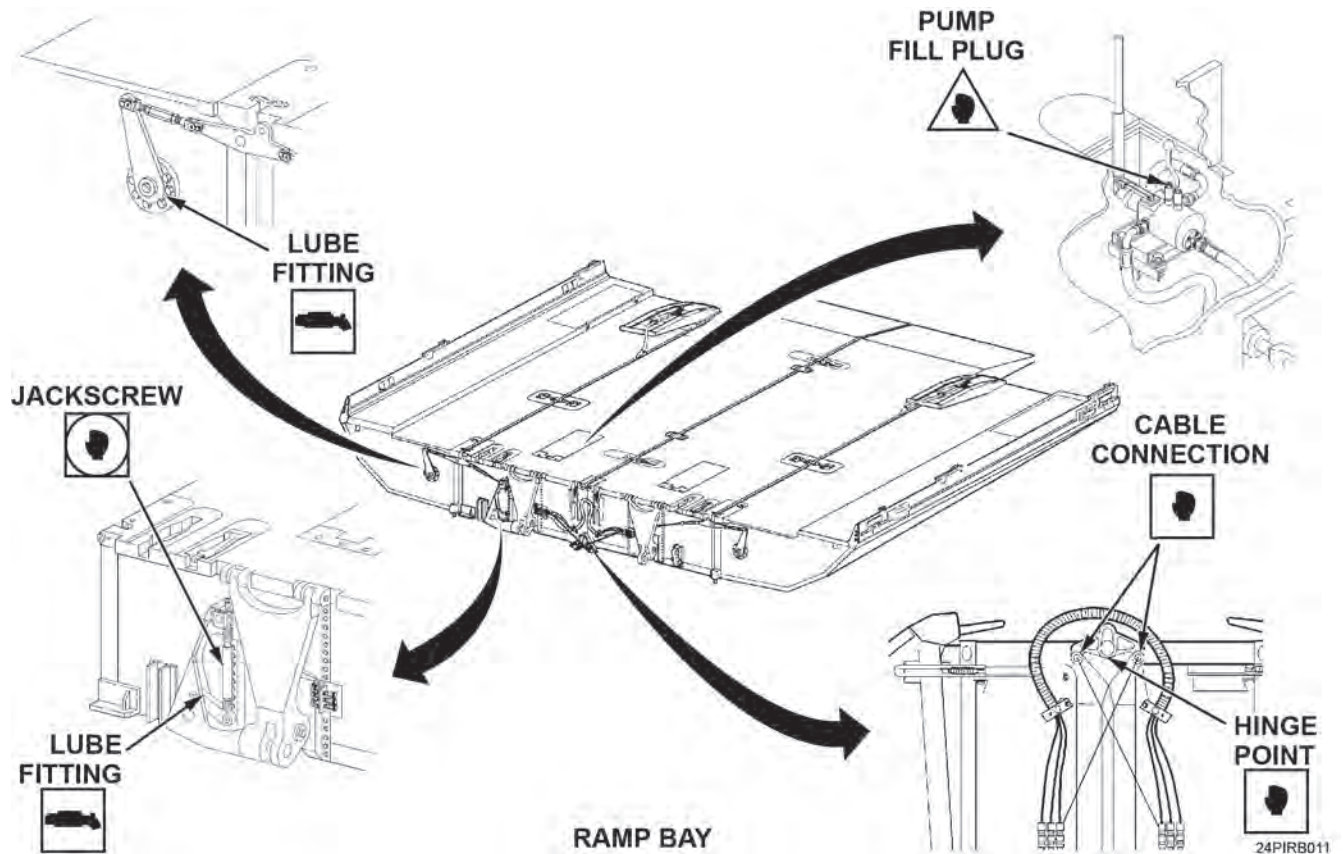


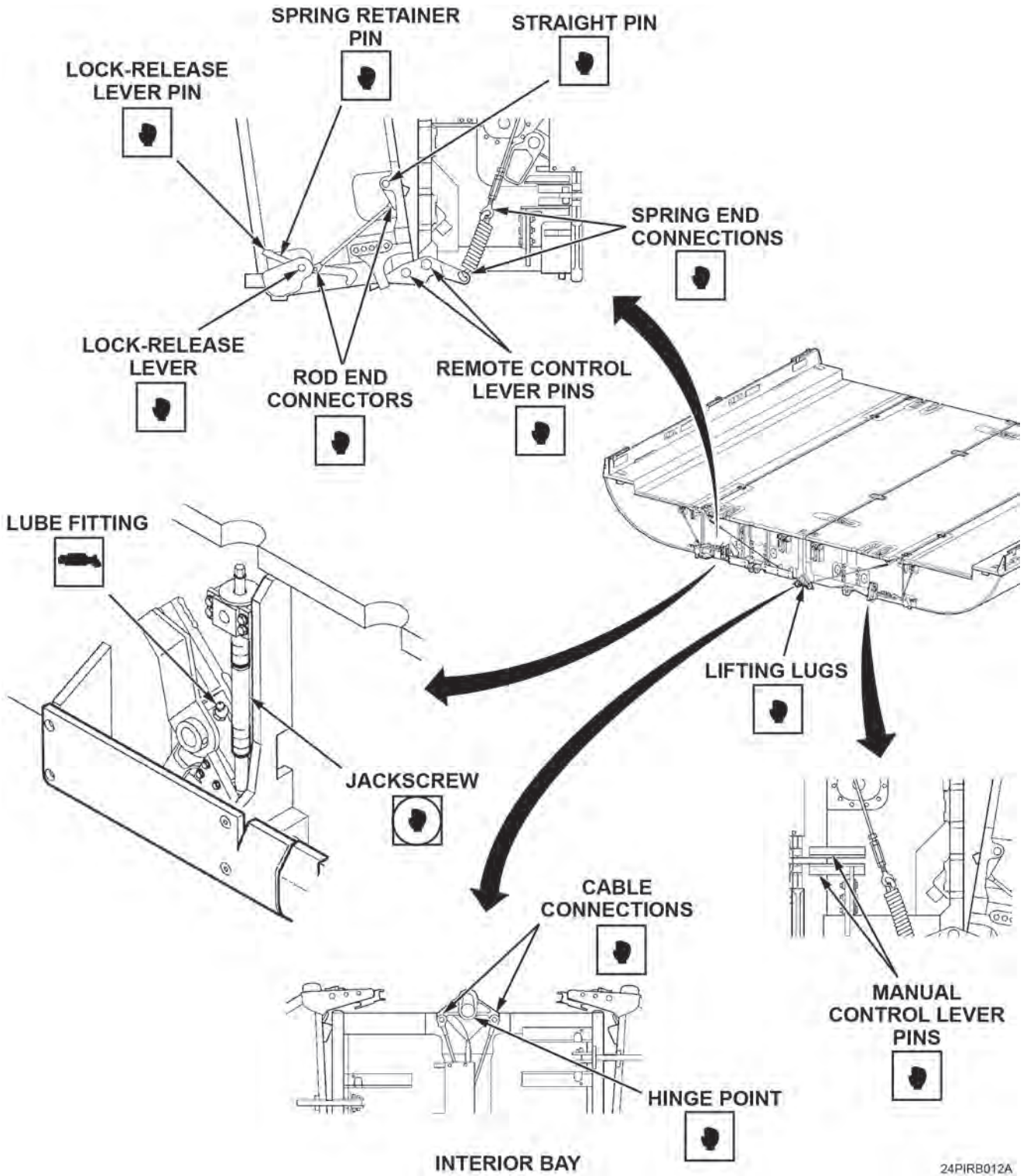
Figure 1. Ramp Bay.

LUBRICATION NOTES - Continued

Table 4. Intervals and Locations — Interior Bay.

LOCATION	INTERVAL	LUBRICANT
Hinge point	6 months	MIL-G-21164
Cable connection (2 cable connections)	6 months	MIL-G-21164
Straight pin	6 months	MIL-G-21164
Lock-release lever pin	6 months	MIL-G-21164
Spring retainer pin	6 months	MIL-G-21164
Lock-release lever	6 months	MIL-G-21164
Rod end connectors (2 rod end connectors)	6 months	MIL-G-21164
Remote control lever pins (2 remote control lever pins)	6 months	MIL-G-21164
Spring end connections (2 spring end connections)	6 months	MIL-PRF-10924
Manual control lever pins (2 Manual control lever pins)	6 months	MIL-PRF-10924
Lifting lug (2 lifting lugs)	6 months	Spray lube 1347K11
JackscREW (2 Jackscrews) apply to threads	After operation or 6 months	MIL-PRF-2104
Lower lock connecting pin levers (2 lube fittings)	6 months	MIL-PRF-10924

LUBRICATION NOTES - Continued



24PIRB012A

Figure 2. Interior Bay.

END OF WORK PACKAGE

FIELD MAINTENANCE PUMP SYSTEM HYDRAULIC SCHEMATIC

INITIAL SETUP:

Not Applicable

SCOPE

The Improved Ribbon Bridge (IRB) pump system hydraulic schematic contains pictorial references designed to assist in isolating components and their hose connections for maintenance repair and/or replacement.

COMPONENT TABLES

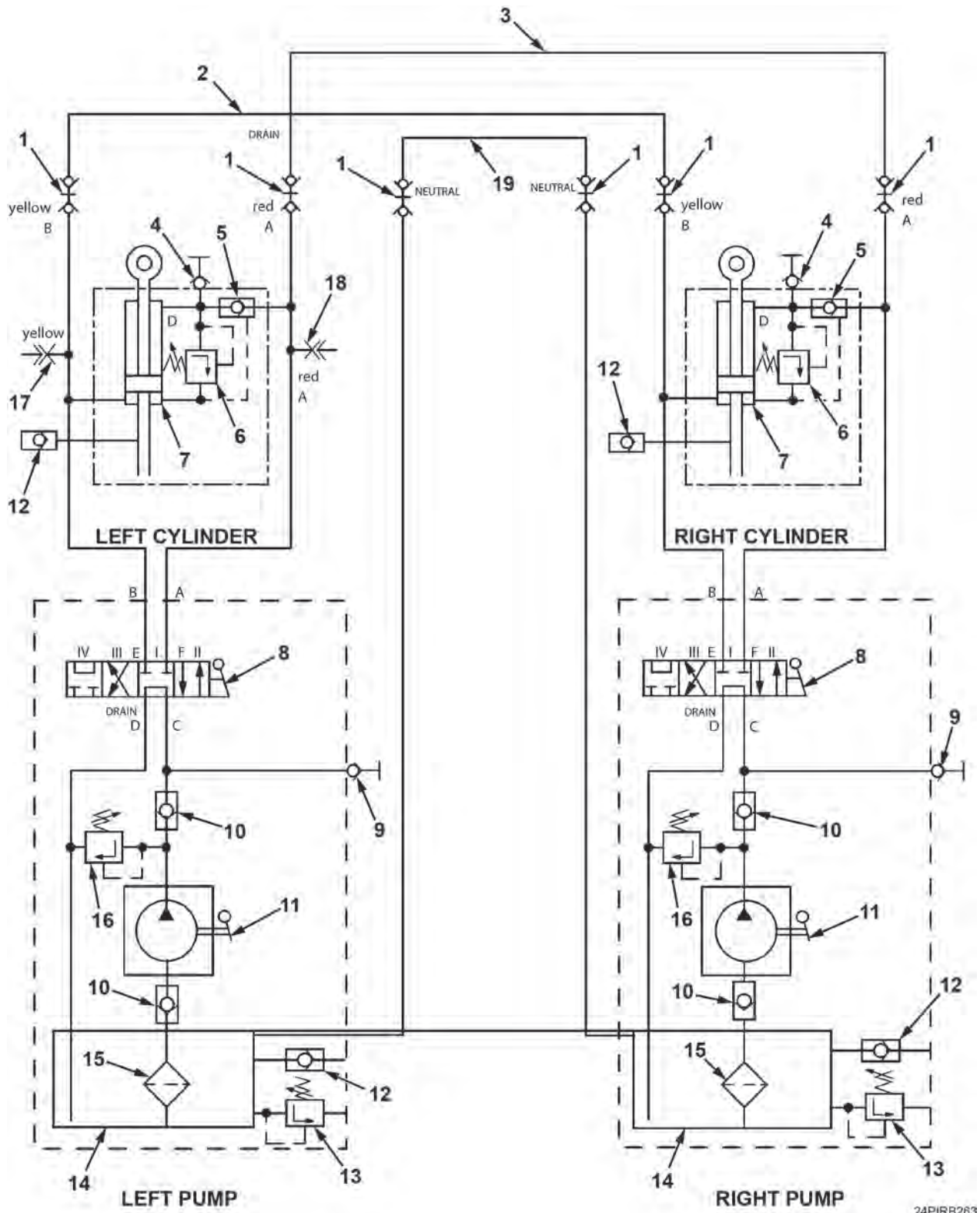
The callout numbers referenced in Table 1, pump system hydraulic schematic system components, are used to identify individual components located in the IRB pump system configuration.

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.

HYDRAULIC SYSTEM SCHEMATIC

The following pump system hydraulic schematic covers the complete IRB pump system, from pumps and control valves to cylinders and the complete routing of fluid hoses.



24PIRB263

Figure 1. Pump System Hydraulic Schematic.

Table 1. Pump System Hydraulic Schematic System Components.

1.	COUPLING
2.	CONNECTING HOSE BETWEEN TWO CYLINDERS (BOTTOM SIDE, YELLOW)
3.	CONNECTING HOSE BETWEEN TWO CYLINDERS (HEAD SIDE, RED)
4.	MEASURING CONNECTION AND VENTING AT THE CYLINDER
5.	SHUT-OFF VALVE
6.	PRESSURE RELIEF VALVE (SAFETY VALVE) 8,412 PSI (580 BAR)
7.	DOUBLE-ACTION WORKING CYLINDER
8.	DIRECTIONAL CONTROL VALVE POSITIONS: DOWN TRANSPORT/CROSSING UP DOWN FAST
9.	MEASURING CONNECTION ON HANDPUMP
10.	CHECK VALVE (NON-RETURN VALVE)
11.	HANDPUMP
12.	VENTING VALVE 4 to 7 PSI (0.3 to 0.5 BAR)
13.	PRESSURE RELIEF VALVE 508 PSI (35 BAR)
14.	FLUID RESERVOIR
15.	SUCTION FILTER
16.	PRESSURE RELIEF VALVE (SAFETY VALVE) 1,450 PSI (100 BAR)
17.	EXTERNAL CONNECTION (BOTTOM SIDE)
18.	EXTERNAL CONNECTION (HEAD SIDE)
19.	CONNECTING HOSE BETWEEN TWO FLUID TANKS (NEUTRAL)

A, B, C, D, E, AND F: PORT DESIGNATION

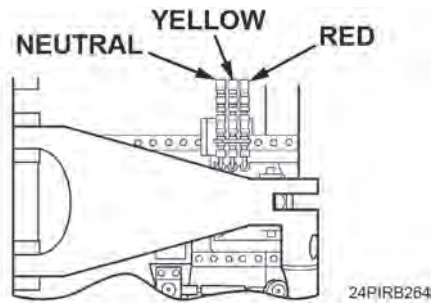


Figure 2. Pump System Hydraulic Hose Connections.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
ILLUSTRATED LIST OF MANUFACTURED ITEMS INTRODUCTION**

SCOPE

This Work Package (WP) includes complete instructions for making items authorized to be manufactured or fabricated at the Field Maintenance level.

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 information which covers fabrication criteria.

Unless otherwise specified, items in Table 1 are illustrated in the next work package.

EXPLANATION OF THE ILLUSTRATIONS OF MANUFACTURED ITEMS

All instructions needed by maintenance personnel to manufacture the item are included on the illustrations. All bulk materials needed for manufacture of an item are listed by part number or specification number in a tabular list on the illustration.

Table 1. Manufactured Items Part Number Index.

ITEM NO.	PART NUMBER/ (CAGEC)	DESCRIPTION	DRAWING NUMBER	WP NO.
1	024502601 (D9913)	Handrail guide rope assembly (interior bay)	Figure 1	
2	024502602 (D9913)	Handrail guide rope assembly (ramp bay)	Figure 1	
3	027007313 (D9913)	Bilge plug assembly	Figure 2	
4	027007314 (D9913)	Drain plug assembly	Figure 2	
5	029105901 (D9913)	Coupling device hook	Figures 10 and 11	
6	029153401 (D9913)	Clevis cleaning hook	Figure 8	
7	N/A	Deflation hose assembly	Figure 9	
8	N/A	Drain hose assembly	Figure 7	
9	N/A	Torsion bar pre-adjusting tool	Figure 5	
10	N/A	Torsion bar pre-stressing tool	Figure 6	
11	N/A	Setup wedge	Figure 4	
12	N/A	Connecting link tool	Figure 3	

END OF WORK PACKAGE

**FIELD MAINTENANCE
ILLUSTRATED LIST OF MANUFACTURED ITEMS**

INITIAL SETUP:**Tools and Special Tools**

General mechanic's tool kit
(WP 0130, Table 1, Item 29)
Angle grinder (WP 0130, Table 1, Item 13)
Drill set (WP 0130, Table 1, Item 6)
Electric drill (WP 0130, Table 1, Item 7)
Goggles (WP 0130, Table 1, Item 11)
MIG welder (WP 0130, Table 1, Item 1)
Welding apron (WP 0130, Table 1, Item 2)
Welder's gloves (WP 0130, Table 1, Item 10)

Materials/Parts (cont.)

Gloves (WP 0129, Table 1, Item 13)
Goggles (WP 0129, Table 1, Item 15)

References

TC 9-237
TM 43-0139

Materials/Parts

Abrasive wheel (WP 0129, Table 1, Item 28)

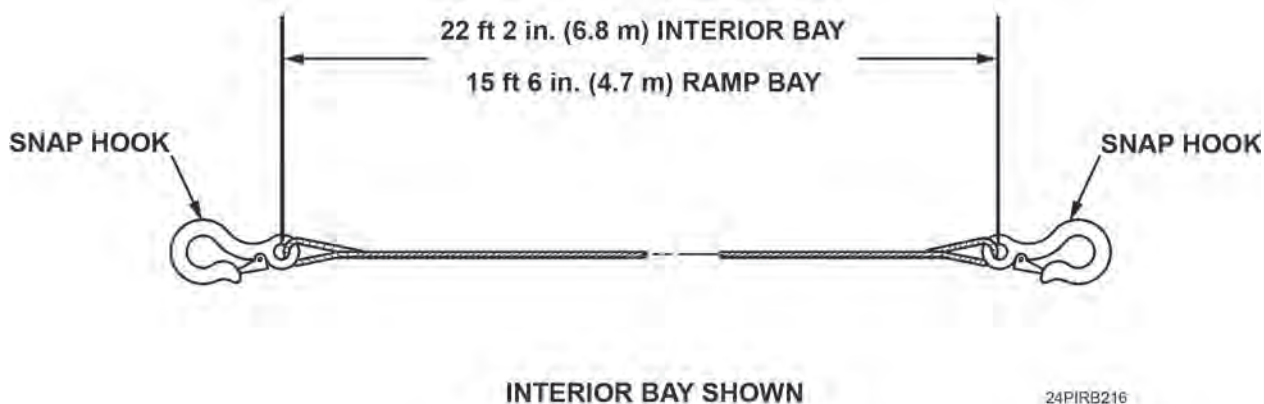


Figure 1. Handrail Guide Rope Assembly.

HANDRAIL GUIDE ROPE ASSEMBLY**NOTE**

One per handrail assembly is required. Use existing snap hooks, part number 909671024 (D9913). If desired, the complete handrail guide rope is available by part number 024502602 (D9913) for the Ramp Bay, and 024502601 (D9913) for the Interior Bay.

1. Cut rope to 22 ft 2 in. (6.8 m) in length for the Interior Bay, or 15 ft 6 in. (4.7 m) for the Ramp Bay.
2. Rotate one end of rope through snap hook, then back, and lace rope ends into rope.
3. Ramp Bay has only one snap hook on one end of rope. Interior Bay has two snap hooks, one on each end of rope.

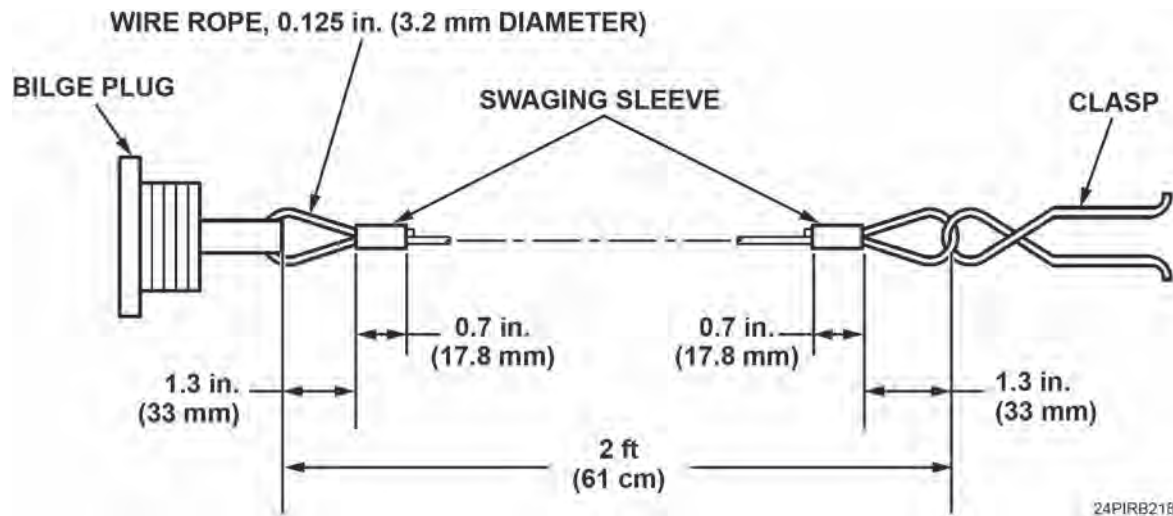


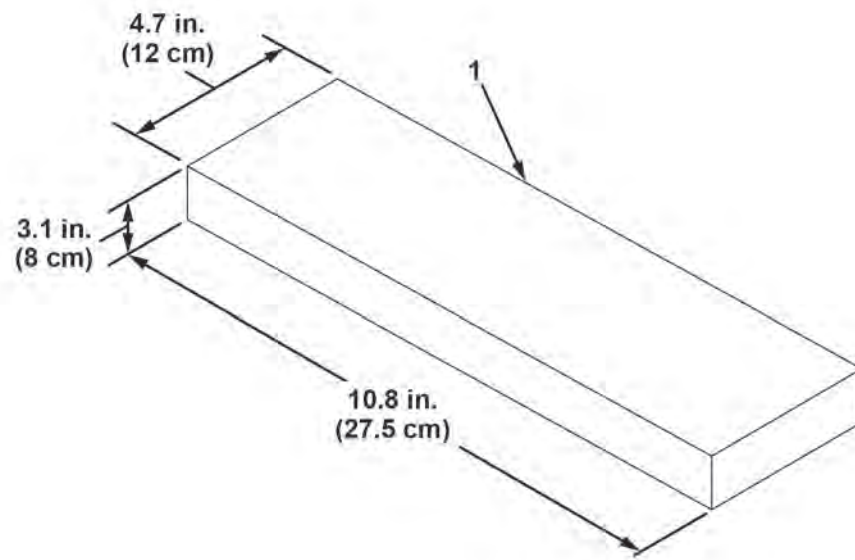
Figure 2. Bilge or Drain Plug Retainer Assembly.

BILGE OR DRAIN PLUG ASSEMBLY

NOTE

One per bilge or drain plug is required. Use existing bilge or drain plug and clasp. If desired, the complete bilge plug assembly is available by part number 027007313 (D9913). The complete drain plug assembly is available by part number 027007314 (D9913).

1. Cut wire rope to 2 ft 5 in. (73.7 cm) in length.
2. Slide two swaging sleeves on wire rope and route ends through bilge/drain plug clasp, and bilge/drain plug, and back through swaging sleeves.
3. Crimp two swaging sleeves on wire rope.



24PIRB284

Figure 3. Connecting Link Tool

CONNECTING LINK TOOL

Make from wood block.

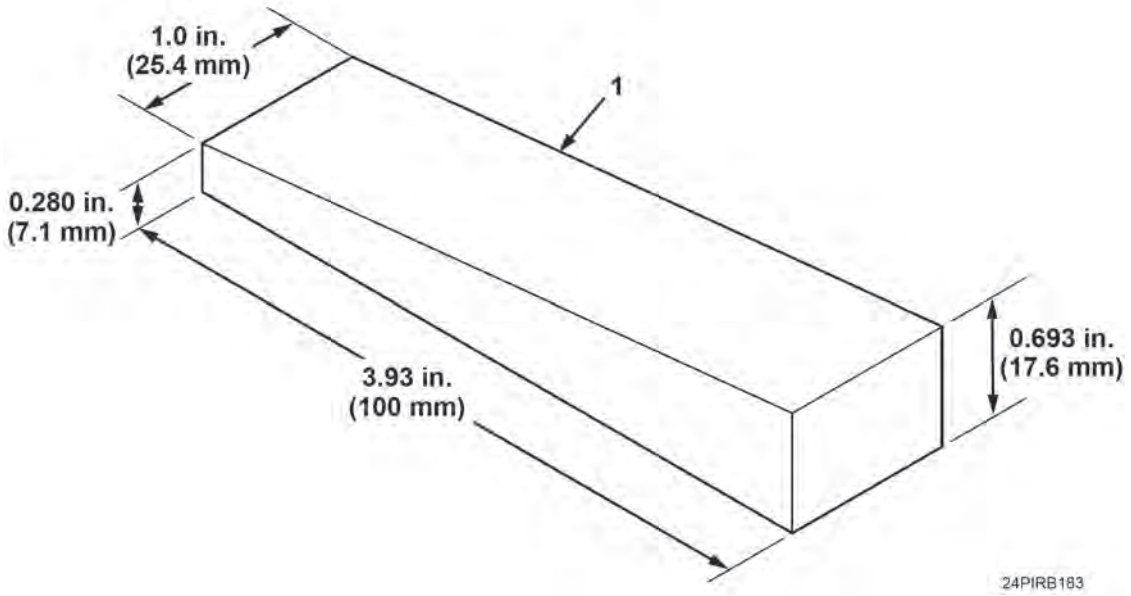


Figure 4. Setup Wedge

SETUP WEDGE

Make from wood block.

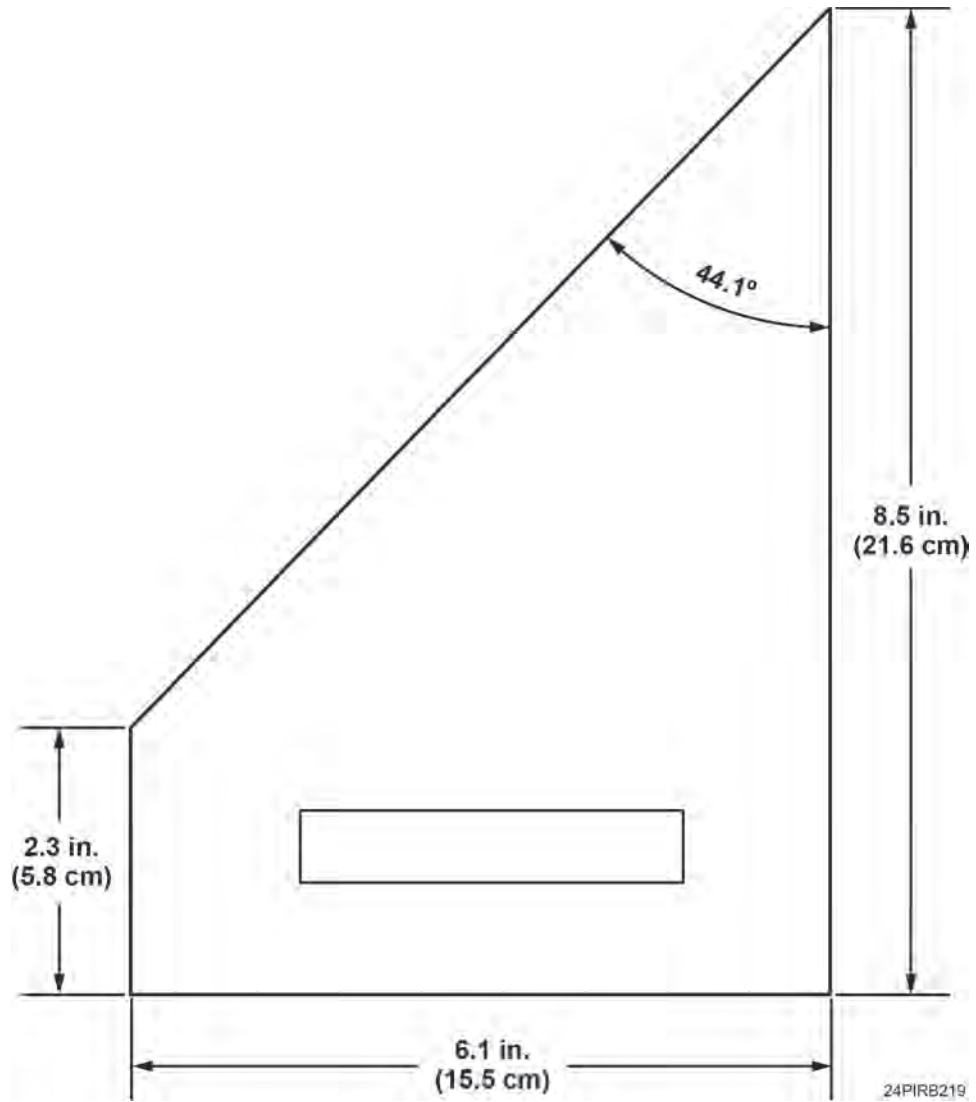


Figure 5. Torsion Bar Pre-Adjusting Tool.

TORSION BAR PRE-ADJUSTING TOOL

Make from 0.25 in. (0.6 cm) thick steel metal plate.

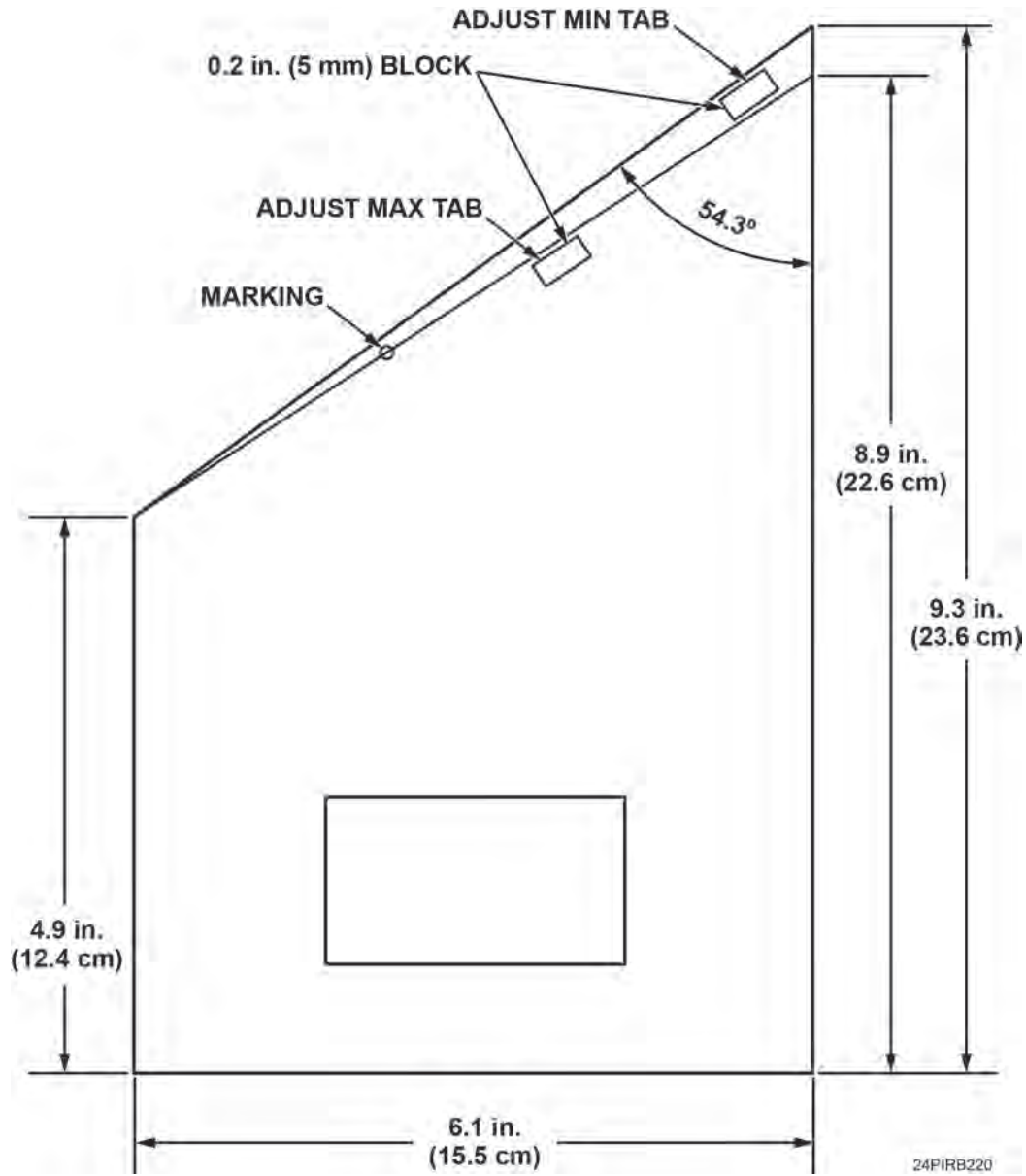


Figure 6. Torsion Bar Pre-Stressing Tool.

TORSION BAR PRE-STRESSING TOOL

Make from 0.25 in. (0.6 cm) thick steel metal plate.

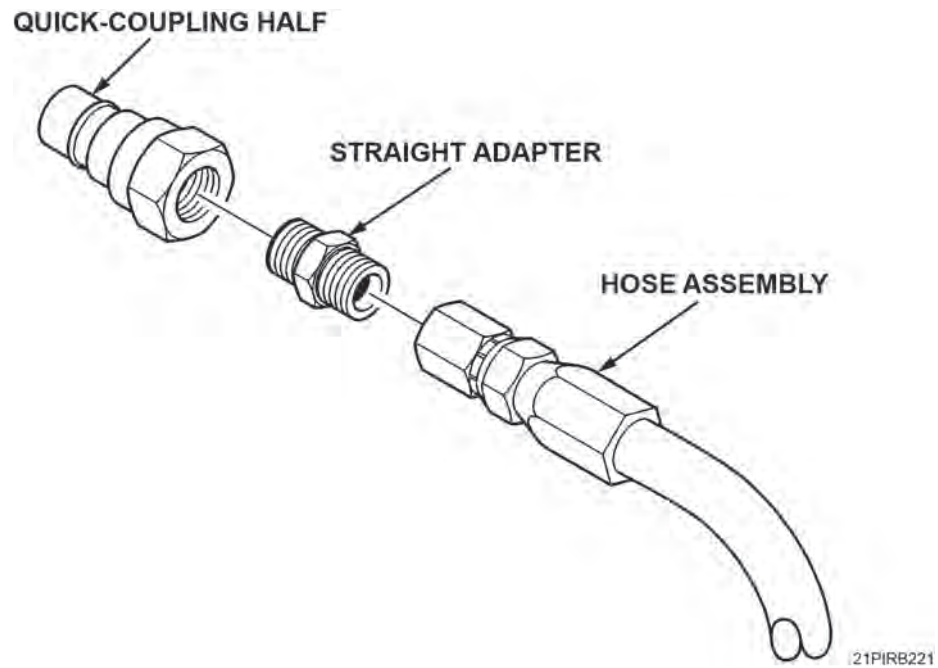


Figure 7. Drain Hose Assembly and Quick-Coupling Half.

DRAIN HOSE ASSEMBLY AND QUICK-COUPLING HALF

Make from:

- NSN 4720-12-356-2080 hose assembly
- NSN 4730-12-162-8809 straight adapter
- NSN 4730-01-063-9285 quick-coupling half

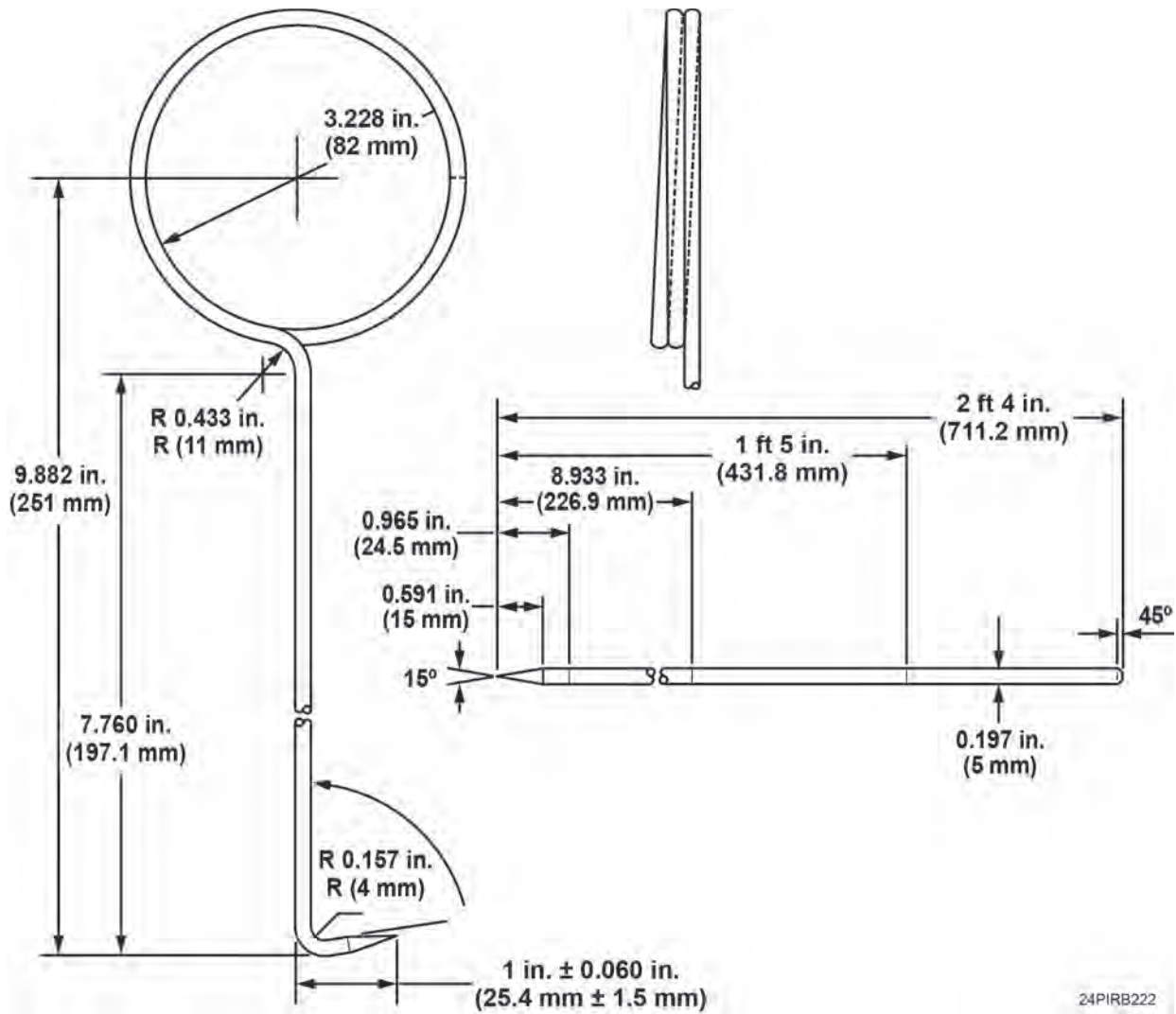


Figure 8. Clevis Cleaning Hook.

CLEVIS CLEANING HOOK

1. Make from NSN 9505-00-331-0437 wire, nonelectrical.
2. Cut wire to 2 ft 4 in. (71.1 cm) length.
3. Grind one end to a 15-degree point as shown.
4. Taper other end to 45 degrees, as shown.
5. Measure from pointed end, as shown, and bend.
6. Measure from tapered end, as shown, and bend to a ring as shown.

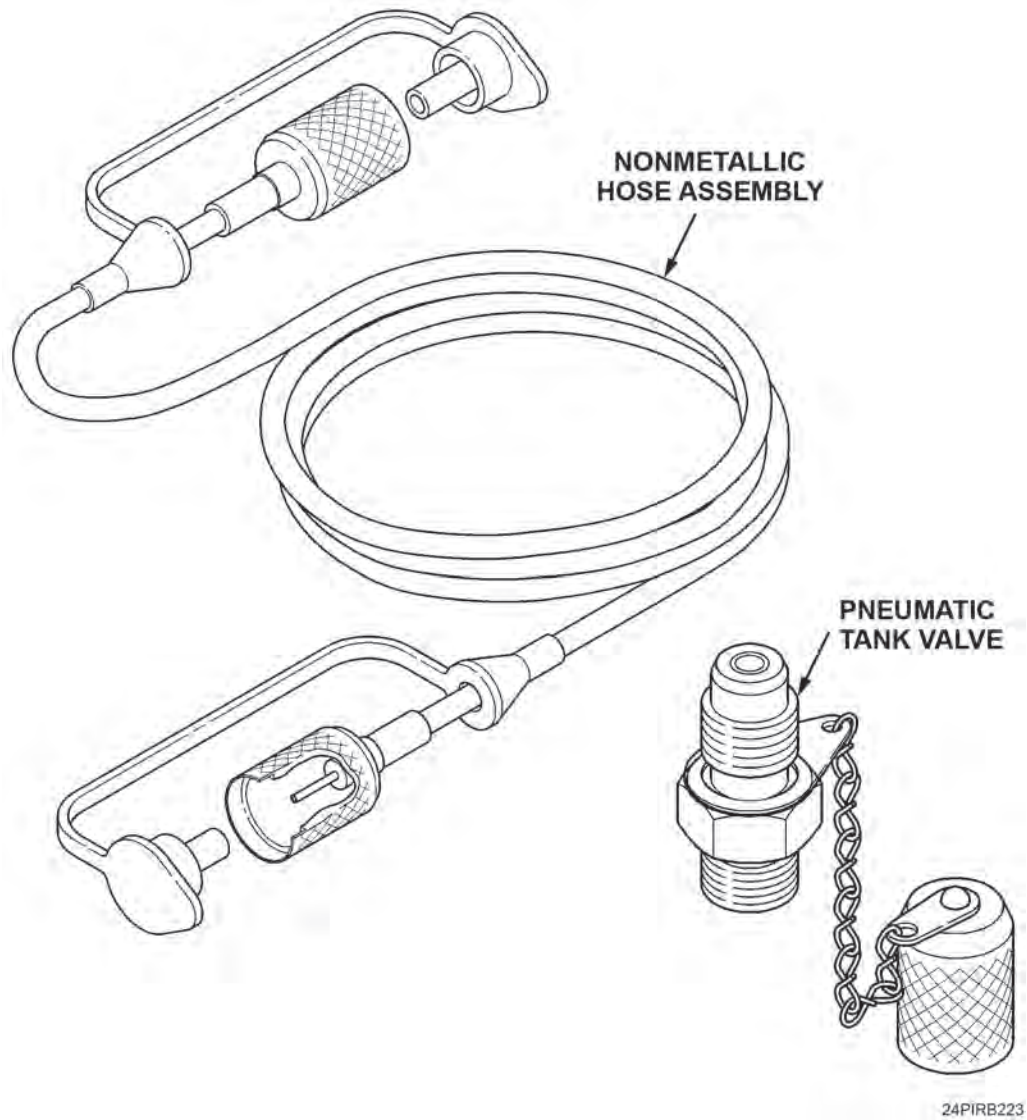


Figure 9. Deflation Hose Assembly.

DEFLATION HOSE ASSEMBLY

Make from:

NSN 4720-01-373-9871 hose assembly, nonmetallic.

NSN 4820-01-312-9207 valve, pneumatic tank.

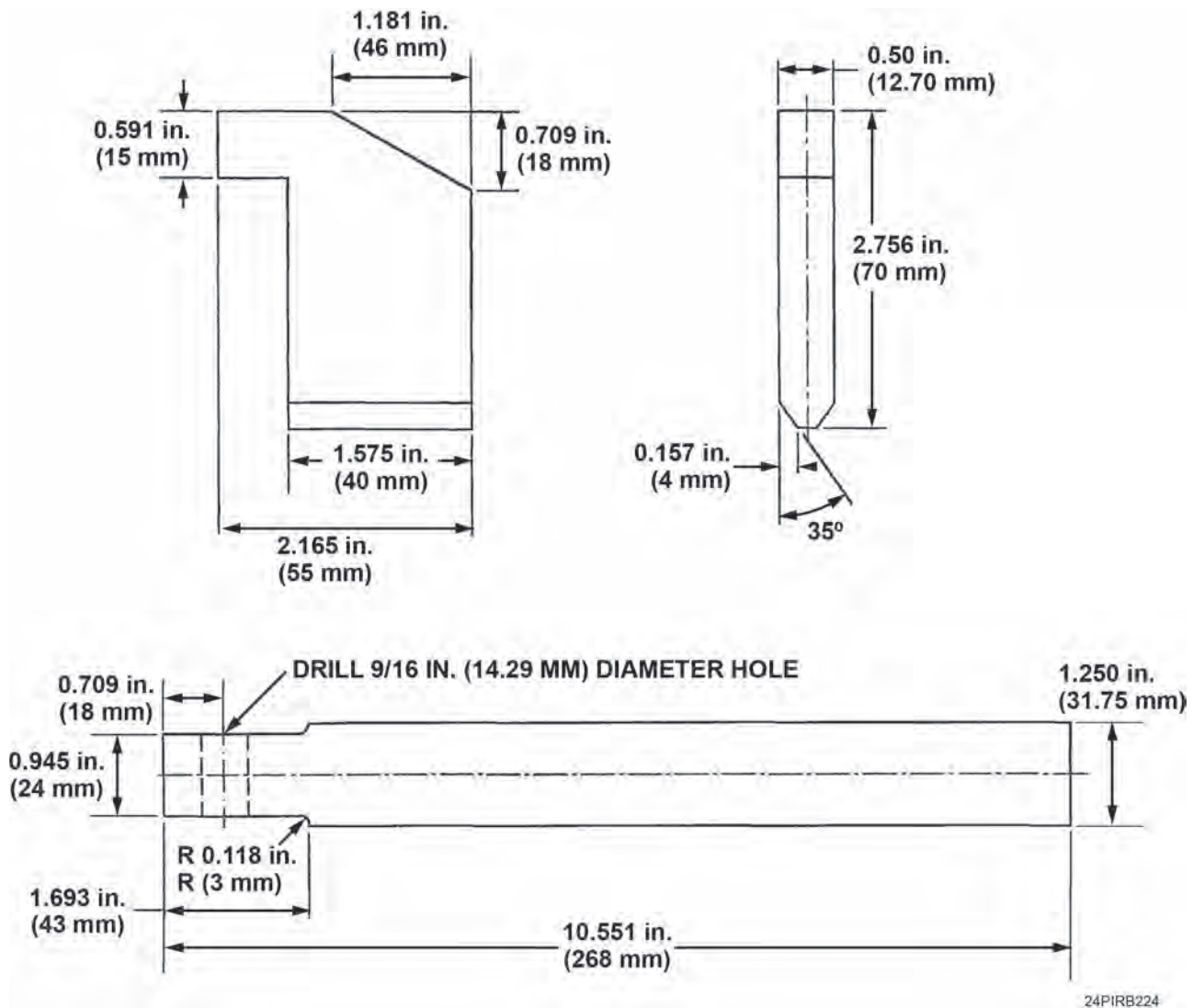


Figure 10. Coupling Device Hook (Top View).

COUPLING DEVICE HOOK

1. Make hook from 1.250 in. (3.18 cm) x 12.0 in. (30.48 cm) metal bar and 0.50 in. (1.27 cm) thick sheet metal plate.

NOTE

- Remove all burrs and sharp edges after each fabrication.
- This sheet metal plate is 0.028 in. (0.071 cm) thicker than original part.

2. Cut sheet metal plate as shown.

NOTE

This metal bar's outside diameter is 0.069 in. (0.175 cm) larger than the original part.

3. Cut metal bar to length and grind or mill two flats at one end as shown.

COUPLING DEVICE HOOK - Continued

4. Locate, mark, and drill a 9/16 in. (1.43 cm) diameter hole through the flats, as shown.

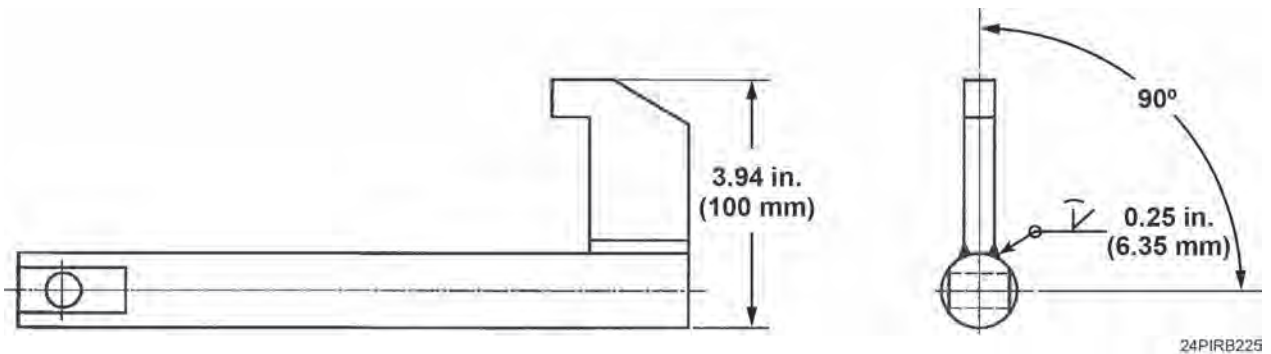


Figure 11. Coupling Device Hook (Side View).

5. Position sheet metal plate on bar stock at 90 degrees to hole, as shown, and weld into place. Refer to TC 9-237.
6. Clean and paint as required. Refer to TM 43-0139.

END OF WORK PACKAGE

FIELD MAINTENANCE TORQUE LIMITS

SCOPE

NOTE

Use general torque limits in this work package when tightening screws that are installed in threaded inserts unless torque specification is noted in procedure.

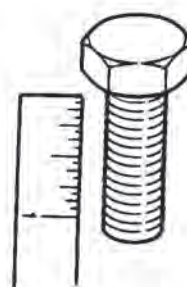
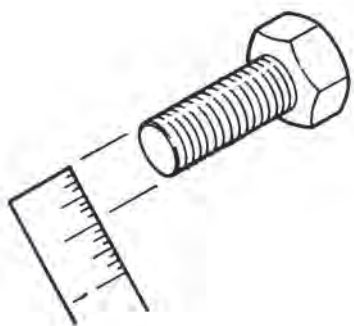
This work package provides general torque limits for screws/bolts used on the Improved Ribbon Bridge-Ramp Bay (IRB-R/B) and Improved Ribbon Bridge-Interior Bay (IRB-I/B). Special torque limits are indicated within the maintenance tasks for applicable components. The general torque limits given in this 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

Tables 1 and 2 are tubing torque specifications. Table 3 specifies wet and dry torque specifications for standard fasteners. Tables 4 and 5 are wet and dry torque specifications for metric fasteners. Dry torque limits are used on screws that do not have lubricants applied to the threads. Wet torque limits are used on screws that have high-pressure lubricants applied to the threads.

HOW TO USE TORQUE TABLES

1. Measure diameter of screw.
2. For standard screws, determine threads per inch by counting threads (Figure 1), or by using a thread pitch gauge. For metric screws, determine thread pitch by using a thread pitch gauge.



010IRB226

Figure 1. Standard Fastener Threads Per Inch.

3. Under the heading SIZE, look down left column and find screw diameter. (There may be two lines beginning with same size.)
4. In the second column under SIZE, find number of threads per inch, for standard fasteners, or thread pitch for metric fasteners, that match number of threads, or thread pitch, determined in Step 2.

TORQUE TABLES - Continued

5. Determine grade of screw by matching markings on head of screw to correct picture of capscrew head marking in illustration preceding torque limits table. Refer to Figure 2 for examples of screw head markings.

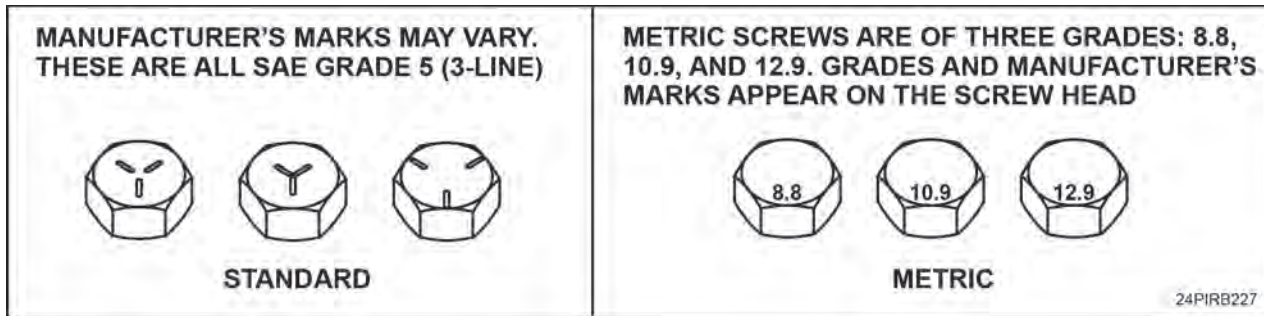


Figure 2. Standard and Metric Capscrew Head Marks.

6. Determine if this will be a wet or dry torque.
 - a. Wet torque is any bolt that is lubricated or coated with an antiseize compound.
 - b. Dry torque is any bolt that is not lubricated or coated.
7. On the tables below, locate bolt to be torqued.
 - a. Locate diameter of the bolt.
 - b. Determine threads per inch for standard fastener, or thread pitch for the metric fastener.
 - c. Slide across table to the proper grade screw.
 - d. Choose wet or dry.
 - e. Slide down proper column and across to proper row until they intersect; this is the torque value.

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. Adapters add or decrease the overall length of the torque wrench and make the dial or scale reading more or less than the actual torque applied to the nut or screw. To prevent under-tightening, over-tightening, or possible damage to equipment, calculate the correct dial or scale reading using the conversion formula provided.

How To Use Adapters With Torque Wrenches

NOTE

The following abbreviations apply to the following procedures:

- DT = Desired Torque
- LT = Length of Torque Wrench
- AL = Adapter Length
- AT = Applied Torque

When an adapter is necessary due to space or type of fitting being torqued, it must be determined how the adapter changes the amount of force applied. If the adapter increases or decreases the distance from the drive of the torque wrench to the fitting being torqued, an equation must be used to compensate for the difference.

1. If the adapter used decreases the distance between the center of the torque wrench handle and the center of the drive, first find the desired torque for the fitting, then calculate as follows:

TORQUE TABLES - Continued

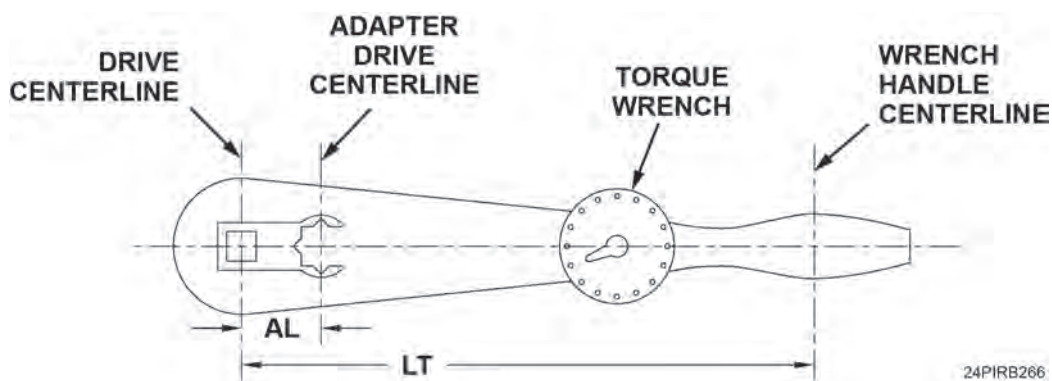


Figure 3. Torque Wrench Drive Centerline (Decreasing Distance).

- a. Multiply DT by LT.
 - b. Subtract AL from LT.
 - c. Divide the first answer by the second answer to find AT.
2. If the adapter used increases the distance between the center of the torque wrench handle and the center of the drive, first find the desired torque for the fitting, then calculate as follows:

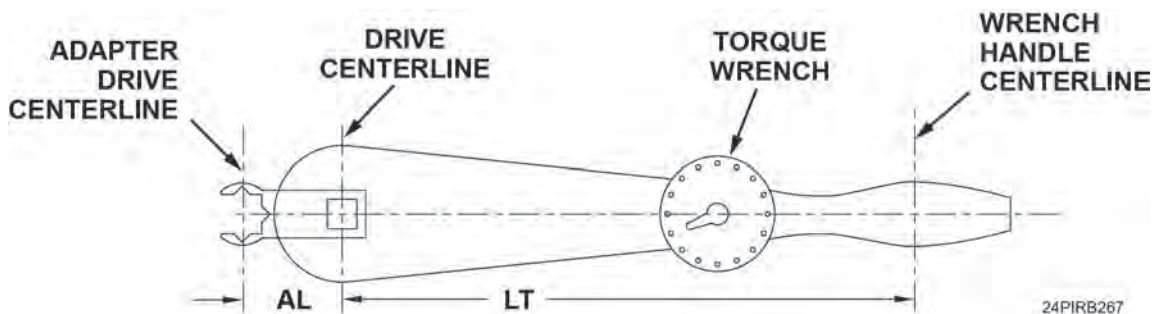
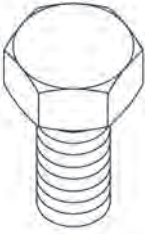
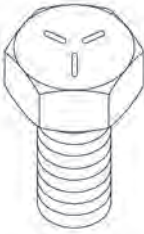



Figure 4. Torque Wrench Drive Centerline (Increasing Distance).

- a. Multiply DT by LT.
- b. Add AL and LT.
- c. Divide the first answer by the second answer to find AT.

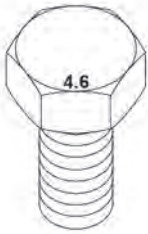
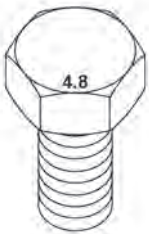
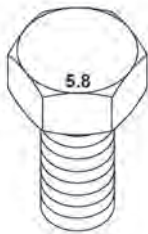
TORQUE TABLES - Continued

Table 1. Standard Fastener Torque Table.

													
		DRY		WET		DRY		WET		DRY		WET	
Dia. in.	THREADS PER INCH	lb-in	N•m	lb-in	N•m	lb-in	N•m	lb-in	N•m	lb-in	N•m	lb-in	N•m
1/4	20	66	7.5	49	5.5	101	11.4	76	8.6	143	16.2	107	12.1
1/4	28	75	8.5	56	6.3	116	13.1	87	9.8	164	18.5	123	13.9
5/16	18	135	15.3	101	11.4	209	23.6	157	17.7	295	33.4	221	25
5/16	24	150	16.9	112	12.7	230	26	173	19.6	327	37	245	27.7
3/8	16	240	27.1	180	20.3	370	41.8	278	31.4	523	59.1	392	44.3
3/8	24	272	30.7	204	23.1	420	47.5	315	35.6	593	67	445	50.3
7/16	14	384	43.4	288	32.5	593	67	445	50.3	837	94.6	628	71
7/16	20	428	48.4	321	36.3	662	74.8	496	56	935	105.6	700	79.1
1/2	13	585	66.1	439	49.6	904	102.1	678	76.6	1277	144.3	958	108.2
1/2	20	660	74.6	495	55.9	1020	115.2	764	86.3	1440	162.7	1080	122
9/16	12	70	94.9	53	71.9	109	147.8	82	111.2	154	208.8	115	155.9
9/16	18	78	105.8	59	80	121	164.1	91	123.4	171	231.9	128	173.6
5/8	11	97	131.5	73	99	150	203.4	113	153.2	212	287.4	159	215.6
5/8	18	110	149.1	82	111.2	170	230.5	127	172.2	240	325.4	180	244.1
3/4	10	172	233.2	129	174.9	269	364.7	201	272.5	376	509.8	282	382.3
3/4	16	192	260.3	144	195.2	297	402.7	223	302.4	420	569.4	315	427.1
1	8	-	-	-	-	644	873.2	483	654.9	909	1232.4	683	926
1	12	-	-	-	-	704	954.5	528	715.9	995	1349	746	1011.4

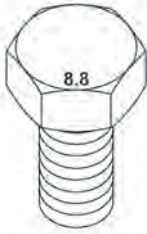
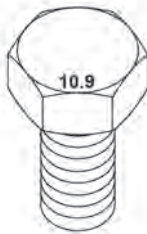
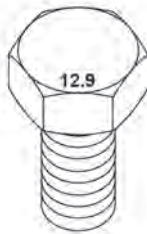
TORQUE TABLES - Continued

Table 2. Metric Fastener Torque Table.

													
		DRY		WET		DRY		WET		DRY		WET	
Dia. mm	THREAD PITCH	N•m	lb-in	N•m	lb-in	N•m	lb-in	N•m	lb-in	N•m	lb-in	N•m	lb-in
3	0.50	0.5	4	0.4	4	0.7	6	0.5	4	-	-	-	-
3.5	0.60	0.8	7	0.6	5	1.1	10	0.8	7	-	-	-	-
4	0.70	1.2	11	0.9	8	1.6	14	1.2	11	-	-	-	-
5	0.80	2.4	21	1.8	16	3.3	29	2.5	22	4	35	3	27
6	1.00	4	35	3	27	5.66	50	4.2	37	6.9	61	5.2	46
8	1.25	9.9	88	7.4	66	13.6	120	10.2	90	16.7	148	12.5	111
10	1.50	19.6	174	14.7	130	27	239	20	177	33.1	293	24.8	220
12	1.75	34.1	302	25.6	227	47	416	35	310	58	513	43	381
14	2.00	54.3	481	40.8	361	75	664	56	496	92	814	69	611

TORQUE TABLES - Continued

Table 3. Metric Fastener Torque Table.

													
		DRY		WET		DRY		WET		DRY		WET	
Dia. mm	THREAD PITCH	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft
8	1.25	26.4	19	19.8	15	28.5	21	21.4	16	36.5	27	27.3	20
10	1.50	52.2	38	39.2	29	56.6	42	42.4	31	72.2	53	54.2	40
12	1.75	91	67	68	50	99	73	74	55	126	93	94	69
14	2.00	145	107	109	80	157	116	118	87	200	147	150	111
16	2.00	226	167	170	125	245	181	184	136	313	231	235	173
20	2.50	441	325	331	244	478	353	358	264	610	450	458	338
24	3.00	762	562	572	422	826	609	620	457	1,055	778	791	583
30	3.50	1,515	1,117	1,136	838	1,641	1,210	1,231	908	2,095	1,545	1,572	1,159
36	4.00	2,647	1,952	1,985	1,464	2,868	2,115	2,151	1,586	3,662	2,701	2,746	2,025

END OF TASK

END OF WORK PACKAGE

CHAPTER 5
PARTS INFORMATION

**FIELD
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION**

INTRODUCTION

SCOPE

This Repair Parts and Special Tools List (RPSTL) lists and authorizes spares and repair parts; special tools; special Test, Measurement, and Diagnostic Equipment (TMDE); and other special support equipment required for performance of Field 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 RPSTL is divided into the following work packages:

1. **Repair Parts List Work Packages.** Work packages containing lists of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. 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.
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 the DESCRIPTION AND USABLE ON CODE [UOC] 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 NSN Index work package refers you to the figure and item number. The P/N Index work package refers you to the figure and item number.

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 SMR code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout. This entry may be subdivided into four subentries, one for each service.

Table 1. SMR Code Explanation.

<u>Source Code</u> <u>XX</u>		<u>Maintenance Code</u> <u>XX</u>	<u>Recoverability Code</u> <u>X</u>
1st two positions: How to get an item.	3rd position: Who can install, replace, or use the item.	4th position: Who can do complete repair* on the item.	5th position: Who determines disposition action on unserviceable items.

***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 follow:

<u>Source Code</u>	<u>Application/Explanation</u>
PA PB PC PD PE PF PG PH PR PZ	NOTE Items coded PC are subject to deterioration.
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
MF - Made at field MH - Made at below depot/sustainment level ML - Made at SRA MD - Made at depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the P/N in the DESCRIPTION AND USABLE ON CODE (UOC) Column and listed in the bulk material functional group of this RPSTL. If the item is authorized to you by the third position of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
AF - Assembled by field AH - Assembled by below depot/sustainment level AL - Assembled by SRA AD - Assembled by depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the Commercial and Government Entity Code (CAGEC) and P/N.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's P/N.
XD	Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and P/N 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 items source coded "XA" or those aircraft support items restricted by requirements of Army Regulation (AR) 750-1.

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 the following levels of maintenance:

<u>Maintenance Code</u>	<u>Application/Explanation</u>
C -	Crew maintenance can service, remove, replace, and use the item.
F -	Field Maintenance can remove, replace, and use the item.
H -	Below Depot Sustainment maintenance can remove, replace, and use the item.
K -	Contractor facility can remove, replace, and use the item.
L -	Specialized Repair Activity (SRA) can remove, replace, and use the item.
D -	Depot can remove, replace, and use the item.

**EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST
WORK PACKAGES - Continued**

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

<u>Maintenance Code</u>	<u>Application/Explanation</u>
F -	Field is the lowest level that can do complete repair of the item.
H -	Below Depot Sustainment is the lowest level that can do complete repair of the item.
K -	Complete repair is done at contractor facility.
L -	Field 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 -	Nonreparable. No repair is authorized.
B -	No repair is authorized. No parts or special tools are authorized for maintenance of "B"-coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

<u>Recoverability Code</u>	<u>Application/Explanation</u>
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the field level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment level.
K -	Reparable item. Condemnation and disposal to be performed at contractor facility.
L -	Reparable item. Condemnation and disposal not authorized below SRA.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
A -	Item requires special handling or condemnation procedures because of specific reasons (such as 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 CAGEC is a five-digit code which 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.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different P/N from the number listed.

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. P/Ns of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.
3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from Electromagnetic Pulse (EMP) damage during a nuclear attack.
4. 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.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST WORK PACKAGES - Continued

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 instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

- NATIONAL STOCK NUMBER (NSN) INDEX Work Package.** NSNs in this index are listed in National Item Identification Number (NIIN) sequence.

STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number. For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the RPSTL WP.

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.
- PART NUMBER (P/N) INDEX Work Package.** P/Ns in this index are listed in ascending alphanumeric sequence (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).

PART NUMBER Column. Indicates the P/N assigned to the item.

FIG. Column. This column lists the number of the figure where the item is identified/located in the RPSTL WP.

ITEM Column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent FIG. Column.

SPECIAL INFORMATION

UOC. The UOC 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 under the applicable item/nomenclature. Uncoded items are applicable to all models. Identification of the UOCs used in the RPSTL are:

<u>Code</u>	<u>Used On</u>
EIB	M17
ERB	M16

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. P/Ns for bulk material are also referenced in the DESCRIPTION Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in WP 0070.

Index Numbers. Items which have the word BULK in the FIG. Column will have an index number shown in the ITEM NO Column. This index number is a cross-reference between the National Stock Number (NSN) Index WP, the Part Number (P/N) Index WP, and the bulk material list in the RPSTL WP.

HOW TO LOCATE REPAIR PARTS

1. **When NSNs or P/Ns Are Not Known.**

First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.

Second. Find the figure covering the functional group or subfunctional group to which the item belongs.

Third. Identify the item on the figure and note the number(s).

Fourth. Look in the RPSTL WP for the figure and item numbers. The NSNs and P/Ns are on the same line as the associated item numbers.
2. **When NSN Is Known.**

First. If you have the NSN, look in the STOCK NUMBER column of the NSN Index WP. The NSN Index WP is arranged in NIIN sequence. Note the figure and item number next to the NSN.

Second. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.
3. **When P/N Is Known.**

First. If you have the P/N and not the NSN, look in the PART NUMBER Column of the Part Number (P/N) Index WP. Identify the figure and item number.

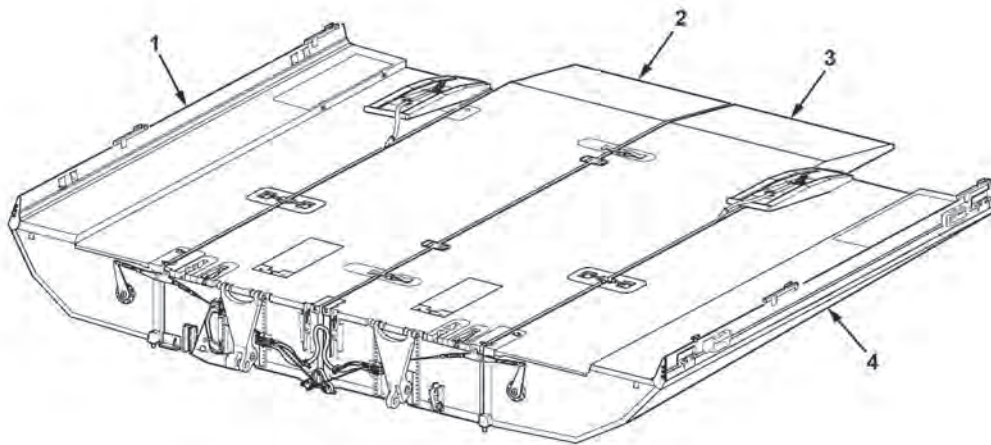
Second. Look up the item on the figure in the applicable RPSTL WP.

ABBREVIATIONS

<u>Abbreviation</u>	<u>Explanation</u>
BOI	Basis of Issue
CAGEC	Commercial and Government Entity Code
EMP	Electromagnetic Pulse
FIG	Figure
HCI	Hardness Critical Item
NSN	National Stock Number
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN).
P/N	Part Number
RPSTL	Repair Parts and Special Tools List
SRA	Specialized Repair Activity
SMR	Source, Maintenance, and Recoverability Code
TMDE	Test, Measurement, and Diagnostic Equipment
U/M	Unit of Measure
UOC	Usable on Code
WP	Work Package

END OF WORK PACKAGE

FIELD
RAMP BAY, INNER AND OUTER PONTOONS



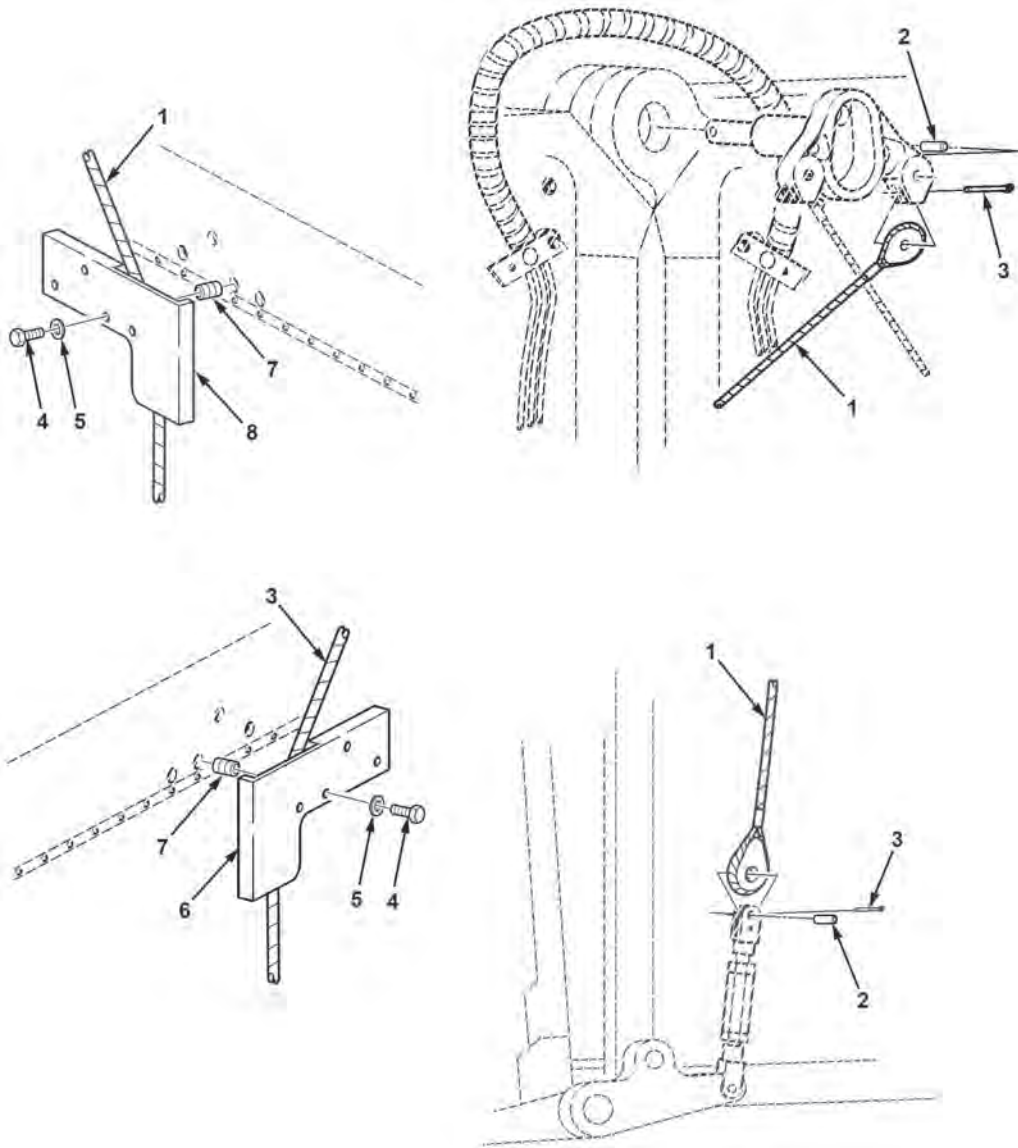
24PIRB001

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
GROUP 2600 RAMP BAY, INNER AND OUTER PONTOONS						
FIG. 1. RAMP BAY, INNER AND OUTER PONTOONS.						
1	PFFFF	5420-12-361-9935	D9913	027500205	PANEL,BRIDGE RIGHT SIDE SEE FIGURES 2 - 28 FOR BREAKDOWN UOC: ERB.....	1
2	PFFFF	5420-12-361-9934	D9913	027500201	PONTOON,INNER RIGHT SIDE SEE FIGURES 2 - 28 FOR BREAKDOWN UOC: ERB.....	1
3	PFFFF	5420-12-361-9933	D9913	027500203	PONTOON,INNER LEFT SIDE SEE FIGURES 2 - 28 FOR BREAKDOWN UOC: ERB.....	1
4	PFFFF	5420-12-362-0727	D9913	027500207	PONTOON,OUTER LEFT SIDE SEE FIGURES 2 - 28 FOR BREAKDOWN UOC: ERB.....	1

END OF FIGURE

**FIELD
RAMP BAY CABLE ASSEMBLY.**



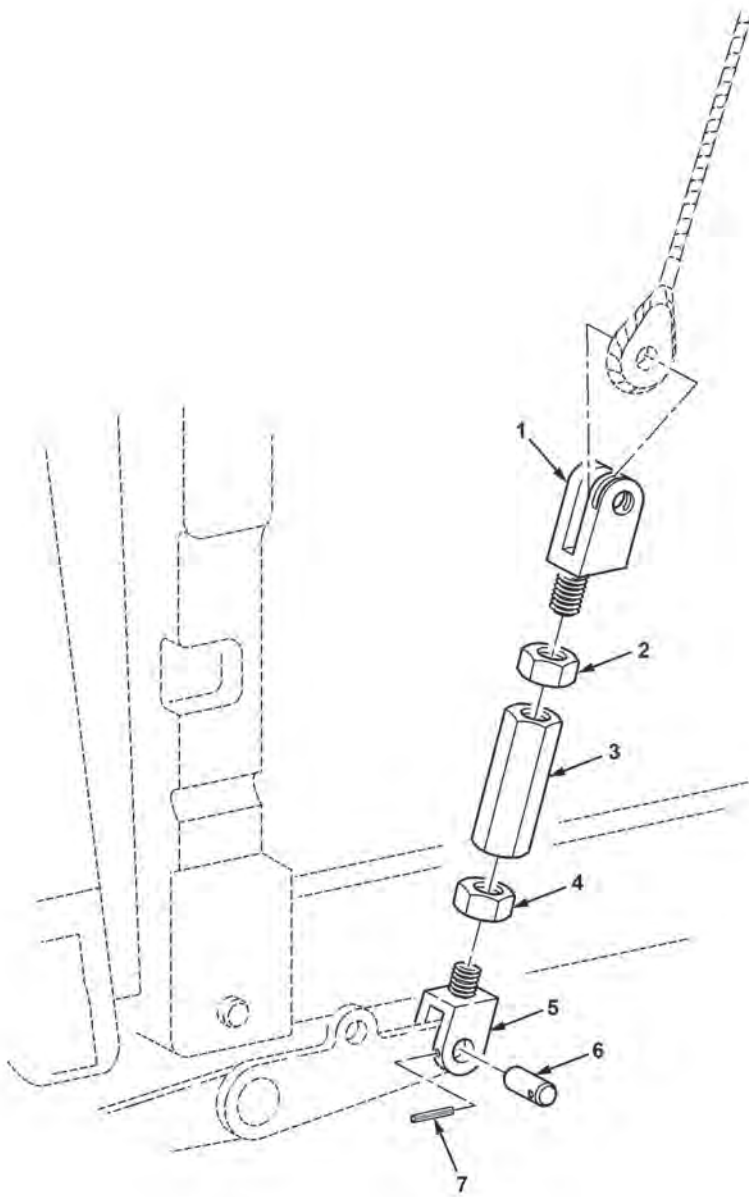
24PIRB802

Figure 2. Ramp Bay 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 2601 RAMP BAY CABLE ASSEMBLY						
FIG. 2. RAMP BAY CABLE ASSEMBLY.						
1	PAFZZ	4010-12-356-1914	D9913	029660102	WIRE ROPE ASSEMBLY UOC: ERB.....	2
2	PAFZZ	5315-12-180-3616	D9913	027073613	PIN,STRAIGHT,HEADLE UOC: ERB.....	4
3	PAFZZ	5315-12-180-3617	D9913	027071702	PIN,LOCK UOC: ERB.....	4
4	PAFZZ	5305-12-141-9963	D8286	DIN933-M16X70-8.8- A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	6
5	PAFZZ	5310-12-142-0640	D8286	DIN125-B17-140HV- A3P	WASHER,FLAT UOC: ERB.....	6
6	PAFZZ	5365-12-356-2551	D9913	027510380	SPACER,SPECIAL SHAP RIGHT SIDE UOC: ERB.....	1
7	PAFZZ	5325-12-147-9354	D9913	909591099	INSERT,SCREW THREAD UOC: ERB.....	6
8	PAFZZ	5365-12-356-2199	D9913	027510379	SPACER,SPECIAL SHAP LEFT SIDE UOC: ERB.....	1

END OF FIGURE

**FIELD
RAMP BAY CABLE ASSEMBLY (TURNBUCKLE).**



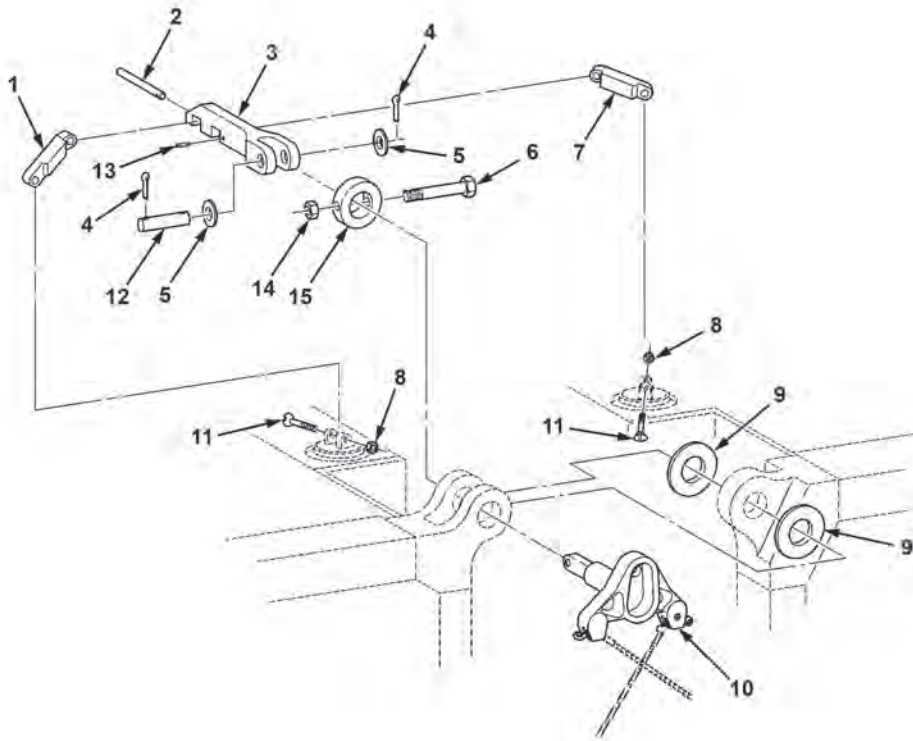
24PIR8803

Figure 3. Ramp Bay Cable Assembly (Turnbuckle).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2601 RAMP BAY CABLE ASSEMBLY						
FIG. 3. RAMP BAY CABLE ASSEMBLY (TURNBUCKLE).						
1	PAFZZ	5340-12-179-7652	D9913	027076601	CLEVIS,ROD END UOC: ERB.....	1
2	PAFZZ	5310-12-174-3877	D8286	DIN439-BM24-05- A2P	NUT,PLAIN,HEXAGON UOC: ERB.....	1
3	PAFZZ	5340-12-356-6956	D8286	DIN1479-SP-M24- ST-A3P	TURNBUCKLE BODY UOC: ERB.....	1
4	PAFZZ	5310-12-179-8253	D8286	DIN439-BM24LH-05- A2P	NUT,PLAIN,HEXAGON UOC: ERB.....	1
5	PAFZZ	5340-12-179-7654	D9913	027076602	CLEVIS,ROD END UOC: ERB.....	1
6	PAFZZ	5315-12-180-3618	D9913	027073627	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
7	PAFZZ	5315-12-356-3958	D9913	940614	PIN,SPRING UOC: ERB.....	1

END OF FIGURE

**FIELD
BELL CRANK AND EYEBOLT (FRONT).**



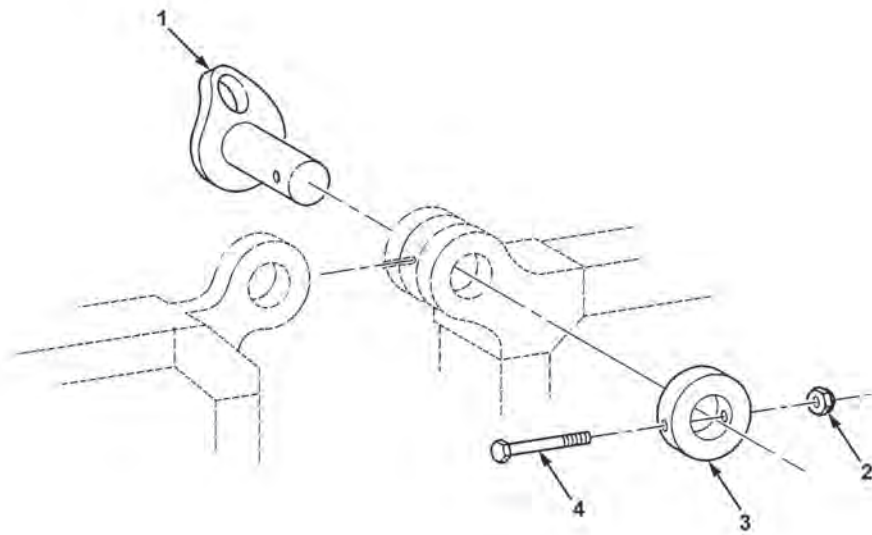
24PIR8804

Figure 4. Bell Crank and Eyebolt (Front).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2603 BELL CRANK AND EYEBOLT						
FIG. 4. BELL CRANK AND EYEBOLT (FRONT).						
1	PAFZZ	5420-12-179-0315	D9913	027074806	LASCHE UOC: ERB.....	1
2	PAFZZ	5315-00-503-0509	97403	13218E4099	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
3	PAFZZ	5420-01-129-6399	97403	13218E4166	COVER,PIN CYLINDER UOC: ERB.....	1
4	PAFZZ	5315-12-180-3614	D9913	942120	PIN,COTTER UOC: ERB.....	2
5	PAFZZ	5310-12-145-2843	D8286	DIN125-B37-140HV-A3P	WASHER,FLAT UOC: ERB.....	2
6	PAFZZ	5305-12-179-8251	D8286	DIN931-M12X150-10.9-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	1
7	PAFZZ	5420-12-179-0316	D9913	027074805	CONNECTING LINK,RIG UOC: ERB.....	1
8	PAFZZ	5310-01-418-2337	80204	B18241B120	NUT,PLAIN,HEXAGON UOC: ERB.....	2
9	PAFZZ	5310-12-179-8252	D9913	027074502	WASHER,FLAT UOC: ERB.....	2
10	PAFZZ	3040-12-356-2893	D9913	027015009	BELL CRANK UOC: ERB.....	1
11	PAFZZ	5305-00-499-1316	97403	13219E4121	SCREW,CLOSE TOLERAN UOC: ERB.....	2
12	PAFZZ	5315-00-480-1770	97403	13218E4157	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
13	PAFZZ	5315-12-314-9043	D9913	940630	PIN,SPRING UOC: ERB.....	1
14	PAFZZ	5310-12-145-2655	D8286	DIN985-M12-8-A2P	NUT,SELF-LOCKING,HE UOC: ERB.....	1
15	PAFZZ	5420-12-179-0318	D9913	027074001	RING,STOP UOC: ERB.....	1

END OF FIGURE

**FIELD
BELL CRANK AND EYEBOLT (REAR).**



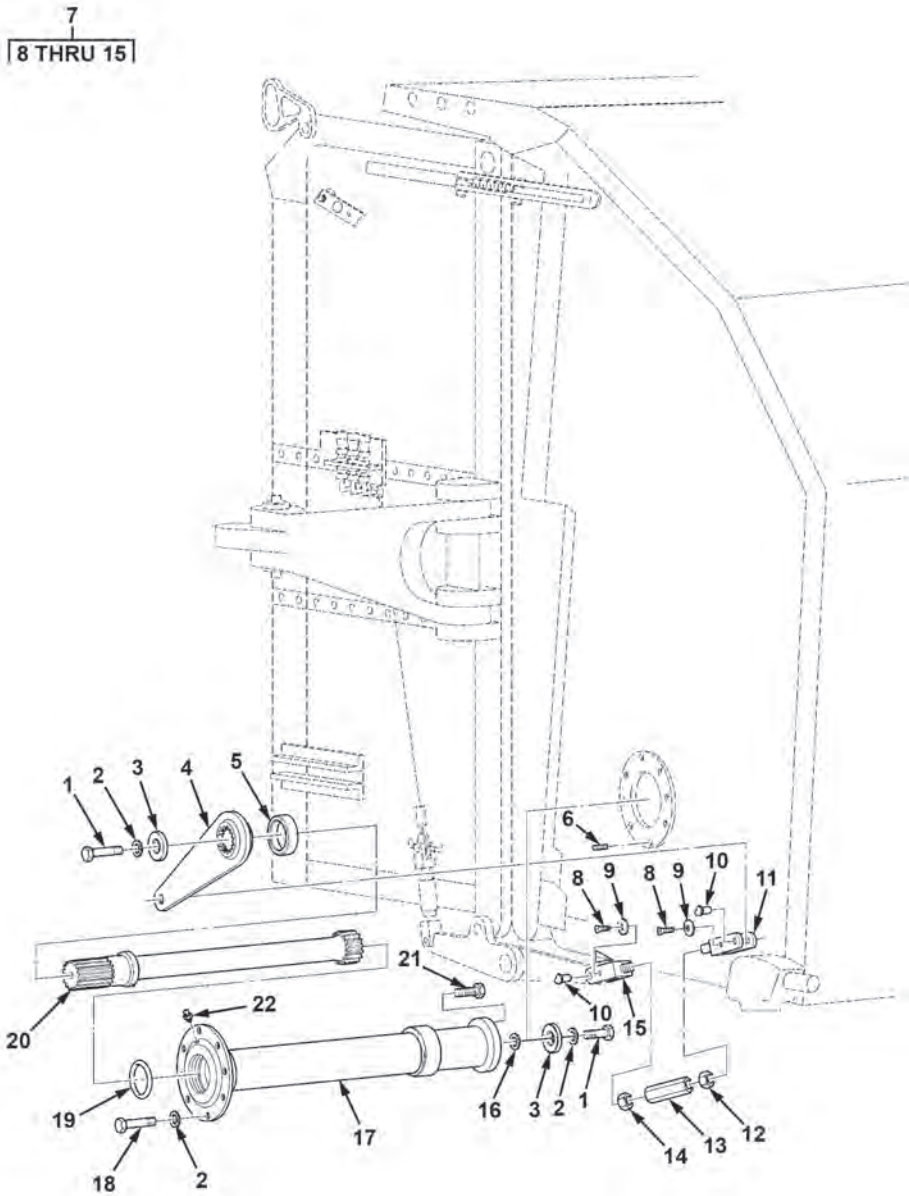
24PIR8805

Figure 5. Bell Crank and Eyebolt (Rear, Ramp Only).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2603 BELL CRANK AND EYEBOLT						
FIG. 5. BELL CRANK AND EYEBOLT (REAR, RAMP ONLY).						
1	PAFZZ	5420-12-179-0320	D9913	027006703	PIN,STRAIGHT,HEADED UOC: ERB.....	1
2	PAFZZ	5310-12-145-2655	D8286	DIN985-M12-8-A2P	NUT,SELF-LOCKING,HE UOC: ERB.....	1
3	PAFZZ	5420-12-179-0318	D9913	027074001	RING,STOP UOC: ERB.....	1
4	PAFZZ	5305-12-179-8251	D8286	DIN931- M12X150-10.9-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	1

END OF FIGURE

**FIELD
TORSION BAR.**



24PIRB006

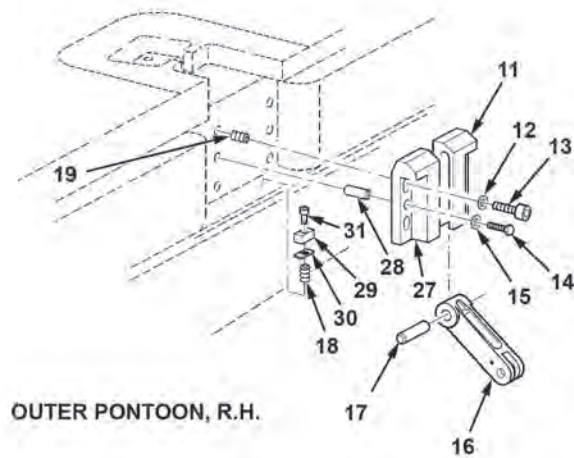
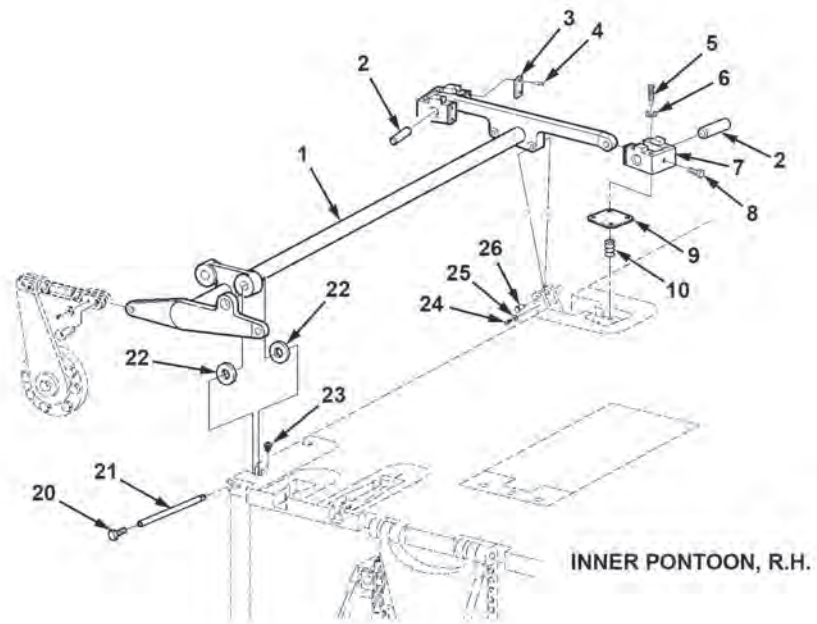
Figure 6. Torsion Bar.

(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						
FIG. 6. TORSION BAR.						
1	PAFZZ	5305-12-167-5376	D8286	DIN933-M12X35-8.8-A3C	SCREW,CAP,HEXAGON H UOC: ERB.....	4
2	PAFZZ	5310-12-156-4899	D8286	DIN125-B13-140HV-A3P	WASHER,FLAT UOC: ERB.....	20
3	PAFZZ	5310-12-372-0547	D9913	027518119	WASHER,FLAT UOC: ERB.....	4
4	PAFZZ	3040-12-356-3468	D9913	027501901	LEVER,REMOTE CONTRO UOC: ERB.....	2
5	PAFZZ	5365-12-356-3032	D9913	027516004	SPACER,SLEEVE UOC: ERB.....	2
6	PAFZZ	5340-12-142-8249	D8442	LN9039-13240	INSERT,SCREW THREAD UOC: ERB.....	16
7	PAFFF	5340-12-356-6984	D9913	027508901	TURNBUCKLE UOC: ERB.....	2
8	PAFZZ	5305-12-142-5931	19206	12529734	. SCREW,CAP,SOCKET HE UOC: ERB.....	2
9	PAFZZ	5310-12-356-4434	D9913	027510381	. WASHER,RECESSED UOC: ERB.....	2
10	PAFZZ	5315-12-356-3483	D9913	027515011	. PIN,STRAIGHT,HEADED UOC: ERB.....	2
11	PAFZZ	5340-12-356-6985	D9913	027511311	. CLEVIS,ROD END UOC: ERB.....	1
12	PAFZZ	5310-12-356-4433	D9913	936640	. NUT,PLAIN,HEXAGON UOC: ERB.....	1
13	PAFZZ	5340-12-356-6359	D9913	935982	. TURNBUCKLE BODY UOC: ERB.....	1
14	PAFZZ	5310-12-327-0721	D8286	DIN439-BM20-04-A2P	. NUT,PLAIN,HEXAGON UOC: ERB.....	1
15	PAFZZ	5340-12-356-6986	D9913	027511312	. CLEVIS,ROD END UOC: ERB.....	1
16	PAFZZ	5310-12-356-2788	D9913	027518122	WASHER,FLAT 2.0 MM UOC: ERB.....	6
16	PAFZZ	5310-12-356-2553	D9913	027518121	WASHER,FLAT 1.5 MM UOC: ERB.....	2
16	PAFZZ	5310-12-356-2552	D9913	027518120	WASHER,FLAT 1.0 MM UOC: ERB.....	4
17	PAFZZ	3040-12-356-3469	D9913	027505502	HOUSING,MECHANICAL UOC: ERB.....	2
18	PAFZZ	5305-12-156-4876	D8286	DIN933-M12X30-8.8-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	16
19	PAFZZ	5331-12-356-2890	D7040	ORAR00140-N7377	O-RING UOC: ERB.....	2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
20	PAFZZ	5340-12-356-6955	D9913	027518901	TORSION BAR,HINGE UOC: ERB.....	2
21	PAFZZ	5305-12-164-0266	D8286	DIN933-M8X20- A2-70	SCREW,CAP,HEXAGON H UOC: ERB.....	2
22	PAFZZ	4730-12-125-0310	D8286	DIN71412AM6	FITTING,LUBRICATION UOC: ERB.....	2

END OF FIGURE

**FIELD
RAMP BAY UNFOLDING STABILIZER AND BRACKETS.**



24PIRB007

Figure 7. Ramp Bay Unfolding Stabilizer and Brackets.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2701 RAMP BAY UNFOLDING STABILIZER AND BRACKETS						
FIG. 7. RAMP BAY UNFOLDING STABILIZER AND BRACKETS.						
1	PAFZZ	3040-12-356-3475	D9913	027500402	BELL CRANK RIGHT SIDE UOC: ERB.....	1
1	PAFZZ	3040-12-356-3471	D9913	027500401	BELL CRANK LEFT SIDE UOC: ERB.....	1
2	PAFZZ	5315-12-356-3474	D9913	027515003	PIN,STRAIGHT,HEADLE UOC: ERB.....	4
3	PAFZZ	5365-12-359-2284	D9913	027518128	SPACER,PLATE 5.0 MM UOC: ERB.....	16
3	PAFZZ	5365-12-356-3035	D9913	027518101	SPACER,PLATE 0.5 MM UOC: ERB.....	16
3	PAFZZ	5365-12-356-3038	D9913	027518103	SPACER,PLATE 2.0 MM UOC: ERB.....	16
3	PAFZZ	5365-12-356-3037	D9913	027518102	SPACER,PLATE 1.0 MM UOC: ERB.....	16
4	PAFZZ	5315-12-156-4700	D8860	014881	PIN,SPRING UOC: ERB.....	16
5	PAFZZ	5305-12-167-5389	D8286	DIN931- M16X120-8.8-A3C	SCREW,CAP,HEXAGON H UOC: ERB.....	16
6	PAFZZ	5310-12-356-2783	D9913	027518107	WASHER,FLAT UOC: ERB.....	16
7	PAFZZ	5340-12-356-6963	D9913	027517601	BRACKET,MOUNTING UOC: ERB.....	4
8	PAFZZ	5305-12-141-9891	D8286	DIN933- M10X25-10.9-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	4
9	PAFZZ	5365-12-356-5118	D9913	027514001	SPACER,PLATE 1.0 MM UOC: ERB.....	12
9	PAFZZ	5365-12-356-3036	D9913	027514002	SPACER,PLATE 1.5 MM UOC: ERB.....	4
10	PAFZZ	5325-12-144-4037	D8442	LN9039-18320	INSERT,SCREW THREAD UOC: ERB.....	16
11	PAFZZ	5340-12-356-6960	D9913	027517702	BRACKET,ANGLE NO.1, INNER PONTOON UOC: ERB.....	2
11	PAFZZ	5340-12-356-6987	D9913	027517704	BRACKET,MOUNTING NO. 3,OUTER PONTOON UOC: ERB.....	2
12	PAFZZ	5310-12-356-2782	D9913	027518113	WASHER,FLAT UOC: ERB.....	16
13	PAFZZ	5305-12-147-0295	D8286	DIN912-M20X60-8.8- A3P	SCREW,CAP,SOCKET HE UOC: ERB.....	16
14	PAFZZ	5305-12-158-0033	I9008	ISO4017- M10X16-8.8-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	8

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
15	PAFZZ	5310-12-356-2785	D9913	027518110	WASHER,FLAT UOC: ERB.....	8
16	PAFZZ	3040-12-356-3472	D9913	027511304	CONNECTING LINK,RIG OUTER PONTOON UOC: ERB.....	2
16	PAFZZ	3040-12-356-3473	D9913	027511305	CONNECTING LINK,RIG INNER PONTOON UOC: ERB.....	2
17	PAFZZ	5315-12-356-2730	D9913	027515002	PIN,STRAIGHT,HEADLE UOC: ERB.....	4
18	PAFZZ	5325-12-156-2814	D8442	LN9039-18160	INSERT,SCREW THREAD UOC: ERB.....	4
19	PAFZZ	5325-14-286-7580	F1699	01300200025	INSERT,SCREW THREAD UOC: ERB.....	16
20	PAFZZ	5305-12-305-7892	D8286	DIN933-M20X20-8.8- A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	4
21	PAFZZ	5315-12-356-2355	D9913	027515004	PIN,STRAIGHT,HEADLE UOC: ERB.....	4
22	PAFZZ	5310-12-357-2525	D9913	027018108	WASHER,FLAT UOC: ERB.....	8
23	PAFZZ	5305-12-356-5297	D9913	027078504	SETSCREW UOC: ERB.....	4
24	PAFZZ	5305-12-186-6949	D8286	DIN963-M8X12-8.8- A2P	SCREW,MACHINE UOC: ERB.....	4
25	PAFZZ	5310-12-356-2784	D9913	027518106	WASHER,RECESSED UOC: ERB.....	4
26	PAFZZ	5315-12-356-2731	D9913	027515001	PIN,STRAIGHT,HEADED UOC: ERB.....	4
27	PAFZZ	5340-12-356-6961	D9913	027517703	BRACKET,MOUNTING NO. 4,OUTER PONTOON UOC: ERB.....	2
27	PAFZZ	5340-12-356-6959	D9913	027517701	BRACKET,MOUNTING NO. 2,INNER PONTOON UOC: ERB.....	2
28	PAFZZ	5315-12-356-3214	D9913	129453	PIN,DOWEL UOC: ERB.....	8
29	PAFZZ	5340-12-356-6962	D9913	027510305	BUMPER,METALLIC UOC: ERB.....	4
30	PAFZZ	5310-12-357-2524	D9913	027518127	WASHER,FLAT 0.5 MM UOC: ERB.....	12
30	PAFZZ	5365-12-356-3033	D9913	027518112	SPACER,PLATE 2.0 MM UOC: ERB.....	12
30	PAFZZ	5365-12-356-3034	D9913	027518111	SPACER,PLATE 1.0 MM UOC: ERB.....	12

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
31	PAFZZ	5305-12-356-6171	D8286	DIN6912- M16X35-8.8-A3P	SCREW,CAP,SOCKET HE UOC: ERB.....	4

END OF FIGURE

**FIELD
RAMP PLATE AND STRAP.**

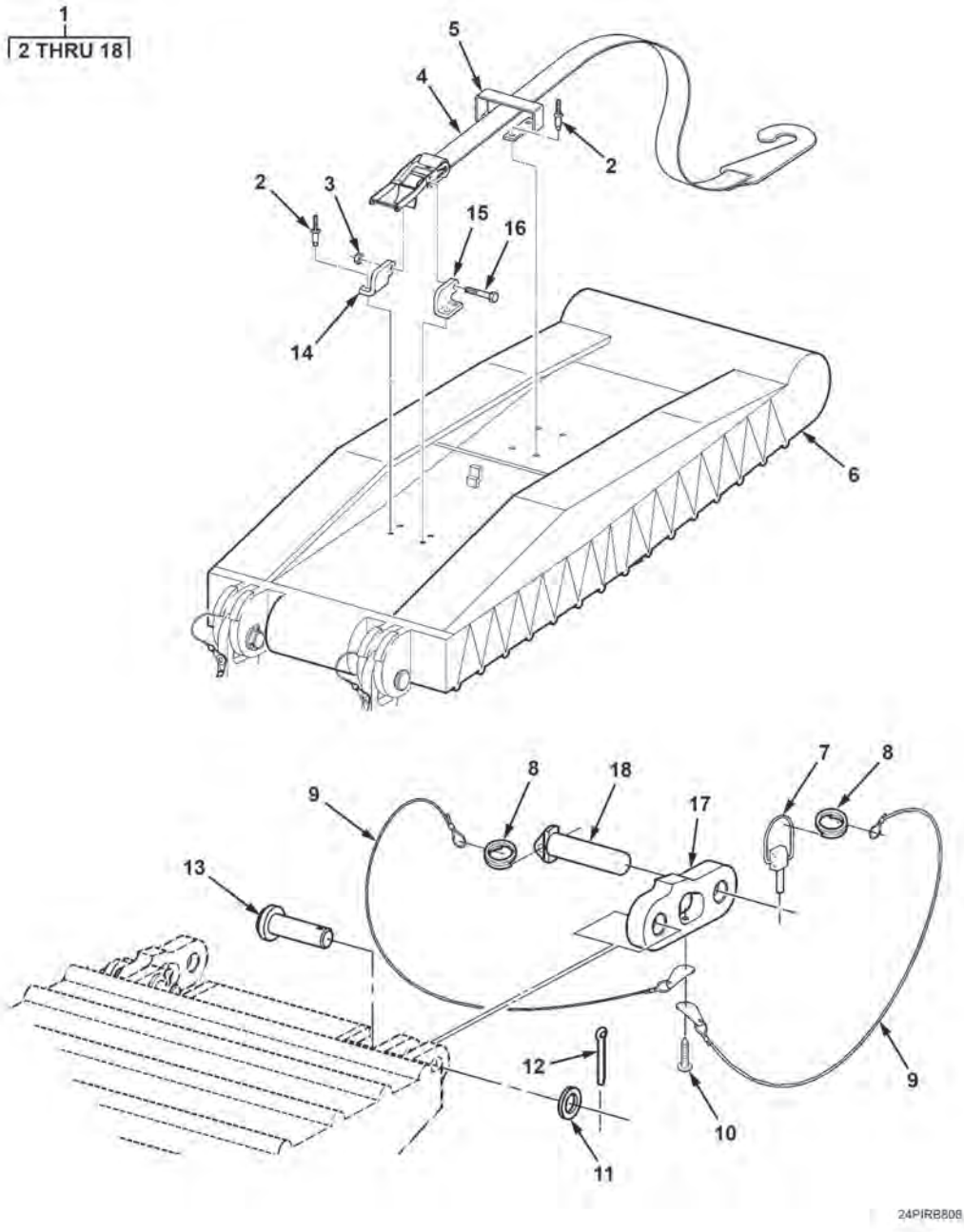


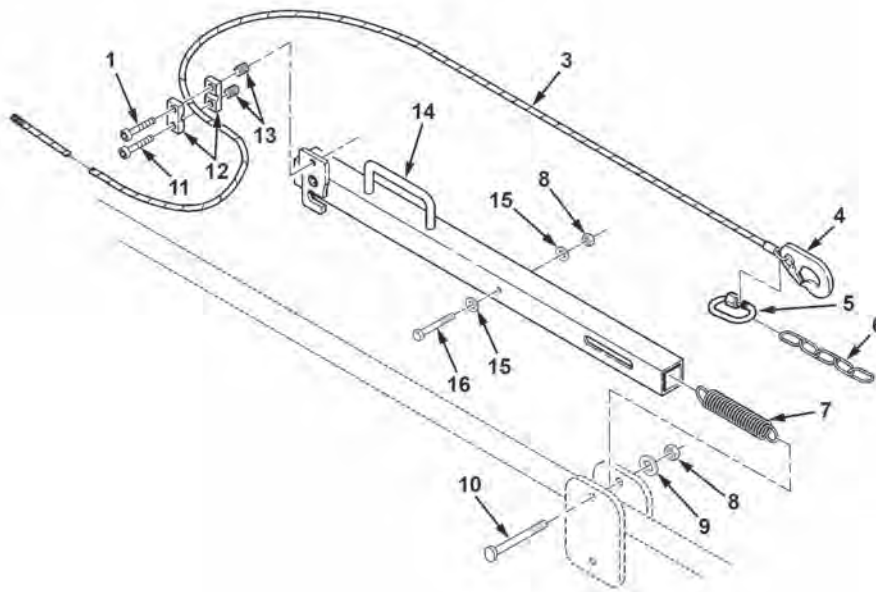
Figure 8. Ramp Plate and Strap.

(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 AND STRAP						
FIG. 8. RAMP PLATE AND STRAP.						
1	PAFFF	3990-12-356-2554	D9913	027504001	PLATFORM,VEHICLE LO UOC: ERB.....	1
2	PAFZZ	5320-99-983-0535	D9913	909550594	. RIVET,BLIND UOC: ERB.....	8
3	PAFZZ	5310-01-129-6737	72582	11502811	. NUT,PLAIN,HEXAGON UOC: ERB.....	1
4	PAFZZ	3990-12-356-2555	D9913	027503803	. BINDER,LOAD UOC: ERB.....	1
5	PAFZZ	5340-12-357-0038	D9913	027513301	. STRAP,RETAINING UOC: ERB.....	1
6	PAFZZ	5420-12-392-3761	D9913	027504002	. PLATE,RAMP UOC: ERB.....	1
7	PAFZZ	5315-12-179-8844	D8286	DIN11023-5X32 VERZINKT	. PIN,QUICK RELEASE UOC: ERB.....	2
8	PAFZZ	5365-12-356-2200	D9913	701718701	. RING,CONNECTING,ROU UOC: ERB.....	4
9	PAFZZ	4010-12-179-1461	D2040	3701-0610	. WIRE ROPE ASSEMBLY, UOC: ERB.....	4
10	PAFZZ	5305-12-142-5728	D8286	DIN7981-ST4,2X9,5- C-H-A3P	. SCREW,TAPPING UOC: ERB.....	2
11	PAFZZ	5310-12-156-4905	D8286	DIN125-B21-140HV- A3P	. WASHER,FLAT UOC: ERB.....	2
12	PAFZZ	5315-12-178-5636	D9913	942070	. PIN,COTTER UOC: ERB.....	2
13	PAFZZ	5315-12-356-3213	D9913	117510	. PIN,STRAIGHT,HEADED UOC: ERB.....	2
14	PAFZZ	5340-12-357-0040	D9913	027511709	. BRACKET,ANGLE UOC: ERB.....	1
15	PAFZZ	5340-12-357-0039	D9913	027511710	. BRACKET,ANGLE UOC: ERB.....	1
16	PAFZZ	5306-01-211-6047	80204	N18231B08040N	. BOLT,MACHINE UOC: ERB.....	1
17	PAFZZ	3040-12-356-3470	D9913	027517606	. CONNECTING LINK,RIG UOC: ERB.....	2
18	PAFZZ	5315-12-392-0248	D9913	027515013	. PIN,STRAIGHT,HEADED UOC: ERB.....	2

END OF FIGURE

**FIELD
RAMP BAY HANDRAIL.**

2
3 THRU 6



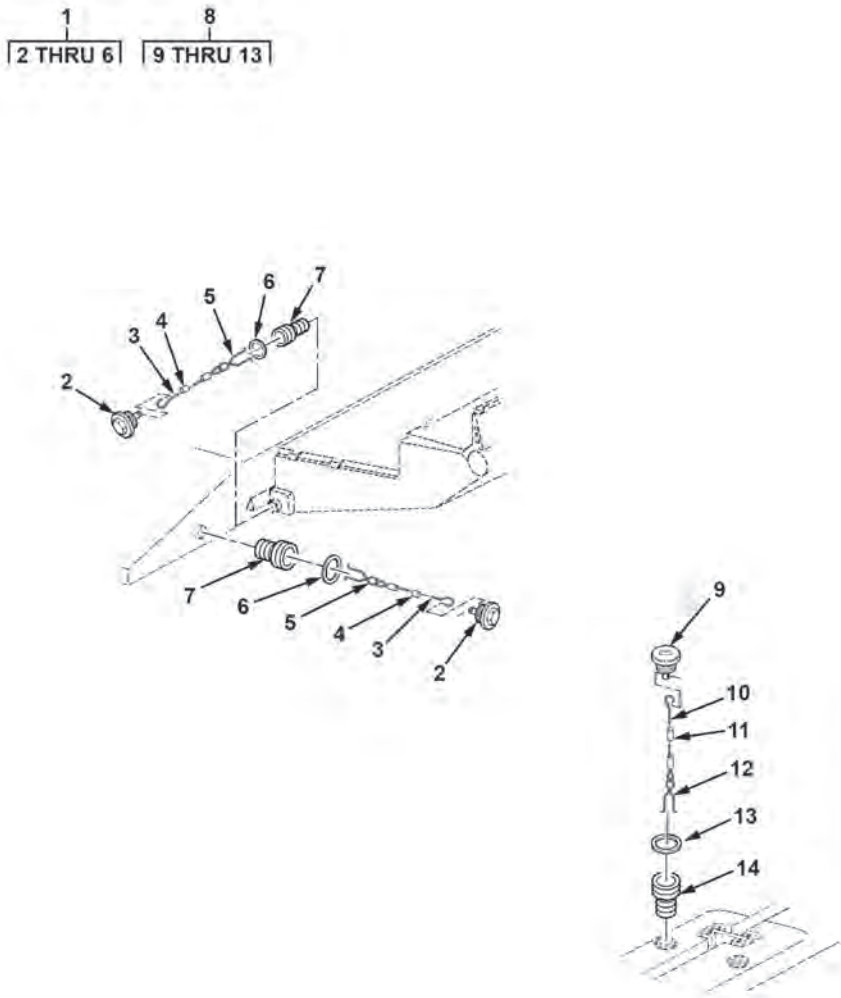
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Figure 9. Ramp Bay Handrail.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2703 RAMP BAY HANDRAIL						
FIG. 9. RAMP BAY HANDRAIL.						
1	PAFZZ	5305-12-142-5852	D9913	933383	SCREW,CAP,SOCKET HE UOC: ERB.....	4
2	PAFFF	4010-12-361-9930	D9913	024502602	WIRE ROPE ASSEMBLY UOC: ERB.....	2
3	MFFZZ		D9913	024522603-186IN	. FIBER ROPE MAKE FROM FIBER ROPE ASSEMBLY (D9913) 025422603, 186 INCHES UOC: ERB.....	1
4	PAFZZ	5340-12-362-0723	D9913	909671024	. SNAP HOOK UOC: ERB.....	1
5	PAFZZ	4010-01-373-5082	39428	3711T34	. LINK,DETACHABLE UOC: ERB.....	1
6	MFFZZ		D9913	909661080-AR	. CHAIN,WELDED MAKE FROM CHAIN,WELDED (D9913) 909661080, LENGTH AS REQUIRED UOC: ERB.....	1
7	PAFZZ	5360-12-356-2241	D9913	909571259	SPRING,HELICAL,EXTE UOC: ERB.....	4
8	PAFZZ	5310-01-328-7657	75755	14M273	NUT,PLAIN,HEXAGON UOC: ERB.....	8
9	PAFZZ	5310-12-305-3868	D8286	DIN125- A10,5-140HV-A2	WASHER,FLAT UOC: ERB.....	4
10	PAFZZ	5305-12-356-2240	D8286	DIN1445-10H11X61 X75-ST-A3P	SCREW,SHOULDER UOC: ERB.....	4
11	PAFZZ	5305-12-142-5854	D8286	DIN912-M10X50-8.8- A3P	SCREW,CAP,SOCKET HE UOC: ERB.....	4
12	PAFZZ	5340-12-362-0724	D8286	DIN3015-S-KP-1- R-13,5-AL	CLAMP,LOOP REAR,INNER UOC: ERB.....	2
12	PAFZZ	5340-12-362-0725	D8286	DIN3015-S-KP-1- R-18-AL	CLAMP,LOOP FRONT,OUTER UOC: ERB.....	2
13	PAFZZ	5310-12-356-4163	D9728	23317100450	NUT,PLAIN,BLIND RIV UOC: ERB.....	8
14	PAFZZ	2040-12-356-3619	D9913	024501103	STANCHION,DECK RAIL UOC: ERB.....	2
14	PAFZZ	2040-12-356-3625	D9913	024501104	STANCHION,DECK RAIL UOC: ERB.....	2
15	PAFZZ	5310-12-175-0141	D8286	DIN125-A8,4-140HV- A3C	WASHER,FLAT UOC: ERB.....	8
16	PAFZZ	5305-12-156-4949	D8286	DIN931-M8X55-8.8- A2P	SCREW,CAP,HEXAGON H UOC: ERB.....	4

END OF FIGURE

FIELD
RAMP BAY BILGE/DRAIN PLUGS AND INSERTS.



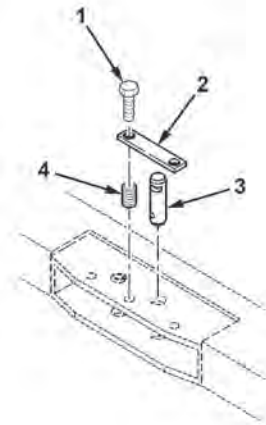
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Figure 10. Ramp Bay Bilge/Drain Plugs and Inserts.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2704 RAMP BAY BILGE/ DRAIN PLUGS AND INSERTS						
FIG. 10. RAMP BAY BILGE/DRAIN PLUGS AND INSERTS.						
1	PAFFF	5340-12-356-9399	D9913	027007314	PLUG,LEAKPROOF SEAL DRAIN ASSEMBLY UOC: ERB.....	4
2	PAFZZ	5365-12-356-6358	D9913	027017302	. PLUG,MACHINE THREAD DRAIN UOC: ERB.....	1
3	MFFZZ		D9913	909667518-29IN	. ROPE,WIRE MAKE FROM ROPE,WIRE (D9913) 909667518, 29 INCHES UOC: ERB.....	1
4	PAFZZ	4030-12-356-3614	C3888	P500.00.30	. TERMINAL,WIRE ROPE, UOC: ERB.....	2
5	PAFZZ	5340-12-356-6972	D9913	027013404	. HOLDER,SPRING UOC: ERB.....	1
6	PAFZZ	5330-12-356-3029	D9913	027518701	. GASKET UOC: ERB.....	1
7	PAFZZ	5340-12-356-6975	D9913	027016002	STANDOFF,THREADED,S UOC: ERB.....	4
8	PAFFF	5340-12-356-9397	D9913	027007313	PLUG,LEAKPROOF SEAL BILGE ASSEMBLY UOC: ERB.....	4
9	PAFZZ	5340-12-356-9396	D9913	027017301	. PLUG,LEAKPROOF SEAL BILGE UOC: ERB.....	1
10	MFFZZ		D9913	909667518-29IN	. ROPE,WIRE MAKE FROM ROPE,WIRE (D9913) 909667518, 29 INCHES UOC: ERB.....	1
11	PAFZZ	4030-12-356-3614	C3888	P500.00.30	. TERMINAL,WIRE ROPE, UOC: ERB.....	2
12	PAFZZ	5340-12-356-9398	D9913	027013001	. HOLDER,SPRING UOC: ERB.....	1
13	PAFZZ	5330-12-356-3027	D9913	027018703	. GASKET UOC: ERB.....	1
14	PAFZZ	5340-12-356-6974	D9913	027016001	STANDOFF,THREADED,S UOC: ERB.....	4

END OF FIGURE

FIELD
RAMP BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN.

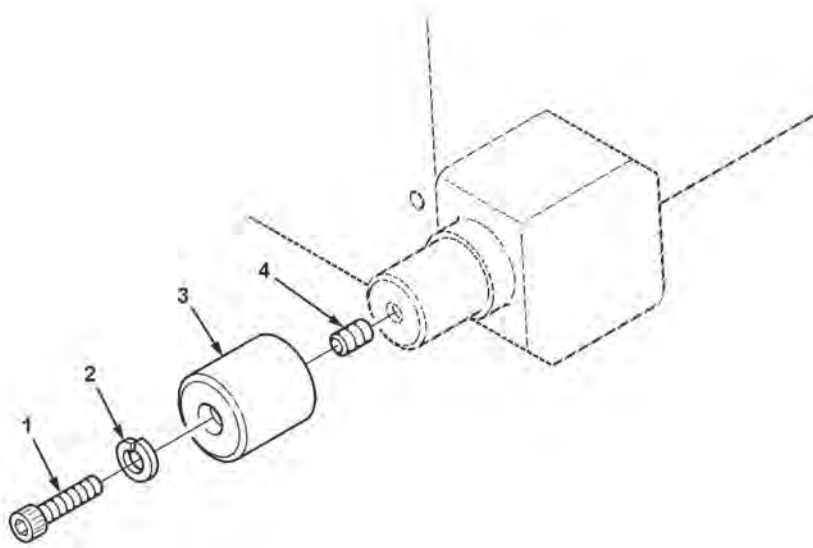


24PIRB809C

Figure 11. Ramp Bay Load Receiving Pin and Rafting Bracket Pin.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2705 RAMP BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN						
FIG. 11. RAMP BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN.						
1	PAFZZ	5305-12-156-4873	D8286	DIN933-M10X30-8.8- A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	8
2	PAFZZ	5365-12-356-2201	D9913	027510395	SPACER,PLATE UOC: ERB.....	4
3	PAFZZ	5315-12-356-2777	D9913	027515014	PIN,STRAIGHT,HEADLE UOC: ERB.....	4
4	PAFZZ	5325-12-142-8210	D8442	LN9039-10200	INSERT,SCREW THREAD UOC: ERB.....	8
END OF FIGURE						

FIELD
TRUNNION WEAR CAP.



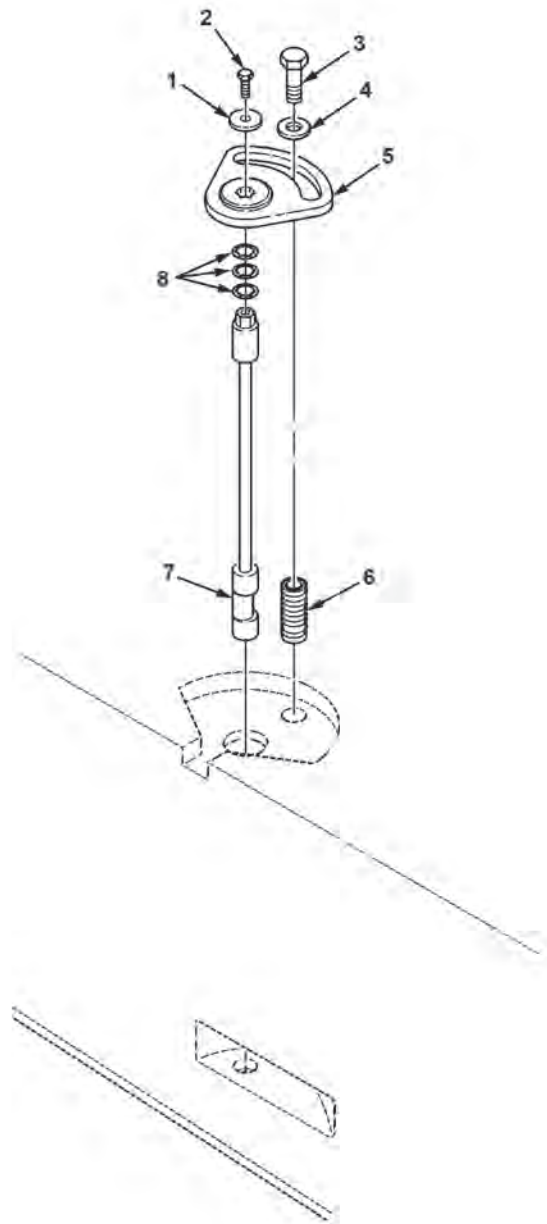
24PIR8810

Figure 12. 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 2706 TRUNION WEAR CAP						
FIG. 12. TRUNNION WEAR CAP.						
1	PAFZZ	5305-12-142-8257	D8286	DIN7984- M12X35-8.8-A3P	SCREW,CAP,SOCKET HE UOC: ERB.....	1
2	PAFZZ	5310-12-144-3934	D3273	06161100108	WASHER,LOCK UOC: ERB.....	1
3	PAFZZ	5365-12-180-1655	D9913	027074603	SPACER,SLEEVE UOC: ERB.....	1
4	PAFZZ	5325-12-142-8233	D8442	LN9039-13180	INSERT,SCREW THREAD UOC: ERB.....	1

END OF FIGURE

**FIELD
SWIVEL HOOK AND RETAINER SHAFT.**



24PIRBB11

Figure 13. Swivel Hook and Retainer Shaft.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2707 SWIVEL HOOK AND RETAINER SHAFT						
FIG. 13. SWIVEL HOOK AND RETAINER SHAFT.						
1	PAFZZ	5310-12-356-2785	D9913	027518110	WASHER,FLAT UOC: ERB.....	1
2	PAFZZ	5305-12-156-4873	D8286	DIN933-M10X30-8.8- A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	1
3	PAFZZ	5305-01-461-2723	I9008	ISO4017- M16X40-8.8-A2A	SCREW,CAP,HEXAGON H UOC: ERB.....	1
4	PAFZZ	5310-12-142-0640	D8286	DIN125-B17-140HV- A3P	WASHER,FLAT UOC: ERB.....	1
5	PAFZZ	5365-12-356-3368	D9913	027518114	SPACER,SPECIAL SHAP UOC: ERB.....	1
6	PAFZZ	5325-12-356-5395	D9728	4130 3160 024	INSERT,SCREW THREAD UOC: ERB.....	1
7	PAFZZ	5315-12-356-2787	D9913	027514603	PIN,SHOULDER,HEADLE UOC: ERB.....	1
8	PAFZZ	5310-12-356-2786	D9913	027518116	WASHER,FLAT 1.0 MM UOC: ERB.....	3

END OF FIGURE

**FIELD
STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS.**

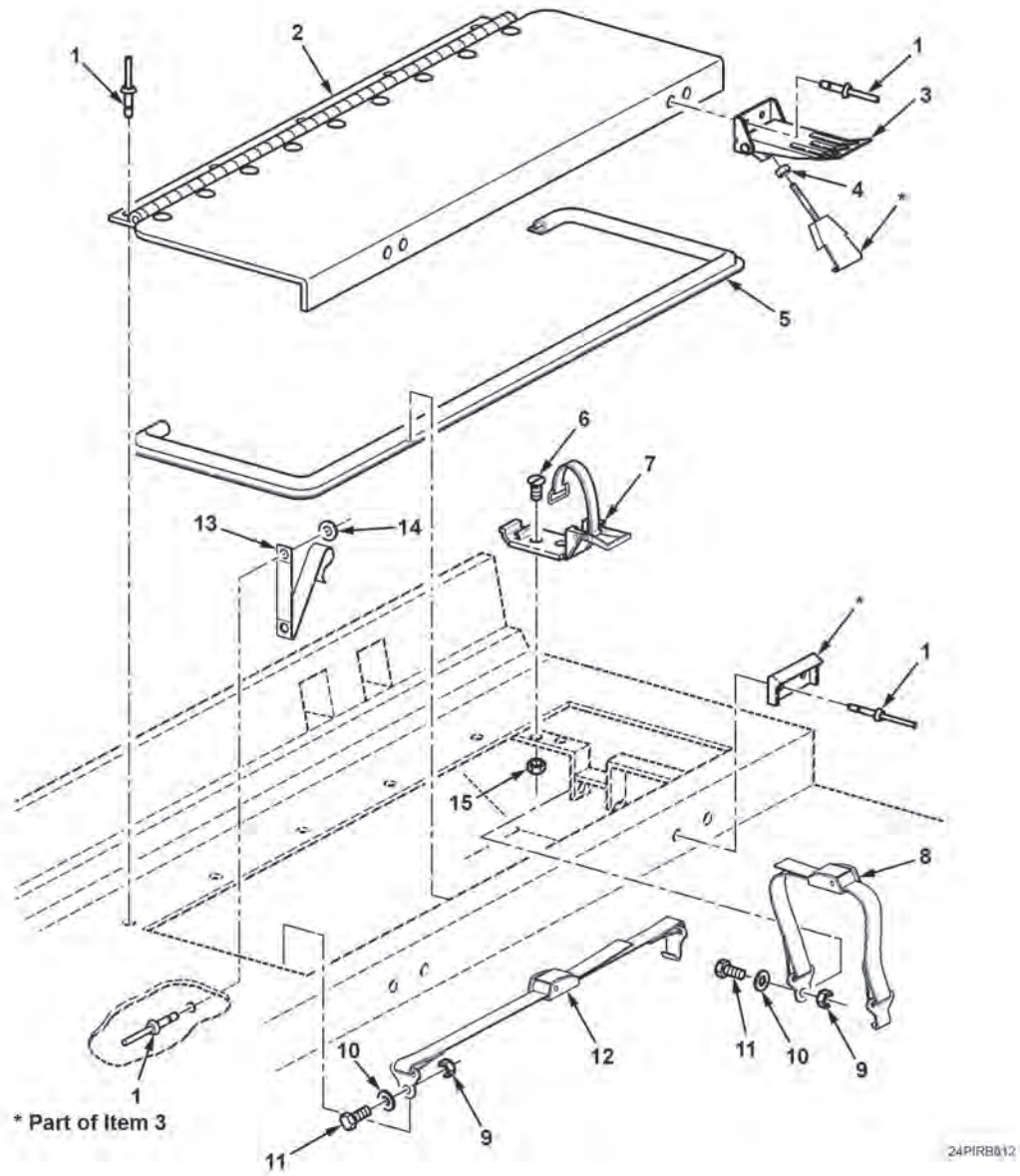
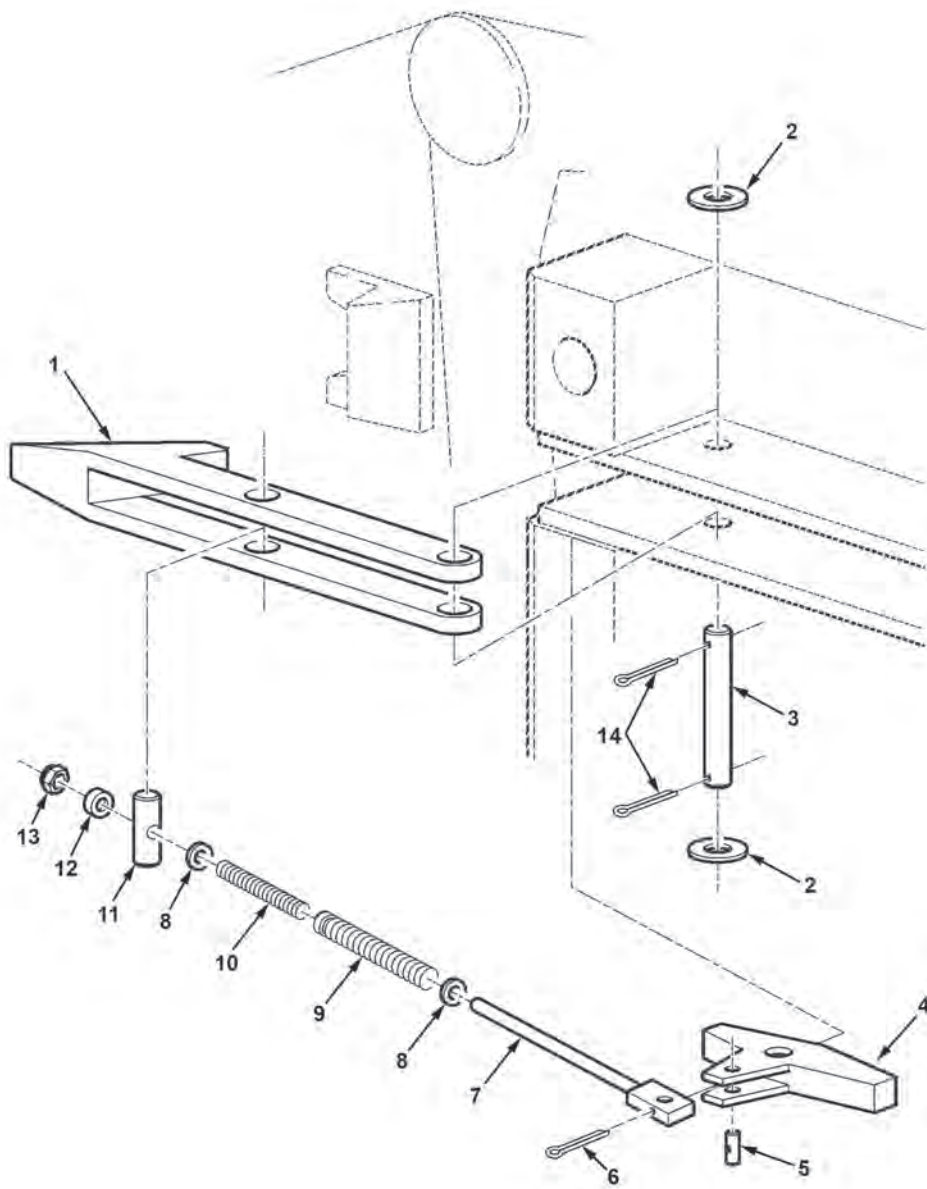


Figure 14. Storage Compartment Access Cover and Tiedown Straps.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2708 STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS						
FIG. 14. STOWAGE COMPARTMENT ACCESS COVER AND TIEDOWN STRAPS.						
1	PAFZZ	5320-99-983-0535	D9913	909550594	RIVET,BLIND UOC: ERB.....	26
2	PAFZZ	5340-12-356-6958	D9913	027501008	COVER,ACCESS RIGHT SIDE UOC: ERB.....	1
2	PAFZZ	5340-12-356-5568	D9913	027501009	COVER,ACCESS LEFT SIDE UOC: ERB.....	1
3	PAFZZ	5340-12-356-6957	D9913	027516201	LATCH,RIM UOC: ERB.....	2
4	PAFZZ	5310-12-169-7096	D8286	DIN934-M6-A2-70	NUT,PLAIN,HEXAGON UOC: ERB.....	2
5	PAFZZ	9390-12-362-0055	D8905	4610067	NONMETALLIC SPECIAL UOC: ERB.....	1
6	PAFZZ	5305-12-173-0258	D8286	DIN7991-M5X16-8.8-A2P	SCREW,CAP,SOCKET HE UOC: ERB.....	4
7	PAFZZ	2590-12-125-0335	D9477	VG75073A77,5	BRACKET,VEHICULAR C UOC: ERB.....	2
8	PAFZZ	5340-12-362-0358	D9913	027503804	STRAP,WEBBING UOC: ERB.....	2
9	PAFZZ	5310-12-156-4982	D8286	DIN934-M12-B-A2P	NUT,PLAIN,HEXAGON UOC: ERB.....	3
10	PAFZZ	5310-12-156-4899	D8286	DIN125-B13-140HV-A3P	WASHER,FLAT UOC: ERB.....	3
11	PAFZZ	5305-12-156-4875	D8286	DIN933-M12X25-8.8-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	3
12	PAFZZ	5340-12-362-0359	D9913	027503805	STRAP,WEBBING UOC: ERB.....	1
13	PAFZZ	5340-12-362-0357	D9913	027513803	STRAP,WEBBING UOC: ERB.....	2
14	PAFZZ	5310-12-120-8203	D8286	DIN440-R6,6-100HV	WASHER,FLAT UOC: ERB.....	4
15	PAFZZ	5310-12-134-7108	D8286	DIN934-M5-5-B2A	NUT,PLAIN,HEXAGON UOC: ERB.....	4

END OF FIGURE

FIELD
RAMP BAY FOLDLOCK.



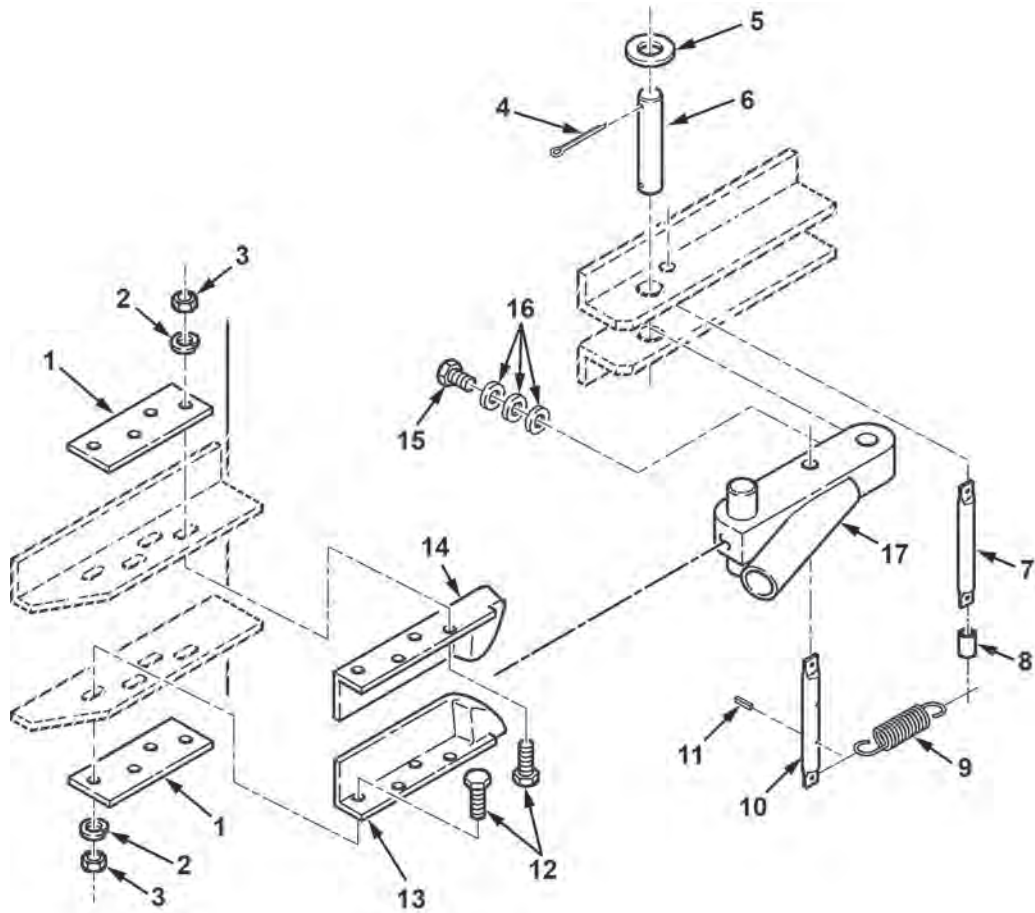
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Figure 15. Ramp Bay Foldlock.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2801 RAMP BAY FOLDLOCK						
FIG. 15. RAMP BAY FOLDLOCK.						
1	PAFZZ	5340-12-356-6978	D9913	027511902	LEVER,MANUAL CONTRO UOC: ERB.....	1
2	PAFZZ	5310-12-152-2147	D8286	DIN1440-22-ST-A3P	WASHER,FLAT UOC: ERB.....	2
3	PAFZZ	5315-12-356-1916	D9913	027515012	PIN,STRAIGHT,HEADLE UOC: ERB.....	2
4	PAFZZ	5340-12-356-6979	D9913	027514303	BRACKET,MOUNTING UOC: ERB.....	2
5	PAFZZ	5315-12-180-4471	D9913	027073616	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
6	PAFZZ	5315-12-196-2838	D8286	DIN94-3,2X32-ST-A3P	PIN,COTTER UOC: ERB.....	1
7	PAFZZ	5340-12-356-6988	D9913	027508603	HOLDER,SPRING UOC: ERB.....	1
8	PAFZZ	5310-12-156-5471	D8286	DIN125-A10,5-140HV-A3P	WASHER,FLAT UOC: ERB.....	1
9	PAFZZ	5360-12-179-8258	D9913	909572039	SPRING,HELICAL,COMP UOC: ERB.....	2
10	PAFZZ	5360-12-179-8257	D9913	909572038	SPRING,HELICAL,COMP UOC: ERB.....	1
11	PAFZZ	5315-12-356-1917	D9913	027515016	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
12	PAFZZ	5365-12-356-2203	D9913	027518123	SPACER,SLEEVE UOC: ERB.....	1
13	PAFZZ	5310-12-146-8397	D8286	DIN985-M10-8-A2P	NUT,SELF-LOCKING,HE UOC: ERB.....	1
14	PAFZZ	5315-12-178-5636	D9913	942070	PIN,COTTER UOC: ERB.....	2

END OF FIGURE

FIELD
TRAVEL LATCH AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY).



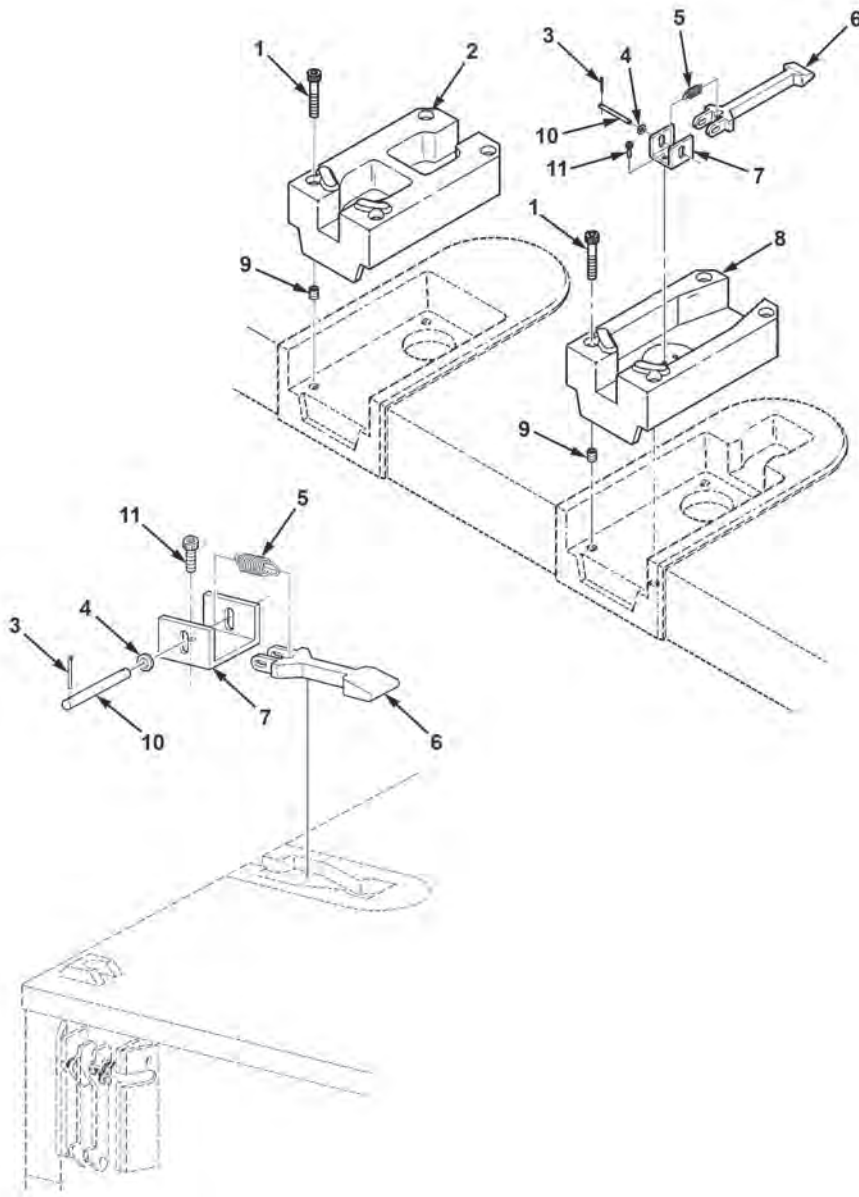
24PIRB814

Figure 16. Travel Latch and Receptacle Blocks (Ramp Bay and Interior Bay).

(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 RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY)						
FIG. 16. TRAVEL LATCH AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY).						
1	PAFZZ	5420-12-179-0332	D9913	027074804	PLATE,LATCH UOC: EIB,ERB.....	2
2	PAFZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A3P	WASHER,LOCK UOC: EIB,ERB.....	8
3	PAFZZ	5310-99-739-9500	U0759	41031420	NUT,SPECIAL UOC: EIB,ERB.....	8
4	PAFZZ	5315-12-131-7424	D8266	000094004078	PIN,COTTER UOC: EIB,ERB.....	2
5	PAFZZ	5310-12-124-0745	D8286	DIN1440-20-ST	WASHER,FLAT UOC: EIB,ERB.....	2
6	PAFZZ	5315-00-475-3431	97403	13218E4197	PIN,STRAIGHT,HEADLE UOC: EIB.....	2
6	PAFZZ	5315-12-180-4461	D9913	027073604	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
7	PAFZZ	5315-01-088-7555	97403	13218E4211	PIN,SPRING SUPPORT UOC: EIB,ERB.....	1
8	PAFZZ	5365-12-180-1654	D9913	027074803	SPACER,SLEEVE UOC: EIB,ERB.....	2
9	PAFZZ	5360-12-179-8256	D9913	027072401	SPRING,HELICAL,EXTE UOC: EIB,ERB.....	2
10	PAFZZ	5315-01-053-9342	97403	13218E4224	PIN,SPRING SUPPORT UOC: EIB,ERB.....	1
11	PAFZZ	5315-12-320-4071	D9913	940582	PIN,SPRING UOC: EIB,ERB.....	2
12	PAFZZ	5305-12-141-9893	D8286	DIN933-M10X30-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB,ERB.....	8
13	PAFZZ	5420-01-048-3389	97403	13218E4198	RECEPTACLE,LATCH UOC: EIB,ERB.....	1
14	PAFZZ	5420-12-179-0330	D9913	027008405	ADMISSION UOC: EIB,ERB.....	1
15	PAFZZ	5305-12-141-9891	D8286	DIN933-M10X25-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB,ERB.....	1
16	PAFZZ	5310-12-156-5471	D8286	DIN125-A10,5-140HV-A3P	WASHER,FLAT UOC: EIB,ERB.....	5
17	PAFZZ	5340-12-356-9403	D9913	027009504	LEVER,MANUAL CONTRO UOC: EIB,ERB.....	1

END OF FIGURE

FIELD
UPPER COUPLING AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY).



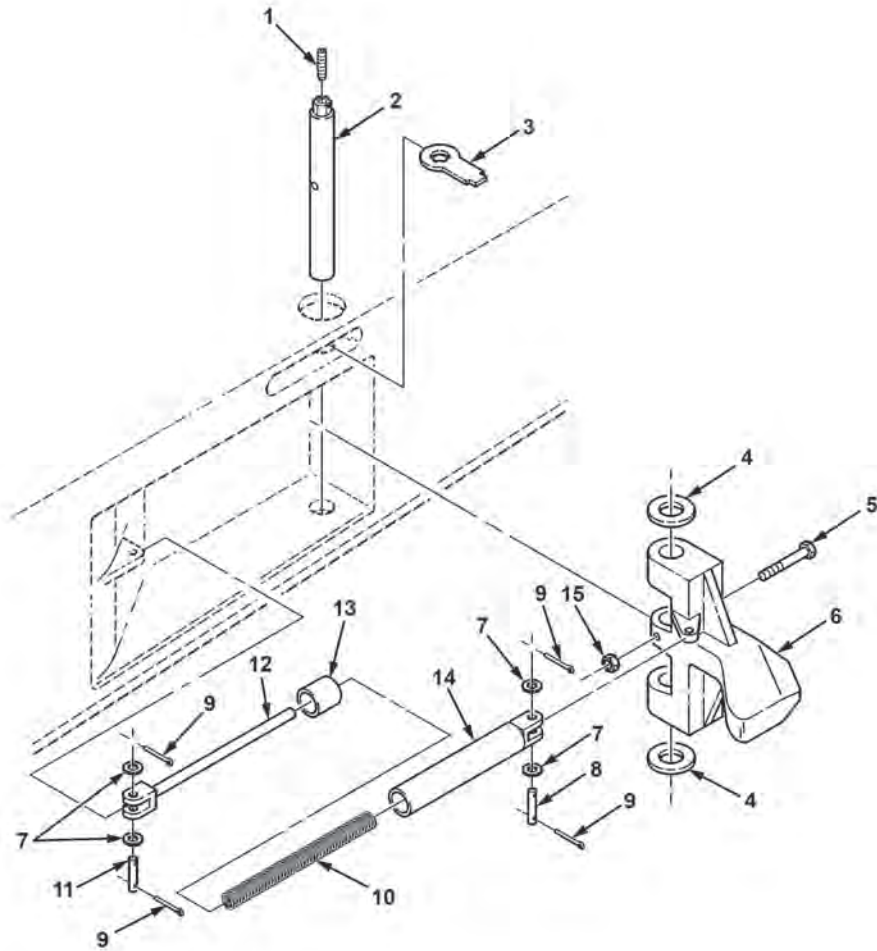
24PIRB015

Figure 17. Upper Coupling and Receptacle Blocks (Ramp Bay and Interior Bay).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2803 UPPER COUPLING AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY)						
FIG. 17. UPPER COUPLING AND RECEPTACLE BLOCKS (RAMP BAY AND INTERIOR BAY).						
1	PAFZZ	5305-12-155-0838	D8286	DIN912-M16X70-8.8-A3P	SCREW,CAP, SOCKET HE UOC: EIB,ERB.....	8
2	PAFZZ	5340-12-356-6970	D9913	027017204	RECEPTACLE, FRICTION UOC: EIB,ERB.....	1
3	PAFZZ	5315-12-192-5816	D8046	000094001617	PIN,COTTER UOC: EIB,ERB.....	4
4	PAFZZ	5310-12-356-0257	D9913	938351	WASHER,FLAT UOC: EIB,ERB.....	4
5	PAFZZ	5360-00-485-4762	97403	13218E4051	SPRING,HELICAL,EXTE UOC: EIB,ERB.....	2
6	PAFZZ	5340-12-356-6976	D9913	027015702	LEVER,LOCK-RELEASE UOC: EIB,ERB.....	2
7	PAFZZ	5340-12-356-6977	D9913	027014302	BRACKET,DOUBLE ANGL UOC: EIB,ERB.....	2
8	PAFZZ	5340-12-356-6971	D9913	027017203	RECEPTACLE, FRICTION UOC: EIB,ERB.....	1
9	PAFZZ	5325-12-356-5396	D9913	909591449	INSERT,SCREW THREAD UOC: EIB,ERB.....	8
10	PAFZZ	5315-12-180-3626	D9913	027073606	PIN,STRAIGHT,HEADLE UOC: EIB,ERB.....	2
11	PAFZZ	5305-12-153-5302	D8286	DIN912-M6X16-8.8-A2P	SCREW,CAP, SOCKET HE UOC: EIB,ERB.....	4

END OF FIGURE

**FIELD
SWIVEL PLATE.**



24PIRBB16

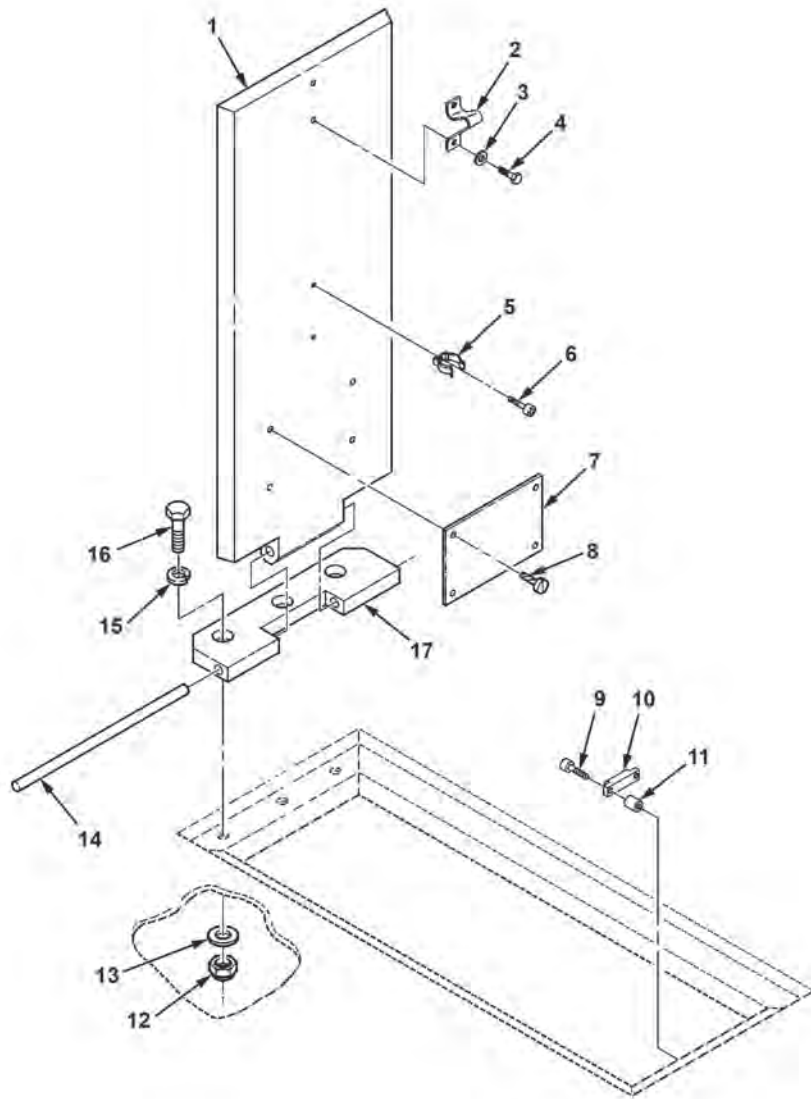
Figure 18. Swivel Plate.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2804 SWIVEL PLATE						
FIG. 18. SWIVEL PLATE.						
1	PAFZZ	5305-12-356-6174	D9913	941962	SETSCREW UOC: ERB.....	1
2	PAFZZ	3040-12-357-2922	D9913	027514601	SHAFT, SHOULDERED UOC: ERB.....	1
3	PAFZZ	5330-12-356-3215	D9913	027514003	GASKET UOC: ERB.....	1
4	PAFZZ	5310-12-356-1920	D9913	027518124	WASHER, FLAT 2 MM UOC: ERB.....	2
4	PAFZZ	5365-12-356-3039	D9913	027518115	SPACER, RING 5 MM UOC: ERB.....	2
4	PAFZZ	5310-12-356-1921	D9913	027518125	WASHER, FLAT 3 MM UOC: ERB.....	2
4	PAFZZ	5310-12-356-1922	D9913	027518126	WASHER, FLAT 4 MM UOC: ERB.....	2
5	PAFZZ	5305-12-142-8497	D8286	DIN931-M8X70-8.8-A2P	SCREW, CAP, HEXAGON H UOC: ERB.....	1
6	PAFZZ	3040-12-356-3477	D9913	027511204	LEVER, REMOTE CONTRO SWIVEL PLATE RIGHT SIDE UOC: ERB.....	1
6	PAFZZ	3040-12-356-3478	D9913	027511205	LEVER, REMOTE CONTRO SWIVEL PLATE LEFT SIDE UOC: ERB.....	1
6	PAFZZ	3040-12-356-3479	D9913	027511202	LEVER, REMOTE CONTRO SWIVEL HOOK RIGHT SIDE UOC: ERB.....	1
6	PAFZZ	3040-12-356-3480	D9913	027511203	LEVER, REMOTE CONTRO SWIVEL HOOK LEFT SIDE UOC: ERB.....	1
7	PAFZZ	5310-12-156-5471	D8286	DIN125-A10,5-140HV-A3P	WASHER, FLAT UOC: ERB.....	4
8	PAFZZ	5315-12-356-2732	D9913	027515007	PIN, STRAIGHT, HEADLE UOC: ERB.....	1
9	PAFZZ	5315-12-125-7770	D9913	942166	PIN, COTTER UOC: ERB.....	4
10	PAFZZ	5360-12-356-8385	D9913	027513001	SPRING, HELICAL, COMP UOC: ERB.....	1
11	PAFZZ	5315-12-356-2733	D9913	027515008	PIN, STRAIGHT, HEADLE UOC: ERB.....	1
12	PAFZZ	5315-12-356-2734	D9913	027516901	PIN, STRAIGHT, HEADED UOC: ERB.....	1
13	PAFZZ	5365-12-359-2285	D9913	027516008	SPACER, SLEEVE UOC: ERB.....	1
14	PAFZZ	5340-12-356-6968	D9913	027507401	CLEVIS, ROD END 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
15	PAFZZ	5310-12-300-8139	D8286	DIN6925-M8-8-A2P	NUT,SELF-LOCKING,HE UOC: ERB.....	1

END OF FIGURE

**FIELD
PUMP ACCESS COVER.**



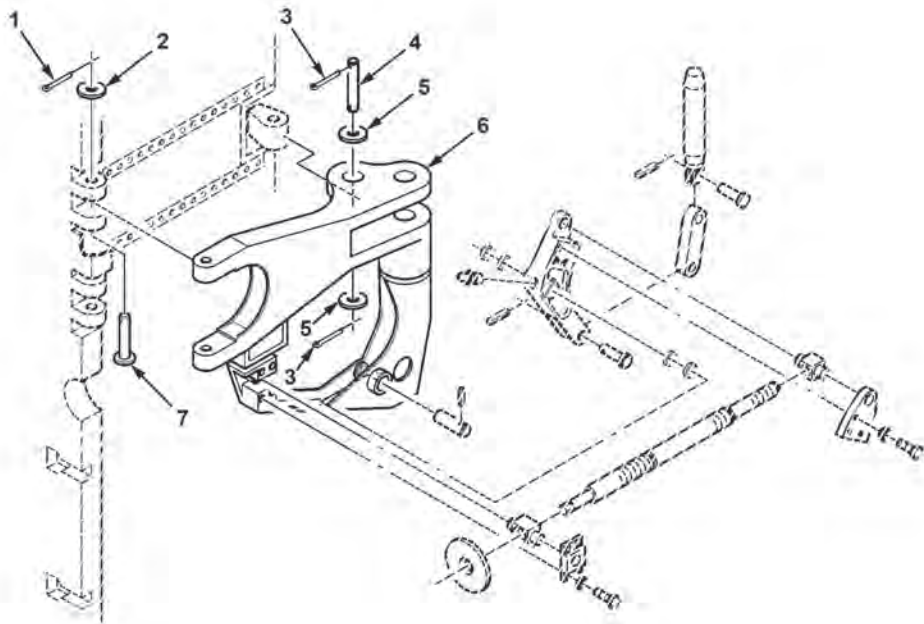
24PIRBB18

Figure 19. Pump 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 ACCESS COVER						
FIG. 19. PUMP ACCESS COVER.						
1	PAFZZ	5340-12-356-4945	D9913	027511015	COVER,ACCESS UOC: ERB.....	1
2	PAFZZ	5360-12-356-8152	D9913	027513002	SPRING,FLAT UOC: ERB.....	1
3	PAFZZ	5310-12-142-0644	D8286	DIN125-B6,4-140HV-A3P	WASHER,FLAT UOC: ERB.....	2
4	PAFZZ	5305-12-146-2633	I9008	ISO4017-M6X16-8.8-A2P	SCREW,CAP,HEXAGON H UOC: ERB.....	2
5	PAFZZ	5340-12-356-7032	C0867	X130-16L	CLIP,SPRING TENSION UOC: ERB.....	2
6	PAFZZ	5305-12-142-5914	D8286	DIN912-M5X12-8.8-A2P	SCREW,CAP,SOCKET HE UOC: ERB.....	2
7	PAFZZ	9905-12-356-3028	D9913	029271683	PLATE,INSTRUCTION UOC: ERB.....	1
8	PAFZZ	5305-12-179-8847	D8286	DIN7513-AM4X16-ST-A2A	SCREW,TAPPING UOC: ERB.....	4
9	PAFZZ	5305-12-142-0989	D8286	DIN912-M8X25-8.8-A2P	SCREW,CAP,SOCKET HE UOC: ERB.....	2
10	PAFZZ	5340-12-356-4946	D9913	027517103	STOP,MECHANICAL UOC: ERB.....	1
11	PAFZZ	5325-14-212-9249	F1699	41300080016	INSERT,SCREW THREAD UOC: ERB.....	2
12	PAFZZ	5310-12-146-8397	D8286	DIN985-M10-8-A2P	NUT,SELF-LOCKING,HE UOC: ERB.....	3
13	PAFZZ	5310-12-142-0481	D8286	DIN125-B10,5-140HV-A3P	WASHER,FLAT UOC: ERB.....	3
14	PAFZZ	5315-12-180-4463	D9913	027073610	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
15	PAFZZ	5310-12-142-0649	D8286	DIN127-B10-FST-A3P	WASHER,LOCK UOC: ERB.....	3
16	PAFZZ	5305-12-142-8229	D8286	DIN931-M10X80-8.8-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	3
17	PAFZZ	5420-12-179-0337	D9913	027075201	HINGE,BLOCK UOC: ERB.....	1

END OF FIGURE

FIELD
LOWER LOCK-DRIVE (YOKE ASSEMBLY, RIGHT SIDE).



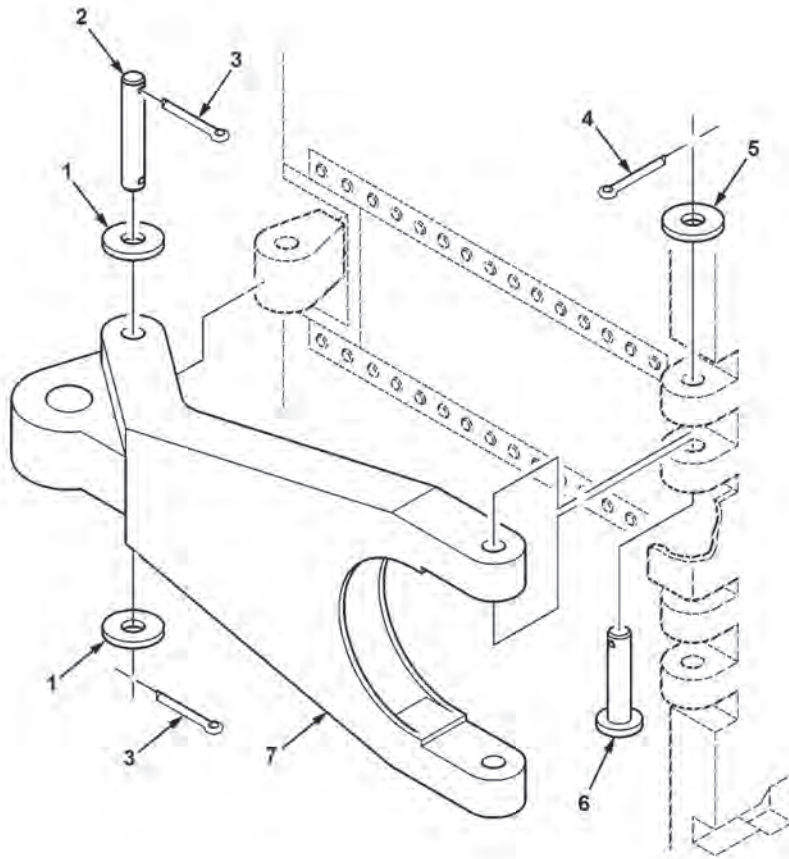
24PIRB819

Figure 20. Lower Lock-Drive (Yoke Assembly, Right Side).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2901 LOWER LOCK-DRIVE						
FIG. 20. LOWER LOCK-DRIVE (YOKE ASSEMBLY, RIGHT SIDE).						
1	PAFZZ	5315-12-199-2959	D8286	DIN94-8X63-ST-A3P	PIN,COTTER UOC: ERB.....	1
2	PAFZZ	5310-12-356-0681	D8286	DIN1441-34-ST-A3P	WASHER,FLAT UOC: ERB.....	1
3	PAFZZ	5315-12-315-0187	D9913	942312	PIN,COTTER UOC: ERB.....	2
4	PAFZZ	5315-12-180-4468	D9913	027073621	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
5	PAFZZ	5310-12-356-0258	D9913	938115	WASHER,FLAT UOC: ERB.....	2
6	PAFZZ	5340-12-356-7858	D9913	027501205	LEVER,MANUAL CONTRO UOC: ERB.....	1
7	PAFZZ	5315-12-356-2778	D9913	027515009	PIN,STRAIGHT,HEADED UOC: ERB.....	1

END OF FIGURE

FIELD
LOWER LOCK-DRIVE (YOKE ASSEMBLY, LEFT SIDE).



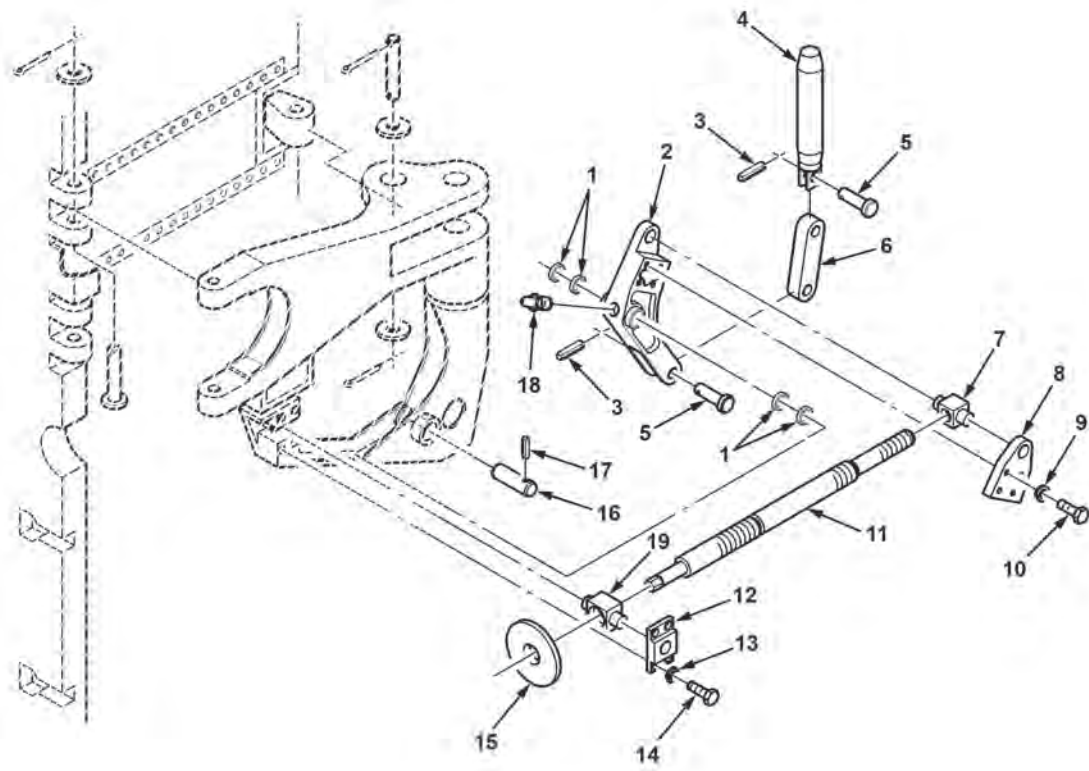
24PIRBB20

Figure 21. Lower Lock-Drive (Yoke Assembly, Left Side).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2901 LOWER LOCK-DRIVE						
FIG. 21. LOWER LOCK-DRIVE (YOKE ASSEMBLY, LEFT SIDE).						
1	PAFZZ	5310-12-356-0258	D9913	938115	WASHER,FLAT UOC: ERB.....	2
2	PAFZZ	5315-12-180-4468	D9913	027073621	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
3	PAFZZ	5315-12-315-0187	D9913	942312	PIN,COTTER UOC: ERB.....	2
4	PAFZZ	5315-12-199-2959	D8286	DIN94-8X63-ST-A3P	PIN,COTTER UOC: ERB.....	2
5	PAFZZ	5310-12-356-0681	D8286	DIN1441-34-ST-A3P	WASHER,FLAT UOC: ERB.....	2
6	PAFZZ	5315-12-356-2778	D9913	027515009	PIN,STRAIGHT,HEADED UOC: ERB.....	2
7	PAFZZ	5340-12-356-7857	D9913	027511308	LEVER,MANUAL CONTRO UOC: ERB.....	1

END OF FIGURE

FIELD
LOWER LOCK-DRIVE.



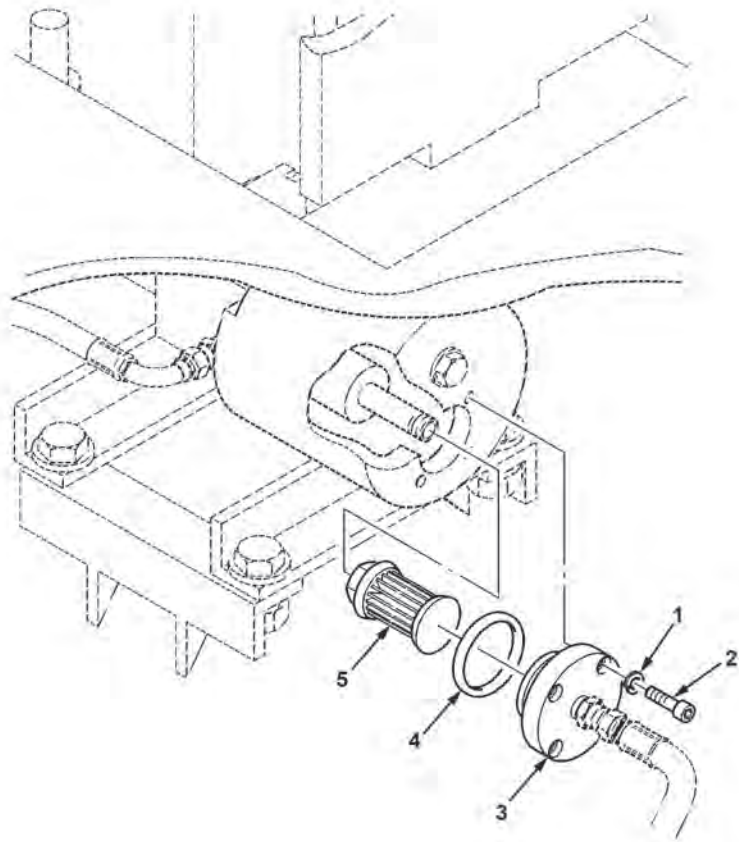
24PIRB821

Figure 22. Lower Lock-Drive.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2901 LOWER LOCK-DRIVE						
FIG. 22. LOWER LOCK-DRIVE.						
1	PAFZZ	5365-01-123-6275	97403	13218E4383	SHIM UOC: ERB.....	4
2	PAFZZ	5420-12-179-0321	D9913	027071901	LEVER UOC: ERB.....	1
3	PAFZZ	5315-01-616-9005	I9008	ISO8752-5X40-A3C	PIN,SPRING UOC: ERB.....	2
4	PAFZZ	5420-00-466-7384	97403	13218E4370	PIN,CONNECTING UOC: ERB.....	1
5	PAFZZ	5315-12-180-3625	D9913	027073603	PIN,STRAIGHT,HEADED UOC: ERB.....	2
6	PAFZZ	3040-01-041-7214	97403	13218E4375	CONNECTING LINK,RIG UOC: ERB.....	1
7	PAFZZ	5420-00-466-7396	97403	13218E4366	TRUNNION NUT,LOWER UOC: ERB.....	1
8	PAFZZ	3040-01-044-3259	97403	13218E4386	LEVER,REMOTE CONTRO UOC: ERB.....	1
9	PAFZZ	5310-12-142-0650	N0146	101102	WASHER,LOCK UOC: ERB.....	4
10	PAFZZ	5305-12-142-8266	D8286	DIN931- M12X60-10.9-A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	4
11	PAFZZ	5420-12-179-0325	D9913	027071801	SCREW,PIN,DRIVE UOC: ERB.....	1
12	PAFZZ	5420-12-179-8843	D9913	027072901	RETAINER,TRUNNION UOC: ERB.....	1
13	PAFZZ	5310-12-142-0649	D8286	DIN127-B10-FST- A3P	WASHER,LOCK UOC: ERB.....	4
14	PAFZZ	5305-12-167-5377	D8286	DIN933-M10X25-8.8- A3C	SCREW,CAP,HEXAGON H UOC: ERB.....	4
15	PAFZZ	5310-01-012-7413	97403	13219E4133	WASHER,FLAT UOC: ERB.....	1
16	PAFZZ	5315-12-314-3888	D9913	027073623	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
17	PAFZZ	5315-12-180-3623	D9913	940671	PIN,SPRING UOC: ERB.....	1
18	PAFZZ	4730-12-125-0310	D8286	DIN71412AM6	FITTING,LUBRICATION UOC: ERB.....	1
19	PAFZZ	5420-00-507-7087	97403	13218E4367	TRUNNION NUT,UPPER UOC: ERB.....	1

END OF FIGURE

**FIELD
PUMP FILTER ELEMENT.**



24PIRB022

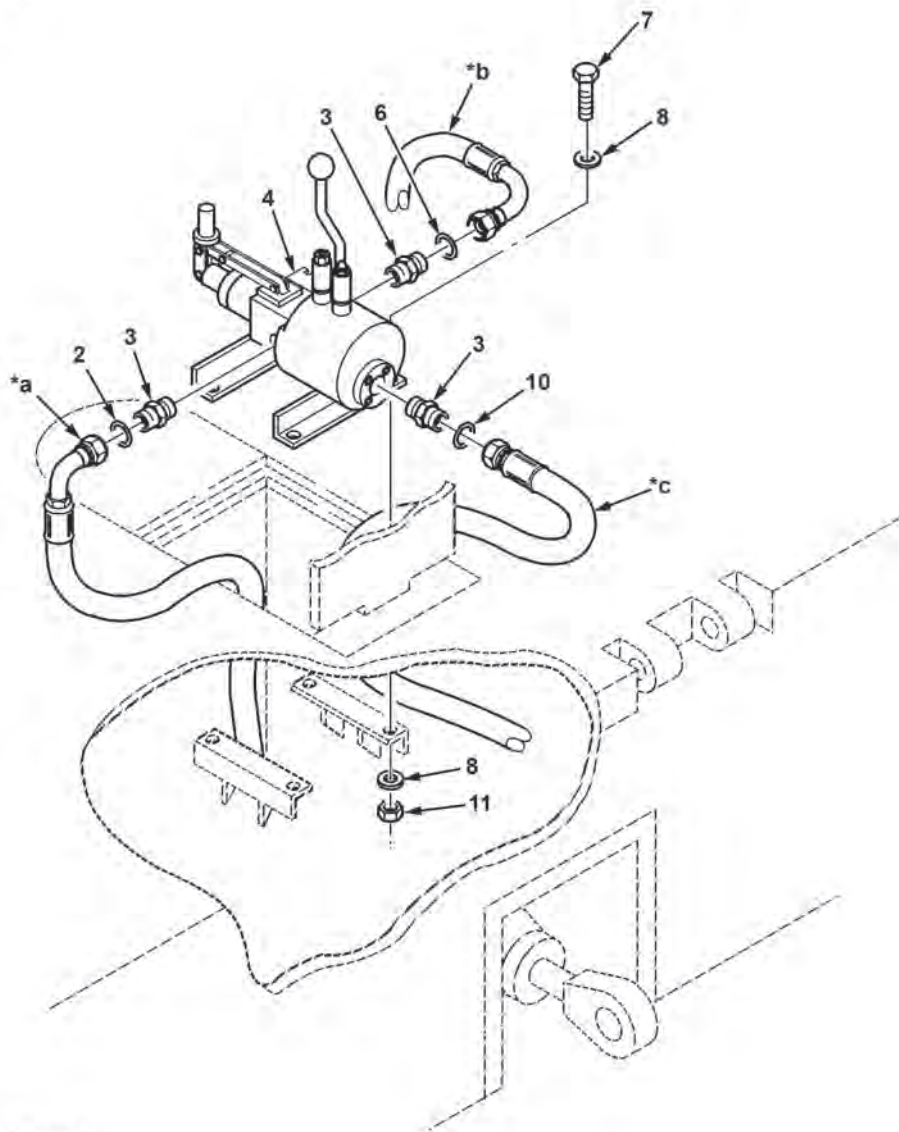
Figure 23. Pump Filter Element.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3002 PUMP FILTER ELEMENT						
FIG. 23. PUMP FILTER ELEMENT.						
1	PAFZZ	5310-12-356-3623	D9913	939270	WASHER,LOCK UOC: ERB.....	4
2	PAFZZ	5305-12-356-4632	D9913	933777	SCREW,CAP,SOCKET HE UOC: ERB.....	4
3	PAFZZ	5340-12-356-6980	D9913	024012806	COVER,ACCESS UOC: ERB.....	1
4	PAFZZ	5330-12-356-2205	D9913	909773194	O-RING UOC: ERB.....	1
5	PAFZZ	4330-12-356-0009	D0718	AS010-00	FILTER ELEMENT,FLUI UOC: ERB.....	1

END OF FIGURE

**FIELD
PUMP (ASSEMBLY AND MOUNTING PARTS).**

1	5	9
2	6	10



*a Part of Item 1
 *b Part of Item 5
 *c Part of Item 9

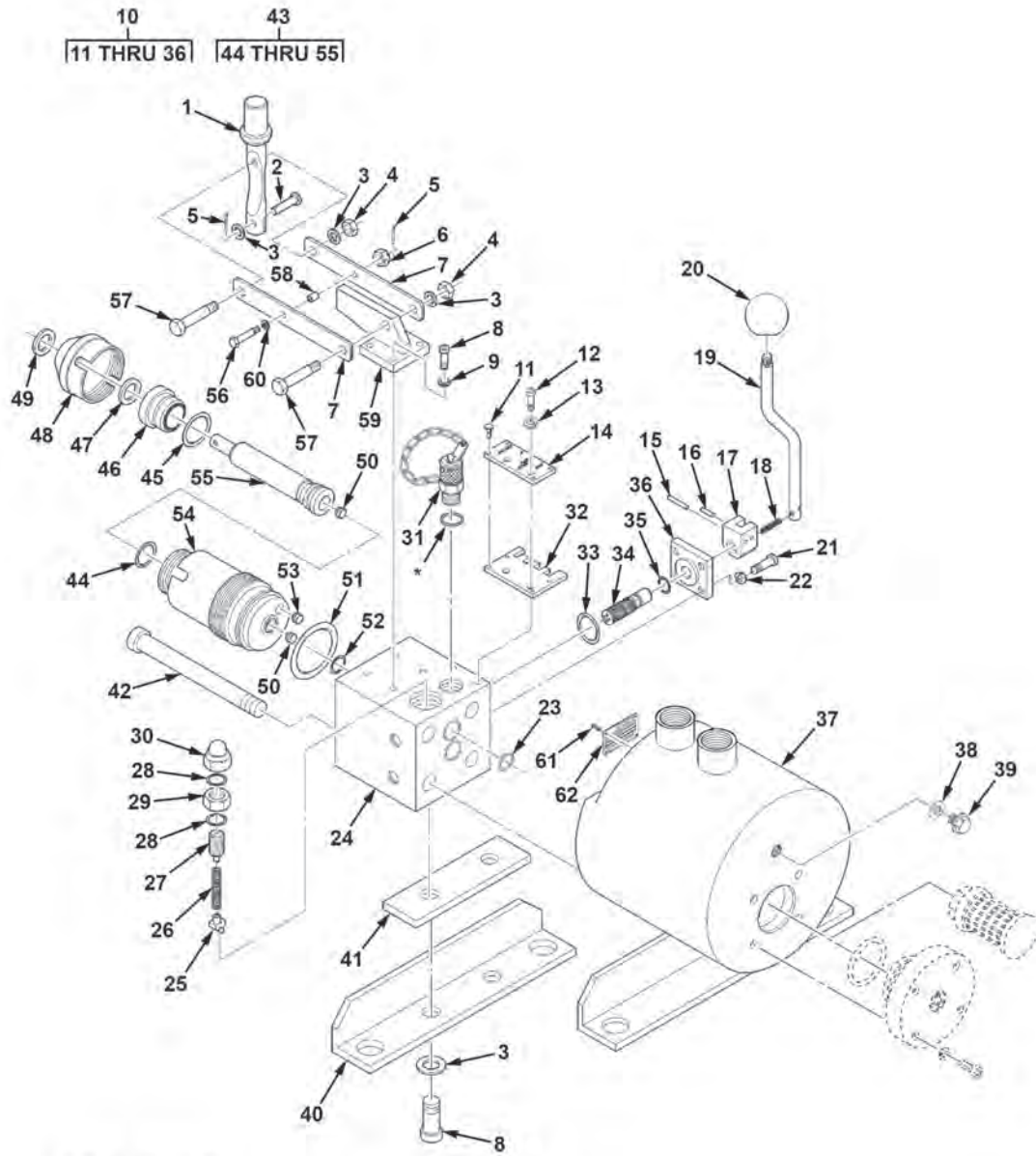
24PIR6823

Figure 24. Pump (Assembly and Mounting Parts).

(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						
FIG. 24. PUMP (ASSEMBLY AND MOUNTING PARTS).						
1	PAFFF	4720-12-356-2086	D9913	909724855	HOSE ASSEMBLY, NONME UOC: ERB.....	1
2	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	1
3	PAFZZ	4730-00-011-8537	81343	SAE J512 4 010111B	NUT, TUBE COUPLING UOC: ERB.....	3
4	PAFFF	4320-12-356-7358	D9913	024004012	PUMP, HYDRAULIC RAM SEE FIGURE 23 FOR BREAKDOWN UOC: ERB.....	1
5	PAFFF	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY, NONME UOC: ERB.....	1
6	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	1
7	PAFZZ	5305-12-167-5376	D8286	DIN933-M12X35-8.8- A3C	SCREW, CAP, HEXAGON H UOC: ERB.....	4
8	PAFZZ	5310-12-156-4899	D8286	DIN125-B13-140HV- A3P	WASHER, FLAT UOC: ERB.....	8
9	PAFFF	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY, NONME UOC: ERB.....	1
10	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	1
11	PAFZZ	5310-12-156-4982	D8286	DIN934-M12-B-A2P	NUT, PLAIN, HEXAGON UOC: ERB.....	4

END OF FIGURE

**FIELD
PUMP (RESERVOIR).**

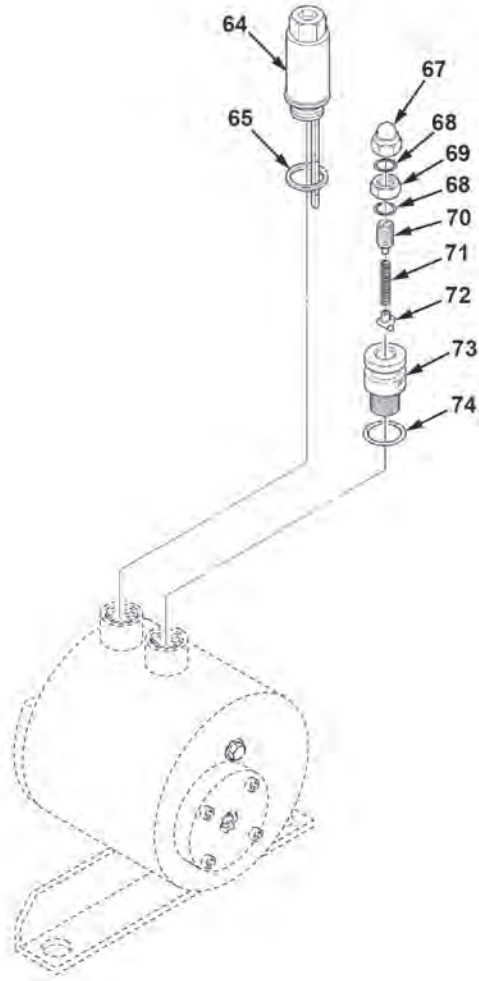


24PIRB024

Figure 25. Pump (Reservoir) (Sheet 1 of 2).

63
64 AND 65

66
67 THRU 74



24PIRB824B

Figure 25. Pump (Reservoir) (Sheet 2 of 2).

(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						
FIG. 25. PUMP (RESERVOIR).						
1	PAFZZ	5340-12-356-5117	D9913	024015002	LEVER,MANUAL CONTRO UOC: ERB.....	1
2	PAFZZ	5315-12-356-2882	D9913	024017005	PIN,STRAIGHT,HEADED UOC: ERB.....	1
3	PAFZZ	5310-12-355-8440	D9913	937893	WASHER,FLAT UOC: ERB.....	5
4	PCFZZ	5310-12-164-6571	D8286	DIN980-VM8-10-A2CNUT,SELF-LOCKING,HE	UOC: ERB.....	2
5	PAFZZ	5315-12-132-0855	D8286	DIN94-2X20-CUZN	PIN,COTTER UOC: ERB.....	2
6	PAFZZ	5310-12-356-3620	D9913	937420	NUT,PLAIN,CASTELLAT UOC: ERB.....	1
7	PAFZZ	5340-12-356-5116	D9913	024012602	PLATE,MENDING UOC: ERB.....	2
8	PAFZZ	5305-12-356-4631	D9913	933775	SCREW,CAP,SOCKET HE UOC: ERB.....	6
9	PAFZZ	5310-12-356-3623	D9913	939270	WASHER,LOCK UOC: ERB.....	4
10	PCFFF	4820-12-356-3464	D9913	024000804	VALVE,LINEAR,DIRECT UOC: ERB.....	1
11	PAFZZ	5315-12-166-3517	D3273	06221060604	. PIN,GROOVED,HEADED UOC: ERB.....	4
12	PAFZZ	5305-12-356-4635	D9913	933499	. SCREW,CAP,SOCKET HE UOC: ERB.....	2
13	PAFZZ	5310-12-355-8644	D9913	939237	. WASHER,LOCK UOC: ERB.....	2
14	PAFZZ	9905-12-356-3030	D9913	029271682	. PLATE,INSTRUCTION UOC: ERB.....	1
15	PAFZZ	5315-12-356-0490	D9913	940608	. PIN,SPRING UOC: ERB.....	1
16	PAFZZ	5315-12-147-9381	D9913	940060	. PIN,STRAIGHT,HEADLE UOC: ERB.....	1
17	PAFZZ	5340-12-356-5115	D9913	024017906	. BRACKET,LEVER UOC: ERB.....	1
18	PAFZZ	5360-12-356-2242	D9913	909572069	. SPRING,HELICAL,COMP UOC: ERB.....	1
19	PAFZZ	5340-12-356-6982	D9913	024015003	. LEVER,MANUAL CONTRO UOC: ERB.....	1
20	PAFZZ	5355-12-156-4791	D8286	DIN319-C32PF	. KNOB UOC: ERB.....	1
21	PAFZZ	5305-12-356-4634	D9913	933936	. SCREW,CAP,SOCKET HE UOC: ERB.....	4

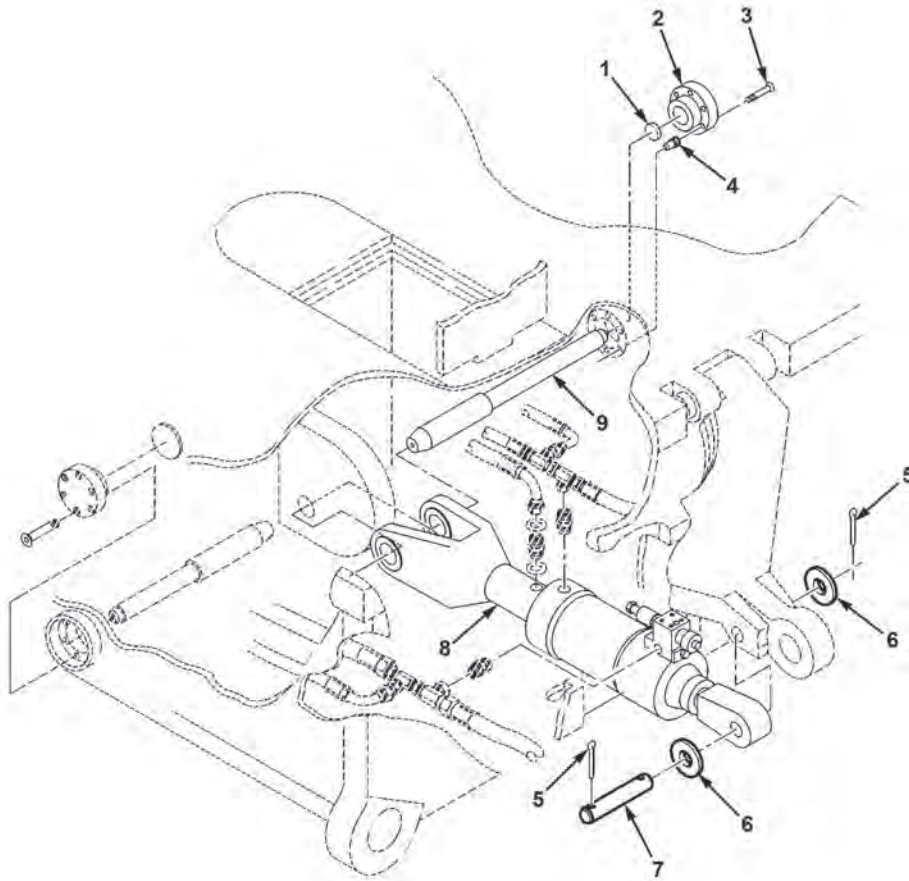
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
22	PAFZZ	5310-12-356-3623	D9913	939270	. WASHER,LOCK UOC: ERB.....	4
23	KFFZZ		D9913	909772418	. O-RING UOC: ERB.....	2
24	PAFZZ	4820-12-392-4705	D9913	024000304	. BLOCK,VALVE UOC: ERB.....	1
25	PAFZZ	4820-12-356-3467	D9913	024009401	. VALVE,BLEEDER,HYDRA UOC: ERB.....	1
26	PAFZZ	5360-12-356-8384	D9913	909572070	. SPRING,HELICAL,COMP UOC: ERB.....	1
27	PAFZZ	5305-12-356-4630	D9913	024017403	. SETSCREW UOC: ERB.....	1
28	PAFZZ	5330-12-124-0973	D8286	DIN7603-A12X18-AL	. GASKET UOC: ERB.....	2
29	PAFZZ	5310-12-356-2888	D9913	936670	. NUT,PLAIN,HEXAGON UOC: ERB.....	1
30	PAFZZ	5310-12-356-2889	D9913	937596	. NUT,PLAIN,CAP UOC: ERB.....	1
31	PAFZZ	4730-12-305-4824	C0551	2102-01-14.48	. COUPLING,TUBE UOC: ERB.....	1
32	PAFZZ	2510-12-392-5083	D9913	024013505	. PLATE UOC: ERB.....	1
33	PAFZZ	5331-12-148-8843	D2480	OR25X2-72NBR/872	. O-RING UOC: ERB.....	1
34	PAFZZ	4820-12-395-1608	D9913	024005701	. VALVE ASSEMBLY UOC: ERB.....	1
35	KFFZZ		D9913	909771726	. O-RING 8X2 MM UOC: ERB.....	1
36	PAFZZ	5340-12-392-4400	D9913	024012807	. COVER PUMP LEVER UOC: ERB.....	1
37	PAFZZ	4320-12-361-2344	D9913	024000603	HOUSING,LIQUID PUMP UOC: ERB.....	1
38	PAFZZ	5330-12-131-4119	D8286	DIN7603-D14X18- CU	GASKET UOC: ERB.....	1
39	PAFZZ	5365-12-125-5213	D8286	DIN7604-A- M14X1,5-ST	PLUG,MACHINE THREAD UOC: ERB.....	1
40	PAFZZ	5340-12-356-6981	D9913	024014102	BRACKET,ANGLE UOC: ERB.....	1
41	PAFZZ	5365-12-356-2204	D9913	024013504	SPACER,PLATE UOC: ERB.....	1
42	PAFZZ	5305-12-356-4633	D9913	933663	SCREW,CAP,SOCKET HE UOC: ERB.....	4
43	PAFFF	3040-12-356-3465	D9913	024002018	CYLINDER ASSEMBLY,A UOC: ERB.....	1
44	KFFZZ		D9913	909775212	. O-RING 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
45	PAFZZ	5331-12-148-8843	D2480	OR25X2-72NBR/872	. O-RING UOC: ERB.....	1
46	PAFZZ	5365-12-392-4554	D9913	024013802	. SLEEVE,BUSHING UOC: ERB.....	1
47	PAFZZ	5330-12-356-3624	D1333	BA 1150 00030	. PACKING ASSEMBLY UOC: ERB.....	1
48	PAFZZ		D9913	024017905	. COVER,THREADED UOC: ERB.....	1
49	PAFZZ	5330-12-356-3481	D7040	WEM300180-T46N	. RING,WIPER UOC: ERB.....	1
50	PAFZZ	4820-12-337-0306	D9913	909414034	. VALVE,CHECK UOC: ERB.....	2
51	KFFZZ		D9913	909773194	. O-RING UOC: ERB.....	1
52	KFFZZ		D9913	909772418	. O-RING UOC: ERB.....	1
53	PAFZZ	4820-12-392-1473	D9913	909414033	. VALVE,CHECK UOC: ERB.....	1
54	PAFZZ	4820-12-320-5594	D9913	024012704	. HOUSING UOC: ERB.....	1
55	PAFZZ	3040-12-392-0365	D9913	024017505	. ROD,PISTON UOC: ERB.....	1
56	PAFZZ	5305-12-356-3957	D9913	024018101	SCREW,CAP,HEXAGON H UOC: ERB.....	1
57	PAFZZ	5305-12-355-9907	D9913	115215	SCREW,CLOSE TOLERAN UOC: ERB.....	2
58	PAFZZ	5365-12-356-3360	D9913	024013904	SPACER,SLEEVE UOC: ERB.....	1
59	PAFZZ	5340-12-356-6983	D9913	024006102	BRACKET,MOUNTING UOC: ERB.....	1
60	PAFZZ	5310-12-356-2781	D9913	937869	WASHER,FLAT UOC: ERB.....	1
61	PAFZZ	5315-12-166-3517	D3273	06221060604	PIN,GROOVED,HEADED UOC: ERB.....	4
62	PAFZZ	9905-12-361-1885	D9913	029271681	PLATE,IDENTIFICATIO UOC: ERB.....	1
63	PAFFF	5340-12-356-6989	D9913	024008501	PLUG,PROTECTIVE,DUS UOC: ERB.....	1
64	PAFZZ	6680-12-392-1416	D9913	024008201	. SCREW,PLUG UOC: ERB.....	1
65	PAFZZ	5330-12-125-2535	D2480	U21,5X28,7X2,5-72N. BR/99041	GASKET UOC: ERB.....	1
66	PAFFF	4820-12-356-3484	D9913	024000805	VALVE,SAFETY RELIEF UOC: ERB.....	1
67	PAFZZ	5310-12-356-2889	D9913	937596	. NUT,PLAIN,CAP 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
68	PAFZZ	5330-12-124-0973	D8286	DIN7603-A12X18-AL.	. GASKET UOC: ERB.....	2
69	PAFZZ	5310-12-356-2888	D9913	936670	. NUT,PLAIN,HEXAGON UOC: ERB.....	1
70	PAFZZ	5305-12-356-4630	D9913	024017403	. SETSCREW UOC: ERB.....	1
71	PAFZZ	5360-12-356-8384	D9913	909572070	. SPRING,HELICAL,COMP UOC: ERB.....	1
72	PAFZZ	4820-12-356-3467	D9913	024009401	. VALVE,BLEEDER,HYDRA UOC: ERB.....	1
73	PAFZZ	4820-12-392-1768	D9913	024012705	. VALVE,HOUSING UOC: ERB.....	1
74	PAFZZ	5330-12-125-2535	D2480	U21,5X28,7X2,5-72N. BR/99041	. GASKET UOC: ERB.....	1

END OF FIGURE

**FIELD
CYLINDER.**



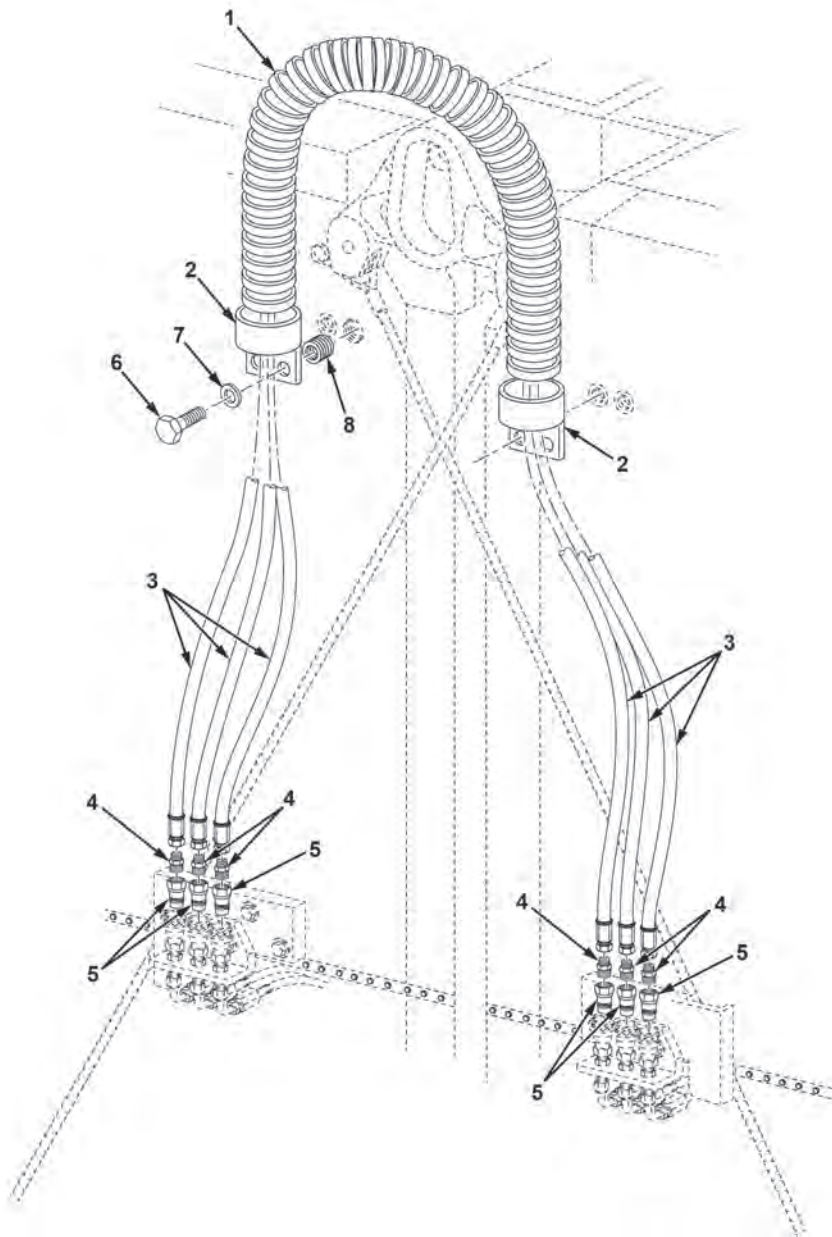
24PIRB025

Figure 26. Cylinder.

(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						
FIG. 26. CYLINDER.						
1	PAFZZ	5330-12-357-2517	D9913	027514011	GASKET UOC: ERB.....	1
2	PAFZZ	5340-12-356-4947	D9913	027501003	COVER,ACCESS UOC: ERB.....	1
3	PAFZZ	5305-12-142-5941	D8286	DIN7991-M6X25-8.8-A2P	SCREW,CAP, SOCKET HE UOC: ERB.....	6
4	PAFZZ	5310-12-318-7526	D9728	23311060065	NUT,PLAIN,BLIND RIV UOC: ERB.....	6
5	PAFZZ	5315-12-315-0187	D9913	942312	PIN,COTTER UOC: ERB.....	2
6	PAFZZ	5310-12-356-0258	D9913	938115	WASHER,FLAT UOC: ERB.....	2
7	PAFZZ	5315-12-180-4468	D9913	027073621	PIN,STRAIGHT,HEADLE UOC: ERB.....	1
8	PAFZZ	3040-12-356-2891	D9913	024002017	CYLINDER ASSEMBLY,A UOC: ERB.....	1
9	PAFZZ	5315-12-356-3858	D9913	027505002	PIN,SHOULDER,HEADLE UOC: ERB.....	1

END OF FIGURE

**FIELD
HOSE ASSEMBLIES AND FITTINGS.**



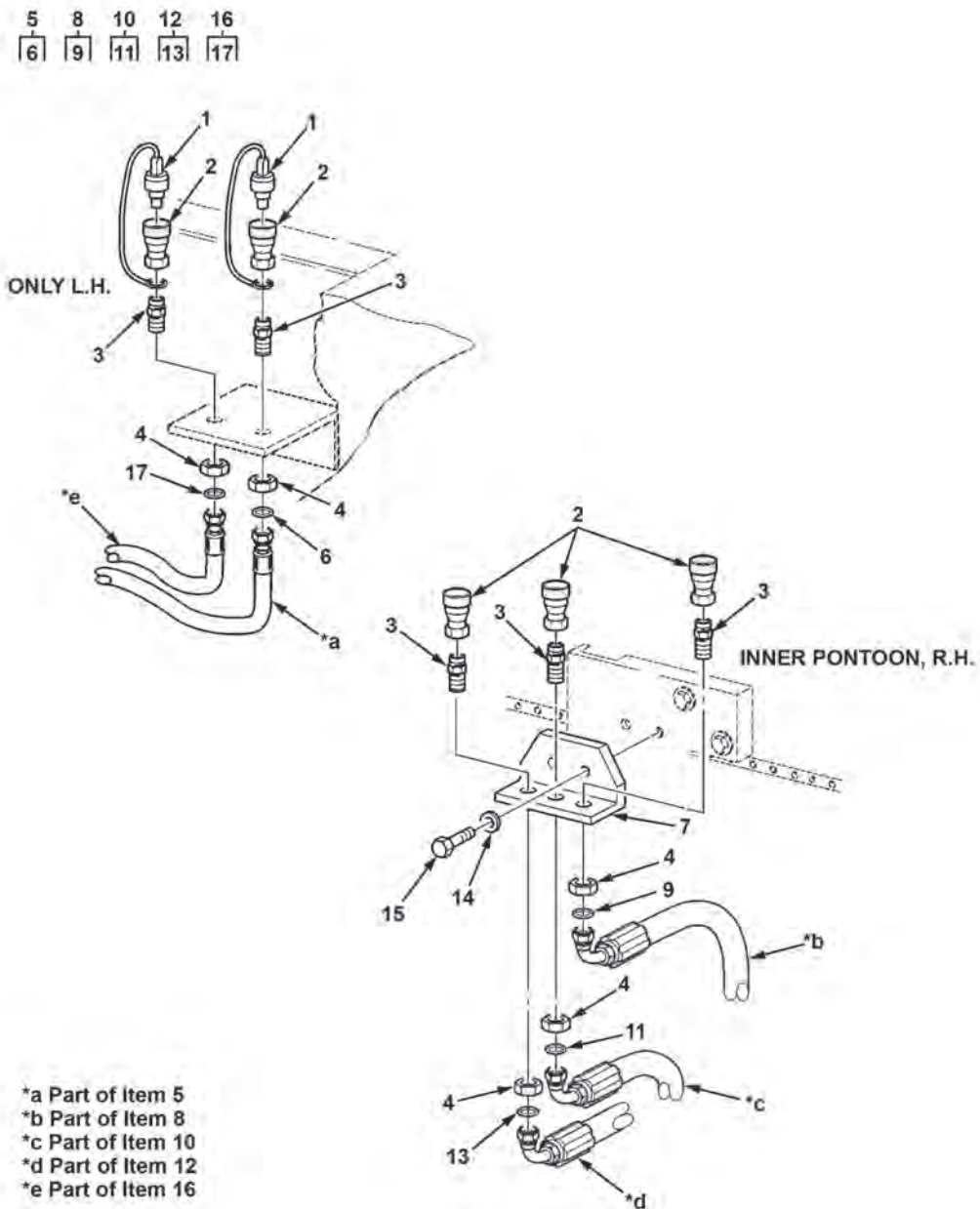
24PIRB027

Figure 27. Hose Assemblies and Fittings.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS						
FIG. 27. HOSE ASSEMBLIES AND FITTINGS.						
1	PAFZZ	4720-12-356-2557	D9913	909721607	TUBING, NONMETALLIC UOC: ERB.....	1
2	PAFZZ	5340-12-356-6964	D9913	027504301	BRACKET, MOUNTING UOC: ERB.....	2
3	PAFZZ	4720-12-356-2080	D9913	909724854	HOSE ASSEMBLY, NONME UOC: ERB.....	3
4	PAFZZ	4730-12-162-8809	D2497	15-006-10-6	ADAPTER, STRAIGHT PI UOC: ERB.....	6
5	PAFZZ	4730-01-063-9285	01276	5602-6-6S	COUPLING HALF, QUICK UOC: ERB.....	6
6	PAFZZ	5305-12-156-4873	D8286	DIN933-M10X30-8.8- A3P	SCREW, CAP, HEXAGON H UOC: ERB.....	4
7	PAFZZ	5310-12-145-2243	D8286	DIN7349-10,5-ST- A3P	WASHER, FLAT UOC: ERB.....	4
8	PAFZZ	5325-12-142-8193	D8442	LN9039-10150	INSERT, SCREW THREAD UOC: ERB.....	4

END OF FIGURE

**FIELD
HOSE ASSEMBLIES AND FITTINGS (BRACKET AND QUICK-DISCONNECTS).**



24PIRB028

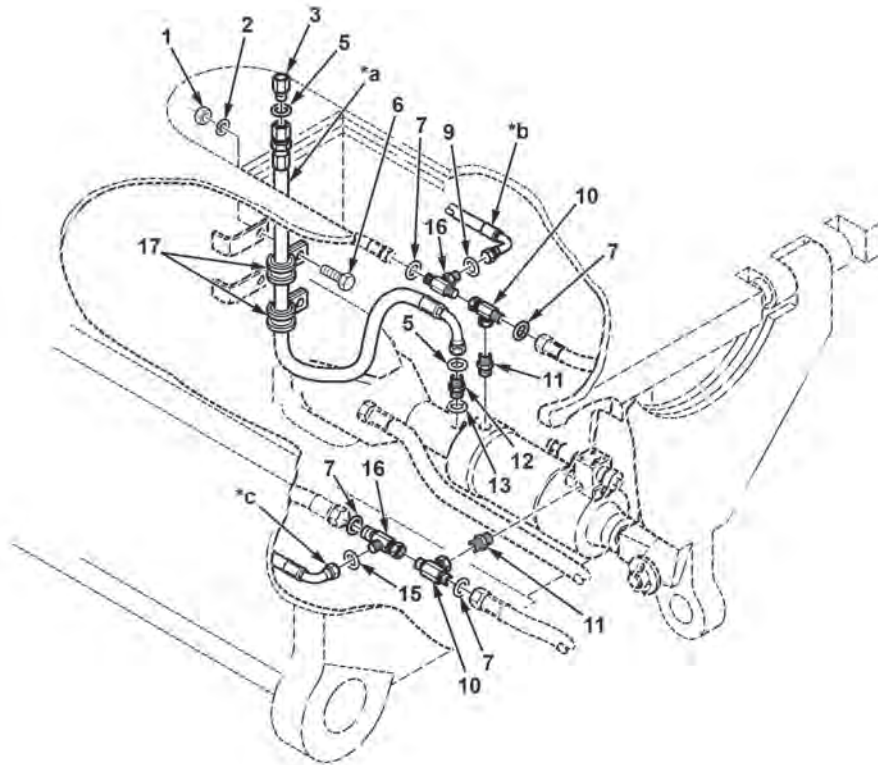
Figure 28. Hose Assemblies and Fittings (Bracket and Quick-Disconnects).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS						
FIG. 28. HOSE ASSEMBLIES AND FITTINGS (BRACKET AND QUICK- DISCONNECTS).						
1	PAFZZ	5340-00-071-3830	01276	5659-6	PLUG,PROTECTIVE,DUS UOC: ERB.....	2
2	PAFZZ	4730-01-063-9285	D2497	5602-6-6S	COUPLING HALF,QUICK UOC: ERB.....	8
3	PAFZZ	4730-12-180-1202	D2497	15-006-10-6-1	ADAPTER,STRAIGHT,PI UOC: ERB.....	8
4	PAFZZ	5310-12-145-2077	D8286	DIN80705- M16X1,5-14H-A2P	NUT,PLAIN,HEXAGON UOC: ERB.....	8
5	PAFFF	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	1
6	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
7	PAFZZ	5340-12-356-6965	D9913	024010303	BRACKET,ANGLE LEFT SIDE UOC: ERB.....	1
7	PAFZZ	5340-12-356-6966	D9913	024010302	BRACKET,ANGLE RIGHT SIDE UOC: ERB.....	1
8	PAFFF	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	2
9	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
10	PAFFF	4720-12-356-2081	D9913	909724856	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	2
11	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
12	PAFFF	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	2
13	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
14	PAFZZ	5310-12-142-0640	D8286	DIN125-B17-140HV- A3P	WASHER,FLAT UOC: ERB.....	4
15	PAFZZ	5305-12-141-9963	D8286	DIN933-M16X70-8.8- A3P	SCREW,CAP,HEXAGON H UOC: ERB.....	4
16	PAFFF	4720-12-356-2081	D9913	909724856	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	1
17	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2

END OF FIGURE

**FIELD
HOSE ASSEMBLIES AND FITTINGS (LEFT SIDE).**

4	8	14
5	9	15



*a Part of Item 4
 *b Part of Item 8
 *c Part of Item 14

24PIR8829

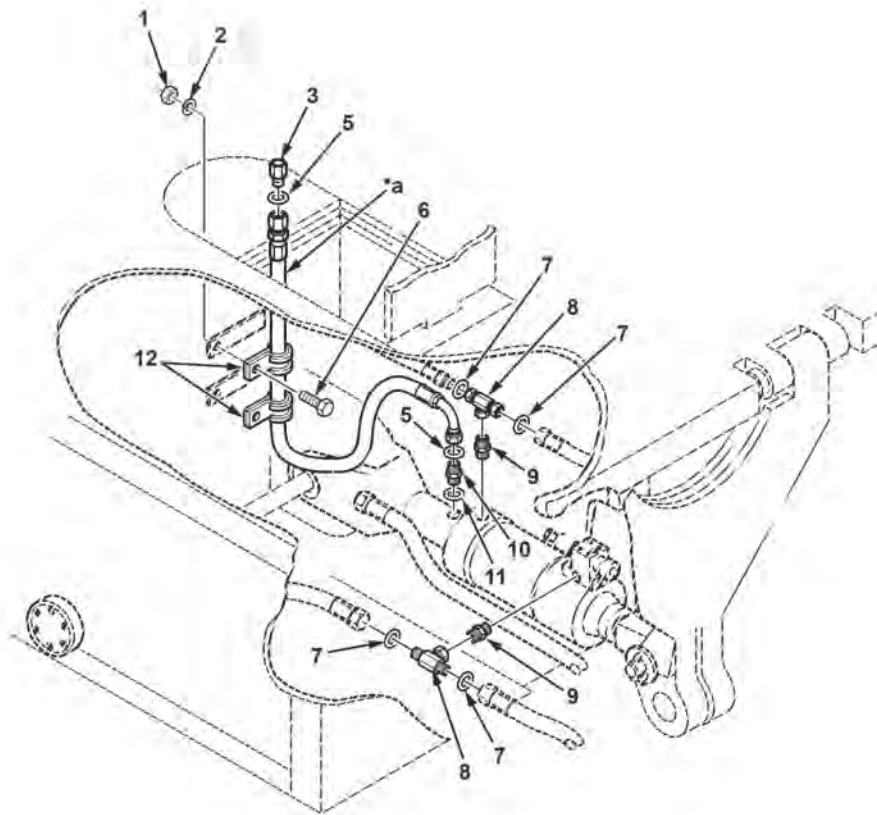
Figure 29. Hose Assemblies and Fittings (Left Side).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS						
FIG. 29. HOSE ASSEMBLIES AND FITTINGS (LEFT SIDE).						
1	PAFZZ	5310-12-144-6214	D8286	DIN934-M8-8-A2P	NUT,PLAIN,HEXAGON UOC: ERB.....	2
2	PAFZZ	5310-12-142-0658	D8286	DIN127-B8-FST-A3P	WASHER,LOCK UOC: ERB.....	2
3	PAFZZ	4820-12-302-4275	D9913	024000802	VALVE,SAFETY RELIEF UOC: ERB.....	1
4	PAFFF	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	1
5	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
6	PAFZZ	5305-12-156-4870	I9006	EN24017- M8X30-8.8-A2P	SCREW,CAP,HEXAGON H UOC: ERB.....	2
7	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	O-RING UOC: ERB.....	4
8	PAFFF	4720-12-356-2082	D9913	909724857	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	1
9	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
10	PAFZZ	4730-12-179-1386	I9008	ISO8434-1-SWBT- L10-ST-A3P	TEE,TUBE UOC: ERB.....	2
11	PAFZZ	4730-12-186-9990	D8286	DIN3901-L10B-M- ST-A3P	ADAPTER,STRAIGHT,TU UOC: ERB.....	2
12	PAFZZ	4730-12-356-2560	D9913	909617880	ADAPTER,STRAIGHT,TU UOC: ERB.....	1
13	PAFZZ	5330-12-156-4527	D8286	DIN7603-A18X24- CU	GASKET UOC: ERB.....	1
14	PAFFF	4720-12-356-2081	D9913	909724856	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	1
15	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
16	PAFZZ	4730-12-356-2559	I9008	ISO8434-1SWRT- L10-ST-A3C	TEE,TUBE UOC: ERB.....	2
17	PAFZZ	5340-12-180-3179	D8286	DIN3016-1- D1-17X20-W1-2-CR	CLAMP,LOOP UOC: ERB.....	2

END OF FIGURE

**FIELD
HOSE ASSEMBLIES AND FITTINGS (RIGHT SIDE).**

4
5



*a Part of Item 4

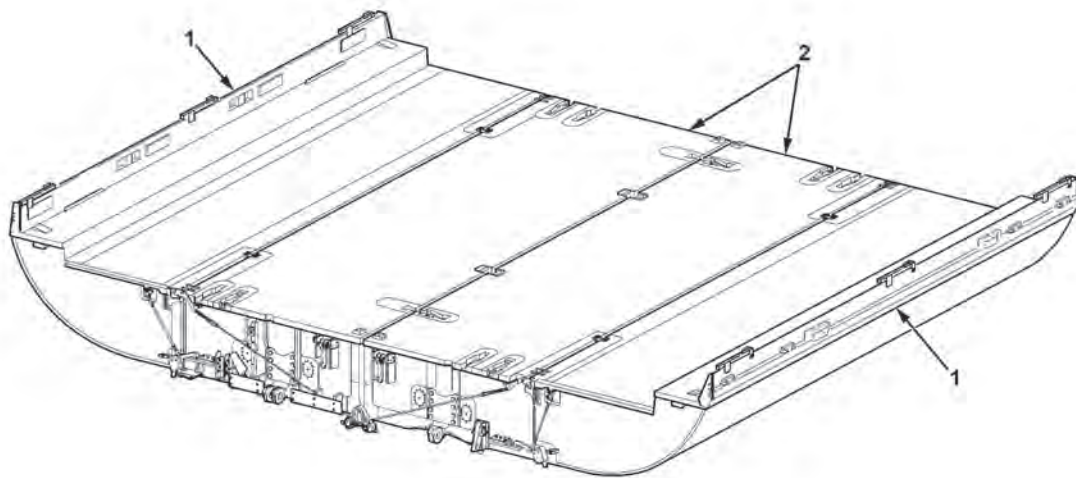
24PIRB830

Figure 30. Hose Assemblies and Fittings (Right Side).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3005 HOSE ASSEMBLIES AND FITTINGS						
FIG. 30. HOSE ASSEMBLIES AND FITTINGS (RIGHT SIDE).						
1	PAFZZ	5310-12-144-6214	D8286	DIN934-M8-8-A2P	NUT,PLAIN,HEXAGON UOC: ERB.....	2
2	PAFZZ	5310-12-142-0658	D8286	DIN127-B8-FST-A3P	WASHER,LOCK UOC: ERB.....	2
3	PAFZZ	4820-12-302-4275	D9913	024000802	VALVE,SAFETY RELIEF UOC: ERB.....	1
4	PAFFF	4720-12-356-2085	D9913	909724858	HOSE ASSEMBLY,NONME W/FITTING UOC: ERB.....	1
5	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	. O-RING UOC: ERB.....	2
6	PAFZZ	5305-12-156-4870	I9006	EN24017- M8X30-8.8-A2P	SCREW,CAP,HEXAGON H UOC: ERB.....	2
7	PAFZZ	5331-12-356-3626	D2497	05.017-8.5X1.5	O-RING UOC: ERB.....	4
8	PAFZZ	4730-12-179-1386	I9008	ISO8434-1-SWBT- L10-ST-A3P	TEE,TUBE UOC: ERB.....	2
9	PAFZZ	4730-12-186-9990	D8286	DIN3901-L10B-M- ST-A3P	ADAPTER,STRAIGHT,TU UOC: ERB.....	2
10	PAFZZ	4730-12-356-2560	D9913	909617880	ADAPTER,STRAIGHT,TU UOC: ERB.....	1
11	PAFZZ	5330-12-156-4527	D8286	DIN7603-A18X24- CU	GASKET UOC: ERB.....	1
12	PAFZZ	5340-12-180-3179	D8286	DIN3016-1- D1-17X20-W1-2-CR	CLAMP,LOOP UOC: ERB.....	2

END OF FIGURE

**FIELD
INTERIOR BAY INNER AND OUTER PONTOONS.**



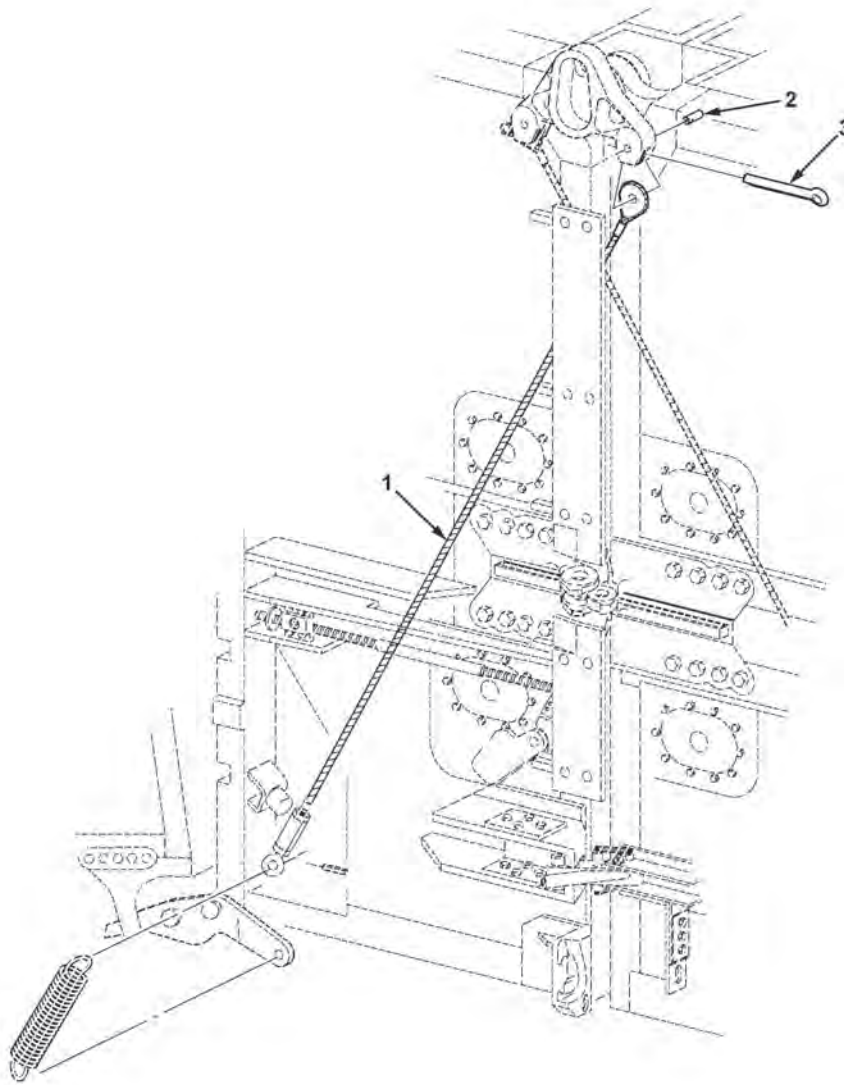
24PIRB031

Figure 31. 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 3100 INTERIOR BAY INNER AND OUTER PONTOONS						
FIG. 31. INTERIOR BAY INNER AND OUTER PONTOONS.						
1	PFFFF	5420-12-361-9932	D9913	027000205	PONTOON FLOAT INTERIOR BAY (BOW) PONTOON SEE FIGURES 30 - 42 FOR BREAKDOWN UOC: EIB.....	2
2	PFFFF	5420-12-361-9931	D9913	027000203	PONTOON FLOAT INTERIOR BAY INNER (ROADWAY) PONTOON SEE FIGURES 30 - 42 FOR BREAKDOWN UOC: EIB.....	2

END OF FIGURE

**FIELD
INTERIOR BAY CABLE ASSEMBLY.**



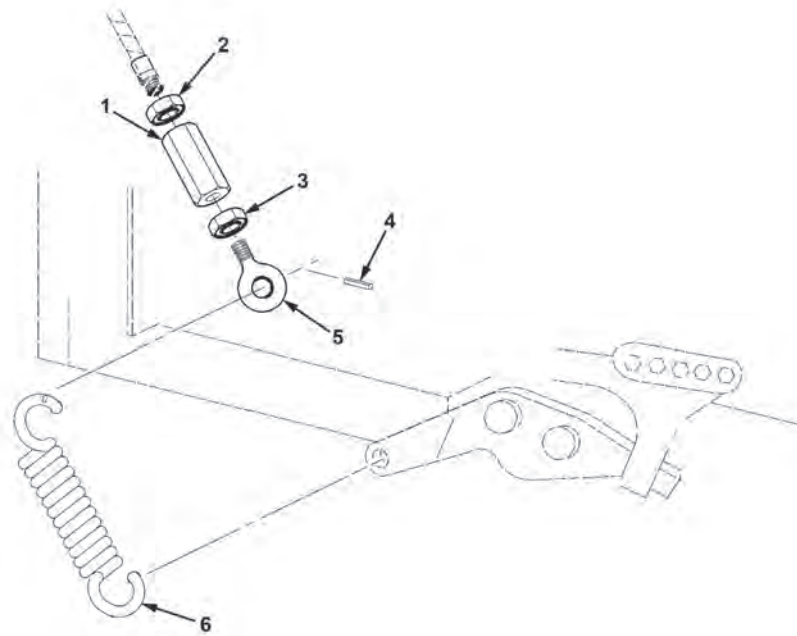
24PIRB832

Figure 32. Interior Bay 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 INTERIOR BAY CABLE ASSEMBLY	
					FIG. 32. INTERIOR BAY CABLE ASSEMBLY.	
1	PAFZZ	4010-12-356-2780	D9913	027075603	WIRE ROPE ASSEMBLY UOC: EIB.....	1
2	PAFZZ	5315-12-180-3616	D9913	027073613	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
3	PAFZZ	5315-12-180-3617	D9913	027071702	PIN,LOCK UOC: EIB.....	1

END OF FIGURE

FIELD
INTERIOR BAY CABLE ASSEMBLY (TURNBUCKLE).



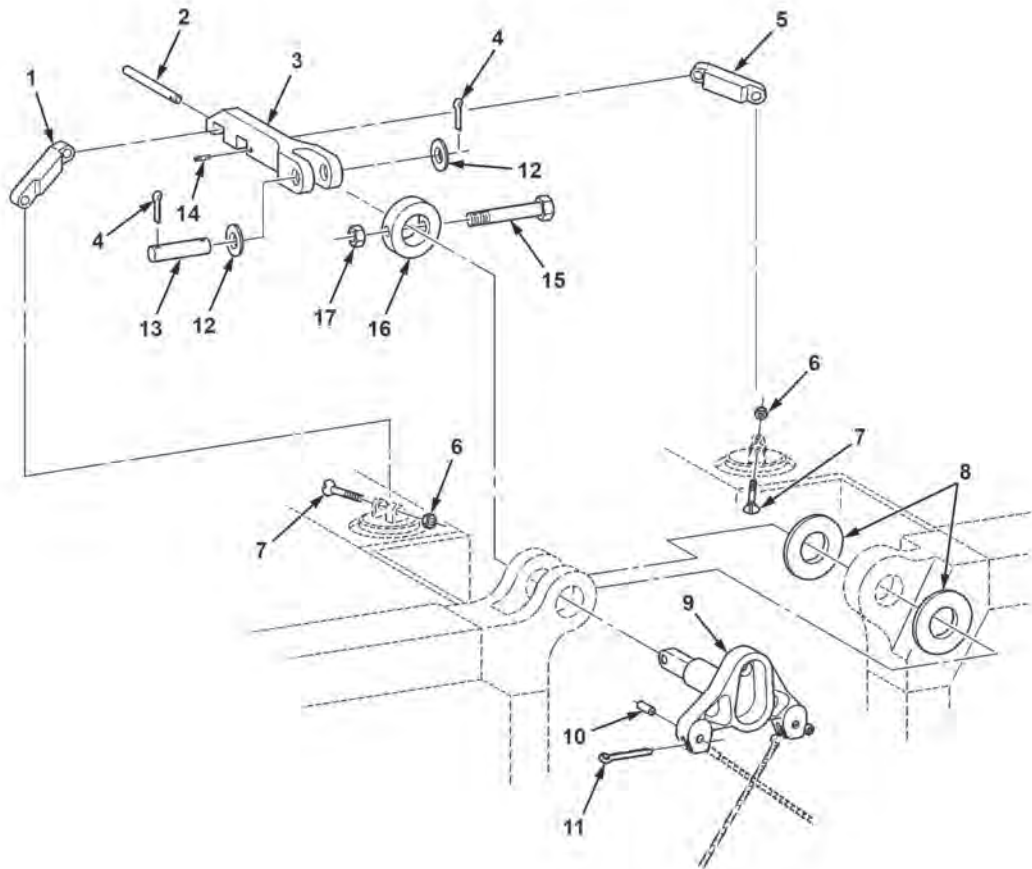
24PIRB333

Figure 33. Interior Bay Cable Assembly (Turnbuckle).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3101 INTERIOR BAY CABLE ASSEMBLY						
FIG. 33. INTERIOR BAY CABLE ASSEMBLY (TURNBUCKLE).						
1	PAFZZ	5340-12-317-2253	D8286	DIN1479-SPM20- X10CRNITI189	TURNBUCKLE BODY UOC: EIB.....	4
2	PAFZZ	5310-12-327-0721	D8286	DIN439-BM20-04- A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	4
3	PAFZZ	5310-12-356-4433	D9913	936640	NUT,PLAIN,HEXAGON UOC: EIB.....	4
4	PAFZZ	5315-12-180-1372	D9913	940635	PIN,SPRING UOC: EIB.....	4
5	PAFZZ	5306-12-314-4873	D9913	027077201	BOLT,EYE UOC: EIB.....	4
6	PAFZZ	5360-12-317-7984	C2311	027077108	SPRING,HELICAL,EXTE UOC: EIB.....	4

END OF FIGURE

**FIELD
EYEBOLT.**



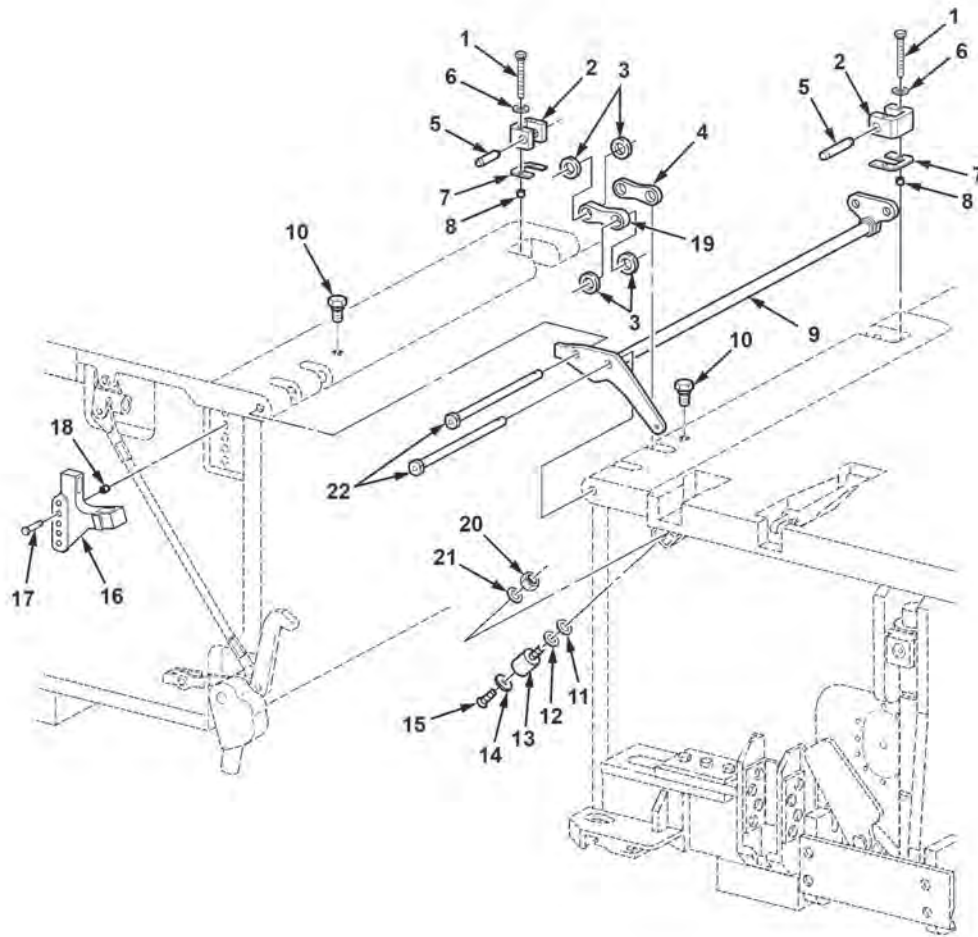
24PIRB034

Figure 34. Eyebolt.

(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						
FIG. 34. EYEBOLT.						
1	PAFZZ	5420-12-179-0315	D9913	027074806	CONNECTING LINK,RIG UOC: EIB.....	1
2	PAFZZ	5315-00-503-0509	97403	13218E4099	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
3	PAFZZ	5420-01-129-6399	97403	13218E4166	COVER,PIN CYLINDER UOC: EIB.....	1
4	PAFZZ	5315-12-180-3614	D9913	942120	PIN,COTTER UOC: EIB.....	2
5	PAFZZ	5420-12-179-0316	D9913	027074805	CONNECTING LINK,RIG UOC: EIB.....	1
6	PAFZZ	5310-01-418-2337	80204	B18241B120	NUT,PLAIN,HEXAGON UOC: EIB.....	2
7	PAFZZ	5305-00-499-1316	97403	13219E4121	SCREW,CLOSE TOLERAN UOC: EIB.....	2
8	PAFZZ	5310-12-179-8252	D9913	027074502	WASHER,FLAT UOC: EIB.....	2
9	PAFZZ	3040-12-356-2893	D9913	027015009	BELL CRANK UOC: EIB.....	1
10	PAFZZ	5315-12-180-3616	D9913	027073613	PIN,STRAIGHT,HEADLE UOC: EIB.....	2
11	PAFZZ	5315-12-180-3617	D9913	027071702	PIN,LOCK UOC: EIB.....	2
12	PAFZZ	5310-12-145-2843	D8286	DIN125-B37-140HV- A3P	WASHER,FLAT UOC: EIB.....	2
13	PAFZZ	5315-12-180-3615	D9913	027073611	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
14	PAFZZ	5315-12-314-9043	D9913	940630	PIN,SPRING UOC: EIB.....	1
15	PAFZZ	5305-12-179-8251	D8286	DIN931- M12X150-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	1
16	PAFZZ	5420-12-179-0318	D9913	027074001	RING,STOP UOC: EIB.....	1
17	PAFZZ	5310-12-145-2655	D8286	DIN985-M12-8-A2P	NUT,SELF-LOCKING,HE UOC: EIB.....	1

END OF FIGURE

**FIELD
INTERIOR BAY UNFOLDING STABILIZER AND BRACKET.**



24PIRB035

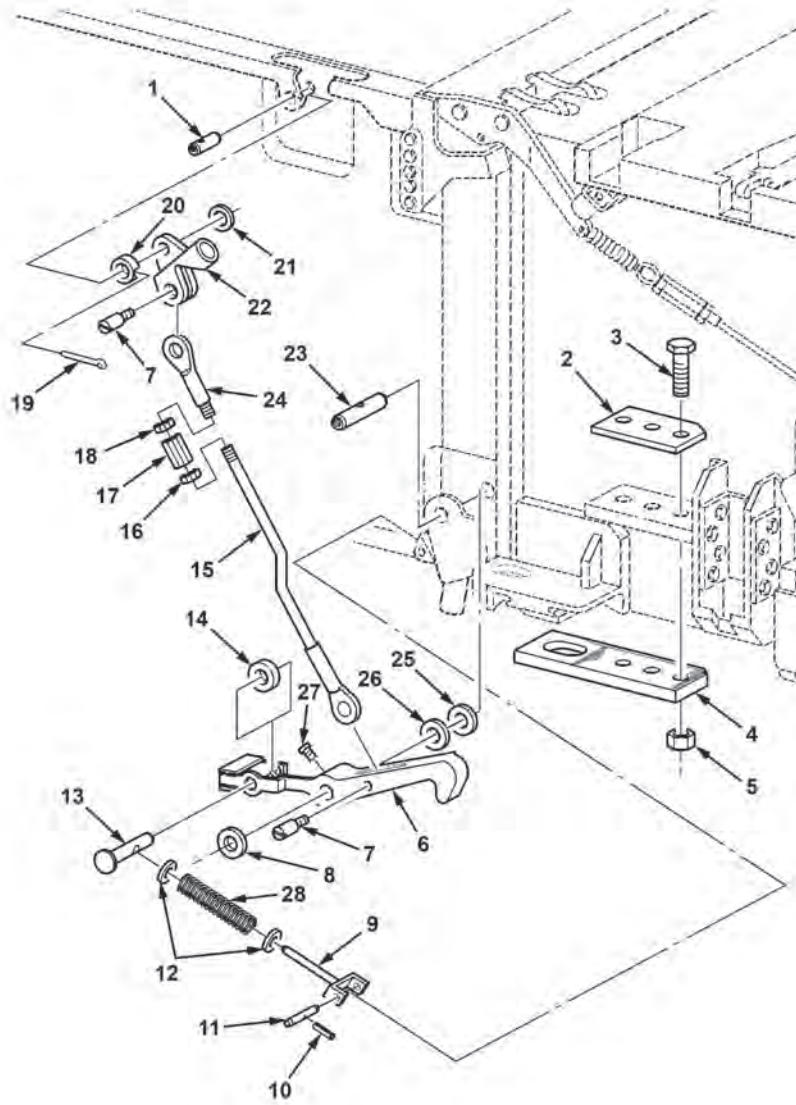
Figure 35. Interior Bay Unfolding Stabilizer and Bracket.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3201 INTERIOR BAY UNFOLDING STABILIZER AND BRACKET						
FIG. 35. INTERIOR BAY UNFOLDING STABILIZER AND BRACKET.						
1	PAFZZ	5305-12-156-4902	D8286	DIN931-M12X90-8.8-A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	4
2	PAFZZ	5340-12-356-9401	D9913	027015105	BRACKET,MOUNTING UOC: EIB.....	2
3	PAFZZ	5310-12-357-2525	D9913	027018108	WASHER,FLAT UOC: EIB.....	2
4	PAFZZ	3040-12-356-3618	D9913	027017601	CONNECTING LINK,RIG UOC: EIB.....	1
5	PAFZZ	5315-12-356-2779	D9913	027015008	PIN,STRAIGHT,HEADLE UOC: EIB.....	2
6	PAFZZ	5310-12-356-2883	D9913	027018106	WASHER,FLAT UOC: EIB.....	4
7	PAFZZ	5365-12-356-3362	D9913	027070301	SPACER,SPECIAL SHAP 2 X 85 X 85 MM UOC: EIB.....	4
7	PAFZZ	5365-12-356-3363	D9913	027010368	SPACER,SPECIAL SHAP 1 X 85 X 85 MM UOC: EIB.....	2
7	PAFZZ	5365-12-356-3364	D9913	027010369	SPACER,SPECIAL SHAP 5 X 85 X 85 MM UOC: EIB.....	2
8	PCFZZ	5340-12-142-8249	D8442	LN9039-13240	INSERT,SCREW THREAD UOC: EIB.....	4
9	PAFZZ	3040-12-356-3859	D9913	027000602	LEVER,REMOTE CONTRO RIGHT SIDE UOC: EIB.....	1
9	PAFZZ	3040-12-356-3466	D9913	027000601	LEVER,REMOTE CONTRO LEFT SIDE UOC: EIB.....	1
10	PAFZZ	5305-12-356-5297	D9913	027078504	SETSCREW UOC: EIB.....	2
11	PAFZZ	5310-12-356-3365	D9913	027078102	WASHER,FLAT 1.2 MM UOC: EIB.....	4
12	PAFZZ	5310-12-356-3366	D9913	027078101	WASHER,FLAT 4.8 MM UOC: EIB.....	1
13	PAFZZ	5342-12-312-8842	D8286	DIN95363-B60X45-NR45ST-M10X20	MOUNT,RESILIENT UOC: EIB.....	1
14	PAFZZ	5310-12-359-2950	D9913	027078103	WASHER,RECESSED UOC: EIB.....	1
15	PAFZZ	5305-12-165-1261	D8286	DIN7991-M10X16-8.8-A3P	SCREW,CAP,SOCKET HE UOC: EIB.....	1
16	PAFZZ	5340-12-356-4948	D9913	027017102	BRACKET,MOUNTING RIGHT SIDE UOC: EIB.....	1
16	PAFZZ	5340-12-356-9402	D9913	027017101	BRACKET,MOUNTING LEFT SIDE UOC: EIB.....	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
17	PAFZZ	5305-12-142-8329	D8286	DIN931- M16X80-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	5
18	PAFZZ	5325-12-356-4305	D8286	DIN8140-AM16X40- A2	INSERT,SCREW THREAD UOC: EIB.....	5
19	PAFZZ	3040-12-356-3617	D9913	027011201	CONNECTING LINK,RIG UOC: EIB.....	1
20	PAFZZ	5310-12-144-6134	D8286	DIN439-BM10-04- A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	1
21	PAFZZ	5310-12-156-5471	D8286	DIN125- A10,5-140HV-A3P	WASHER,FLAT UOC: EIB.....	1
22	PAFZZ	5315-12-356-3367	D9913	027015007	PIN,STRAIGHT,HEADED UOC: EIB.....	2

END OF FIGURE

**FIELD
OUTER PONTOON LOCK.**



24PIRB837

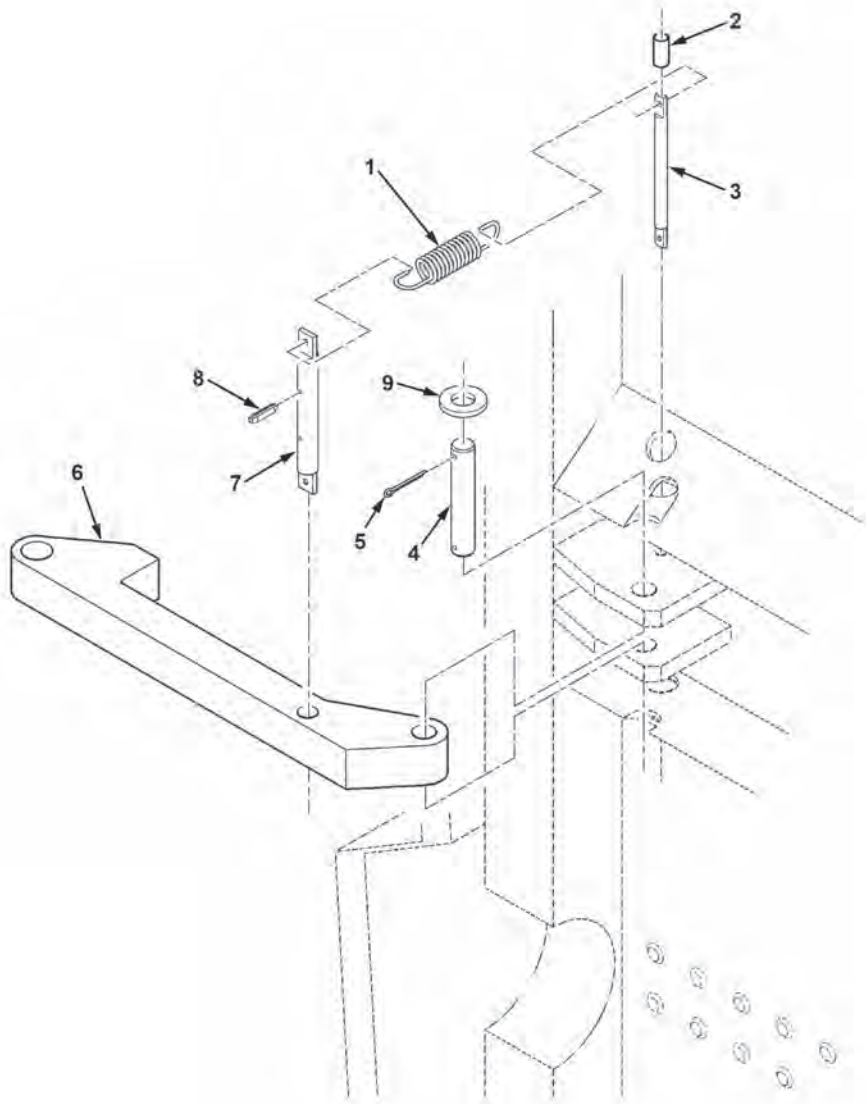
Figure 36. Outer Pontoon Lock.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3203 OUTER PONTOON LOCK						
FIG. 36. OUTER PONTOON LOCK.						
1	PAFZZ	5315-12-357-2516	D9913	027015011	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
2	PAFZZ	5365-12-356-2197	D9913	027010337	SPACER,PLATE UOC: EIB.....	1
3	PAFZZ	5305-12-142-8325	D8286	DIN931- M16X65-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	3
4	PAFZZ	5365-12-357-2614	D9913	027014007	SPACER,PLATE RIGHT SIDE UOC: EIB.....	1
4	PAFZZ	5365-12-356-2198	D9913	027014003	SPACER,PLATE LEFT SIDE UOC: EIB.....	1
5	PAFZZ	5310-12-156-4984	D8286	DIN934-M16-8-A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	3
6	PAFZZ	5340-12-356-9400	D9913	027013401	LEVER,LOCK-RELEASE LEFT SIDE UOC: EIB.....	1
6	PAFZZ	5340-12-357-3703	D9913	027013402	LEVER,LOCK-RELEASE RIGHT SIDE UOC: EIB.....	1
7	PAFZZ	5305-12-356-3860	D9913	027015001	SCREW,MACHINE UOC: EIB.....	2
8	PAFZZ	5310-12-359-2952	D9913	027018109	WASHER,FLAT 1 MM UOC: EIB.....	1
9	PAFZZ	5315-12-356-1913	D9913	027004301	PIN,STRAIGHT,HEADED UOC: EIB.....	1
10	PAFZZ	5315-01-272-4911	15526	DIN1481-3X22	PIN,SPRING UOC: EIB.....	1
11	PAFZZ	5315-12-356-1912	D9913	027015004	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
12	PAFZZ	5310-12-189-7275	D8286	DIN125- B10,5-140HV-A4	WASHER,FLAT UOC: EIB.....	2
13	PAFZZ	5315-12-356-2079	D9913	027015010	PIN,STRAIGHT,HEADED UOC: EIB.....	1
14	PAFZZ	5365-12-392-2364	D9913	027018112	SPACER,SLEEVE UOC: EIB.....	1
15	PAFZZ	3040-12-356-3615	D9913	027016702	CONNECTING LINK,RIG UOC: EIB.....	1
16	PAFZZ	5310-12-166-7736	D8286	DIN439-BM16-05- A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	1
17	PAFZZ	5340-12-150-8958	D8286	DIN1479- SPM16-1.3965	TURNBUCKLE BODY UOC: EIB.....	1
18	PAFZZ	5310-12-356-4435	I9008	ISO4035-M16LH-05- A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	1
19	PAFZZ	5315-12-313-2591	D9913	942119	PIN,COTTER UOC: EIB.....	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
20	PAFZZ	5365-12-356-2196	D9913	027018101	SPACER,RING UOC: EIB.....	1
21	PAFZZ	5310-12-142-0642	D8286	DIN125-B23-140HV- A3P	WASHER,FLAT UOC: EIB.....	1
22	PAFZZ	3040-12-356-3621	D9913	027011901	BELL CRANK LEFT SIDE UOC: EIB.....	1
22	PAFZZ	3040-12-356-3616	D9913	027011902	BELL CRANK RIGHT SIDE UOC: EIB.....	1
23	PAFZZ	5315-12-356-1911	D9913	027015002	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
24	PAFZZ	5306-12-356-5567	D9913	027016701	BOLT,EYE UOC: EIB.....	1
25	PAFZZ	5310-12-359-2953	D9913	027018111	WASHER,FLAT 10 MM UOC: EIB.....	1
26	PAFZZ	5310-12-359-2951	D9913	027018110	WASHER,FLAT 3 MM UOC: EIB.....	1
27	PAFZZ	5305-12-356-5296	D9913	027018501	SETSCREW UOC: EIB.....	1
28	PAFZZ	5360-12-357-3819	D9913	909573027	SPRING,HELICAL,COMP UOC: EIB.....	1

END OF FIGURE

**FIELD
INTERIOR BAY FOLDLOCK.**



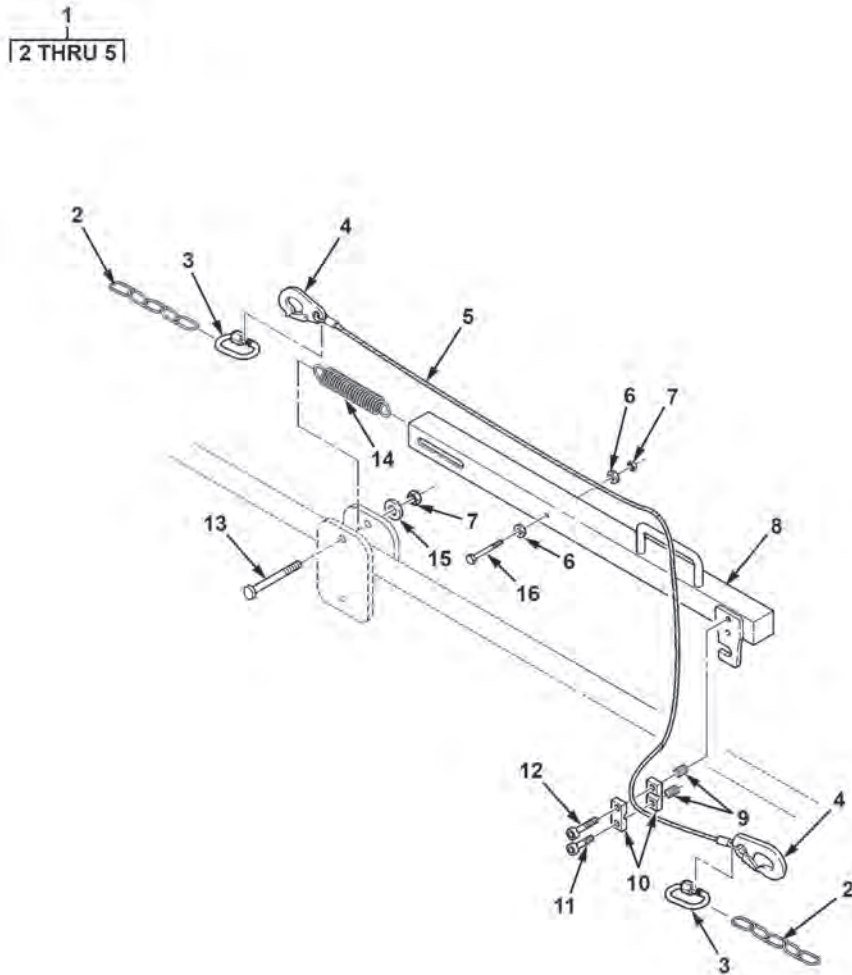
24PIRB36

Figure 37. Interior Bay Foldlock.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3204 INTERIOR BAY FOLDLOCK						
FIG. 37. INTERIOR BAY FOLDLOCK.						
1	PAFZZ	5360-12-179-8256	D9913	027072401	SPRING,HELICAL,EXTE UOC: EIB.....	1
2	PAFZZ	5365-12-180-1654	D9913	027074803	SPACER,SLEEVE UOC: EIB.....	2
3	PAFZZ	5315-01-088-7555	97403	13218E4211	PIN,SPRING SUPPORT UOC: EIB.....	1
4	PAFZZ	5315-12-180-4461	D9913	027073604	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
5	PAFZZ	5315-12-131-7424	D8266	000094004078	PIN,COTTER UOC: EIB.....	2
6	PAFZZ	5420-00-507-7055	97403	13218E4365	FOLDLOCK,ROADWAY TO UOC: EIB.....	1
7	PAFZZ	5315-01-053-9342	97403	13218E4224	PIN,SPRING SUPPORT UOC: EIB.....	1
8	PAFZZ	5315-12-320-4071	D9913	940582	PIN,SPRING UOC: EIB.....	2
9	PAFZZ	5310-12-124-0745	D8286	DIN1440-20-ST	WASHER,FLAT UOC: EIB.....	2

END OF FIGURE

FIELD
INTERIOR BAY HANDRAIL.



24P/RB83q

Figure 38. Interior Bay Handrail.

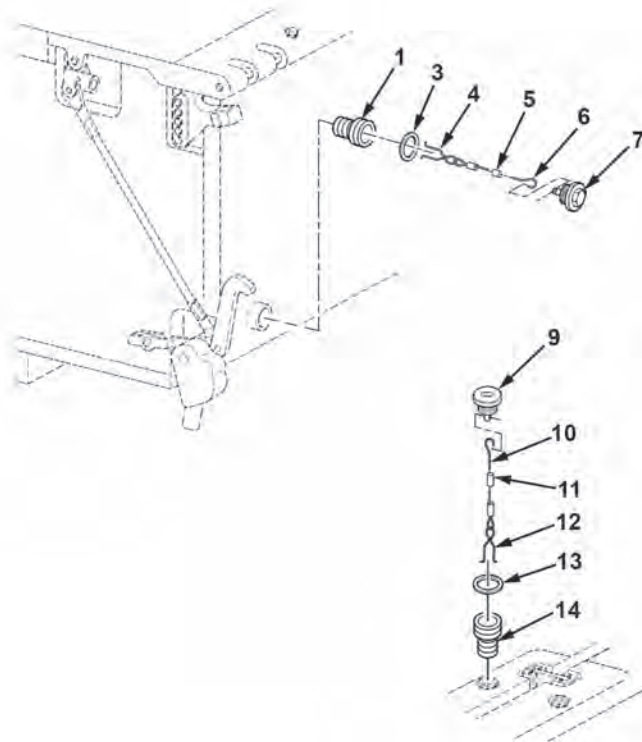
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3205 INTERIOR BAY HANDRAIL						
FIG. 38. INTERIOR BAY HANDRAIL.						
1	PAFFF	4010-12-361-9928	D9913	024502601	WIRE ROPE ASSEMBLY, UOC: EIB.....	1
2	MFFZZ		D9913	909661080-AR	. CHAIN,WELDED MAKE FROM CHAIN,WELDED (D9913) 909661080, LENGTH AS REQUIRED UOC: EIB.....	2
3	PAFZZ	4010-01-373-5082	39428	3711T34	. LINK,DETACHABLE UOC: EIB.....	2
4	PAFZZ	5340-12-362-0723	D9913	909671024	. SNAP HOOK UOC: EIB.....	2
5	MFFZZ		D9913	024522601-266IN	. FIBER ROPE MAKE FROM FIBER ROPE ASSY (D9913) 024522601, 266 INCHES UOC: EIB.....	1
6	PAFZZ	5310-12-175-0141	D8286	DIN125-A8,4-140HV- A3C	-WASHER,FLAT UOC: EIB.....	6
7	PAFZZ	5310-01-328-7657	75755	14M7273	NUT,PLAIN,HEXAGON UOC: EIB.....	6
8	PAFZZ	2040-12-356-3619	D9913	024501103	STANCHION,DECK RAIL UOC: EIB.....	3
9	PAFZZ	5310-12-356-4163	D9728	23317100450	NUT,PLAIN,BLIND RIV UOC: EIB.....	6
10	PAFZZ	5340-12-362-0725	D8286	DIN3015-S-KP-1- R-18-AL	CLAMP,LOOP FRONT,OUTER UOC: EIB.....	3
10	PAFZZ	5340-12-362-0724	D8286	DIN3015-S-KP-1- R-13,5-AL	CLAMP,LOOP REAR,INNER UOC: EIB.....	1
11	PAFZZ	5305-12-142-5854	D8286	DIN912-M10X50-8.8- A3P	SCREW,CAP,SOCKET HE UOC: EIB.....	3
12	PAFZZ	5305-12-142-5852	D9913	933383	SCREW,CAP,SOCKET HE UOC: EIB.....	5
13	PAFZZ	5305-12-356-2240	D8286	DIN1445-10H11X61 X75-ST-A3P	SCREW,SHOULDER UOC: EIB.....	1
14	PAFZZ	5360-12-356-2241	D9913	909571259	SPRING,HELICAL,EXTE UOC: EIB.....	3
15	PAFZZ	5310-12-305-3868	D8286	DIN125- A10,5-140HV-A2	WASHER,FLAT UOC: EIB.....	3
16	PAFZZ	5305-12-156-4949	D8286	DIN931-M8X55-8.8- A2P	SCREW,CAP,HEXAGON H UOC: EIB.....	3

END OF FIGURE

**FIELD
INTERIOR BAY BILGE/DRAIN PLUGS AND INSERTS.**

2
3 THRU 7

8
9 THRU 13



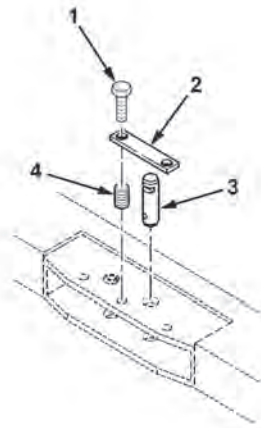
24PIRB838A

Figure 39. Interior Bay Bilge/Drain Plugs and Inserts.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3206 INTERIOR BAY BILGE/ DRAIN PLUGS AND INSERTS						
FIG. 39. INTERIOR BAY BILGE/DRAIN PLUGS AND INSERTS.						
1	PAFZZ	5340-12-356-6975	D9913	027016002	STANDOFF,THREADED,S UOC: EIB.....	8
2	PAFFF	5340-12-356-9399	D9913	027007314	PLUG,LEAKPROOF SEAL DRAIN UOC: EIB.....	8
3	PAFZZ	5330-12-356-3029	D9913	027518701	. GASKET UOC: EIB.....	1
4	PAFZZ	5340-12-356-6972	D9913	027013404	. HOLDER,SPRING UOC: EIB.....	1
5	PAFZZ	4030-12-356-3614	C3888	P500.00.30	. TERMINAL,WIRE ROPE, UOC: EIB.....	2
6	MFFZZ		D9913	909667518-29IN	. ROPE,WIRE MAKE FROM ROPE,WIRE (D9913) 909667518, 29 INCHES UOC: EIB.....	1
7	PAFZZ	5365-12-356-6358	D9913	027017302	. PLUG,MACHINE THREAD DRAIN UOC: EIB.....	1
8	PAFFF	5340-12-356-9397	D9913	027007313	PLUG,LEAKPROOF SEAL BILGE ASSEMBLY UOC: EIB.....	4
9	PAFZZ	5340-12-356-9396	D9913	027017301	. PLUG,LEAKPROOF SEAL BILGE UOC: EIB.....	1
10	MFFZZ		D9913	909667518-29IN	. ROPE,WIRE MAKE FROM ROPE,WIRE (D9913) 909667518, 29 INCHES UOC: EIB.....	1
11	PAFZZ	4030-12-356-3614	C3888	P500.00.30	. TERMINAL,WIRE ROPE, UOC: EIB.....	2
12	PAFZZ	5340-12-356-9398	D9913	027013001	. HOLDER,SPRING UOC: EIB.....	1
13	PAFZZ	5330-12-356-3027	D9913	027018703	. GASKET UOC: EIB.....	1
14	PAFZZ	5340-12-356-6974	D9913	027016001	STANDOFF,THREADED,S UOC: EIB.....	4

END OF FIGURE

FIELD
INTERIOR BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN.



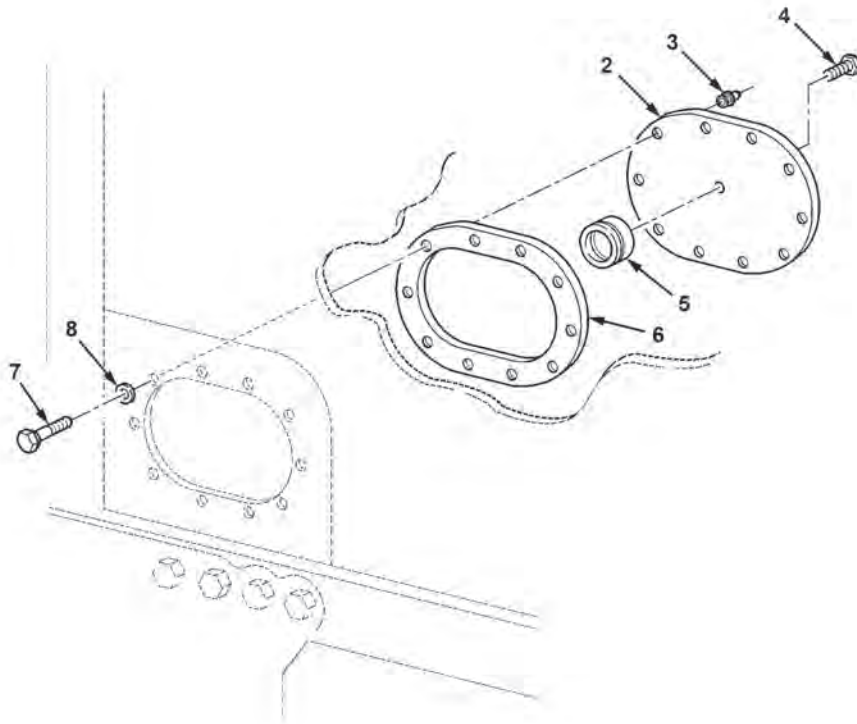
24PIRB338B

Figure 40. Interior Bay Load Receiving Pin and Rafting Bracket Pin.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3207 INTERIOR BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN						
FIG. 40. INTERIOR BAY LOAD RECEIVING PIN AND RAFTING BRACKET PIN.						
1	PAFZZ	5325-12-142-8210	D8442	LN9039-10200	INSERT,SCREW THREAD UOC: EIB.....	4
2	PAFZZ	5305-12-156-4873	D8286	DIN933-M10X30-8.8- A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	4
3	PAFZZ	5365-12-356-2201	D9913	027510395	SPACER,PLATE UOC: EIB.....	4
4	PAFZZ	5315-12-356-2777	D9913	027515014	PIN,STRAIGHT,HEADLE UOC: EIB.....	2
END OF FIGURE						

**FIELD
ACCESS COVER**

1
[2 THRU 6]



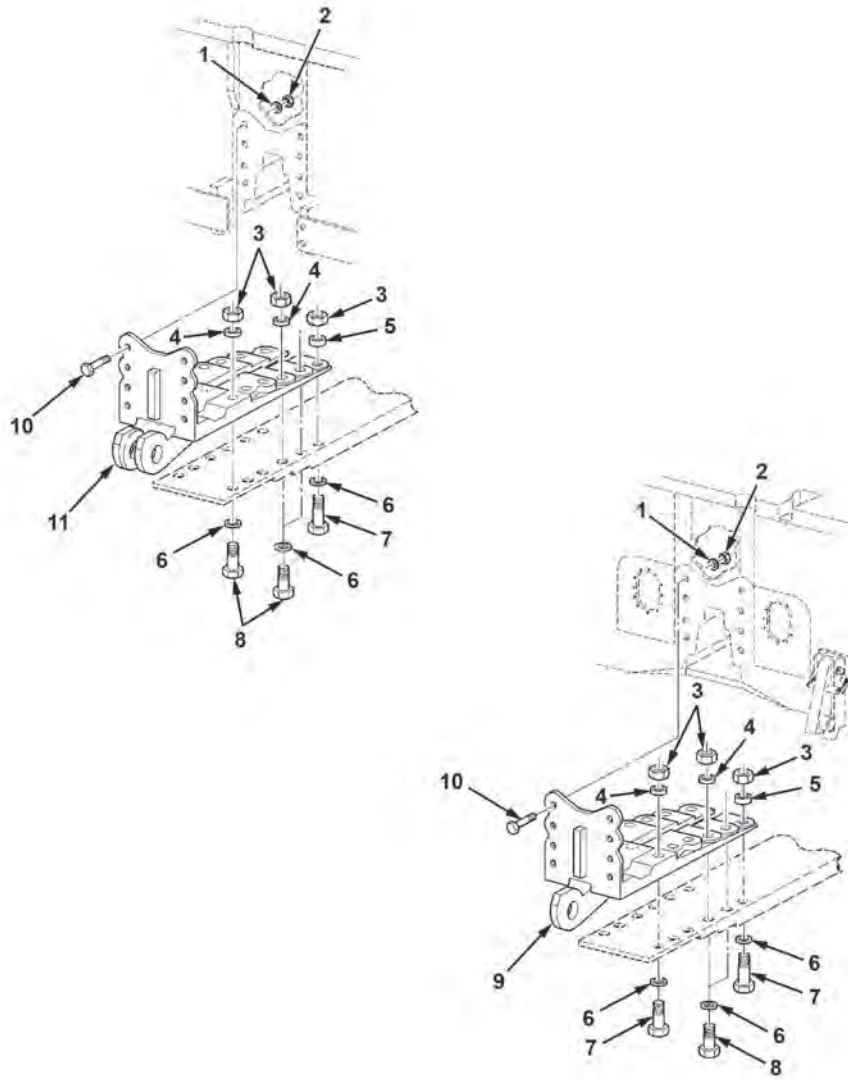
24PIRB841

Figure 41. 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. 41. ACCESS COVER.						
1	PAFFF	5340-12-356-5790	D9913	027001001	COVER,ACCESS UOC: EIB.....	1
2	PAFZZ	5340-12-359-3964	D9913	027010357	. COVER,ACCESS UOC: EIB.....	1
3	PAFZZ	5310-12-356-4164	D9728	23310080065	. NUT,PLAIN,BLIND RIV UOC: EIB.....	10
4	PAFZZ	5305-12-156-4962	D8286	DIN933-M8X18-8.8- A2P	. SCREW,CAP,HEXAGON H UOC: EIB.....	1
5	PAFZZ	5340-12-359-2283	D9913	027017409	. STANDOFF,THREADED,S UOC: EIB.....	1
6	PAFZZ	5330-12-356-3031	D9913	027019303	. GASKET UOC: EIB.....	1
7	PAFZZ	5305-12-141-9870	D8286	DIN933-M8X35-8.8- A2P	SCREW,CAP,HEXAGON H UOC: EIB.....	10
8	PAFZZ	5310-12-154-1380	D8286	DIN125-B8,4-140HV- A4	WASHER,FLAT UOC: EIB.....	10

END OF FIGURE

**FIELD
LOWER MAIN COUPLING.**



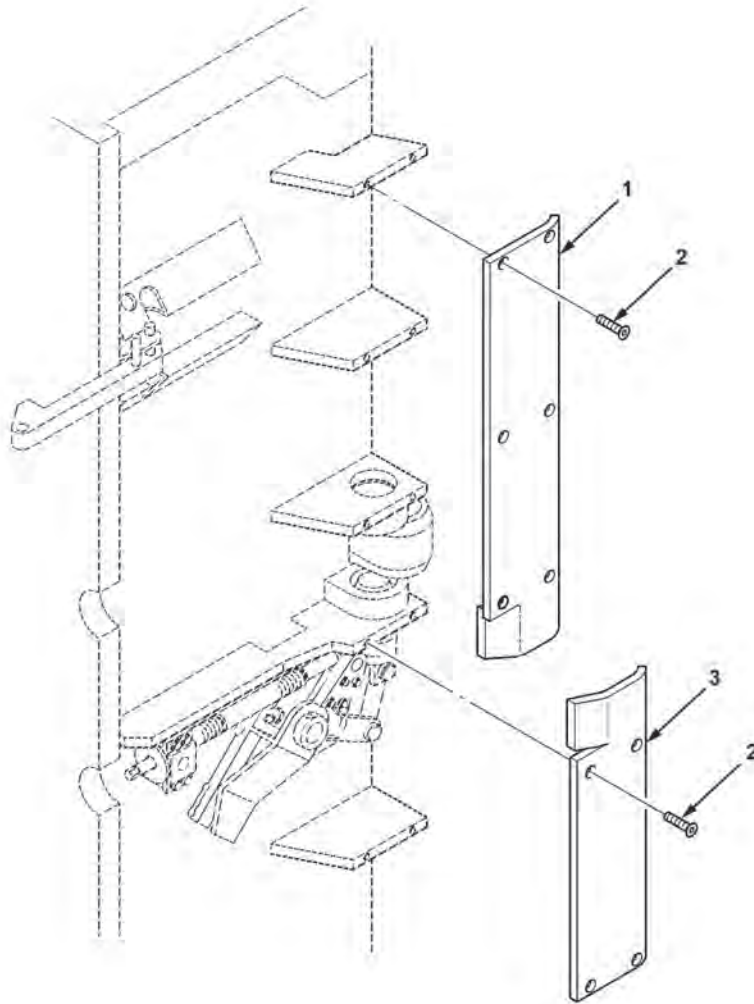
24PIRB642

Figure 42. Lower Main Coupling.

(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 COUPLING						
FIG. 42. LOWER MAIN COUPLING.						
1	PAFZZ	5310-12-356-2884	D9913	027018104	WASHER,FLAT UOC: EIB.....	16
2	PAFZZ	5310-12-196-2389	D8286	DIN934-M24-8-A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	16
3	PAFZZ	5310-12-153-5036	D8286	DIN934-M30-8-A2P	NUT,PLAIN,HEXAGON UOC: EIB.....	24
4	PAFZZ	5310-12-356-2885	D9913	027018102	WASHER,FLAT UOC: EIB.....	20
5	PAFZZ	5310-12-356-2886	D9913	027018105	WASHER,FLAT UOC: EIB.....	4
6	PAFZZ	5310-12-356-2887	D9913	027018103	WASHER,FLAT UOC: EIB.....	24
7	PAFZZ	5305-12-355-9726	D8286	DIN609- M30X120-10.9-A3P	SCREW,CLOSE TOLERAN UOC: EIB.....	16
8	PAFZZ	5305-12-355-9727	D8286	DIN609- M30X110-10.9-A3P	SCREW,CLOSE TOLERAN UOC: EIB.....	8
9	PAFZZ	5340-12-356-9405	D9913	027006706	HINGE,BUTT COUPLING,SINGLE EYE UOC: EIB.....	1
10	PAFZZ	5305-12-355-9728	D8286	DIN609- M24X75-10.9-A3P	SCREW,CLOSE TOLERAN UOC: EIB.....	16
11	PAFZZ	5340-12-356-9404	D9913	027001301	HINGE,BUTT COUPLING,DOUBLE EYE UOC: EIB.....	1

END OF FIGURE

**FIELD
BUMPERS.**

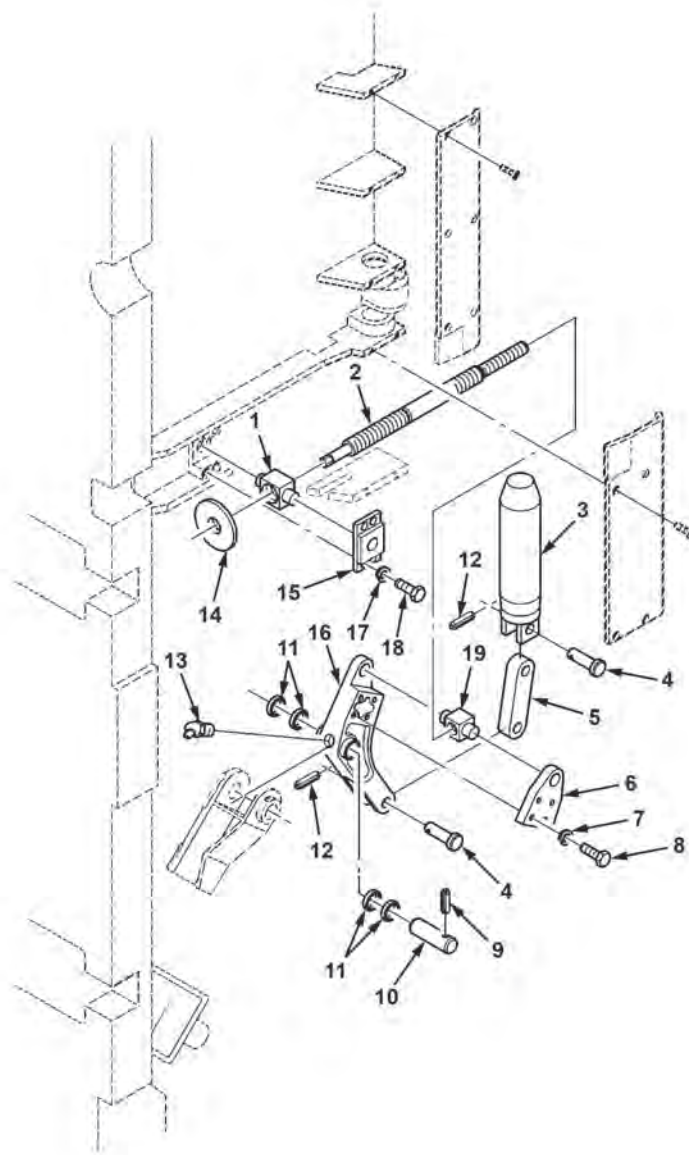


24PIRB643

Figure 43. Bumpers.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3401 BUMPERS						
FIG. 43. BUMPERS.						
1	PAFZZ	5340-12-357-4717	D9913	027010387	BUMPER,METALLIC UOC: EIB.....	1
2	PAFZZ	5305-12-342-0255	D8286	DIN7991- M10X40-10.9-A3P	SCREW,CAP,SOCKET HE UOC: EIB.....	10
3	PAFZZ	5340-12-357-4718	D9913	027010386	BUMPER,METALLIC UOC: EIB.....	1
END OF FIGURE						

FIELD
INTERIOR BAY LOWER LOCK-DRIVE.



24PIRB844

Figure 44. Interior Bay Lower Lock-Drive.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3402 INTERIOR BAY LOWER LOCK-DRIVE						
FIG. 44. INTERIOR BAY LOWER LOCK-DRIVE.						
1	PAFZZ	5420-00-507-7087	97403	13218E4367	TRUNNION NUT,UPPER UOC: EIB.....	1
2	PAFZZ	5420-12-179-0325	D9913	027071801	SCREW,PIN,DRIVE UOC: EIB.....	1
3	PAFZZ	5420-00-466-7384	97403	13218E4370	PIN,CONNECTING UOC: EIB.....	1
4	PAFZZ	5315-12-180-3625	D9913	027073603	PIN,STRAIGHT,HEADED UOC: EIB.....	2
5	PAFZZ	3040-01-041-7214	97403	13218E4375	CONNECTING LINK,RIG UOC: EIB.....	1
6	PAFZZ	3040-01-044-3259	97403	13218E4386	LEVER,REMOTE CONTRO UOC: EIB.....	1
7	PAFZZ	5310-12-142-0650	N0146	101102	WASHER,LOCK UOC: EIB.....	4
8	PAFZZ	5305-12-142-8266	D8286	DIN931- M12X60-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	4
9	PAFZZ	5315-12-180-3623	D9913	940671	PIN,SPRING UOC: EIB.....	1
10	PAFZZ	5315-00-475-3431	97403	13218E4197	PIN,STRAIGHT,HEADLE UOC: EIB.....	1
11	PAFZZ	5365-01-123-6275	97403	13218E4383	SHIM UOC: EIB.....	8
12	PAFZZ	5315-01-616-9005	I9008	ISO8752-5X40-A3C	PIN,SPRING UOC: EIB.....	2
13	PAFZZ	4730-12-125-0310	D8286	DIN71412AM6	FITTING,LUBRICATION UOC: EIB.....	1
14	PAFZZ	5310-01-012-7413	97403	13219E4133	WASHER,FLAT UOC: EIB.....	1
15	PAFZZ	5420-12-179-8843	D9913	027072901	RETAINER,TRUNNION UOC: EIB.....	1
16	PAFZZ	5420-12-179-0321	D9913	027071901	LEVER UOC: EIB.....	1
17	PAFZZ	5310-12-142-0649	D8286	DIN127-B10-FST- A3P	WASHER,LOCK UOC: EIB.....	4
18	PAFZZ	5305-12-141-9891	D8286	DIN933- M10X25-10.9-A3P	SCREW,CAP,HEXAGON H UOC: EIB.....	4
19	PAFZZ	5420-00-466-7396	97403	13218E4366	TRUNNION NUT,LOWER UOC: EIB.....	1

END OF FIGURE

**FIELD
DATA PLATES.**

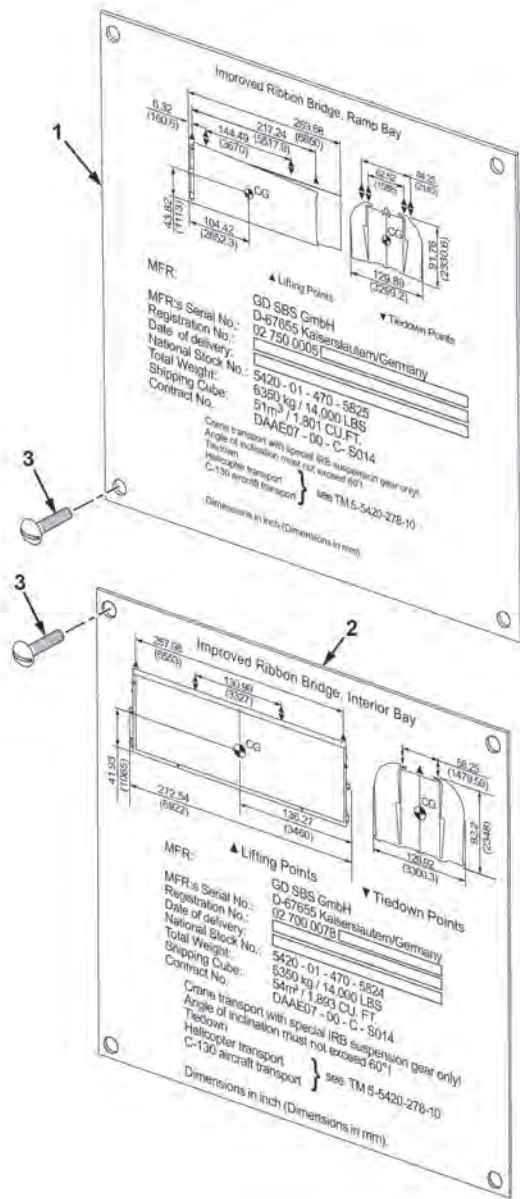
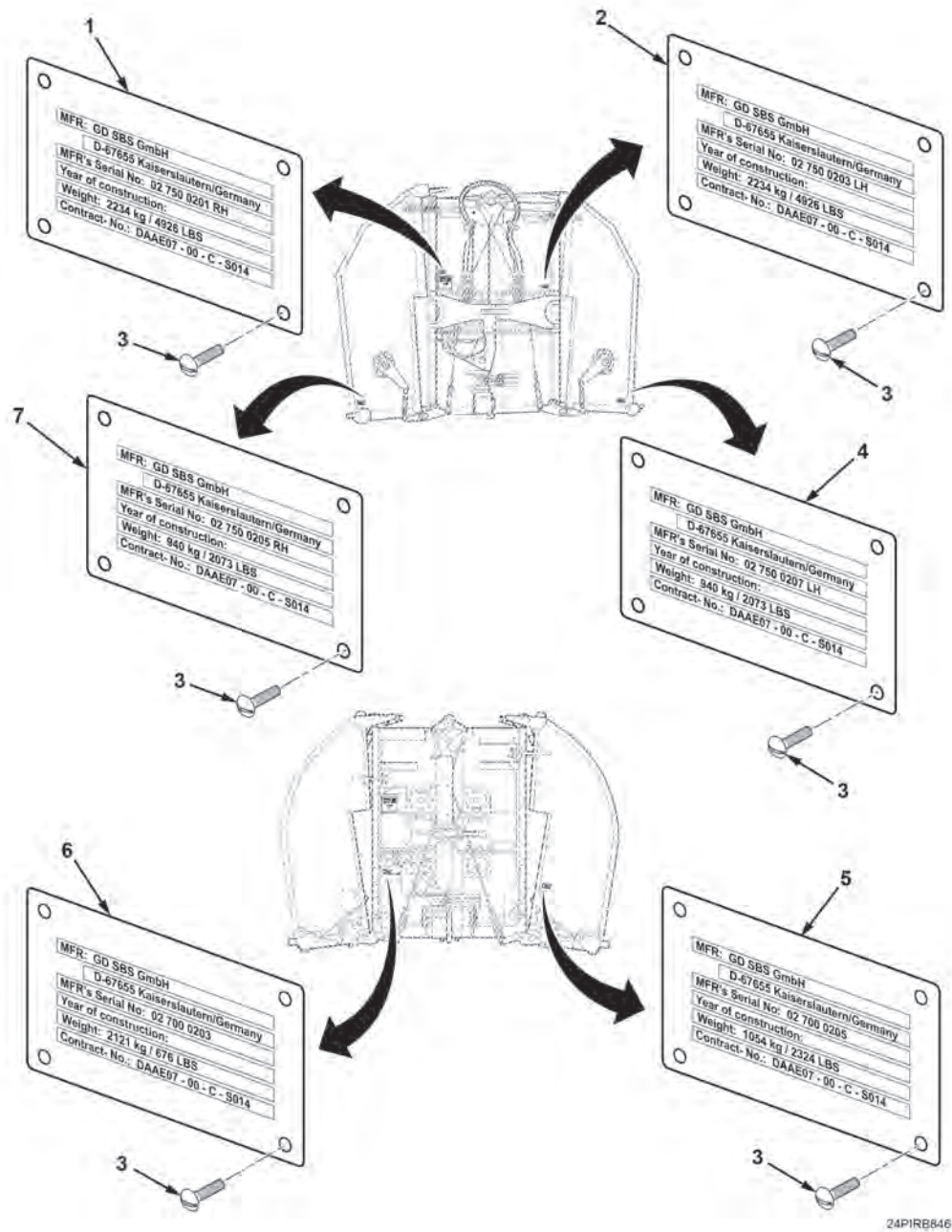


Figure 45. Data Plates.

24PIRB845

(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. 45. DATA PLATES.						
1	PAFZZ	9905-12-356-1919	D9913	029271684	PLATE,INSTRUCTION UOC: ERB.....	1
2	PAFZZ	9905-12-356-1918	D9913	029271689	PLATE,INSTRUCTION UOC: EIB.....	1
3	PAFZZ	5305-12-142-0049	D8286	DIN84-M3X8-5.8- A2P	SCREW,MACHINE UOC: EIB,ERB.....	8
END OF FIGURE						

FIELD
DATA PLATES (CONTINUED).



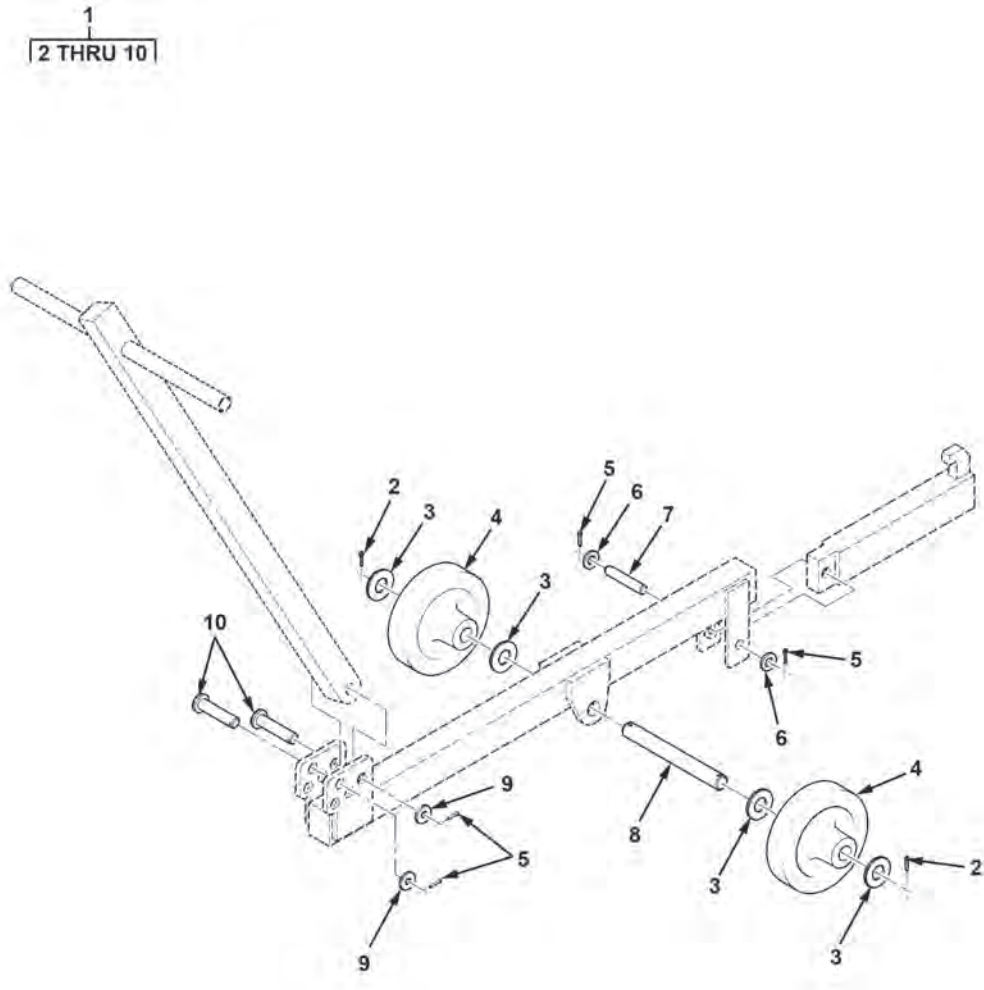
24PIRB646

Figure 46. Data Plates (Continued).

(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. 46. DATA PLATES (CONTINUED).						
1	PAFZZ	9905-12-357-2520	D9913	029271685	PLATE,IDENTIFICATIO UOC: ERB.....	1
2	PAFZZ	9905-12-357-2521	D9913	029271686	PLATE,IDENTIFICATIO UOC: EIB.....	1
3	PAFZZ	5305-12-142-0049	D8286	DIN84-M3X8-5.8- A2P	SCREW,MACHINE UOC: EIB,ERB.....	24
4	PAFZZ	9905-12-357-2522	D9913	029271688	PLATE,IDENTIFICATIO UOC: EIB,ERB.....	1
5	PAFZZ	9905-12-357-2518	D9913	029271691	PLATE,IDENTIFICATIO UOC: EIB,ERB.....	2
6	PAFZZ	9905-12-357-2523	D9913	029271690	PLATE,IDENTIFICATIO UOC: EIB,ERB.....	2
7	PAFZZ	9905-12-357-2519	D9913	029271687	PLATE,IDENTIFICATIO UOC: EIB,ERB.....	1

END OF FIGURE

**FIELD
COUPLING DEVICE.**



24PIRB648

Figure 47. Coupling Device.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 3501 COUPLING DEVICE						
FIG. 47. COUPLING DEVICE.						
1	PAFFF	5420-12-356-3861	D9913	029107607	DRAWBAR,BRIDGE BAY UOC: ERB.....	1
2	PAFZZ	5315-12-346-8417	I9008	ISO1234-5X50-ST- A3P	. PIN,COTTER UOC: ERB.....	2
3	PAFZZ	5310-12-140-9515	D8286	DIN125-B21-140HV- A2	. WASHER,FLAT UOC: ERB.....	4
4	PAFZZ	5340-12-362-0726	C2235	PO150/20G-WE	. WHEEL,SOLID,NONMETA UOC: ERB.....	2
5	PAFZZ	5315-12-156-4637	409BB	DIN94-4X28-ST	. PIN,COTTER UOC: ERB.....	4
6	PAFZZ	5310-12-196-2837	D8286	DIN1440-14-ST-A3P	. WASHER,FLAT UOC: ERB.....	2
7	PAFZZ	5315-12-361-9855	D9913	029155004	. PIN,STRAIGHT,HEADLE UOC: ERB.....	1
8	PAFZZ	5315-12-361-9927	D9913	029154601	. PIN,STRAIGHT,HEADLE UOC: ERB.....	1
9	PAFZZ	5310-12-193-8599	D8286	DIN125-B17-140HV- A2	. WASHER,FLAT UOC: ERB.....	2
10	PAFZZ	5315-12-190-2775	C3689	DIN1444- B16H11X75-ST-A2C	. PIN,STRAIGHT,HEADED UOC: ERB.....	2

END OF FIGURE

**FIELD
REPAIR PARTS KITS.**

ILLUSTRATION NOT REQUIRED

Figure KITS. Repair Parts Kits.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
--------------------	-----------------	------------	--------------	--------------------	--	------------

GROUP 9401 REPAIR PARTS KITS

FIG. KITS. REPAIR PARTS KITS.

1	PAFZZ	5330-12-356-2205	D9913	024009402	GASKET AND SHIM SET UOC: ERB.....	1
					GASKET (001) 25-38	
					GASKET (001) 25-65	
					O-RING (002) 25-23	
					O-RING (001) 25-33	
					O-RING (001) 25-35	
					O-RING (001) 25-44	
					O-RING (001) 25-45	
					O-RING (001) 25-51	
					O-RING (001) 25-52	
					O-RING (Figure 23, (001) 23-4 Item 4)	
					PACKING ASSEMBLY(001) 25-47	
					RING,WIPER (001) 25-49	

END OF FIGURE

**FIELD
BULK MATERIAL.**

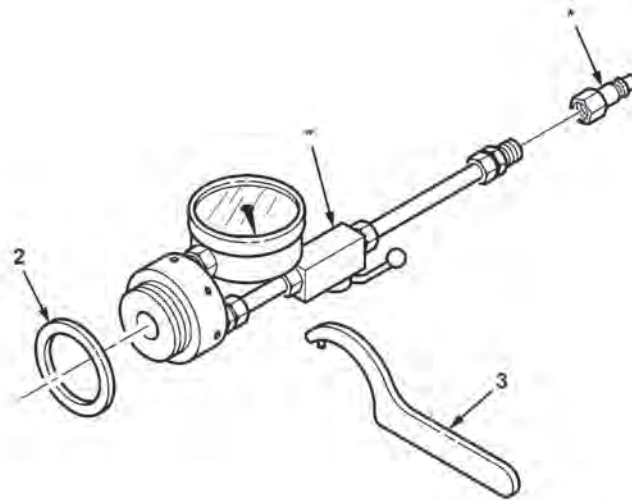
ILLUSTRATION NOT REQUIRED

Figure BULK. Bulk Material.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 9501 BULK MATERIAL						
FIG. BULK. BULK MATERIAL.						
1	PAFZZ	4010-12-361-9929	D9913	909661080	CHAIN,WELDED UOC: EIB,ERB.....	1
2	PAFZZ	4020-12-392-4932	D9913	024522601	FIBROUS ROPE UOC: EIB.....	1
3	PAFZZ	4020-12-356-1915	D9913	024522603	FIBER ROPE ASSEMBLY UOC: ERB.....	1
4	PAFZZ	4010-12-355-9346	D9913	909667518	ROPE,WIRE UOC: EIB,ERB.....	1
END OF FIGURE						

**FIELD
SPECIAL TOOLS.**

1
[2 AND 3]



* Part of Item 1

24PIRB647

Figure 48. 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 3501 SPECIAL TOOLS						
FIG. 48. SPECIAL TOOLS.						
1	PEFFF	6685-12-357-2615	D9913	029107606	TESTER,PRESSURIZED UOC: EIB,ERB.....	1
2	PEFZZ	5330-12-356-3027	D9913	027018703	. GASKET UOC: EIB,ERB.....	1
3	PEFZZ	5120-12-156-9348	D8286	DIN1810-B80-90	. WRENCH,SPANNER UOC: EIB,ERB.....	1
4	PEFZZ	5120-12-360-0176	C0856	595146	WRENCH,OPEN END UOC: EIB,ERB.....	1

END OF FIGURE

**FIELD
NATIONAL STOCK NUMBER (NSN) INDEX**

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
4730-00-011-8537	24	3		37	9
5340-00-071-3830	28	1	5330-12-124-0973	25	28
5420-00-466-7384	22	4		25	68
	44	3	4730-12-125-0310	6	22
5420-00-466-7396	22	7		22	18
	44	19		44	13
5315-00-475-3431	16	6	2590-12-125-0335	14	7
	44	10	5330-12-125-2535	25	65
5315-00-480-1770	4	12		25	74
5360-00-485-4762	17	5	5365-12-125-5213	25	39
5305-00-499-1316	4	11	5315-12-125-7770	18	9
	34	7	5330-12-131-4119	25	38
5315-00-503-0509	4	2	5315-12-131-7424	16	4
	34	2		37	5
5420-00-507-7055	37	6	5315-12-132-0855	25	5
5420-00-507-7087	22	19	5310-12-134-7108	14	15
	44	1	5310-12-140-9515	47	3
5310-01-012-7413	22	15	5305-12-141-9870	41	7
	44	14	5305-12-141-9891	7	8
3040-01-041-7214	22	6		16	15
	44	5		44	18
3040-01-044-3259	22	8	5305-12-141-9893	16	12
	44	6	5305-12-141-9963	2	4
5420-01-048-3389	16	13		28	15
5315-01-053-9342	16	10	5305-12-142-0049	45	3
	37	7		46	3
4730-01-063-9285	27	5	5310-12-142-0481	19	13
	28	2	5310-12-142-0640	2	5
5315-01-088-7555	16	7		13	4
	37	3		28	14
5365-01-123-6275	22	1	5310-12-142-0642	36	21
	44	11	5310-12-142-0644	19	3
5420-01-129-6399	4	3	5310-12-142-0649	16	2
	34	3		19	15
5310-01-129-6737	8	3		22	13
5306-01-211-6047	8	16		44	17
5315-01-272-4911	36	10	5310-12-142-0650	22	9
5310-01-328-7657	9	8		44	7
	38	7	5310-12-142-0658	29	2
4010-01-373-5082	9	5		30	2
	38	3	5305-12-142-0989	19	9
5310-01-418-2337	4	8	5305-12-142-5728	8	10
	34	6	5305-12-142-5852	9	1
5305-01-461-2723	13	3		38	12
5315-01-616-9005	22	3	5305-12-142-5854	9	11
	44	12		38	11
5310-12-120-8203	14	14	5305-12-142-5914	19	6
5310-12-124-0745	16	5	5305-12-142-5931	6	8

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5305-12-142-5941	26	3	5305-12-156-4876	6	18
5325-12-142-8193	27	8	5310-12-156-4899	6	2
5325-12-142-8210	11	4		14	10
	40	1		24	8
5305-12-142-8229	19	16	5305-12-156-4902	35	1
5325-12-142-8233	12	4	5310-12-156-4905	8	11
5340-12-142-8249	6	6	5305-12-156-4949	9	16
	35	8		38	16
5305-12-142-8257	12	1	5305-12-156-4962	41	4
5305-12-142-8266	22	10	5310-12-156-4982	14	9
	44	8		24	11
5305-12-142-8325	36	3	5310-12-156-4984	36	5
5305-12-142-8329	35	17	5310-12-156-5471	15	8
5305-12-142-8497	18	5		16	16
5310-12-144-3934	12	2		18	7
5325-12-144-4037	7	10		35	21
5310-12-144-6134	35	20	5120-12-156-9348	48	3
5310-12-144-6214	29	1	5305-12-158-0033	7	14
	30	1	4730-12-162-8809	27	4
5310-12-145-2077	28	4	5305-12-164-0266	6	21
5310-12-145-2243	27	7	5310-12-164-6571	25	4
5310-12-145-2655	4	14	5305-12-165-1261	35	15
	5	2	5315-12-166-3517	25	11
	34	17		25	61
5310-12-145-2843	4	5	5310-12-166-7736	36	16
	34	12	5305-12-167-5376	6	1
5305-12-146-2633	19	4		24	7
5310-12-146-8397	15	13	5305-12-167-5377	22	14
	19	12	5305-12-167-5389	7	5
5305-12-147-0295	7	13	5310-12-169-7096	14	4
5325-12-147-9354	2	7	5305-12-173-0258	14	6
5315-12-147-9381	25	16	5310-12-174-3877	3	2
5331-12-148-8843	25	33	5310-12-175-0141	9	15
	25	45		38	6
5340-12-150-8958	36	17	5315-12-178-5636	8	12
5310-12-152-2147	15	2		15	14
5310-12-153-5036	42	3	5420-12-179-0315	4	1
5305-12-153-5302	17	11		34	1
5310-12-154-1380	41	8	5420-12-179-0316	4	7
5305-12-155-0838	17	1		34	5
5325-12-156-2814	7	18	5420-12-179-0318	4	15
5330-12-156-4527	29	13		5	3
	30	11		34	16
5315-12-156-4637	47	5	5420-12-179-0320	5	1
5315-12-156-4700	7	4	5420-12-179-0321	22	2
5355-12-156-4791	25	20		44	16
5305-12-156-4870	29	6	5420-12-179-0325	22	11
	30	6		44	2
5305-12-156-4873	11	1	5420-12-179-0330	16	14
	13	2	5420-12-179-0332	16	1
	27	6	5420-12-179-0337	19	17
	40	2	4730-12-179-1386	29	10
5305-12-156-4875	14	11		30	8

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
4010-12-179-1461	8	9	5310-12-196-2389	42	2
5340-12-179-7652	3	1	5310-12-196-2837	47	6
5340-12-179-7654	3	5	5315-12-196-2838	15	6
5305-12-179-8251	4	6	5315-12-199-2959	20	1
	5	4		21	4
	34	15	5310-12-300-8139	18	15
5310-12-179-8252	4	9	4820-12-302-4275	29	3
	34	8		30	3
5310-12-179-8253	3	4	5310-12-305-3868	9	9
5360-12-179-8256	16	9		38	15
	37	1	4730-12-305-4824	25	31
5360-12-179-8257	15	10	5305-12-305-7892	7	20
5360-12-179-8258	15	9	5342-12-312-8842	35	13
5420-12-179-8843	22	12	5315-12-313-2591	36	19
	44	15	5315-12-314-3888	22	16
5315-12-179-8844	8	7	5306-12-314-4873	33	5
5305-12-179-8847	19	8	5315-12-314-9043	4	13
4730-12-180-1202	28	3		34	14
5315-12-180-1372	33	4	5315-12-315-0187	20	3
5365-12-180-1654	16	8		21	3
	37	2		26	5
5365-12-180-1655	12	3	5340-12-317-2253	33	1
5340-12-180-3179	29	17	5360-12-317-7984	33	6
	30	12	5310-12-318-7526	26	4
5315-12-180-3614	4	4	5315-12-320-4071	16	11
	34	4		37	8
5315-12-180-3615	34	13	4820-12-320-5594	25	54
5315-12-180-3616	2	2	5310-12-327-0721	6	14
	32	2		33	2
	34	10	4820-12-337-0306	25	50
5315-12-180-3617	2	3	5305-12-342-0255	43	2
	32	3	5315-12-346-8417	47	2
	34	11	5310-12-355-8440	25	3
5315-12-180-3618	3	6	5310-12-355-8644	25	13
5315-12-180-3623	22	17	4010-12-355-9346	BULK	4
	44	9	5305-12-355-9726	42	7
5315-12-180-3625	22	5	5305-12-355-9727	42	8
	44	4	5305-12-355-9728	42	10
5315-12-180-3626	17	10	5305-12-355-9907	25	57
5315-12-180-4461	16	6	4330-12-356-0009	23	5
	37	4	5310-12-356-0257	17	4
5315-12-180-4463	19	14	5310-12-356-0258	20	5
5315-12-180-4468	20	4		21	1
	21	2		26	6
	26	7	5315-12-356-0490	25	15
5315-12-180-4471	15	5	5310-12-356-0681	20	2
5305-12-186-6949	7	24		21	5
4730-12-186-9990	29	11	5315-12-356-1911	36	23
	30	9	5315-12-356-1912	36	11
5310-12-189-7275	36	12	5315-12-356-1913	36	9
5315-12-190-2775	47	10	4010-12-356-1914	2	1
5315-12-192-5816	17	3	4020-12-356-1915	BULK	3
5310-12-193-8599	47	9	5315-12-356-1916	15	3

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5315-12-356-1917	15	11	5315-12-356-2778	20	7
9905-12-356-1918	45	2		21	6
9905-12-356-1919	45	1	5315-12-356-2779	35	5
5310-12-356-1920	18	4	4010-12-356-2780	32	1
5310-12-356-1921	18	4	5310-12-356-2781	25	60
5310-12-356-1922	18	4	5310-12-356-2782	7	12
5315-12-356-2079	36	13	5310-12-356-2783	7	6
4720-12-356-2080	27	3	5310-12-356-2784	7	25
4720-12-356-2081	28	10	5310-12-356-2785	7	15
	28	16		13	1
	29	14	5310-12-356-2786	13	8
4720-12-356-2082	24	5	5315-12-356-2787	13	7
	28	5	5310-12-356-2788	6	16
	28	8	5315-12-356-2882	25	2
	29	8	5310-12-356-2883	35	6
4720-12-356-2085	24	9	5310-12-356-2884	42	1
	28	12	5310-12-356-2885	42	4
	29	4	5310-12-356-2886	42	5
	30	4	5310-12-356-2887	42	6
4720-12-356-2086	24	1	5310-12-356-2888	25	29
5365-12-356-2196	36	20		25	69
5365-12-356-2197	36	2	5310-12-356-2889	25	30
5365-12-356-2198	36	4		25	67
5365-12-356-2199	2	8	5331-12-356-2890	6	19
5365-12-356-2200	8	8	3040-12-356-2891	26	8
5365-12-356-2201	11	2	3040-12-356-2893	4	10
	40	3		34	9
5365-12-356-2203	15	12	5330-12-356-3027	10	13
5365-12-356-2204	25	41		39	13
5330-12-356-2205	23	4		48	2
	KITS	1	9905-12-356-3028	19	7
5305-12-356-2240	9	10	5330-12-356-3029	10	6
	38	13		39	3
5360-12-356-2241	9	7	9905-12-356-3030	25	14
	38	14	5330-12-356-3031	41	6
5360-12-356-2242	25	18	5365-12-356-3032	6	5
5315-12-356-2355	7	21	5365-12-356-3033	7	30
5365-12-356-2551	2	6	5365-12-356-3034	7	30
5310-12-356-2552	6	16	5365-12-356-3035	7	3
5310-12-356-2553	6	16	5365-12-356-3036	7	9
3990-12-356-2554	8	1	5365-12-356-3037	7	3
3990-12-356-2555	8	4	5365-12-356-3038	7	3
4720-12-356-2557	27	1	5365-12-356-3039	18	4
4730-12-356-2559	29	16	5315-12-356-3213	8	13
4730-12-356-2560	29	12	5315-12-356-3214	7	28
	30	10	5330-12-356-3215	18	3
5315-12-356-2730	7	17	5365-12-356-3360	25	58
5315-12-356-2731	7	26	5365-12-356-3362	35	7
5315-12-356-2732	18	8	5365-12-356-3363	35	7
5315-12-356-2733	18	11	5365-12-356-3364	35	7
5315-12-356-2734	18	12	5310-12-356-3365	35	11
5315-12-356-2777	11	3	5310-12-356-3366	35	12
	40	4	5315-12-356-3367	35	22

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5365-12-356-3368	13	5	3040-12-356-3859	35	9
4820-12-356-3464	25	10	5305-12-356-3860	36	7
3040-12-356-3465	25	43	5420-12-356-3861	47	1
3040-12-356-3466	35	9	5305-12-356-3957	25	56
4820-12-356-3467	25	25	5315-12-356-3958	3	7
	25	72	5310-12-356-4163	9	13
3040-12-356-3468	6	4		38	9
3040-12-356-3469	6	17	5310-12-356-4164	41	3
3040-12-356-3470	8	17	5325-12-356-4305	35	18
3040-12-356-3471	7	1	5310-12-356-4433	6	12
3040-12-356-3472	7	16		33	3
3040-12-356-3473	7	16	5310-12-356-4434	6	9
5315-12-356-3474	7	2	5310-12-356-4435	36	18
3040-12-356-3475	7	1	5305-12-356-4630	25	27
3040-12-356-3477	18	6		25	70
3040-12-356-3478	18	6	5305-12-356-4631	25	8
3040-12-356-3479	18	6	5305-12-356-4632	23	2
3040-12-356-3480	18	6	5305-12-356-4633	25	42
5330-12-356-3481	25	49	5305-12-356-4634	25	21
5315-12-356-3483	6	10	5305-12-356-4635	25	12
4820-12-356-3484	25	66	5340-12-356-4945	19	1
4030-12-356-3614	10	4	5340-12-356-4946	19	10
	10	11	5340-12-356-4947	26	2
	39	5	5340-12-356-4948	35	16
	39	11	5340-12-356-5115	25	17
3040-12-356-3615	36	15	5340-12-356-5116	25	7
3040-12-356-3616	36	22	5340-12-356-5117	25	1
3040-12-356-3617	35	19	5365-12-356-5118	7	9
3040-12-356-3618	35	4	5305-12-356-5296	36	27
2040-12-356-3619	9	14	5305-12-356-5297	7	23
	38	8		35	10
5310-12-356-3620	25	6	5325-12-356-5395	13	6
3040-12-356-3621	36	22	5325-12-356-5396	17	9
5310-12-356-3623	23	1	5306-12-356-5567	36	24
	25	9	5340-12-356-5568	14	2
	25	22	5340-12-356-5790	41	1
5330-12-356-3624	25	47	5305-12-356-6171	7	31
2040-12-356-3625	9	14	5305-12-356-6174	18	1
5331-12-356-3626	24	2	5365-12-356-6358	10	2
	24	6		39	7
	24	10	5340-12-356-6359	6	13
	28	6	5340-12-356-6955	6	20
	28	9	5340-12-356-6956	3	3
	28	11	5340-12-356-6957	14	3
	28	13	5340-12-356-6958	14	2
	28	17	5340-12-356-6959	7	27
	29	5	5340-12-356-6960	7	11
	29	7	5340-12-356-6961	7	27
	29	9	5340-12-356-6962	7	29
	29	15	5340-12-356-6963	7	7
	30	5	5340-12-356-6964	27	2
	30	7	5340-12-356-6965	28	7
5315-12-356-3858	26	9	5340-12-356-6966	28	7

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5340-12-356-6968	18	14	9905-12-357-2521	46	2
5340-12-356-6970	17	2	9905-12-357-2522	46	4
5340-12-356-6971	17	8	9905-12-357-2523	46	6
5340-12-356-6972	10	5	5310-12-357-2524	7	30
	39	4	5310-12-357-2525	7	22
5340-12-356-6974	10	14		35	3
	39	14	5365-12-357-2614	36	4
5340-12-356-6975	10	7	6685-12-357-2615	48	1
	39	1	3040-12-357-2922	18	2
5340-12-356-6976	17	6	5340-12-357-3703	36	6
5340-12-356-6977	17	7	5360-12-357-3819	36	28
5340-12-356-6978	15	1	5340-12-357-4717	43	1
5340-12-356-6979	15	4	5340-12-357-4718	43	3
5340-12-356-6980	23	3	5340-12-359-2283	41	5
5340-12-356-6981	25	40	5365-12-359-2284	7	3
5340-12-356-6982	25	19	5365-12-359-2285	18	13
5340-12-356-6983	25	59	5310-12-359-2950	35	14
5340-12-356-6984	6	7	5310-12-359-2951	36	26
5340-12-356-6985	6	11	5310-12-359-2952	36	8
5340-12-356-6986	6	15	5310-12-359-2953	36	25
5340-12-356-6987	7	11	5340-12-359-3964	41	2
5340-12-356-6988	15	7	5120-12-360-0176	48	4
5340-12-356-6989	25	63	9905-12-361-1885	25	62
5340-12-356-7032	19	5	4320-12-361-2344	25	37
4320-12-356-7358	24	4	5315-12-361-9855	47	7
5340-12-356-7857	21	7	5315-12-361-9927	47	8
5340-12-356-7858	20	6	4010-12-361-9928	38	1
5360-12-356-8152	19	2	4010-12-361-9929	BULK	1
5360-12-356-8384	25	26	4010-12-361-9930	9	2
	25	71	5420-12-361-9931	31	2
5360-12-356-8385	18	10	5420-12-361-9932	31	1
5340-12-356-9396	10	9	5420-12-361-9933	1	3
	39	9	5420-12-361-9934	1	2
5340-12-356-9397	10	8	5420-12-361-9935	1	1
	39	8	9390-12-362-0055	14	5
5340-12-356-9398	10	12	5340-12-362-0357	14	13
	39	12	5340-12-362-0358	14	8
5340-12-356-9399	10	1	5340-12-362-0359	14	12
	39	2	5340-12-362-0723	9	4
5340-12-356-9400	36	6		38	4
5340-12-356-9401	35	2	5340-12-362-0724	9	12
5340-12-356-9402	35	16		38	10
5340-12-356-9403	16	17	5340-12-362-0725	9	12
5340-12-356-9404	42	11		38	10
5340-12-356-9405	42	9	5340-12-362-0726	47	4
5340-12-357-0038	8	5	5420-12-362-0727	1	4
5340-12-357-0039	8	15	5310-12-372-0547	6	3
5340-12-357-0040	8	14	5315-12-392-0248	8	18
5315-12-357-2516	36	1	3040-12-392-0365	25	55
5330-12-357-2517	26	1	6680-12-392-1416	25	64
9905-12-357-2518	46	5	4820-12-392-1473	25	53
9905-12-357-2519	46	7	4820-12-392-1768	25	73
9905-12-357-2520	46	1	5365-12-392-2364	36	14

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5420-12-392-3761	8	6	4820-12-395-1608	25	34
5340-12-392-4400	25	36	5325-14-212-9249	19	11
5365-12-392-4554	25	46	5325-14-286-7580	7	19
4820-12-392-4705	25	24	5310-99-739-9500	16	3
4020-12-392-4932	BULK	2	5320-99-983-0535	8	2
2510-12-392-5083	25	32		14	1

END OF WORK PACKAGE

**FIELD
PART NUMBER (P/N) INDEX**

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
AS010-00	23	5	DIN1479-SPM20-		
B18241B120	4	8	X10CRNIT189	33	1
	34	6	DIN1481-3X22	36	10
BA 1150 00030	25	47	DIN1810-B80-90	48	3
DIN11023-5X32 VERZINKT	8	7	DIN3015-S-KP-1-R-13,5-AL	9	12
DIN125-A10,5-140HV-A2	9	9		38	10
	38	15	DIN3015-S-KP-1-R-18-AL	9	12
DIN125-A10,5-140HV-A3P	15	8		38	10
	16	16	DIN3016-1-D1-17X20-W1-2-		
	18	7	CR	29	17
	35	21		30	12
DIN125-A8,4-140HV-A3C	9	15	DIN319-C32PF	25	20
	38	6	DIN3901-L10B-M-ST-A3P	29	11
DIN125-B10,5-140HV-A3P	19	13		30	9
DIN125-B10,5-140HV-A4	36	12	DIN439-BM10-04-A2P	35	20
DIN125-B13-140HV-A3P	6	2	DIN439-BM16-05-A2P	36	16
	14	10	DIN439-BM20-04-A2P	6	14
	24	8		33	2
DIN125-B17-140HV-A2	47	9	DIN439-BM24-05-A2P	3	2
DIN125-B17-140HV-A3P	2	5	DIN439-BM24LH-05-A2P	3	4
	13	4	DIN440-R6,6-100HV	14	14
	28	14	DIN609-M24X75-10.9-A3P	42	10
DIN125-B21-140HV-A2	47	3	DIN609-M30X110-10.9-A3P	42	8
DIN125-B21-140HV-A3P	8	11	DIN609-M30X120-10.9-A3P	42	7
DIN125-B23-140HV-A3P	36	21	DIN6912-M16X35-8.8-A3P	7	31
DIN125-B37-140HV-A3P	4	5	DIN6925-M8-8-A2P	18	15
	34	12	DIN71412AM6	6	22
DIN125-B6,4-140HV-A3P	19	3		22	18
DIN125-B8,4-140HV-A4	41	8		44	13
DIN127-B10-FST-A3P	16	2	DIN7349-10,5-ST-A3P	27	7
	19	15	DIN7513-AM4X16-ST-A2A	19	8
	22	13	DIN7603-A12X18-AL	25	28
	44	17		25	68
DIN127-B8-FST-A3P	29	2	DIN7603-A18X24-CU	29	13
	30	2		30	11
DIN1440-14-ST-A3P	47	6	DIN7603-D14X18-CU	25	38
DIN1440-20-ST	16	5	DIN7604-A-M14X1,5-ST	25	39
	37	9	DIN7981-ST4,2X9,5-C-H-A3P	8	10
DIN1440-22-ST-A3P	15	2	DIN7984-M12X35-8.8-A3P	12	1
DIN1441-34-ST-A3P	20	2	DIN7991-M10X16-8.8-A3P	35	15
	21	5	DIN7991-M10X40-10.9-A3P	43	2
DIN1444-B16H11X75-ST-A2C	47	10	DIN7991-M5X16-8.8-A2P	14	6
DIN1445-10H11X61X75-ST-			DIN7991-M6X25-8.8-A2P	26	3
A3P	9	10	DIN80705-M16X1,5-14H-A2P	28	4
	38	13	DIN8140-AM16X40-A2	35	18
DIN1479-SP-M24-ST-A3P	3	3	DIN84-M3X8-5.8-A2P	45	3
DIN1479-SPM16-1.3965	36	17		46	3
			DIN912-M10X50-8.8-A3P	9	11

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
	38	11	DIN95363-B60X45-NR45ST-M10X20	35	13
DIN912-M16X70-8.8-A3P	17	1	DIN963-M8X12-8.8-A2P	7	24
DIN912-M20X60-8.8-A3P	7	13	DIN980-VM8-10-A2C	25	4
DIN912-M5X12-8.8-A2P	19	6	DIN985-M10-8-A2P	15	13
DIN912-M6X16-8.8-A2P	17	11		19	12
DIN912-M8X25-8.8-A2P	19	9	DIN985-M12-8-A2P	4	14
DIN931-M10X80-8.8-A3P	19	16		5	2
DIN931-M12X150-10.9-A3P	4	6		34	17
	5	4	EN24017-M8X30-8.8-A2P	29	6
	34	15		30	6
DIN931-M12X60-10.9-A3P	22	10	ISO1234-5X50-ST-A3P	47	2
	44	8	ISO4017-M10X16-8.8-A3P	7	14
DIN931-M12X90-8.8-A3P	35	1	ISO4017-M16X40-8.8-A2A	13	3
DIN931-M16X120-8.8-A3C	7	5	ISO4017-M6X16-8.8-A2P	19	4
DIN931-M16X65-10.9-A3P	36	3	ISO4035-M16LH-05-A2P	36	18
DIN931-M16X80-10.9-A3P	35	17	ISO8434-1-SWBT-L10-ST-A3P	29	10
DIN931-M8X55-8.8-A2P	9	16		30	8
	38	16	ISO8434-1SWRT-L10-ST-A3C	29	16
DIN931-M8X70-8.8-A2P	18	5	ISO8752-5X40-A3C	22	3
DIN933-M10X25-10.9-A3P	7	8		44	12
	16	15	LN9039-10150	27	8
	44	18	LN9039-10200	11	4
DIN933-M10X25-8.8-A3C	22	14		40	1
DIN933-M10X30-10.9-A3P	16	12	LN9039-13180	12	4
DIN933-M10X30-8.8-A3P	11	1	LN9039-13240	6	6
	13	2		35	8
	27	6	LN9039-18160	7	18
	40	2	LN9039-18320	7	10
DIN933-M12X25-8.8-A3P	14	11	N18231B08040N	8	16
DIN933-M12X30-8.8-A3P	6	18	OR25X2-72NBR/872	25	33
DIN933-M12X35-8.8-A3C	6	1		25	45
	24	7	ORAR00140-N7377	6	19
DIN933-M16X70-8.8-A3P	2	4	P500.00.30	10	4
	28	15		10	11
DIN933-M20X20-8.8-A3P	7	20	PO150/20G-WE	39	5
DIN933-M8X18-8.8-A2P	41	4	SAE J512 4 010111B	39	11
DIN933-M8X20-A2-70	6	21	U21,5X28,7X2,5-72NBR/99041	47	4
DIN933-M8X35-8.8-A2P	41	7		24	3
DIN934-M12-B-A2P	14	9	VG75073A77,5	25	65
	24	11	WEM300180-T46N	25	74
DIN934-M16-8-A2P	36	5	X130-16L	14	7
DIN934-M24-8-A2P	42	2	000094001617	25	49
DIN934-M30-8-A2P	42	3	000094004078	19	5
DIN934-M5-5-B2A	14	15	01300200025	17	3
DIN934-M6-A2-70	14	4	014881	16	4
DIN934-M8-8-A2P	29	1	024000304	37	5
	30	1	024000603	7	19
DIN94-2X20-CUZN	25	5		7	4
DIN94-3,2X32-ST-A3P	15	6		25	24
DIN94-4X28-ST	47	5		25	37
DIN94-8X63-ST-A3P	20	1		7	19
	21	4		7	4

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
024000802	29	3	027007313	10	8
	30	3		39	8
024000804	25	10	027007314	10	1
024000805	25	66		39	2
024002017	26	8	027008405	16	14
024002018	25	43	027009504	16	17
024004012	24	4	027010337	36	2
024005701	25	34	027010357	41	2
024006102	25	59	027010368	35	7
024008201	25	64	027010369	35	7
024008501	25	63	027010386	43	3
024009401	25	25	027010387	43	1
	25	72	027011201	35	19
024009402	KITS	1	027011901	36	22
024010302	28	7	027011902	36	22
024010303	28	7	027013001	10	12
024012602	25	7		39	12
024012704	25	54	027013401	36	6
024012705	25	73	027013402	36	6
024012806	23	3	027013404	10	5
024012807	25	36		39	4
024013504	25	41	027014003	36	4
024013505	25	32	027014007	36	4
024013802	25	46	027014302	17	7
024013904	25	58	027015001	36	7
024014102	25	40	027015002	36	23
024015002	25	1	027015004	36	11
024015003	25	19	027015007	35	22
024017005	25	2	027015008	35	5
024017403	25	27	027015009	4	10
	25	70		34	9
024017505	25	55	027015010	36	13
024017905	25	48	027015011	36	1
024017906	25	17	027015105	35	2
024018101	25	56	027015702	17	6
024501103	9	14	027016001	10	14
	38	8		39	14
024501104	9	14	027016002	10	7
024502601	38	1		39	1
024502602	9	2	027016701	36	24
024522601	BULK	2	027016702	36	15
024522601-266IN	38	5	027017101	35	16
024522603	BULK	3	027017102	35	16
024522603-186IN	9	3	027017203	17	8
027000203	31	2	027017204	17	2
027000205	31	1	027017301	10	9
027000601	35	9		39	9
027000602	35	9	027017302	10	2
027001001	41	1		39	7
027001301	42	11	027017409	41	5
027004301	36	9	027017601	35	4
027006703	5	1	027018101	36	20
027006706	42	9	027018102	42	4

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
027018103	42	6		34	5
027018104	42	1	027074806	4	1
027018105	42	5		34	1
027018106	35	6	027075201	19	17
027018108	7	22	027075603	32	1
	35	3	027076601	3	1
027018109	36	8	027076602	3	5
027018110	36	26	027077108	33	6
027018111	36	25	027077201	33	5
027018112	36	14	027078101	35	12
027018501	36	27	027078102	35	11
027018703	10	13	027078103	35	14
	39	13	027078504	7	23
	48	2		35	10
027019303	41	6	027500201	1	2
027070301	35	7	027500203	1	3
027071702	2	3	027500205	1	1
	32	3	027500207	1	4
	34	11	027500401	7	1
027071801	22	11	027500402	7	1
	44	2	027501003	26	2
027071901	22	2	027501008	14	2
	44	16	027501009	14	2
027072401	16	9	027501205	20	6
	37	1	027501901	6	4
027072901	22	12	027503803	8	4
	44	15	027503804	14	8
027073603	22	5	027503805	14	12
	44	4	027504001	8	1
027073604	16	6	027504002	8	6
	37	4	027504301	27	2
027073606	17	10	027505002	26	9
027073610	19	14	027505502	6	17
027073611	34	13	027507401	18	14
027073613	2	2	027508603	15	7
	32	2	027508901	6	7
	34	10	027510305	7	29
027073616	15	5	027510379	2	8
027073621	20	4	027510380	2	6
	21	2	027510381	6	9
	26	7	027510395	11	2
027073623	22	16		40	3
027073627	3	6	027511015	19	1
027074001	4	15	027511202	18	6
	5	3	027511203	18	6
	34	16	027511204	18	6
027074502	4	9	027511205	18	6
	34	8	027511304	7	16
027074603	12	3	027511305	7	16
027074803	16	8	027511308	21	7
	37	2	027511311	6	11
027074804	16	1	027511312	6	15
027074805	4	7	027511709	8	14

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
027511710	8	15	027518121	6	16
027511902	15	1	027518122	6	16
027513001	18	10	027518123	15	12
027513002	19	2	027518124	18	4
027513301	8	5	027518125	18	4
027513803	14	13	027518126	18	4
027514001	7	9	027518127	7	30
027514002	7	9	027518128	7	3
027514003	18	3	027518701	10	6
027514011	26	1		39	3
027514303	15	4	027518901	6	20
027514601	18	2	029107606	48	1
027514603	13	7	029107607	47	1
027515001	7	26	029154601	47	8
027515002	7	17	029155004	47	7
027515003	7	2	029271681	25	62
027515004	7	21	029271682	25	14
027515007	18	8	029271683	19	7
027515008	18	11	029271684	45	1
027515009	20	7	029271685	46	1
	21	6	029271686	46	2
027515011	6	10	029271687	46	7
027515012	15	3	029271688	46	4
027515013	8	18	029271689	45	2
027515014	11	3	029271690	46	6
	40	4	029271691	46	5
027515016	15	11	029660102	2	1
027516004	6	5	05.017-8.5X1.5	24	2
027516008	18	13		24	6
027516201	14	3		24	10
027516901	18	12		28	6
027517103	19	10		28	9
027517601	7	7		28	11
027517606	8	17		28	13
027517701	7	27		28	17
027517702	7	11		29	5
027517703	7	27		29	7
027517704	7	11		29	9
027518101	7	3		29	15
027518102	7	3		30	5
027518103	7	3		30	7
027518106	7	25	06161100108	12	2
027518107	7	6	06221060604	25	11
027518110	7	15		25	61
	13	1	101102	22	9
027518111	7	30		44	7
027518112	7	30	11502811	8	3
027518113	7	12	115215	25	57
027518114	13	5	117510	8	13
027518115	18	4	12529734	6	8
027518116	13	8	129453	7	28
027518119	6	3	13218E4051	17	5
027518120	6	16	13218E4099	4	2

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
	34	2	909571259	9	7
13218E4157	4	12		38	14
13218E4166	4	3	909572038	15	10
	34	3	909572039	15	9
13218E4197	16	6	909572069	25	18
	44	10	909572070	25	26
13218E4198	16	13		25	71
13218E4211	16	7	909573027	36	28
	37	3	909591099	2	7
13218E4224	16	10	909591449	17	9
	37	7	909617880	29	12
13218E4365	37	6		30	10
13218E4366	22	7	909661080	BULK	1
	44	19	909661080-AR	9	6
13218E4367	22	19		38	2
	44	1	909667518	BULK	4
13218E4370	22	4	909667518-29IN	10	3
	44	3		10	10
13218E4375	22	6		39	6
	44	5		39	10
13218E4383	22	1	909671024	9	4
	44	11		38	4
13218E4386	22	8	909721607	27	1
	44	6	909724854	27	3
13219E4121	4	11	909724855	24	1
	34	7	909724856	28	10
13219E4133	22	15		28	16
	44	14		29	14
14M273	9	8	909724857	24	5
14M7273	38	7		28	5
15-006-10-6	27	4		28	8
15-006-10-6-1	28	3		29	8
2102-01-14.48	25	31	909724858	24	9
23310080065	41	3		28	12
23311060065	26	4		29	4
23317100450	9	13		30	4
	38	9	909771726	25	35
3701-0610	8	9	909772418	25	23
3711T34	9	5		25	52
	38	3	909773194	23	4
41031420	16	3		25	51
4130 3160 024	13	6	909775212	25	44
41300080016	19	11	933383	9	1
4610067	14	5		38	12
5602-6-6S	27	5	933499	25	12
	28	2	933663	25	42
5659-6	28	1	933775	25	8
595146	48	4	933777	23	2
701718701	8	8	933936	25	21
909414033	25	53	935982	6	13
909414034	25	50	936640	6	12
909550594	8	2		33	3
	14	1	936670	25	29

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
	25	69	940608	25	15
937420	25	6	940614	3	7
937596	25	30	940630	4	13
	25	67		34	14
937869	25	60	940635	33	4
937893	25	3	940671	22	17
938115	20	5		44	9
	21	1	941962	18	1
	26	6	942070	8	12
938351	17	4		15	14
939237	25	13	942119	36	19
939270	23	1	942120	4	4
	25	9		34	4
	25	22	942166	18	9
940060	25	16	942312	20	3
940582	16	11		21	3
	37	8		26	5

END OF WORK PACKAGE

CHAPTER 6
SUPPORTING INFORMATION

FIELD REFERENCES

SCOPE

This work package lists all field manuals, forms, technical manuals, and miscellaneous publications referenced in this manual. Refer to DA PAM 25-30 for index of blank forms. Refer to DA PAM 750-8, The Army Maintenance Management System (TAMMS), for instructions on the use of maintenance forms pertaining to this manual.

FIELD MANUALS

FM 4-25.11	First Aid
FM 5-34	Engineer Field Data

FORMS

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 2407	Maintenance Request Form
DD Form 250	Material Inspection and Receiving Report
SF 368	Product Quality Deficiency Report

OTHER PUBLICATIONS

AR 750-1	Army Materiel Maintenance Policy
ASTM-E 1417	Standard Practice for Liquid Penetrant Testing
CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-909	Field and Garrison Furnishings and Equipment (Repair Parts, and Heraldic Items)
CTA 50-970	Expendable/Durable Items (except Medical, Class V, Repair Parts, and Heraldic Items)
E 02 005 0803	Cleaning Directive
FED-STD-595C	Colors Used in Government Procurement
MIL-DTL-5541	Military Specification Chemical Conversion Coatings on Aluminum and Aluminum Alloys
MIL-DTL-53072	Chemical Agent Resistant Coating
MIL-I-6868	Military Specification: Inspection Process, Magnetic Particle
TB 43-0242	CARC Spot Painting

OTHER PUBLICATIONS - Continued

TT-C-490 Chemical Conversion Coatings and Pre-treatments for Ferrous Surfaces (Base for Organic Coatings)

PAMPHLETS

DA PAM 750-8 The Army Maintenance Management System (TAMMS) Users Manual

DA PAM 25-30 Consolidated Index of Army Publications and Blank Forms

TECHNICAL CIRCULARS

TC 5-210 Military Float Bridging Equipment

TC 9-237 Welding Theory and Application

TECHNICAL MANUALS

TM 4-48.10 Multiservice Helicopter Sling Load: Single Point Load Rigging Procedures

TM 4-48.11 Multiservice Helicopter Sling Load: Dual Point Load Rigging Procedures

TM 5-1940-277-10 Boat, Bridge Erection, Twin Jet, Aluminum Hull, Models USCSBMK 1 and USCSBMK 2

TM 5-3990-263-13&P Operator And Field Maintenance Manual Including Repair Parts And Special Tools List (RPSTL) For Pallet, Adapter, Bridge M15

TM 5-3990-264-13&P Operator And Field Maintenance Manual Including Repair Parts And Special Tools List (RPSTL) For Cradle, Boat, Improved M14

TM 5-5420-278-10 Operator's Manual, Improved Ribbon Bridge (IRB)

TM 9-214 Inspection, Care, and Maintenance of Anti-friction Bearing Subscription Form

TM 9-450 Metal Body, Fender, Repair and Related Operations

TM 9-2320-346-10 Technical Manual Operator's Manual For Truck, Common Bridge Transport (CBT), 8X8 M1977A4 W/Winch

TM 9-2320-425-10 Technical Manual Operator's Manual For Truck, Common Bridge Transport (CBT), 8X8, M1977A2 W/Winch

TM 9-2320-435-10 Technical Manual Operator's Manual For Truck, Common Bridge Transport (CBT), 8X8, M1977 W/Winch

TM 43-0139 Painting Instructions for Army Material

TECHNICAL MANUALS - Continued

TM 55-2200-001-12

Transportability Guidance for Application of Blocking,
Bracing, Tiedown Materials for Rail Transport

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**END OF WORK PACKAGE**

**FIELD
MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION**

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) 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 – includes two subcolumns, Crew (C) and Maintainer (F).

Sustainment – includes two subcolumns, Below Depot (H) and Depot (D)

The maintenance to be performed at field and sustainment levels is described as follows:

1. Crew maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "C" in the third position of the SMR code. A "C" appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.
2. Maintainer maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the Field Maintenance level. Items are returned to the user after maintenance is performed at this level.
3. Below depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level.
4. Depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this level.

The tools and test equipment requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

INTRODUCTION - Continued

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 gaugings 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, e.g., load testing of lift devices and hydrostatic testing of pressure hoses.
3. Service. Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:
 - a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.
 - b. Repack. To return item to packing box after service and other maintenance operations.
 - c. Clean. To rid the item of contamination.
 - d. Touch up. To spot paint scratched or blistered surfaces.
 - e. Mark. To restore obliterated identification.
4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. Paint (ammunition only). To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance, and Recoverability (SMR) code.
10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

INTRODUCTION - Continued**NOTE**

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly. The step-by-step breakdown (taking apart) of spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (e.g., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material 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 a 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 manhours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

- C Crew Maintenance
- F Maintainer maintenance

INTRODUCTION - ContinuedSustainment:

- L Specialized Repair Activity (SRA)
- H Below depot maintenance
- D Depot maintenance

NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

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 alphabetical 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 or 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.

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.

END OF WORK PACKAGE

**FIELD
MAINTENANCE ALLOCATION CHART (MAC)**

Table 1. MAC for Improved Ribbon Bridge (IRB).

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
26	Ramp Bay Unfolding Mechanism (M16)							
2600	Ramp Bay Inner and Outer Pontoons	Inspect	0.1	0.1				
		Test		1.0		8, 9		
		Remove		0.4		7, 9, 12, 14		
		Repair		5.0		9, 12, 14	A	
2601	Ramp Bay Cable Assembly	Inspect	0.1	0.1				
		Repair	0.1	0.1		9		
		Replace		0.5		9, 12	B	
2603	Bell Crank and Eyebolt (Front and Rear)	Inspect	0.1	0.1				
		Service	0.1					
		Replace		0.5		9, 12		
2605	Torsion Bar	Inspect	0.1	0.1				
		Service		0.1				
		Replace		0.8		1, 7, 9, 10, 11, 12		
27	Ramp Bay Inner and Outer Pontoons							
2701	Ramp Bay Unfolding Stabilizer and Brackets	Inspect	0.1	0.1				
		Replace		8.0		9, 12, 14		

Table 1. MAC for Improved Ribbon Bridge (IRB) - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
2702	Ramp Plate and Strap	Inspect	0.1	0.1				
		Replace		0.2			4, 9	
		Repair		0.5			4, 9, 13	
2703	Ramp Bay Handrail	Inspect	0.1	0.1				
		Repair		0.2			9, 13	
2704	Ramp Bay Bilge/Drain Plugs and Inserts	Inspect	0.1	0.1				
		Repair		0.5			4, 9	
2705	Ramp Bay Load Receiving Pin and Rafting Bracket Pin	Inspect	0.1	0.1				
		Repair		0.5			9, 12	
2706	Trunnion Wear Cap	Inspect	0.1	0.1				
		Replace		0.1			9, 12	
		Repair		1.0			4, 9	
2707	Swivel Hook and Retainer Shaft	Inspect	0.1	0.1				
		Replace		0.1			7, 9, 12, 14	
2708	Stowage Compartment Access Cover and Tiedown Straps	Inspect	0.1	0.1				
		Replace		0.4			4, 9, 12	
28	Ramp Bay Inner Pontoons							

Table 1. MAC for Improved Ribbon Bridge (IRB) - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
2801	Ramp Bay Foldlock	Inspect	0.1	0.1				
		Replace		0.3			9	
2802	Ramp Bay Travel Latch and Receptacle Blocks	Inspect	0.1	0.1				
		Replace		1.7			9, 12	
2803	Ramp Bay Upper Coupling and Receptacle Blocks	Inspect	0.1	0.1				
		Replace		0.3			4, 9, 13, 14	
2804	Swivel Plate	Inspect	0.1	0.1				
		Replace		1.0			9, 12	
2805	Pump Access Cover	Inspect	0.1	0.1				
		Replace		0.2			9, 12, 13	
29	Ramp Bay Yoke and Lower Lock-Drive Assembly							
2901	Lower Lock- Drive	Inspect	0.1	0.1				
		Service	0.1	0.1				
		Repair		4.0			9, 12	
30	Ramp Bay Pump System							
3002	Pump Filter Element	Service		0.5				
		Replace		0.4			4, 9, 12, 15	
3003	Ramp Bay Pump System	Service	0.5	1.5			2, 3, 4, 9	

Table 1. MAC for Improved Ribbon Bridge (IRB) - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
3003	Pump	Inspect	0.1	0.1				
		Replace		1.0			4, 9, 12	
3004	Cylinder	Inspect	0.1	0.1				
		Replace		1.4			4, 9, 12, 13	
3005	Hose Assemblies and Fittings	Inspect	0.1	0.1				
		Repair		1.0			4, 9, 12, 14	
31	Interior Bay Unfolding Mechanism (M17)							
3100	Interior Bay Inner and Outer Pontoons	Inspect	0.1	0.1				
		Test		1.0			8, 9	
		Remove		0.4			7, 9, 12, 14	
		Repair		5.0			9, 12, 14	A
3101	Interior Bay Cable Assembly	Inspect	0.1	0.1				
		Service	0.1	0.1				
		Replace		0.5			9	B
3103	Eyebolt	Inspect	0.1	0.1				
		Service	0.1					
		Replace		0.5			7, 9, 12	
32	Interior Bay Inner and Outer Pontoons							
3201	Interior Bay Unfolding Stabilizer and Bracket	Inspect	0.1	0.1				
		Replace		1.0			9, 12	

Table 1. MAC for Improved Ribbon Bridge (IRB) - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
3201	Bumper Stop	Replace		0.1			9	
3203	Outer Pontoon Lock	Inspect	0.1	0.1				
		Repair		1.0			6, 9, 14	
3204	Interior Bay Foldlock	Inspect	0.1	0.1				
		Repair		0.3			9	
3205	Interior Bay Handrail	Inspect	0.1	0.1				
		Repair		0.2			9, 13	
3206	Interior Bay Bilge/Drain Plugs and Inserts	Inspect	0.1	0.1				
		Repair		0.5			4, 9	
3207	Interior Bay Load Receiving Pin and Rafting Bracket Pin	Inspect	0.1	0.1				
		Repair		0.5			9, 12	
33	Interior Bay Inner Pontoons							
3301	Interior Bay Travel Latch and Receptacle Blocks	Inspect	0.1	0.1				
		Replace		1.7			9, 12	C
3302	Interior Bay Upper Coupling and Receptacle Blocks	Inspect	0.1	0.1				
		Replace		0.3			4, 9, 13, 14	D

Table 1. MAC for Improved Ribbon Bridge (IRB) - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
3304	Access Cover	Inspect	0.1				4, 9, 13	
		Repair		0.3				
3305	Lower Main Coupling	Inspect	0.1				4, 5, 9, 12, 13, 14	
		Repair		8.0				
34	Interior Bay Lower Lock- Drive Assembly							
3401	Bumpers	Inspect	0.1	0.1			9, 12	
		Replace		0.1				
3402	Interior Bay Lower Lock- Drive	Inspect	0.1	0.1			9, 12	
		Service	0.1	0.1				
		Repair		1.8				
3403	Data Plates	Replace		0.1			9	
3501	Coupling Device	Inspect	0.1	0.1			9	
		Service	0.1	0.1				
		Repair		0.2				

Table 2. Tools and Test Equipment for Improved Ribbon Bridge (IRB).

TOOLS OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Connecting Link Tool		
2	F	Deflation Hose Assembly		
3	F	Drain Hose Assembly		
4	F	Forward Repair System (FRS)	4940-01-533-1621	SC4940-95-E42
5	F	Multiplier, Torque Wrench		SC4940-95-E42
6	F	Setup Wedge		
7	C	Sling, Multiple Leg, IRB Gear	3940-12-359-3444	029186806
8	F	Tester, Pressurized Container Leakage	6685-12-357-2615	029107606
9	F	Tool Kit, General Mechanic's (GMTK)	5180-01-548-7634	5180-95-B48
10	F	Torsion Bar Pre-Adjusting Tool		
11	F	Torsion Bar Pre-Stressing Tool		
12	F	Wrench, torque (3/8 in. drive, 0-100 lb-ft)		SC4940-95-E42
13	F	Wrench, torque (3/8 in. drive, 30-200 lb-in)		SC4940-95-E42
14	F	Wrench, torque (1/2 in. drive, 30-250 lb-ft)		SC4940-95-E42
15	F	Wrench, open end (filter wrench)	5120-12-360-0176	595146

Table 3. Remarks for Improved Ribbon Bridge (IRB).

REMARK CODE	REMARKS
A	Repair by straightening and spot-welding cracks. Refer to welding procedures.
B	Replace entire cable if kinked or frayed. Use only specified cable.
C	Refer to WP 0089 for parts breakdown.
D	Refer to WP 0090 for parts breakdown.

END OF WORK PACKAGE

**FIELD
EXPENDABLE AND DURABLE ITEMS LIST (EDIL)**

INTRODUCTION

Scope

This Work Package (WP) lists expendable and durable items that you will need 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 to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items); CTA 50-909, Field and Garrison Furnishings and Equipment; or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable and Durable Items List (EDIL)

Column (1) Item No. The number assigned to the entry in the list and referenced in the narrative instructions to identify the item (e.g., Use adhesive (WP 0127, Item 1)).

Column (2) Level. Identifies the lowest level of maintenance that requires the listed item: C = Crew, F = Field, H = Below Depot, or D = Depot.

Column (3) National Stock Number (NSN). Identifies the stock number of the item to be used for requisition purposes.

Column (4) Item Name, Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue indicates the physical measurement or count of an item such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List (EDIL).

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
1	F	8040-01-038-5043	Adhesive cement 5H2471 (11083)	CN
2	F	8040-01-592-4490	Adhesive thread lock (0L1E5)	EA
3	F	8040-00-833-9563	Adhesive silicone rubber RTV102 WTT 85ML (B0936)	KT
4	F	8030-00-155-6444	Antiseize compound S00620 (54636)	CN
5	C	5130-01-457-3865	Brush, wire, rotary AC2C (55719)	EA
6	F	5340-00-450-5718	Cap, protective, dust and moisture 10935405 (19207)	EA
7	C	6850-01-474-2317	Cleaning compound, solvent BT05 (0K209)	CO
8	C	5350-00-025-7935	Cloth, abrasive 11578467-3 (19206)	PG
9	C	7290-00-044-9281	Cloth, cleaning, lint-free, general purpose white A-A-59323 (58536)	BX
10	F	8030-00-244-1297	Corrosion preventive compound DEF2331A (K0851)	GL
11	F	8030-01-418-9008	Corrosion preventive compound Tectyl 5750 (09137)	CN
12	F	4240-00-017-9767	Face shield, industrial 11040124-7 (18876)	EA
13	C	8415-00-268-8350	Glove, men's, leather A-A-50016 (58536)	PR
14	C	8415-01-283-3866	Glove, nitrile C-4542 (54537)	BX
15	F	4240-00-052-3776	Goggles, industrial 3336841 (45152)	PR
16	C	9150-00-145-0268	Grease, aircraft general purpose M81322-2 (81349)	CN
17	C	9150-01-197-7693	Grease, automotive and artillery M-10924-B (81349)	CA
18	C	9150-01-197-7690	Grease, automotive and artillery M-10924-C (81349)	CN
19	F	9150-00-935-4018	Grease, molybdenum disulfide (07950)	CA
20	C	9150-01-433-7910	Lubricating oil, engine MIL-PRF 2104 (81349)	DR

Table 1. Expendable and Durable Items List (EDIL) - Continued.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
21	C	9150-00-234-1597	Lubricating oil, wire rope and exposed gear VVL751 (81348)	CN
22	F	9535-00-855-6919	Plate, metal (Aluminum) AMS-QQA250-11 (81343)	PM
23	C	6810-01-181-7121	Propylene glycol MIL-P-83800/GL (13873)	GL
24	F	4240-01-249-9261	Respirator 7701N95L (0VTP4)	EA
25	F	8030-01-218-0321	Sealing compound MS-PTS-50 (02570)	TU
26	F	8030-01-025-1692	Sealing compound, thread-locking, medium strength 24241 (05972)	BT
27	C	9905-00-537-8954	Tag, marker 9905-00-537-8954 (64067)	BD
28	F	3460-00-209-1898	Wheel, abrasive W63260R (55719)	EA

END OF WORK PACKAGE

**FIELD
TOOL IDENTIFICATION LIST (TIL)**

Scope

This Work Package (WP) lists all common tools and supplements and special tools/fixtures needed to maintain the Improved Ribbon Bridge (IRB).

Explanation of Columns in the Tool Identification List

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., Sling (WP 0128, Item 23)).

Column (2) - Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gage, belt tension).

Column (3) - National Stock Number (NSN). 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 Repair Parts and Special Tools List (RPSTL) for items listed in column two of the table below.

Table 1. Tool Identification List (TIL).

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
1	Aluminum MIG gun (Welder)		90922 (55719)	SC 4940-95-E42
2	Apron, welder's		564GR40 (55719)	SC 4940-95-E42
3	Connecting link tool			WP 0070
4	Crowbar, pinch, heavy duty		LFI60CB	SC 4940-95-E42
5	Drawbar, bridge bay	5420-12-356-3861	029107607 (D9913)	TM 5-5420-278-10
6	Drill bit set	5133-014779534	DBTBC129 (55719)	SC 4940-95-E42
7	Drill-driver, electric, portable	5130-015594628	DC920KA (07429)	SC 4940-95-E42

Table 1. Tool Identification List (TIL) - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
8	Funnel		75-070 (55719)	SC 4940-95-E42
9	Glass, magnifying	4933-00-620-0099	81-23-35 (06175)	
10	Gloves, welder's		820L (55719)	SC 4940-95-E42
11	Goggles, industrial		0752 0035 (55719)	SC 4940-95-E42
12	Grease, gun		500 (55719)	SC 4940-95-E42
13	Grinder, angle		G2A120RP10 45 (55719)	SC 4940-95-E42
14	Hammer, slide		482100 (55719)	SC 4940-95-E42
15	Heat gun		PH-1100 (55719)	SC 4940-95-E42
16	Holder, lock	5420-12-359-8600	029105901 (D9913)	TM 5-5420-278-10
17	Hose assembly, nonmetallic (deflation hose)			WP 0070
18	Hose assembly, nonmetallic (drain hose)			WP 0070
19	Multiplier, torque wrench	5120-01-348-9484	YA393 (55719)	SC 4940-95-E42
20	Oiler, hand		50-573 (55719)	SC 4940-95-E42
21	Pan, drain		75-762 (55719)	SC 4940-95-E42
22	Plate, surface	9515-00-952-8564	ASTM-A36 (81346)	
23	Setup wedge			WP 0070

Table 1. Tool Identification List (TIL) - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
24	Sling, multiple leg	3940-12-359-3444	029186806 (D9913)	TM 5-5420-278-10
25	Straightedge	5210-00-084-0927	599-526-48 (09058)	
26	Tester, pressurized container, leakage	6685-12-357-2615	029107606 (D9913)	TM 5-5420-278-10
27	Thread insert kit, screw		25999 (55719)	SC 4940-95-E42
28	Tool kit, blind rivet (rivet gun & acc.)		D-100-MIL-1 (55719)	SC 4940-95-E42
29	Tool kit, general mechanic's	5180-01-548-7634	PD484 (19200)	SC 5180-95-B48
30	Tool, puller set, mechanical	5120-00-604-5456	FRS4235B (55719)	SC 4940-95-E42
31	Torsion bar pre-adjusting tool			WP 0070
32	Torsion bar pre-stressing tool			WP 0070
33	Wrench, open end (filter wrench)	5120-12-360-0176	595146 (C0856)	
34	Wrench, torque (1/2 in. drive, 30-250 lb-ft)		2503MFRMH SS (55719)	SC 4940-95-E42
35	Wrench, torque (3/8 in. drive, 0-100 lb-ft)		1002MFRMH SS (55719)	SC 4940-95-E42
36	Wrench, torque (3/8 in. drive, 30-200 lb-in)		2002MRMHS S (55719)	SC 4940-95-E42

END OF WORK PACKAGE

**FIELD
MANDATORY REPLACEMENT PARTS (MRP) LIST**

INTRODUCTION**Scope**

This work package includes a list of all mandatory replacement parts referenced in the Improved Ribbon Bridge (IRB) task initial setups and procedures. These are items that must be replaced during maintenance whether they have failed or not. This includes items based on usage intervals such as miles, time, rounds fired, etc.

Table 1. Mandatory Replacement Parts (MRP) List.

ITEM NO.	PART NUMBER (CAGEC)	NATIONAL STOCK NUMBER (NSN)	NOMENCLATURE	QTY
1	05.017-8.5X1.5 (D2497)	5331-12-356-3626	O-ring	17
2	101102 (N0146)	5310-12-142-0650	Washer, lock	8
3	939237 (D9913)	5310-12-355-8644	Washer, lock	2
4	939270 (D9913)	5310-12-356-3623	Washer, lock	8
5	940582 (D9913)	5315-12-320-4071	Pin, spring	2
6	940630 (D9913)	5315-12-314-9043	Pin, spring	2
7	940635 (D9913)	5315-12-180-1372	Pin, spring	4
8	940671 (D9913)	5315-12-180-3623	Pin, spring	8
9	942024 (D9913)	5315-12-132-0855	Pin, cotter	2
10	942070 (D9913)	5315-12-178-5636	Pin, cotter	4
11	942119 (D9913)	5315-12-313-2591	Pin, cotter	2
12	942120 (D9913)	5315-12-180-3614	Pin, cotter	10
13	942166 (D9913)	5315-12-125-7770	Pin, cotter	8

Table 1. Mandatory Replacement Parts (MRP) List - Continued.

ITEM NO.	PART NUMBER /(CAGEC)	NATIONAL STOCK NUMBER (NSN)	NOMENCLATURE	QTY
14	942312 (D9913)	5315-12-315-0187	Pin, cotter	2
15	027019303 (D9913)	5330-12-356-3031	Gasket	2
16	027071702 (D9913)	5315-12-180-3617	Pin, lock	4
17	027073604 (D9913)	5315-12-180-4461	Pin, cotter	2
18	027518701 (D9913)	5330-12-356-3029	Gasket	1
19	909550594 (D9913)	5320-99-983-0535	Rivet, blind	26
20	909773194 (D9913)		O-ring (Part of kit, P/N 024009402)	2
21	909775197 (D9913)	5331-12-356-2890	O-ring	1
22	6221060604 (D3273)	5315-12-166-3517	Pin, grooved, headed	12
23	06161100108 (D3273)	5310-12-144-3934	Washer, lock	2
24	000094001617 (D8046)	5315-12-192-5816	Pin, cotter	2
25	000094004078 (D8266)	5315-12-131-7424	Pin, cotter	2
26	AS010-00 (D0718)	4330-12-356-0009	Filter element	2
27	DIN94-3,2X32-ST- A3P (D8286)	5315-12-196-2838	Pin, cotter	2
28	DIN94-8X63-ST-A3P (D8262)	5315-12-199-2959	Pin, cotter	2
29	DIN127-B8-FST-A3P (D8286)	5310-12-142-0658	Washer, lock	2
30	DIN127-B10-FST-A3P (D8286)	5310-12-142-0649	Washer, lock	19
31	DIN985-M10-8-A2P (D8286)	5310-12-146-8397	Nut, self locking	4

Table 1. Mandatory Replacement Parts (MRP) List - Continued.

ITEM NO.	PART NUMBER (CAGEC)	NATIONAL STOCK NUMBER (NSN)	NOMENCLATURE	QTY
32	DIN985-M12-8-A2P (D8286)	5310-12-145-2655	Nut, self locking	5
33	DIN1481-3X22 (15526)	5315-01-272-4911	Pin, spring	4
34	DIN6925-M8-8-A2P (D8286)	5310-12-300-8139	Nut, self locking	2
35	DIN7603-A18X24-CU (D8286)	5330-12-156-4527	Gasket	2
36	ISO1234-5X50-ST- A3P (I9008)	5315-12-346-8417	Pin, cotter	2
37	ISO8752-5X40-A3C (I9008)	5315-01-616-9005	Pin, spring	4
38	TBD 12-156-4637 (IREF0)	5315-12-156-4637	Pin, cotter	4
39	U21, 5X28, 7X2, 5-72NBR/99041 (D2480)	5330-12-125-2535	Gasket	2

END OF WORK PACKAGE

INDEX

<u>Subject</u>	<u>WP Sequence No.-Page No.</u>
A	
Access Cover.....	WP 0114-1
B	
Bell Crank and Eyebolt (Front and Rear) Replacement.....	WP 0027-1
Bell Crank and Eyebolt (Front).....	WP 0077-1
Bell Crank and Eyebolt (Rear).....	WP 0078-1
Bilge and Drain Plugs Repair.....	WP 0032-1
Bleeding Pump System	WP 0045-1
Bulk Material.....	WP 0122-1
Bumpers.....	WP 0116-1
C	
Coupling Device Wheels and Pins Repair.....	WP 0062-1
Coupling Device.....	WP 0120-1
Crack Repair Preparation and Welding.....	WP 0066-1
Cylinder Replacement.....	WP 0048-1
Cylinder.....	WP 0099-1
D	
Data Plate Replacement.....	WP 0061-1
Data Plates (Continued).....	WP 0119-1
Data Plates.....	WP 0118-1
Draining and Filling Pump System.....	WP 0044-1
E	
Equipment Description and Data.....	WP 0002-1
Expendable and Durable Items List (EDIL).....	WP 0129-1
Eyebolt.....	WP 0107-1
G	
General Information.....	WP 0001-1
General Maintenance.....	WP 0064-1
H	
Handrail Repair.....	WP 0031-1
Hose Assemblies and Fittings (Bracket and Quick-Disconnects).....	WP 0101-1
Hose Assemblies and Fittings (Left Side).....	WP 0102-1
Hose Assemblies and Fittings (Right Side).....	WP 0103-1
Hose Assemblies and Fittings Repair.....	WP 0049-1
Hose Assemblies and Fittings.....	WP 0100-1
I	
Illustrated List of Manufactured Items.....	WP 0071-1
Illustrated List of Manufactured Items Introduction.....	WP 0070-1
Interior Bay Access Cover Repair.....	WP 0057-1
Interior Bay Bilge/Drain Plugs and Inserts.....	WP 0112-1

INDEX - Continued

<u>Subject</u>	<u>WP Sequence No.-Page No.</u>
I	
Interior Bay Bumper Replacement.....	WP 0059-1
Interior Bay Bumper Stop Replacement.....	WP 0054-1
Interior Bay Cable Assembly (Turnbuckle).....	WP 0106-1
Interior Bay Cable Assembly Service.....	WP 0051-1
Interior Bay Cable Assembly.....	WP 0105-1
Interior Bay Eyebolt Replacement.....	WP 0052-1
Interior Bay Foldlock Repair.....	WP 0056-1
Interior Bay Foldlock.....	WP 0110-1
Interior Bay Handrail.....	WP 0111-1
Interior Bay Inner Pontoon and Outer Pontoon Separation (M17).....	WP 0050-1
Interior Bay Inner and Outer Pontoons.....	WP 0104-1
Interior Bay Load Receiving Pin and Rafting Bracket Pin.....	WP 0113-1
Interior Bay Lower Lock-Drive Repair.....	WP 0060-1
Interior Bay Lower Lock-Drive.....	WP 0117-1
Interior Bay Lower Main Coupling Repair.....	WP 0058-1
Interior Bay Outer Pontoon Lock Repair.....	WP 0055-1
Interior Bay Preventive Maintenance Checks and Services (PMCS).....	WP 0022-1
Interior Bay Unfolding Stabilizer and Bracket.....	WP 0108-1
Interior Bay Unfolding Stabilizer and Brackets Replacement.....	WP 0053-1
L	
Load Receiving Pin and Rafting Bracket Pin Repair.....	WP 0033-1
Lower Lock-Drive (Yoke Assembly, Left Side).....	WP 0094-1
Lower Lock-Drive (Yoke Assembly, Right Side).....	WP 0093-1
Lower Lock-Drive.....	WP 0095-1
Lower Main Coupling.....	WP 0115-1
Lubrication Instructions.....	WP 0068-1
M	
Maintenance Allocation Chart (MAC).....	WP 0128-1
Maintenance Allocation Chart (MAC) Introduction.....	WP 0127-1
Mandatory Replacement Parts (MRP) List.....	WP 0131-1
N	
NATIONAL STOCK NUMBER (NSN) INDEX.....	WP 0124-1
O	
Outer Pontoon Lock.....	WP 0109-1
P	
PART NUMBER (P/N) INDEX.....	WP 0125-1
Painting.....	WP 0067-1
Pontoon Leak Test.....	WP 0024-1
Preparation for Storage or Shipment.....	WP 0063-1
Preventive Maintenance Checks and Services (PMCS) Introduction.....	WP 0020-1
Pump (Assembly and Mounting Parts).....	WP 0097-1
Pump (Reservoir).....	WP 0098-1

INDEX - Continued

<u>Subject</u>	<u>WP Sequence No.-Page No.</u>
P	
Pump Access Cover Replacement.....	WP 0042-1
Pump Access Cover.....	WP 0092-1
Pump Filter Element Replacement.....	WP 0046-1
Pump Filter Element.....	WP 0096-1
Pump Replacement.....	WP 0047-1
Pump System Hydraulic Schematic.....	WP 0069-1
R	
Ramp Bay Bilge/Drain Plugs and Inserts.....	WP 0083-1
Ramp Bay Cable Assembly (Turnbuckle).....	WP 0076-1
Ramp Bay Cable Assembly Service.....	WP 0026-1
Ramp Bay Cable Assembly.....	WP 0075-1
Ramp Bay Foldlock Replacement.....	WP 0038-1
Ramp Bay Foldlock.....	WP 0088-1
Ramp Bay Handrail.....	WP 0082-1
Ramp Bay Inner Pontoon and Outer Pontoon Separation (M16).....	WP 0025-1
Ramp Bay Load Receiving Pin and Rafting Bracket Pin.....	WP 0084-1
Ramp Bay Lower Lock-Drive Repair.....	WP 0043-1
Ramp Bay Preventive Maintenance Checks and Services (PMCS).....	WP 0021-1
Ramp Bay Unfolding Stabilizer and Brackets Replacement.....	WP 0029-1
Ramp Bay Unfolding Stabilizer and Brackets.....	WP 0080-1
Ramp Bay, Inner and Outer Pontoons.....	WP 0074-1
Ramp Plate and Strap Repair.....	WP 0030-1
Ramp Plate and Strap.....	WP 0081-1
References.....	WP 0126-1
Repair Parts Kits.....	WP 0121-1
Repair Parts and Special Tools List (RPSTL) Introduction.....	WP 0073-1
S	
Service Upon Receipt.....	WP 0023-1
Special Tools.....	WP 0123-1
Stowage Compartment Access Cover and Tiedown Straps Replacement.....	WP 0037-1
Stowage Compartment Access Cover and Tiedown Straps.....	WP 0087-1
Swivel Hook and Retainer Shaft Replacement.....	WP 0036-1
Swivel Hook and Retainer Shaft.....	WP 0086-1
Swivel Plate Replacement (Ramp Only).....	WP 0041-1
Swivel Plate.....	WP 0091-1
T	
Theory of Operation.....	WP 0003-1
Threaded Insert Replacement.....	WP 0065-1
Tool Identification List (TIL).....	WP 0130-1
Torque Limits.....	WP 0072-1
Torsion Bar Replacement.....	WP 0028-1
Torsion Bar.....	WP 0079-1
Transverse Upper Coupling and Receptacle Blocks Replacement.....	WP 0040-1
Travel Latch and Receptacle Blocks (Ramp Bay and Interior Bay).....	WP 0089-1
Travel Latch and Receptacle Replacement.....	WP 0039-1

INDEX - Continued

<u>Subject</u>	<u>WP Sequence No.-Page No.</u>
T	
Troubleshooting Index.....	WP 0004-1
Troubleshooting Procedure - Bay Will Not Unfold Automatically When Launched.....	WP 0006-1
Troubleshooting Procedure - Foldlock Will Not Engage or Hold When Engaged.....	WP 0007-1
Troubleshooting Procedure - Handrail Stanchion Does Not Hold When Set.....	WP 0008-1
Troubleshooting Procedure - Inner or Outer Pontoon Leaking.....	WP 0009-1
Troubleshooting Procedure - Lower Coupling Jammed and Will Not Line Up.....	WP 0010-1
Troubleshooting Procedure - Lower Lock-Drive Will Not Engage.....	WP 0011-1
Troubleshooting Procedure - Outer Pontoon Lock Will Not Engage or Hold When Engaged (Interior Bay Only).....	WP 0012-1
Troubleshooting Procedure - Pump System Will Not Hold Bay in Raised Position (Ramp Bay Only).....	WP 0013-1
Troubleshooting Procedure - Pump System Will Not Raise Bay (Ramp Bay Only).....	WP 0014-1
Troubleshooting Procedure - Ramp or Interior Bay Trunnions Damaged.....	WP 0015-1
Troubleshooting Procedure - Swivel Hook Will Not Engage or Hold When Engaged (Ramp Bay Only).....	WP 0016-1
Troubleshooting Procedure - Travel Latch Will Not Release.....	WP 0017-1
Troubleshooting Procedure - Upper Coupling Will Not Engage in Receptacle Block.....	WP 0018-1
Troubleshooting Procedure - Upper Coupling Will Not Release From Receptacle Block.....	WP 0019-1
Troubleshooting Procedure - Bay Will Not Fold Automatically During Retrieval.....	WP 0005-1
Trunnion Repair Preparation and Welding.....	WP 0035-1
Trunnion Wear Cap Replacement.....	WP 0034-1
Trunnion Wear Cap.....	WP 0085-1
U	
Upper Coupling and Receptacle Blocks (Ramp Bay and Interior Bay).....	WP 0090-1

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TO (Forward to proponent of publication or form) (Include ZIP Code) U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000						FROM (Activity and location) (Include ZIP Code) <i>Your mailing address</i>	
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PUBLICATION/FORM NUMBER <i>TM Number</i>						DATE <i>Date of the TM</i>	TITLE <i>Title of the TM</i>
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)	
	0007-3					<i>Figure 2, Item 9 should show a lockwasher. Currently shows a flat washer.</i>	
	0018-2					<i>Cleaning and inspection, Step 6, reference to governor support pin (14) is wrong reference. Reference should be change to (12).</i>	
<h1>SAMPLE</h1>							
TYPED NAME, GRADE OR TITLE <i>Your Name</i>						TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <i>Your Phone Number</i>	SIGNATURE <i>Your Signature</i>

TO <i>(Forward direct to addressee listed in publication)</i> U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IMP/TECH PUBS MS 727 6501 E. 11 Mile Road, Warren, MI 48397-5000	FROM <i>(Activity and location) (Include ZIP Code)</i> <i>Your Address</i>	DATE <i>Date you filled out this form</i>
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PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER <i>TM Number</i>	DATE <i>Date of the TM</i>	TITLE <i>Title of the TM</i>
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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION
<h1>SAMPLE</h1>								

PART III – REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE <i>Your Name</i>	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <i>Your Phone Number</i>	SIGNATURE <i>Your Signature</i>
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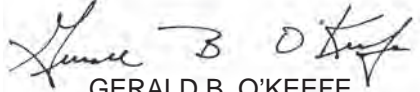
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By Order of the Secretary of the Army:

Official:

Handwritten signature of Gerald B. O'Keefe in black ink.

GERALD B. O'KEEFE
*Administrative Assistant to the
Secretary of the Army*

1532004

MARK A. MILLEY
*General, United States Army
Chief of Staff*

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THE METRIC SYSTEM AND EQUIVALENTS

<p>Linear Measure</p> <p>1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches 1 Kilometer = 1000 Meters = 0.621 Miles</p> <p>Weights</p> <p>1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces 1 Kilogram = 1000 Grams = 2.2 Pounds 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons</p> <p>Liquid Measure</p> <p>1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces</p>	<p>Square Measure</p> <p>1 Sq Centimeter = 100 Sq Millimeter = 0.155 Sq Inches 1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet 1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles</p> <p>Cubic Measure</p> <p>1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet</p> <p>Temperature</p> <p>$9/5\text{ }^{\circ}\text{C} + 32 = \text{ }^{\circ}\text{F}$ $5/9 (\text{ }^{\circ}\text{F} - 32) = \text{ }^{\circ}\text{C}$ 212° Fahrenheit is equivalent to 100° Celsius 90° Fahrenheit is equivalent to 32.2° Celsius 32° Fahrenheit is equivalent to 0° Celsius</p>
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APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

To Change	To	Multiply By
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

