

**TECHNICAL MANUAL**  
**UNIT MAINTENANCE MANUAL**  
**FOR**  
**CARRIER, PERSONNEL, FULL TRACKED, ARMORED, M113A2**  
**NSN 2350-01-068-4077**

**CARRIER, COMMAND POST, LIGHT TRACKED, M577A2**  
**NSN 2350-01-068-4089**

**CARRIER, MORTAR, 120-MM, M121; SELF-PROPELLED, M1064**  
**NSN 2350-01-338-3116**

**CARRIER, STANDARDIZED INTEGRATED COMMAND POST SYSTEM,**  
**M1068**  
**NSN 2350-01-354-5657**

**CARRIER, SMOKE GENERATOR, FULL TRACKED, M1059**  
**NSN 2350-01-203-0188**

**COMBAT VEHICLE, ANTI-TANK, IMPROVED TOW VEHICLE, M901A1**  
**NSN 2350-01-103-5641**

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NSN 2350-01-103-5641****REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

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REPLACE COMMANDER'S CUPOLA COVER (M113A2 AND M1064 ONLY).....	.0455 00
REPLACE COMMANDER'S CUPOLA HOLD-OPEN HOOK AND BUMPER (M113A2, M1059, AND M1064 ONLY).....	.0456 00
REPAIR COMMANDER'S CUPOLA MACHINE GUN MOUNT (M113A2, M1059, AND M1064 ONLY).....	.0457 00
REPLACE COMMANDER'S CUPOLA MACHINE GUN MOUNT STOPS (M1059 ONLY).....	.0458 00
REPLACE COMMANDER'S HATCH CUSHIONING PAD AND HANDLE (M577A2 AND M1068 ONLY).....	.0459 00
REPLACE COMMANDER'S HATCH INTERIOR LATCH (M577A2 AND M1068 ONLY).....	.0460 00
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REPLACE MORTAR HATCH INTERIOR RELEASE MECHANISMS (M1064 ONLY).....	.0466 00
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**CHAPTER 24**  
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<u>Title</u>	<u>Sequence No.</u>
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**REPLACE LIFTING EYE**

**0416 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0416 00-1).  
 Installation (page 0416 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

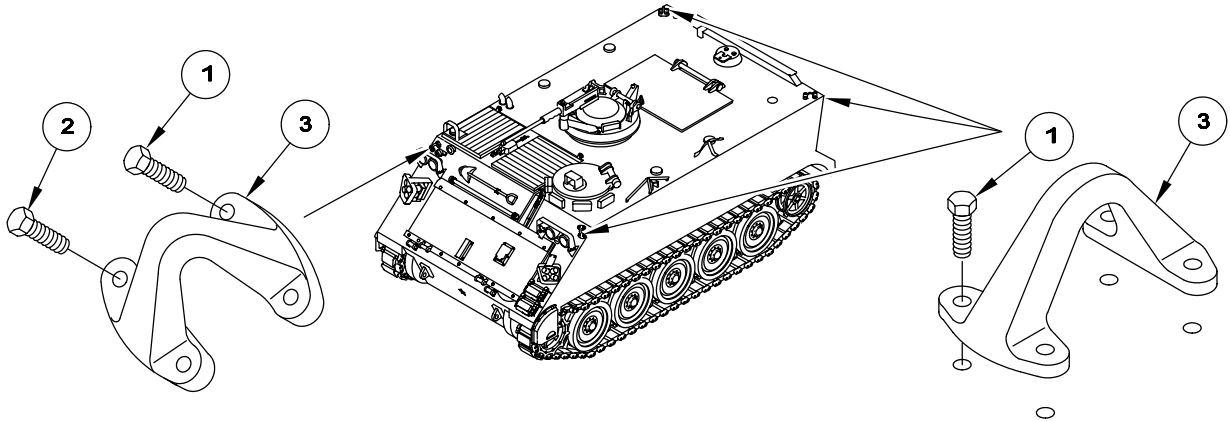
General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 105)  
 Torque Wrench Adapter (WP 0780 00, Item 3)

Equipment Condition

Engine stopped/shutdown (see your -10)  
 Carrier blocked (see your -10)

**REMOVAL**

1. Remove four screws (1) or screws (1) and (2) that secure lifting eye (3) to hull.



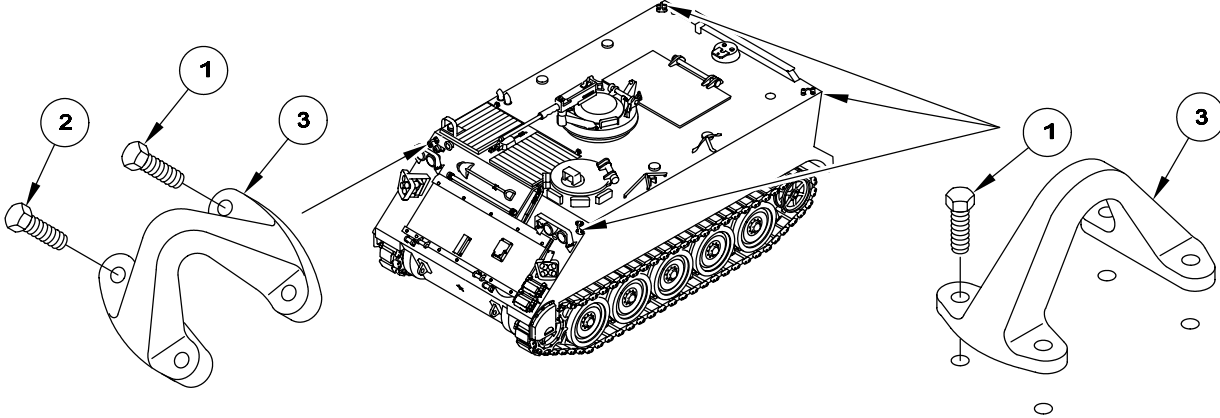
**INSTALLATION**

1. Install lifting eye (3) on hull. Secure with four screws (1) or screws (1) and (2).

**NOTE**

**Right front lifting eye has one screw (2) 2-3/4 inches (7 cm) long and three screws 2-1/2 inches (6 cm) long. All other lifting eyes use four screws 2-1/2 inches (6 cm) long.**

2. TIGHTEN SCREWS (1) AND (2) TO 175-200 LB-FT (237-271 N·M) TORQUE. Use torque wrench and adapter.

**END OF TASK**

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## REPLACE REAR TIEDOWN PLATES

---

0417 00

### THIS WORK PACKAGE COVERS:

Removal (page 0417 00-1).  
 Installation (page 0417 00-2).

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### INITIAL SETUP:

#### Maintenance Level

Unit

#### Personnel Required

Unit Mechanic

#### Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Socket Wrench Set (WP 0780 00, Item 97)  
 Torque Wrench (WP 0780 00, Item 105)

#### Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)

#### Materials/Parts

Sealing compound primer (WP 0782 00, Item 58)  
 Sealing compound (WP 0782 00, Item 67)

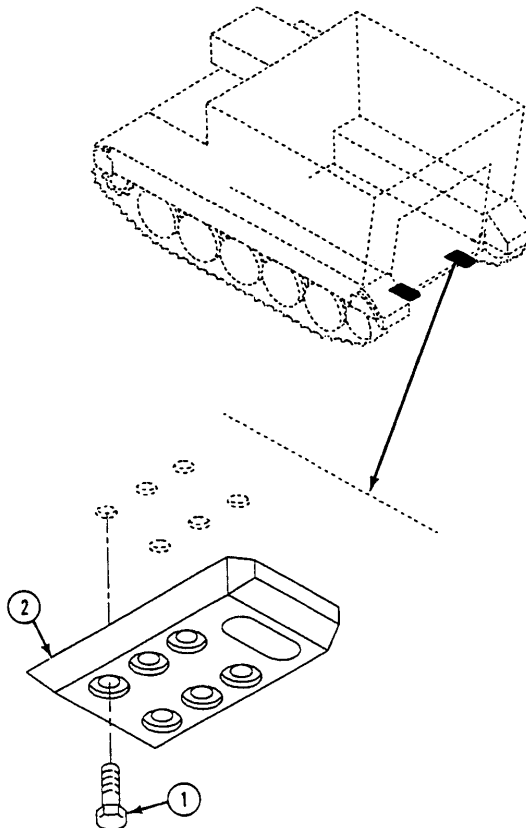
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## REMOVAL

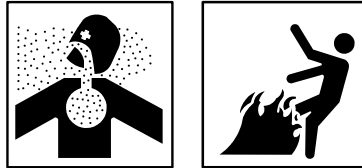
### NOTE

**Tiedown plates are in same location on all carriers.**

1. Remove 12 screws (1) and two plates (2) from bottom of carrier.



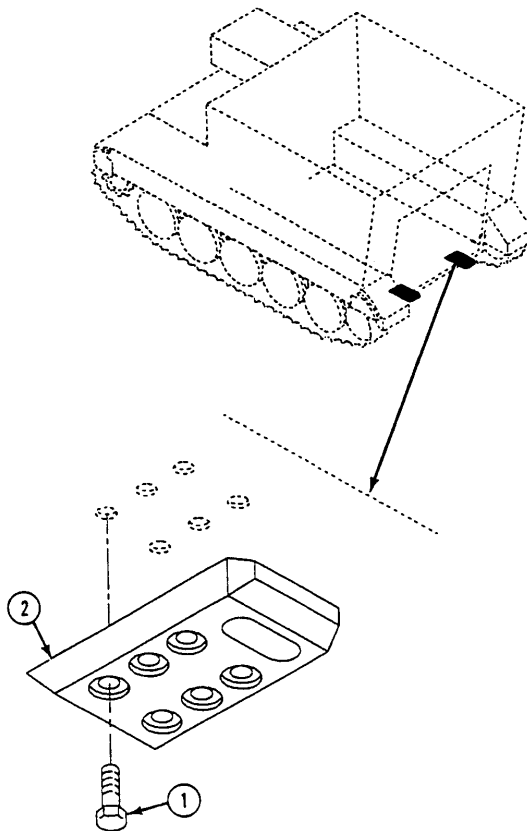
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Install two plates to bottom of carrier.
  - a. Apply a light coat of sealing compound primer and sealing compound to the threads of the 12 screws (1).
  - b. Install two plates (2) and coated screws (1) to bottom of carrier.
2. TIGHTEN 12 SCREWS (1) TO 268-295 LB-FT (363-400 N·M) TORQUE. Use torque wrench.



END OF TASK

**REPLACE TOWING HOOK AND EYE PAD**

**0418 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0418 00-1).  
 Installation (page 0418 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

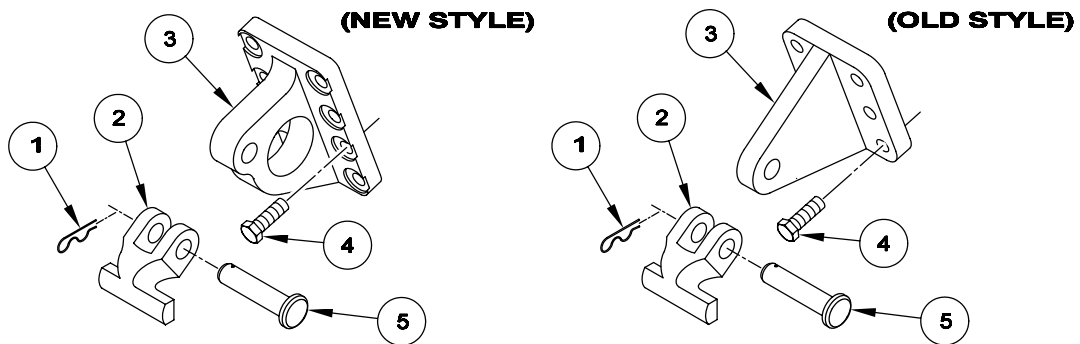
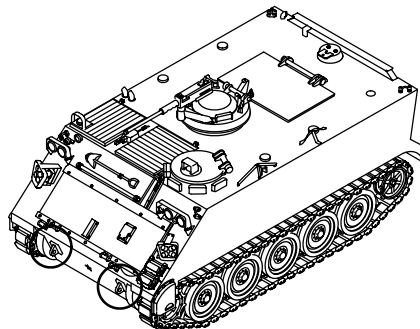
Engine stopped/shutdown (see your -10)  
 Carrier blocked (see your -10)

**REMOVAL**

**NOTE**

**Rear eyes on ramp are old style; they are removed and installed the same way. The new style eye is for tie-down of the carrier without shackles. Only the front requires the new style eyes.**

1. Remove clip (1) and pin (5) that secure hook (2) in eye pad (3). Remove hook.
2. Remove six screws (4) that secure eye pad (3) to carrier. Remove eye pad.



## INSTALLATION

**NOTE**

The torque is different for the new style front towing eye pads.

**NOTE**

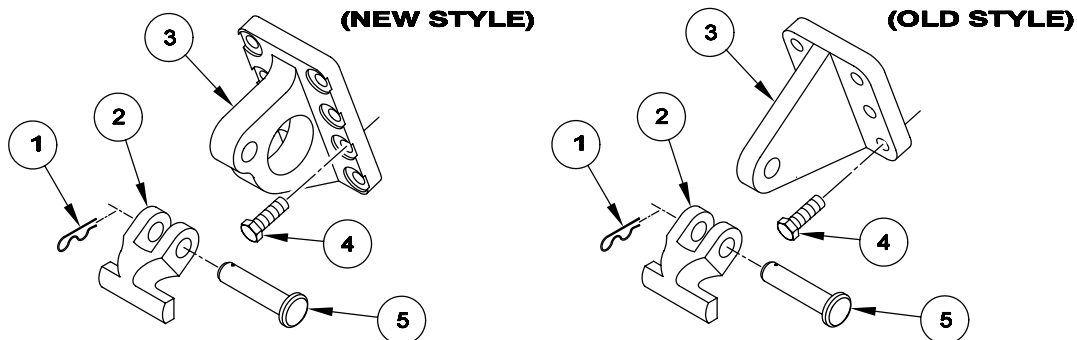
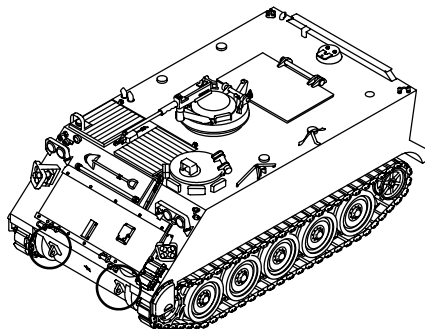
Two tow hooks (2) should be on the front eye pads (3).

1. Place eye pad (3) on rear of carrier. Secure with six screws (4). TIGHTEN SCREWS TO 130-140 LB-FT (176-190 N·M) TORQUE. Use torque wrench.

**NOTE**

Front towing eye pad is marked "TOP". Use only the top six holes for securing the towing eye pad to the hull. The other holes are for future use.

2. Place front towing eye pad (3) on front slope of carrier. Secure with six screws (4). TIGHTEN SCREWS TO 151–166 LB-FT (205–225 N·M) TORQUE. Use torque wrench.
3. Install hook (2) on eye pad (3). Secure with pin (5) and clip (1).



END OF TASK

**REPAIR/REPLACE TOWING PINTLE**

**0419 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0419 00-1).
- Disassembly (page 0419 00-2).
- Inspection-Acceptance and Rejection Criteria (page 0419 00-2).
- Assembly (page 0419 00-3).
- Installation (page 0419 00-4).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

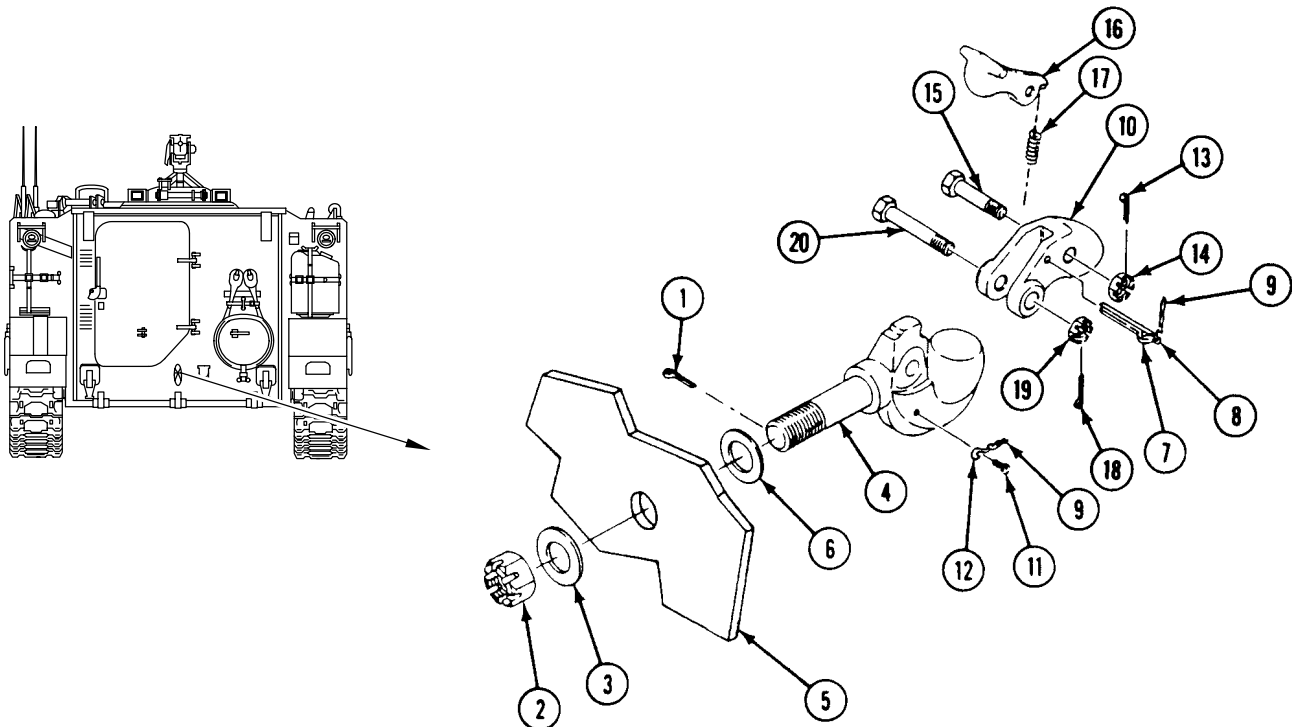
Engine stopped/shutdown (see your -10)  
Carrier blocked (see your -10)

Materials/Parts

- Cotter pin (2)
- Cotter pin
- Drive screw
- Preformed packing

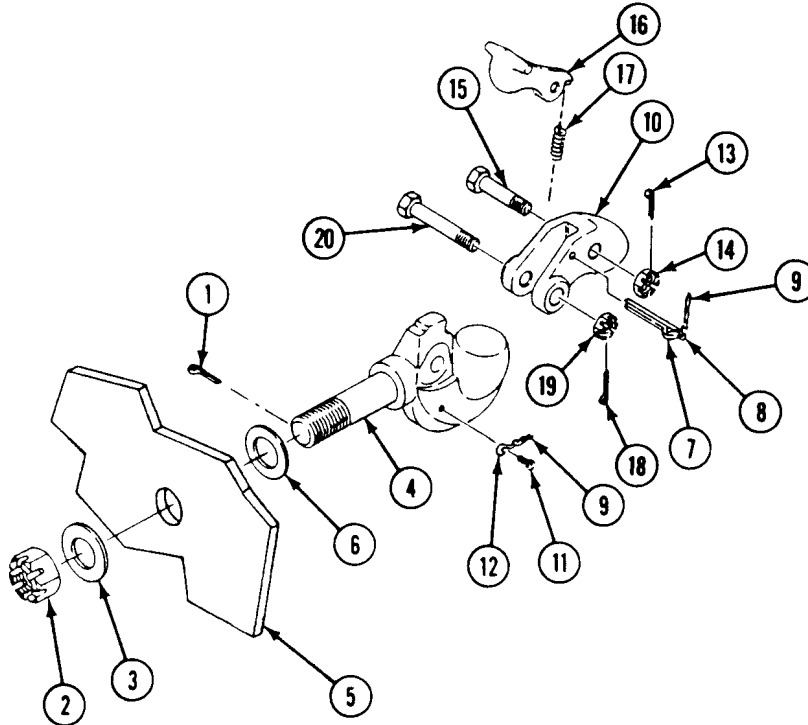
**REMOVAL**

1. Remove cotter pin (1), nut (2), and washer (3) that secure pintle (4) to ramp (5). Discard cotter pin.
2. Remove pintle (4) and preformed packing (6) from ramp (5). Discard packing.



**DISASSEMBLY**

1. Remove cotter pin (7) with S hook (8) and chain (9) from lock (10) and pintle (4).
2. Remove drive screw (11), S hook (12), and chain (9) from pintle (4). Discard drive screw.
3. If necessary, open S hooks (8) and (12) and remove chain (9) and cotter pin (7).
4. Remove cotter pin (13), nut (14), screw (15), handle (16), and spring (17) from lock (10). Discard cotter pin.
5. Remove cotter pin (18), nut (19), screw (20), and lock (10) from pintle (4). Discard cotter pin.

**INSPECTION-ACCEPTANCE AND REJECTION CRITERIA**

1. Inspect parts for corrosion, distortion, cracks, breaks, and loose or missing parts. Repair or replace damaged and missing parts.

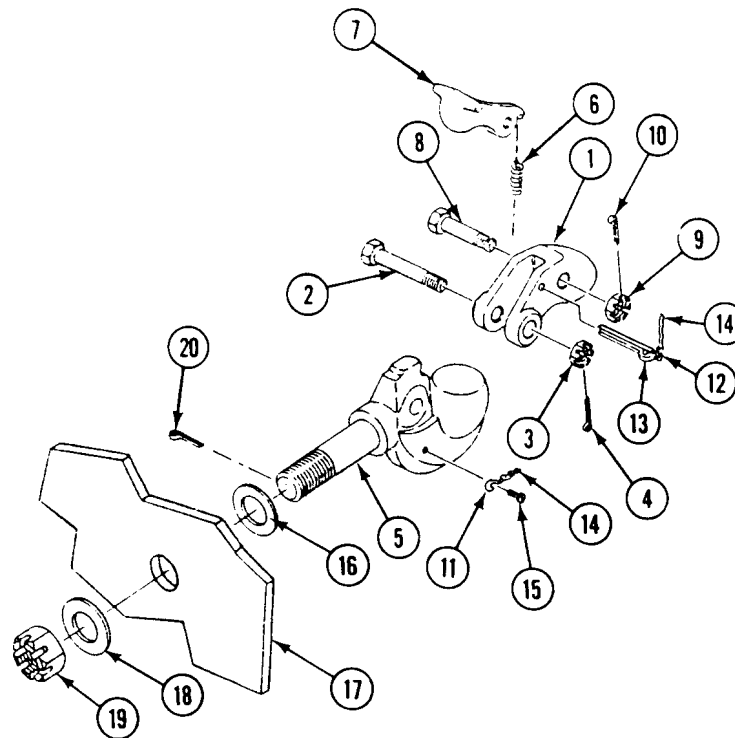


## ASSEMBLY

## NOTE

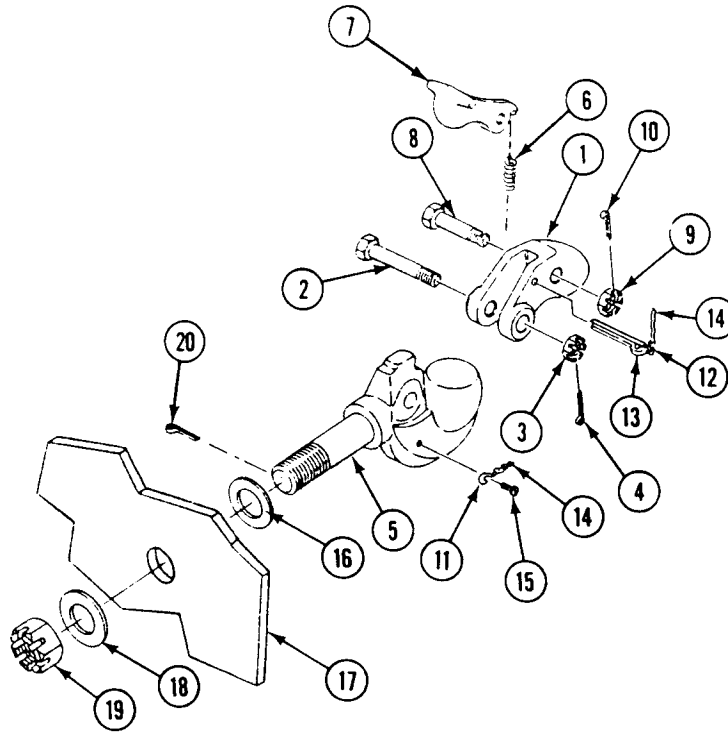
Neither the lock nor the pintle are available as repair parts.

1. Install lock (1), screw (2), nut (3), and new cotter pin (4) on pintle (5).
2. Install spring (6), handle (7), screw (8), nut (9), and new cotter pin (10) on lock (1). Check that spring is properly seated.
3. If removed, install S hooks (11) and (12) and cotter pin (13) on chain (14). Close S hook.
4. Install S hook (11), chain (14), and new drive screw (15) on pintle (5).
5. Install cotter pin (13) with attached S hook (12) and chain (14) on lock (1) and pintle (5).



**INSTALLATION**

1. Install new preformed packing (16) and pintle (5) on ramp (17).
2. Install washer (18), nut (19), and new cotter pin (20) on pintle (5).



3. Check that pintle turns freely on ramp after installation.

**END OF TASK**

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**REPLACE TOW CABLE PAD**

**0420 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0420 00-1).  
 Installation (page 0420 00-2).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Tow cable removed (see your -10)

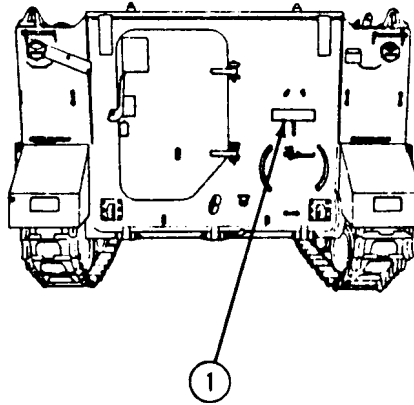
Materials/Parts

Adhesive (WP 0782 00, Item 3)

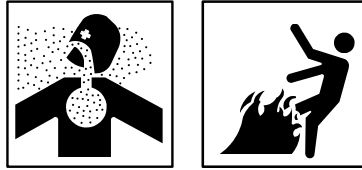
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**REMOVAL**

1. Check pad (1). If pad is cracked, broken, cut, or not flexible, scrape from hull.



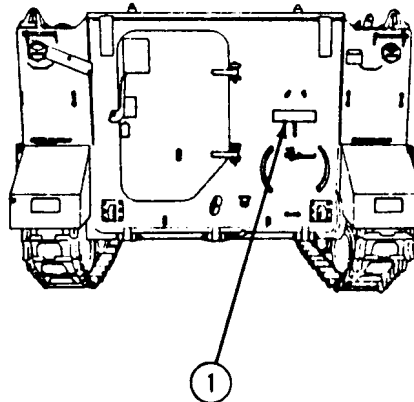
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply a thin coat of adhesive to hull and back of new pad (1).
2. Allow adhesive to dry for 10 to 20 minutes. Surface should be tacky, but not too sticky.
3. Position pad (1) on hull surface and press firmly in place.

**FOLLOW-THROUGH STEPS**

1. Install tow cable (see your -10).

**END OF TASK**

## REPLACE TRIM VANE

0421 00

### THIS WORK PACKAGE COVERS:

Removal (page 0421 00-1).  
Installation (page 0421 00-2).

### INITIAL SETUP:

#### Maintenance Level

Unit

#### References

See your -10

#### Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

#### Equipment Condition

Engine stopped (see your -10)  
Carrier blocked (see your -10)  
Trim vane stowed (see your -10)

#### Materials/Parts

Locknut (4)

#### Personnel Required

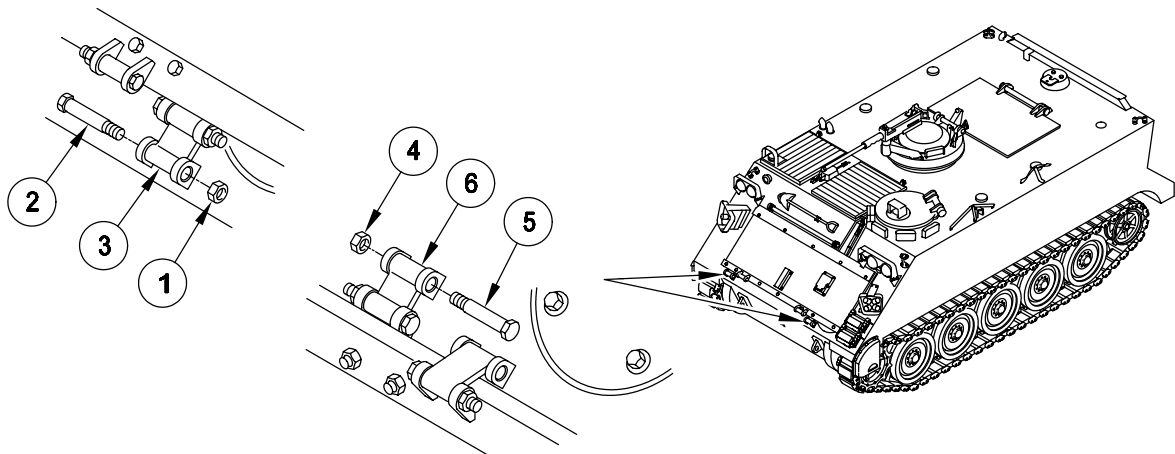
Unit Mechanic  
Helper (H)

## REMOVAL

### NOTE

**Pods on trim vane are no longer required. Remove and dispose if still on trim vane.**

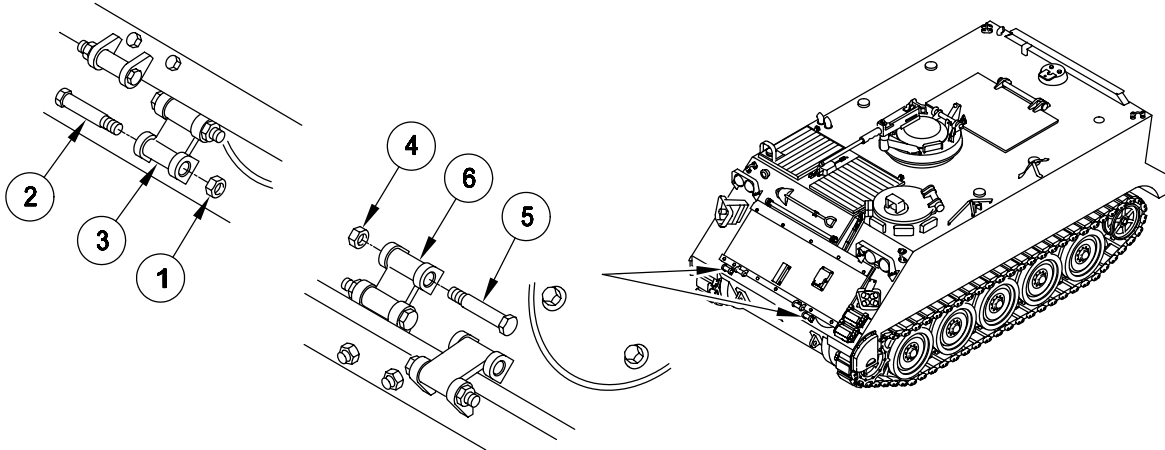
1. Remove two outer locknuts (1) and screws (2) from hinges (3). Discard locknuts.
2. (H): Lower trim vane (see your -10).
3. Remove two inner locknuts (4) and screws (5) from hinges (6). Remove trim vane from carrier. Have helper assist. Discard locknuts.



4. Remove hinges from trim vane and retain.

**INSTALLATION**

1. Install hinges on new trim vane.
2. Place trim vane on carrier and align four hinges. Have helper assist. Secure two inner hinges (6) with two screws (5) and new locknuts (4).
3. (H): Stow trim vane (see your -10).
4. Secure two outer hinges (3) with two screws (2) and new locknuts (1).

**FOLLOW-THROUGH STEPS**

1. Raise trim vane (see your -10).

**END OF TASK**

**REPAIR TRIM VANE**

**0422 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0422 00-1).  
 Assembly (page 0422 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

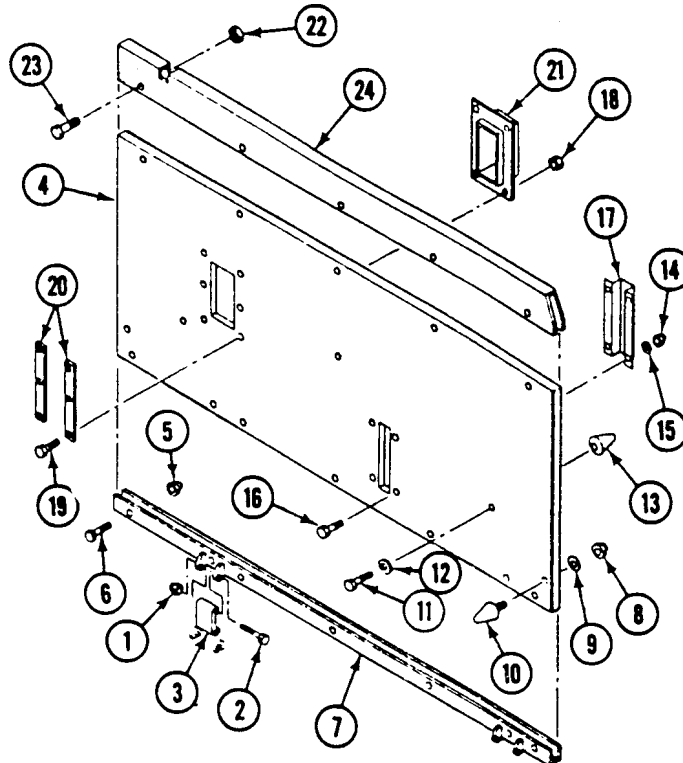
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Trim vane removed (WP 0421 00)

Materials/Parts

Locknut (7)  
 Locknut (16)  
 Locknut (2)

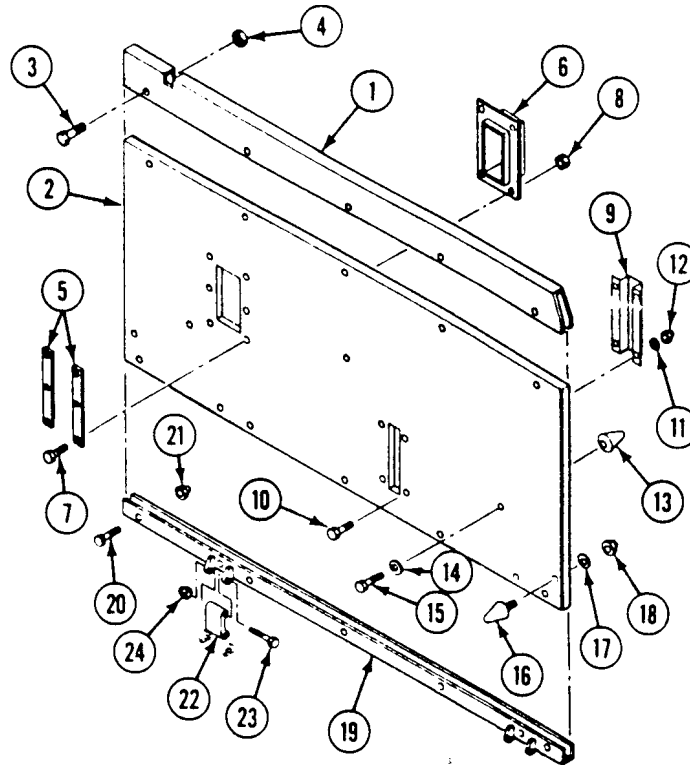
**DISASSEMBLY**

1. Remove two locknuts (1), screws (2), and hinges (3) from trim vane (4). Discard locknuts.
2. Remove seven locknuts (5), screws (6), and lower stiffener (7) from vane (4). Discard locknuts.
3. Remove three locknuts (8), washers (9), and bumpers (10) from vane (4). Discard locknuts.
4. Remove two screws (11), washers (12), and bumpers (13) from vane (4).
5. Remove four locknuts (14), washers (15), screws (16), and guard (17) from vane (4). Discard locknuts.
6. Remove six locknuts (18), screws (19), two plates (20), and release assembly (21) from vane (4). Discard locknuts.
7. Remove five locknuts (22), screws (23), and upper stiffener (24) from vane (4). Discard locknuts.



**ASSEMBLY**

1. Install release assembly (6) in trim vane (2). Secure with two plates (5), six screws (7), and new locknuts (8).
2. Install upper stiffener (1) on trim vane (2). Secure with five screws (3) and new locknuts (4).
3. Install lower stiffener (19) on trim vane (2). Secure with seven screws (20) and new locknuts (21).
4. Install two hinges (22) on lower stiffener (19). Secure with two screws (23) and new locknuts (24).
5. Install three bumpers (16) on trim vane (2). Secure with three washers (17) and new locknuts (18).
6. Install guard (9) on vane (2). Secure with four screws (10), washers (11), and new locknuts (12).
7. Install two screws (15), washers (14), and bumpers (13).



**FOLLOW-THROUGH STEPS**

1. Install trim vane (WP 0421 00).

**END OF TASK**



**REPAIR TRIM VANE CONTROL LINKAGE**

**0423 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0423 00-1).  
 Assembly (page 0423 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Trim vane lowered (see your -10)

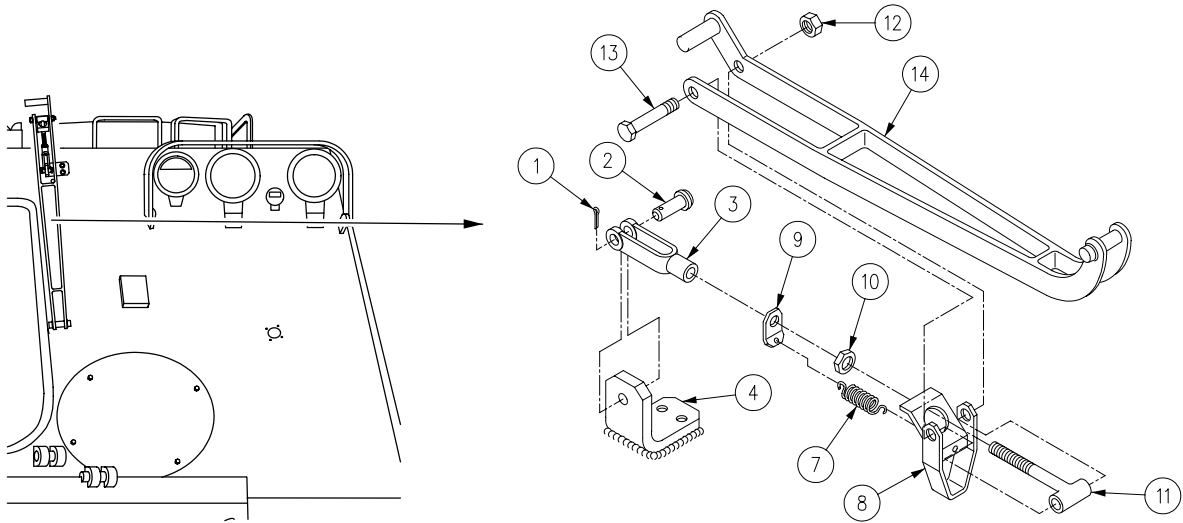
Materials/Parts

Cotter pin

Locknut

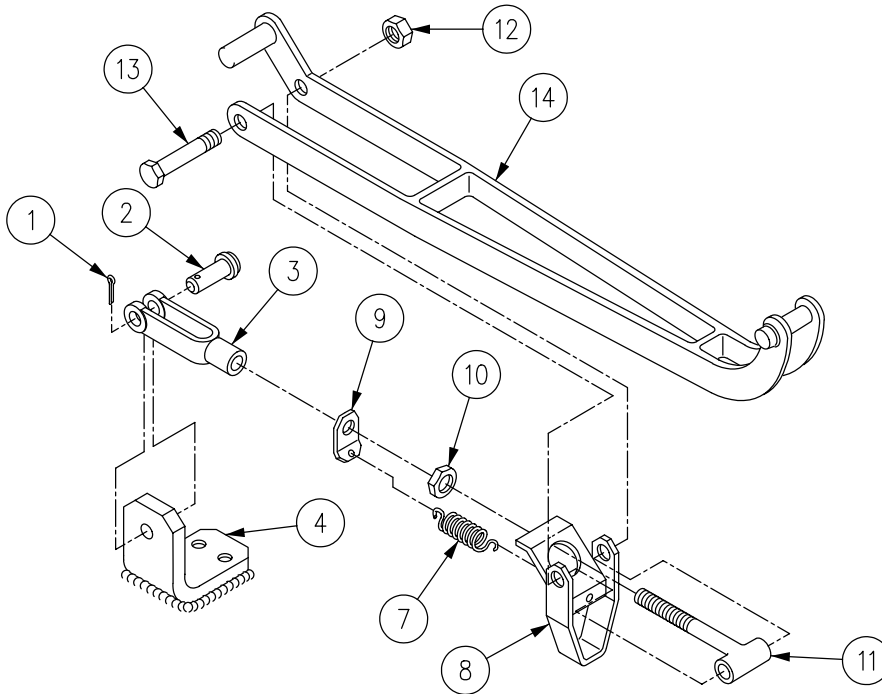
**DISASSEMBLY**

1. Remove cotter pin (1) from pin (2). Remove pin (2) from clevis (3) and pivot bracket (4). Discard cotter pin.
2. Disconnect spring (7) from catch (8) and bracket (9).
3. Remove clevis (3), bracket (9), and nut (10) from eyebolt (11).
4. Remove locknut (12), screw (13), catch (8), and eyebolt (11) from extension (14). Remove extension. Discard locknut.



**ASSEMBLY**

1. Install eyebolt (11) and catch (8) on extension (14). Secure with screw (13) and new locknut (12).
2. Install nut (10), bracket (9), and clevis (3) on eyebolt (11).
3. Install spring (7) on catch (8) and bracket (9).
4. Position trim vane control linkage on carrier with clevis (3) aligned with pivot bracket (4).
5. Install pin (2) in clevis (3) and pivot bracket (4). Secure with new cotter pin (1).
6. Adjust clevis (3) to provide overcenter lock in retracted position.
7. Adjust trim vane quick release to provide overcenter lock in retracted position.



**FOLLOW-THROUGH STEPS**

1. Raise trim vane (see your -10).

**END OF TASK**

**REPLACE TRIM VANE RELEASE**

**0424 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0424 00-1).
- Installation (page 0424 00-2).
- Adjustment (page 0424 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

See your -10

Materials/Parts

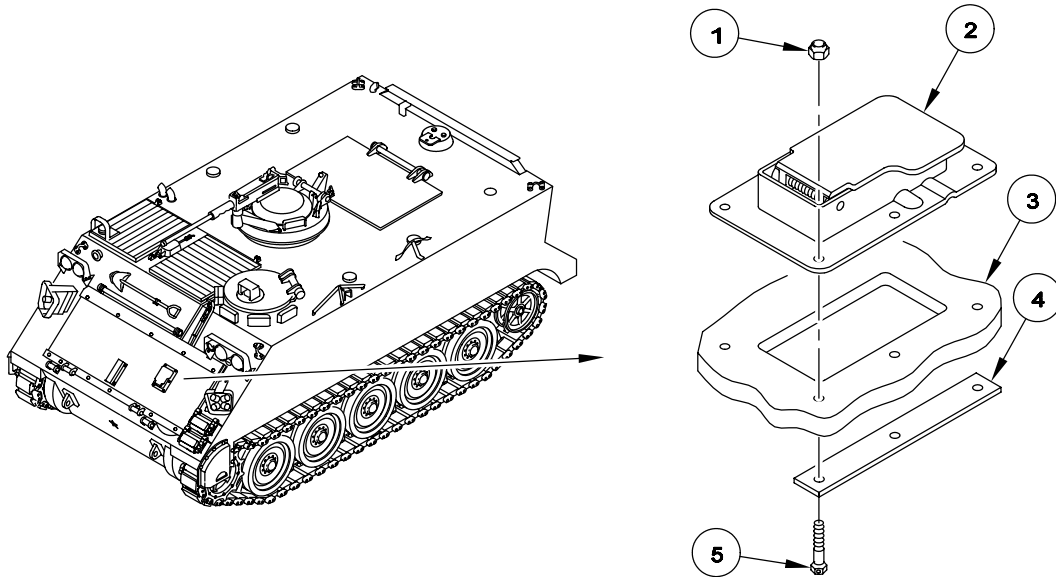
- Cotter pin
- Cotter pin
- Locknut (6)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Trim vane lowered (see your -10)

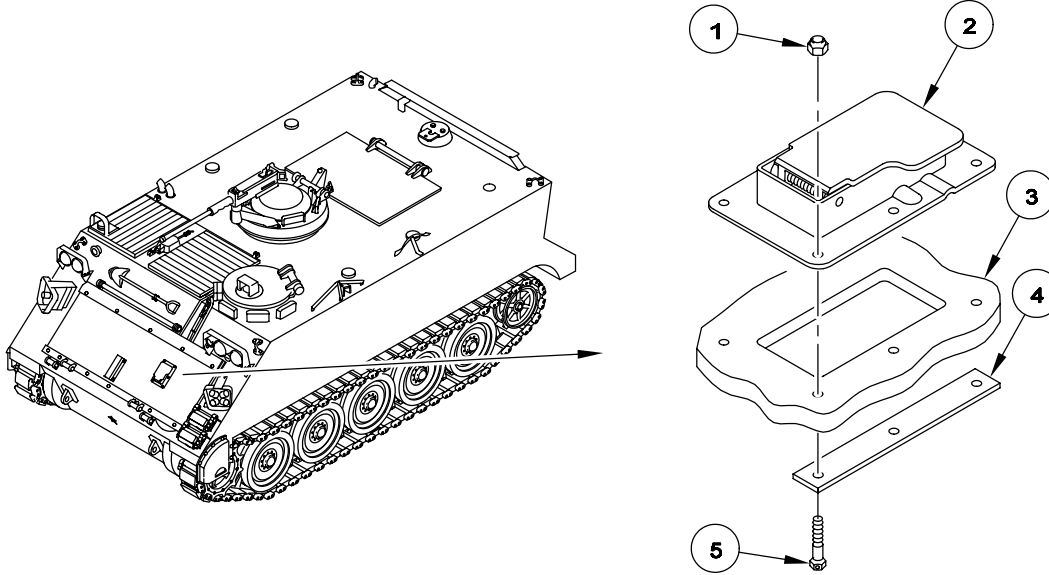
**REMOVAL**

1. Remove six locknuts (1), screws (5), and two plates (4) from trim vane (3). Discard locknuts.
2. Remove trim vane release (2) from trim vane (3).



**INSTALLATION**

1. Place two plates (4) and trim vane release (2) on trim vane (3). Secure with six screws (5) and new locknuts (1).



## ADJUSTMENT

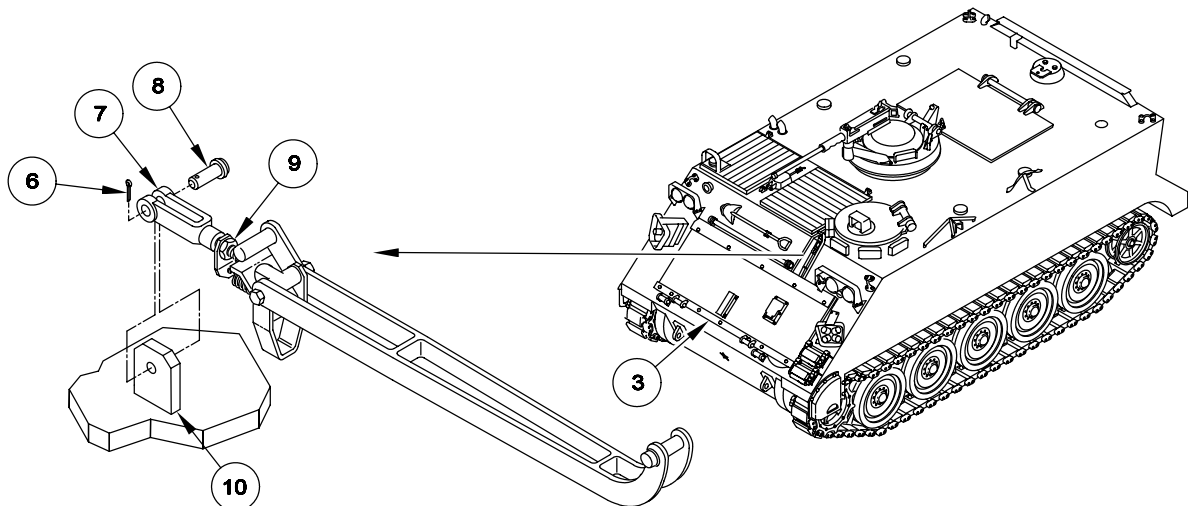
**WARNING**

**Trim vane can fall and injure personnel. Make sure trim vane zone is clear when you lower or stow trim vane.**

**NOTE**

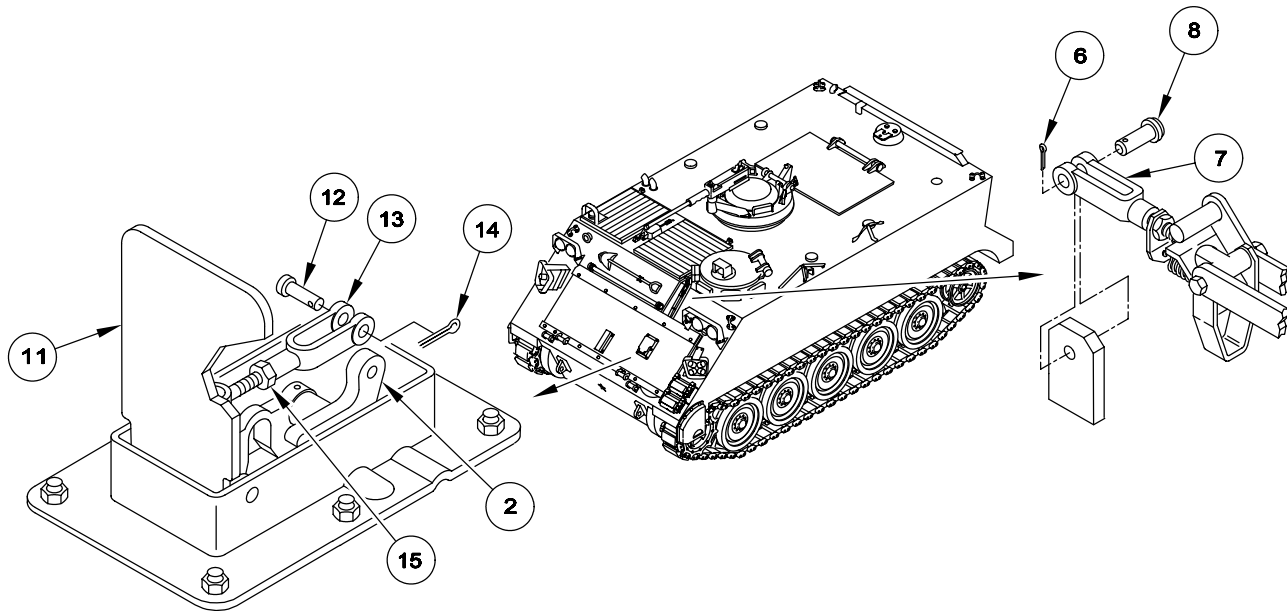
**Several adjustments of clevis rod ends on extension linkage and trim vane release may be necessary to obtain overcenter lock in retracted position.**

1. Stow trim vane (see your -10).
2. Manually move upper edge of trim vane (3) forward and rearward to check trim vane for excess movement in stowed position. If trim vane moves too much or is not secure in stowed position, go to Step 3.
3. Remove cotter pin (6) and pin (8) from clevis rod end (7) and bracket (10). Loosen nut (9) and turn clevis rod end to change length of extension linkage. Tighten nut. Retain cotter pin until adjustments are complete.
4. Install clevis rod end (7), pin (8), and retained cotter pin (6) on bracket (10). Check that extension linkage provides overcenter lock in retracted position.
5. Check trim vane (3) for excess movement in stowed position. If trim vane moves too much or is not secure in stowed position, go to Step 6.



**REPLACE TRIM VANE RELEASE — Continued****0424 00**

6. Lower trim vane (see your -10) and secure in safe position for access to trim vane release handle (11).
7. Lift and secure spring-loaded trim vane release handle (11) for access to internal parts.
8. Remove cotter pin (14), straight pin (12), and clevis rod end (13) from trim vane release (2). Retain cotter pin until adjustments are complete.
9. Loosen nut (15) and turn clevis rod end (13) to change length of clevis rod. Tighten nut.
10. Install clevis rod end (13), straight pin (12), and retained cotter pin (14) on trim vane release linkage (2).
11. Check that trim vane release linkage (2) provides overcenter lock in retracted position. Repeat adjustment procedure for clevis rod ends on extension linkage and trim vane release, if necessary.
12. Remove and discard retained cotter pin (6) from pin (8) on extension linkage clevis rod end (7). Install new cotter pin (6).
13. Remove and discard retained cotter pin (14) from straight pin (12) on trim vane release linkage (2). Install new cotter pin (14).

**FOLLOW-THROUGH STEPS**

1. Raise trim vane (see your -10).

**END OF TASK**

**REPAIR TRIM VANE RELEASE**

**0425 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0425 00-1).  
 Assembly (page 0425 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

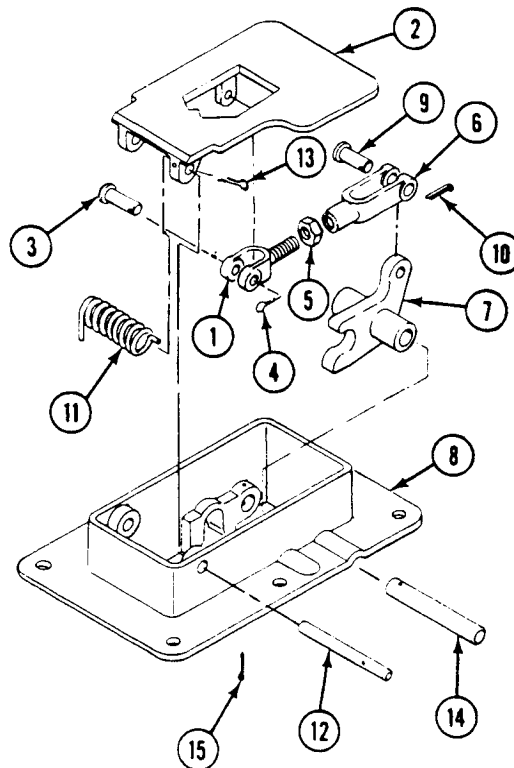
Trim vane release removed from trim vane (WP 0424 00)  
 Engine stopped (see your -10)  
 Carrier blocked (see your -10)

Materials/Parts

Solvent, cleaning compound (WP 0782 00, Item 16)  
 Cotter pin (4)

**DISASSEMBLY**

1. Remove cotter pin (13), straight pin (12), and cover (2) from housing (8). Discard cotter pin.
2. Remove cotter pin (4), headed pin (3), and cover (2) from clevis (1). Discard cotter pin.
3. Remove cover (2) and spring (11) from housing (8).
4. Remove clevis (1) and nut (5) from clevis (6).
5. Remove cotter pin (10), headed pin (9), and clevis (6) from trim vane release (7). Discard cotter pin.
6. Remove cotter pin (15), straight pin (14), and release (7) from housing (8). Discard cotter pin.

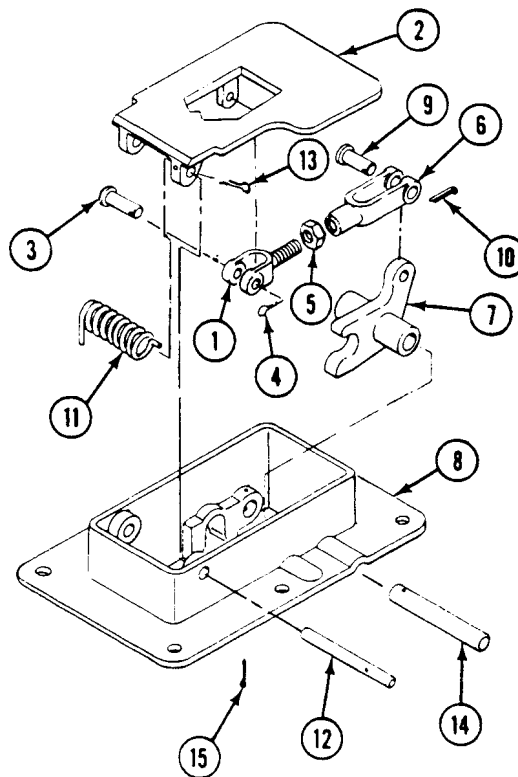


7. Clean parts with solvent, cleaning compound.
8. Check spring for corrosion, distortion, weakness, cracks, and breaks. Replace damaged spring.

9. Check cover and housing for corrosion, distortion, cracks, and missing parts. Repair or replace damaged parts.
10. Check parts for corrosion, distortion, cracks, breaks, and missing parts. Repair or replace damaged and missing parts.

### ASSEMBLY

1. Install clevis (1) on cover (2). Secure with headed pin (3) and new cotter pin (4).
2. Install nut (5) and clevis (6) on clevis (1).
3. Install release (7) on housing (8). Secure with straight pin (14) and new cotter pin (15).
4. Place spring (11) in housing (8). Secure cover (2) to housing with straight pin (12) and new cotter pin (13).
5. Raise cover (2). Install clevis (6) on release (7). Secure with headed pin (9) and new cotter pin (10).



### FOLLOW-THROUGH STEPS

1. Install trim vane release on trim vane (WP 0424 00).

### END OF TASK



**REPLACE POWER PLANT DOOR COMBAT LOCK**

**0426 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0426 00-1).  
 Installation (page 0426 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Trim vane lowered and disconnected (see your -10)  
 Power plant door open (see your -10)  
 Battery ground lead disconnected (WP 0294 00)

Materials/Parts

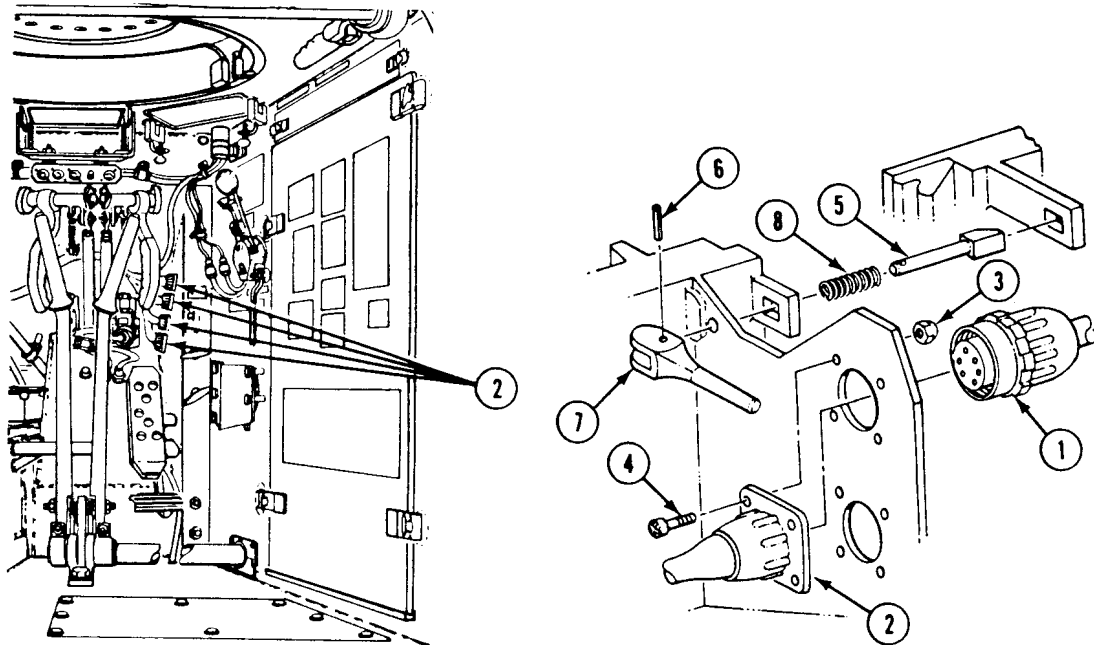
Drive pin  
 Locknut (16)

**REMOVAL**

**NOTE**

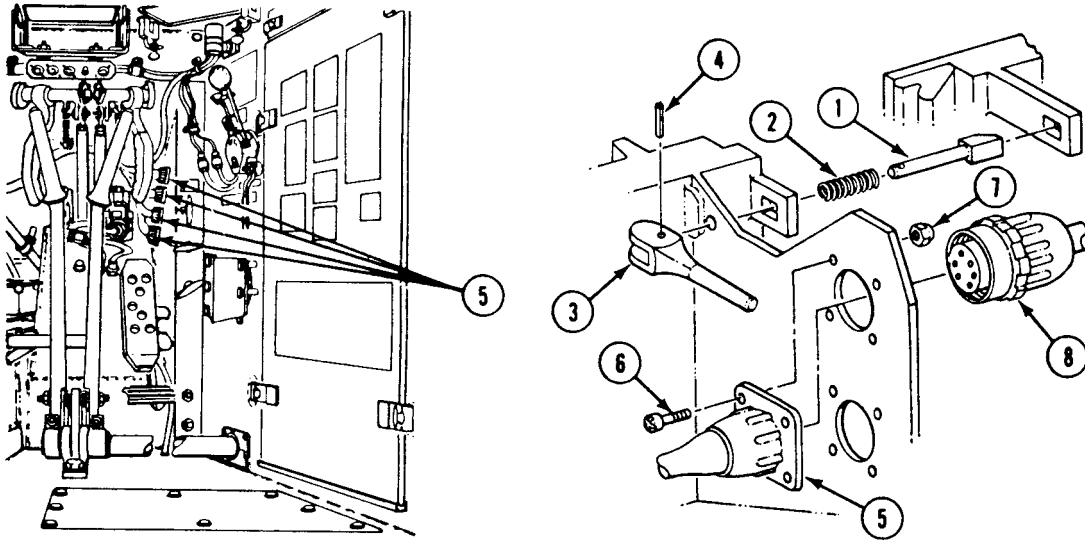
**Tag or mark each harness to make sure each is installed in the proper connector after service.**

1. Disconnect four wiring harnesses (1) from bulkhead connectors (2) inside driver's compartment.
2. Remove 16 locknuts (3) and screws (4), and four wiring harness connectors (2) from bulkhead. Discard locknuts.
3. (H): Hold hand under bolt (5) from inside carrier through power plant access door opening.
4. Drive out pin (6). Remove handle (7) and spring (8) from bolt (5). Discard drive pin.
5. (H): Remove bolt (5) from power plant compartment.



**INSTALLATION**

1. (H): Install bolt (1) and spring (2) in place from outside of carrier through access to power plant compartment.
2. From inside driver's compartment, install handle (3) on bolt (1). Secure with new pin (4).
3. Install four wiring harness connectors (5), 16 screws (6), and new locknuts (7) on bulkhead.
4. Connect four wiring harness connectors (8) to bulkhead connectors (5) inside driver's compartment.

**FOLLOW-THROUGH STEPS**

1. Connect battery ground lead (WP 0294 00).
2. Close power plant door (see your -10).
3. Connect and raise trim vane (see your -10).

**END OF TASK**

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**REPLACE POWER PLANT DOOR**

**0427 00**

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**THIS WORK PACKAGE COVERS:**

Removal page 0427 00-1.  
 Installation page 0427 00-3.

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Sling (WP 0780 00, Item 66)  
 Socket Wrench Set (WP 0780 00, Item 96)  
 Torque Wrench (WP 0780 00, Item 102)  
 Suitable Lifting Device

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Trim vane lowered and disconnected (see your -10)  
 Power plant door open (see your -10)

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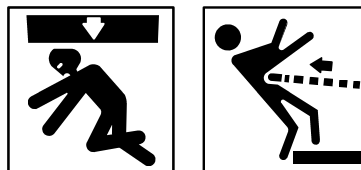
**REMOVAL**

**WARNING**



**Power plant door is heavy. It can fall and injure you. Do not remove housing before relieving spring tension by lifting and holding with lifting device.**

**WARNING**



**Damaged slings can fail when loaded. Breaking slings can strike and injure personnel. Suspended load can fall and crush personnel.**

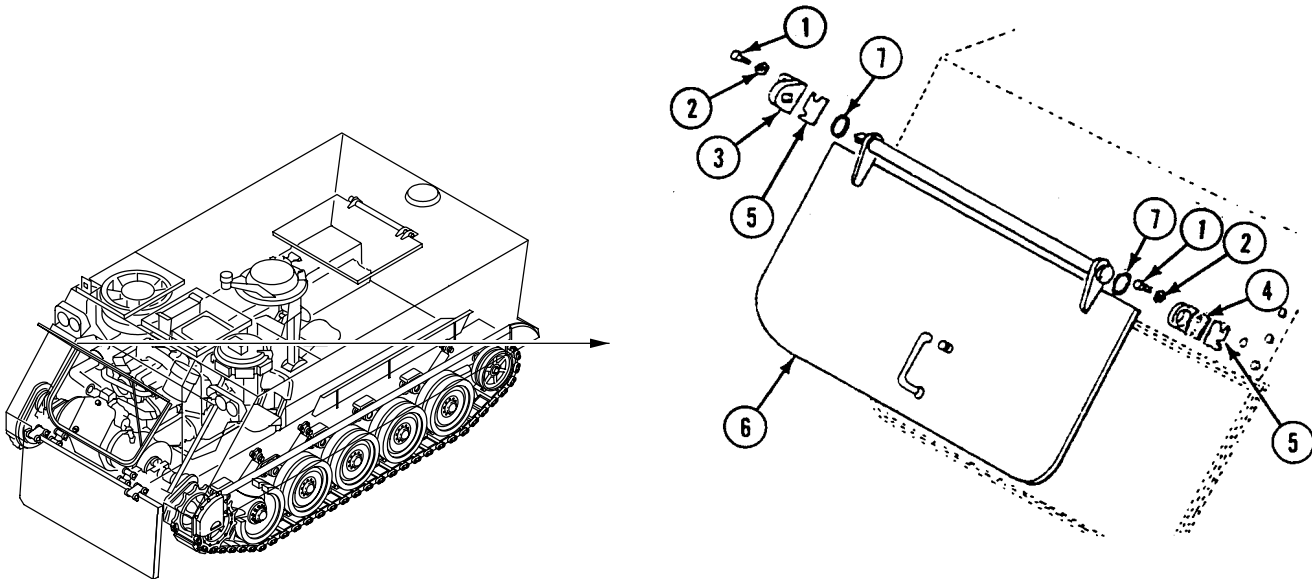
**Inspect all slings before use. Do not use damaged slings. Clearly mark all damaged slings as DAMAGED - DO NOT USE.**

**WARNING**

**Hanging loads, heavy parts, and overhead equipment can fall unexpectedly and kill or injure you.**

**Stay clear of hanging loads, heavy parts, and overhead equipment. Use correct lifting devices. Always have helper guide heavy parts and equipment.**

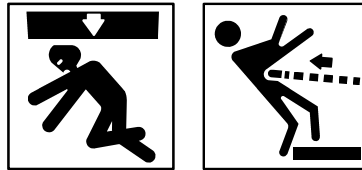
1. Connect a suitable lifting device and sling around power plant door. Hold door straight up until tension is gone. Have helper assist.
2. Remove four screws (1), washers (2), two brackets (3) and (4), plates (5), and power plant door (6) from hull.
3. Remove two spacers (7) from ends of power plant door (6).



**INSTALLATION**

1. Install two spacers (7) on ends of power plant door (6).

**WARNING**



**Damaged slings can fail when loaded. Breaking slings can strike and injure personnel. Suspended load can fall and crush personnel.**

**Inspect all slings before use. Do not use damaged slings. Clearly mark all damaged slings as DAMAGED - DO NOT USE.**

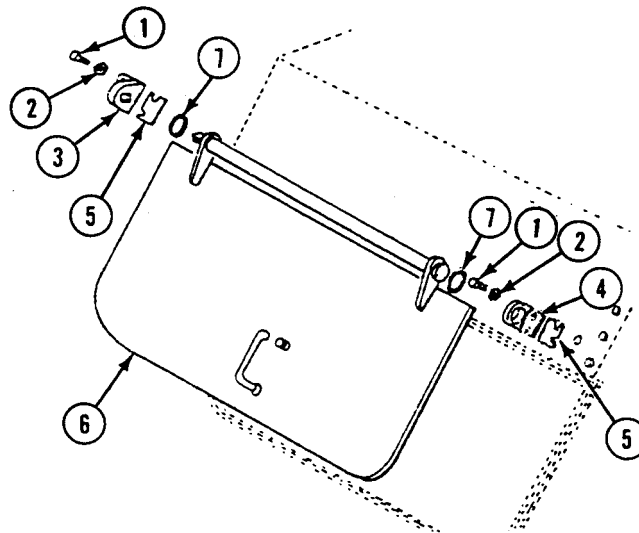
**WARNING**



**Hanging loads, heavy parts, and overhead equipment can fall unexpectedly and kill or injure you.**

**Stay clear of hanging loads, heavy parts, and overhead equipment. Use correct lifting devices. Always have helper guide heavy parts and equipment.**

2. Connect suitable lifting device around power plant door (6) and position on hull. Have helper assist.



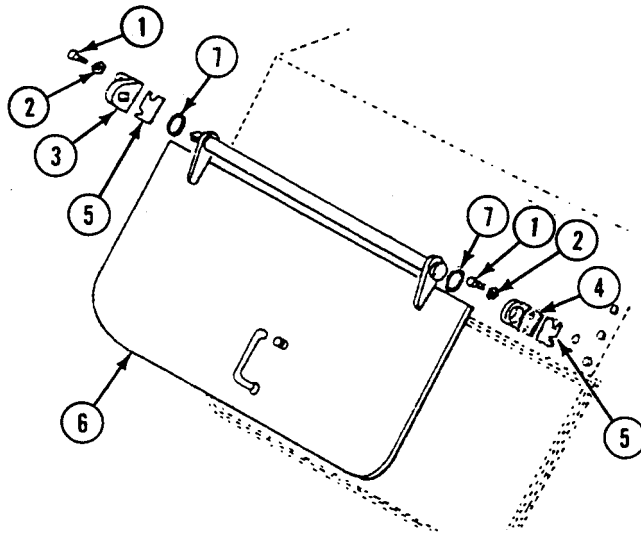
**REPLACE POWER PLANT DOOR — Continued****0427 00**

3. Install bracket (4) on left end of power plant door (6), with door in open position. Secure brackets (3) and (4) to hull with four washers (2), and screws (1). Do not tighten screws.

**NOTE**

**Do Step 4 if power plant door does not clear top of opening.**

4. Place plates (5) under brackets (3) and (4). After each plate is installed, tighten screws (1) until power plant door (6) clears top of opening.
5. **TIGHTEN FOUR SCREWS (1) TO 216-240 LB-IN (24-27 N·M) TORQUE.** Use torque wrench.
6. Remove lifting device and sling from power plant door.

**FOLLOW-THROUGH STEPS**

1. Close and lock power plant door (see your -10).
2. Connect and raise trim vane (see your -10).

**END OF TASK**

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**REPAIR POWER PLANT DOOR**

**0428 00**

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**THIS WORK PACKAGE COVERS:**

- Disassembly (page 0428 00-2).
  - Assembly (page 0428 00-3).
  - Adjustment (page 0428 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Power plant door removed from carrier (WP 0427 00)

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Cotter pin

Locknut

Preformed packing

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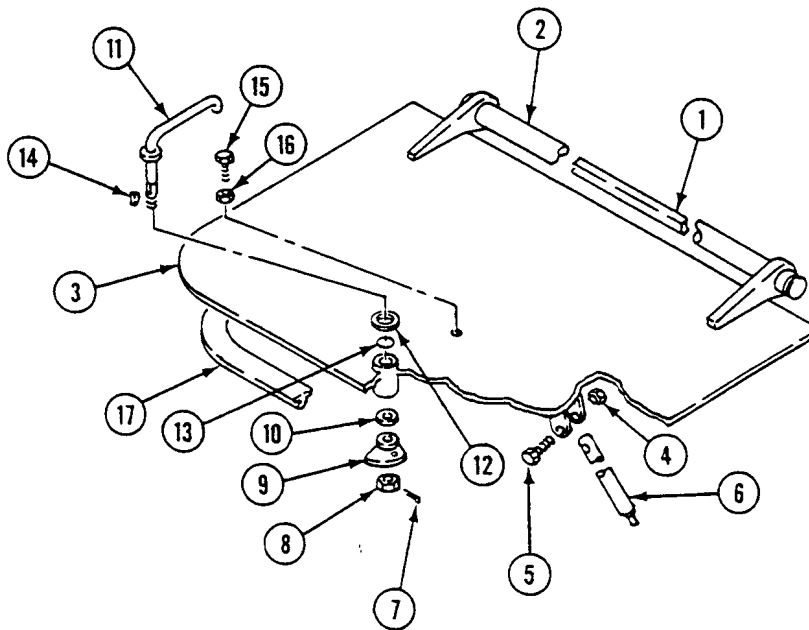
**DISASSEMBLY**

1. Remove vehicular leaf pins (1) and shield (2) from door (3).
2. Remove locknut (4), screw (5), and brace (6) from door (3). Discard locknut.
3. Remove cotter pin (7), nut (8), catch (9), and washer (10) from handle (11). Discard cotter pin.
4. Remove handle (11), washer (12), packing (13), and key (14) from door (3). Discard packing.
5. Remove screw (15) and nut (16) from door (3).

**NOTE**

**Do Step 6 only if door seal is damaged.**

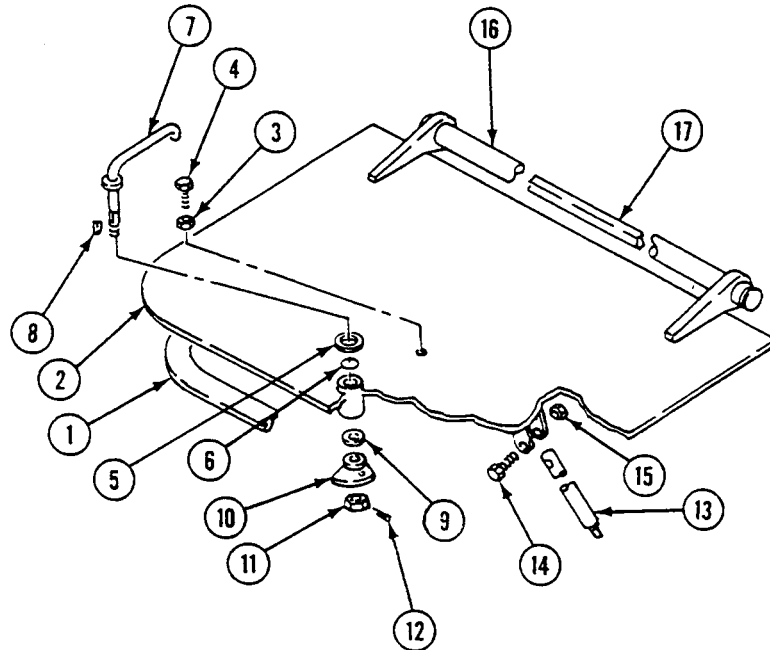
6. Bend back door seal support and remove seal (17) from door (3). Discard seal.





**ASSEMBLY**

1. If removed, install new seal (1) on door (2). Bend seal support into place to hold seal.
2. Install nut (3) and screw (4) on door (2).
3. Install washer (5) and new packing (6) on handle (7).
4. Install key (8) on handle (7). Insert handle and key in door (2). Make sure key (8) and keyway in door are aligned.
5. Install washer (9), catch (10), nut (11), and new cotter pin (12) on handle (7).
6. Install brace (13) on door (2). Secure with screw (14) and new locknut (15).
7. Install shield (16) and vehicular leaf pins (17) on door (2).

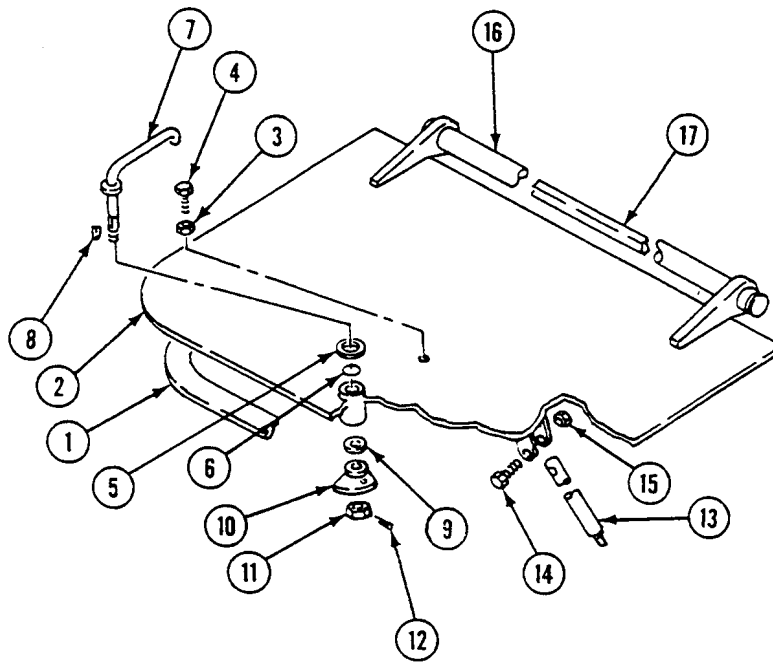


## ADJUSTMENT

## NOTE

After door is installed on carrier, it may be necessary to add or remove washers until door locks securely on hull.

1. Adjust screw (4) until handle (7) rubs on head of screw. This adds slight detent action when opening or closing door (2).



## FOLLOW-THROUGH STEPS

1. Install power plant door on carrier (WP 0427 00).

## END OF TASK

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**REPLACE HULL FRONT ACCESS COVER**

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**0429 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0429 00-1).  
 Installation (page 0429 00-2).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 104)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Trim vane lowered (see your -10)

Materials/Parts

Adhesive (WP 0782 00, Item 3)

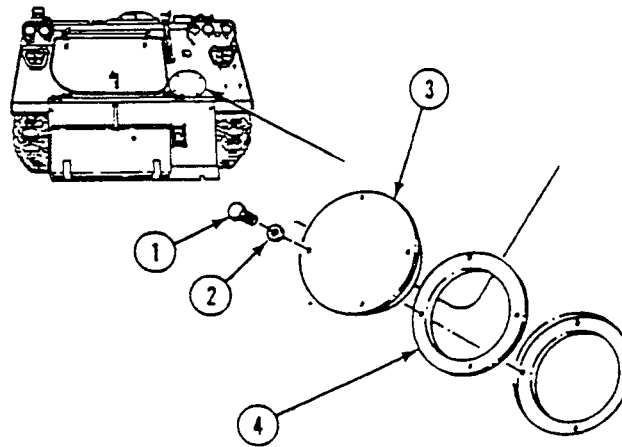
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**REMOVAL**

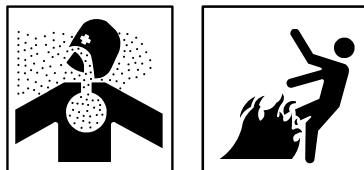
**NOTE**

**Remove gasket (4) only if damaged.**

1. Remove four screws (1), washers (2), and cover (3) from hull.



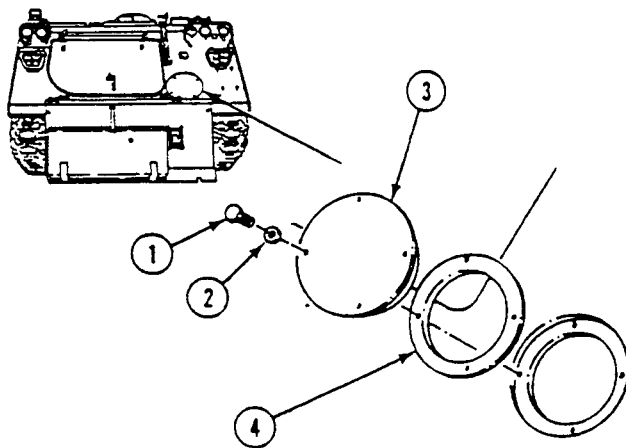
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply thin coat of adhesive to one side of new gasket (4), if gasket is being replaced, and allow to dry 20-40 minutes. Apply thin coat of adhesive to cleaned bottom side of cover. Allow to dry 30-120 seconds.
2. Position gasket (4) on cleaned bottom side of cover (3). Align mounting holes in cover and gasket.
3. Secure cover (3) and gasket (4) to hull with four washers (2) and screws (1). TIGHTEN SCREWS TO 40-50 LB-FT (54-68 N·M) TORQUE. Use torque wrench.

**FOLLOW-THROUGH STEPS**

1. Raise trim vane (see your -10).

**END OF TASK**

**REPLACE DRIVER'S POWER PLANT ACCESS PANEL**

**0430 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0430 00-1).  
 Installation (page 0430 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

References

WP 0120 00

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Cotter pin (4)

Personnel Required

Unit Mechanic

**REMOVAL**

**NOTE**

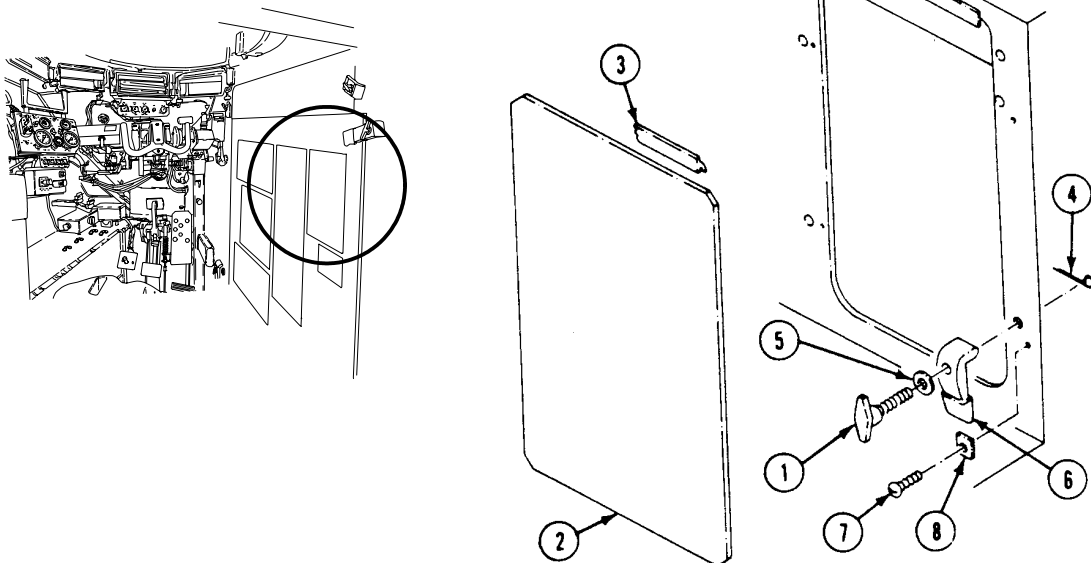
**If decals and plates on panel need replacing, see WP 0511 00.**

1. Unscrew four T-bolts (1). Remove driver's access panel (2) from hull.

**NOTE**

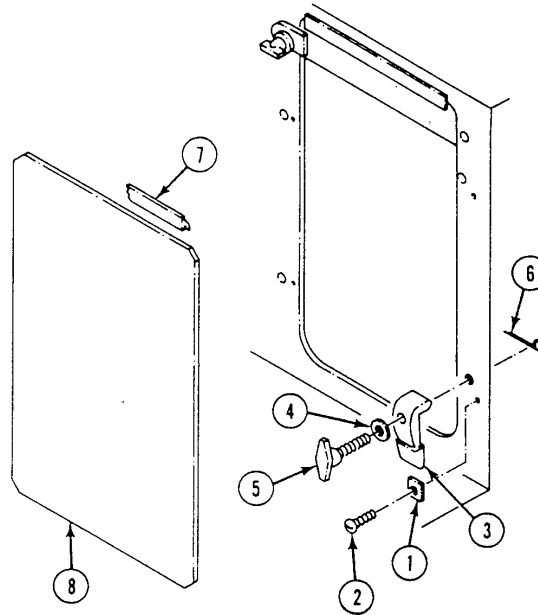
**Remove seal only if damaged.**

2. Bend back seal support to remove seal (3).
3. Remove four cotter pins (4), T-bolts (1), washers (5), and clamps (6) from hull. Discard cotter pins.
4. Remove four screws (7) and washers (8) from hull.



**INSTALLATION**

1. Install four washers (1) on hull. Secure with four screws (2).
2. Install four clamps (3), washers (4), T-bolts (5), and new cotter pins (6).
3. If new seal (7) is needed, install on panel (8). Bend support to secure seal to panel.
4. Install driver's access panel (8) in hull. Secure by tightening four T-bolts (5) and clamps (3).



5. Perform chalk test (WP 0120 00) to ensure that panel seals hull opening to prevent carbon monoxide leaks.

**END OF TASK**

**REPLACE POWER PLANT REAR ACCESS PANELS (M113A2 AND M901A1 ONLY)**

0431 00

**THIS WORK PACKAGE COVERS:**

- Removal (page 0431 00-1).
- Installation (page 0431 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

References

WP 0120 00

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

- Engine stopped/shutdown (see your -10)
- Carrier blocked (see your -10)
- Personnel heater duct removed (WP 0617 00)

Materials/Parts

- Cotter pin (7)
- Locknut (6)

Personnel Required

Unit Mechanic

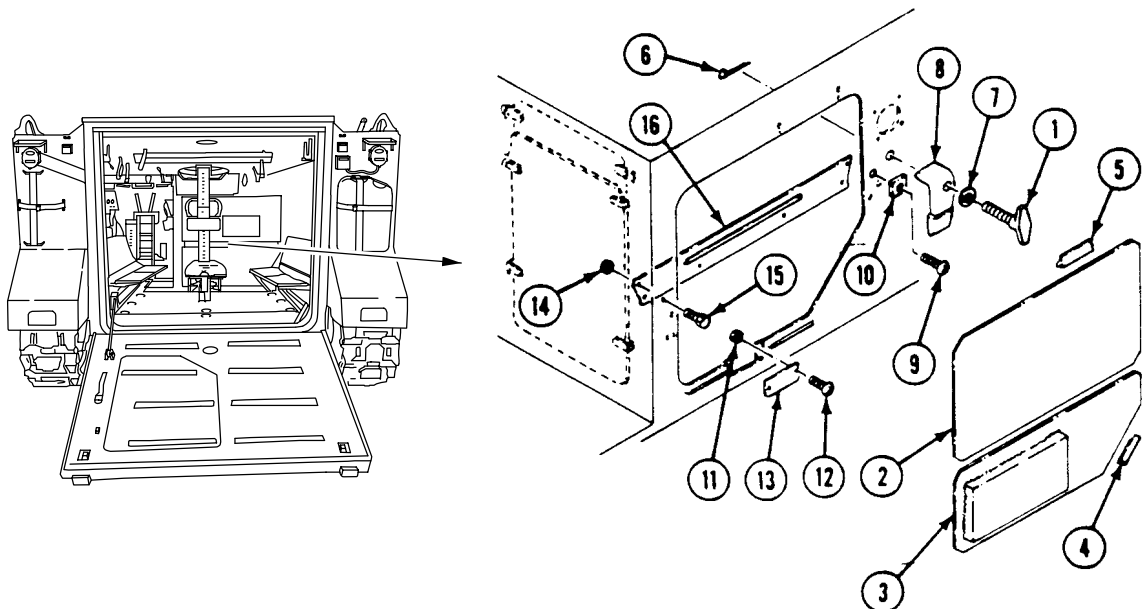
**REMOVAL**

1. Unscrew seven T-bolts (1). Remove upper and lower panels (2) and (3).

**NOTE**

**Remove seals only if damaged.**

2. Bend back seal supports on panel to remove seals (4) and (5).
3. Remove seven cotter pins (6), T-bolts (1), washers (7), and clamps (8) from hull. Discard cotter pins.
4. Remove seven screws (9) and spacers (10) from hull.
5. Remove two locknuts (11), screws (12), and cover (13) from hull. Discard locknuts.
6. Remove four locknuts (14), screws (15), and support (16) from hull. Discard locknuts.

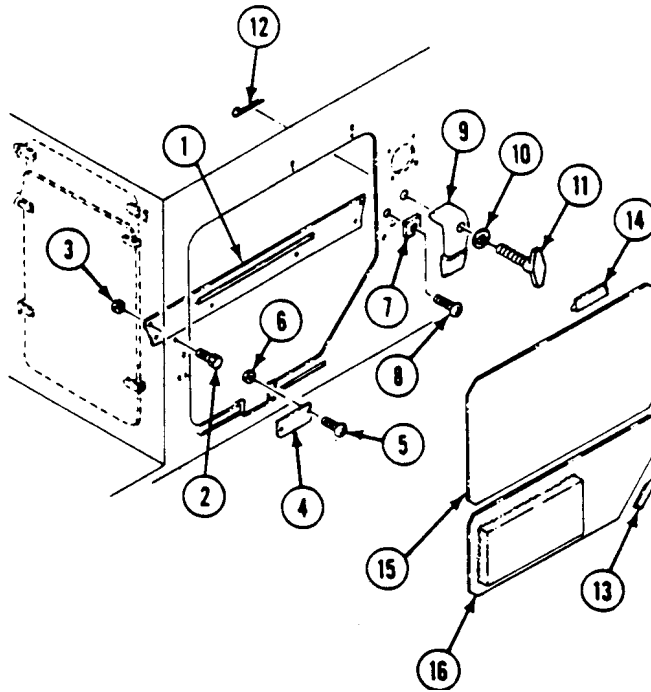


**REPLACE POWER PLANT REAR ACCESS PANELS (M113A2 AND M901A1 ONLY) — Continued**

0431 00

**INSTALLATION**

1. Install support (1) on hull. Secure with four screws (2) and new locknuts (3).
2. Install cover (4) on hull. Secure with two screws (5) and new locknuts (6).
3. Install seven spacers (7) on hull. Secure with seven screws (8).
4. Install seven clamps (9), washers (10), T-bolts (11), and new cotter pins (12) in hull.
5. If removed, install new seals (13) and (14) on panels (15) and (16). Bend seal supports to secure seals to panels.
6. Install panels (15) and (16) on hull. Tighten seven clamps (9) and T-bolts (11).



7. Use chalk test (WP 0120 00) to ensure panel seals hull opening to prevent carbon monoxide leaks.

**FOLLOW-THROUGH STEPS**

1. Install personnel heater duct (WP 0617 00).

**END OF TASK**



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**REPLACE POWER PLANT REAR ACCESS PANELS (M1059 ONLY)**

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**0432 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0432 00-2).  
 Installation (page 0432 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

References

WP 0120 00

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Personnel heater duct removed (WP 0617 00)

Materials/Parts

Cotter pin (7)

Locknut (6)

Personnel Required

Unit Mechanic

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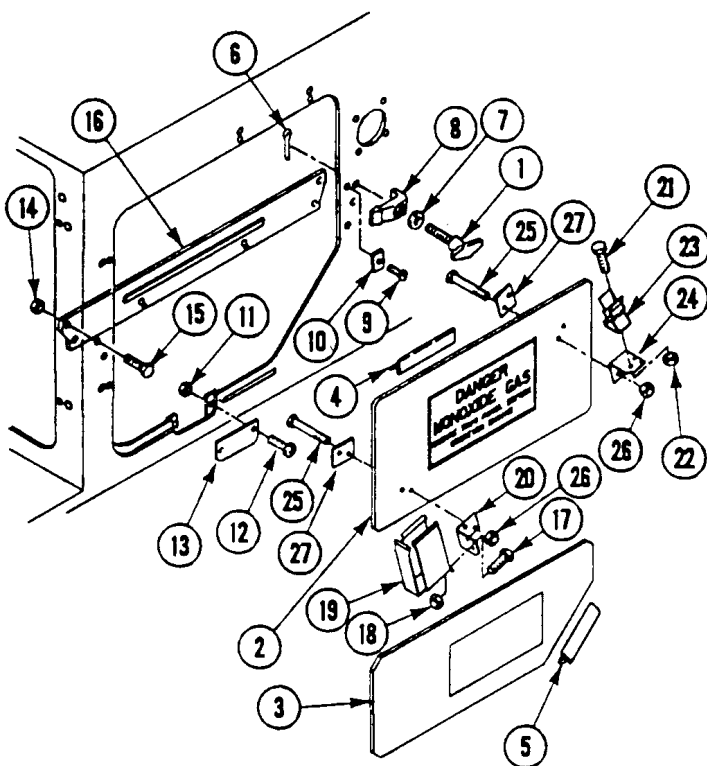
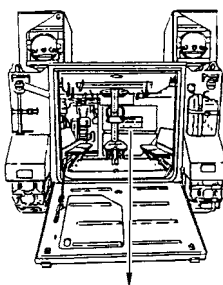
**REMOVAL**

1. Unscrew seven T-bolts (1). Remove upper and lower panels (2) and (3).

**NOTE**

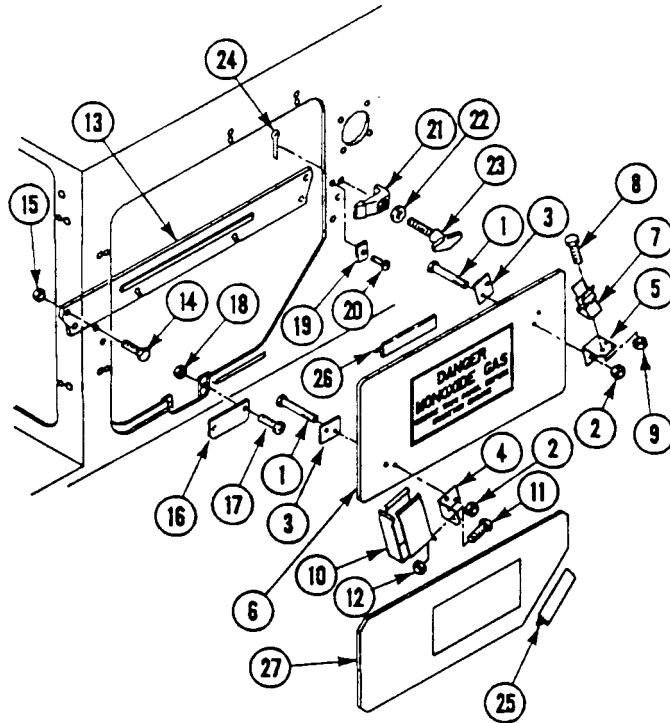
**Remove seals only if damaged.**

2. Bend back seal supports on panel to remove seals (4) and (5).
3. Remove seven cotter pins (6), T-bolts (1), washers (7), and clamps (8) from hull. Discard cotter pins.
4. Remove seven screws (9) and spacers (10) from hull.
5. Remove two locknuts (11), screws (12), and cover (13) from hull. Discard locknuts.
6. Remove four locknuts (14), screws (15), and support (16) from hull. Discard locknuts.
7. Remove two screws (17), nuts (18), and rifle bracket (19) from bracket (20).
8. Remove screw (21), locknut (22), and rifle clip (23) from bracket (24).
9. Remove four screws (25), nuts (26), two plates (27), and brackets (20) and (24) from upper panel (2).



**INSTALLATION**

1. Install four screws (1), nuts (2), two plates (3), and brackets (4) and (5) on upper panel (6).
2. Install rifle clip (7), screw (8), and nut (9) on bracket (5).
3. Install rifle bracket (10), two screws (11), and nuts (12) on bracket (4).
4. Install support (13) on hull. Secure with four screws (14) and new locknuts (15).
5. Install cover (16) on hull. Secure with two screws (17) and new locknuts (18).
6. Install seven spacers (19) on hull. Secure with seven screws (20).
7. Install seven clamps (21), washers (22), T-bolts (23), and new cotter pins (24) in hull.
8. If removed, install new seals (25) and (26) on panels (6) and (27). Bend seal supports to secure seals to panels.
9. Install panels (6) and (27) on hull. Tighten seven clamps (21) and T-bolts (23).



10. Use chalk test (WP 0120 00) to ensure panel seals hull opening to prevent carbon monoxide leaks.

**FOLLOW-THROUGH STEPS**

1. Install personnel heater duct (WP 0617 00).

**END OF TASK**



**REPLACE POWER PLANT REAR ACCESS PANEL (M577A2, M1068, AND M1064 ONLY)**

0433 00

**THIS WORK PACKAGE COVERS:**

- Removal (page 0433 00-1).
- Installation (page 0433 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

References

WP 0120 00

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)

Materials/Parts

- Cotter pin (5)
- Locknut (2)

Personnel Required

Unit Mechanic

**REMOVAL**

**NOTE**

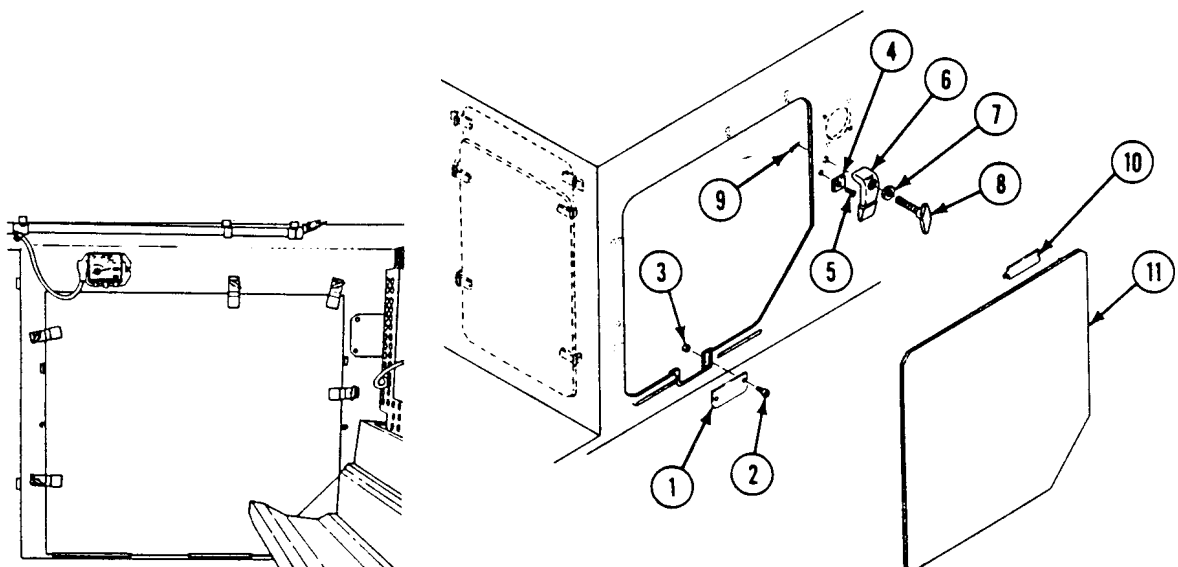
If decals on panel need to be replaced, see WP 0511 00.

1. Unscrew five T-bolts (8). Remove panel (11) from hull.

**NOTE**

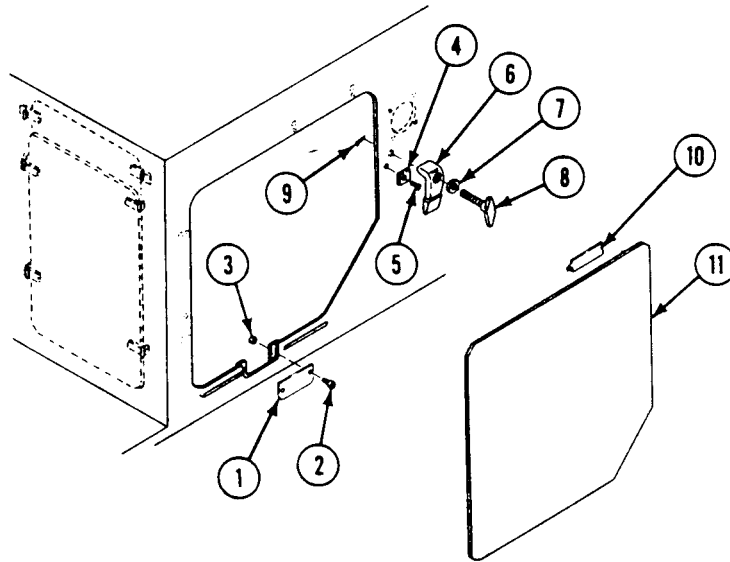
Remove seal only if damaged

2. Bend back seal supports on panel to remove seals (10).
3. Remove five cotter pins (9), T-bolts (8), washers (7), and clamps (6) from hull. Discard cotter pins.
4. Remove five screws (5) and washers (4) from hull.
5. Remove two locknuts (3), screws (2), and cover (1) from hull. Discard locknuts.



**REPLACE POWER PLANT REAR ACCESS PANEL (M577A2, M1068,  
AND M1064 ONLY) — Continued****0433 00****INSTALLATION**

1. Install cover (1) on hull. Secure with two screws (2) and new locknuts (3).
2. Install five washers (4) on hull. Secure with five screws (5).
3. Install five clamps (6), washers (7), and T-bolts (8) on hull. Secure with five new cotter pins (9).
4. If removed, install new seal (10) on panel (11). Bend seal supports on panel to secure seals.
5. Install panel (11) on hull. Tighten five clamps (6) and T-bolts (8).



6. Use chalk test (WP 0120 00) to ensure panel seals hull opening and prevents carbon monoxide leaks.

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).

**END OF TASK**

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**REPLACE POWER PLANT BOTTOM ACCESS COVER**

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**0434 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0434 00-2).
  - Clean, Inspect, and Repair (page 0434 00-3).
  - Installation (page 0434 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)

Materials/Parts

- Adhesive (WP 0782 00, Item 2)
  - Antiseize compound (WP 0782 00, Item 8)
  - Solvent, cleaning compound (WP 0782 00, Item 16)
-

## REMOVAL

**WARNING**

Access cover is heavy and can fall and injure you when screws are removed. Keep body clear of cover.

**CAUTION**

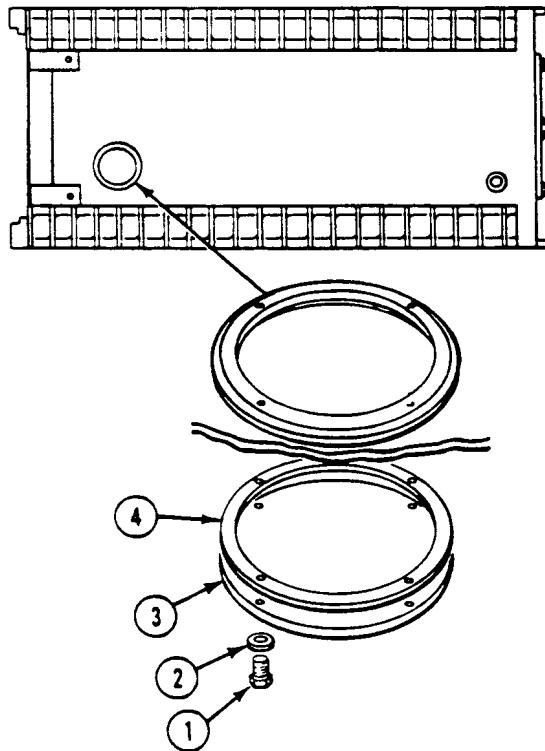
Carrier should not be operated with bottom access cover off. This reduces air flow through radiator and draws dirt and debris into power plant compartment.

1. Remove four screws (1), washers (2), and bottom access cover (3) from hull.

**NOTE**

Remove gasket only if damaged.

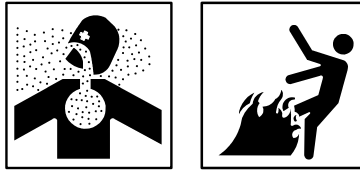
2. Remove gasket (4) from cover (3).





**CLEAN, INSPECT, AND REPAIR**

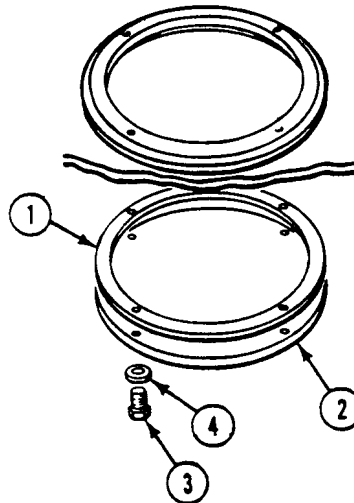
1. Inspect gasket for separation, tears, and cracks. Replace separated or damaged gasket.
2. Clean cover and gasket mating surface with cleaning compound.

**INSTALLATION****WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. If gasket is being replaced, apply a light coat of adhesive to one side of new gasket. Allow adhesive to become tacky.
2. Place new gasket (1) on cleaned mating side of cover (2). Align mounting holes in cover and gasket.
3. Clean four screws (3) with cleaning compound. Apply antiseize compound sparingly to external threads of screws.
4. Place cover (2) on hull. Secure with four screws (3) and washers (4). **TIGHTEN SCREWS TO 40-50 LB-FT (54-68 N·M) TORQUE.** Use torque wrench.

**END OF TASK**



**REPLACE FINAL DRIVE DRAIN PLUGS AND HULL POPPET VALVES**

**0435 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0435 00-1).  
 Installation (page 0435 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Socket Wrench Adapter (WP 0780 00, Item 5)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Rear floor plates removed (WP 0436 00)

Materials/Parts

Antiseize compound (WP 0782 00, Item 8)

**REMOVAL**

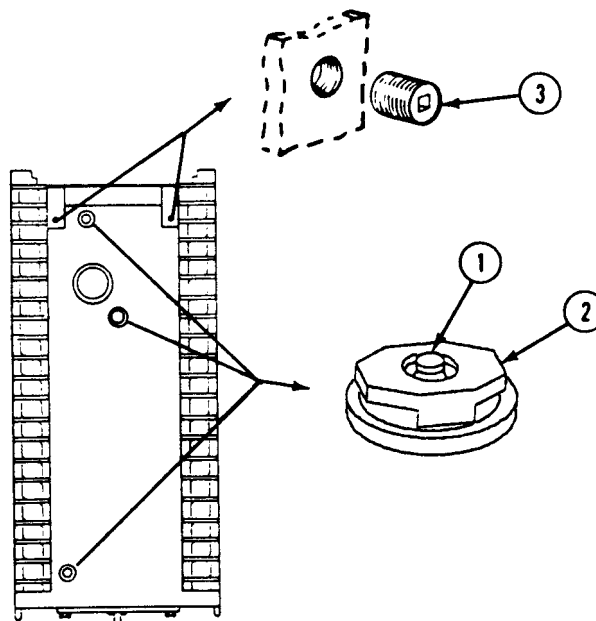
**CAUTION**

**Carrier should not be operated with hull drain plug or poppet valve removed. This reduces air flow through radiator and draws dirt and debris into power plant compartment, and water into carrier.**

**NOTE**

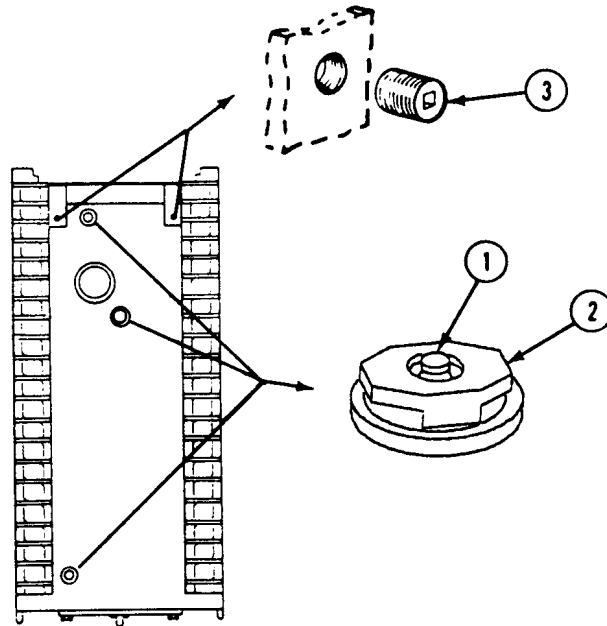
**Three poppet valves and two drain plugs are installed on bottom of hull.**

1. Loosen three screws (1) and remove poppet valves (2) from hull.
2. Remove two drain plugs (3) from hull. Use socket wrench adapter.



**INSTALLATION**

1. Coat threads of two drain plugs (3) with antiseize compound. Install two drain plugs in hull. Use socket wrench adapter.
2. Install three poppet valves (2) in hull and tighten screws (1).

**FOLLOW-THROUGH STEPS**

1. Install rear floor plates (WP 0436 00).

**END OF TASK**

**REPLACE REAR FLOOR PLATES (M113A2 AND M577A2 ONLY)**

**0436 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0436 00-1).  
 Installation (page 0436 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Personnel heater floor duct removed, if installed  
 (WP 0617 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

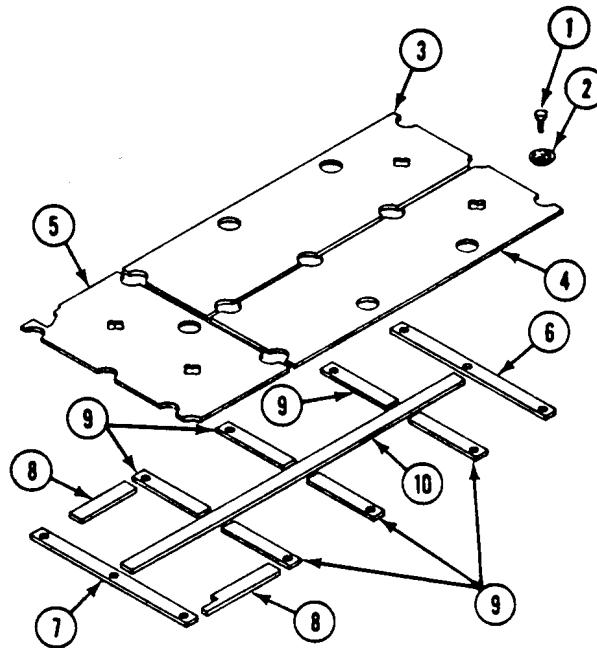
Adhesive (WP 0782 00, Item 2)

Personnel Required

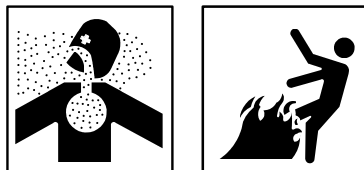
Unit Mechanic

**REMOVAL**

1. Remove 16 screws (1) and lined washers (2) from carrier hull.
2. Remove two front floor plates (3) and (4) and rear floor plate (5) from hull crossmembers.
3. If needed, remove two pads (6) and (7), rubber strips (8), six seals (9), and seal (10) from crossmembers by scraping.



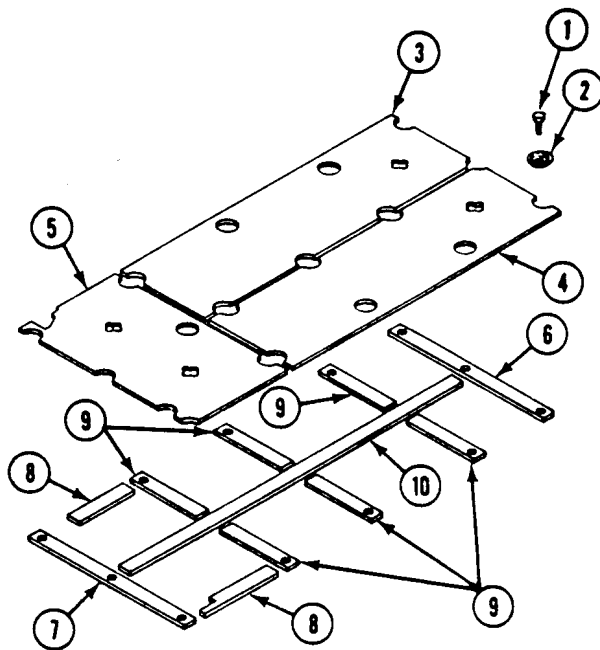
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. If pads (6) and (7), strips (8), or seals (9) and (10) were removed, apply thin coat of adhesive to roughened side of rubber surface. Allow to dry 20-40 minutes. Apply thin coat of adhesive to metal surface of hull crossmembers. Allow to dry 30-120 seconds. Install new pads, strips, and seals on crossmembers and press surfaces together firmly.
2. Place rear floor plate (5) and two front floor plates (3) and (4) on hull crossmembers. Secure to hull with 16 lined washers (2) and screws (1).

**FOLLOW-THROUGH STEPS**

1. Install personnel heater floor duct, if removed (WP 0617 00).
2. Raise and lock ramp (see your -10).

**END OF TASK**

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**REPLACE FLOOR PLATES (M1064 ONLY)**

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**0437 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0437 00-2).  
 Installation (page 0437 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Personnel heater floor duct removed, if installed  
 (WP 0617 00)

Materials/Parts

Adhesive (WP 0782 00, Item 2)

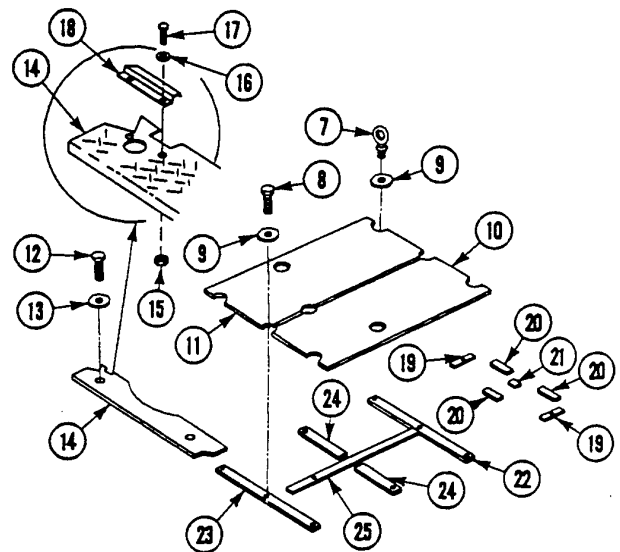
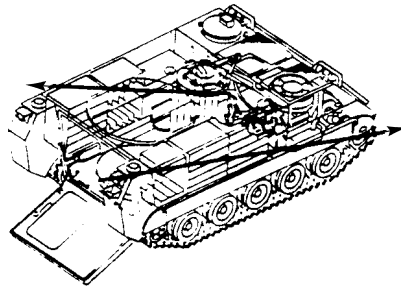
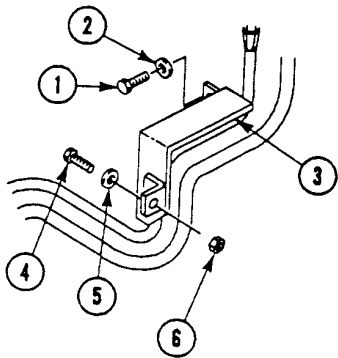
Locknut (2)

Locknut

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**REMOVAL**

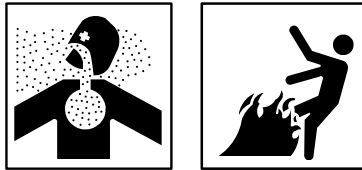
1. Remove screw (1) and washer (2) from guard (3).
2. Remove screw (4), washer (5), locknut (6), and guard (3) from hull. Discard locknut.
3. Remove eight eyebolts (7), one screw (8), and nine lined washers (9) from right front floor plate (10) and left front floor plate (11).
4. Remove two screws (12), lined washers (13), and rear floor plate (14) from carrier.
5. Remove two locknuts (15), washers (16), screws (17), and guard (18) from rear floor plate (14). Discard locknuts.
6. If necessary, remove two pads (19), three pads (20), and pad (21) from front crossmembers by scraping.
7. If necessary, remove two pads (22) and (23) and three seals (24) and (25) from crossmembers by scraping.





**INSTALLATION**

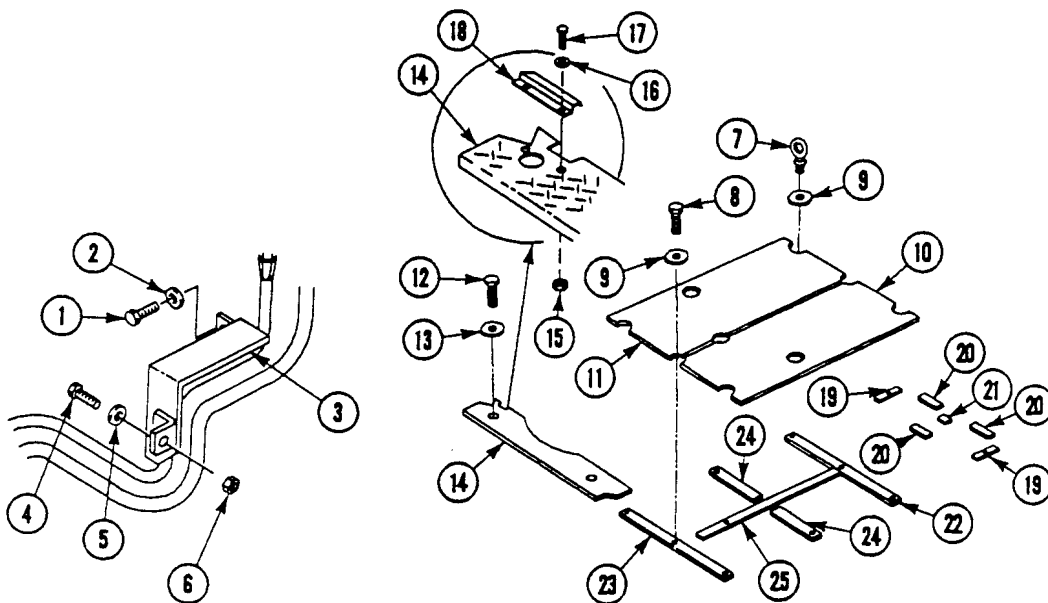
**WARNING**



Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. If pads (19) through (23) or seals (24) and (25) were removed, apply light coat of adhesive to crossmember mating surfaces. Allow surfaces to become tacky. Install pads and seals on crossmembers and press surfaces together firmly.
2. Install guard (18), two screws (17), washers (16), and new locknuts (15) on rear floor plate (14).
3. Place rear floor plate (14) in carrier. Secure with two lined washers (13) and screws (12).
4. Place left front floor plate (11) and right front floor plate (10) in carrier. Secure with nine lined washers (9), one screw (8), and eight eyebolts (7).
5. Install guard (3) on hull with screw (4), washer (5), and new locknut (6).
6. Install screw (1) and washer (2) on guard (3).



**FOLLOW-THROUGH STEPS**

1. Install personnel heater floor duct, if removed. (WP 0617 00).
2. Raise and lock ramp (see your -10).

**END OF TASK**



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**REPLACE FLOOR PLATES (M1059 ONLY)**

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**0438 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0438 00-2).
  - Clean, Inspect, and Repair (page 0438 00-3).
  - Installation (page 0438 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Adhesive (WP 0782 00, Item 2)

Personnel Required

Unit Mechanic

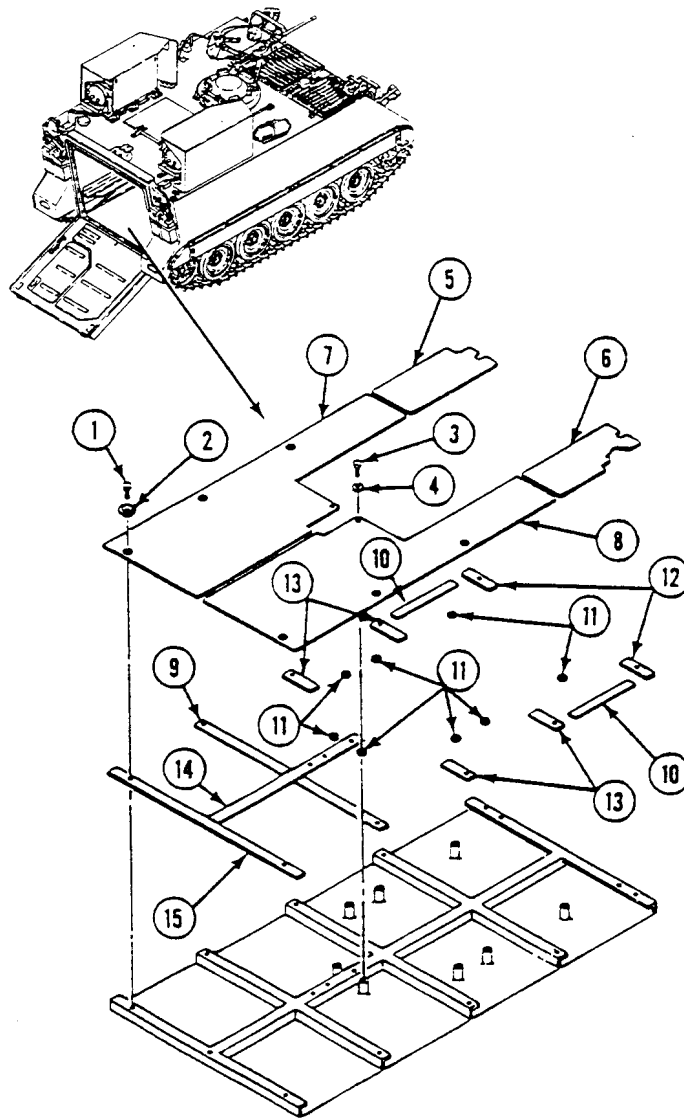
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Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Personnel floor heater duct removed (WP 0617 00)
- Seats folded in stowed position (see your -10)
- Ramp lowered (see your -10)

**REPLACE FLOOR PLATES (M1059 ONLY) — Continued****0438 00****REMOVAL**

1. Remove 12 screws (1) and lined washers (2) securing floor plates to hull crossmembers.
2. Remove two screws (3) and washers (4) securing floor plates to hull crossmembers.
3. Remove two rear floor plates (5) and (6) from hull crossmembers.
4. Remove two front floor plates (7) and (8) from hull crossmembers.
5. If necessary, remove two non-metallic seals (9) from hull crossmembers by scraping.
6. If necessary, remove two rubber strips (10) from hull crossmembers by scraping.
7. If necessary, remove eight pads (11) from hull crossmembers by scraping.
8. If necessary, remove two pads (12), four pads (13), and two pads (14) and (15) from hull crossmembers by scraping.



**CLEAN, INSPECT, AND REPAIR**

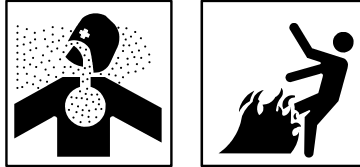
1. Inspect parts to make sure parts are not broken or damaged. If any part is damaged, it must be replaced.

**INSTALLATION**

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**WARNING**

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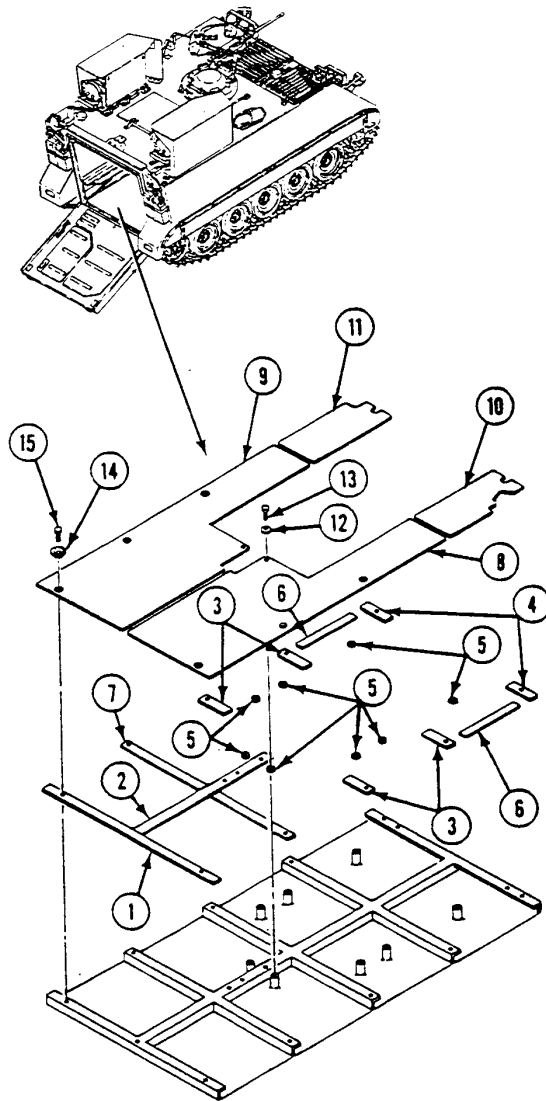


**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

**REPLACE FLOOR PLATES (M1059 ONLY) — Continued****0438 00**

1. If pads (1) through (5), rubber strips (6), or seals (7) were removed, apply light coat of adhesive to all crossmember mating surfaces. Allow surfaces to become sticky. Install pads, rubber strips, and seals on crossmembers and press surfaces firmly together.
2. Place two front floor plates (8) and (9) on hull crossmembers.
3. Place two rear floor plates (10) and (11) on hull crossmembers.
4. Install two washers (12) and screws (13) on front floor plates (8) and (9).
5. Install 12 lined washers (14) and screws (15) on front floor plates (8) and (9), and rear floor plates (10) and (11).

**FOLLOW-THROUGH STEPS**

1. Install personnel floor heater duct (WP 0617 00).
2. Unstow seats (see your -10).
3. Raise and lock ramp (see your -10).

**END OF TASK**

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**REPLACE DRIVER'S COMPARTMENT HULL ACCESS COVERS**

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**0439 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0439 00-1).
  - Clean, Inspect, and Repair (page 0439 00-2).
  - Installation (page 0439 00-2).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

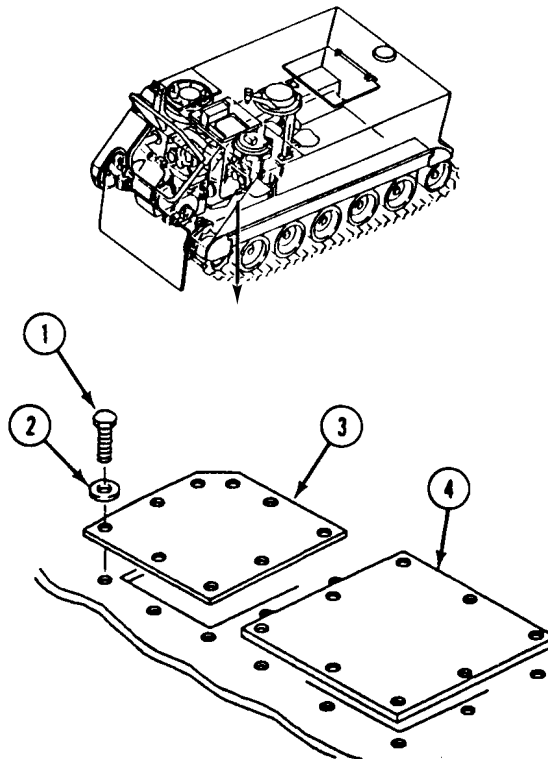
Materials/Parts

Cleaning compound (WP 0782 00, Item 15)

Sealing compound (WP 0782 00, Item 61)

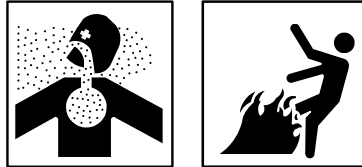
**REMOVAL**

1. Remove nine screws (1), washers (2), and forward access cover (3) from hull.
2. Remove eight screws (1), washers (2), and rear access cover (4) from hull.



**CLEAN, INSPECT, AND REPAIR**

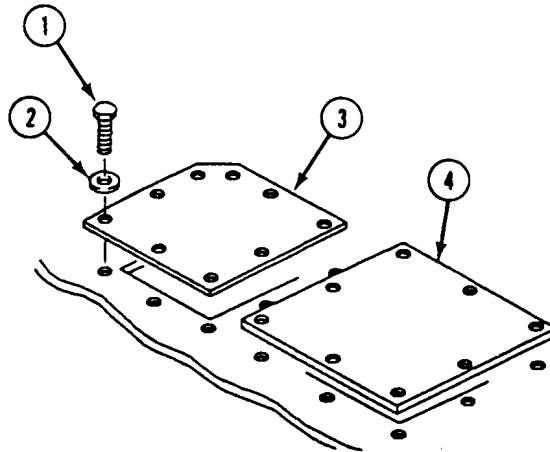
1. Clean access covers and hull mating surface with cleaning compound.

**INSTALLATION****WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. Apply sealing compound to hull mating surface of access covers.
2. Install rear access cover (4). Secure with eight washers (2) and screws (1).
3. Install forward access cover (3). Secure with nine washers (2) and screws (1).

**END OF TASK**



**REPLACE COMPARTMENT FLOOR PLATES (M1068 ONLY)**

**0440 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0440 00-1).  
 Installation (page 0440 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped/shutdown (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Personnel heater floor duct removed (WP 0617 00)  
 Power supply storage box removed (WP 0733 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

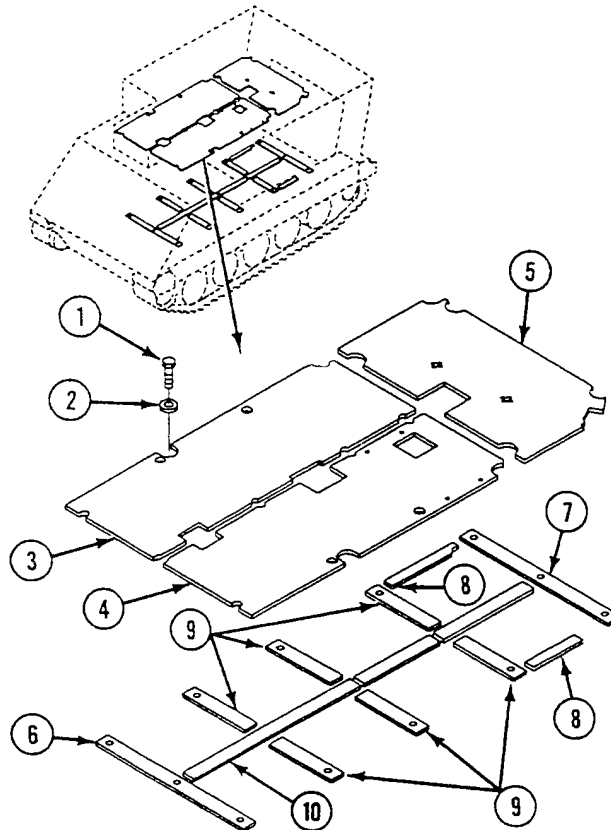
Adhesive (WP 0782 00, Item 2)

Personnel Required

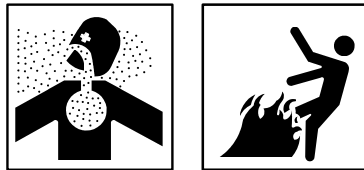
Unit Mechanic

**REMOVAL**

1. Remove 13 screws (1) and lined washers (2) from carrier hull.
2. Remove two front floor plates (3) and (4) and rear floor plate (5) from hull crossmembers.
3. If necessary, remove two pads (6) and (7), rubber strips (8), six seals (9), and seal (10) from crossmembers by scraping.



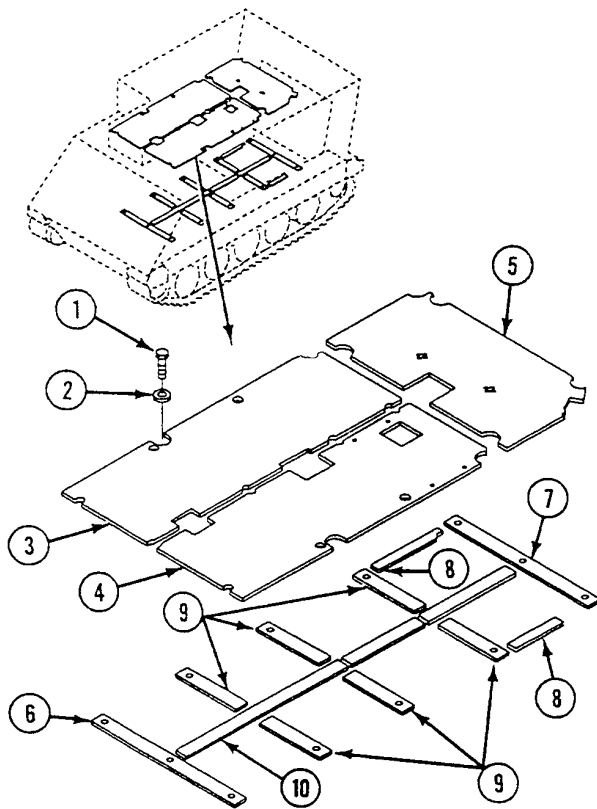
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. If pads (6) and (7), strips (8), or seals (9) and (10) were removed, apply thin coat of adhesive to roughened side of surface. Allow to dry 20-40 minutes. Apply thin coat of adhesive to metal surface of hull crossmembers. Allow to dry 30-120 seconds. Install pads, strips, and seals on crossmembers and press surfaces together firmly.
2. Place rear floor plate (5) and 2 front floor plates (4) and (3) on hull crossmembers. Secure to hull with 13 lined washers (2) and screws (1).



**FOLLOW-THROUGH STEPS**

1. Install personnel heater floor duct (WP 0617 00).
2. Install power supply storage box (WP 0733 00).
3. Raise and lock ramp (see your -10).

**END OF TASK**



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**REPLACE FLOOR PLATES (M901A1 ONLY)**

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**0441 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0441 00-2).  
 Installation (page 0441 00-4).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Launcher stowed (see your -10)  
 Personnel heater duct and hose removed (WP 0617 00)

---

Materials/Parts

Adhesive (WP 0782 00, Item 2)  
 Grommet  
 Locknut (14)

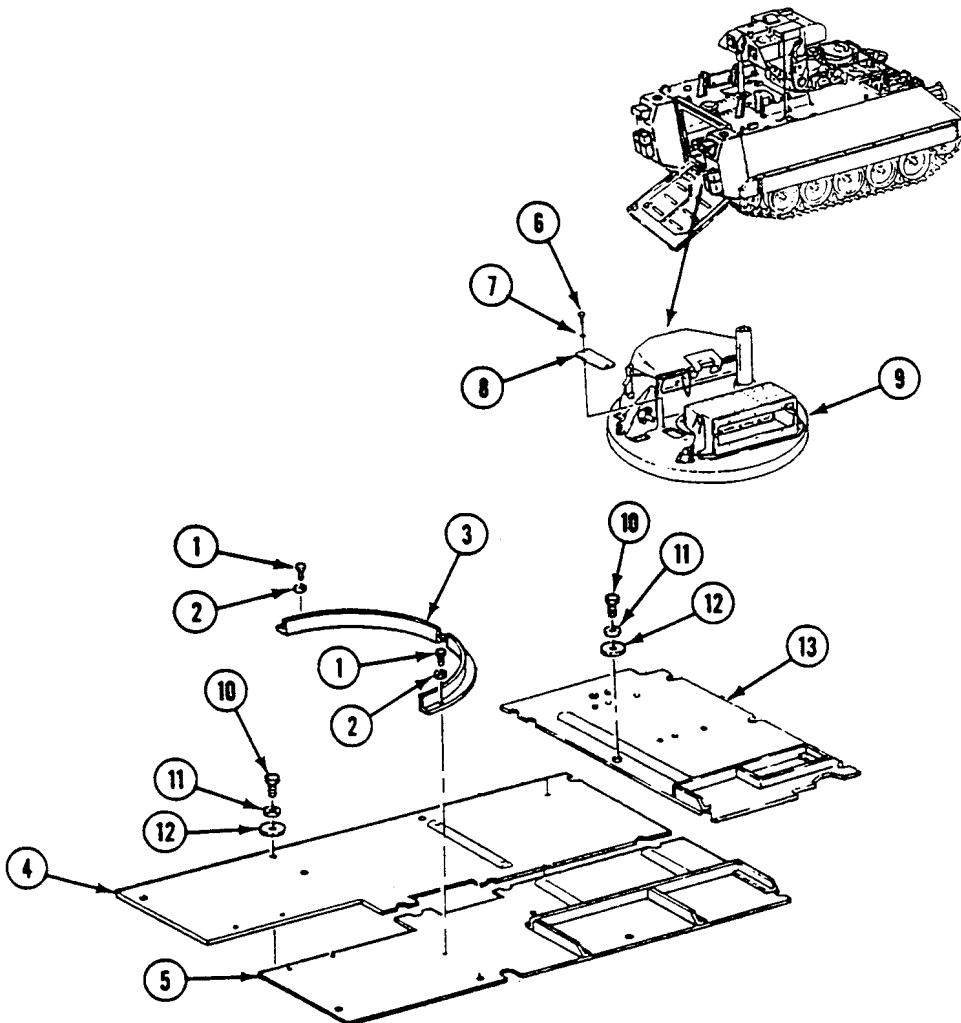
**REMOVAL**

1. Remove four screws (1), flat washers (2), and two platform protectors (3) from floor plates (4) and (5).
2. Remove two screws (6), two washers (7), and access cover (8) from platform assembly (9).

**NOTE**

**When launcher is stowed at  $180^\circ \pm 1/2^\circ$ , access to one of the screws is through the access hole in the platform assembly.**

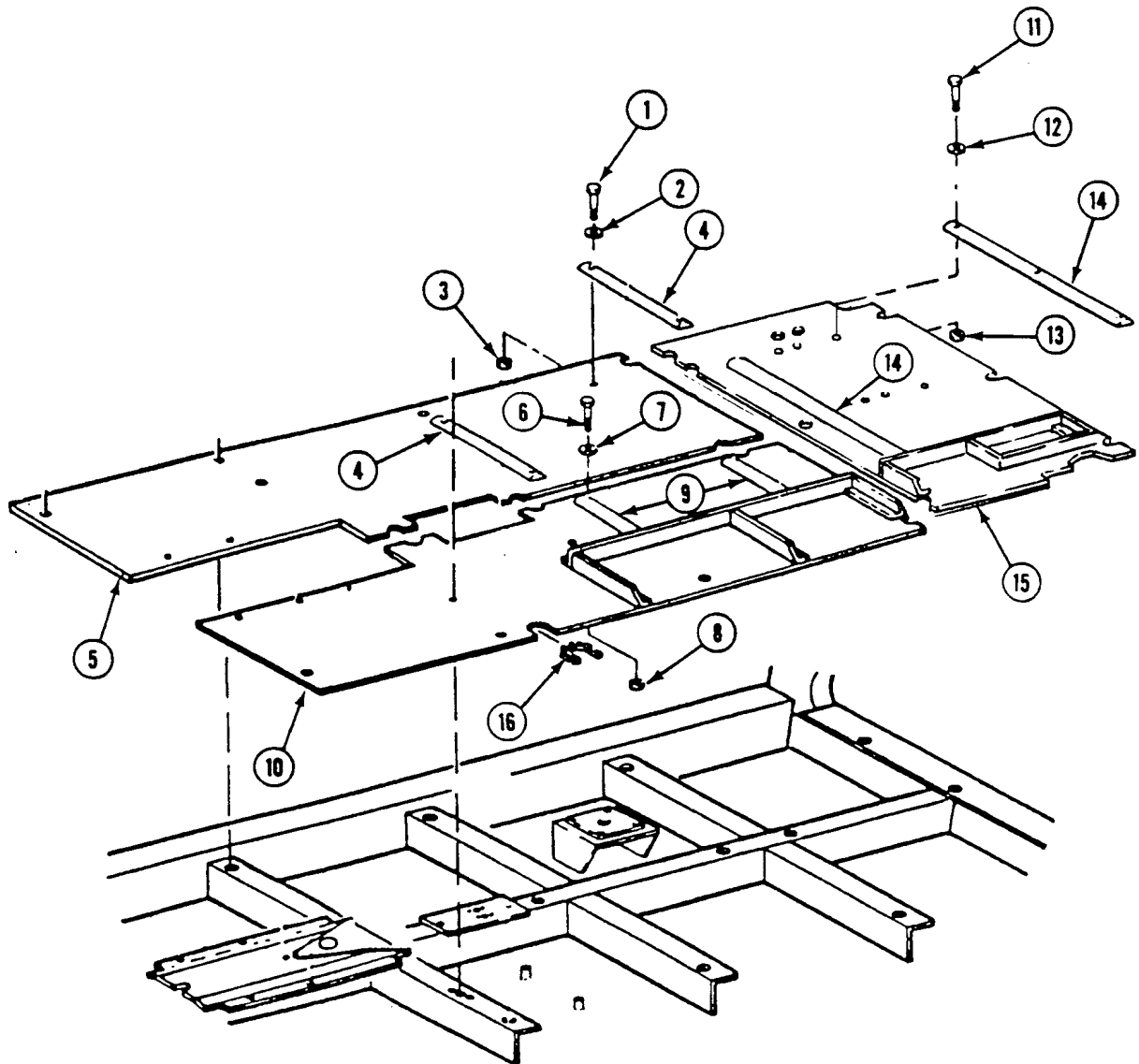
3. Remove 13 screws (10), washers (11), and lined washers (12) from floor plates (4), (5), and (13).
4. Remove floor plates (4), (5), and (13) from carrier structural supports. Have helper assist.



REPLACE FLOOR PLATES (M901A1 ONLY) — Continued

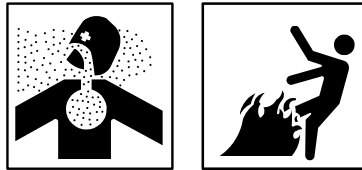
0441 00

5. Remove four screws (1), flat washers (2), locknuts (3), and two tread plate cleats (4) from floor plate (5). Discard locknuts.
6. Remove four screws (6), flat washers (7), locknuts (8), and two left floor plate cleats (9) from floor plate (10). Discard locknuts.
7. Remove six screws (11), flat washers (12), locknuts (13), and two floor plate cleats (14) from floor plate (15). Discard locknuts.
8. Remove grommet (16) from floor plate (10). Discard grommet.



**INSTALLATION**

1. Install two floor plate cleats (14) on floor plate (15). Secure with six screws (11), flat washers (12), and new locknuts (13).
2. Install two left floor plate cleats (9) on floor plate (10). Secure with four screws (6), flat washers (7), and new locknuts (8).
3. Install two tread plate cleats (4) on floor plate (5). Secure with four screws (1), flat washers (2), and new locknuts (3).

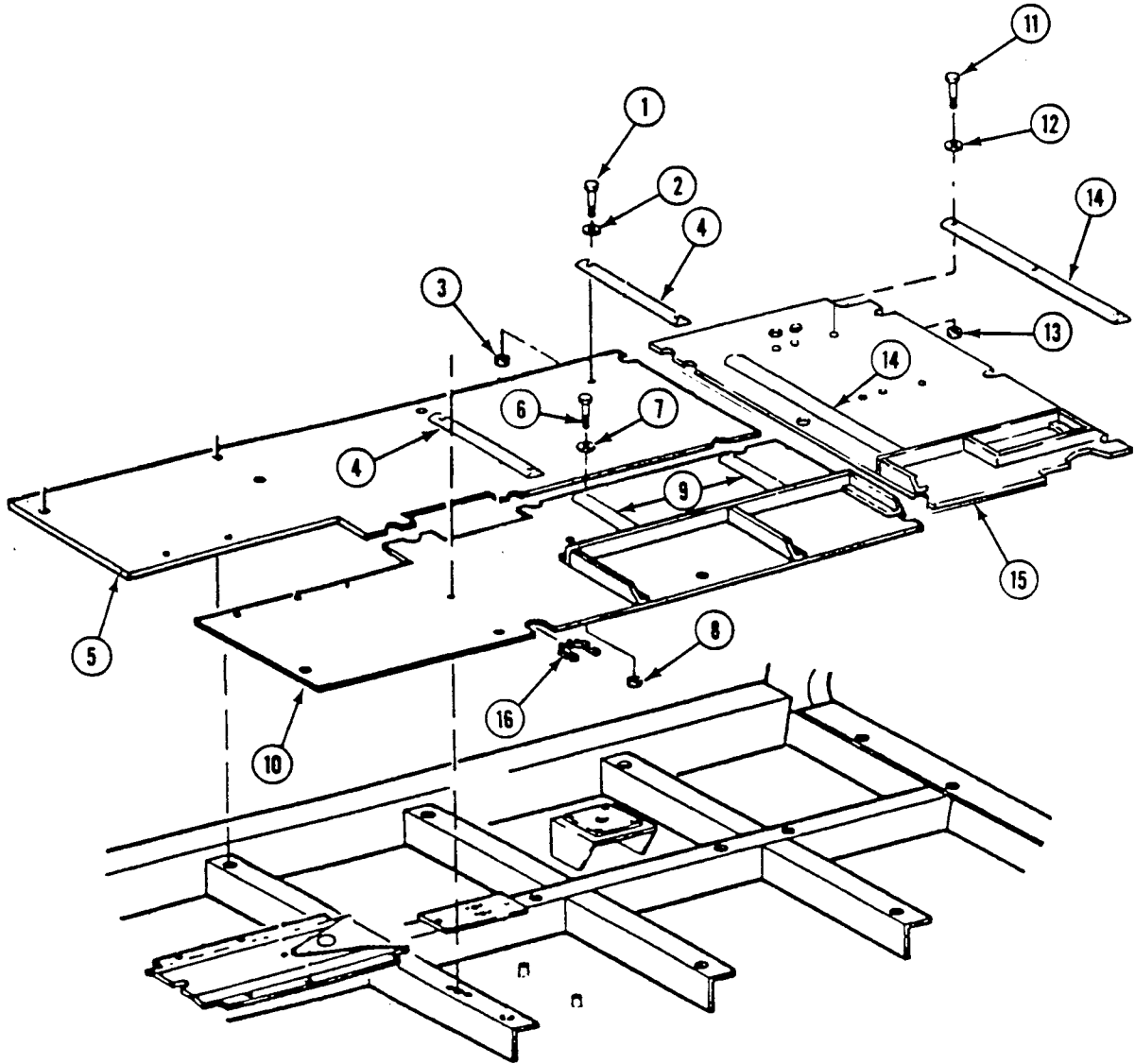
**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

4. Apply light coat of adhesive to groove portion of new grommet (16). Allow adhesive to dry until tacky.
5. Carefully insert new grommet (16) in cut out portion of floor plate (10). Press firmly into place. Wipe off excess sealant.

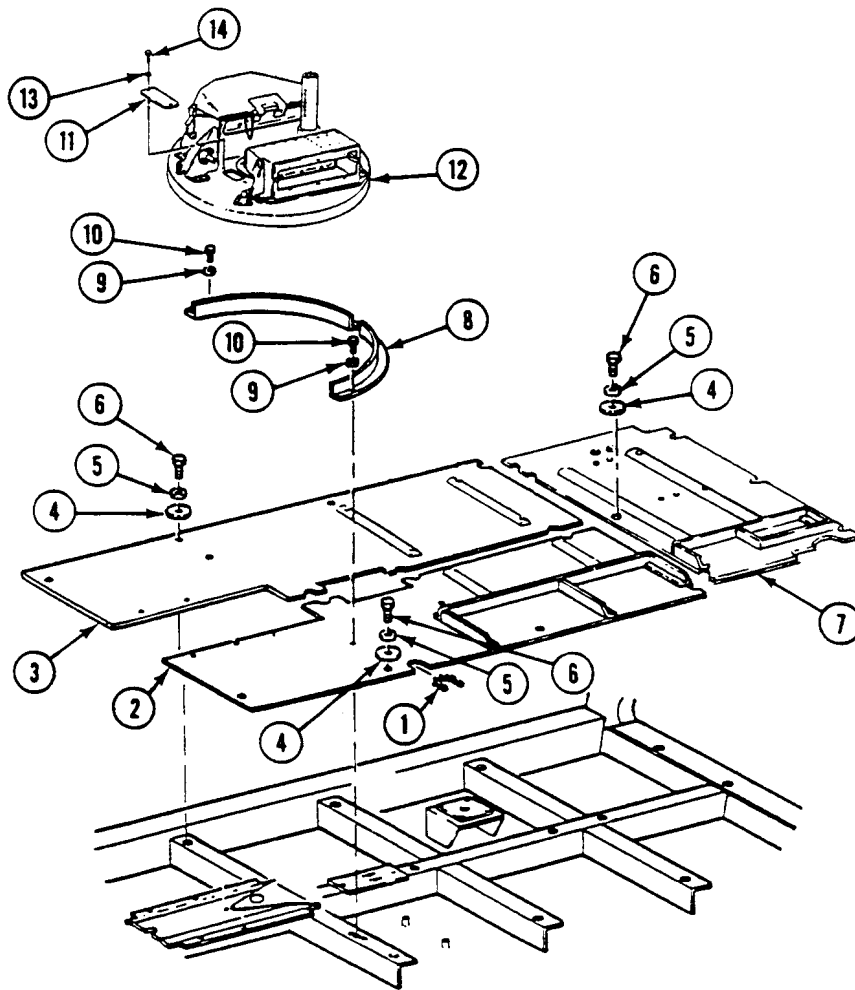




**NOTE**

**When installing floor plates in the M901A1, make sure electrical cables are not pinched or damaged.**

6. Position floor plates (2) and (3) on vehicle structural supports. Have helper assist.
7. Secure floor plates (2) and (3) to vehicle structural supports with seven lined washers (4), washers (5), and screws (6).
8. Install floor plate (7) on vehicle structural supports. Secure with six lined washers (4), washers (5), and screws (6).
9. Install two platform protectors (8) on floor plates (2) and (3). Secure with four flat washers (9) and screws (10).
10. Install access cover (11) on platform assembly (12). Secure with two washers (13) and screws (14).

**FOLLOW-THROUGH STEPS**

1. Install personnel heater duct and hose (WP 0617 00).
2. Raise and lock ramp (see your -10).

**END OF TASK**

**REPLACE POWER PLANT GRILL SUPPORT ARM**

**0442 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0442 00-1).  
 Installation (page 0442 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

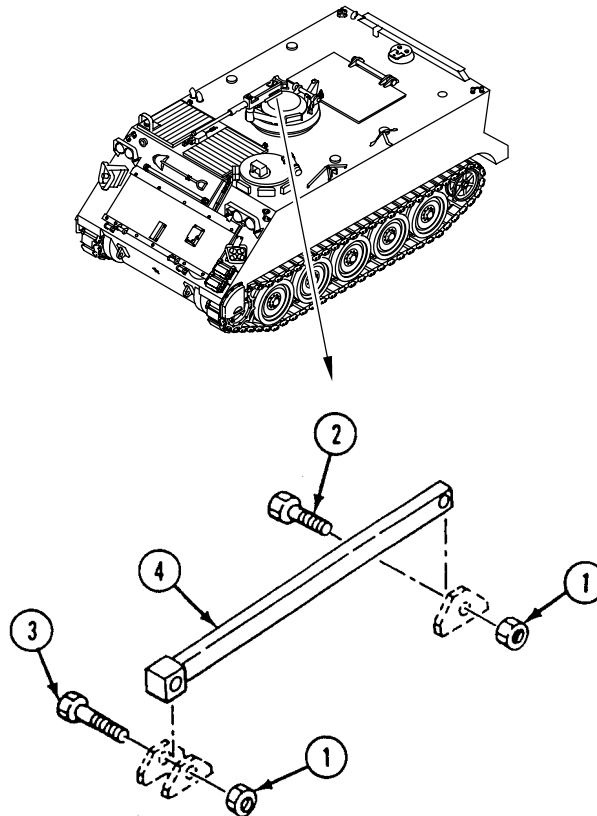
Carrier blocked (see your -10)

Materials/Parts

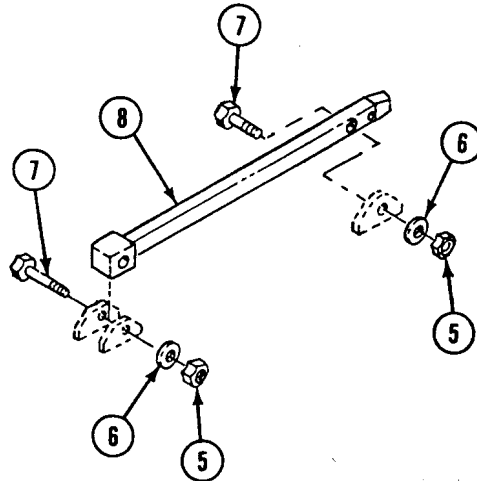
Locknut (2)

**REMOVAL**

1. Remove two locknuts (1), screws (2) and (3), and grill support arm (4) from two hull top plate mounts. Discard locknuts.



- M901A1 Only. Remove two locknuts (5), washers (6), screws (7), and grill support arm (8) from two hull top plate mounts. Discard locknuts.



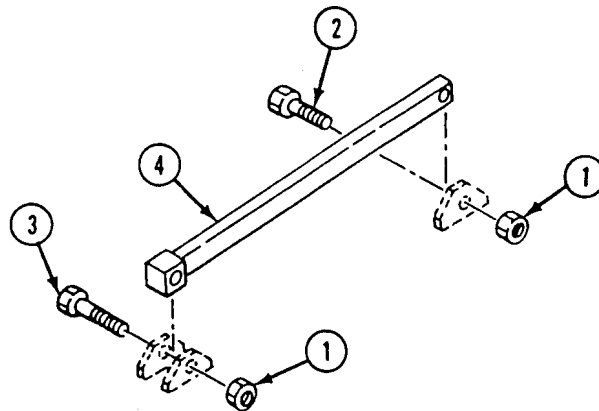
**INSTALLATION**

- Place grill support arm (4) in hull top plate mounts with plastic-coated end facing forward.

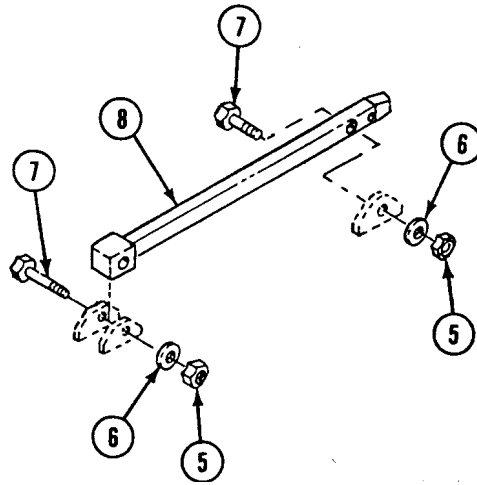
**NOTE**

**Forward screw must be installed from right side of carrier, as shown.**

- Align grill support arm (4) with mounts. Secure with two screws (2) and (3) and new locknuts (1).



3. M901A1 Only. Align grill support arm (8) with mounts. Secure with two screws (7), washers (6), and new locknuts (5).



END OF TASK



**REPLACE DRIVER'S HATCH CUSHIONING PAD**

**0443 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0443 00-1).  
 Installation (page 0443 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

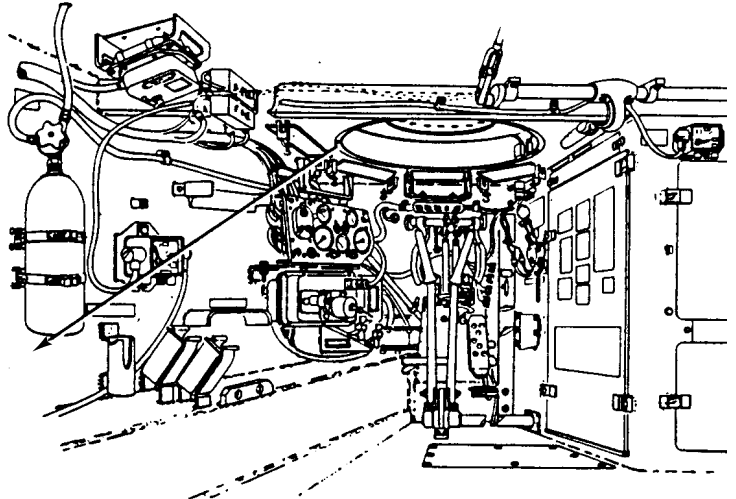
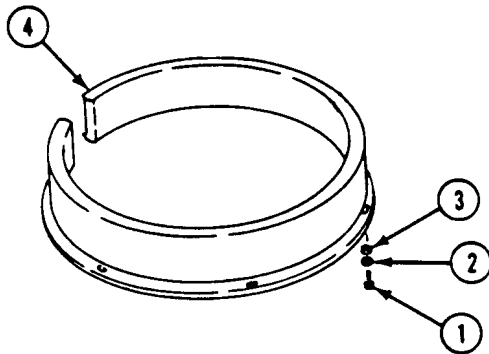
Carrier blocked (see your -10)

Materials/Parts

Lockwasher (6)

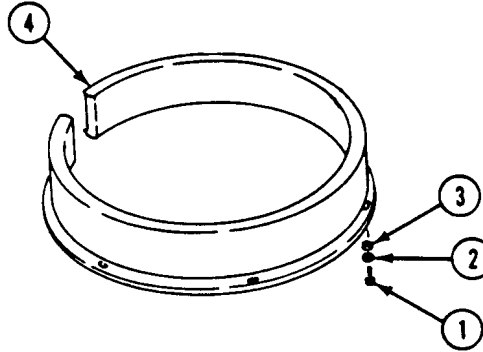
**REMOVAL**

1. Remove six screws (1), lockwashers (2), washers (3), and cushioning pad (4) from hatch opening. Discard lockwashers.



**INSTALLATION**

1. Place cushioning pad (4) in hatch opening. Secure with six washers (3), new lockwashers (2), and screws (1).

**END OF TASK**



**REPLACE DRIVER'S HATCH VISION BLOCK LOCKS AND SEALS**

**0444 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0444 00-1).
- Clean (page 0444 00-2).
- Installation (page 0444 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 97)
- Torque Wrench (WP 0780 00, Item 103)
- Torque Wrench (WP 0780 00, Item 104)

Materials/Parts

- Adhesive (WP 0782 00, Item 4)
- Cleaning compound solvent (WP 0782 00, Item 16)
- Rubber seal
- Spring pin

Personnel Required

Unit Mechanic

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Vision block removed (see your -10)

**REMOVAL**

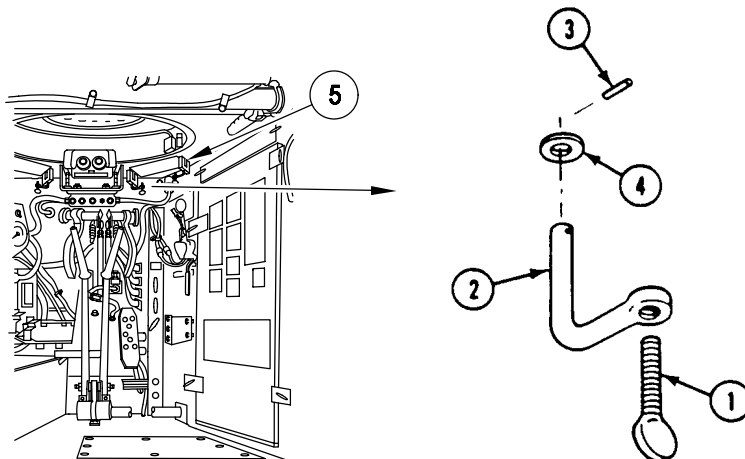
**NOTE**

**There are six vision block locks and four seals on the driver's hatch. Task is for one lock and seal.**

**Driver's center vision block is held in place by two thumbscrews mounted on the warning light panel.**

**Steps 1 - 4 apply to all carriers except M1064.**

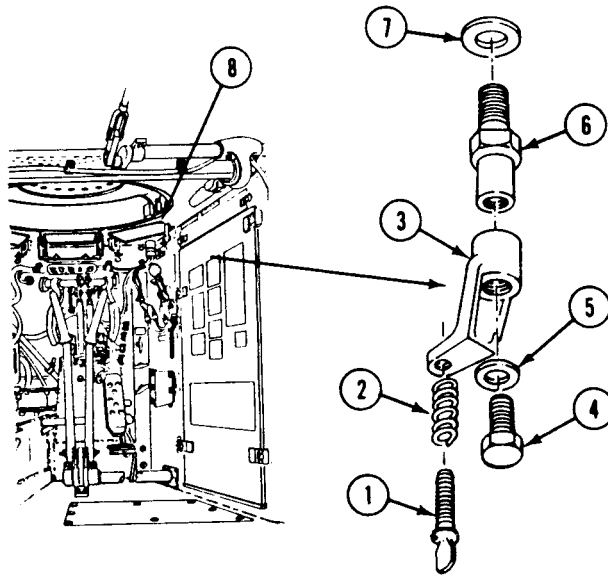
1. Remove thumbscrew (1) from arm (2).
2. Remove spring pin (3) from arm (2). Discard pin.
3. Remove arm (2) and washer (4) from hull bracket.
4. Scrape seal (5) from vision block opening.



**NOTE**

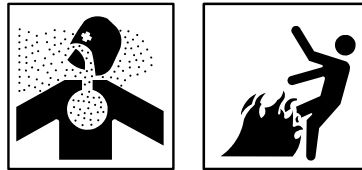
Steps 5 - 8 apply to M1064 only.

5. Remove thumbscrew (1) and spring (2) from arm (3).
6. Remove screw (4), washer (5), and arm (3) from bolt (6).
7. Remove bolt (6) and washer (7) from driver's hatch.
8. Scrape seal (8) from vision block opening.

**CLEAN**

1. Clean seal mating surface on hull with cleaning compound.

## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

**NOTE**

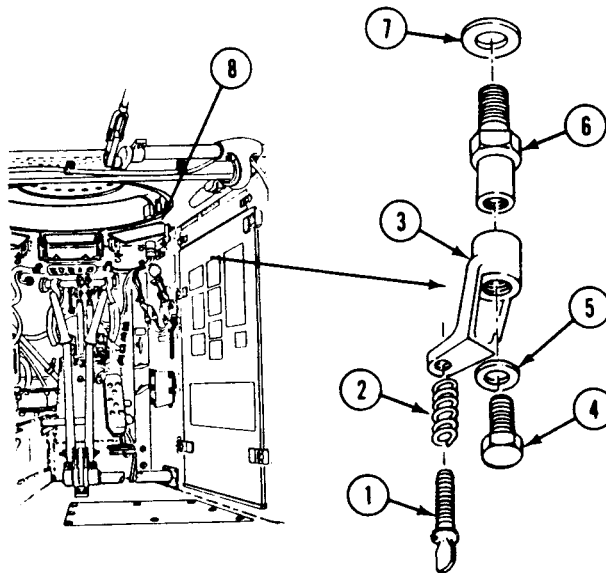
Surface on seal marked **BOND THIS SIDE** should be glued to hull.

1. Apply adhesive to mating surface around vision block opening. Allow to become tacky. Install new seal (8) on hull.

**NOTE**

Steps 2 - 4 apply to M1064 only.

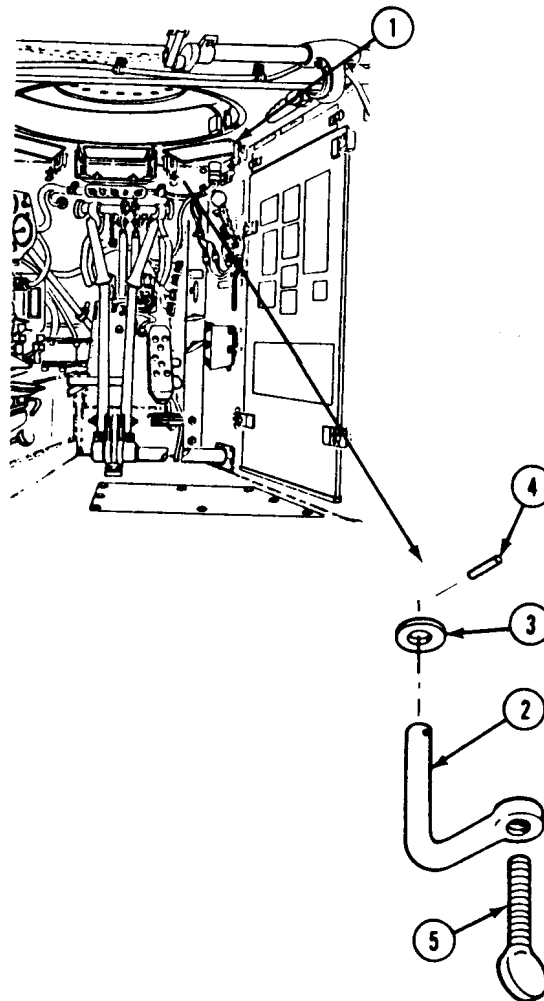
2. Install washer (7) and bolt (6) in driver's hatch. TIGHTEN BOLT TO 54-59 LB-FT (73-80 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 104).
3. Install arm (3) on bolt (6). Secure with washer (5) and screw (4). TIGHTEN BOLT TO 144-168 LB-IN (16-19 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 103).
4. Install spring (2) and thumbscrew (1) in arm (3). Deform first thread of thumbscrew to prevent easy removal.



**NOTE**

Step 5 and Step 6 apply to all carriers except M1064.

5. Install arm (2) and washer (3) in hull bracket. Secure with new spring pin (4).
6. Install thumbscrew (5) in arm (2). Deform first thread of thumbscrew to prevent easy removal.

**FOLLOW-THROUGH STEPS**

1. Install vision blocks (see your -10).
2. Raise and lock ramp (see your -10).

**END OF TASK**

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**REPLACE DRIVER'S HATCH INTERIOR LOCK AND LATCH**

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**0445 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0445 00-2).
  - Installation (page 0445 00-3).
  - Adjustment (page 0445 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Cotter pin (2)

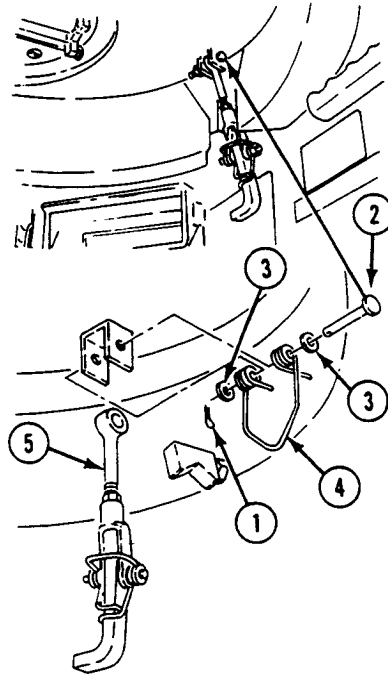
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REPLACE DRIVER'S HATCH INTERIOR LOCK AND LATCH — Continued

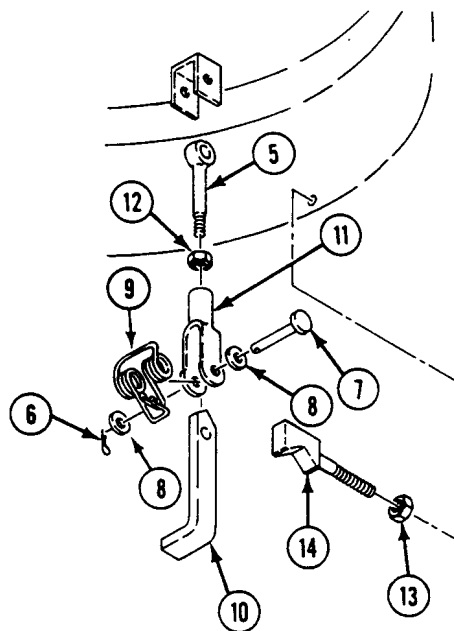
0445 00

REMOVAL

1. Remove cotter pin (1) from headed pin (2). Discard cotter pin.
2. Remove pin (2), two washers (3), spring (4), and eyebolt (5) from driver's hatch bracket.

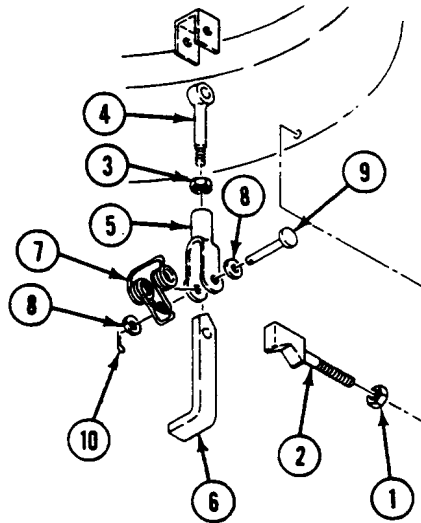


3. Remove cotter pin (6) from headed pin (7). Discard cotter pin.
4. Remove pin (7), two washers (8), spring (9), and latch (10) from clevis (11).
5. Loosen nut (12). Remove eyebolt (5) from clevis (11).
6. Loosen nut (13). Remove lug (14) from bulkhead. Remove nut from lug.

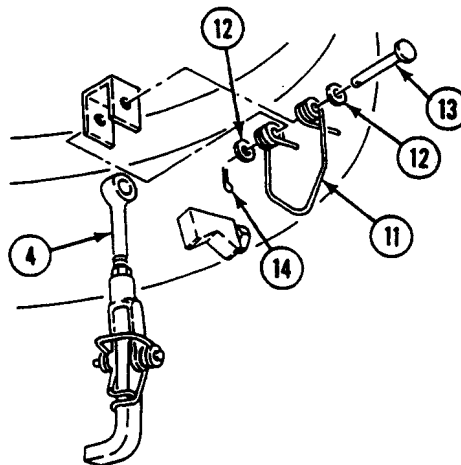


**INSTALLATION**

1. Install nut (1) on lug (2). Install lug in bulkhead. Do not tighten nut.
2. Install nut (3) and eyebolt (4) in clevis (5). Do not tighten nut.
3. Align latch (6), spring (7), and two washers (8) with clevis (5). Secure with headed pin (9) and new cotter pin (10).



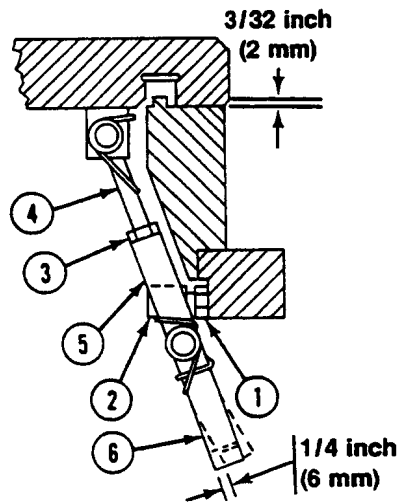
4. Install eyebolt (4), spring (11), and two washers (12) in driver's hatch bracket. Secure with headed pin (13) and new cotter pin (14).



**ADJUSTMENT****NOTE**

Perform Steps 1 - 2 to adjust lock and latch.

1. Turn clevis (5) on eyebolt (4) until hatch closes tightly on hull in the latched position with maximum clearance of  $\frac{3}{32}$  inch (2 mm). Tighten nut (3).
2. Turn lug (2) until latch (6) is in line with clevis (5) or  $\frac{1}{4}$  inch (6 mm) maximum above clevis in the latched position. Tighten nut (1) on lug.

**FOLLOW-THROUGH STEPS**

1. Close hatch. Check that hatch lock and latch are properly installed.

**END OF TASK**



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**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND  
QUICK RELEASE ASSEMBLY**

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**0446 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0446 00-2).
  - Disassembly (page 0446 00-4).
  - Clean, Inspect, and Repair (page 0446 00-6).
  - Assembly (page 0446 00-6).
  - Installation (page 0446 00-9).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

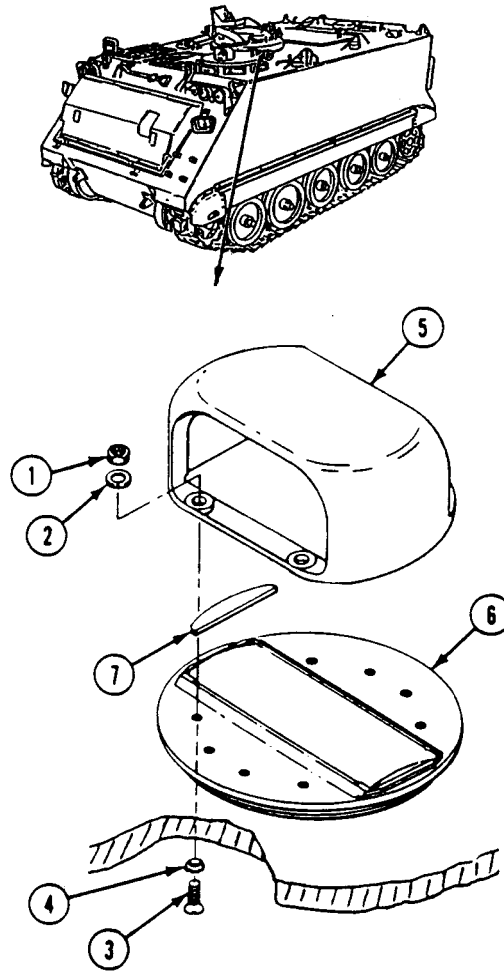
Carrier blocked (see your -10)

Materials/Parts

- Adhesive (WP 0782 00, Item 2)
  - Cleaning compound solvent (WP 0782 00, Item 16)
  - Sealing compound primer (WP 0782 00, Item 58)
  - Sealing compound (WP 0782 00, Item 62)
  - Lockwasher (4)
  - Lockwasher (4)
  - Lockwasher
  - Non-metallic seal (2)
  - Preformed mechanical felt (1)
  - Preformed mechanical felt (2)
-

**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE ASSEMBLY — Continued****0446 00****REMOVAL**

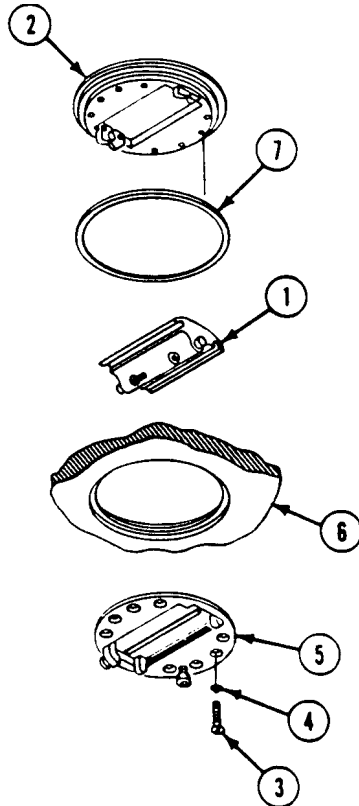
1. Remove four nuts (1), washers (2), screws (3), lockwashers (4), and periscope guard (5) from periscope quick release assembly (6). Discard lockwashers.
2. Remove two non-metallic seals (7) from bottom of guard (5). Discard seals.



**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE  
ASSEMBLY — Continued**

**0446 00**

3. Compress two rings on plug (1). Remove plug from quick release top plate (2). Place plug on top deck of carrier.
4. Remove four screws (3), lockwashers (4), top plate (2), and bottom plate (5) from driver's hatch (6). Discard lockwashers.
5. Remove felt (7) from top plate (2). Discard felt.

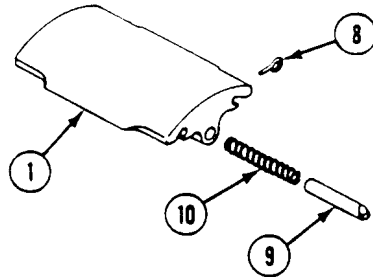


**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE  
ASSEMBLY — Continued**

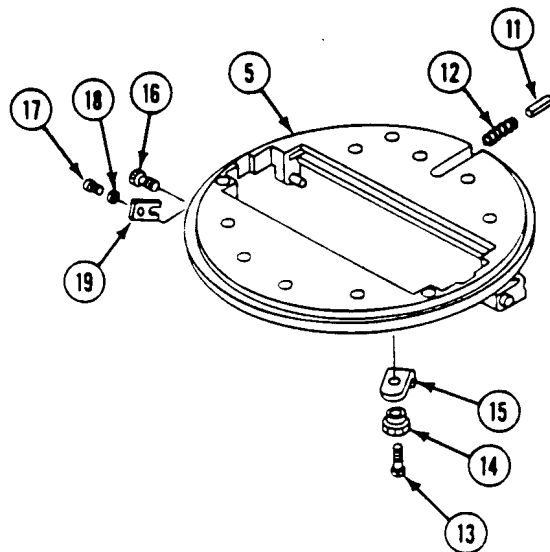
0446 00

**DISASSEMBLY**

1. Remove eyebolt (8), trunnion (9), and spring (10) from plug (1).



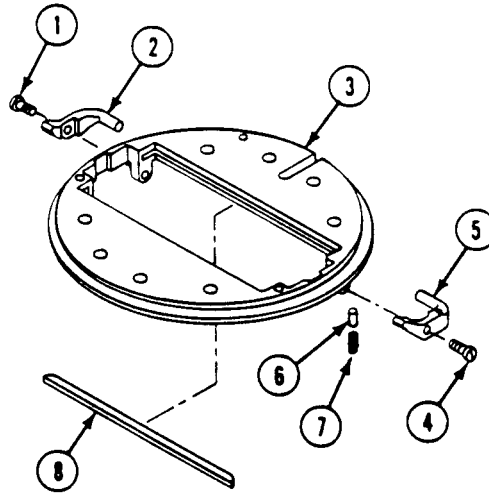
2. Remove key (11) and spring (12) from bottom plate (5).
3. Remove screw (13), knob (14), and lock plate (15) from bottom plate (5).
4. Remove knob (16), screw (17), lockwasher (18), and retainer (19) from bottom plate (5). Discard lockwasher.



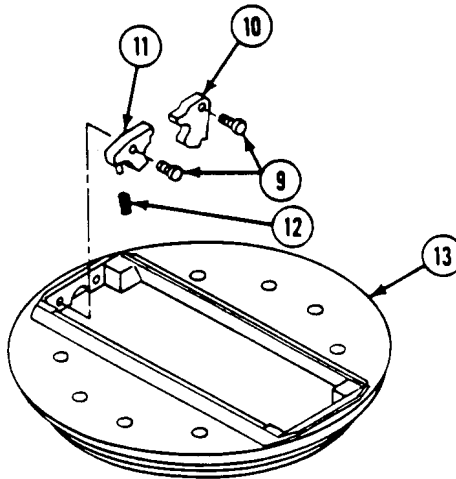
**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE  
ASSEMBLY — Continued**

0446 00

5. Remove screw (1) and latch release (2) from bottom plate (3).
6. Remove screw (4) and latch release (5) from bottom plate (3).
7. Remove two pins (6) and springs (7) from bottom plate (3).
8. Remove two felts (8) from bottom plate (3). Discard felt.



9. Remove four screws (9), retainers (10) and (11), and two springs (12) from top plate (13).



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**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE  
ASSEMBLY — Continued**


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0446 00

**CLEAN, INSPECT, AND REPAIR**

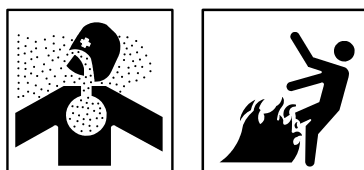
1. Clean parts with solvent, cleaning compound.
2. Inspect springs for corrosion, distortion, weakness, cracks, and breaks. Replace damaged springs.
3. Inspect parts for corrosion, distortion, wear, cracks, and loose or missing parts. Repair or replace damaged or missing parts.

**ASSEMBLY**


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**WARNING**

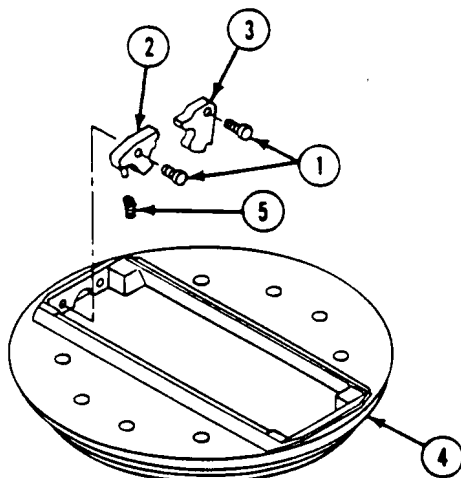

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**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. Apply primer and sealing compound to threads of screws (1).
2. Install four retainers (2) and (3) and screws (1) on top plate (4).
3. Install two springs (5) on retainers (2).



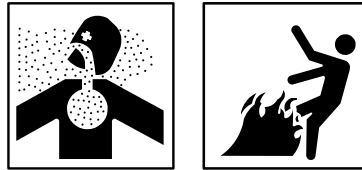
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**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE  
ASSEMBLY — Continued**

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0446 00

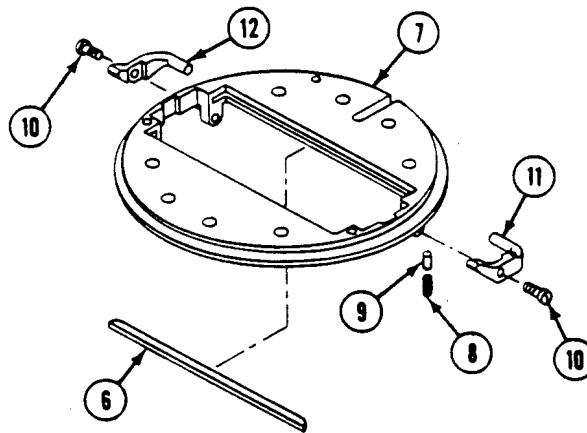
4. Install two new felts (6) on bottom plate (7).
5. Install two springs (8) and pins (9) on bottom plate (7).

**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

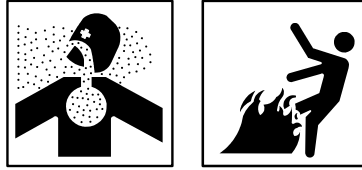
**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

6. Apply primer and sealing compound to the threads of screws (10).
7. Install latch release (11) and secure with screw (10).
8. Install latch release (12) and secure with screw (10).



**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE  
ASSEMBLY — Continued**

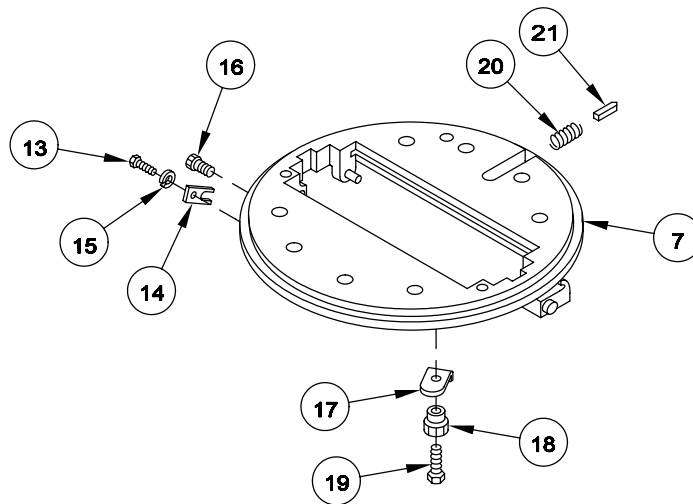
0446 00

**WARNING**


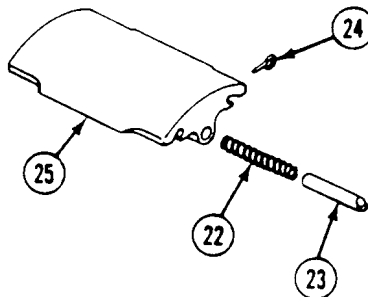
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

9. Apply primer and sealing compound to the threads of screw (13).
10. Install retainer (14) on bottom plate (7). Secure with new lockwasher (15), screw (13), and knob (16).
11. Install lock plate (17), knob (18), and screw (19) on bottom plate (7).
12. Install spring (20) and key (21) on bottom plate (7).



13. Install spring (22), trunnion (23), and eyebolt (24) in plug (25).





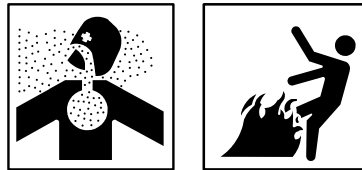
**REPLACE DRIVER'S HATCH PERISCOPE GUARD AND QUICK RELEASE ASSEMBLY — Continued**

0446 00

**INSTALLATION**

1. Install new felt (1) on top plate (2). Place top plate in driver's hatch (3).
2. Install bottom plate (4) in driver's hatch (3). Secure to top plate (2) with four new lockwashers (5) and screws (6).
3. Compress two rings on plug (7). Install plug in top plate (2) from top deck of carrier.

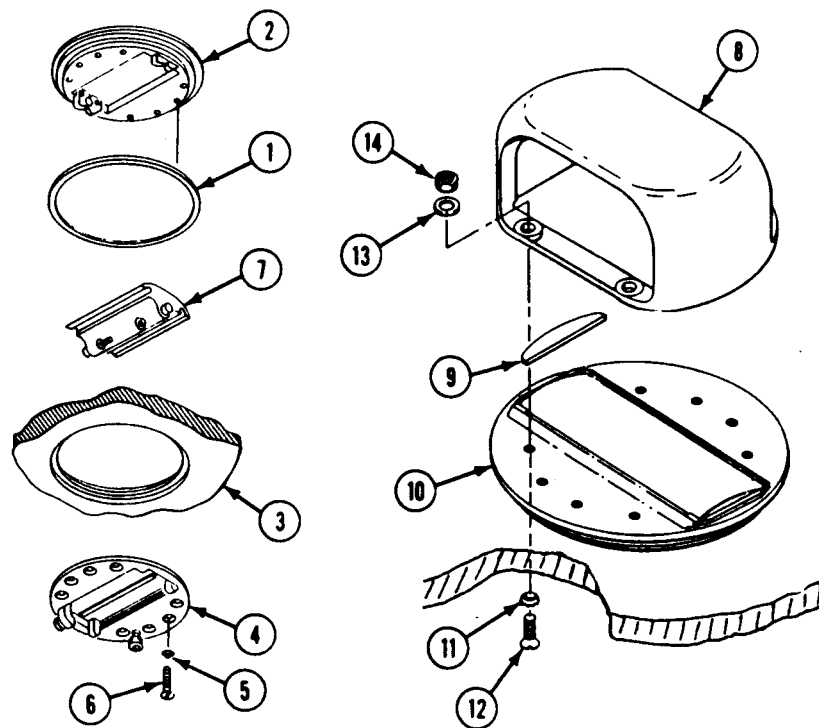
**WARNING**



**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

4. Apply adhesive to mating surface on guard (8). Install two new non-metallic seals (9). Trim seals, if needed.
5. Place guard (8) on periscope quick-release assembly (10). Secure with four new lockwashers (11), screws (12), washers (13), and nuts (14).



**END OF TASK**



**REPLACE DRIVER'S HATCH COVER AND EXTERIOR LOCK  
(ALL EXCEPT M901A1)**

**0447 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0447 00-1).  
Installation (page 0447 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)  
Carrier blocked (see your -10)  
Driver's hatch interior latch disconnected from hatch cover (WP 0445 00)  
Driver's hatch periscope guard and quick release assembly removed (WP 0446 00)

Materials/Parts

Grease (WP 0782 00, Item 24)  
Cotter pin  
Locknut (3)  
Non-metallic seal  
Ring spacers (2)

**REMOVAL**

**WARNING**



**Falling hatch could seriously injure you.**

**Keep head lower than closed hatch position when opening or closing hatch. Keep hands clear of hatch rim when closing. Make sure latch pin or mechanism is fully engaged when hatch is in any open position.**

**WARNING**



**Lifting or moving objects in excess of 70 pounds could injure you. Get an assistant or use a lifting device to move heavy objects.**

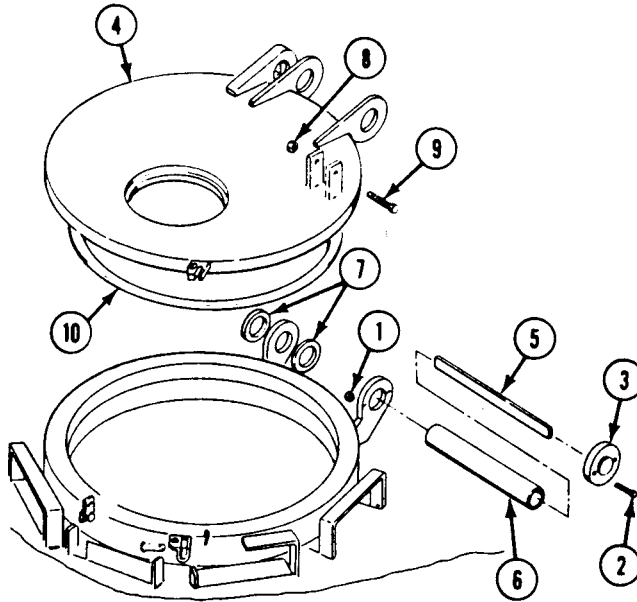
**CAUTION**

**Hold hatch straight up to release spring tension to avoid damaging equipment. After removing retainer, lower hatch.**

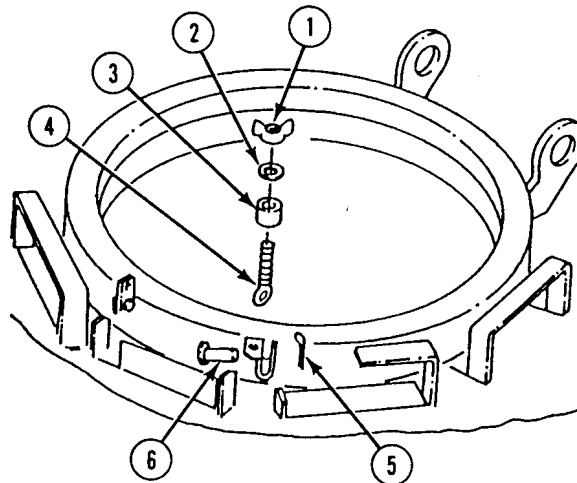
**REPLACE DRIVER'S HATCH COVER AND EXTERIOR LOCK (ALL EXCEPT M901A1) — Continued**

0447 00

1. Remove two locknuts (1), screws (2), and retainer (3) from hinge brackets. Discard locknuts.
2. Support cover (4). Remove springs (5), tube (6), two ring spacers (7), and cover from hinge brackets. Discard ring spacers.
3. Remove locknut (8) and screw (9) from cover (4). Discard locknut.
4. Pry up end of seal (10) and remove from cover (4). Discard seal.



5. Remove wing nut (1), washer (2), and bushing (3) from bolt (4).
6. Remove cotter pin (5) from headed pin (6). Discard cotter pin.
7. Remove pin (6) and bolt (4) from bracket on hatch.

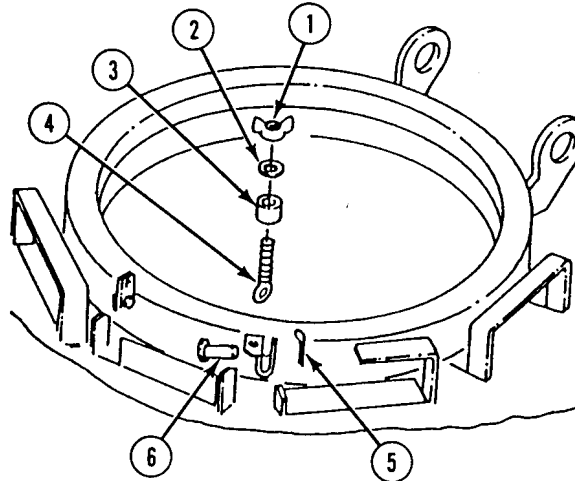


**REPLACE DRIVER'S HATCH COVER AND EXTERIOR LOCK (ALL EXCEPT M901A1) — Continued**

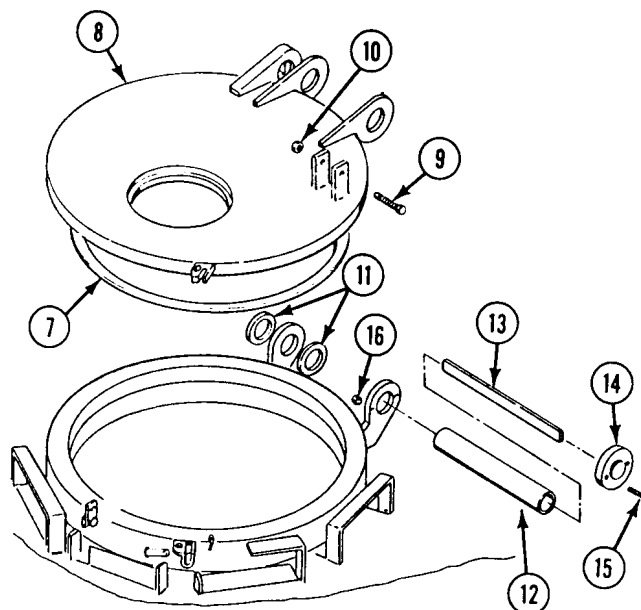
0447 00

**INSTALLATION**

1. Align bolt (4) with bracket on hatch. Secure with headed pin (6) and new cotter pin (5).
2. Install bushing (3), washer (2), and wing nut (1) on bolt (4).



3. Place new seal (7) over retaining groove in cover (8) and press seal into place. Trim end, if needed.
4. Install screw (9) in cover (8) and secure with new locknut (10).
5. Align cover (8) with hinge brackets and install two new ring spacers (11) and tube (12).
6. Apply light coat of grease to each spring (13). Install springs in tube (12).
7. Place cover (8) in vertical position and install retainer (14) on hinge brackets. Secure with two screws (15) and new locknuts (16).



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**REPLACE DRIVER'S HATCH COVER AND EXTERIOR LOCK (ALL  
EXCEPT M901A1) — Continued**

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**0447 00**

**FOLLOW-THROUGH STEPS**

1. Install driver's hatch periscope guard and quick release assembly (WP 0446 00).
2. Connect driver's hatch interior latch to cover (WP 0445 00).

**END OF TASK**

**REPLACE DRIVER'S HATCH LATCH AND BUMPER (ALL EXCEPT M901A1)**

**0448 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0448 00-1).
- Clean, Inspect, and Repair (page 0448 00-3).
- Installation (page 0448 00-4).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Locknut

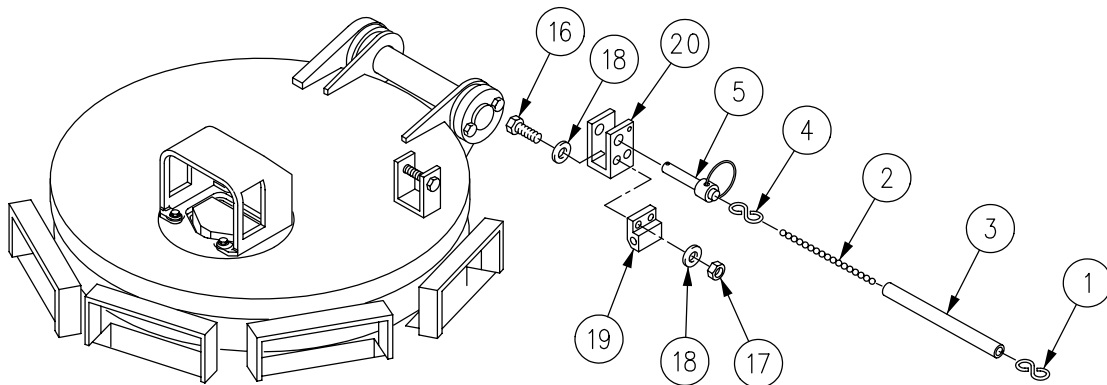
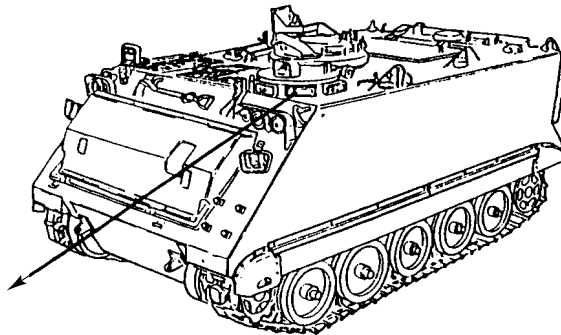
Locknut (2)

**REMOVAL**

**NOTE**

**Steps 1 - 6 apply to all carriers, except M577A2 and M1068.**

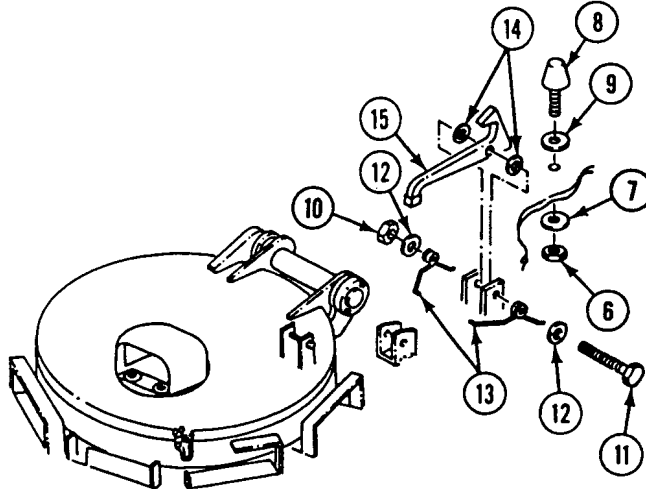
1. Open both ends of S-hook (1). Remove S-hook from chain (2) and hull bracket (20).
2. Remove tube (3) from chain (2).
3. Open both ends of S-hook (4). Remove S-hook from chain (2) and quick release pin (5). Remove quick release pin (5) from hull bracket (20).



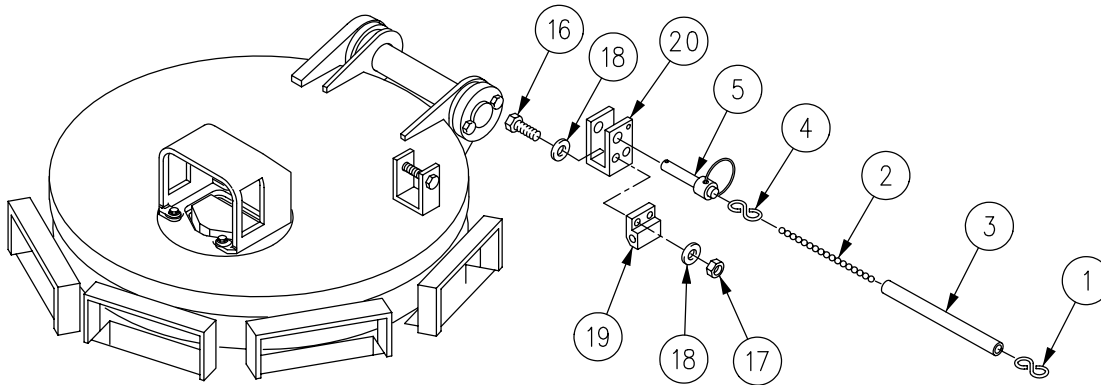
REPLACE DRIVER'S HATCH LATCH AND BUMPER (ALL EXCEPT M901A1) — Continued

0448 00

4. From inside carrier, remove nut (6) and washer (7). Remove bumper (8) and washer(s) (9) from hull top plate.
5. Remove locknut (10), screw (11), two washers (12), springs (13), spacers (14), and hold-open hook (15) from hull bracket.



6. Remove two screws (16), locknuts (17), four washers (18), and block (19) from hull bracket (20). Discard locknuts.

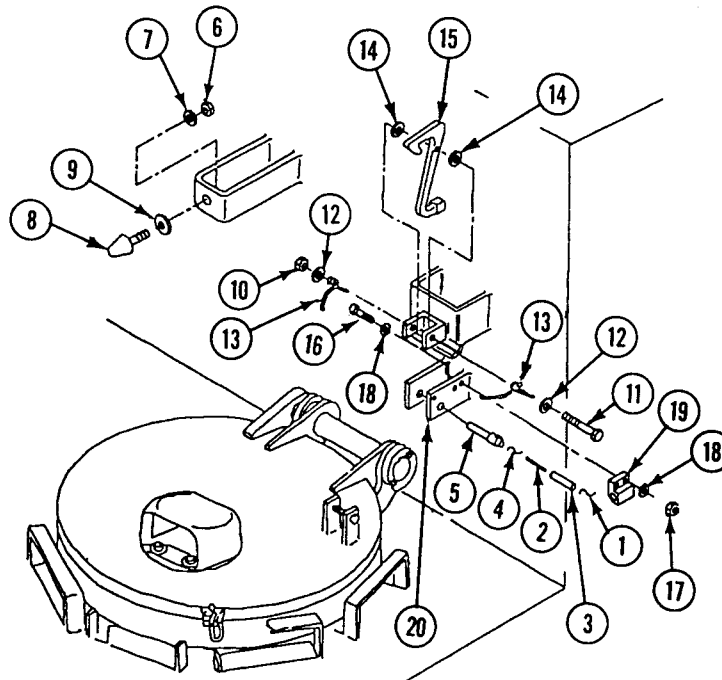




**NOTE**

Steps 7 - 12 apply to M577A2 and M1068 carriers.

7. Open both ends of hook (1). Remove from chain (2) and hull bracket (20).
8. Remove tube (3) from chain (2).
9. Open both ends of hook (4). Remove from chain (2) and quick release pin (5).
10. Remove locknut (6), washer (7), bumper (8), and washer(s) (9) from bulkhead bracket. Discard locknut.
11. Remove locknut (10), screw (11), two washers (12), springs (13), two spacers (14), and hook (15) from hull brackets. Discard locknut.
12. Remove two screws (16), nuts (17), four washers (18), and block (19) from hull bracket (20).

**CLEAN, INSPECT, AND REPAIR**

1. Check spring. Replace broken or weak spring.
2. Check bumper. Replace bumper that is cut, hard, or has stripped threads.
3. Check spring clip. Replace if broken or weak.

## INSTALLATION

## NOTE

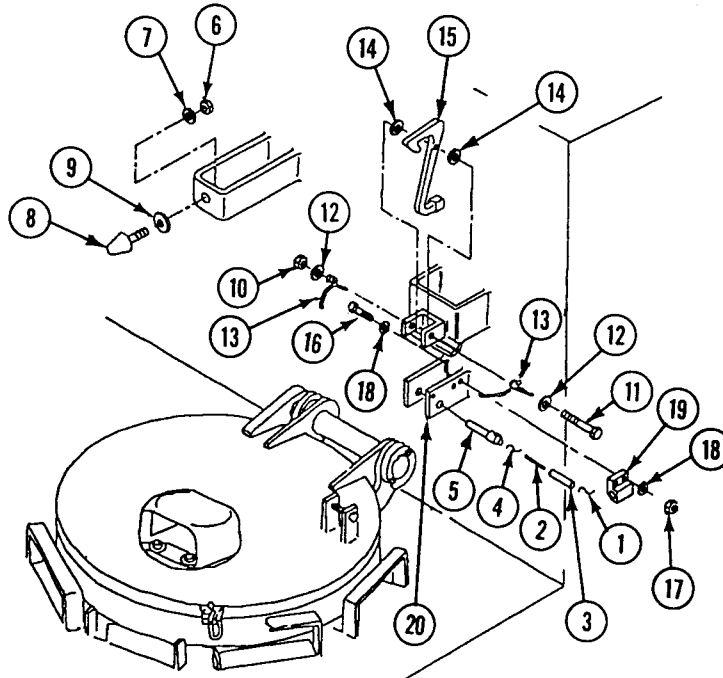
Steps 1 - 6 apply to M577A2 and M1068 carriers.

1. Align hold-open hook (15), two spacers (14), two springs (13), and two washers (12) with hull bracket (20). Secure with screw (11) and new locknut (10).

## NOTE

Install washer(s), as needed, to compress bumper 1/4 inch (6 mm) when hold-open hook is engaged.

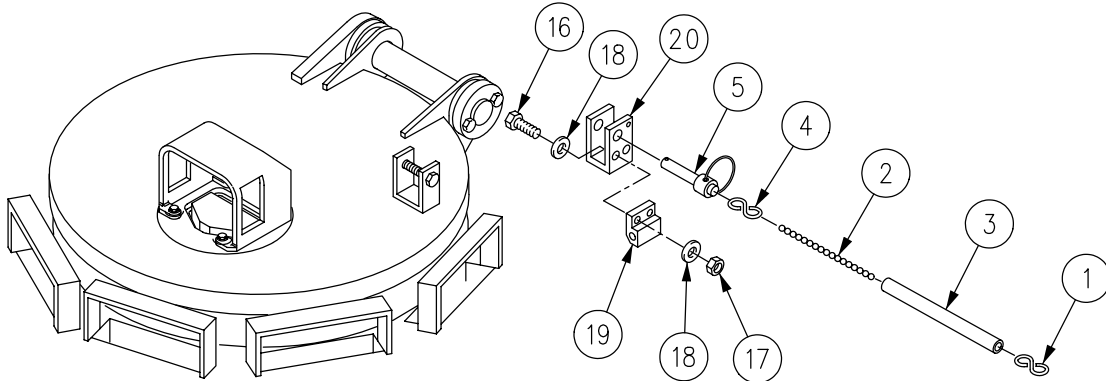
2. Install washer(s) (9) and bumper (8) in hull bracket (20). Secure with washer (7) and new locknut (6).
3. Install S-hook (4) on quick release pin (5) and chain (2). Squeeze both ends of S-hook to secure.
4. Install tube (3) on chain (2).
5. Install S-hook (1) in chain (2) and on hull bracket (20). Squeeze both ends of S-hook to secure.
6. Install block (19), four washers (18), two screws (16), and nuts (17) on hull bracket (20).



**NOTE**

Steps 7 - 12 apply to all carriers, except M577A2 and M1068.

7. Install block (19), four washers (18), two screws (16), and nuts (17) on hull bracket (20).

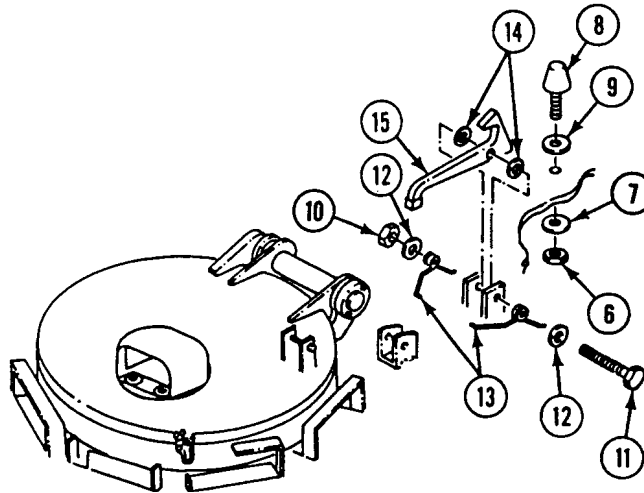


8. Install hook (15), two spacers (14), two springs (13), and two washers (12) on hull bracket. Secure with screw (11) and new locknut (10).

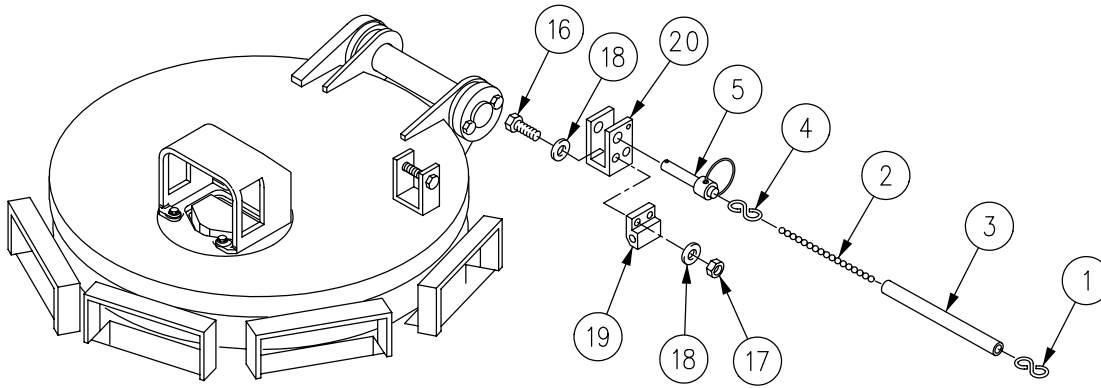
**NOTE**

**Install washer(s), as needed, to compress bumper 1/4 inch (6 mm) when hold-open hook is engaged.**

9. Install washer(s) (9) and bumper (8) on hull bracket. From inside carrier, secure with washer (7) and nut (6).



10. Install hook (4) on quick release pin (5) and chain (2). Squeeze both ends of hook to secure.
11. Install tube (3) on chain (2).
12. Install hook (1) on chain (2) and on hull bracket (20). Squeeze both ends of hook to secure.



**FOLLOW-THROUGH STEPS**

1. Open and close driver's hatch cover and engage hold-open hook to check that hook and bumper are installed correctly.

**END OF TASK**

**REPAIR DRIVER’S HATCH (M901A1 ONLY)**

**0449 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0449 00-1).
- Disassembly (page 0449 00-5).
- Cleaning (page 0449 00-9).
- Inspection-Acceptance and Rejection Criteria (page 0449 00-9).
- Repair or Replacement (page 0449 00-9).
- Assembly (page 0449 00-11).
- Installation (page 0449 00-14).

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

- General Mechanic’s Tool Kit (WP 0780 00, Item 29)
- Snap Ring Pliers (WP 0780 00, Item 45)
- Socket Wrench Set (WP 0780 00, Item 97)
- Torque Wrench (WP 0780 00, Item 100)
- Torque Wrench (WP 0780 00, Item 102)
- Torque Wrench (WP 0780 00, Item 105)
- Torque Wrench (WP 0780 00, Item 104)

Materials/Parts

- Adhesive sealant (WP 0782 00, Item 4)
- Cleaning compound (WP 0782 00, Item 16)
- Lubricating oil (WP 0782 00, Item 37)
- Sealing compound (WP 0782 00, Item 62)
- Cotter pin (2)
- Cotter pin (2)
- Locknut (2)
- Locknut
- Locknut (4)

Materials/Parts

- Lockwasher (6)
- Lockwasher (3)
- Lockwasher (2)
- Lockwasher (3)
- Rubber stop
- Seal
- Spring pin

Personnel Required

Unit Mechanic

References

See your -10

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)

**REMOVAL**

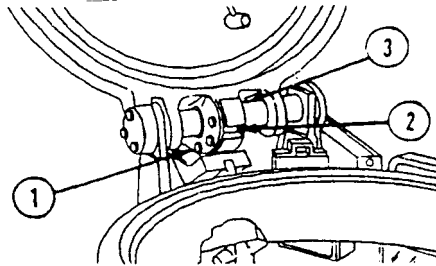
1. Clean driver’s hatch areas with a stiff acid brush dampened with cleaning compound.

**WARNING**



**Driver’s hatch cover could fall during vehicle operation because of worn or excessively soiled components and/or maladjustment, causing injury or death. Follow inspection procedures very carefully.**

2. Close and latch driver's hatch (see your -10). While driver's hatch is closed and latched, inspect yoke support assembly (1) and block detents (2) and (3) for mud, dirt, and any debris that could interfere with smooth operation of the assembly.



### NOTE

**Make sure hatch is in the closed position.**

3. Remove two setscrews (1), snap rings (2), pins (3), washers (4), and washers (5) from driver's hatch cover (6).

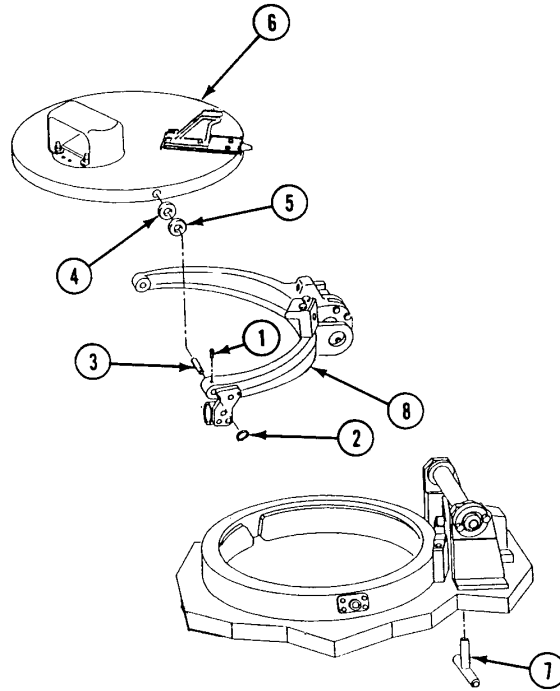
### WARNING



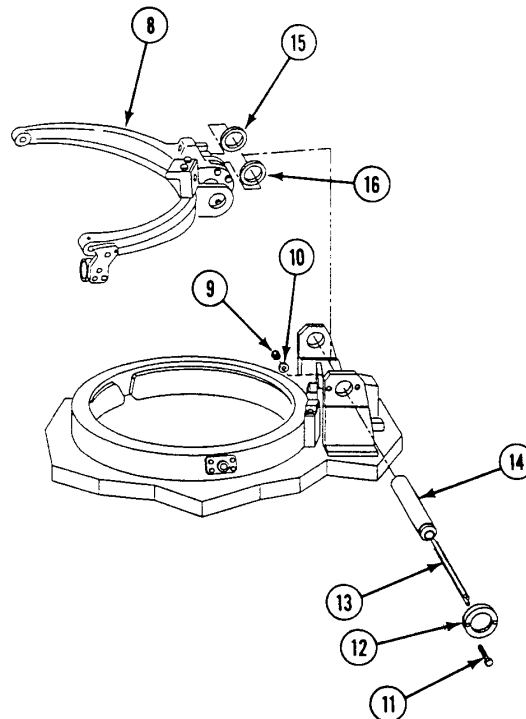
**Falling hatch could seriously injure you.**

**Keep head lower than closed hatch position when opening or closing hatch. Keep hands clear of hatch rim when closing. Make sure latch pin or mechanism is fully engaged when hatch is in any open position.**

4. Pull hatch release handle (7) and allow yoke (8) to move to open position.
5. Carefully lift away hatch cover (6).



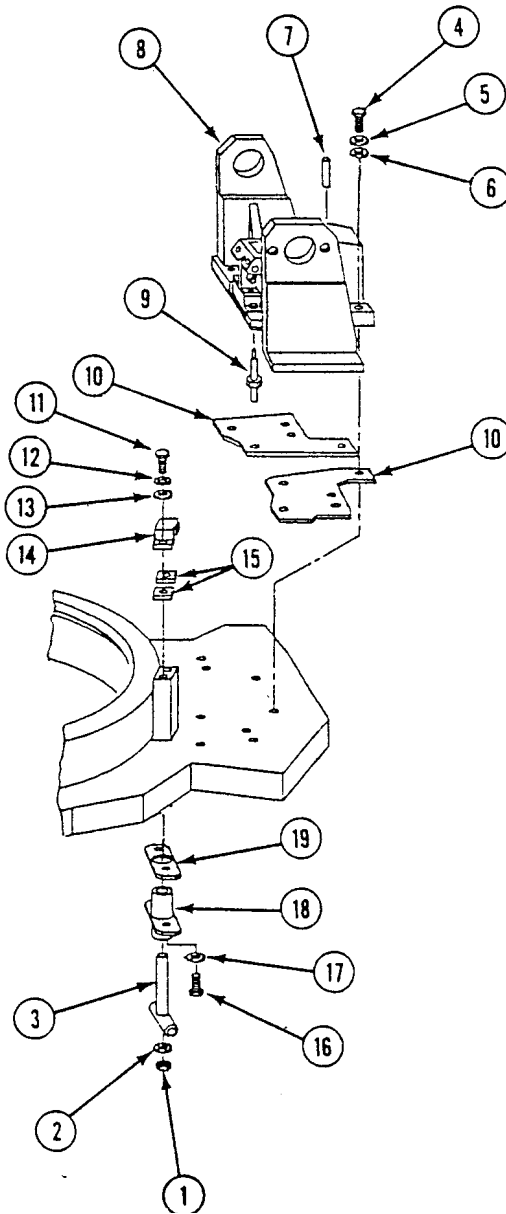
6. Remove two locknuts (9), washers (10), screws (11), and cap (12). Discard locknuts.
7. Move yoke (8) to closed position.
8. Remove 17 springs (13), shield (14), spacer (15), spacer (16), and yoke (8).



REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued

0449 00

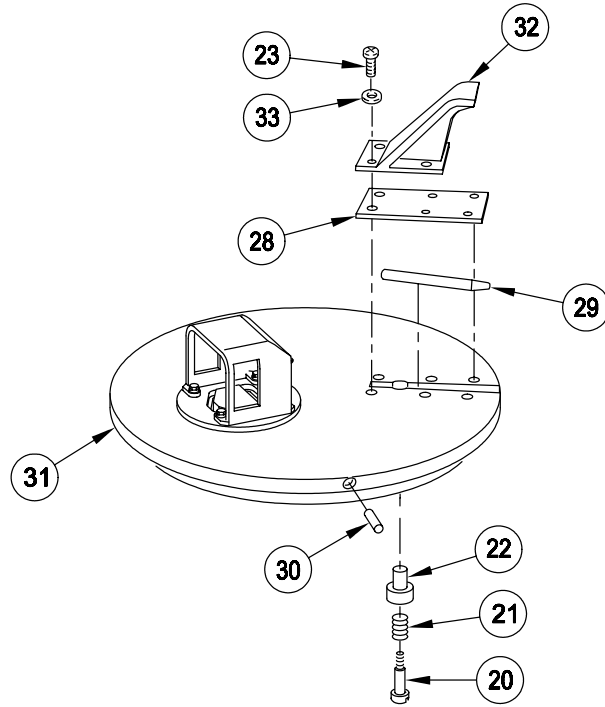
9. Remove locknut (1), washer (2), and handle (3). Discard locknut.
10. Remove six screws (4), lockwashers (5), washers (6), two pins (7), support (8), lanyard (9), and four shims (10). Discard lockwashers.
11. Remove two screws (11), lockwashers (12), washers (13), catch (14), and two shims (15). Discard lockwashers.
12. Remove two screws (16), washers (17), guide (18), and spacer (19).



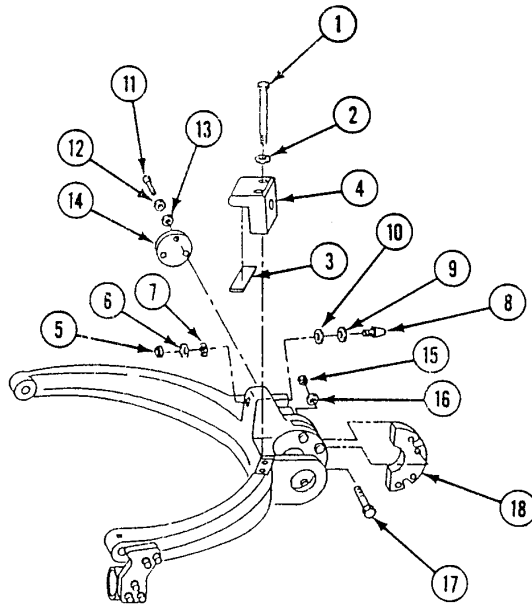


**DISASSEMBLY**

1. Remove screw (20), spring (21), and handle (22).
2. Remove six screws (23), washers (33), stop (32), plate (28), and thumb latch (29).
3. Remove two sleeve bearings (30) from hatch cover (31).



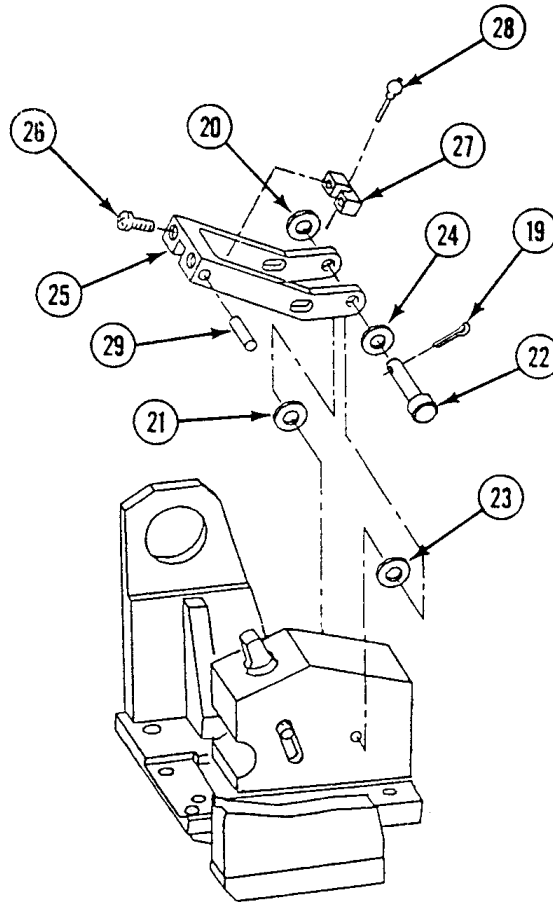
4. Remove two screws (1), lockwashers (2), rubber stop (3), and stop (4). Discard lockwashers.
5. Remove nut (5), washer (6), lockwasher (7), bumper (8), washer (9), and washer (10). Discard lockwasher.
6. Remove three screws (11), lockwashers (12), washers (13), and cover (14). Discard lockwashers.
7. Remove four locknuts (15), washers (16), screws (17), and insert block (18). Discard locknuts.



REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued

0449 00

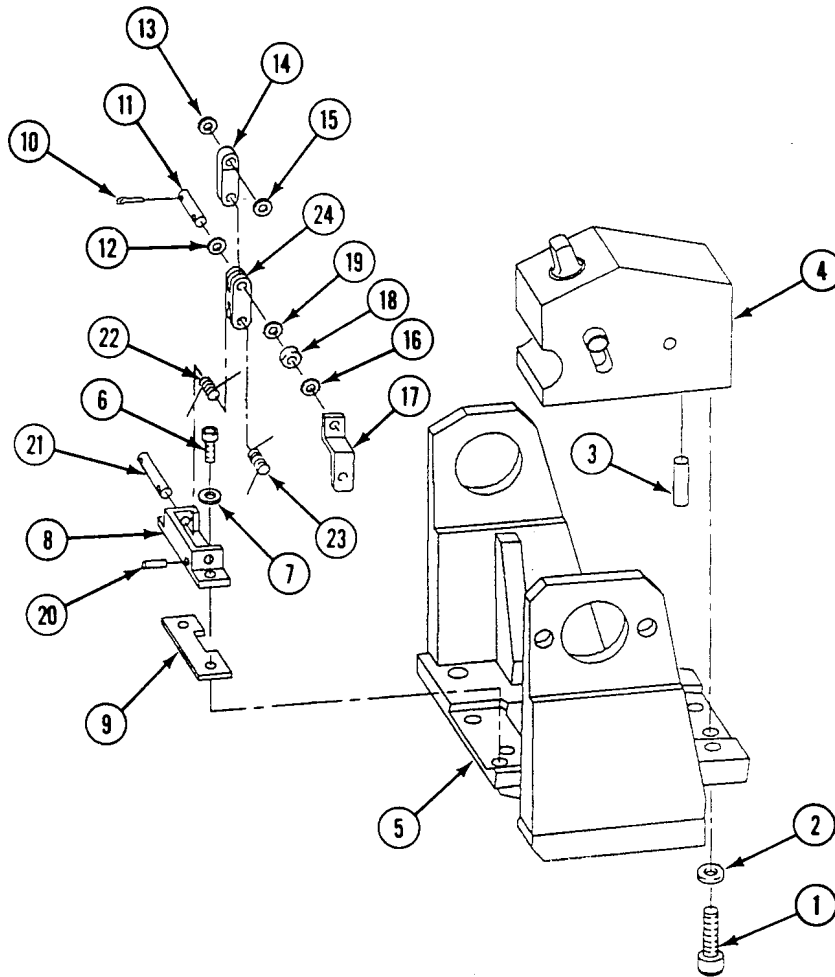
8. Remove two cotter pins (19), washers (20), washer (21), two pins (22), washer (23), two washers (24), and bracket (25). Discard cotter pins.
9. Remove two screws (26), retainer (27), pin (28), and pin (29).



REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued

0449 00

10. Remove six screws (1), washers (2), two pins (3), and block (4) from support (5).
11. Remove two screws (6), washers (7), bracket (8), and shim (9).
12. Remove two cotter pins (10), pin (11), washer (12), washer (13), link (14), washer (15), washer (16), link (17), spacer (18), and washer (19). Discard cotter pins.
13. Remove spring pin (20), pin (21), spring (22), spring (23), and link (24). Discard spring pin.



**CLEANING**

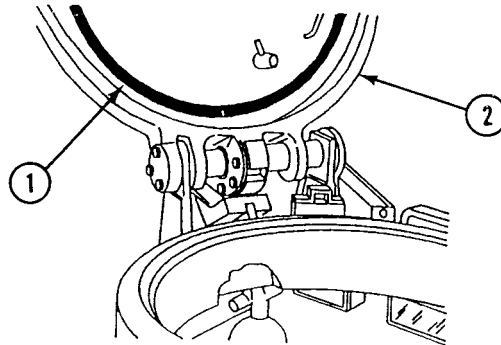
1. Clean parts with cleaning compound.

**INSPECTION-ACCEPTANCE AND REJECTION CRITERIA**

1. Inspect parts for corrosion, distortion, cracks, and broken or missing parts.

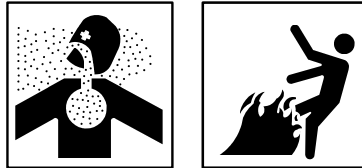
**REPAIR OR REPLACEMENT**

1. Repair or replace damaged and missing parts.
2. Replace hatch seal.
  - a. Remove seal (1) from hatch (2). Discard seal.
  - b. Press new seal (1) into hatch (2) groove and apply pressure with a roller or other suitable tool to seat seal.



3. Replace rubber stop, see DISASSEMBLY Step 4.
  - a. Place hatch in closed position.
  - b. Remove stop (3) from yoke (4).
  - c. Remove rubber stop (5) from stop (3). Discard rubber stop. Clean to bare metal.

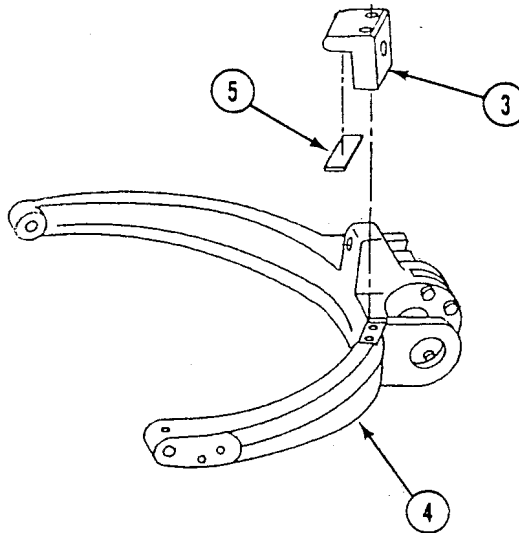
**WARNING**



**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

- d. Apply clear adhesive sealant evenly to mating surface of stop (3). Allow to dry at least 30 minutes. Apply second coat only when surface is dry to touch.
- e. Apply second coat of sealant evenly to mating surface of stop (3). Allow second coat of sealant to dry at least 20 minutes. Surface must be tacky to touch.
- f. Press new rubber stop (5) to stop (3), and apply pressure with a roller or other functional tool.
- g. Install stop (3) on yoke (4), see ASSEMBLY Step 11.



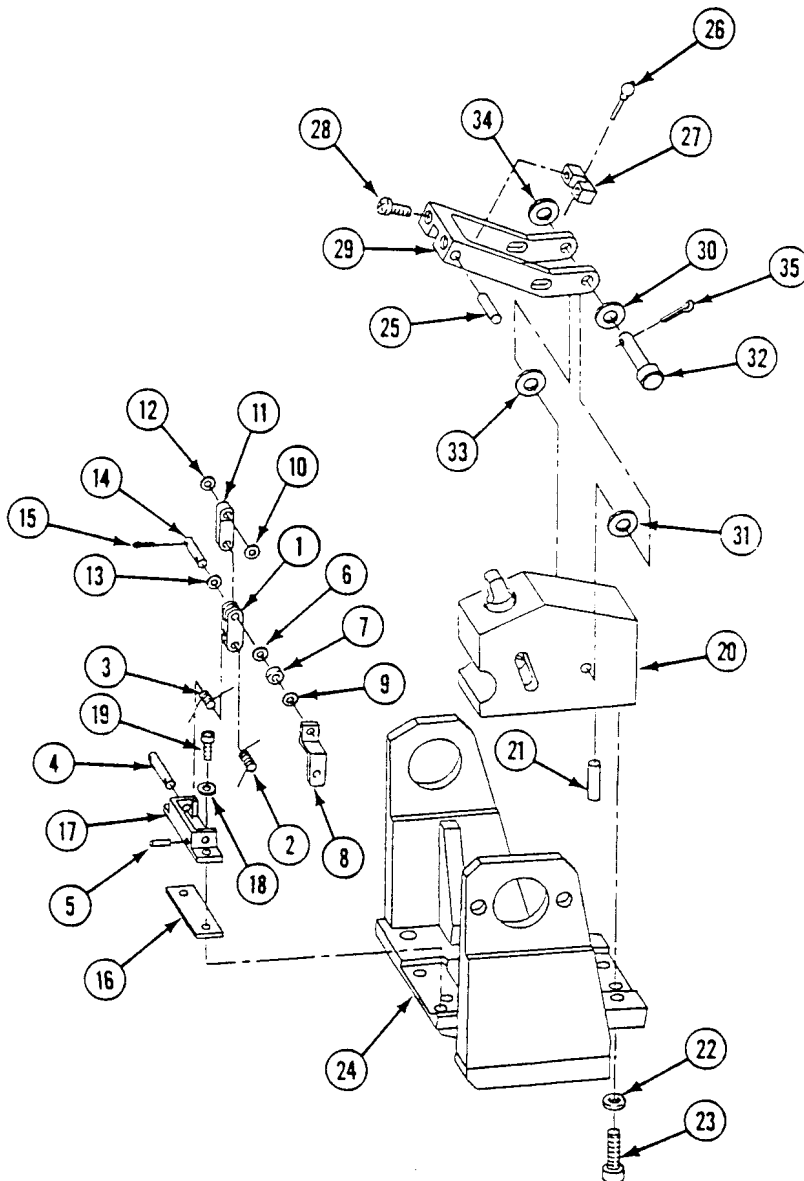
**ASSEMBLY**

1. Install link (1), spring (2), spring (3), pin (4), and new spring pin (5).
2. Install washer (6), spacer (7), link (8), washer (9), washer (10), link (11), washer (12), washer (13), pin (14), and two new cotter pins (15).
3. Install shim (16), bracket (17), two washers (18), and screws (19).
4. Install block (20), two pins (21), six washers (22), and screws (23) on support (24).
5. Install pin (25), pin (26), block (27), and two screws (28).

**NOTE**

**Shim is required to make sure linkage returns to over center position.**

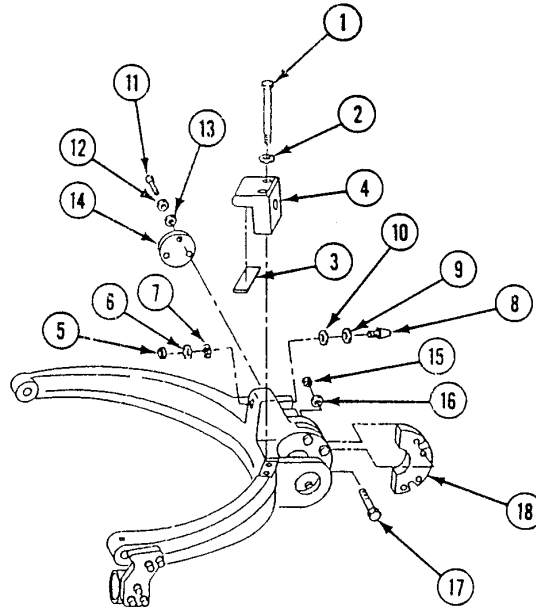
6. Install bracket (29), two washers (30), washer (31), two pins (32), washer (33), two washers (34), and two new cotter pins (35).



REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued

0449 00

7. Install insert block (18), four screws (17), washers (16), and new locknuts (15).
8. TIGHTEN FOUR NUTS (15) TO 216-240 LB-FT (320-325 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 105).
9. Install cap (14), three washers (13), new lockwashers (12), and screws (11).
10. Install washer (10), washer (9), bumper (8), washer (7), new lockwasher (6), and nut (5).
11. Install stop (4), two new lockwashers (2), and screws (1).

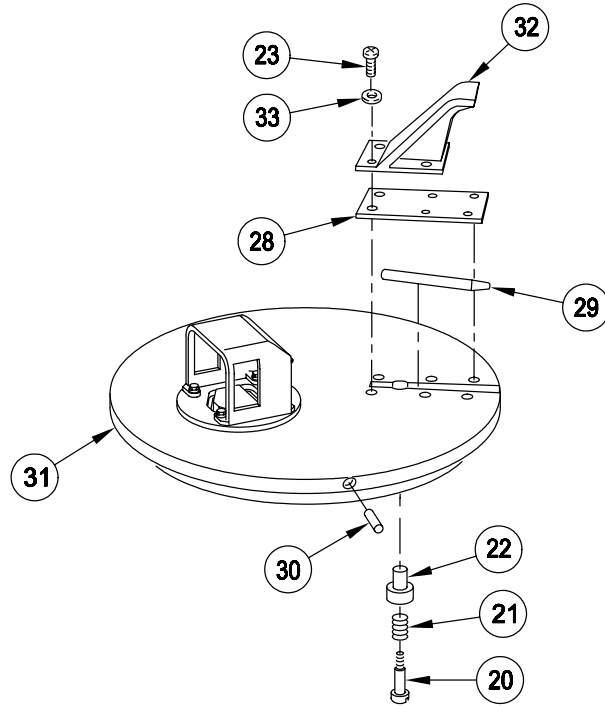




REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued

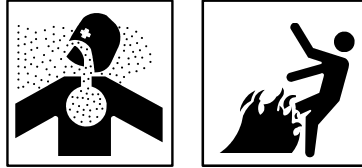
0449 00

12. Install two sleeve bearings (30) on hatch cover (31).
13. Install pop-up hatch latch (29), plate (28), stop (32), six washers (33), and screws (23).
14. Install handle (22), spring (21), and screw (20).



**INSTALLATION**

1. Install spacer (1), guide (2), two washers (3), and screws (4).
2. Install two shims (5), catch (6), two washers (7), new lockwashers (8), and screws (9).
3. TIGHTEN TWO SCREWS (9) TO 120-144 LB-IN (14-16 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 100).

**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

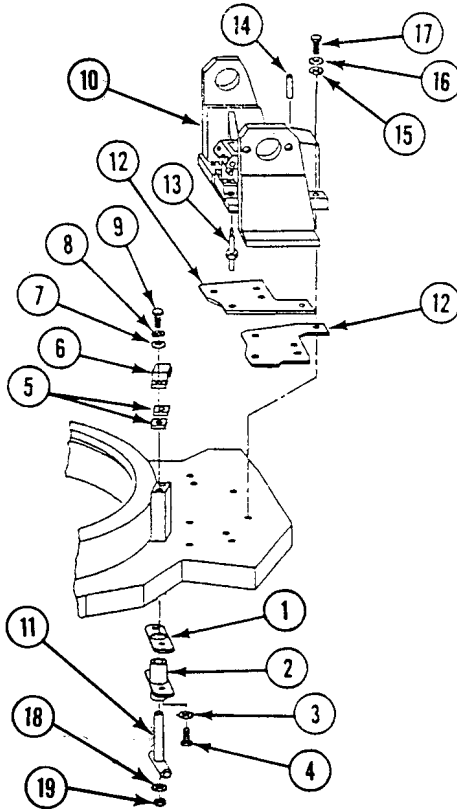
**NOTE**

**Before installing support (10) to deck, apply a .006-inch high and .12-inch wide bead of sealing compound around the hole through the deck for handle (11). Do not allow sealing compound to dry before installing support to deck.**

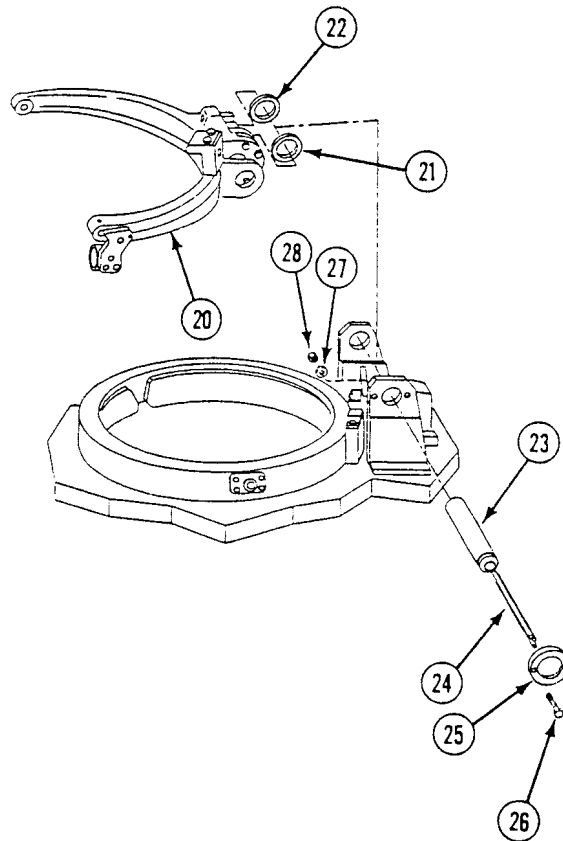
REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued

0449 00

4. Install two shims (12), lanyard (13), support (10), two pins (14), six washers (15), new lockwashers (16), and screws (17).
5. TIGHTEN SIX SCREWS (17) TO 300-336 LB-IN (34-38 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).
6. Install handle (11), washer (18), and new locknut (19).



7. Install yoke (20), spacer (21), spacer (22), shield (23), and 17 springs (24).
8. Move yoke (20) to open position.
9. Install cap (25), two screws (26), washers (27), and new locknuts (28).
10. TIGHTEN TWO NUTS (28) TO 48-70 LB-FT (65-95 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 104).

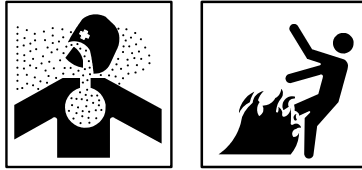


11. Move yoke (1) to closed position.
12. Place hatch cover (2) into position.

**NOTE**

**A minimum of one washer (3) and (4) is required between hatch cover (2) and yoke assembly (1).**

13. Using washers (3) and (4), center latch assembly (5) within stop assembly (6), allowing maximum movement of hatch cover (2) within yoke assembly (1). This allows engagement between latch assembly (5) and stop assembly (6).

**WARNING**

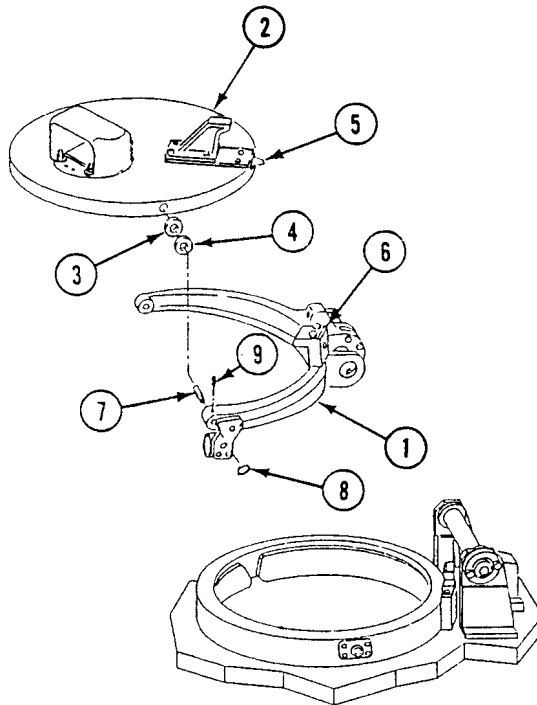
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

**NOTE**

Apply sealing compound to setscrews (9) before installing.

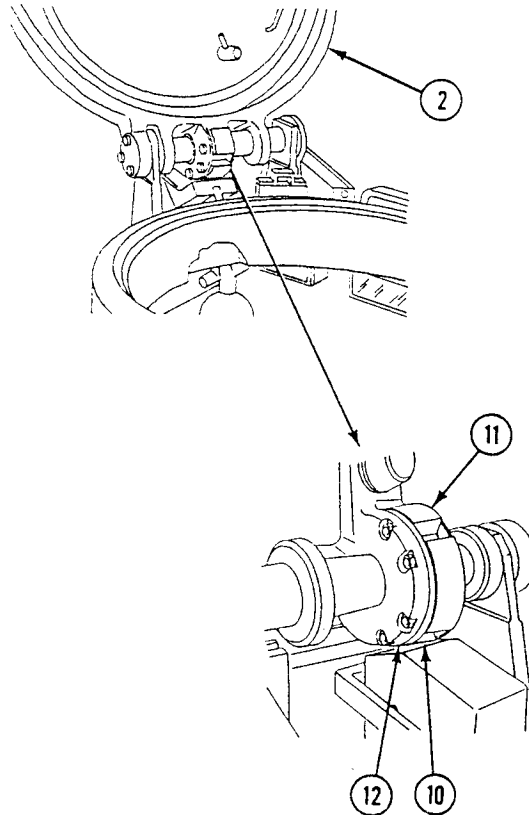
14. Install two washers (3), washers (4), pins (7), snap rings (8), and setscrews (9) on driver's hatch cover (2). Use snap ring pliers.



**WARNING**

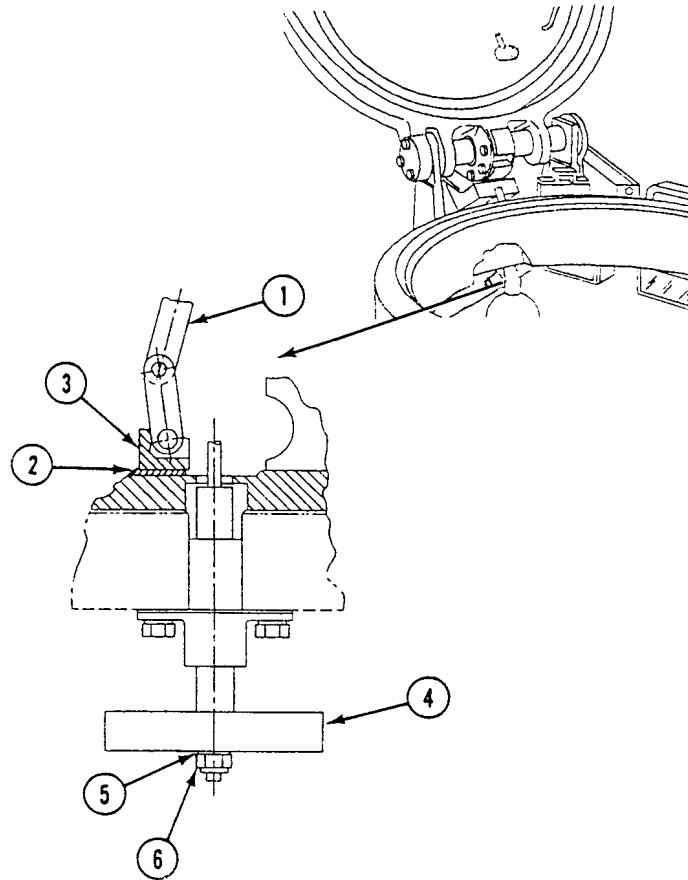
**The yoke support assembly could fail to operate if the hatch release handle gets caught on the ledge directly behind it. Watch for this any time the hatch release handle is operated.**

15. Raise driver's hatch cover (2) to first detent (10) (pop-up) and second detent (11) (full-up) positions. Make sure top (12) fully engages. Insert block detents (10) and (11) in each position.



**REPAIR DRIVER'S HATCH (M901A1 ONLY) — Continued****0449 00**

16. Check that yoke support assembly linkage (1) is over center. If linkage is not over center, add shim laminations (2) under bracket (3).
17. Push hatch release handle (4) up. Then measure between handle (4) and washer (5). Make sure gap is 0.06 (+0.03, -0.00) inch. If clearance is not within limits, loosen or tighten nut (6), as required.

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**





**REPLACE COMMANDER'S CUPOLA CUSHIONING PAD AND HANDLE (M113A2, M1059, AND M1064 ONLY)**

**0450 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0450 00-1).  
 Installation (page 0450 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Hatch cover open (see your -10)

Tools and Special Tools

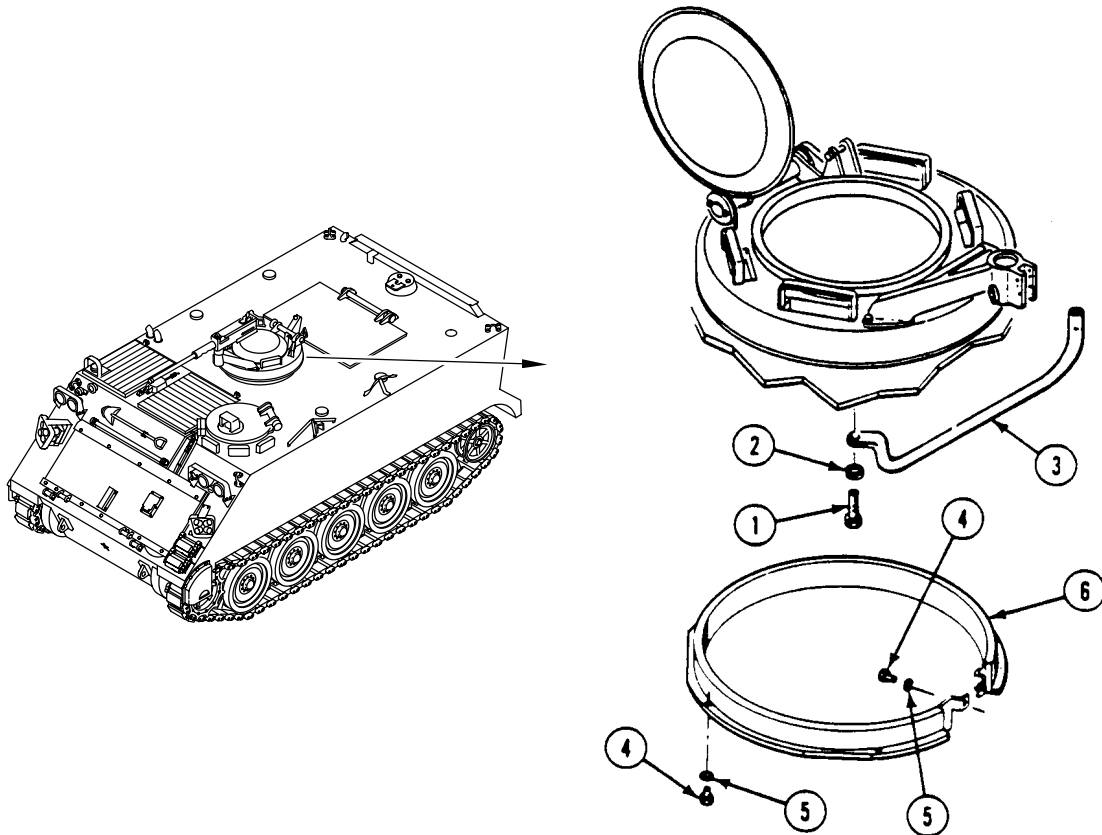
General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 103)

Personnel Required

Unit Mechanic

**REMOVAL**

1. Remove two screws (1), washers (2), and handle (3) from commander's hatch.
2. Remove six screws (4), washers (5), and pad (6) from commander's hatch.



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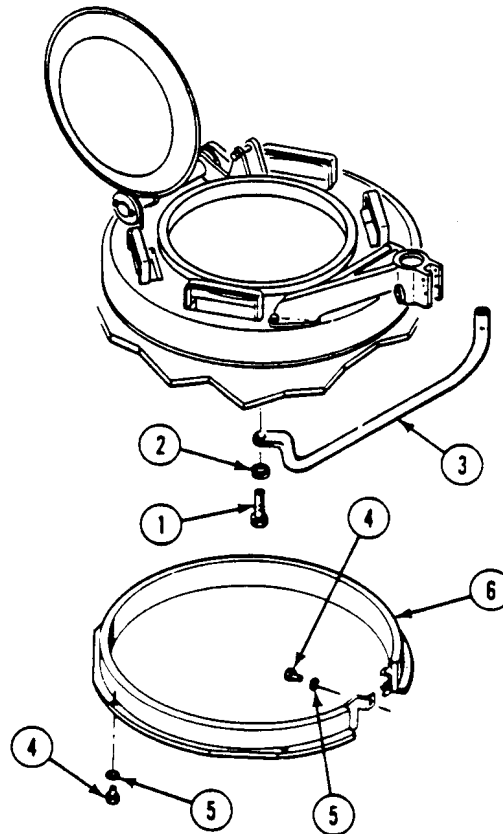
**REPLACE COMMANDER'S CUPOLA CUSHIONING PAD AND HANDLE (M113A2,  
M1059, AND M1064 ONLY) — Continued**

---

0450 00

**INSTALLATION**

1. Align pad (6) with holes in commander's hatch. Secure with six washers (5) and screws (4).
2. Align handle (3) with commander's hatch. Secure with two washers (2) and screws (1). **TIGHTEN SCREWS TO 120-130 LB-FT (163-176 N·M) TORQUE.** Use torque wrench.

**FOLLOW-THROUGH STEPS**

1. Close hatch cover (see your -10).

**END OF TASK**

**REPLACE COMMANDER'S HATCH VISION BLOCK, LOCKS, AND SEALS**

**0451 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0451 00-1).  
 Installation (page 0451 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Socket Wrench Set (WP 0780 00, Item 96)  
 Torque Wrench (WP 0780 00, Item 102)  
 Torque Wrench (WP 0780 00, Item 104)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Vision block removed (see your -10)  
 Ramp lowered (see your -10)

Materials/Parts

Adhesive (WP 0782 00, Item 2)  
 Seal  
 Spring pin

**REMOVAL**

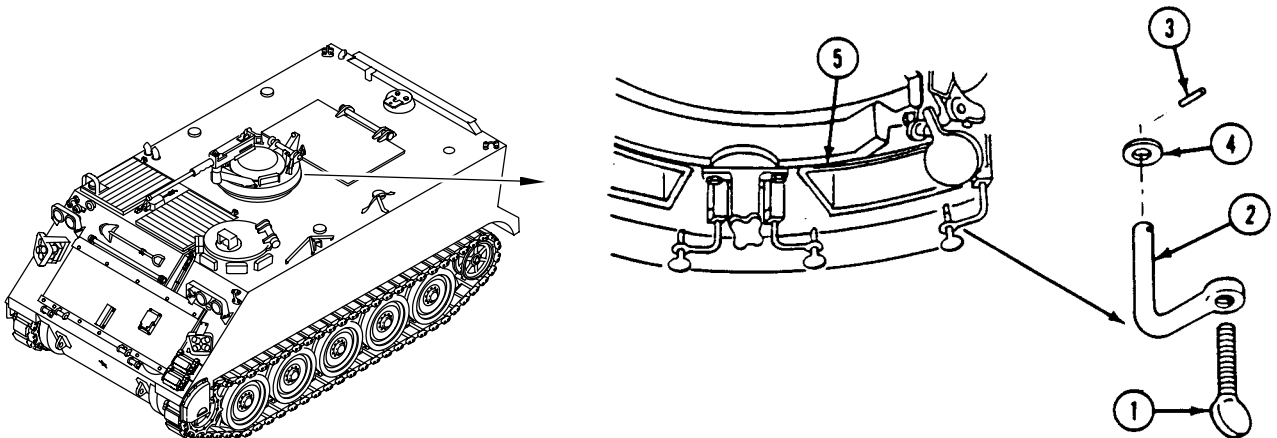
**NOTE**

Steps 1 - 4 apply to all carriers except the M1064.

**NOTE**

**There are five vision blocks on the commander's hatch. Each block has two locks and one seal. Task is for one lock and one seal.**

1. Remove thumbscrew (1) from arm (2).
2. Remove spring pin (3) from arm (2). Discard pin.
3. Remove arm (2) and washer (4) from hull bracket.
4. Scrape seal (5) from vision block opening.



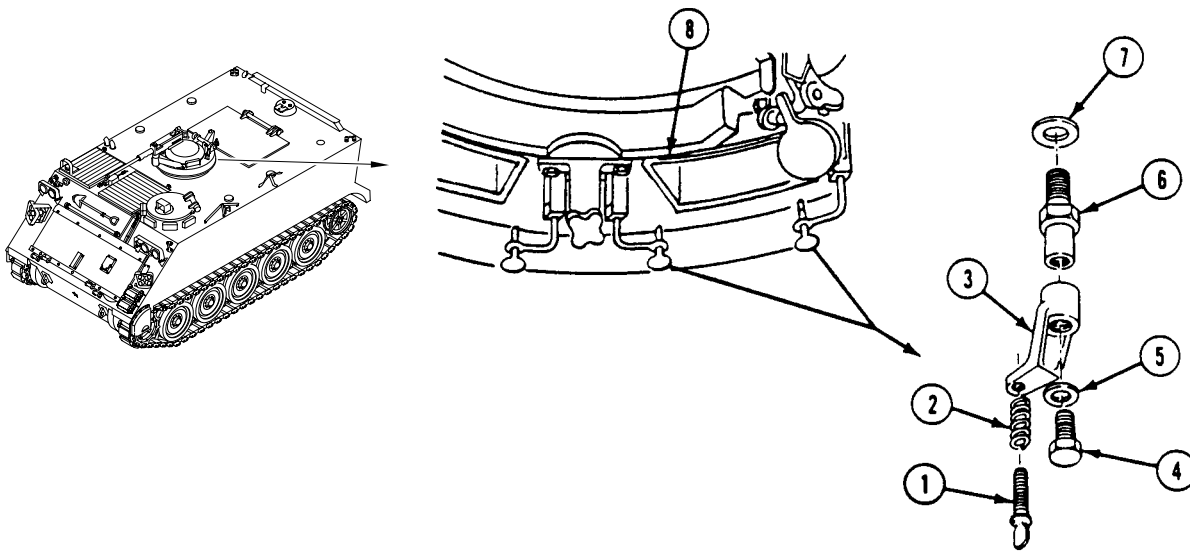
**NOTE**

Steps 5 - 8 apply to the M1064 only.

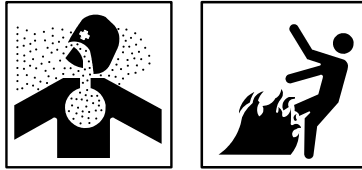
**NOTE**

Six vision block locks and four seals are on the commander's hatch. Task is for one lock and seal.

5. Remove thumbscrew (1) and spring (2) from periscope clamp (3).
6. Remove bolt (4), washer (5), and periscope clamp (3) from post (6).
7. Remove post (6) and washer (7) from commander's hatch.
8. Scrape seal (8) from vision block opening.



## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

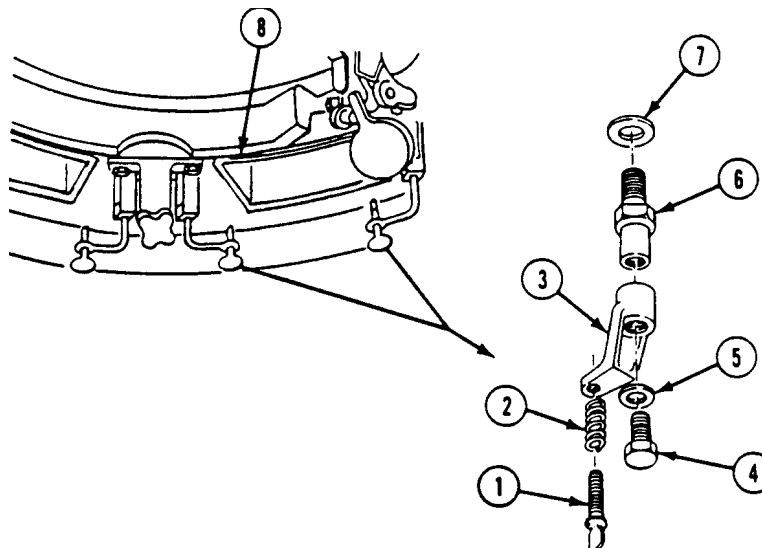
**NOTE**

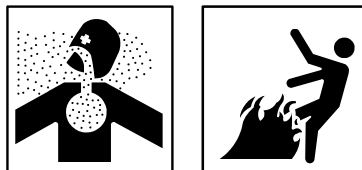
Steps 1 - 4 apply to the M1064 only.

**NOTE**

Surface on seal marked **BOND THIS SIDE** should be glued to hull.

1. Apply adhesive to mating surface around vision block opening. Allow to become tacky. Install new seal (8) on hatch.
2. Install washer (7) and post (6) in commander's hatch. TIGHTEN POST TO 54-59 LB-FT (73-80 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 104).
3. Install periscope clamp (3) on post (6). Secure with washer (5) and bolt (4). TIGHTEN BOLT TO 144-168 LB-IN (16-19 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).
4. Install spring (2) and thumbscrew (1) on periscope clamp (3). Deform first thread of thumbscrew to prevent easy removal.



**WARNING**

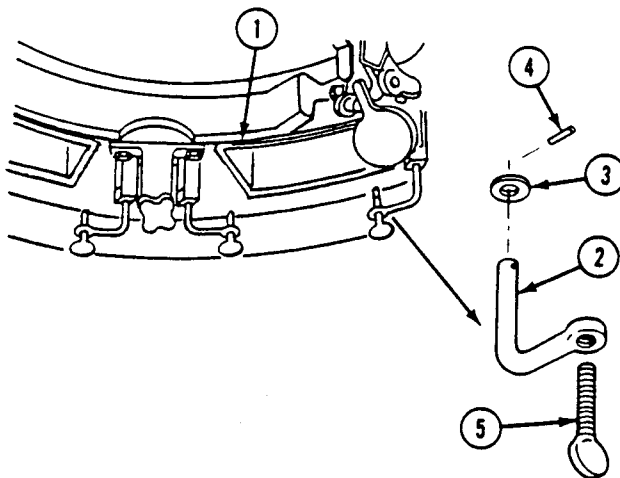
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

**NOTE**

Surface on seal marked **BOND THIS SIDE** should be glued to hull.

5. Apply adhesive to cleaned mating surface around vision block opening. Allow adhesive to become tacky. Install new seal (1) on hull.
6. Install arm (2) and washer (3) in hull bracket. Secure with new spring pin (4).
7. Install thumbscrew (5) in arm (2). Deform first thread of thumbscrew to prevent easy removal.

**FOLLOW-THROUGH STEPS**

1. Install vision block (see your -10).
2. Raise and lock ramp (see your -10).

**END OF TASK**

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**REPLACE COMMANDER'S CUPOLA BRAKE ASSEMBLY**

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**0452 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0452 00-1).  
 Installation (page 0452 00-2).

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**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

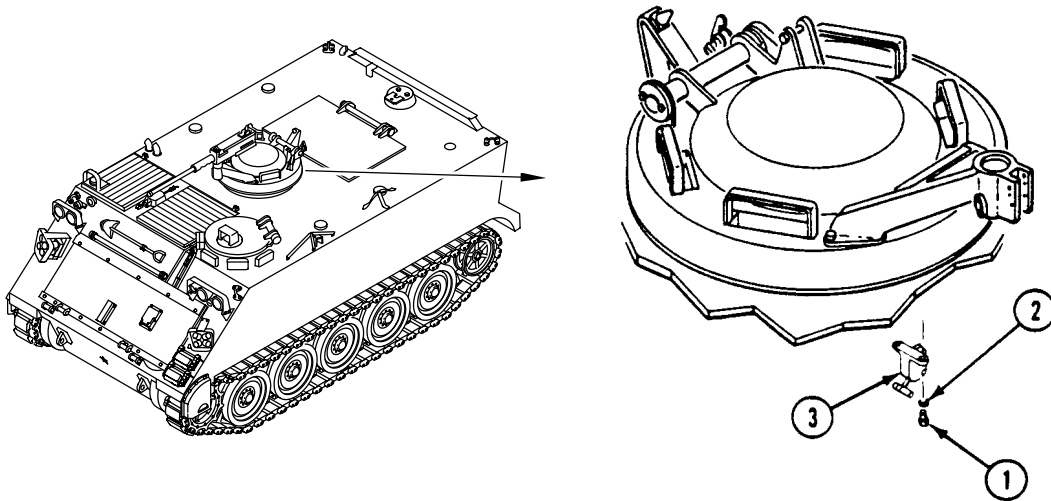
Personnel Required

Unit Mechanic

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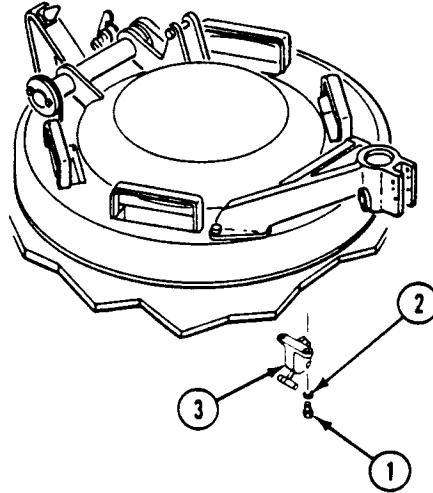
**REMOVAL**

1. Remove two screws (1), washers (2), and brake assembly (3) from commander's cupola.



**INSTALLATION**

1. Align brake assembly (3) with holes in commander's cupola. Secure with two washers (2) and screws (1).

**FOLLOW-THROUGH STEPS**

1. Tighten brake. Check that brake can slow and stop cupola movement (see your -10).

**END OF TASK**



**REPLACE COMMANDER'S CUPOLA AZIMUTH LOCK**

**0453 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0453 00-1).  
 Installation (page 0453 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

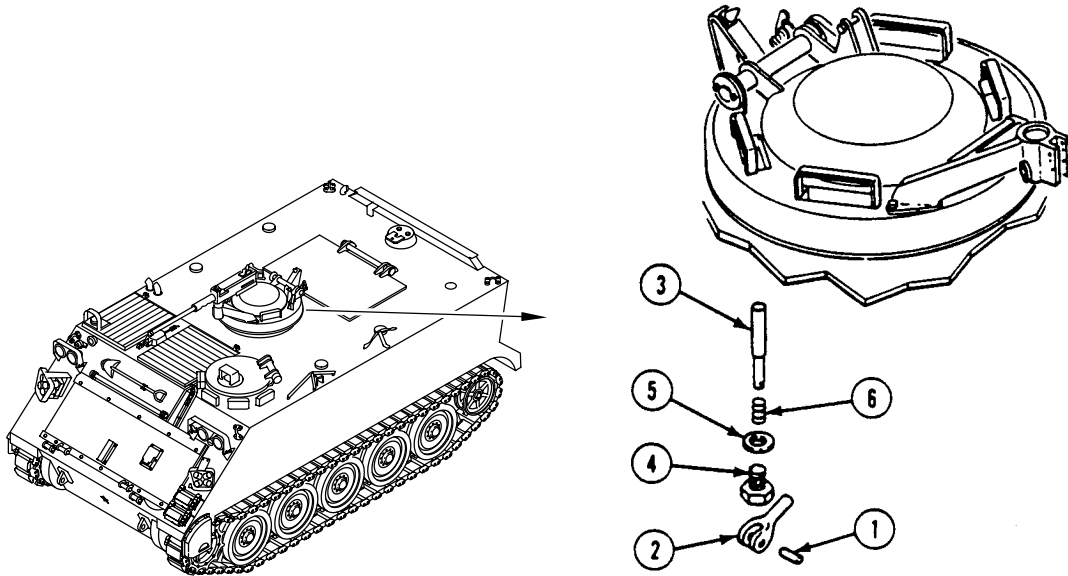
Carrier blocked (see your -10)

Materials/Parts

Spring pin

**REMOVAL**

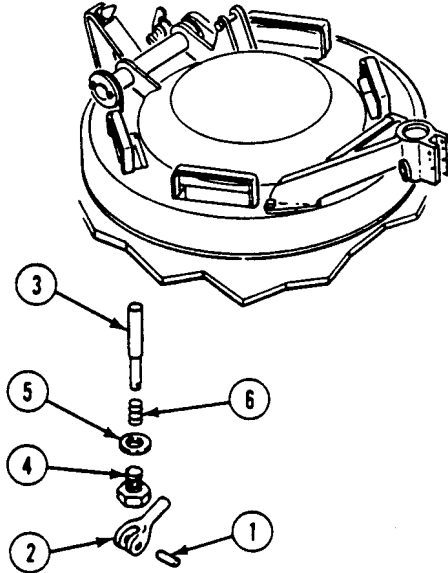
1. Remove spring pin (1) and handle (2) from pin (3). Discard spring pin.
2. Remove bushing (4), washer(s) (5), pin (3), and spring (6) from hull ceiling below commander's cupola.



**INSTALLATION****NOTE**

Use the least number of washers needed to release pin in unlocked position.

1. Install spring (6), pin (3), washer(s) (5), and bushing (4) in hull ceiling below commander's cupola.
2. Align handle (2) with pin (3). Secure with new spring pin (1).

**FOLLOW-THROUGH STEPS**

1. Operate azimuth lock (see your -10). Check that cupola can be locked and unlocked. If cupola does not unlock, add more washers under bushing.

**END OF TASK**

**REPLACE COMMANDER'S CUPOLA INTERIOR LATCH (M113A2, M1059, AND M1064 ONLY)**

0454 00

**THIS WORK PACKAGE COVERS:**

- Removal (page 0454 00-1).
- Installation (page 0454 00-2).
- Adjustment (page 0454 00-2)

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 102)

Equipment Condition

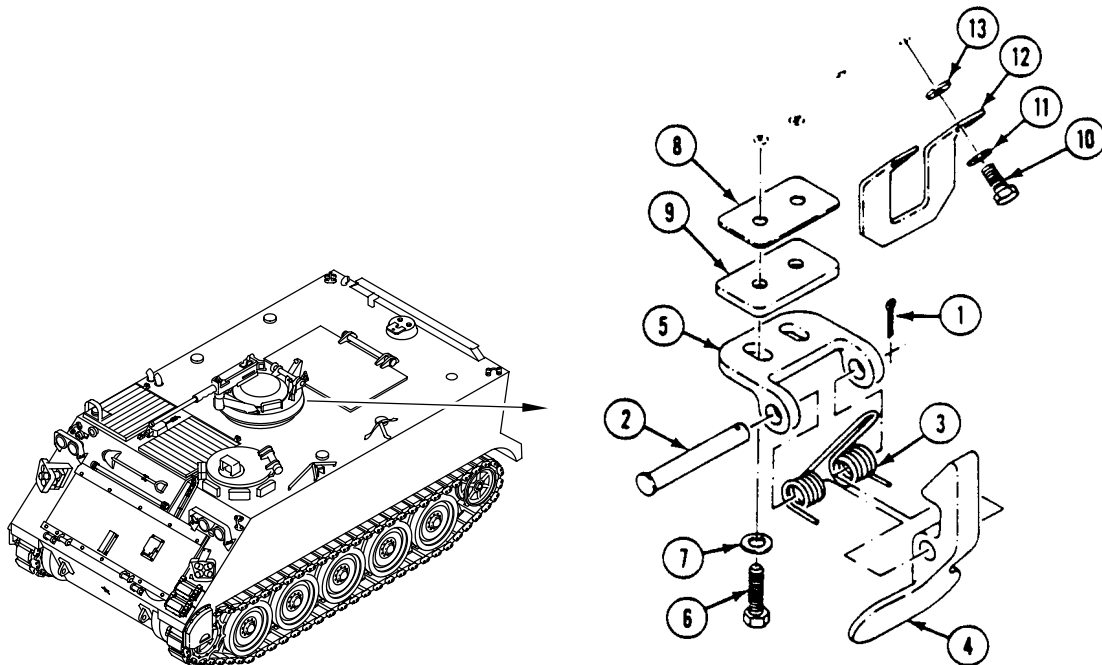
- Engine stopped (see your -10)
- Carrier blocked (see your -10)

Materials/Parts

- Cotter pin
- Lockwasher (2)

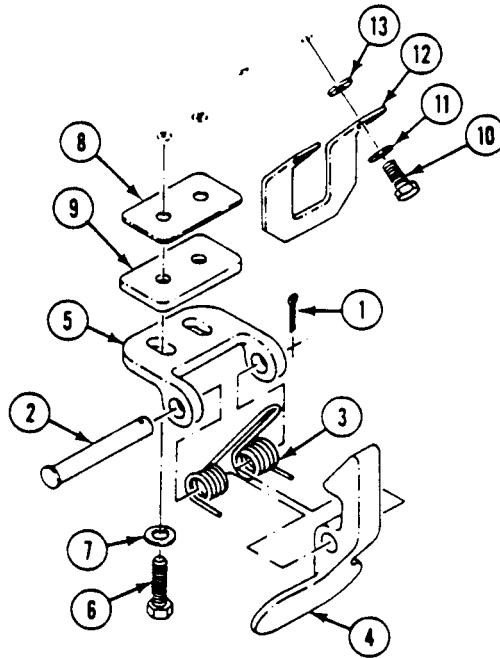
**REMOVAL**

1. Remove cotter pin (1) from headed pin (2). Discard cotter pin.
2. Remove pin (2), spring (3), and latch (4) from eye bracket (5).
3. Remove two screws (6), washers (7), eye bracket (5), and shim(s) (8) and (9) from cupola.
4. Remove two screws (10), washers (11), striker (12), and two lockwashers (13) from cupola cover. Discard lockwashers.



**REPLACE COMMANDER'S CUPOLA INTERIOR LATCH (M113A2, M1059,  
AND M1064 ONLY) — Continued****0454 00****INSTALLATION**

1. Align striker (12) with holes in cupola cover. Secure with two new lockwashers (13), washers (11), and screws (10).
2. Place shim(s) (8) and (9) and eye bracket (5) on cupola. Secure with two washers (7) and screws (6). Do not tighten screws.
3. Align latch (4) and spring (3) with eye bracket (5). Secure with headed pin (2) and new cotter pin (1).
4. **TIGHTEN TWO SCREWS (6) TO 300–360 LB-IN (34–41 N·M) TORQUE.** Use torque wrench.

**ADJUSTMENT**

1. Open and close cupola cover. Check that cover latches tightly with a firm latching action.
2. To increase pressure of latch on striker, add shim(s) between eye bracket and cupola. To decrease pressure, remove shim(s).

**END OF TASK**

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**REPLACE COMMANDER'S CUPOLA COVER (M113A2 AND M1064 ONLY)**

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**0455 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0455 00-2).  
 Installation (page 0455 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Grease (WP 0782 00, Item 24)

Locknut (3)

Seal

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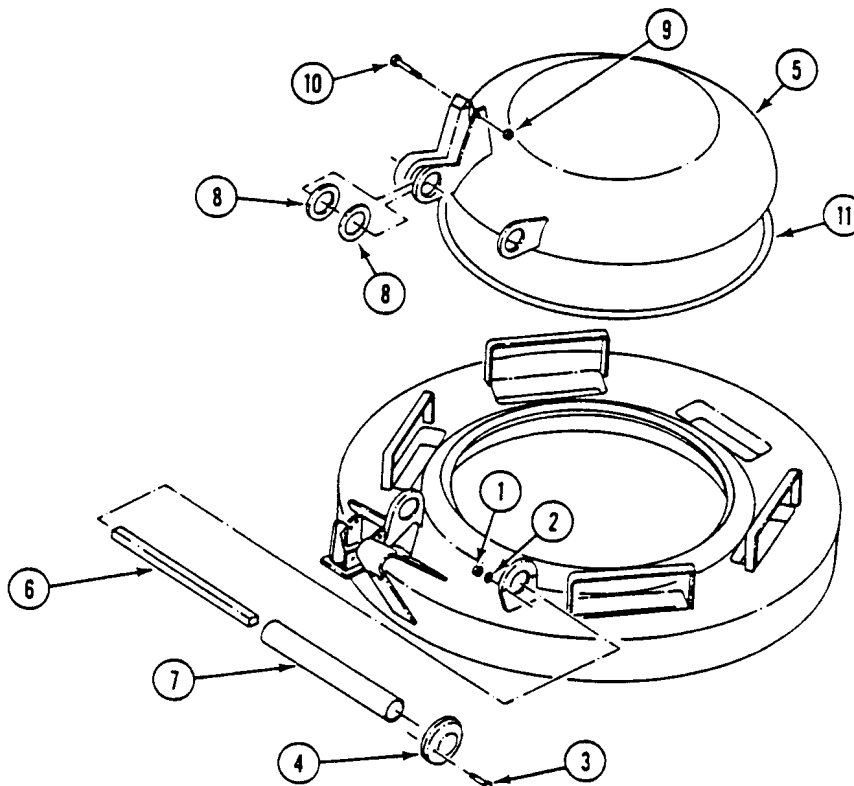
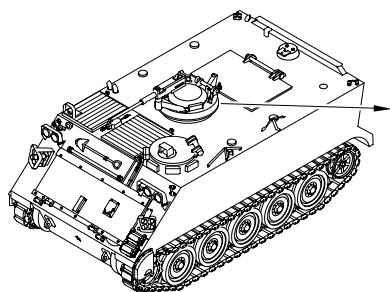
## REMOVAL

**WARNING**

Falling hatch could seriously injure you.

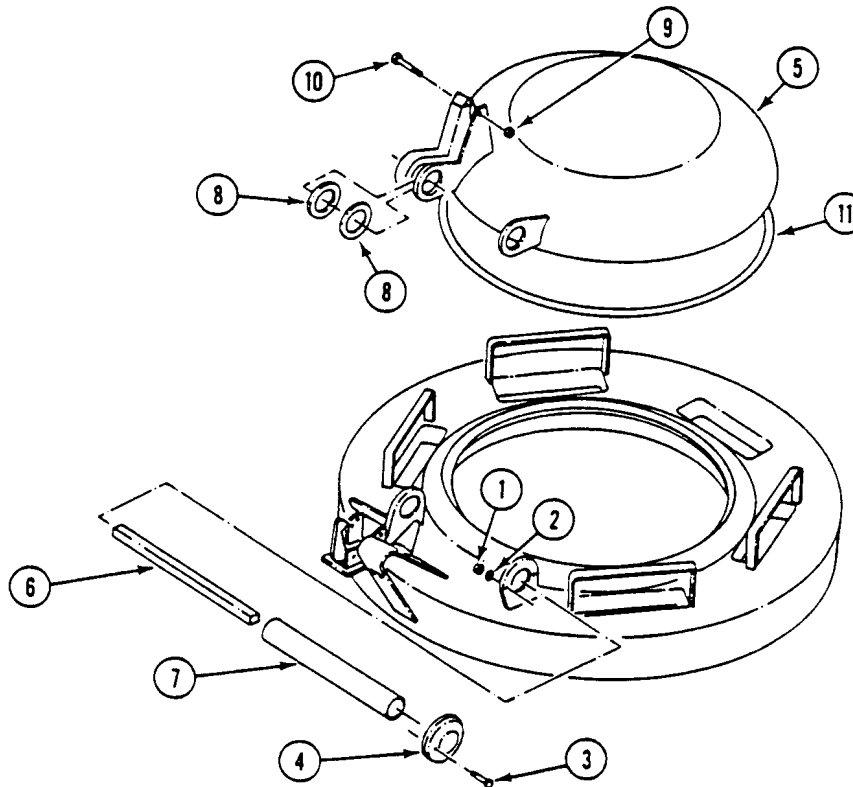
Keep head lower than closed hatch position when opening or closing hatch. Keep hands clear of hatch rim when closing. Make sure latch pin or mechanism is fully engaged when hatch is in any open position.

1. Remove two locknuts (1), washers (2), screws (3), and retainer (4) from cupola bracket. Discard locknuts.
2. Support cover (5). Remove 12 springs (6), shield (7), two fiber washers (8), and cover (5) from cupola.
3. Remove locknut (9) and screw (10) from cover (5). Discard locknut.
4. Pry up end of seal (11) and remove from cover (5). Discard seal.



**INSTALLATION**

1. Place new seal (11) over retaining groove in cover (5). Press seal into place. Trim end of seal if needed.
2. Install screw (10) in cover (5). Secure with new locknut (9).
3. Align cover (5) with cupola brackets. Install two fiber washers (8) and shield (7).
4. Apply light coat of grease to each spring (6). Install 12 springs in shield (7).
5. Place cover (5) in vertical position. Install retainer (4) on cupola bracket. Secure with two screws (3), washers (2), and new locknuts (1).

**FOLLOW-THROUGH STEPS**

1. Adjust commander's cupola cover latch (WP 0454 00).
2. Close cover. Check that commander's cupola cover is installed right (see your -10).

**END OF TASK**





**REPLACE COMMANDER'S CUPOLA HOLD-OPEN HOOK AND BUMPER (M113A2, M1059, AND M1064 ONLY)**

**0456 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0456 00-1).
- Installation (page 0456 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

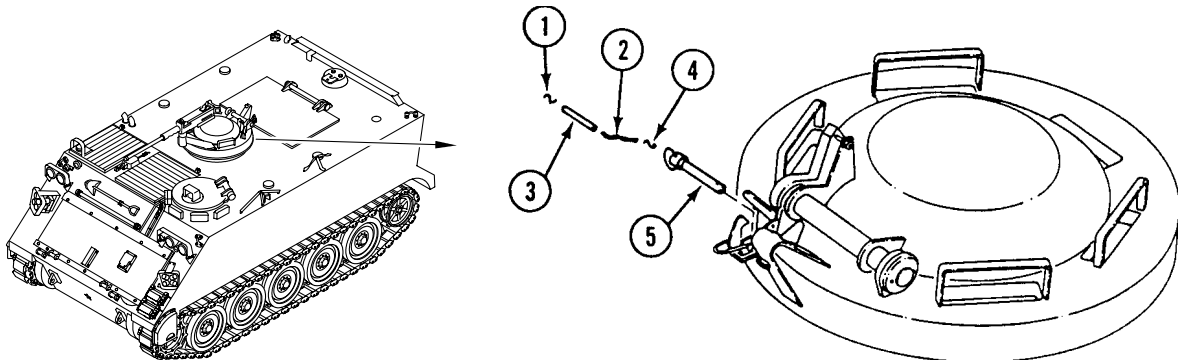
Carrier blocked (see your -10)

Materials/Parts

Locknut (2)

**REMOVAL**

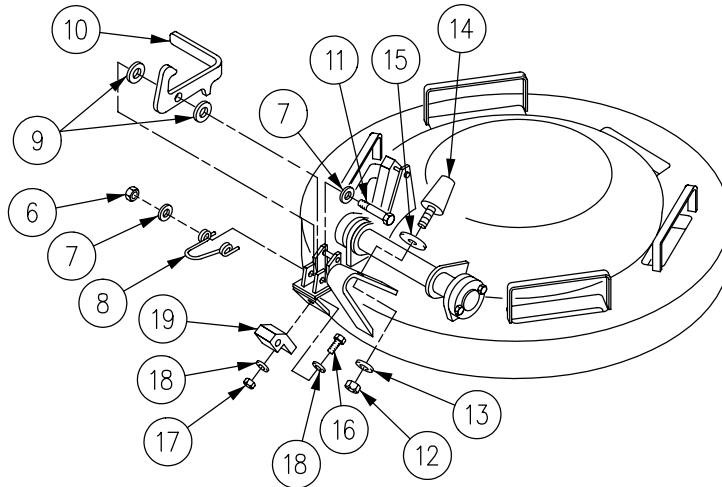
1. Open both ends of hook (1). Remove hook from chain (2) and cupola bracket.
2. Remove tube (3) from chain (2).
3. Open both ends of hook (4). Remove hook from chain (2) and safety pin (5).



**REPLACE COMMANDER'S CUPOLA HOLD-OPEN HOOK AND BUMPER  
(M113A2, M1059, AND M1064 ONLY) — Continued**

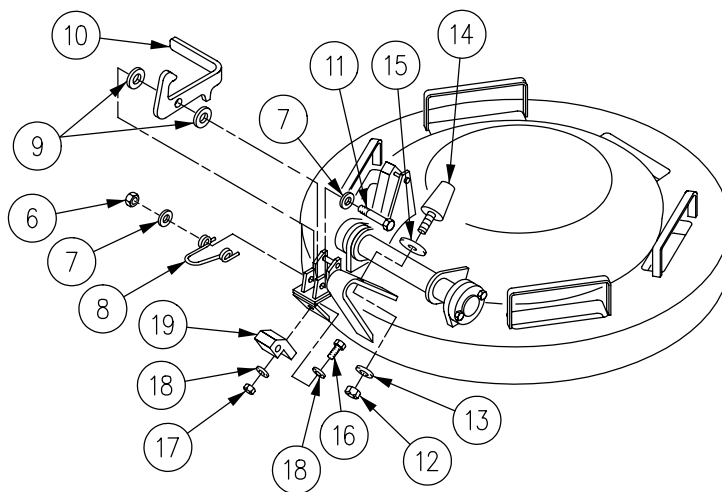
0456 00

4. Remove locknut (6), two washers (7), spring (8), two spacers (9), hook (10), and screw (11) from cupola. Discard locknut.
5. Remove locknut (12), washer (13), bumper (14), and washer(s) (15) from cupola bracket. Discard locknut.
6. Remove two screws (16), nuts (17), four washers (18), and block (19) from cupola bracket.


**INSTALLATION**
**NOTE**

**Install washer(s), as needed, to compress bumper 1/4 inch (6 mm) when hold-open hook is engaged.**

1. Install block (19), four washers (18), two screws (16), and nuts (17) on cupola bracket.
2. Install washer(s) (15) and bumper (14) in cupola bracket. Secure with washer (13) and new locknut (12).
3. Align hook (10), two spacers (9), spring (8), and two washers (7) with cupola bracket. Secure with screw (11) and new locknut (6).



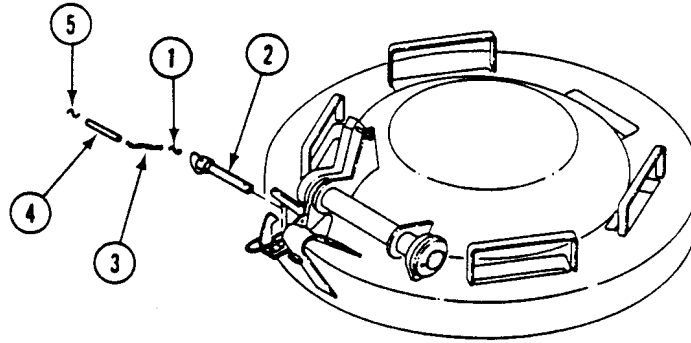
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**REPLACE COMMANDER'S CUPOLA HOLD-OPEN HOOK AND BUMPER  
(M113A2, M1059, AND M1064 ONLY) — Continued**

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0456 00

4. Install hook (1) on safety pin (2) and chain (3). Squeeze both ends of hook to secure.
5. Install tube (4) on chain (3).
6. Install hook (5) on chain (3) and cupola bracket. Squeeze both ends of hook to secure.

**FOLLOW-THROUGH STEPS**

1. Open commander's cupola cover and engage hook (see your -10). Check that hook and bumper are installed properly.

**END OF TASK**



**REPAIR COMMANDER'S CUPOLA MACHINE GUN MOUNT  
(M113A2, M1059, AND M1064 ONLY)**

**0457 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0457 00-1).
- Disassembly (page 0457 00-2).
- Clean, Inspect, and Repair (page 0457 00-2).
- Assembly (page 0457 00-3).
- Installation (page 0457 00-4).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

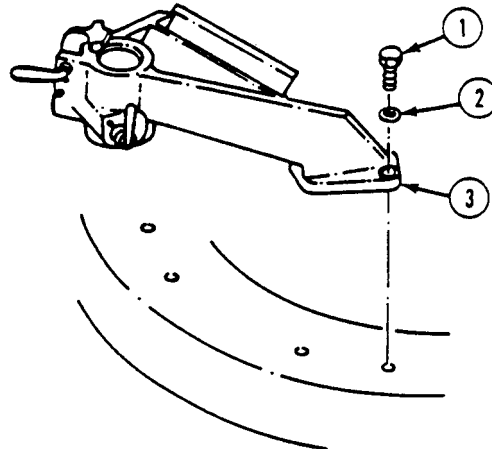
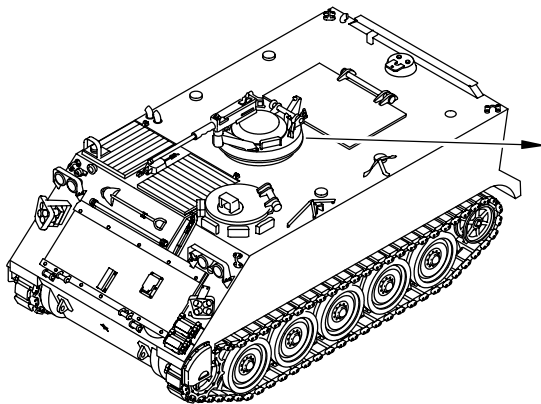
Cleaning compound solvent (WP 0782 00, Item 16)

Cotter pin (2)

Lockwasher (2)

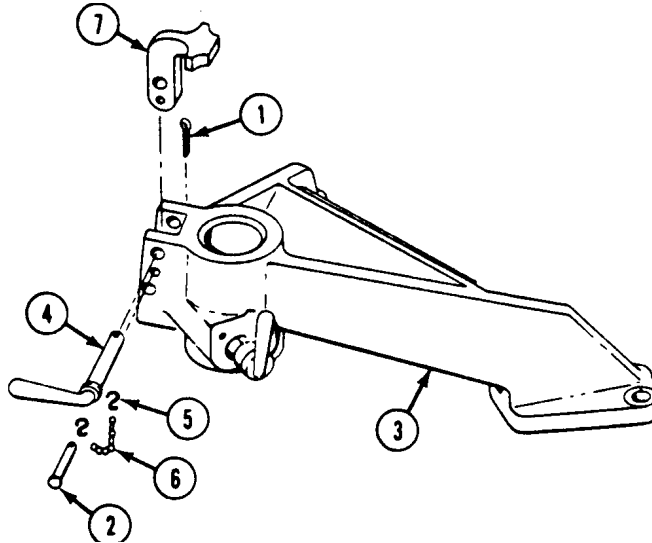
**REMOVAL**

1. Remove four screws (1), washers (2), and machine gun mount (3) from commander's cupola.

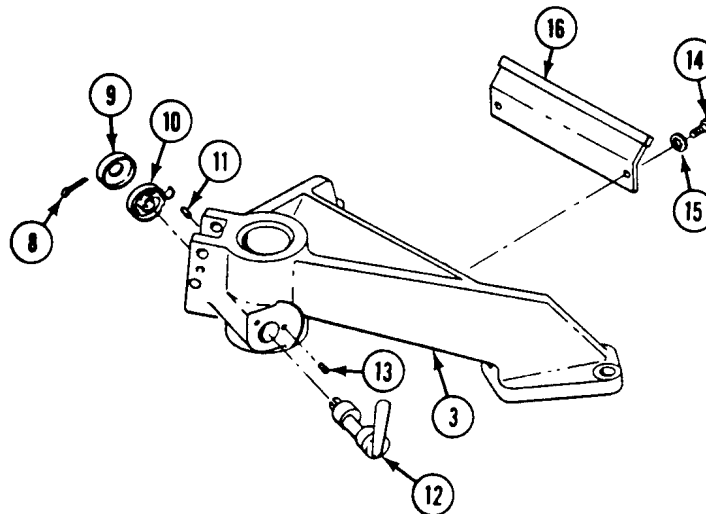


**DISASSEMBLY**

1. Remove cotter pin (1) and headed pin (2) from gun mount support (3). Discard cotter pin.
2. Remove travel lock pin (4), two S-hooks (5), chain (6), and travel lock (7) from gun mount support (3).



3. Remove cotter pin (8), cover (9), spring (10), and straight pin (11) from gun mount support (3). Discard cotter pin.
4. Remove cam and handle assembly (12) and two pins (13) from gun mount support (3).
5. Remove two screws (14), lockwashers (15), and bracket (16) from gun mount support (3). Discard lockwashers.



**CLEAN, INSPECT, AND REPAIR**

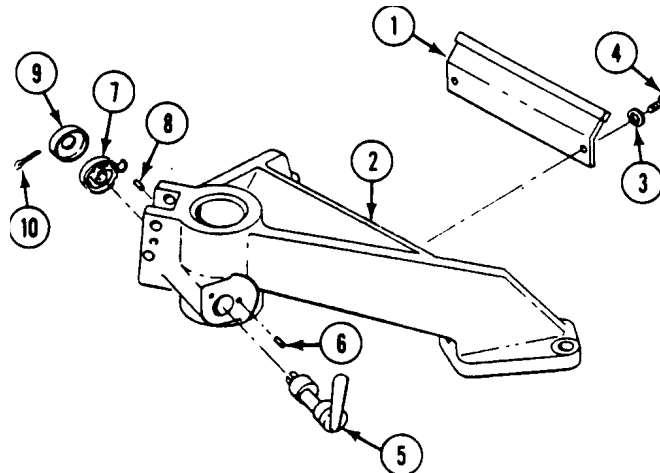
1. Clean parts with solvent, cleaning compound.
2. Inspect parts for corrosion, distortion, wear, cracks, and loose or missing parts. Repair or replace damaged and missing parts.

REPAIR COMMANDER'S CUPOLA MACHINE GUN MOUNT (M113A2, M1059,  
AND M1064 ONLY) — Continued

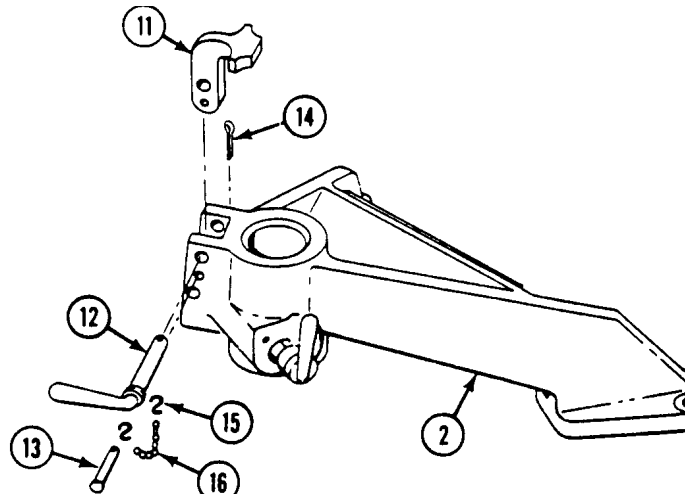
0457 00

**ASSEMBLY**

1. Install bracket (1) on gun mount support (2). Secure with two new lockwashers (3) and screws (4).
2. Install cam and handle assembly (5) and two pins (6) on gun mount support (2).
3. Install pin (8) in gun mount support (2). Install spring (7) with center tang engaging slot in handle (5) and outer tang engaging pin (8).
4. Install cover (9) over spring (7). Secure with new cotter pin (10) through handle (5).



5. Install travel lock (11) on gun mount support (2).
6. Insert travel lock pin (12) through gun mount support (2) and large hole in travel lock (11).
7. Install pin (13) through travel lock (11). Secure with new cotter pin (14).
8. Install two S-hooks (15) and chain (16) between pin (13) and lock pin (12).



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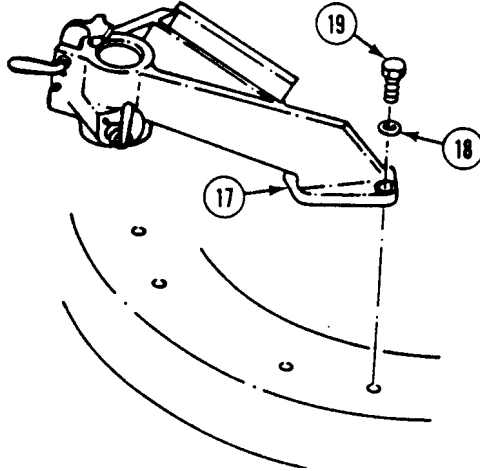
**REPAIR COMMANDER'S CUPOLA MACHINE GUN MOUNT (M113A2, M1059,  
AND M1064 ONLY) — Continued**

---

0457 00

**INSTALLATION**

1. Place machine gun mount (17) on commander's cupola. Secure with four washers (18) and screws (19).

**END OF TASK**



**REPLACE COMMANDER'S CUPOLA MACHINE GUN MOUNT STOPS (M1059 ONLY)**

0458 00

**THIS WORK PACKAGE COVERS:**

- Removal (page 0458 00-1).
- Installation (page 0458 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Materials/Parts

Lockwasher (4)

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 102)

Personnel Required

Unit Mechanic

Equipment Condition

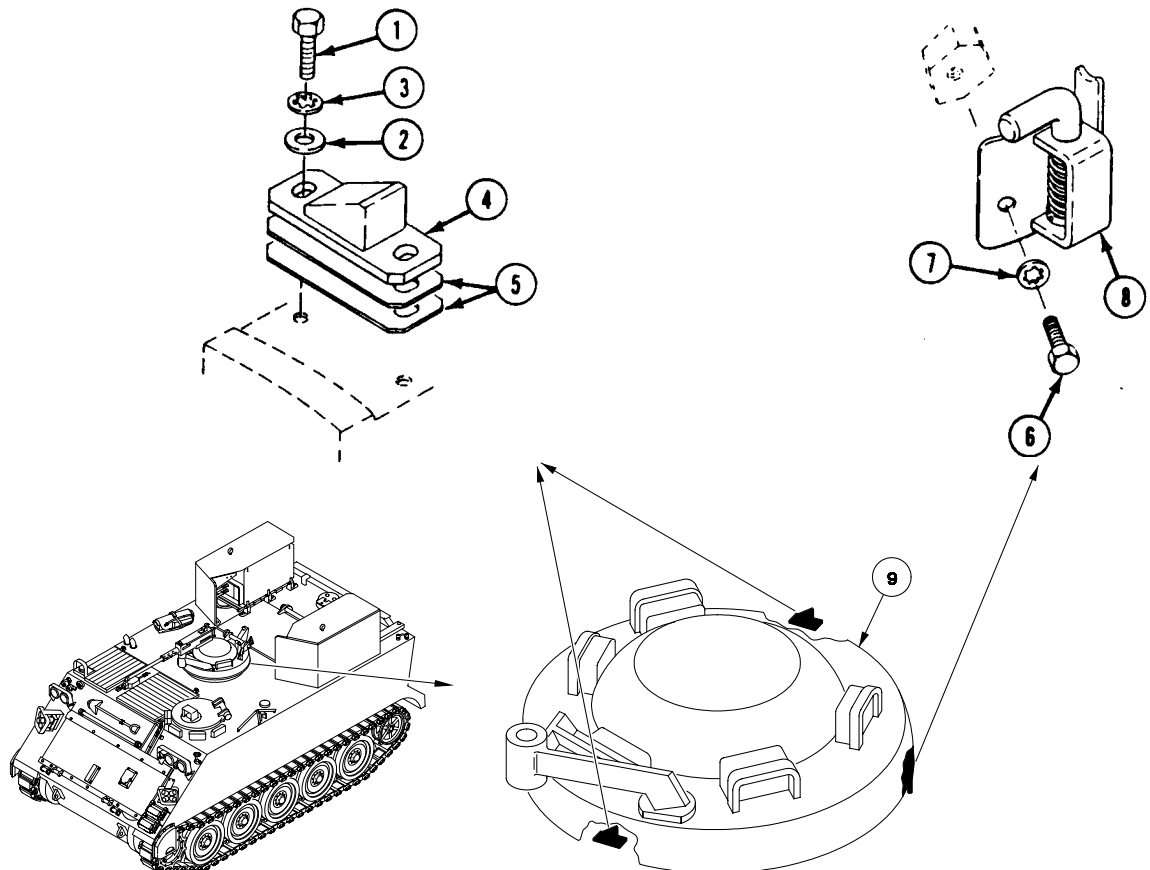
- Engine stopped (see your -10)
- Carrier blocked (see your -10)

**REMOVAL**

**NOTE**

**Left and right stops (brackets) are removed and installed the same way.**

1. Remove two screws (1), lockwashers (3), washers (2), bracket (4), and shims (5) from carrier. Discard lockwashers.
2. Remove two screws (6), lockwashers (7), and catch (8) from mount (9). Discard lockwashers.



**REPLACE COMMANDER'S CUPOLA MACHINE GUN MOUNT STOPS  
(M1059 ONLY) — Continued**

0458 00

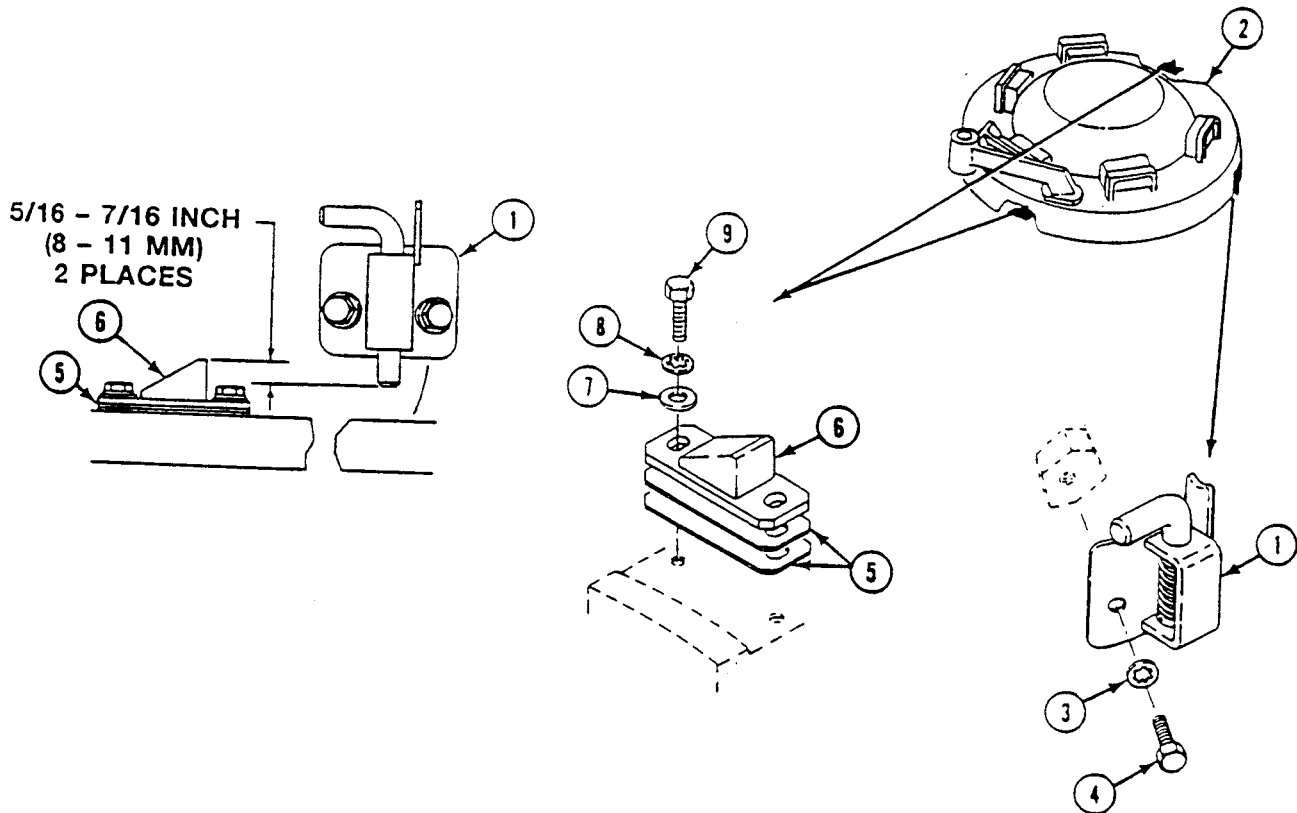
**INSTALLATION**

1. Install catch (1) on mount (2). Secure with two new lockwashers (3) and screws (4). **TIGHTEN SCREWS TO 264-284 IN-LB (30-32 N·M) TORQUE.** Use torque wrench.

**NOTE**

**Install shims (5) as required so pin of catch contacts bracket from 5/16 to 7/16 inch (8 to 11 mm).  
Make sure flat surface of bracket makes contact with pin.**

2. Install shims (5) and bracket (6) on carrier. Secure with two washers (7), new lockwashers (8), and screws (9). **TIGHTEN SCREWS TO 264-284 IN-LB (30-32 N·M) TORQUE.** Use torque wrench.
3. Turn cupola until catch (1) contacts bracket (6). Measure distance from bottom of pin to top of bracket. Distance should be 5/16 to 7/16 inch (8 to 11 mm). If not, add or remove shims (5) to obtain correct measurement.



**END OF TASK**

**REPLACE COMMANDER'S HATCH CUSHIONING PAD AND HANDLE (M577A2 AND M1068 ONLY)**

**0459 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0459 00-1).
- Clean, Inspect, and Repair (page 0459 00-1).
- Installation (page 0459 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

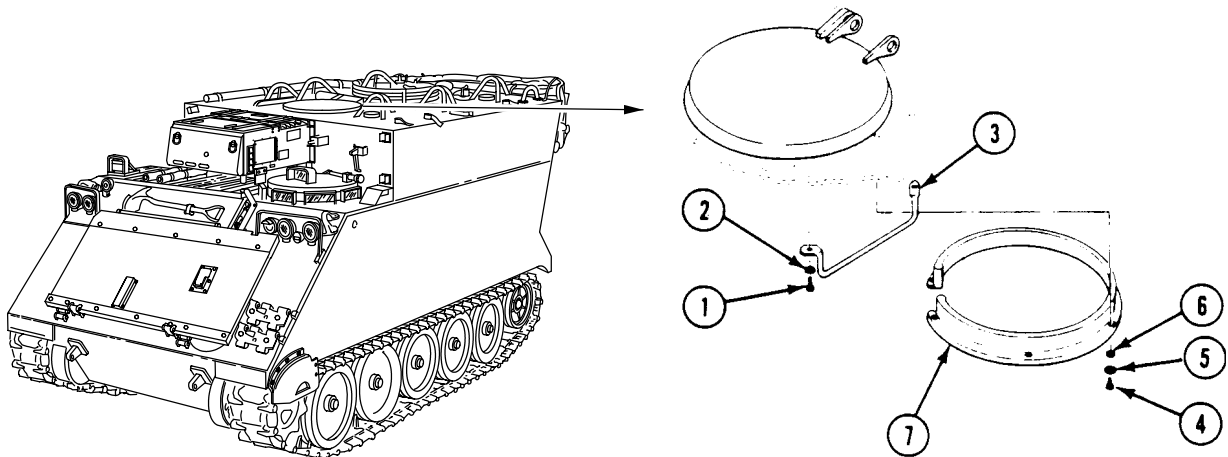
- Engine stopped (see your -10)
- Carrier blocked (see your -10)

Materials/Parts

- Lockwasher (2)
- Lockwasher (6)

**REMOVAL**

1. Remove two screws (1), lockwashers (2), and handle (3) from hull ceiling. Discard lockwashers.
2. Remove six screws (4), lockwashers (5), washers (6), and pad (7) from commander's hatch opening. Discard lockwashers.



**CLEAN, INSPECT, AND REPAIR**

1. Clean cushioning pad with soap and water. Dry with clean cloth.
2. Check handle. Replace cracked or damaged handle.
3. Check pad. Replace cut, broken, or hard pad.

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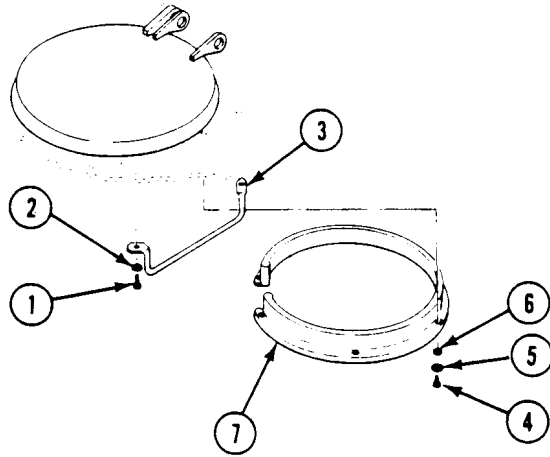
**REPLACE COMMANDER'S HATCH CUSHIONING PAD AND HANDLE**  
**(M577A2 AND M1068 ONLY) — Continued**

---

0459 00

**INSTALLATION**

1. Install pad (7) in commander's hatch opening. Secure with six washers (6), new lockwashers (5), and screws (4).
2. Place handle (3) on hull ceiling. Secure with two new lockwashers (2) and screws (1).

**END OF TASK**

**REPLACE COMMANDER'S HATCH INTERIOR LATCH (M577A2 AND M1068 ONLY)**

**0460 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0460 00-1).
- Installation (page 0460 00-2).
- Adjustment (page 0460 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 102)

Equipment Condition

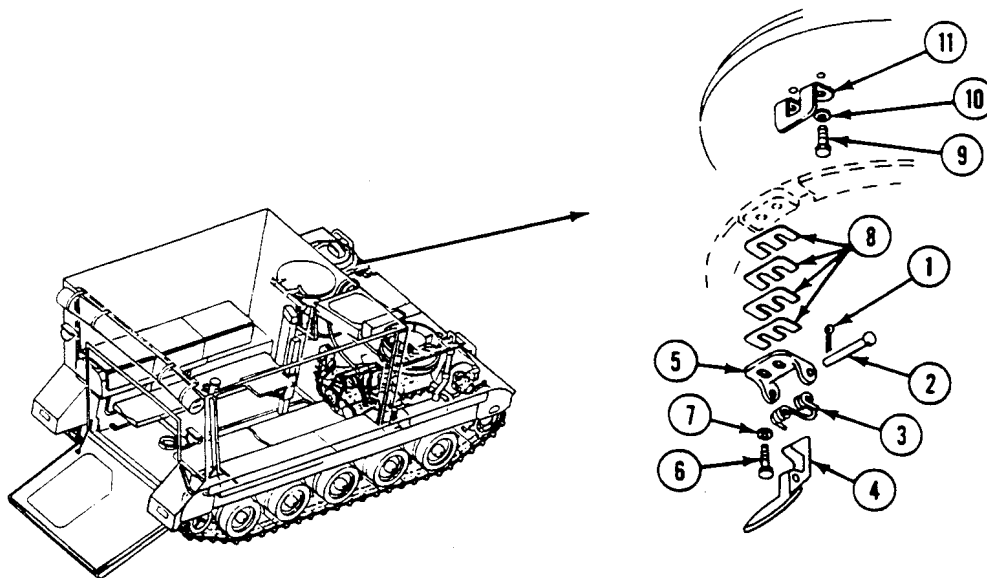
- Engine stopped (see your -10)
- Carrier blocked (see your -10)

Materials/Parts

- Cotter pin
- Lockwasher (2)

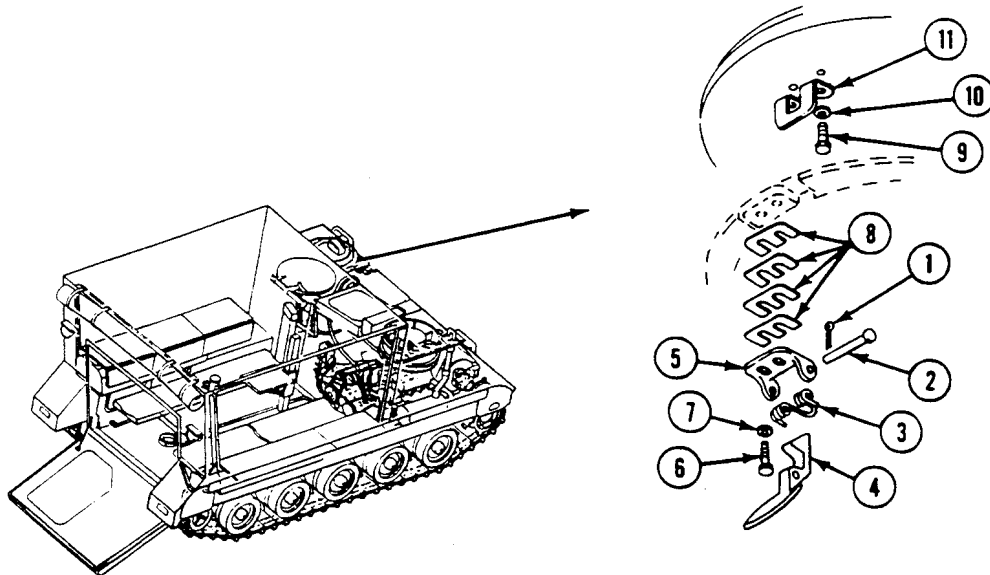
**REMOVAL**

1. Remove cotter pin (1) from headed pin (2). Discard cotter pin.
2. Remove pin (2), spring (3), and latch plate (4) from eye bracket (5).
3. Remove two screws (6), washers (7), eye bracket (5), and spacers (8) from hull.
4. Remove two screws (9), lockwashers (10), and strike (11) from commander's hatch cover. Discard lockwashers.



**REPLACE COMMANDER'S HATCH INTERIOR LATCH (M577A2 AND M1068 ONLY) — Continued****0460 00****INSTALLATION**

1. Align strike (11) with holes in hatch cover. Secure with two new lockwashers (10) and screws (9).
2. Place spacers (8) and eye bracket (5) on hull. Secure with two washers (7) and screws (6). Do not tighten screws.
3. Align latch plate (4) and spring (3) with eye bracket (5). Secure with headed pin (2) and new cotter pin (1).



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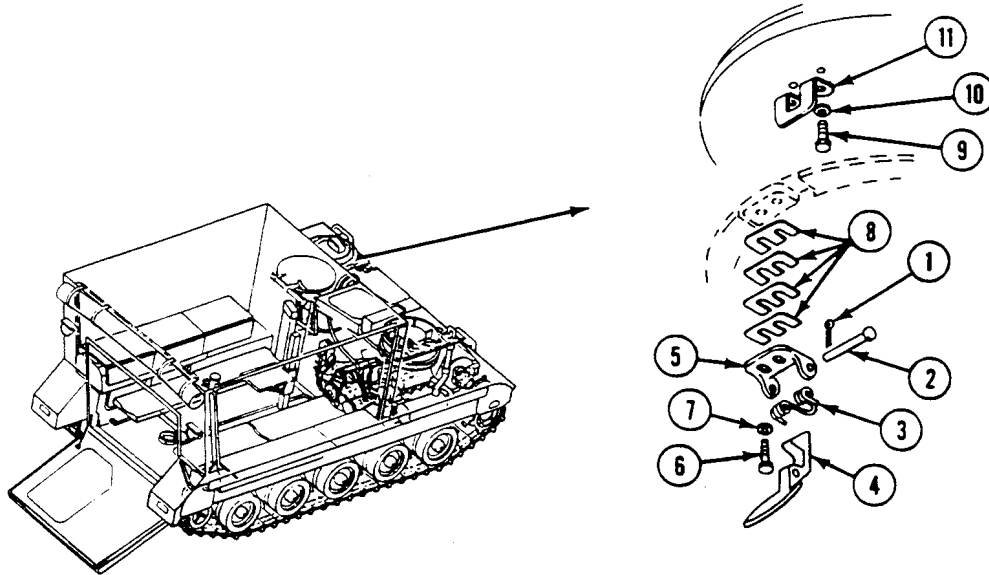
**REPLACE COMMANDER'S HATCH INTERIOR LATCH (M577A2 AND M1068 ONLY) — Continued**

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0460 00

**ADJUSTMENT**

1. Check that commander's hatch cover latches tightly with a firm latching action.
2. To increase pressure of latch plate (4) on strike (11), add spacers (8) between eye bracket (5) and hull. To decrease pressure, use fewer spacers.
3. **TIGHTEN SCREWS (6) TO 300-360 LB-IN (34-41 N·M) TORQUE.** Use torque wrench.

**END OF TASK**





**REPLACE COMMANDER'S HATCH COVER (M577A2 AND M1068 ONLY)**

**0461 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0461 00-1).  
 Installation (page 0461 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Commander's hatch interior latch removed  
 (WP 0460 00)

Materials/Parts

Grease (WP 0782 00, Item 24)

Locknut (4)

Locknut

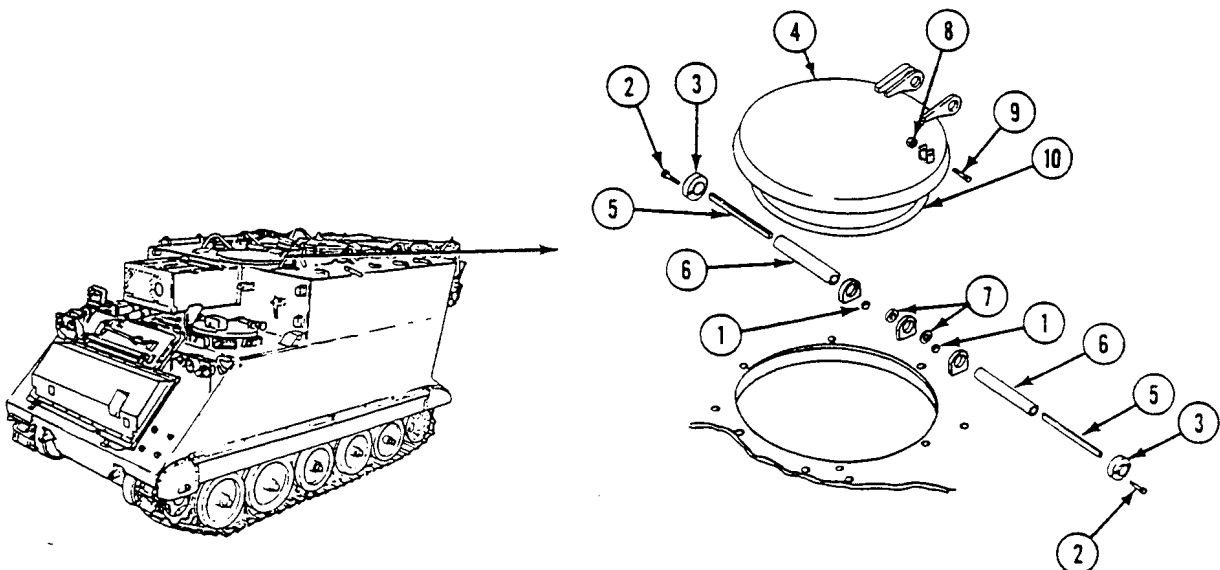
**REMOVAL**

**WARNING**



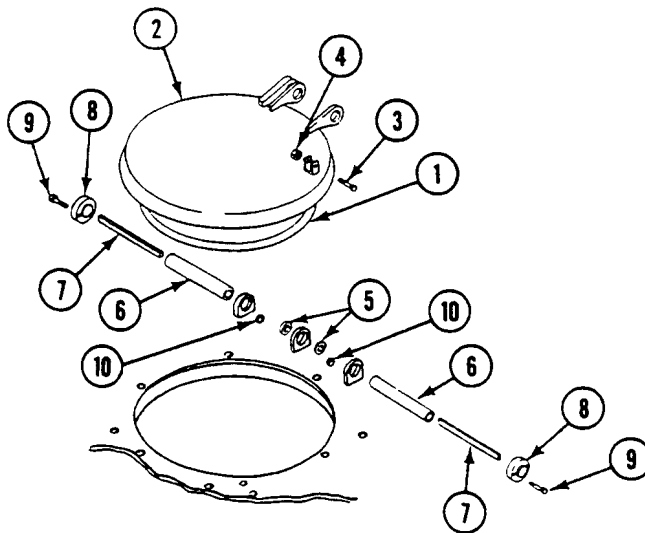
**Driver's hatch cover may spring up and injure you. Open and support hatch cover in vertical position.**

1. Remove four locknuts (1), screws (2), and two retaining plates (3) from hatch brackets. Discard locknuts.
2. Support hatch cover (4). Remove 28 springs (5), two tubes (6), spacers (7), and cover (4) from hatch brackets.
3. Remove locknut (8) and screw (9) from cover (4). Discard locknut.
4. If necessary, pry up end of seal (10) and remove from cover (4).



**INSTALLATION**

1. If removed, place seal (1) over retaining groove on cover (2). Press seal into place. Trim end of seal, if necessary.
2. Install screw (3) in cover (2). Secure with new locknut (4).
3. Align cover (2) with hinge brackets. Install two spacers (5) and tubes (6).
4. Apply a light coat of grease on each spring (7). Install 14 springs in each tube (6).
5. Place cover (2) in vertical position. Install two retaining plates (8) on hatch brackets. Secure with four screws (9) and new locknuts (10).

**FOLLOW-THROUGH STEPS**

1. Install and adjust commander's hatch interior latch (WP 0460 00).
2. Close cover and check for proper installation.

**END OF TASK**

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**REPLACE COMMANDER'S HATCH HOOK AND BUMPER  
(M577A2 AND M1068 ONLY)**

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**0462 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0462 00-2).  
Installation (page 0462 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Locknut

Locknut

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**REMOVAL**

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**WARNING**

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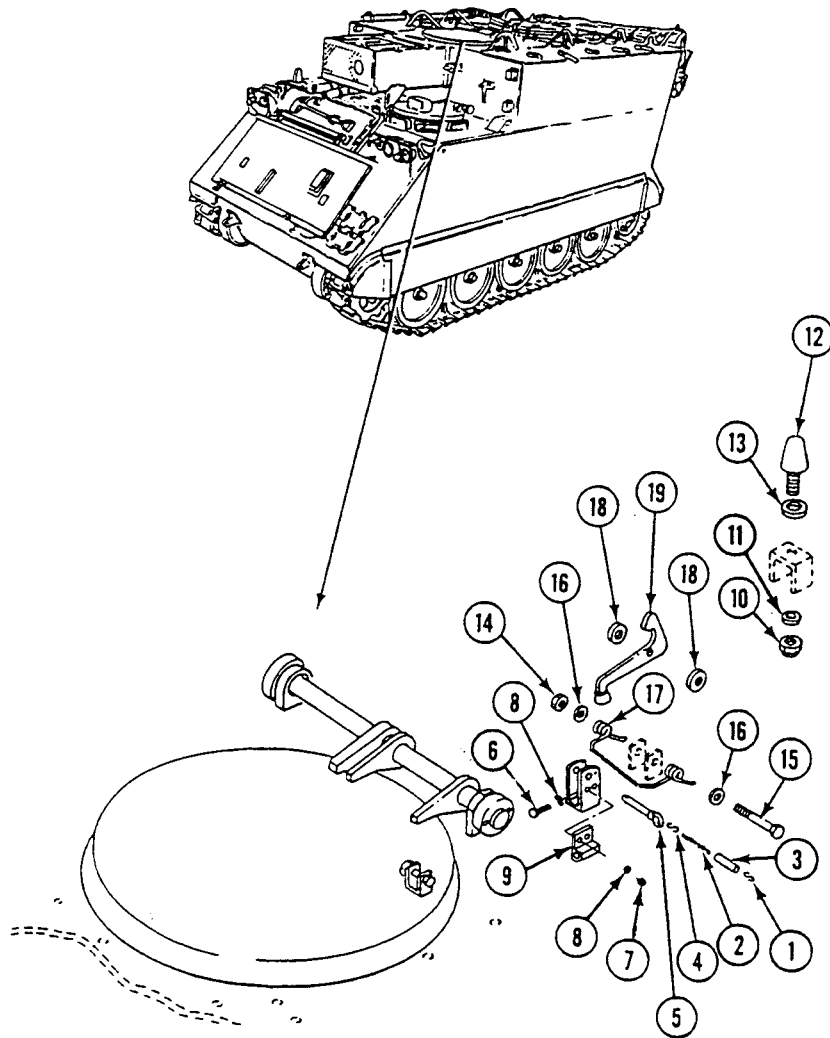
**Falling hatch could seriously injure you.**

**Keep head lower than closed hatch position when opening or closing hatch. Keep hands clear of hatch rim when closing. Make sure latch pin or mechanism is fully engaged when hatch is in any open position.**

1. Open both ends of hook (1). Remove from chain (2) and hull bracket.
2. Remove tube (3) from chain (2).
3. Open both ends of hook (4). Remove from chain (2) and quick release pin (5).
4. Remove two screws (6), nuts (7), four washers (8), and block (9) from bracket.
5. Remove locknut (10), washer (11), bumper (12), and washer (13) from hull brackets. Discard locknut.
6. Remove locknut (14), screw (15), two washers (16), spring (17), two spacers (18), and hook (19) from hull brackets. Discard locknut.

REPLACE COMMANDER'S HATCH HOOK AND BUMPER (M577A2  
AND M1068 ONLY) — Continued

0462 00



**REPLACE COMMANDER'S HATCH HOOK AND BUMPER (M577A2 AND M1068 ONLY) — Continued**

**0462 00**

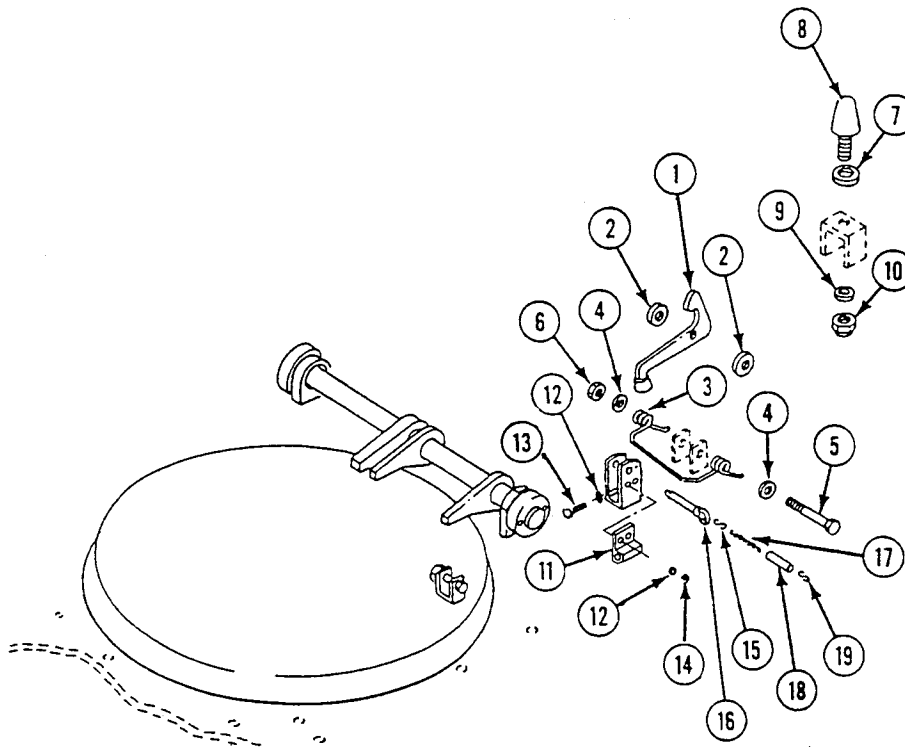
**INSTALLATION**

1. Align hook (1), two spacers (2), spring (3), and two washers (4) with hull brackets. Secure with screw (5) and new locknut (6).

**NOTE**

**Install washers (7), as needed, to compress bumper 1/4 inch (6 mm) when hook is engaged.**

2. Install washer(s) (7) and bumper (8) in hull bracket. Secure with washer (9) and new locknut (10).
3. Install block (11) four washers (12), two screws (13), and nuts (14) on bracket.
4. Install hook (15) in quick release pin (16) and chain (17). Squeeze both ends of hook to secure.
5. Install tube (18) on chain (17).
6. Install hook (19) on chain (17) and hull bracket. Squeeze both ends of hook to secure.



**FOLLOW-THROUGH STEPS**

1. Install and adjust commander's hatch interior latch (WP 0460 00).
2. Open commander's hatch cover and engage hook (see your -10). Check that hook and bumper are properly installed.

**END OF TASK**

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**REPLACE CARGO HATCH INTERIOR LATCH**

**0463 00**

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**THIS WORK PACKAGE COVERS:**

- Removal (page 0463 00-2).
  - Installation (page 0463 00-4).
  - Adjustment (page 0463 00-6).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)

Materials/Parts

- Cotter pin (2)
  - Lockwasher (4)
-

**REMOVAL****NOTE**

**Do Steps 1 - 2 for M113A2 FOV (late model).**

1. Remove two cotter pins (1), headed pins (2), and clevises (3) from two latches (4). Discard cotter pins.
2. Remove two clevises (3) from chain (5). Remove tube (6) from chain.

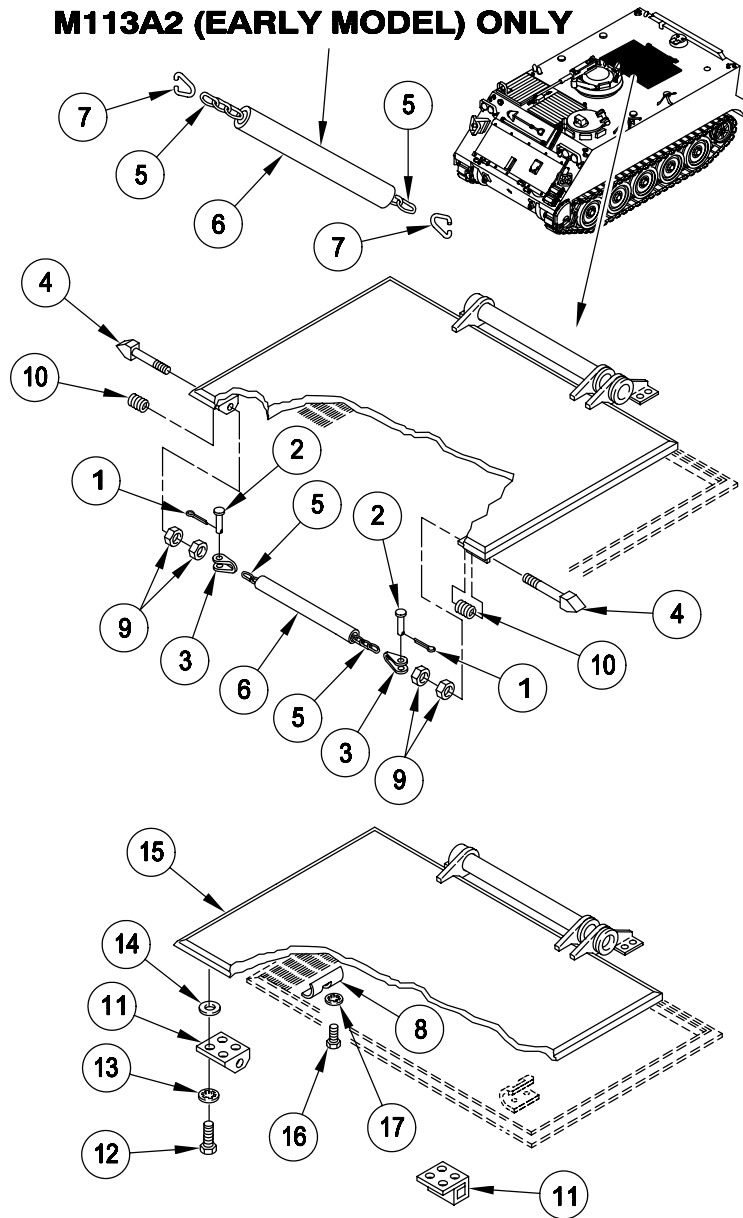
**NOTE**

**Do Steps 3 - 4 for M113A2 FOV (early model).**

3. Spread two rings (7) and remove from strikers (8).
4. Remove two rings (7) from chain (5). Remove tube (6) from chain.
5. Remove four nuts (9) from two latches (4). Remove two latches and springs (10) from two mount brackets (11).
6. Remove eight screws (12), washers (13), two brackets (11), and washers (14) from cargo hatch cover (15).
7. Remove four screws (16), lockwashers (17), and two strikers (8) from hull. Discard lockwashers.



**M113A2 (EARLY MODEL) ONLY**



**INSTALLATION**

1. Place two strikers (1) on hull. Secure with four new lockwashers (2) and screws (3).
2. Place washers (4) and two mount brackets (5) on cargo hatch cover (6). Secure with eight washers (7) and screws (8). Do not tighten screws.
3. Install two latches (9) and springs (10) in brackets (5). Secure with four nuts (11).
4. Install tube (12) on chain (13).

**NOTE**

**Do Step 5 for M113A2 FOV (late model).**

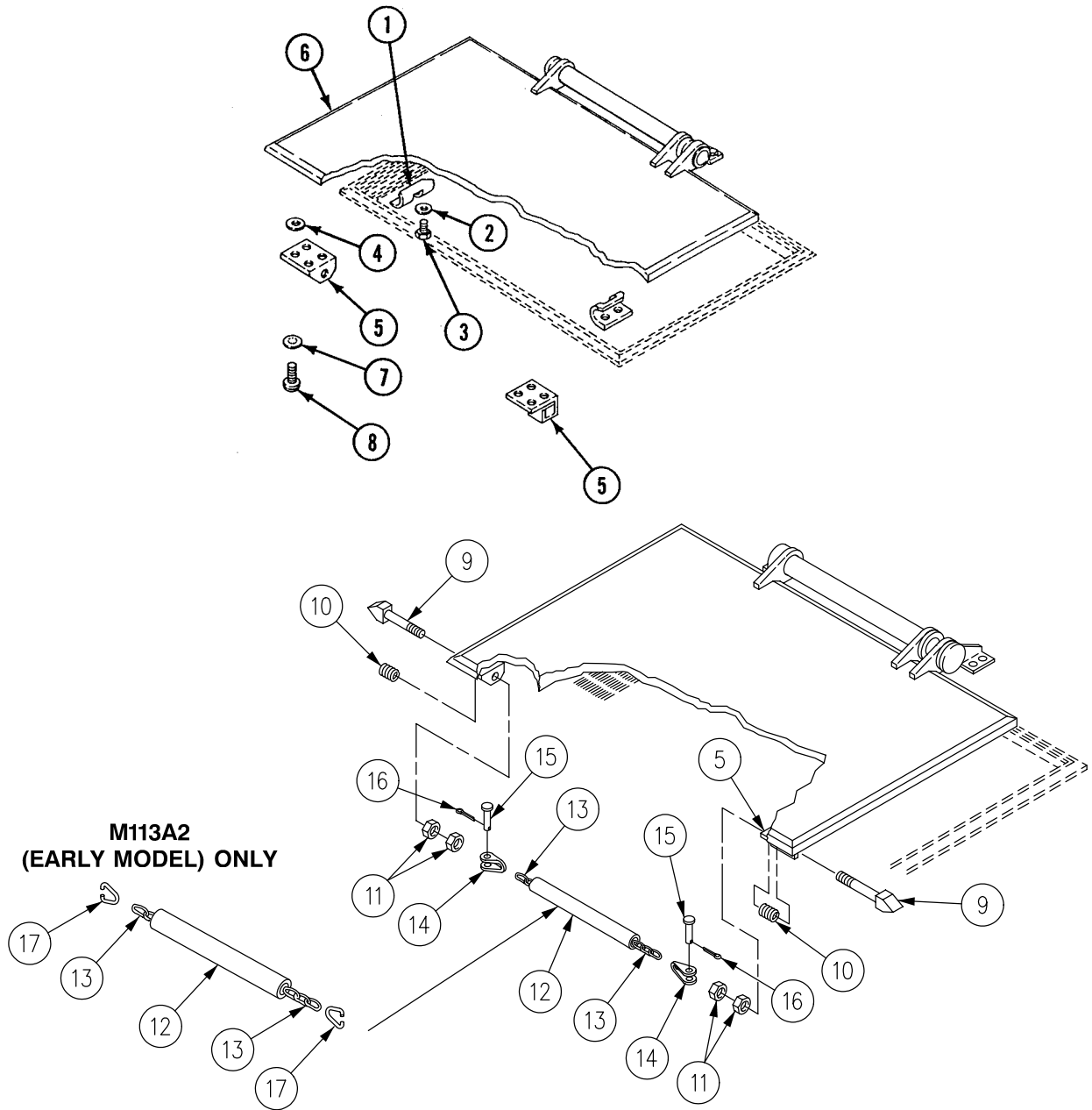
5. Install two clevises (14) on chain (13). Secure clevises to two latches (9) with headed pins (15) and new cotter pins (16).

**NOTE**

**Do Step 6 for M113A2 FOV (early model) only.**

6. Install two rings (17) on chain (13). Squeeze rings on two strikers (1) to secure.

REPLACE CARGO HATCH INTERIOR LATCH — Continued

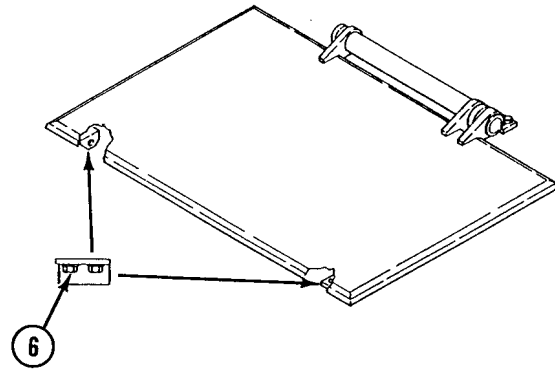
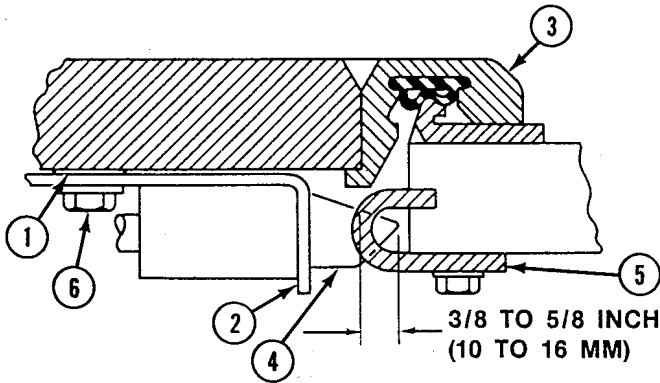


## ADJUSTMENT

## NOTE

Cargo hatch cover should fit tightly and evenly along all four sides.

1. Remove or add washers (1) between two brackets (2) and the cargo hatch cover (3), as needed, to establish a proper seal and correct latch engagement.
2. If cargo hatch cover does not seal correctly, remove required number of washers (1), equally, from both brackets (2) to tighten seal.
3. If cargo hatch cover (3) is too tight to latch correctly, add required number of washers (1), equally, to both brackets (2) to obtain proper latch engagement.
4. Position bracket (2) so that latch (4) engages striker (5) within 3/8 to 5/8 inch (10-16 mm).
5. TIGHTEN EIGHT SCREWS (6) TO 22-24 LB-FT (30-37 N·M) TORQUE. Use torque wrench.



END OF TASK

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**REPLACE CARGO HATCH DOOR (M113A2, M901A1, AND M1059 ONLY)**

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**0464 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0464 00-2).  
 Installation (page 0464 00-4).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Grease (WP 0782 00, Item 24)

Nonmetallic seals (2 long, 2 short)

Locknut

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## REMOVAL

**WARNING**

**Hatch door may spring up and injure you. Open hatch door and support in vertical position.**

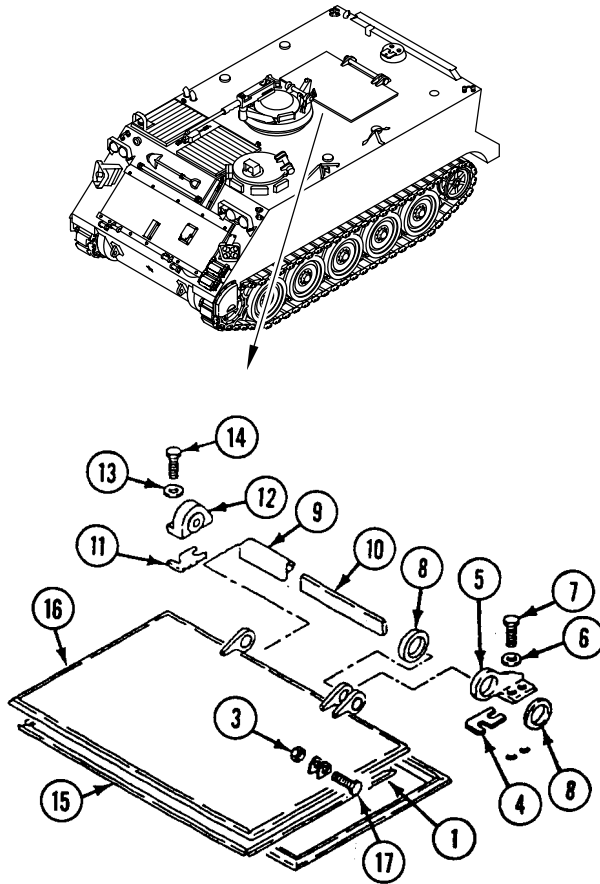
1. Remove two screws (14), washers (13), bracket (12), and plate(s) (11) from hull top plate.

**WARNING**

**Lifting or moving objects in excess of 70 pounds could injure you. Get an assistant or use a lifting device to move heavy objects.**

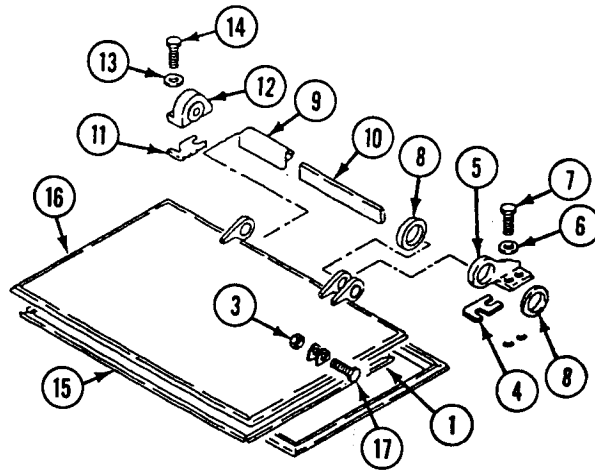
2. Support hatch door (16). Remove nine leaf springs (10), shield (9), two gaskets (8), and hatch door (16) from hinge brackets.
3. Remove two screws (7), washers (6), eye bracket (5), and plate(s) (4) from hull top plate.
4. Remove locknut (3) and screw (17) from hatch door (16). Discard locknut.

5. Remove two long seals (15) and two short seals (1) from groove in hatch door (16). Discard seals.



**INSTALLATION**

1. Install two new short seals (1) and two new long seals (15) into hatch door. Press seals into place.
2. Install screw (17) in hatch door (16). Secure with new locknut (3).
3. Place plate(s) (4) and eye bracket (5) on hull top plate. Secure with two washers (6) and screws (7). **TIGHTEN SCREWS TO 60–65 LB-FT (81–88 N·M) TORQUE.** Use torque wrench.
4. Align hatch door (16) with hinge brackets. Install two gaskets (8) and shield (9).
5. Apply coat of grease to each leaf spring (10). Install nine leaf springs in shield (9).
6. Place hatch door (16) in vertical position. Install plate(s) (11) and bracket (12). Secure with two washers (13) and screws (14). **TIGHTEN SCREWS TO 60–65 LB-FT (81–88 N·M) TORQUE.** Use torque wrench.

**FOLLOW-THROUGH STEPS**

1. Adjust latch (WP 0463 00).
2. Close cargo hatch door. Check that door is properly installed.

**END OF TASK**



**REPLACE CARGO HATCH HOLD-OPEN HOOK AND BUMPERS  
(M113A2, M901A1, AND M1059 ONLY)**

**0465 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0465 00-1).
- Installation (page 0465 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

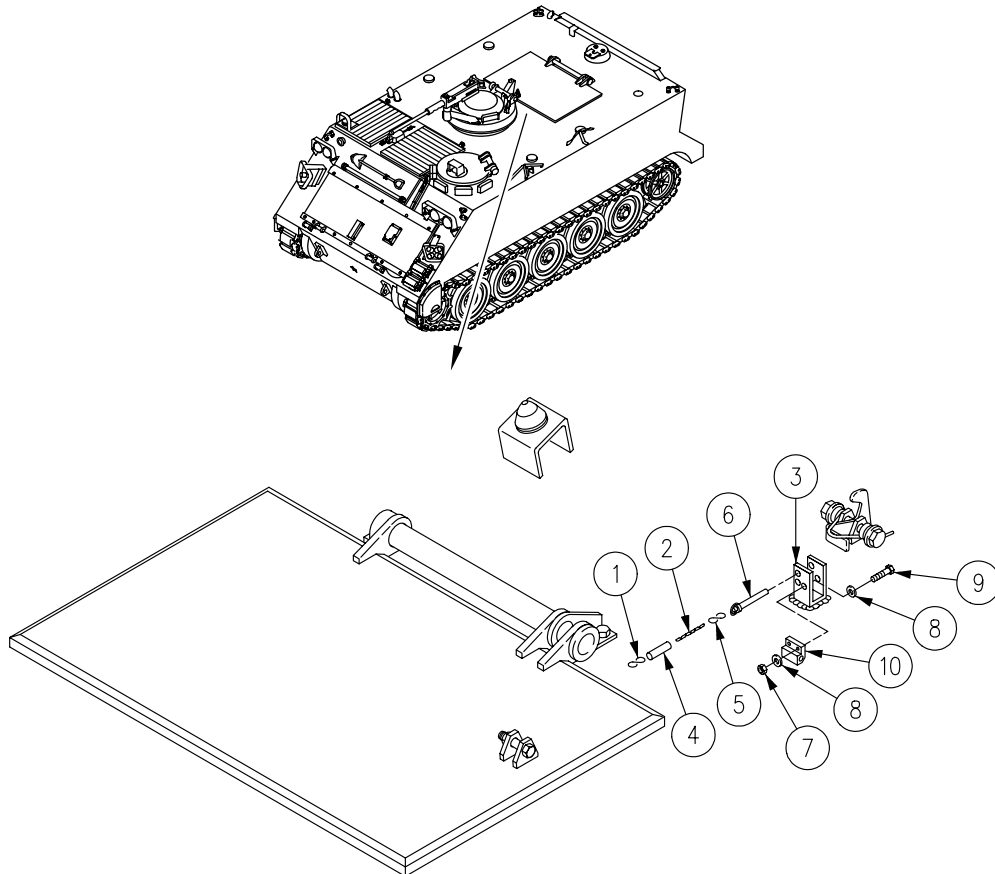
Carrier blocked (see your -10)

Materials/Parts

- Locknut (2)
- Locknut (2)
- Locknut

**REMOVAL**

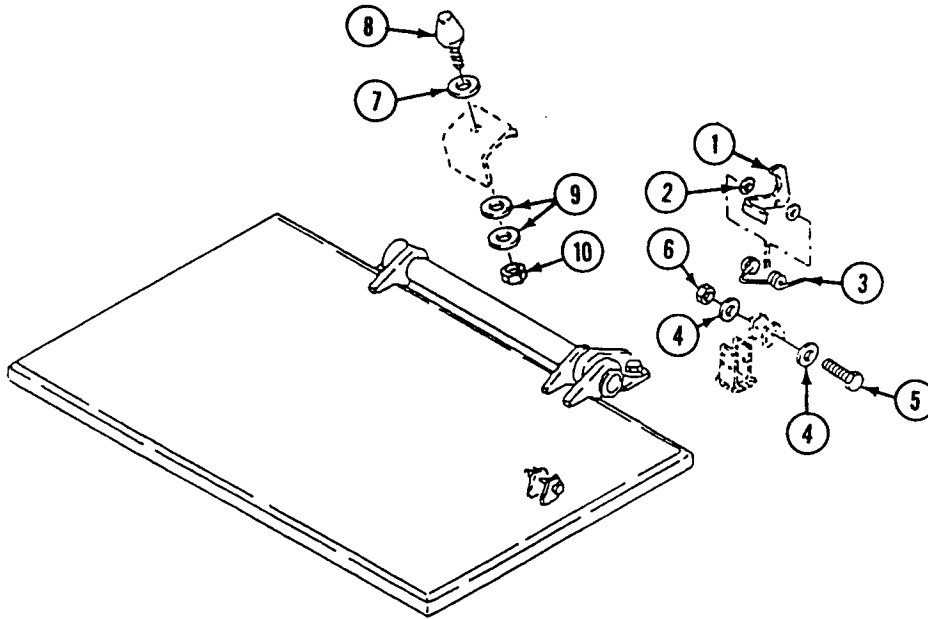
1. Open both ends of hook (1). Remove hook from chain (2) and hull bracket (3).
2. Remove tube (4) from chain (2).
3. Open both ends of hook (5). Remove hook from chain (2) and safety pin (6).
4. Remove two screws (9), four washers (8), two locknuts (7), and block (10) from hull bracket (3). Discard locknuts.



**REPLACE CARGO HATCH HOLD-OPEN HOOK AND BUMPERS (M113A2,  
M901A1, AND M1059 ONLY) — Continued**

0465 00

5. Remove two locknuts (10), four washers (9), two bumpers (8), and washer(s) (7) from hull brackets. Discard locknuts.
6. Remove locknut (6), screw (5), two washers (4), spring (3), two spacers (2), and hook (1) from hull brackets. Discard locknut.


**INSTALLATION**

1. Align hook (1), two spacers (2), spring (3), and two washers (4) with hull bracket. Secure with screw (5) and new locknut (6).

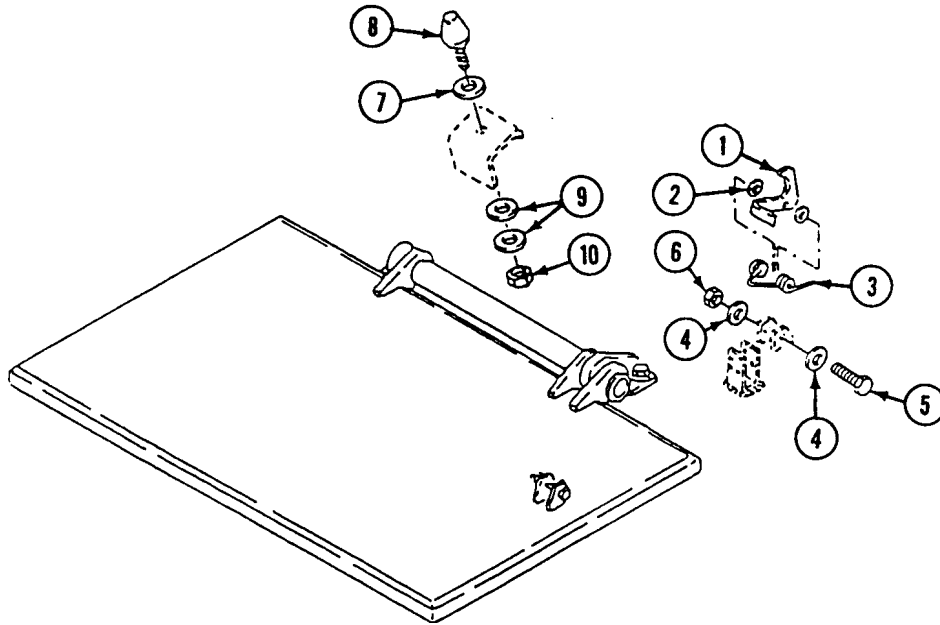
**NOTE**

**Install washer(s), as needed, to compress left bumper 3/16 to 5/16 inch (5-8 mm) and right bumper 1/16 to 1/4 inch (2-6 mm) when hold-open hook is engaged.**

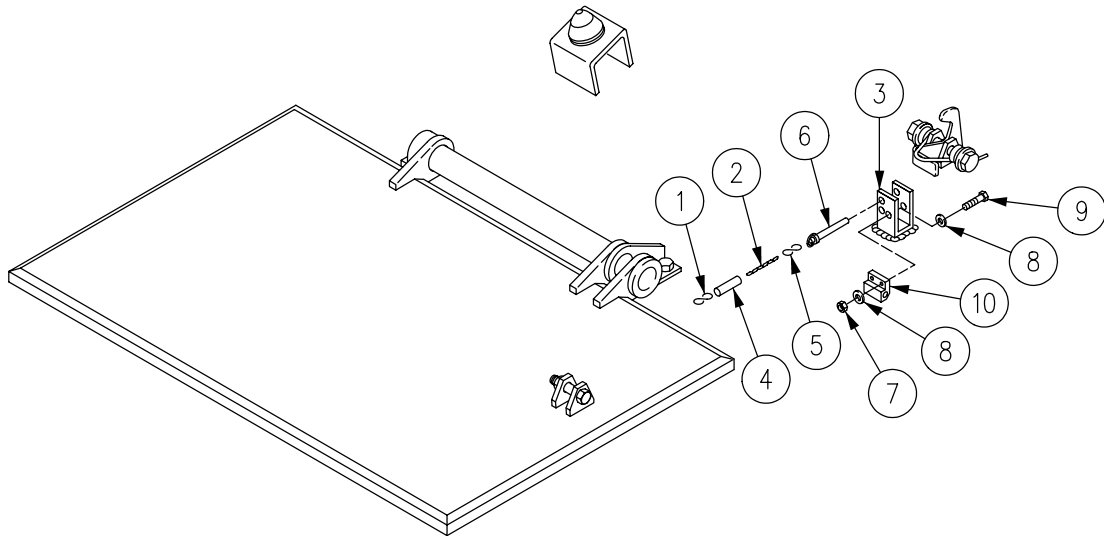
2. Install washer(s) (7) and two bumpers (8) in hull brackets. Secure with four washers (9) and two new locknuts (10).

**REPLACE CARGO HATCH HOLD-OPEN HOOK AND BUMPERS (M113A2, M901A1, AND M1059 ONLY) — Continued**

0465 00



3. Place block (10) on hull bracket (3). Secure with two screws (9), four washers (8), and two new locknuts (7).
4. Install hook (5) in safety pin (6) and chain (2). Squeeze both ends of hook to secure.
5. Install tube (4) on chain (2).
6. Install hook (1) on chain (2) and hull bracket (3). Squeeze both ends of hook to secure.



**FOLLOW-THROUGH STEPS**

1. Open cargo hatch cover and engage hook to check that hook and bumper are installed correctly.

**END OF TASK**



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**REPLACE MORTAR HATCH INTERIOR RELEASE MECHANISMS  
(M1064 ONLY)**

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**0466 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0466 00-2).
  - Installation (page 0466 00-3).
  - Adjustment (page 0466 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Caulking compound (WP 0782 00, Item 12)

Cotter pin (2)

Lockwasher (8)

Lockwasher (4)

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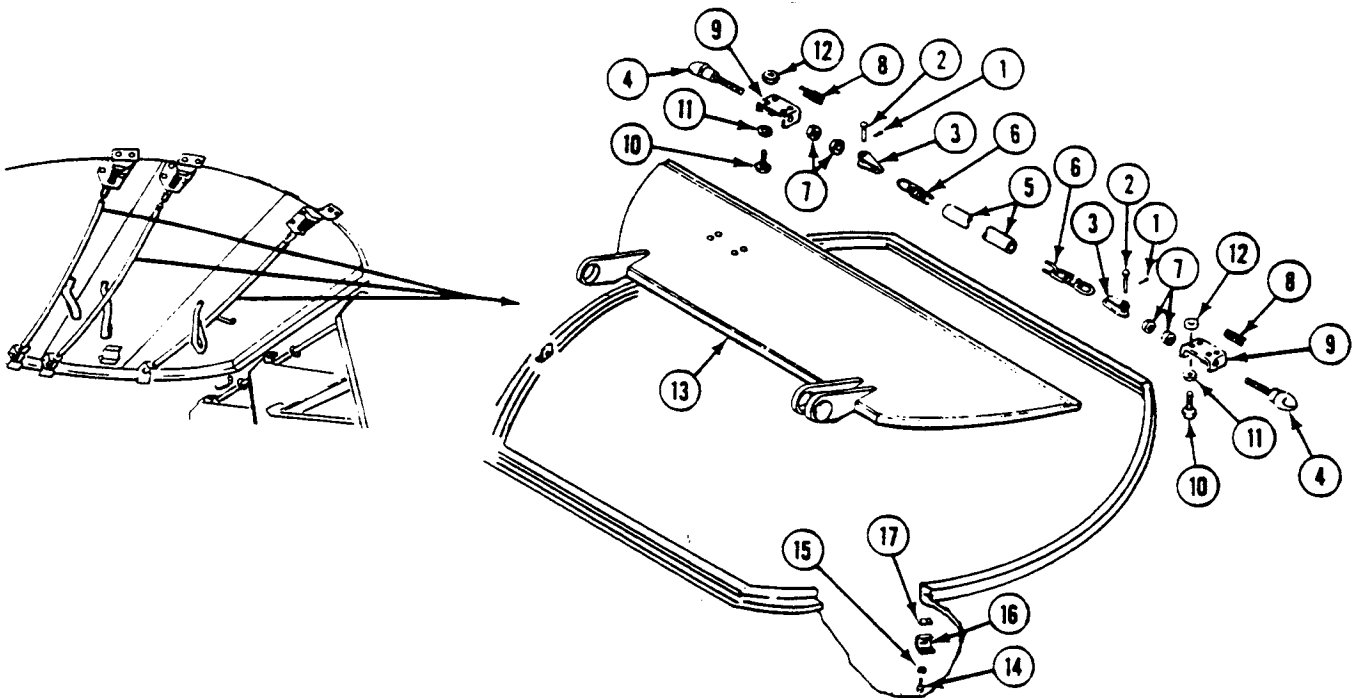
**REPLACE MORTAR HATCH INTERIOR RELEASE MECHANISMS  
(M1064 ONLY) — Continued**

0466 00

**REMOVAL****NOTE**

**There are three interior latch mechanisms. Inner chain and tube are longer than outside chains and tubes. Remove and install all three release mechanisms the same way. Left section is shown.**

1. Remove two cotter pins (1) from headed pins (2). Discard cotter pins.
2. Remove two headed pins (2) and clevises (3) from tee head bolts (4).
3. Remove two clevises (3) and tube (5) from chain (6).
4. Remove four nuts (7), two tee head bolts (4), and springs (8) from brackets (9).
5. Remove eight screws (10), lockwashers (11), two brackets (9), and washers (12) from cover section (13). Discard lockwashers.
6. Remove four screws (14), lockwashers (15), two strikes (16), and spacer(s) (17) from hull top plate. Discard lockwashers.



**REPLACE MORTAR HATCH INTERIOR RELEASE MECHANISMS  
(M1064 ONLY) — Continued**

0466 00

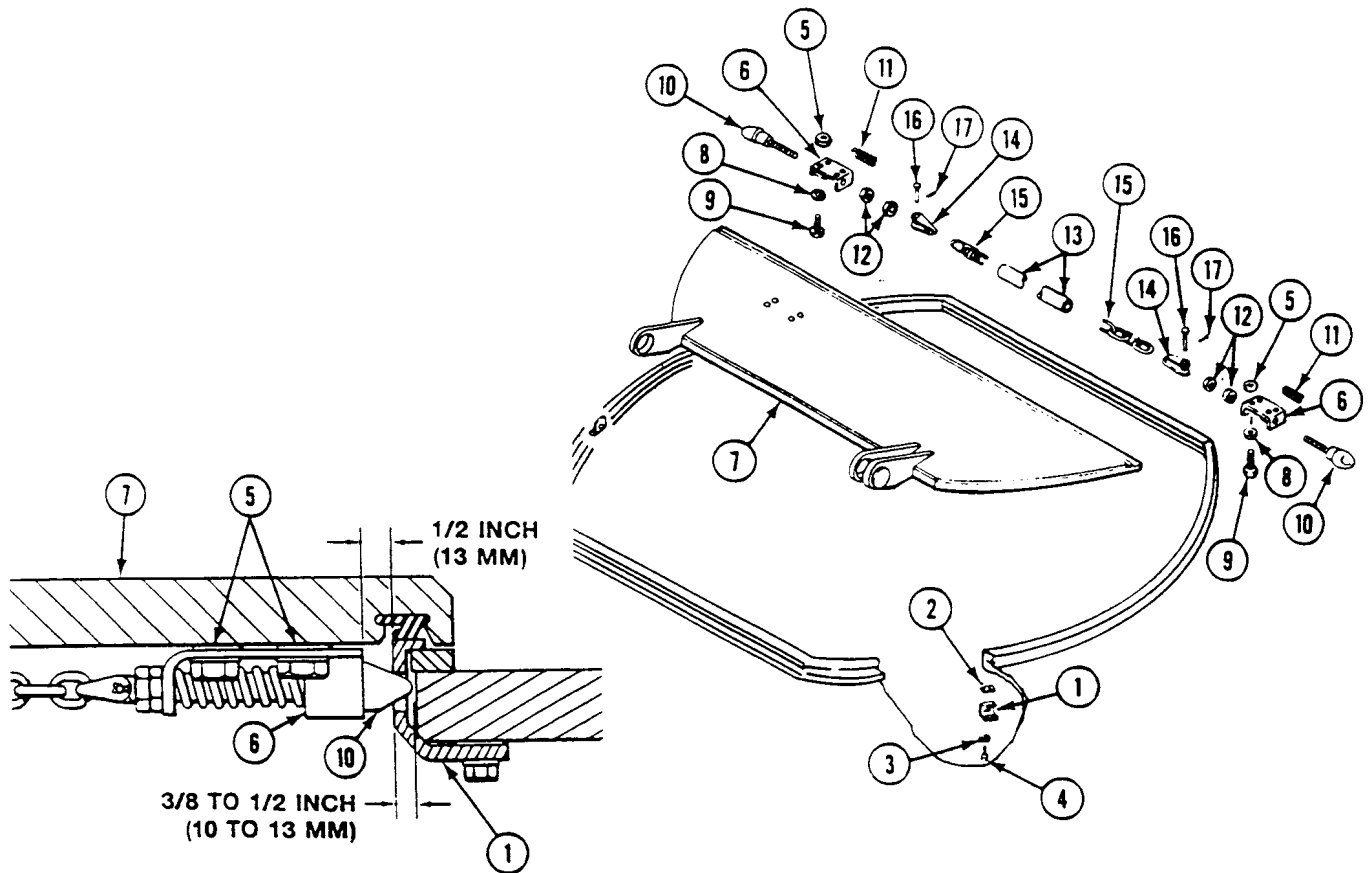
**INSTALLATION**

1. Apply caulking compound to surfaces of strikes (1) that contact seal ledge.
2. Place spacer(s) (2) and two strikes (1) on hull top plate. Secure with four new lockwashers (3) and screws (4).
3. Place eight washers (5) and two brackets (6) on cover section (7). Secure with eight new lockwashers (8) and screws (9). Do not tighten screws.
4. Install two tee head bolts (10) and springs (11) on brackets (6). Secure with four nuts (12).

**NOTE**

**Inner chain and tube are longer than outside chains and tubes. Check lengths of chains and tubes before installation.**

5. Install tube (13) and two clevises (14) on chain (15). Secure clevises to tee head bolts (10) with headed pins (16) and new cotter pins (17).

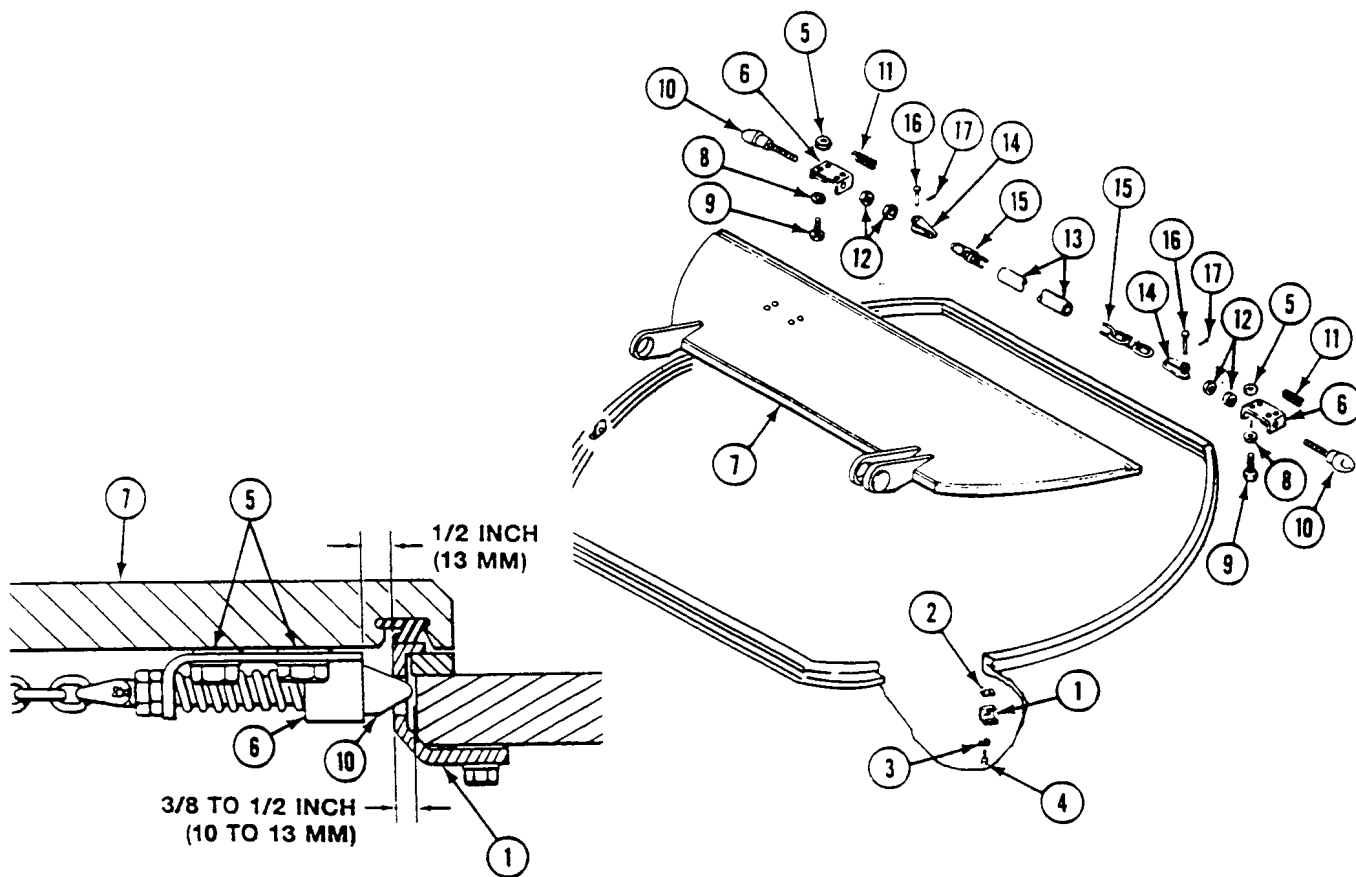


**REPLACE MORTAR HATCH INTERIOR RELEASE MECHANISMS  
(M1064 ONLY) — Continued**

0466 00

**ADJUSTMENT**

1. Position each bracket (6) on cover (7) to get 1/2 inch (13 mm) maximum distance from strike (1) to bracket with cover closed.
2. Install washer(s) (5) between each bracket (6) and cover (7) until tee head bolt (10) inserts into strike (1) 3/8-1/2 in (10-13 mm) with cover closed.
3. Tighten four screws (9).



**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



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**REPLACE MORTAR HATCH EXTERIOR CATCHES AND  
BUMPERS (M1064 ONLY)**

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**0467 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0467 00-2).
  - Installation (page 0467 00-4).
  - Adjustment (page 0467 00-5).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 97)
- Torque Wrench (WP 0780 00, Item 102)

Materials/Parts

- Cotter pin (2)
- Locknut (2)
- Lockwasher (8)
- Spring pin

Personnel Required

Unit Mechanic

Equipment Condition

- Engine stopped (see your -10)
  - Carrier blocked (see your -10)
-

**REPLACE MORTAR HATCH EXTERIOR CATCHES AND BUMPERS  
(M1064 ONLY) — Continued**

0467 00

**REMOVAL****NOTE**

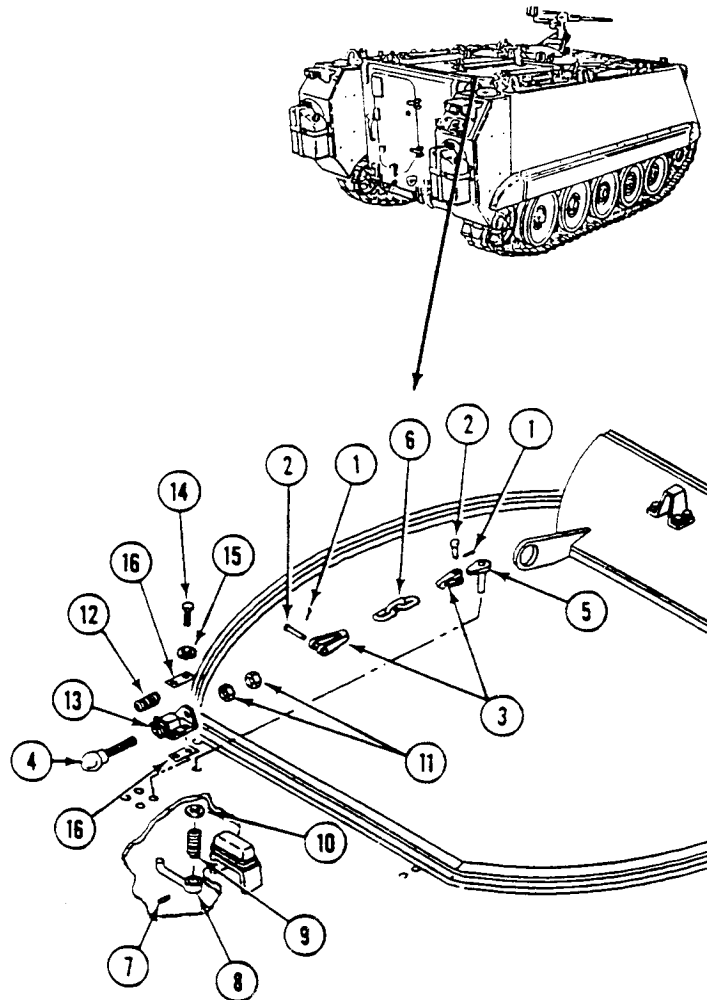
Three exterior catches and bumpers are removed and installed the same way. The three chains and some brackets are not interchangeable and should be returned to the same assembly during installation. Left section is shown.

1. Remove two cotter pins (1) from headed pins (2). Discard cotter pins.
2. Remove two headed pins (2) and clevises (3) from tee head bolt (4) and arm (5).
3. Remove two clevises (3) from chain (6).
4. Remove spring pin (7), handle (8), spring (9), and washer (10) from arm (5). Discard spring pin. Remove arm from hull top plate.
5. Remove two nuts (11) from tee head bolt (4). Remove tee head bolt and spring (12) from latch bolt bracket (13).

**NOTE**

Latch bolt bracket for center door section is mounted on right door section. Bracket for right door section does not have four spacers installed.

6. Remove four screws (14), lockwashers (15), spacers (16), and latch bolt bracket (13) from hull top plate. Discard lockwashers.



**REPLACE MORTAR HATCH EXTERIOR CATCHES AND BUMPERS  
(M1064 ONLY) — Continued**

0467 00

**NOTE**

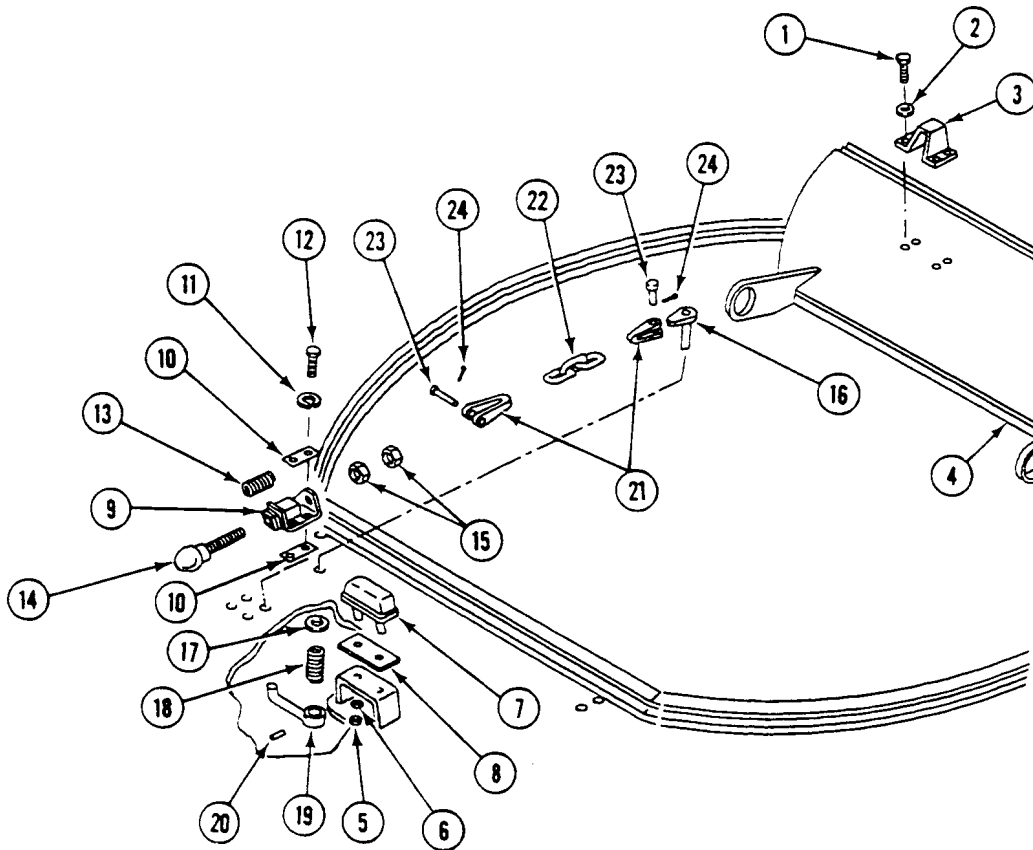
**Striker and catch for center and right door sections are both mounted on center door section.**

7. Remove four screws (1), lockwashers (2), and catch (3) from door section (4). Discard lockwashers.

**NOTE**

**Bumper for center door section is mounted on right door section.**

8. Remove two locknuts (5), washers (6), bumper (7), and shim(s) (8) from hull bracket. Discard locknuts.



**REPLACE MORTAR HATCH EXTERIOR CATCHES AND BUMPERS  
(M1064 ONLY) — Continued**

0467 00

**INSTALLATION****NOTE**

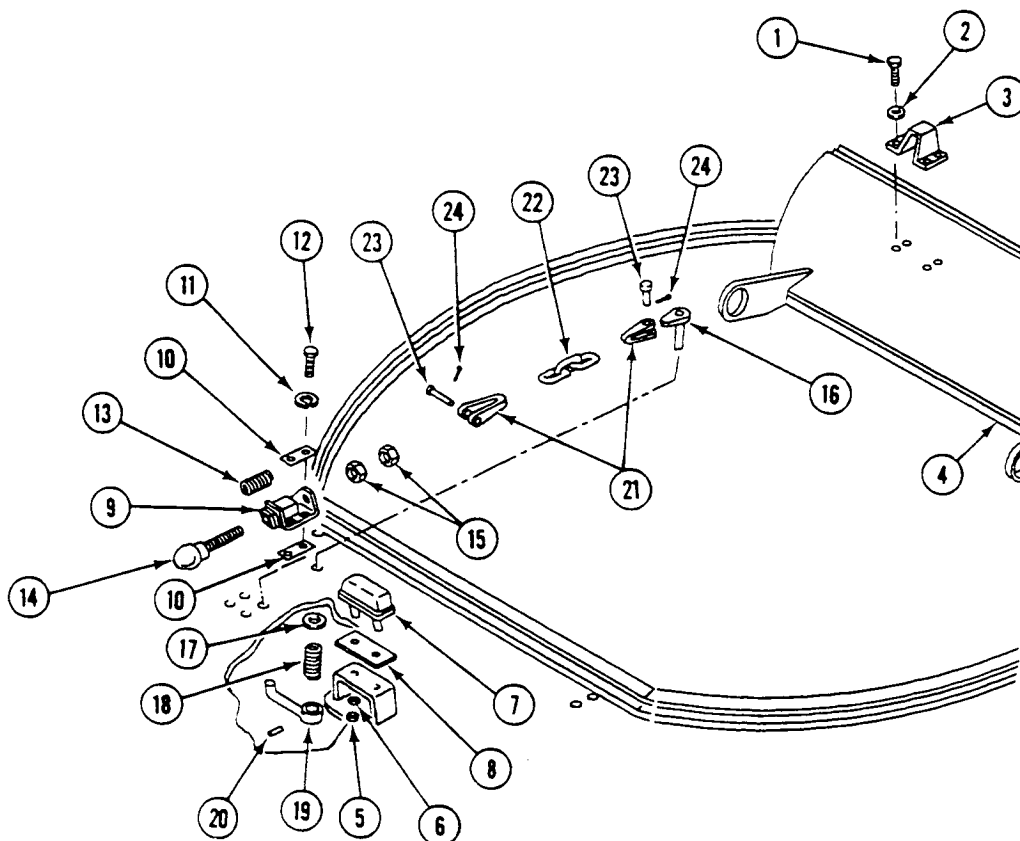
**Shim(s) are installed between bumper and hull bracket to remove all end play between cover and bumper.**

1. Install shim(s) (8) and bumper (7) on hull bracket. Secure with two washers (6) and new locknuts (5).
2. Place catch (3) on door section (4). Secure with four new lockwashers (2) and screws (1). Do not torque screws at this time.

**NOTE**

**Latch bolt bracket for center door section is mounted on right door section. Bracket for right door section does not have spacers installed.**

3. Place latch bolt bracket (9) and two spacers (10) on hull top plate. Secure with four new lockwashers (11) and screws (12). Do not tighten screws at this time.
4. Install spring (13) and tee head bolt (14) on latch bolt bracket (9). Secure with two nuts (15).
5. Install arm (16) through hole in hull top plate. Install washer (17), spring (18), and handle (19) on arm. Secure with new spring pin (20).
6. Install two clevises (21) on chain (22). Secure clevises to arm (16) and tee head bolt (14) with two headed pins (23) and new cotter pins (24).

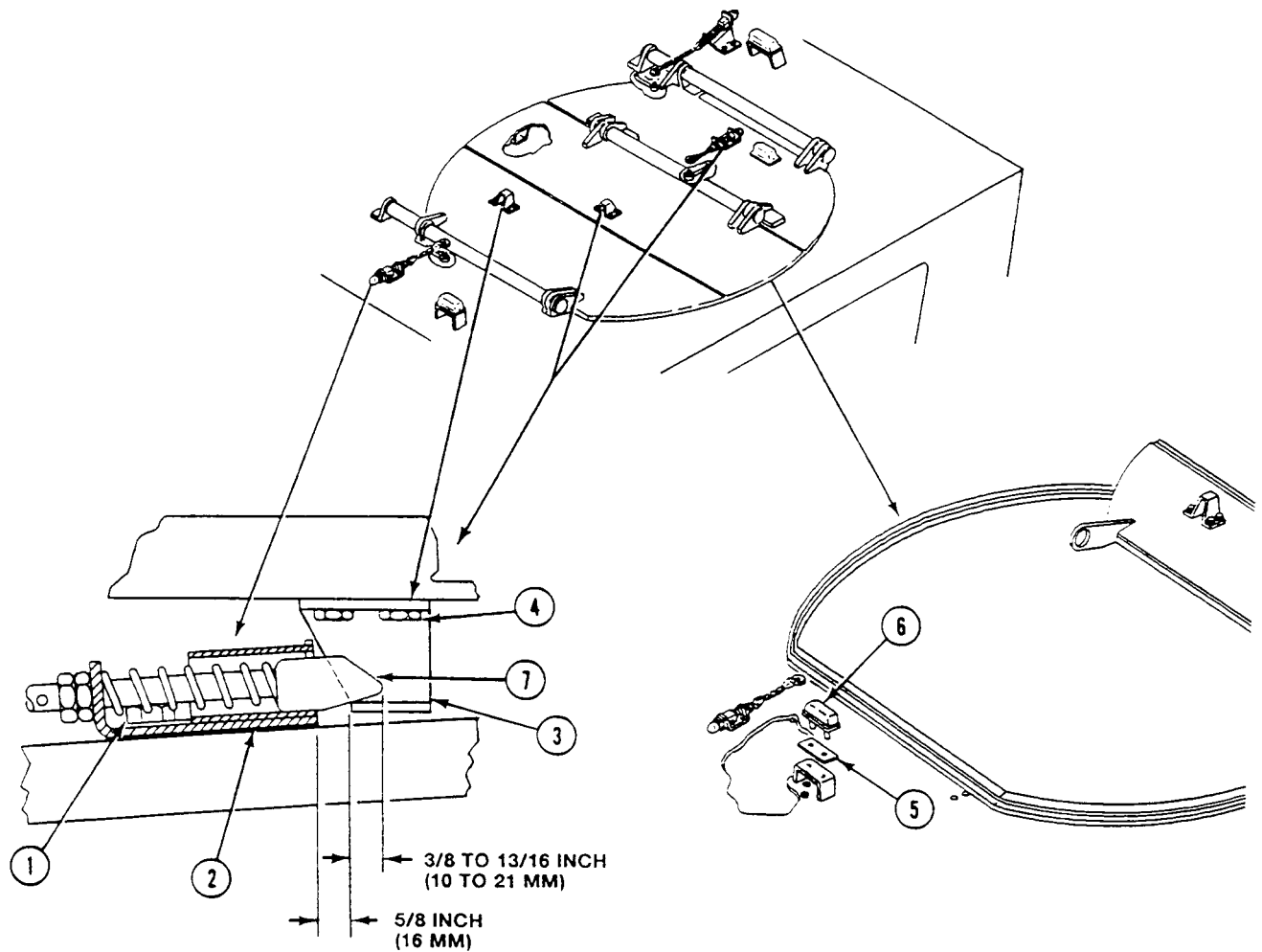


**REPLACE MORTAR HATCH EXTERIOR CATCHES AND BUMPERS  
(M1064 ONLY) — Continued**

0467 00

**ADJUSTMENT**

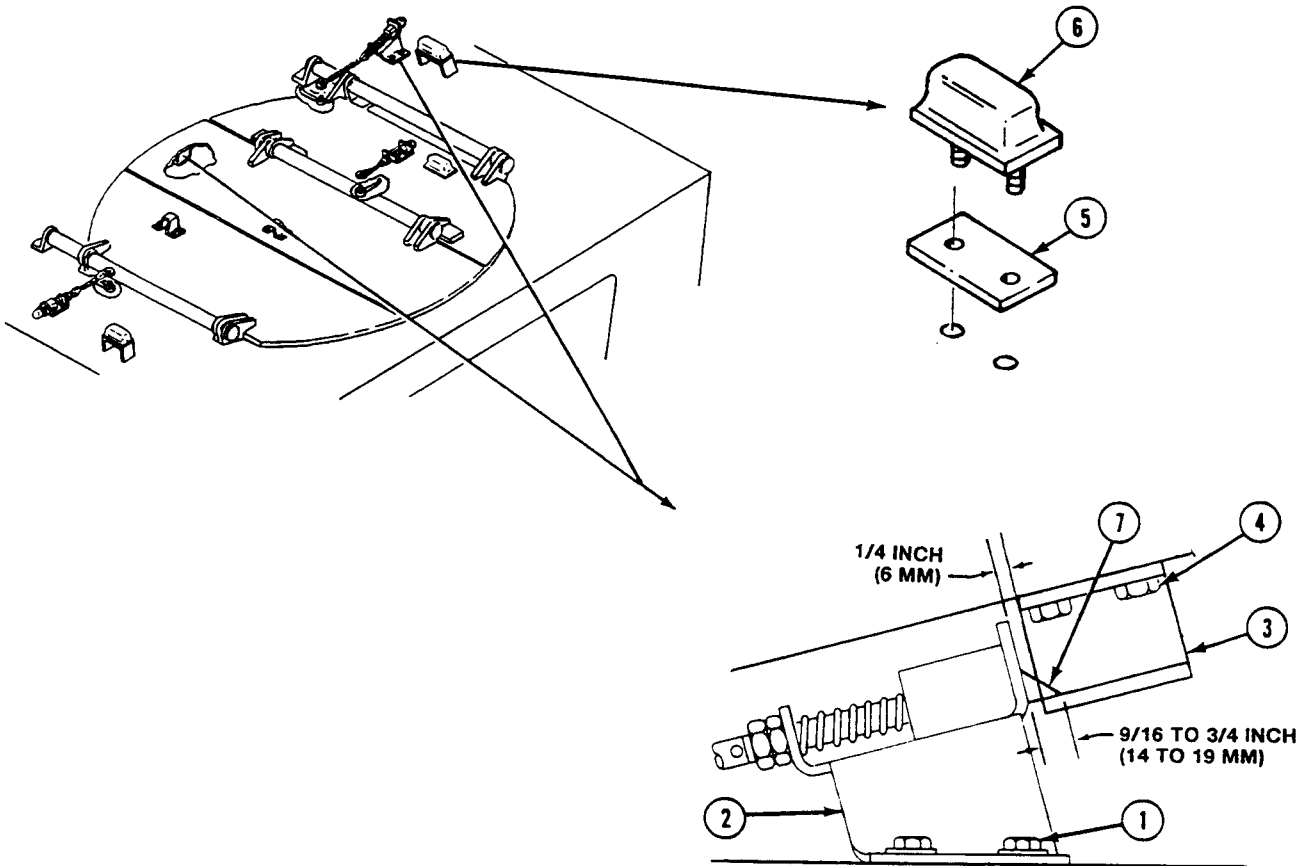
1. Adjust LEFT and CENTER exterior latches as follows:
  - a. Open hatch sections.
  - b. Loosen screws (1). Move latch bolt bracket (2) to get 5/8 in (16 mm) between end of bracket (2) and edge of catch (3).
  - c. If above adjustment cannot be made, loosen screws (4) and move catch (3) to get above measurement.
  - d. Remove or install shims (5) between bumper (6) and hull so that tee head bolt (7) protrudes into catch (3) a distance of 3/8 to 13/16 in (10 to 21 mm) with center door section firmly against bumper.
  - e. Tighten screws (1) on bracket (2).
  - f. **TIGHTEN SCREWS (4) ON CATCH (3) AND TORQUE TO 360-420 LB-IN (41-47 N·M).** Use torque wrench.


**LEFT AND CENTER EXTERIOR LATCH ADJUSTMENT**

**REPLACE MORTAR HATCH EXTERIOR CATCHES AND BUMPERS  
(M1064 ONLY) — Continued**

0467 00

2. Adjust RIGHT exterior latch as follows:
  - a. Open hatch sections.
  - b. Loosen screws (1). Move bracket (2) to get 1/4 in (6 mm) between end of bracket (2) and edge of catch (3).
  - c. If above adjustment cannot be made, loosen screws (4) and move catch (3) to get above measurement.
  - d. Remove or install shims (5) between bumper (6) and door section so that tee head bolt (7) protrudes into catch (3) a distance of 9/16 to 3/4 in (14 to 19 mm) with center and right door sections firmly against bumper.
  - e. Tighten screws (1) on bracket (2).
  - f. TIGHTEN SCREWS (4) ON CATCH (3) AND TORQUE TO 360-420 LB-IN (41-47 N·M). Use torque wrench.


**RIGHT EXTERIOR LATCH ADJUSTMENT**
**FOLLOW-THROUGH STEPS**

1. Open and close mortar hatch covers (see your -10). Check that covers are properly installed.

**END OF TASK**

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**REPLACE MORTAR HATCH COVERS (M1064 ONLY)**

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**0468 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0468 00-1).  
 Installation (page 0468 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Mortar hatch interior release mechanism removed  
 (WP 0466 00)  
 Mortar hatch exterior catch removed (WP 0467 00)

Materials/Parts

Grease (WP 0782 00, Item 24)  
 Seal (2)  
 Seal (2)  
 Seal (2)

---

**REMOVAL**

**WARNING**



**Mortar hatch sections must be in a vertical position to release torsion spring tension before removing torsion spring brackets.**

**WARNING**

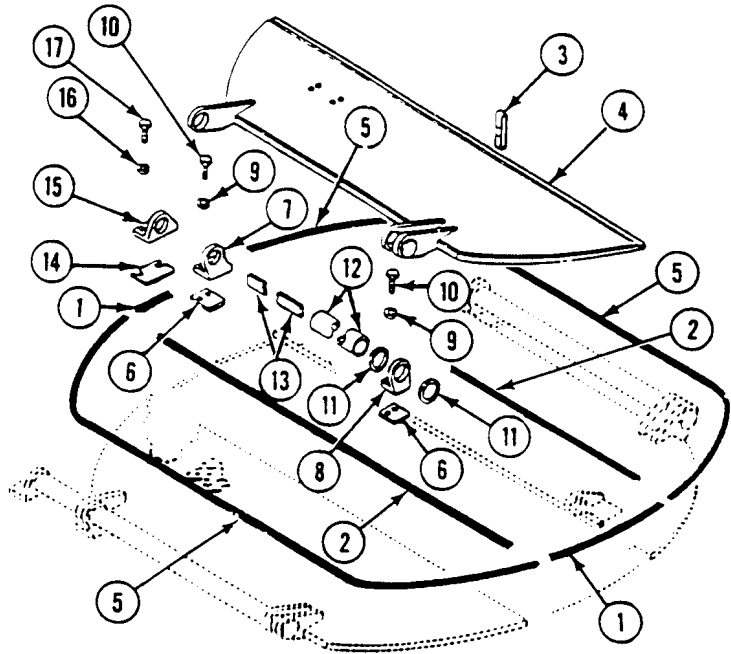
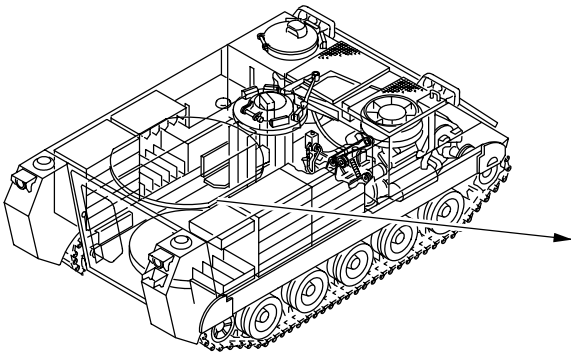


**Lifting or moving objects in excess of 70 pounds could injure you. Get an assistant or use a lifting device to move heavy objects.**

**NOTE**

**There are three mortar hatch sections. Remove and install all three the same way. Left section is shown.**

1. Remove two screws (17), washers (16), bracket (15), and spacers (14) from hull top plate. Have helper assist.
2. Support door (4). Remove two springs (13), shield (12), two spacers (11), and door from hinges (7) and (8). Remove six springs from shield for right door section.
3. Remove four screws (10), washers (9), two hinges (7) and (8), and spacers (6) from hull top plate.
4. Remove two seals (5) from door (4). Discard seals.
5. Remove two seals (1) and two seals (2) from center door. Discard seals.
6. Remove canvas strap (3) from door (4).





**INSTALLATION**

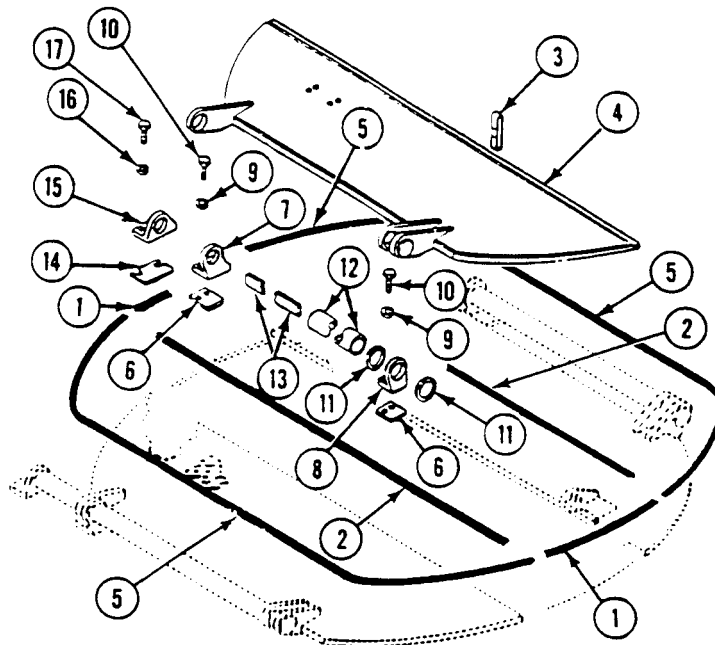
1. Install canvas strap (3) on door (4).
2. Place two new seals (5) over retaining groove in door (4). Press seals into place.
3. Install two new seals (1) and two new seals (2) on center door.
4. Place two spacers (6) and hinges (7) and (8) on hull top plate. Secure with four washers (9) and screws (10). **TIGHTEN SCREWS TO 60-65 LB-FT (81-88 N·M) TORQUE.** Use torque wrench.

**WARNING**



**Lifting or moving objects in excess of 70 pounds could injure you. Get an assistant or use a lifting device to move heavy objects.**

5. Align door (4) with hinges (7) and (8). Install two spacers (11) and shield (12). Have helper assist.
6. Apply light coat of grease to each spring (13). Install two springs in shield (12) for left door section. Install six springs in shield for right door section.
7. Place door (4) in vertical position. Install spacer(s) (14) and bracket (15). Secure with two washers (16) and screws (17). **TIGHTEN SCREWS TO 60-65 LB-FT (81-88 N·M) TORQUE.** Use torque wrench.



**FOLLOW-THROUGH STEPS**

1. Install mortar hatch exterior catch (WP 0467 00).
2. Install mortar hatch interior release mechanism (WP 0466 00).
3. Close cover. Check that mortar hatch door is properly installed.
4. Start engine (see your -10).
5. Raise and lock ramp (see your -10).
6. Stop engine (see your -10).

**END OF TASK**

**REPAIR CARGO HATCH LATCH (M901A1 ONLY)**

**0469 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0469 00-1).  
 Assembly (page 0469 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Socket Wrench Set (WP 0780 00, Item 96)  
 Torque Wrench (WP 0780 00, Item 101)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Launcher erected (see your -10)  
 Ramp lowered (see your -10)  
 Turret traversed to 230° (see your -10)  
 Launcher bled down and supported (TM 9-2350-259-20)

Materials/Parts

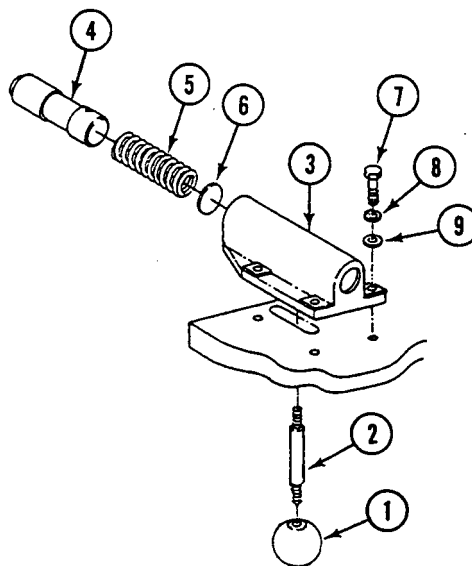
Sealing compound (WP 0782 00, Item 62)  
 Lockwasher (4)

**DISASSEMBLY**

**CAUTION**

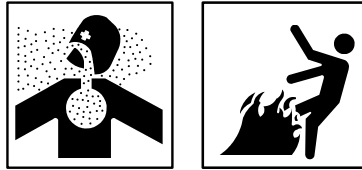
**Do not traverse the turret with the cargo hatch in the open (load or vertical) position. Damage to system could occur.**

1. Remove knob (1) and shouldered stud (2) from housing (3).
2. Remove shouldered pin (4), spring (5), and disk (6) from housing (3).
3. Remove four bolts (7), lockwashers (8), washers (9), and housing (3) from hatch. Discard lockwashers.



**ASSEMBLY**

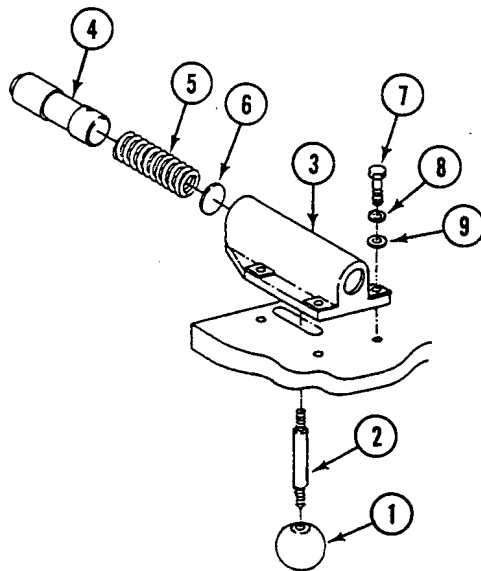
1. Install housing (3) on hatch. Secure with four washers (8), new lockwashers (9), and bolts (7).
2. **TIGHTEN FOUR BOLTS (7) TO 120-144 LB-IN (14–16 N·M) TORQUE.** Use torque wrench.
3. Install disk (6), spring (5), and shoulder pin (4) on housing (3).
4. Install shouldered stud (2) on housing (3).

**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

5. Apply sealing compound to knob (1).
6. Install knob (1) on handle (2) and housing (3).



**FOLLOW-THROUGH STEPS**

1. Fill launcher hydraulic system and remove supports. See TM 9-2350-259-20.
2. Power up launcher (see your -10).
3. Stow launcher (see your -10).
4. Start engine (see your -10).
5. Raise and lock ramp (see your -10).
6. Stop engine (see your -10).

**END OF TASK**



**REPLACE CARGO HATCH SUPPORT (M901A1 ONLY)**

**0470 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0470 00-1).  
 Installation (page 0470 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

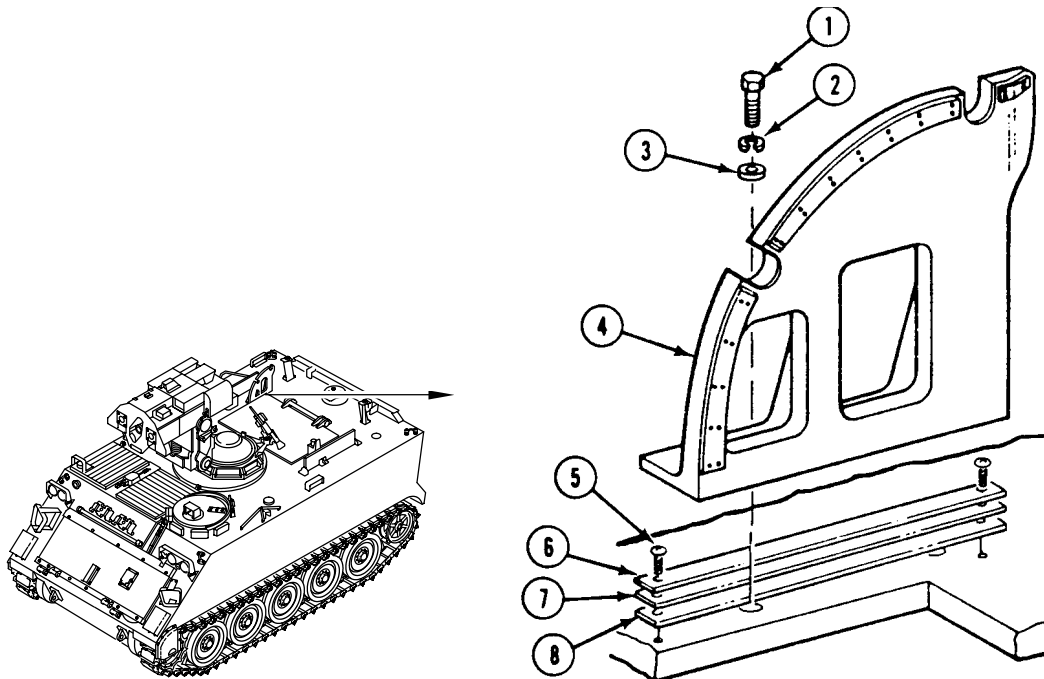
Carrier blocked (see your -10)

Materials/Parts

Lockwasher (2)

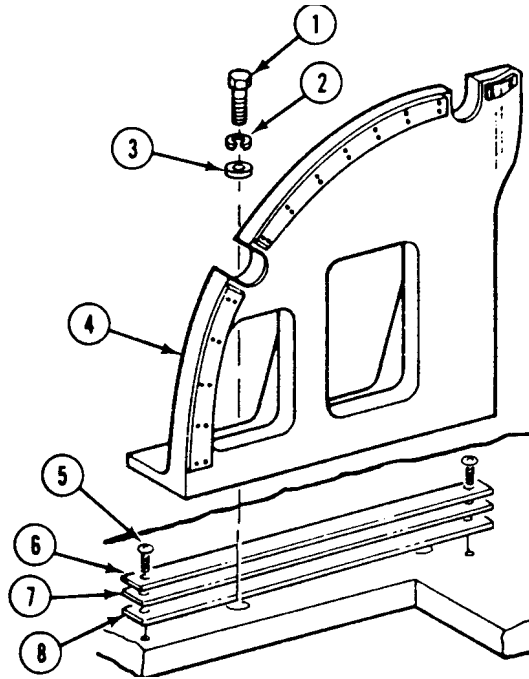
**REMOVAL**

1. Remove two screws (1), lockwashers (2), and washers (3) from support (4). Discard lockwashers.
2. Remove support (4) from deck.
3. Remove two drive screws (5) and three shims (6), (7), and (8) from deck.



**INSTALLATION**

1. Install three shims (6), (7), and (8) on deck. Secure with two drive screws (5).
2. Install support (4) on deck. Secure with two washers (3), new lockwashers (2), and screws (1).

**END OF TASK**



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**REPLACE REAR COMPARTMENT AIR VENTILATOR**

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**0471 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0471 00-2).  
 Installation (page 0471 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Socket Wrench Set (WP 0780 00, Item 96)  
 Torque Wrench (WP 0780 00, Item 103)  
 Torque Wrench (WP 0780 00, Item 102)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)

Materials/Parts

Gasket  
 Locknut (early model only) (3)

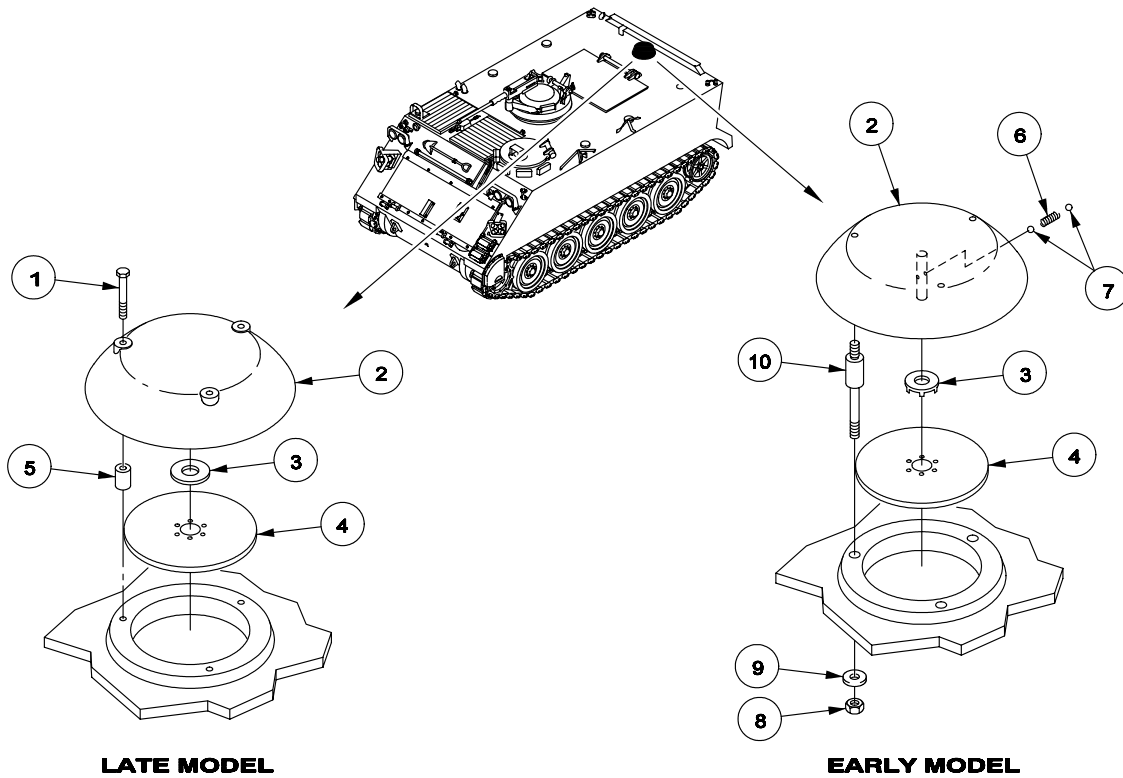
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REMOVAL

NOTE

For late model compartment ventilator do Steps 1 - 2. For early model compartment ventilator do Steps 3 - 6.

1. Remove three screws (1), cover (2), and three spacers (5) from hull mount.
2. Remove valve (4) and gasket (3) from cover (2). Discard gasket.
3. Remove three locknuts (8) and washers (9) securing three ventilator studs (10) in hull from inside personnel compartment. Remove ventilator cover with studs and valve (4). Discard locknuts.
4. Remove valve (4), two balls (7), and one spring (6) from cover (2).
5. Remove gasket (3) from valve (4).
6. Remove three studs (10) from cover (2).



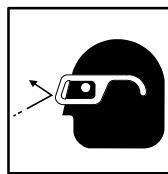
**INSTALLATION**

**NOTE**

**For late model compartment ventilator do Steps 1 - 2. For early model compartment ventilator do Steps 3 - 6.**

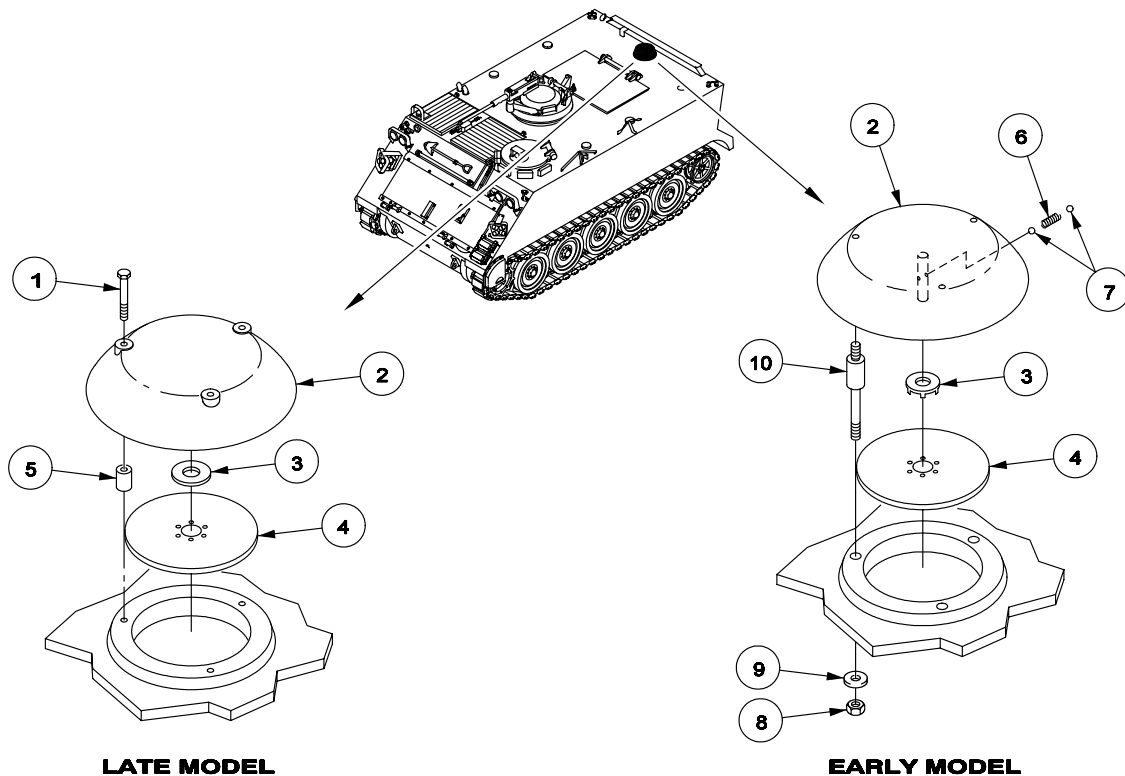
1. Install new gasket (3) and valve (4) on cover (2).
2. Align three spacers (5) and cover (2) with hull mount. Secure with three screws (1). **TIGHTEN SCREWS TO 75-80 LB-FT (102-108 N·M) TORQUE.** Use torque wrench (WP 0780 00, Item 103).

**WARNING**



**Metal chips and grinding dust can cause eye injury. Wear goggles and gloves.**

3. Install three studs (10) in cover (2), tighten, and if studs extend out of the cover, grind exterior surface flush with cover.
4. Insert spring (6) and two balls (7) in cover post, and stake post four places so balls extend 1/16 inch (1.588 mm) minimum from post.
5. Install gasket (3) on valve (4) and install valve on cover (2).
6. Position cover (2) with studs (10) and valve (4) on hull ring, and secure with three washers (9) and new locknuts (8). **TIGHTEN LOCKNUTS TO 300-360 LB-IN (34-41 N·M).** Use torque wrench (WP 0780 00, Item 102) and socket.



**FOLLOW-THROUGH STEPS**

1. Open and close air ventilator. Check that ventilator is installed right.
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

**END OF TASK**

**REPLACE 4.2 KW GENERATOR SET ENCLOSURE (M577A2 ONLY)**

**0472 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0472 00-1).  
 Installation (page 0472 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Sling (WP 0780 00, Item 66)  
 Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 4.2 KW Generator set removed (M577A2 only)  
 (see your -10)

Materials/Parts

Cotter Pin (4)  
 Locknut (2)

**REMOVAL**

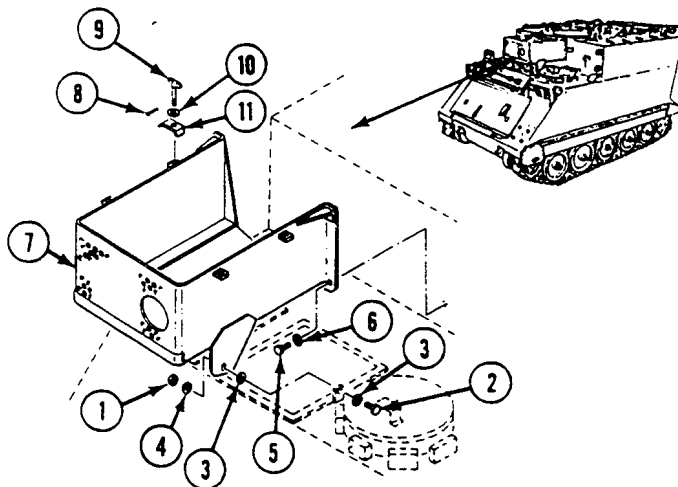
1. Remove two locknuts (1), screws (2), washers (3), and washers (4) from two hull lugs. Discard locknuts.
2. Remove four screws (5), washers (6), and generator set enclosure (7) from bulkhead.
3. Remove four cotter pins (8) from thumbscrews (9). Discard cotter pins.
4. Remove four thumbscrews (9), washers (10), and clamps (11) from enclosure (7).

**WARNING**



**Lifting or moving objects in excess of 70 lbs could injure you. Get an assistant or use a lifting device to move heavy objects.**

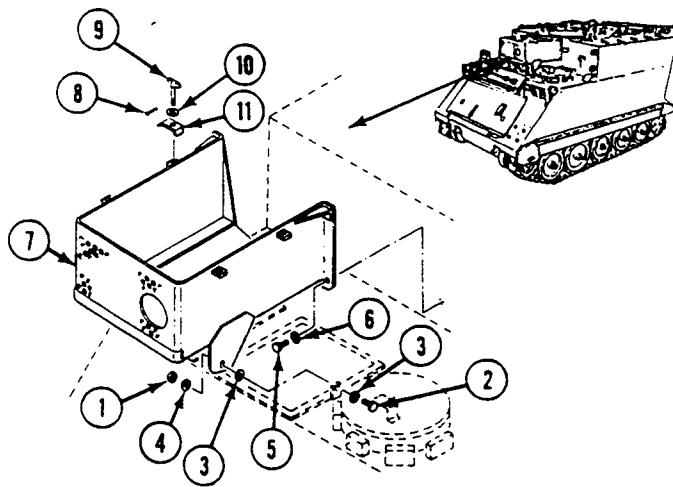
5. Remove enclosure (7). Use lifting device and sling.



0472 00-1

**INSTALLATION**

1. Install enclosure (7). Use lifting device and sling.
2. Install four clamps (11), washers (10), and thumbscrews (9) in generator set enclosure (7). Secure with four new cotter pins (8).
3. Place enclosure (7) on bulkhead. Secure with four washers (6) and screws (5). **TIGHTEN SCREWS TO 55-60 LB-FT (75-81 N·M) TORQUE.** Use torque wrench.
4. If needed, add washers (4) to remove play between enclosure (7) and hull lugs.
5. Align enclosure (7) with two hull lugs. Secure with two washers (4), washers (3), screws (2), and new locknuts (1).



**FOLLOW-THROUGH STEPS**

1. Install 4.2 KW generator set (M577A2 only) (see your -10).

**END OF TASK**

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**REPLACE 5.0 KW AUXILIARY POWER UNIT (M577A2 AND M1068 ONLY)**

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**0473 00**

**THIS WORK PACKAGE COVERS:**

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**INITIAL SETUP:**

Maintenance Level

Unit

References

TM 9-6115-664-13&P

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**NOTE**

**Refer to TM 9-6115-664-13&P for all maintenance procedures.**

**END OF TASK**





**REPLACE SIDE ARMOR (M901A1 ONLY)**

**0474 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0474 00-1).  
 Installation (page 0474 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)

Materials/Parts

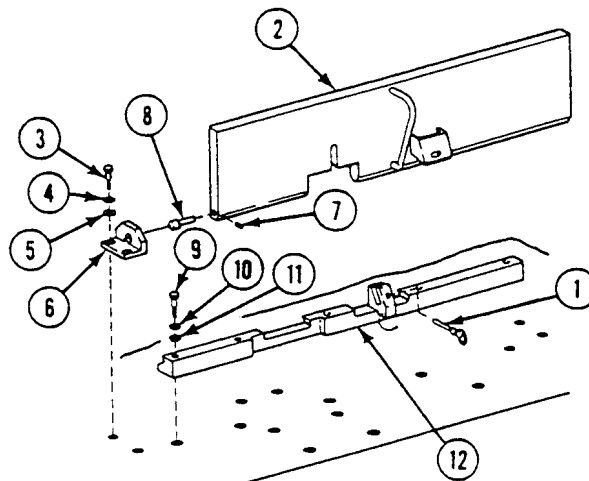
Lockwasher (4)  
 Lockwasher (5)  
 Spring pin (2)

**REMOVAL**

**NOTE**

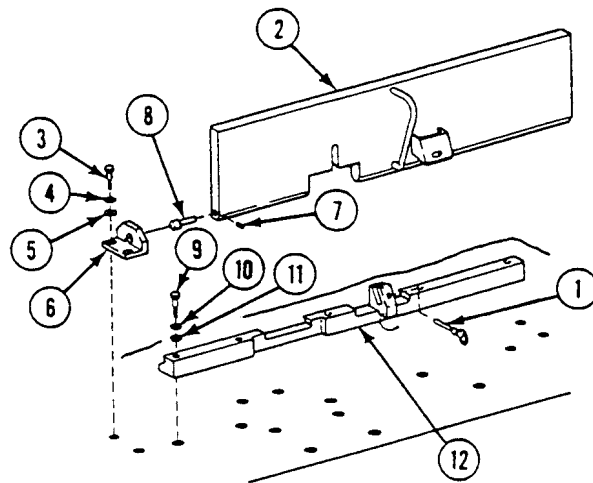
**Right and left side armor are replaced the same way. Left side shown.**

1. Remove quick release pin (1) and place armor plate (2) in the down position.
2. Remove four screws (3), lockwashers (4), washers (5), two brackets (6), and armor plate (2) from deck. Discard lockwashers.
3. Remove two spring pins (7) and shoulder pins (8) from brackets (6) and armor plate (2). Discard spring pins.
4. Remove five screws (9), lockwashers (10), washers (11), and armor plate (12) from deck. Discard lockwashers.



**INSTALLATION**

1. Install armor plate (12) on deck. Secure with five washers (11), new lockwashers (10), and screws (9).
2. TIGHTEN FIVE SCREWS (9) TO 55-60 LB-FT (75-81 N·M) TORQUE. Use torque wrench.
3. Install two brackets (6) on armor plate (2). Secure with two shoulder pins (8) and new spring pins (7).
4. Install two brackets (6) and armor plate (2) on deck. Secure with four washers (5), new lockwashers (4), and screws (3).
5. TIGHTEN FOUR SCREWS (3) TO 35-40 LB-FT (48-54 N·M) TORQUE. Use torque wrench.
6. Install quick release pin (1) on armor plate (2).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**

**REPLACE LOW-STOW CUSHION BASE (M901A1 ONLY)**

**0475 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0475 00-1).  
 Installation (page 0475 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

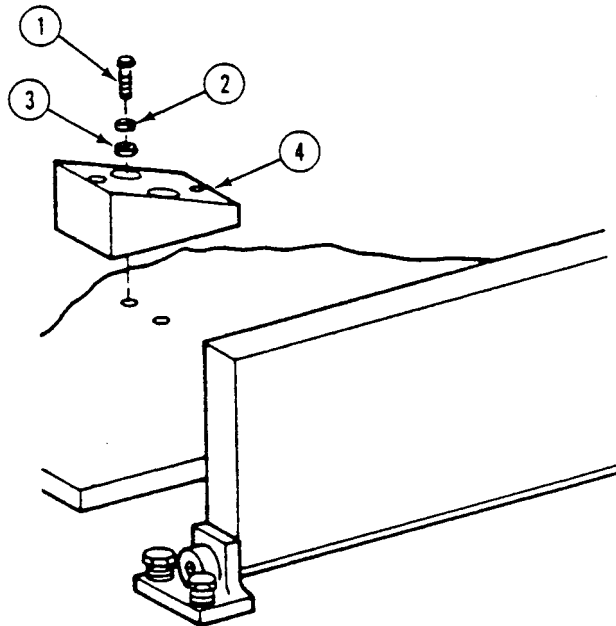
Launcher erect (see your -10)

Materials/Parts

Lockwasher (2)

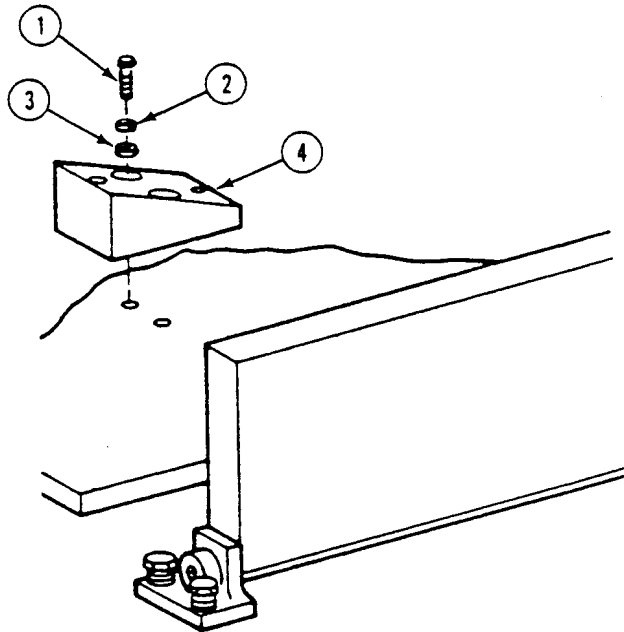
**REMOVAL**

1. Remove two screws (1), lockwashers (2), and washers (3) from low-stow cushion base (4). Discard lockwashers.
2. Remove low-stow cushion base (4) from deck.



**INSTALLATION**

1. Install low-stow cushion base (4) on deck. Secure with two washers (3), new lockwashers (2), and screws (1).

**FOLLOW-THROUGH STEPS**

1. Lower launcher (see your -10).
2. Stop engine (see your -10).

**END OF TASK**

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**REPLACE HIGH-STOW LAUNCHER SUPPORT (M901A1 ONLY)**

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**0476 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0476 00-1).
- Disassembly (page 0476 00-2).
- Assembly (page 0476 00-3).
- Installation (page 0476 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Torque Wrench (WP 0780 00, Item 102)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Launcher erect (see your -10)

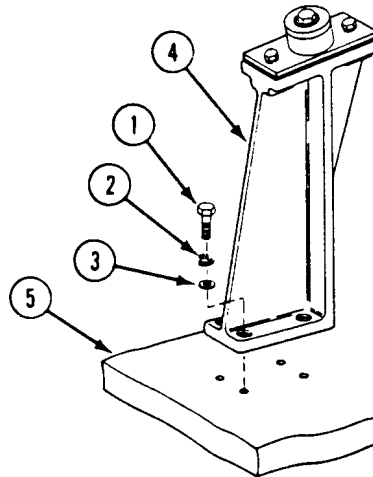
Materials/Parts

- Locknut
- Lockwasher (4)
- Lockwasher (2)

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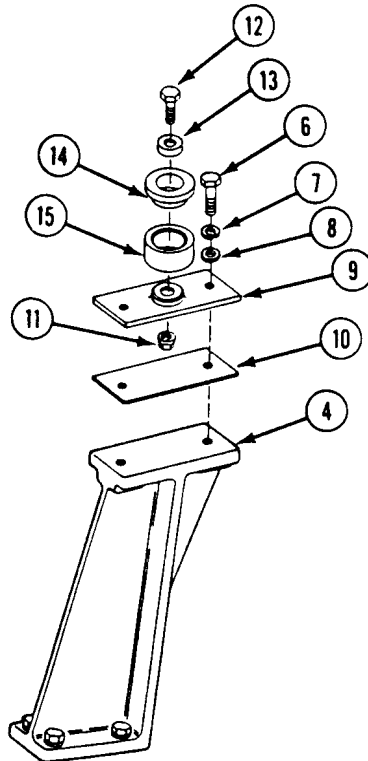
**REMOVAL**

1. Remove four bolts (1), lockwashers (2), and washers (3) from high-stow launcher support (4). Discard lockwashers.
2. Remove high-stow launcher support (4) from deck (5).



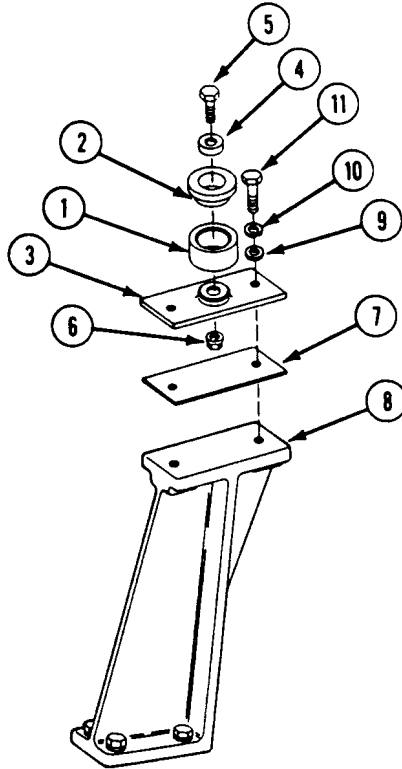
**DISASSEMBLY**

1. Remove two bolts (6), lockwashers (7), washers (8), base (9), and shim (10) from high-stow launcher support (4). Discard lockwashers.
2. Remove locknut (11), bolt (12), washer (13), pad (14), and bumper (15) from base (9). Discard locknut.



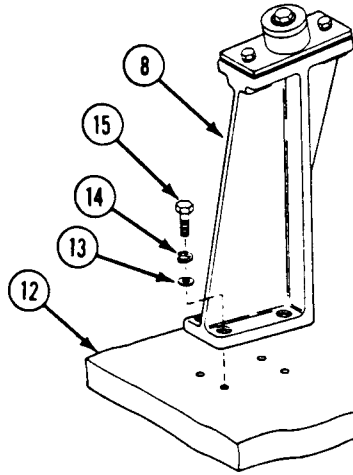
**ASSEMBLY**

1. Install bumper (1) and pad (2) on base (3). Secure with washer (4), bolt (5), and new locknut (6).
2. Install shim (7) and base (3) on high-stow launcher support (8). Secure with two washers (9), new lockwashers (10), and bolts (11).



**INSTALLATION**

1. Install high-stow launcher support (8) on deck (12). Secure with four washers (13), new lockwashers (14), and bolts (15).
2. TIGHTEN FOUR BOLTS (15) TO 300-360 LB-IN (34-41 N·M) TORQUE. Use torque wrench.

**FOLLOW-THROUGH STEPS**

1. Lower launcher (see your -10).

**END OF TASK**



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**REPLACE HIGH-STOW BRACKET (M901A1 ONLY)**

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**0477 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0477 00-1).
  - Disassembly (page 0477 00-2).
  - Assembly (page 0477 00-3).
  - Installation (page 0477 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

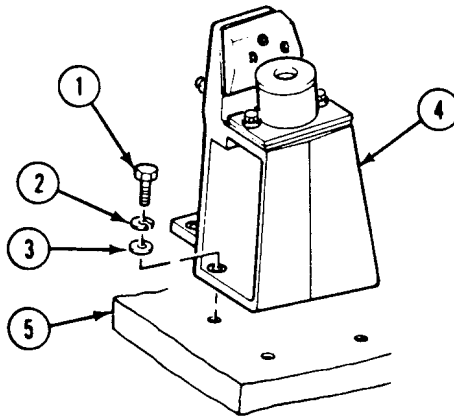
- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Launcher erect (see your -10)

Materials/Parts

- Lockwasher (6)
  - Locknut (2)
  - Locknut (3)
  - Locknut
- 

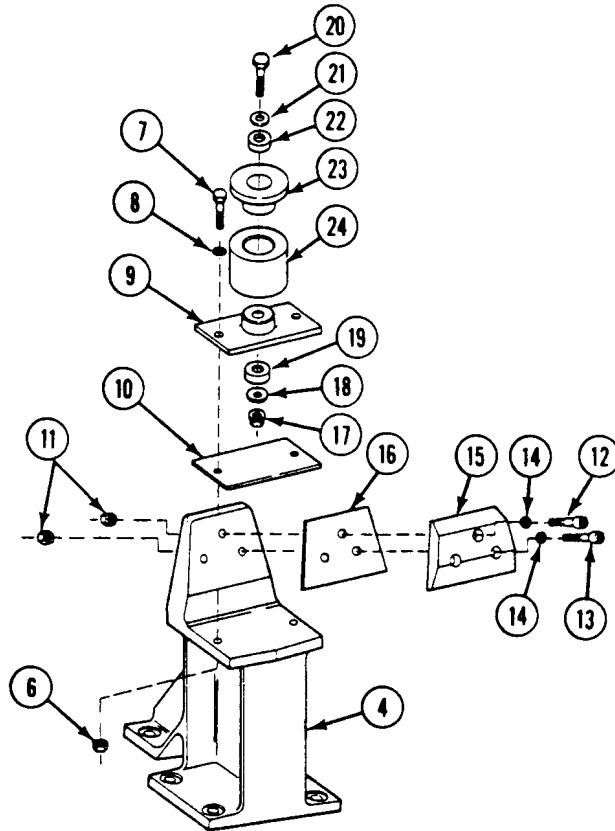
**REMOVAL**

1. Remove six screws (1), lockwashers (2), and washers (3) from high-stow bracket (4). Discard lockwashers.
2. Remove high-stow bracket (4) from deck (5).



**DISASSEMBLY**

1. Remove two locknuts (6), screws (7), washers (8), bumper plate (9), and shim (10) from high-stow bracket (4). Discard locknuts.
2. Remove three locknuts (11), screw (12), two screws (13), three washers (14), plate (15), and shim (16) from high-stow bracket (4). Discard locknuts.
3. Remove locknut (17), washer (18), spacer (19), screw (20), washer (21), spacer (22), plate (23), and bumper (24) from high-stow bracket (4). Discard locknut.



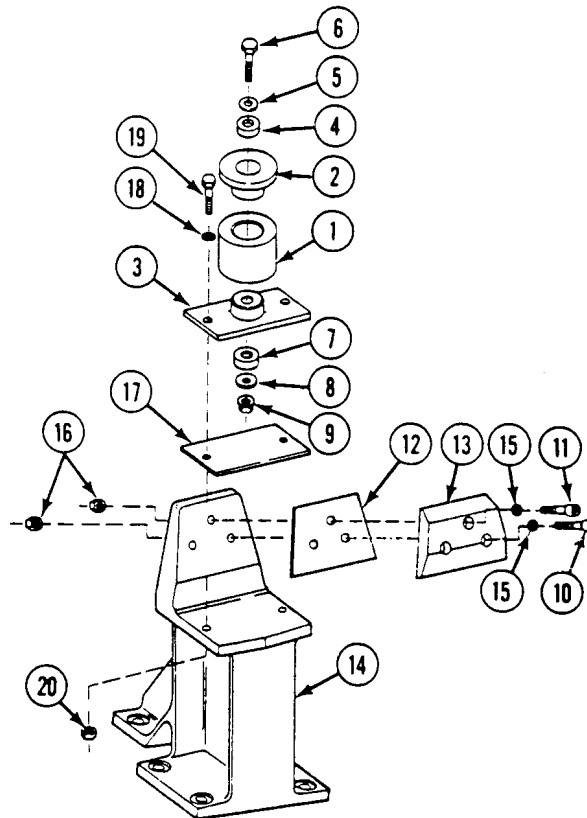
**ASSEMBLY**

1. Install bumper (1) and plate (2) on bumper plate (3). Secure with spacer (4), washer (5), screw (6), spacer (7), washer (8), and new locknut (9).

**NOTE**

**Screws (10) are longer than screw (11).**

2. Install shim (12) and plate (13) on high-stow bracket (14). Secure with three washers (15), screw (11), two screws (10), and three new locknuts (16).
3. Install shim (17) and bumper plate (3) on high-stow bracket (14). Secure with two washers (18), screws (19), and new locknuts (20).



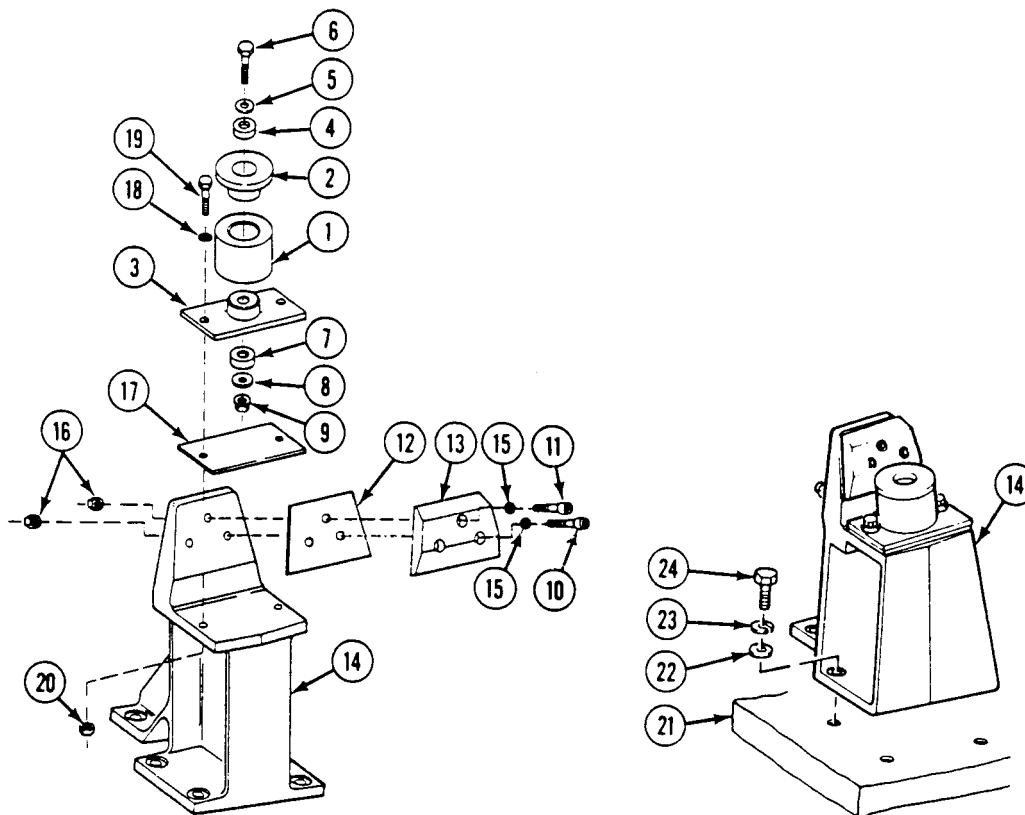
**INSTALLATION**

1. Install high-stow bracket (14) on deck (21). Secure with six washers (22), new lockwashers (23), and screws (24).
2. TIGHTEN SIX SCREWS (24) TO 50-55 LB-FT (68-75 N·M) TORQUE. Use torque wrench.

**CAUTION**

**Excessive clearance between the high stowage erection arm stop and the side plate of the launcher high stow bracket may cause damage to the system.**

3. Adjust clearance between plate (13) and the high stowage erection arm stop.
  - a. With the launcher in the stow position, use a feeler gauge to measure the distance between the high stowage erection arm stop and plate (13) of the launcher high stow bracket (14).
  - b. Repeat for the other side of the carrier and add the two measurements.
  - c. If the sum of the two measurements exceeds .060 inch (1.524 mm), add shims (12) between high stow bracket (14) and plate (13) as required to reduce the sum of the measurements to .060 inch (1.524 mm) or less.



**FOLLOW-THROUGH STEPS**

1. Lower launcher (see your -10).

**END OF TASK**

**REPLACE DRIVER'S SEAT (ALL CONFIGURATIONS)**

**0478 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0478 00-1).
- Installation (page 0478 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

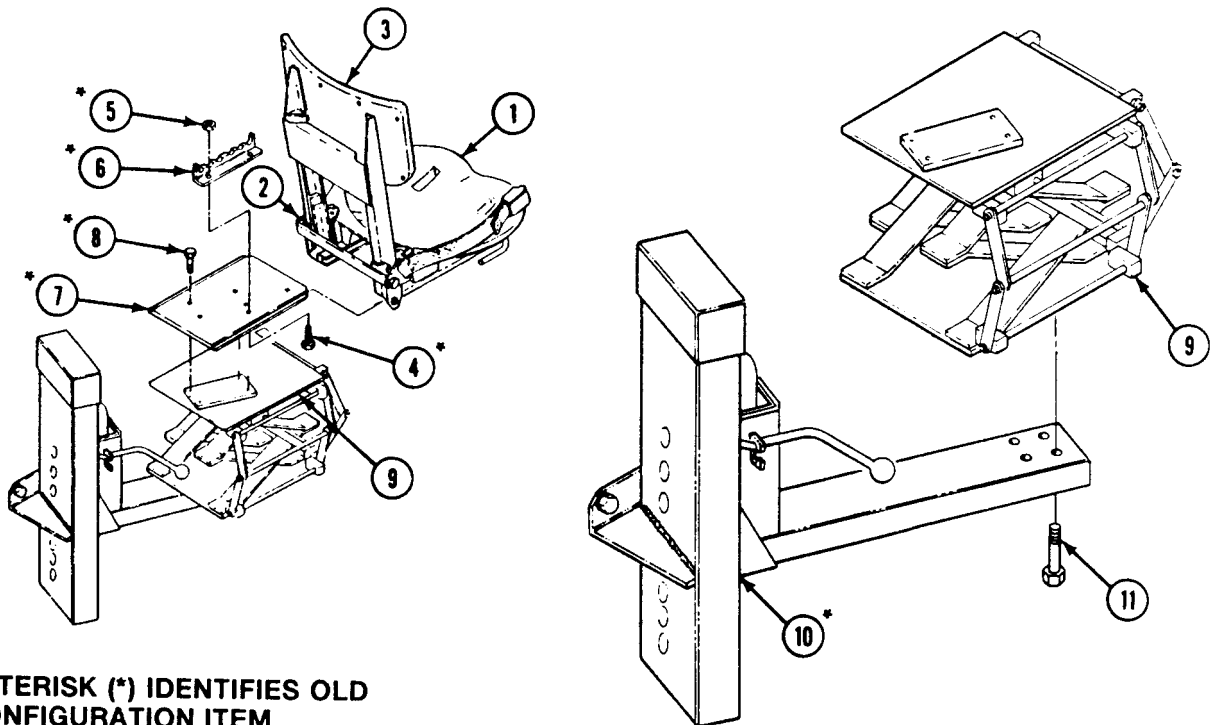
Ramp lowered (see your -10)

Materials/Parts

Locknut (2)

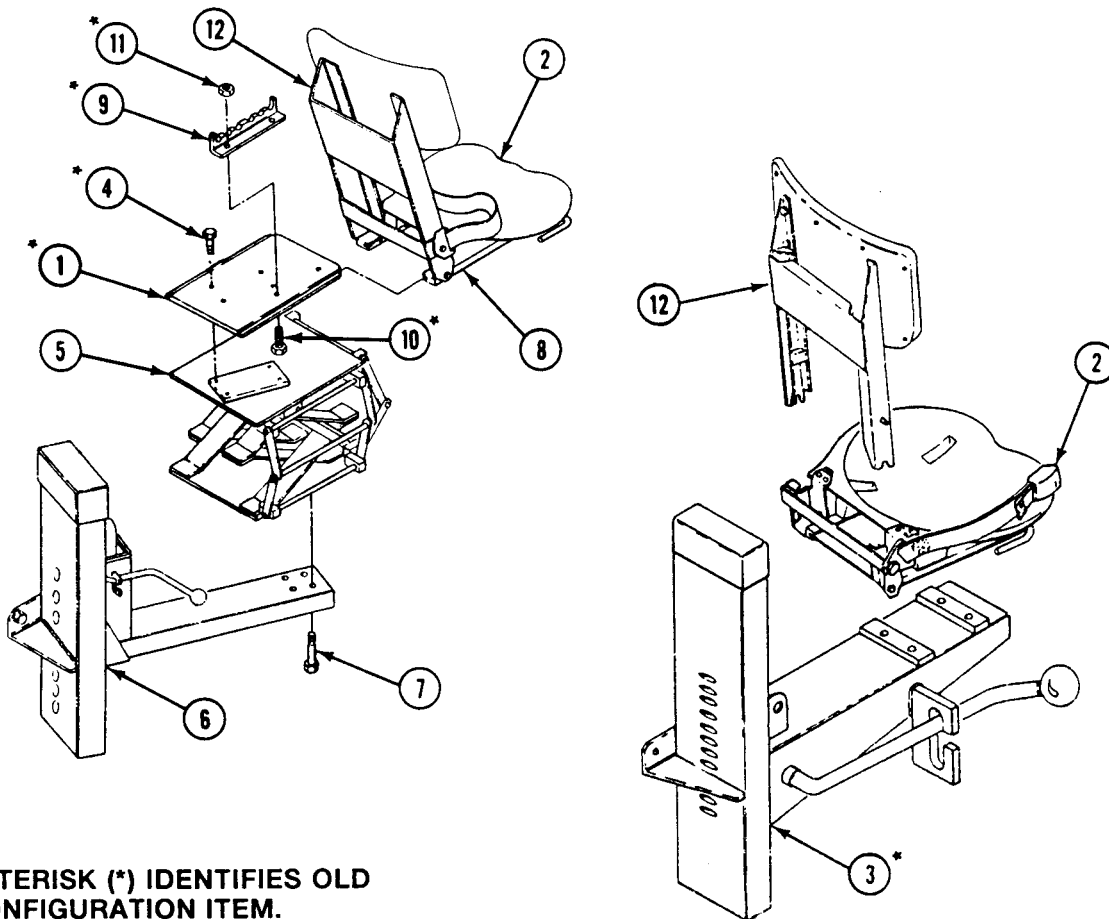
**REMOVAL**

1. Push driver's seat back assembly (1) forward against spring tension of flanges (2) and lift seat back assembly from seat (3).
2. On old configuration seats, remove two screws (4), locknuts (5), and seat lock rack (6) from seat mounting plate (7). Discard locknuts.
3. Slide seat (3) forward. Remove four screws (8) from seat mounting plate (7) and seat impact absorber (9) (on new configuration seats) or post assembly (10) (on old configuration seats). Remove plate (7).
4. On old configuration seats, remove four screws (11) from seat impact absorber (9) and post assembly (10). Remove absorber.



**INSTALLATION**

1. Slide plate (1) into seat (2).
2. On old configuration seats, position plate (1) with seat on post assembly (3). Secure with four screws (4).
3. On new configuration seats, install absorber (5) on post assembly (6). Secure with four screws (7).
4. Position plate (1) on absorber (5). Secure with four screws (4).
5. Position seat rails (8) with mounting plate (1). Slide seat (2) to the rear.
6. Install seat lock rack (9) on seat mounting plate (1). Secure with two screws (10) and new locknuts (11).
7. Push seat back assembly (12) down into seat (2) until it locks into position.



**ASTERISK (\*) IDENTIFIES OLD CONFIGURATION ITEM.**

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**

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**REPAIR DRIVER'S SEAT**

**0479 00**

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**THIS WORK PACKAGE COVERS:**

Disassembly (page 0479 00-2).  
 Assembly (page 0479 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine shutdown (see your -10)  
 Carrier blocked (see your -10)  
 Driver's seat removed (WP 0478 00)

Materials/Parts

Bushing  
 Locknut (4)  
 Locknut (6)  
 Lockwasher (2)  
 Long spring pin (2)  
 Short spring pin (2)

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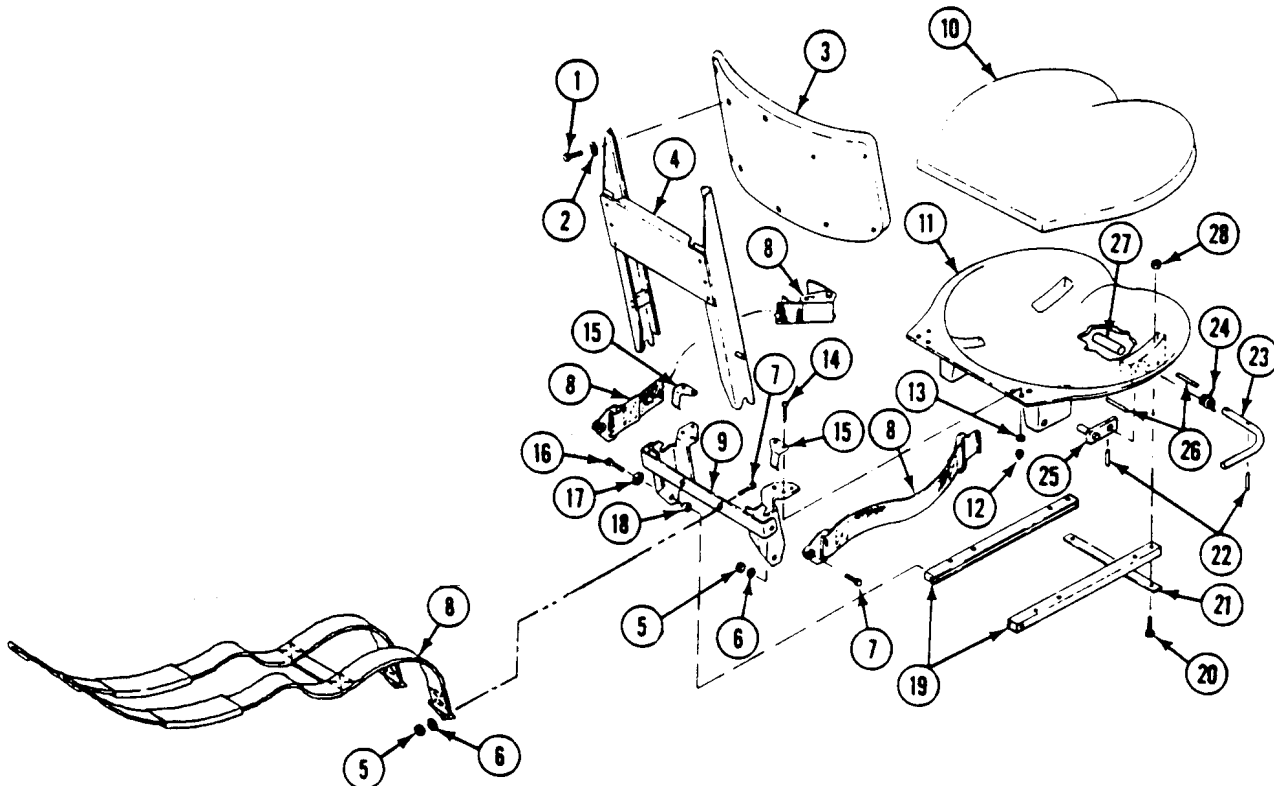
**DISASSEMBLY**

1. Remove four screws (1), washers (2), and backrest (3) from back brace (4).
2. Remove four locknuts (5), washers (6), screws (7), and seatbelt (8) from backrest bracket (9). Discard locknuts.
3. Remove seat cushion (10) from seat (11).
4. Remove six locknuts (12), washers (13), screws (14), and two clips (15) from seat (11). Discard locknuts.
5. Remove two screws (16), lockwashers (17), spacers (18), and bracket (9) from two rails (19). Discard lockwashers.
6. Remove eight screws (20), brace (21), and seat (11) from two rails (19).
7. Remove two short spring pins (22) from handle (23). Discard spring pins.
8. Remove handle (23), spring (24), and latch (25) from seat (11).
9. Remove two long spring pins (26) from seat (11). Discard spring pins.

**NOTE**

**If inspection shows that bushing (27) needs to be replaced, perform Step 10. Be careful. Do not damage seat when straightening ends.**

10. Straighten ends and remove bushing (27) from seat (11). Discard bushing.
11. If locknut(s) (28) need to be replaced, drive out old locknut(s) from seat (11). Discard locknut(s).





**ASSEMBLY**

1. If removed, install new bushing (1) in seat (2). Peen both ends snugly to seat and secure.
2. Install two new long spring pins (3) in seat (2).

**NOTE**

**If handle (4) is replaced, use latch (5) as a template. Drill 1/8 inch (3 mm) hole in handle for spring pin (6).**

3. Install latch (5), spring (7), and handle (4) in seat (2). Secure with two new short spring pins (6).
4. If locknut(s) (8) was removed, install new locknut(s) (8) in seat (2).

**NOTE**

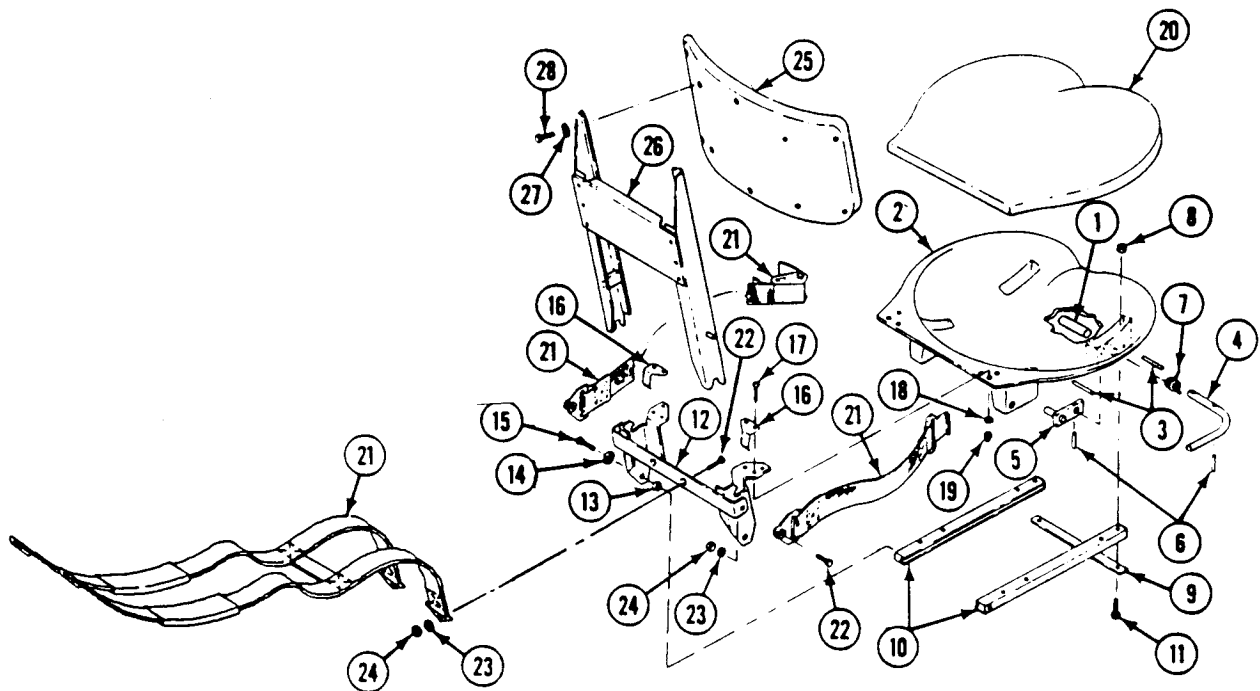
**Install brace (9) between rails (10) and front two screws (11).**

5. Secure seat (2) to rails (10) with brace (9) and eight screws (11).
6. Align backrest bracket (12) and two spacers (13) with two rails (10). Secure with two new lockwashers (14) and screws (15).
7. Align two clips (16) and bracket (12) with seat (2). Secure with six screws (17), washers (18), and new locknuts (19).
8. Install seat cushion (20) on seat (2).

**NOTE**

**Install seatbelt (21) with buckle on left side of seat (2).**

9. Align seatbelt (21) with bracket (12). Secure with four screws (22), washers (23), and new locknuts (24).
10. Align backrest (25) with back brace (26). Secure with four washers (27) and screws (28).



**FOLLOW-THROUGH STEPS**

1. Install driver's seat (WP 0478 00).

**END OF TASK**



**REPLACE DRIVER'S SEAT MOUNT (OLD CONFIGURATION)**

**0480 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0480 00-1).  
 Installation (page 0480 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

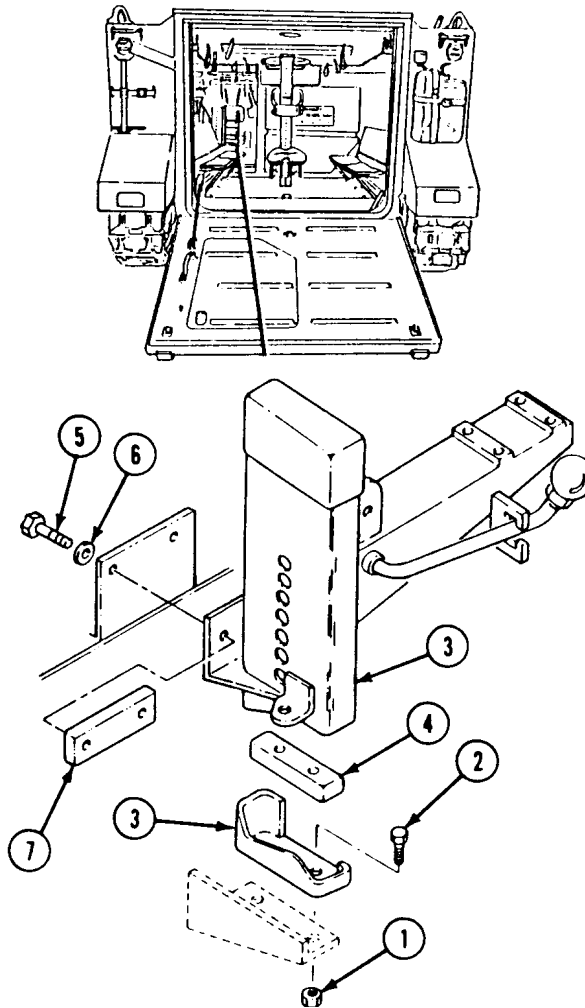
Driver's seat removed (WP 0478 00)

Materials/Parts

Locknut (2)

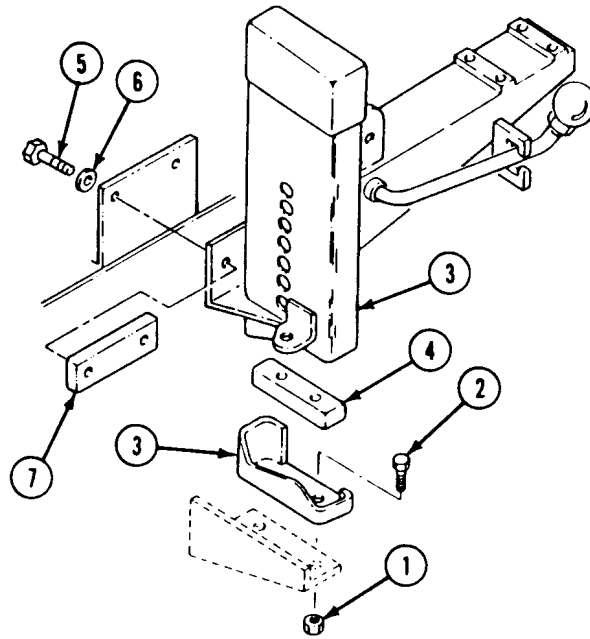
**REMOVAL**

1. Remove two locknuts (1) and screws (2) from seat mount (3). Discard locknuts.
2. Remove pad (4) from seat mount (3).
3. Remove two screws (5), washers (6), strap (7), and seat mount (3) from driver's sponson brackets.



**INSTALLATION**

1. Place seat mount (3) on driver's sponson brackets.
2. Align strap (7) with seat mount and sponson bracket. Secure with two washers (6) and screws (5).
3. Install pad (4) in seat mount (3).
4. Secure seat mount (3) to sponson bracket with two screws (2) and new locknuts (1).

**FOLLOW-THROUGH STEPS**

1. Install driver's seat (WP 0478 00).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**

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**REPAIR DRIVER'S SEAT MOUNT (OLD CONFIGURATION)**

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**0481 00**

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**THIS WORK PACKAGE COVERS:**

- Disassembly (page 0481 00-2).
  - Clean, Inspect, and Repair (page 0481 00-2).
  - Assembly (page 0481 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

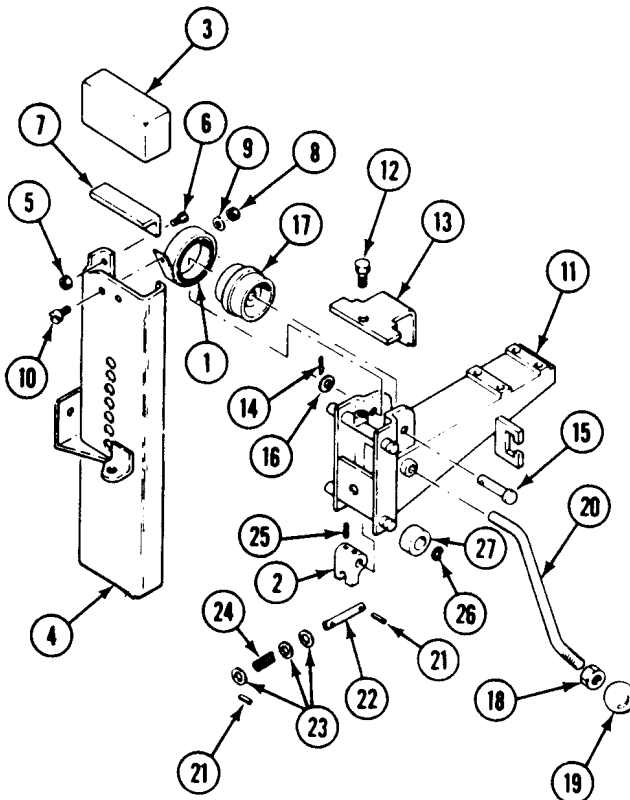
- Engine stopped/shutdown (see your -10)
- Carrier blocked (see your -10)
- Driver's seat removed (WP 0478 00)
- Driver's seat post removed (WP 0483 00)

Materials/Parts

- Cotter pin
  - Locknut (2)
  - Locknut (2)
  - Spring pin (4)
-

**REPAIR DRIVER'S SEAT MOUNT (OLD CONFIGURATION) — Continued****0481 00****DISASSEMBLY**

1. Check torsion springs (1). Spring should be able to raise seat to top position when seat is released. Replace weak springs.
2. Check spring (2). Spring must be able to return handle to release position. Replace broken or weak spring.
3. Remove plastic cap (3) from seat post (4).
4. Remove two locknuts (5), screws (6), and stiffener (7) from seat post (4). Discard locknuts.
5. Remove two locknuts (8), washers (9), screws (10), and torsion springs (1) from seat post (4). Remove seat support (11) from seat post. Discard locknuts.
6. Remove screw (12) and cover (13) from seat support (11).
7. Remove cotter pin (14) from pin (15). Discard cotter pin.
8. Remove pin (15), washer (16), spool (17), and two torsion springs (1) from seat support (11).
9. Loosen jamnut (18). Remove knob (19) and jamnut from handle (20).
10. Remove two spring pins (21) from straight pin (22). Discard spring pins.
11. Remove straight pin (22), three washers (23), and spring (24) from seat support (11).
12. Remove two spring pins (25) from cam (2) and handle (20). Remove cam and handle from seat support (11). Discard spring pins.
13. Remove four retainer rings (26) and rollers (27) from seat support (11).

**CLEAN, INSPECT, AND REPAIR**

1. Check parts for corrosion, distortion, cracks, breaks, and loose or missing parts. Repair or replace damaged or missing parts.

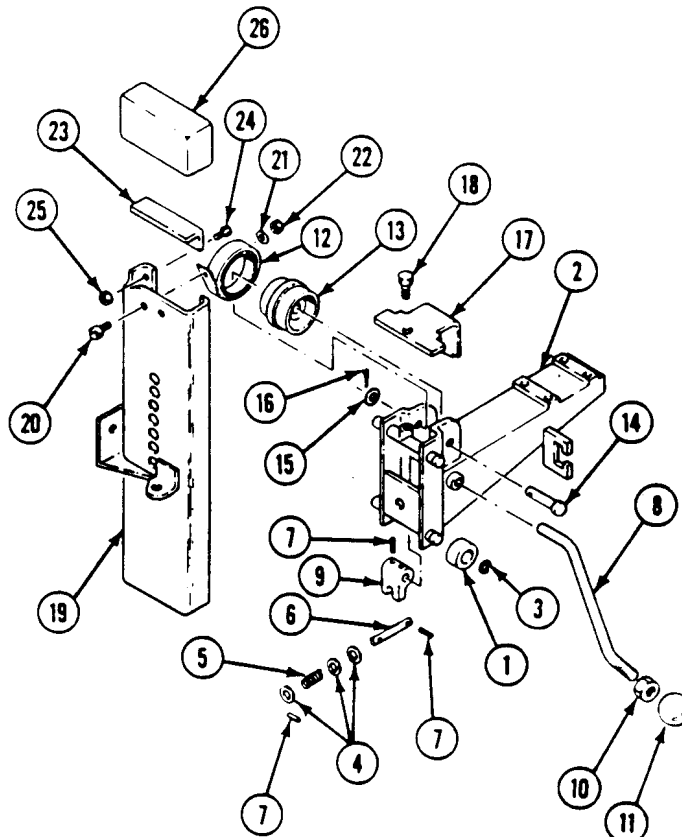
**ASSEMBLY**

1. Install four rollers (1) on seat support (2). Secure with four retainer rings (3).
2. Install three washers (4), spring (5), and straight pin (6) in seat support (2). Secure with two new spring pins (7).

**NOTE**

**If handle (8) is replaced, use cam (9) as a template. Drill two 1/8 inch (3 mm) holes in handle for spring pins (7).**

3. Install cam (9) and handle (8) in seat support (2). Secure with two new spring pins (7).
4. Install jamnut (10) and knob (11) on handle (8). Tighten jamnut to secure knob.
5. Place two torsion springs (12) on spool (13). Align spool with seat support (2). Secure with pin (14), washer (15), and new cotter pin (16).
6. Install cover (17) on seat support (2). Secure with screw (18).
7. Install seat support (2) in seat post (19). Align torsion springs (12) with seat post. Secure with two screws (20), washers (21), and new locknuts (22).
8. Align stiffener (23) with seat post (19). Secure with two screws (24) and new locknuts (25).
9. Install cap (26) on seat post (19).



**FOLLOW-THROUGH STEPS**

1. Install driver's seat post (WP 0483 00).
2. Install driver's seat (WP 0478 00).

**END OF TASK**





**REPLACE DRIVER'S FOOTREST**

**0482 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0482 00-1).  
 Installation (page 0482 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

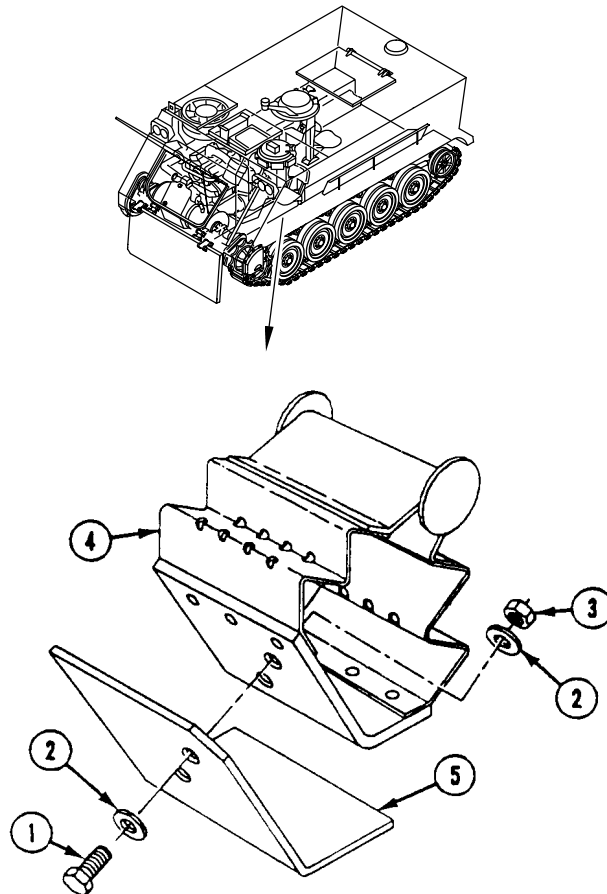
Carrier blocked (see your -10)

Materials/Parts

Locknut (2)

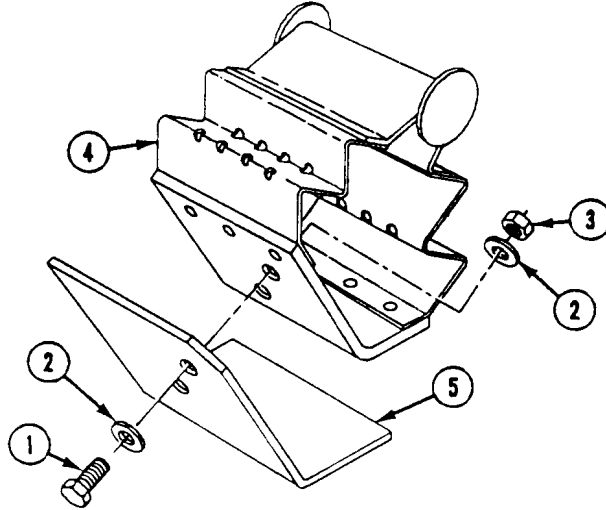
**REMOVAL**

1. Remove two screws (1), four washers (2), two locknuts (3), and footrest (4) from bracket (5). Discard locknuts.



**INSTALLATION**

1. Install footrest (4) on bracket (5). Secure with two new locknuts (3), four washers (2), and two screws (1).

**END OF TASK**

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**REPLACE/REPAIR DRIVER'S SEAT POST ASSEMBLY**

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**0483 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0483 00-2).
  - Disassembly (page 0483 00-3).
  - Clean, Inspect, and Repair (page 0483 00-5).
  - Assembly (page 0483 00-5).
  - Installation (page 0483 00-8).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Helper (H)

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Snap Ring Pliers (WP 0780 00, Item 45)

Equipment Condition

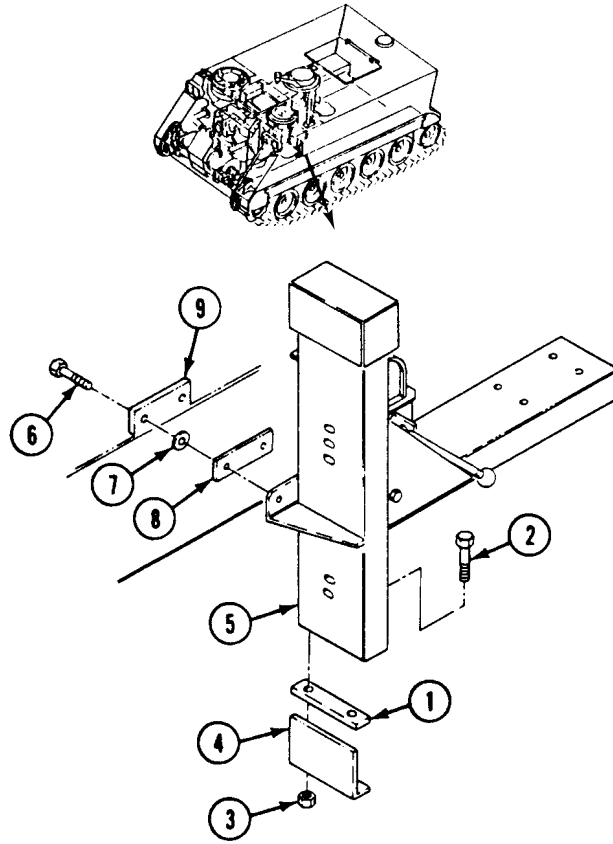
- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Driver's seat assembly removed (WP 0478 00)
- Driver's seat impact absorber removed (WP 0478 00)

Materials/Parts

- Cotter pin
  - Locknuts (2)
  - Locknuts (4)
  - Locknuts (2)
  - Locknuts (4)
  - Spring Pin (4)
-

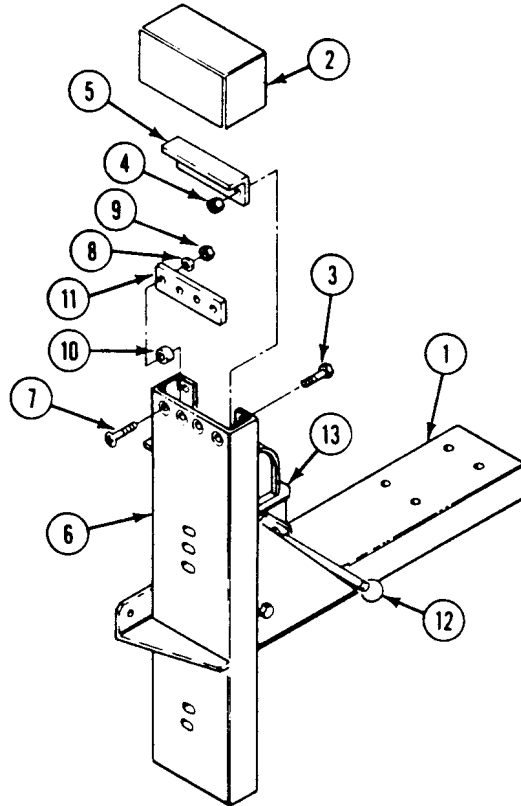
## REMOVAL

1. Remove bumper (1), two screws (2), and locknuts (3) from lower support bracket (4). Discard locknuts.
2. Support post assembly (5) and remove two screws (6), washers (7), and strip (8) from post assembly and sponson bracket (9). Remove post assembly from carrier. Have helper assist.

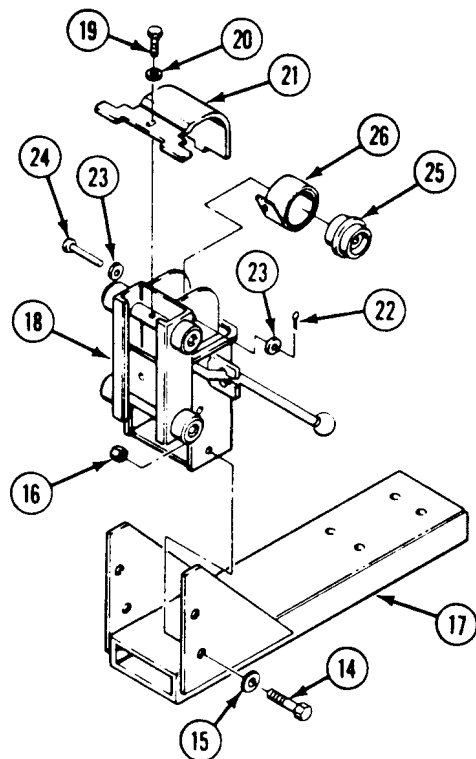


**DISASSEMBLY**

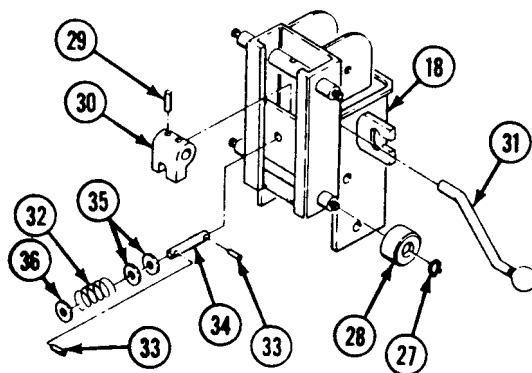
1. Lower seat support (1) to bottom hole. Remove cap (2), two screws (3), locknuts (4), and stiffener (5) from post (6). Discard locknuts.
2. Remove four screws (7), washers (8), locknuts (9), two spacers (10), and plate (11) from post (6). Discard locknuts.
3. Hold crank (12) up and slide adjuster (13) up and out of post (6).



4. Remove four screws (14), washers (15), locknuts (16), and support (17) from adjuster (18). Discard locknuts.
5. Remove screw (19), washer (20), and spring cover (21) from adjuster (18). Remove cover.
6. Remove cotter pin (22), washer (23), pin (24), washer (23), and spool (25) with two springs (26) from adjuster (18). Remove springs from spool. Discard cotter pin.



7. Remove four snap rings (27) and rollers (28). Use snap ring pliers.
8. Work through slot on top of adjuster (18), and remove two spring pins (29) from cam (30). Remove crank (31). Discard spring pins.
9. Compress spring (32) against wall of adjuster (18). Remove two spring pins (33) from straight pin (34). Remove straight pin, two washers (35), and cam (30) from inside adjuster. Discard spring pins.
10. Remove spring (32) and washer (36) from adjuster (18).

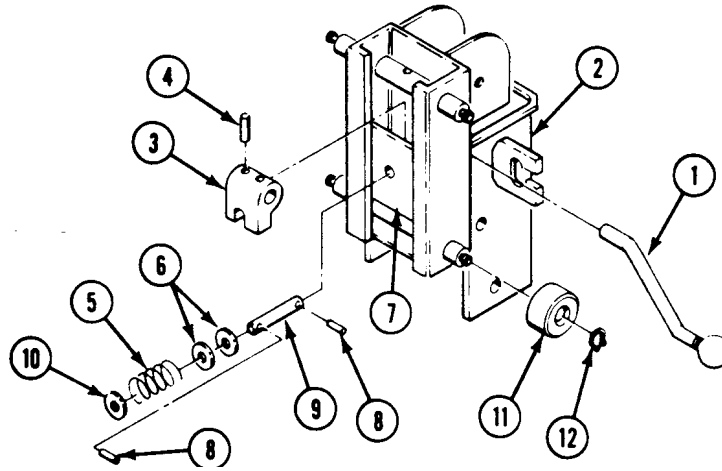


**CLEAN, INSPECT, AND REPAIR**

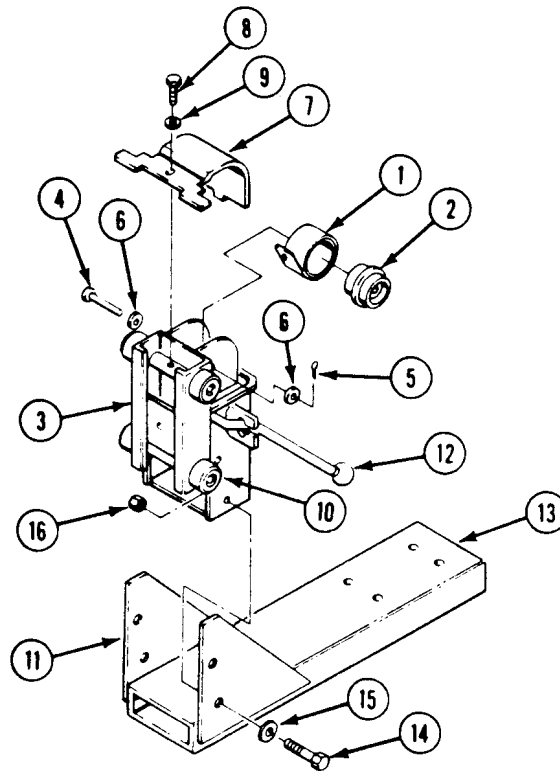
1. Check parts for corrosion, distortion, cracks, breaks, and loose or missing parts. Repair or replace damaged and missing parts.

**ASSEMBLY**

1. Place crank (1) in adjuster (2) and install cam (3). Secure with two new spring pins (4).
2. Align spring (5) and two washers (6) with holes of stiffener (7) and adjuster (2).
3. Install new spring pin (8) in hole closest to end of straight pin (9). Install two washers (6) on straight pin from other end and push up against spring pin. Slide straight pin through slot in cam (3), hole in housing, spring (5), and washer (10), and into hole in stiffener (7).
4. Compress spring (5) against wall of adjuster (2) and install new spring pin (8) outboard of washers (6). Check operation of crank (1) and straight pin (9).
5. Install four rollers (11) on shaft of adjuster (2) and secure with four snap rings (12). Use snap ring pliers.



6. Install two springs (1) on spool (2) and install on top of adjuster (3). Install pin (4) through spool. Secure with new cotter pin (5) and two washers (6).
7. Pry out two springs (1) and route under upper roller shaft. Extend springs 2-3 inches (51-76 mm) beyond roller shaft.
8. Install spring cover (7) on adjuster (3). Secure with one screw (8) and washer (9).
9. Place lower roller (10) inside top of post (11). Raise crank (12) and slide adjuster (3) down into post until holes in post line up with holes in springs (1).
10. Install support (13) on adjuster (3). Secure with four screws (14), washers (15), and new locknuts (16).



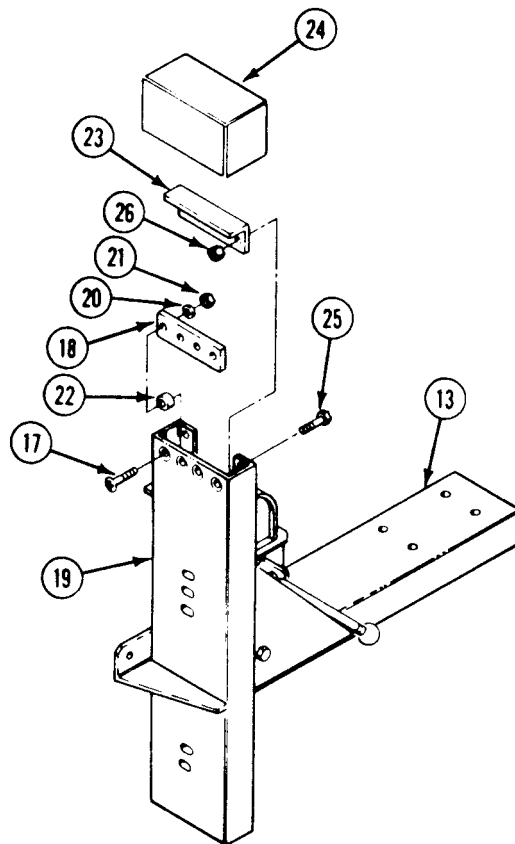


11. Install two screws (17) into inboard holes and install plate (18) on post (19) with two screws (17), washers (20), and new locknuts (21). Tighten locknuts two turns only at this time.
12. Place spacers (22) between post (19) and plate (18) at the outboard holes. Install two screws (17) through spacers and plate. Secure with two washers (20) and new locknuts (21).

### **CAUTION**

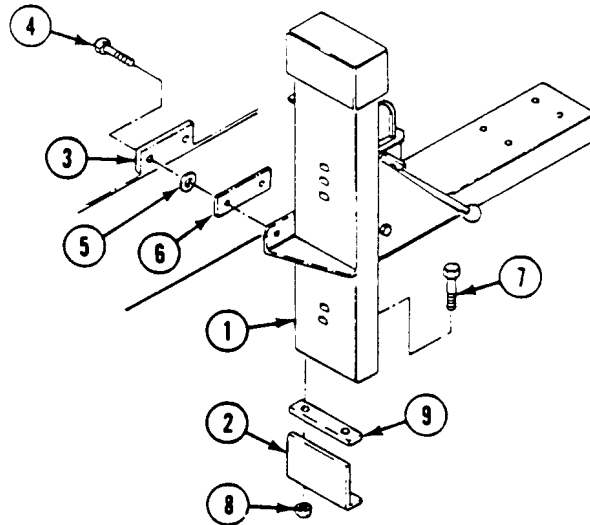
**Take care not to tighten the locknuts too tight or the plate will bend.**

13. Tighten two locknuts (21), installed in Step 11, just enough to bottom against plate (18).
14. Lower seat support (13) all the way down. Place stiffener (23) in post (19) and install cap (24). Secure with two screws (25) and new locknuts (26).



**INSTALLATION**

1. Place post assembly (1) on lower bracket (2) and against sponson bracket (3). Secure post to sponson bracket with two screws (4), washers (5), and strip (6).
2. Secure lower end of post assembly (1) to lower bracket (2) with two screws (7) and new locknuts (8).
3. Install bumper (9) inside post (1).

**FOLLOW-THROUGH STEPS**

1. Install driver's seat impact absorber (WP 0478 00).
2. Install driver's seat assembly (WP 0478 00).

**END OF TASK**

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**REPLACE COMMANDER'S SEAT AND POST**

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**0484 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0484 00-1).  
 Installation (page 0484 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

References

WP 0490 00

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Commander's platform removed (WP 0491 00 or  
 WP 0492 00)

Materials/Parts

Locknut

Locknut

Lockwasher

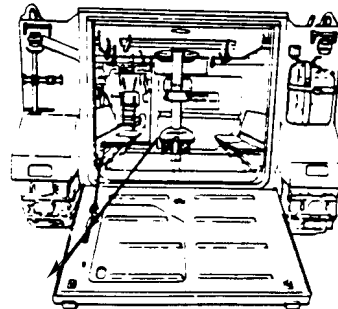
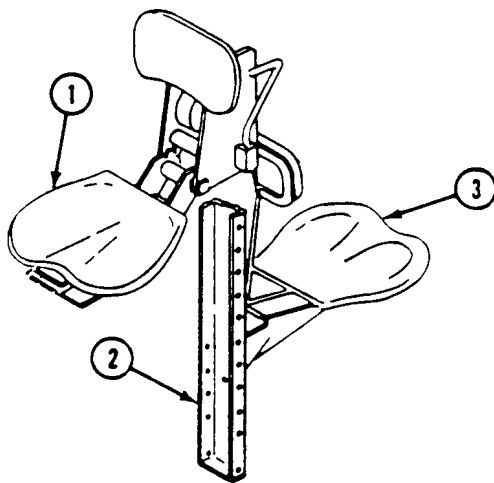
Personnel Required

Unit Mechanic

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**REMOVAL**

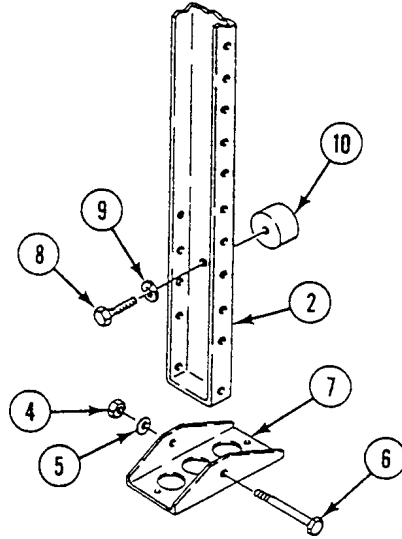
1. Unlock seat lock. Remove seat assembly (1) from post (2).
2. If post (2) is to be replaced, remove commander's jump seat (3) from post (WP 0490 00).



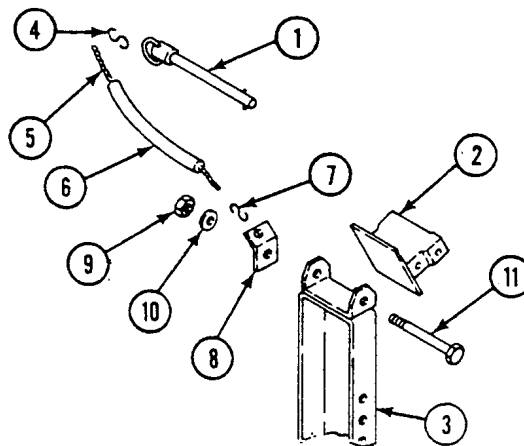
REPLACE COMMANDER'S SEAT AND POST — Continued

0484 00

3. Remove locknut (4), washer (5), screw (6), and post (2) from base (7). Discard locknut.
4. Remove base (7) from hull crossmember.
5. Remove screw (8), lockwasher (9), and nut (10) from post (2). Discard lockwasher.

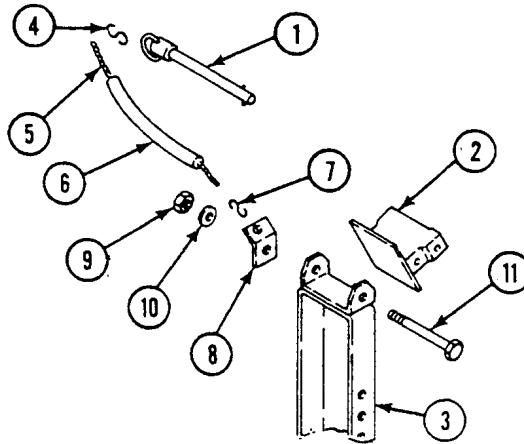


6. Remove quick release pin (1) from link (2) and hull top plate brackets. Remove seat and post assembly (3) from carrier.
7. Open both ends of hook (4). Remove from pin (1) and chain (5).
8. Remove tube (6) from chain (5).
9. Open both ends of hook (7). Remove hook from chain (5) and bracket (8).
10. Remove locknut (9), washer (10), bracket (8), link (2), and screw (11) from post (3). Discard locknut.

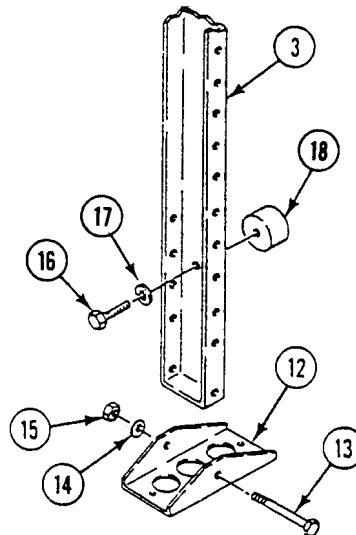


**INSTALLATION**

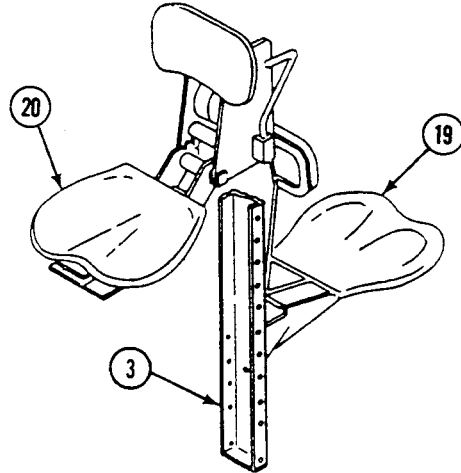
1. Align link (2) and bracket (8) with post (3). Secure with screw (11), washer (10), and new locknut (9).
2. Install hook (7) in bracket (8) and chain (5). Squeeze both ends of hook to secure.
3. Install tube (6) on chain (5).
4. Install hook (4) on chain (5) and quick release pin (1). Squeeze both ends of hook to secure.
5. Align link (2) with hull top plate brackets. Secure with pin (1).



6. Install base (12) in hull crossmember.
7. Align post (3) with base (12). Secure with screw (13), washer (14), and new locknut (15).
8. Install screw (16), new lockwasher (17), and nut (18) on post (3).



9. Install commander's jump seat (19) on post assembly (3) (WP 0490 00).
10. Hold seat lock in unlocked position. Install seat assembly (20) on post (3).

**FOLLOW-THROUGH STEPS**

1. Install commander's platform (WP 0491 00 or WP 0492 00).

**END OF TASK**

**REPLACE COMMANDER'S SEAT AND POST (M1064 ONLY)**

**0485 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0485 00-1).  
 Installation (page 0485 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Commander's platform removed (WP 0491 00 or  
 WP 0492 00)

Rifle rack removed (WP 0493 00)

Materials/Parts

Locknut

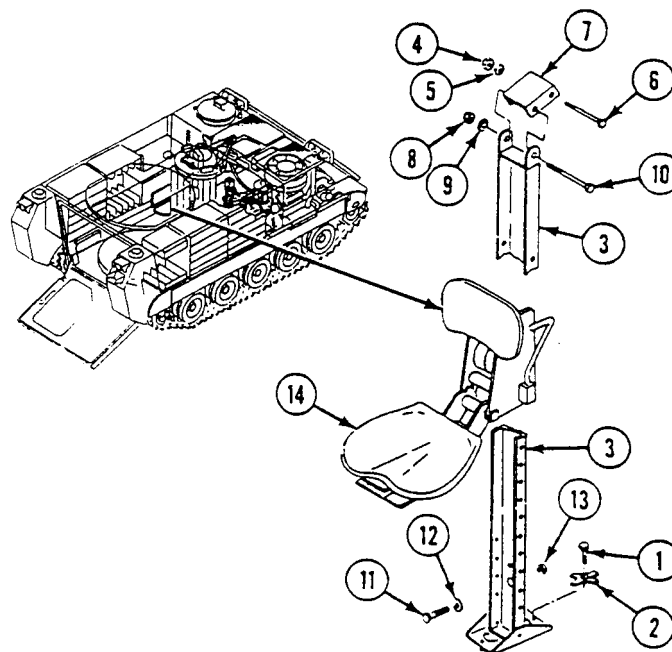
Locknut

Lockwasher

Tablock washer (2)

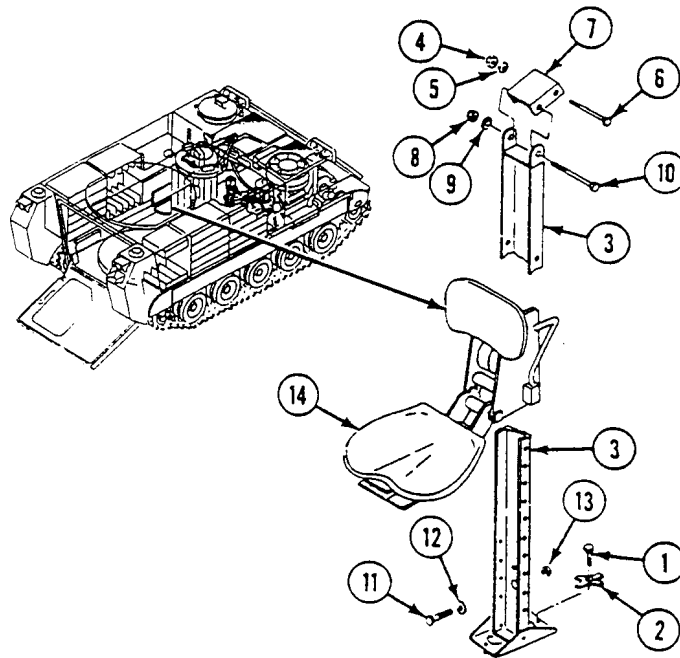
**REMOVAL**

1. Remove two screws (1) and tablock washers (2) from base of post assembly (3). Discard tablock washers.
2. Remove locknut (4), washer (5), screw (6), and link (7) from hull top plate brackets. Discard locknut.
3. Remove seat and post (3) from carrier.
4. Remove locknut (8), washer (9), link (7), and screw (10) from post (3). Discard locknut.
5. Remove screw (11), lockwasher (12), and nut (13) from post (3). Discard lockwasher.
6. Unlock seat lock. Remove seat assembly (14) from post (3).



**INSTALLATION**

1. Hold seat lock in unlocked position. Install seat assembly (14) on post (3).
2. Align nut (13) with post (3). Secure with new lockwasher (12) and screw (11).
3. Align link (7) with post (3). Secure with screw (10), washer (9), and new locknut (8).
4. Place post and seat assembly (14) in carrier. Align link (7) with hull top plate brackets. Secure with screw (6), washer (5), and new locknut (4).
5. Align base of post (3) with hull crossmember. Secure with two new tablock washers (2) and screws (1). Bend tabs on washers to secure screws.

**FOLLOW-THROUGH STEPS**

1. Install rifle rack (WP 0493 00).
2. Install commander's platform (WP 0491 00 or WP 0492 00).

**END OF TASK**



**REPLACE/REPAIR COMMANDER'S SEAT (M1068 ONLY)**

**0486 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0486 00-1).
- Disassembly (page 0486 00-2).
- Assembly (page 0486 00-6).
- Installation (page 0486 00-4).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

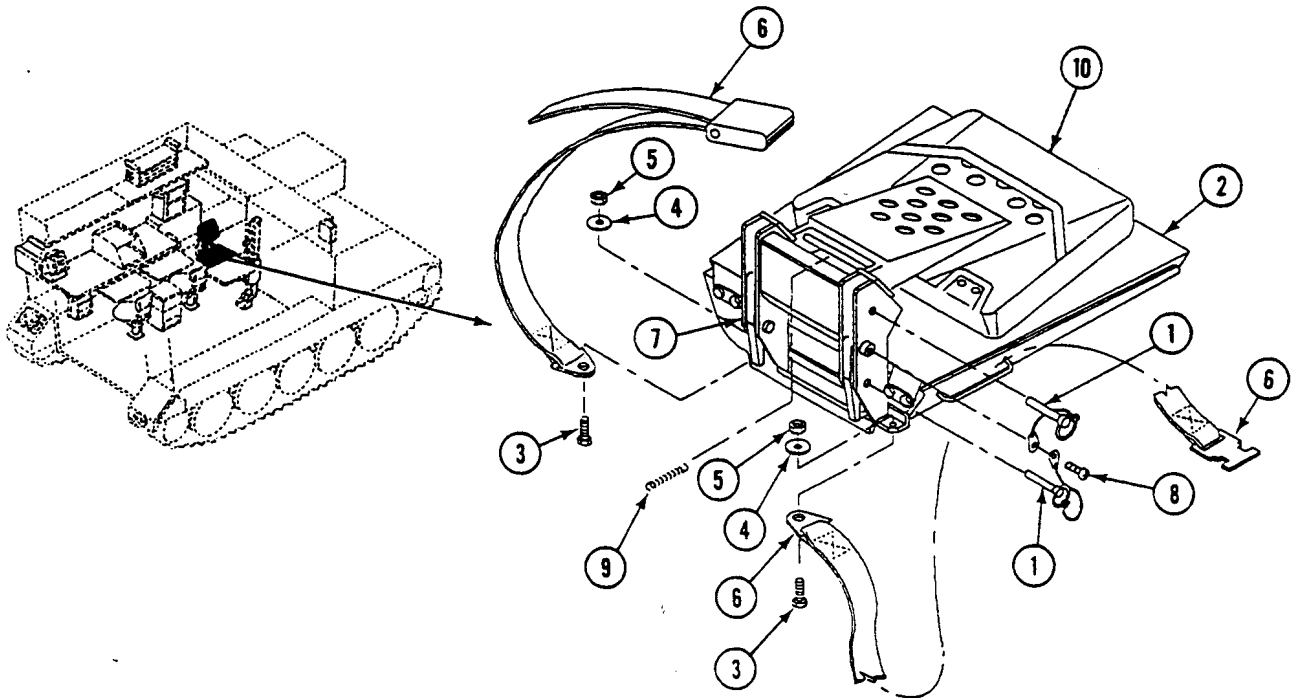
Materials/Parts

Cotter pin (2)

Locknut (2)

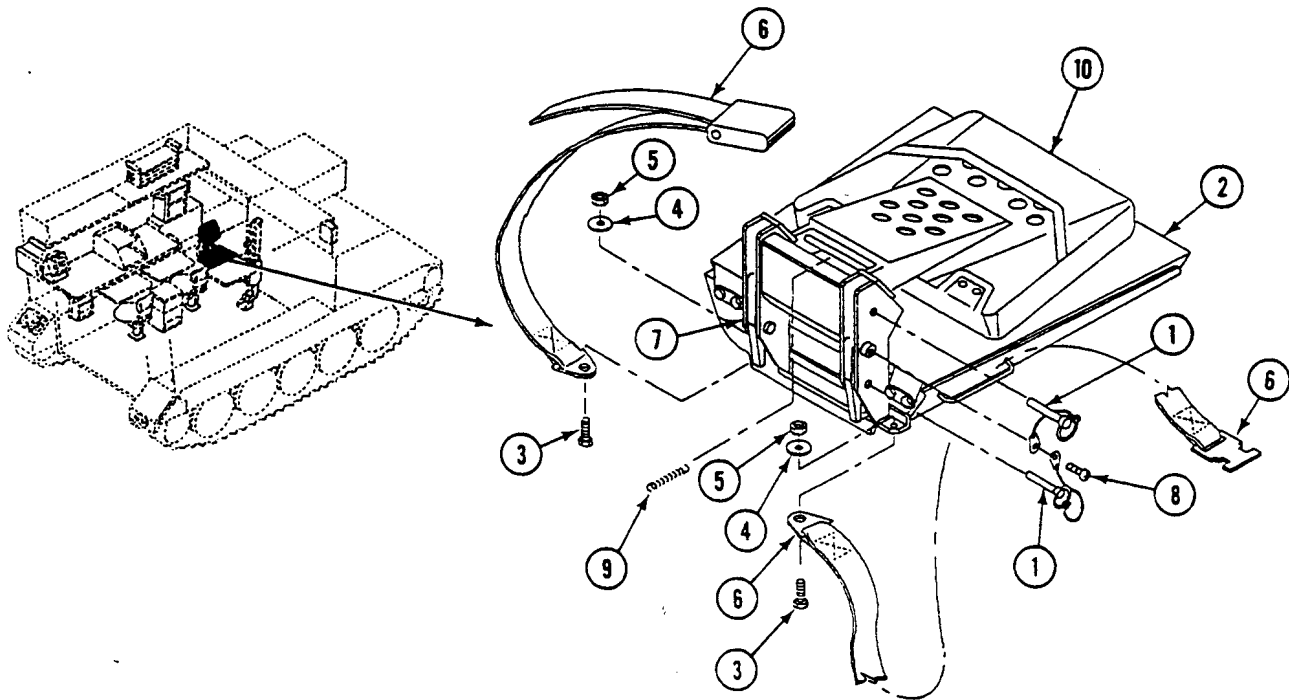
**REMOVAL**

1. Remove four pins (1) securing commander's seat (2) to track bracket.
2. Remove commander's seat (2) from carrier.



**DISASSEMBLY**

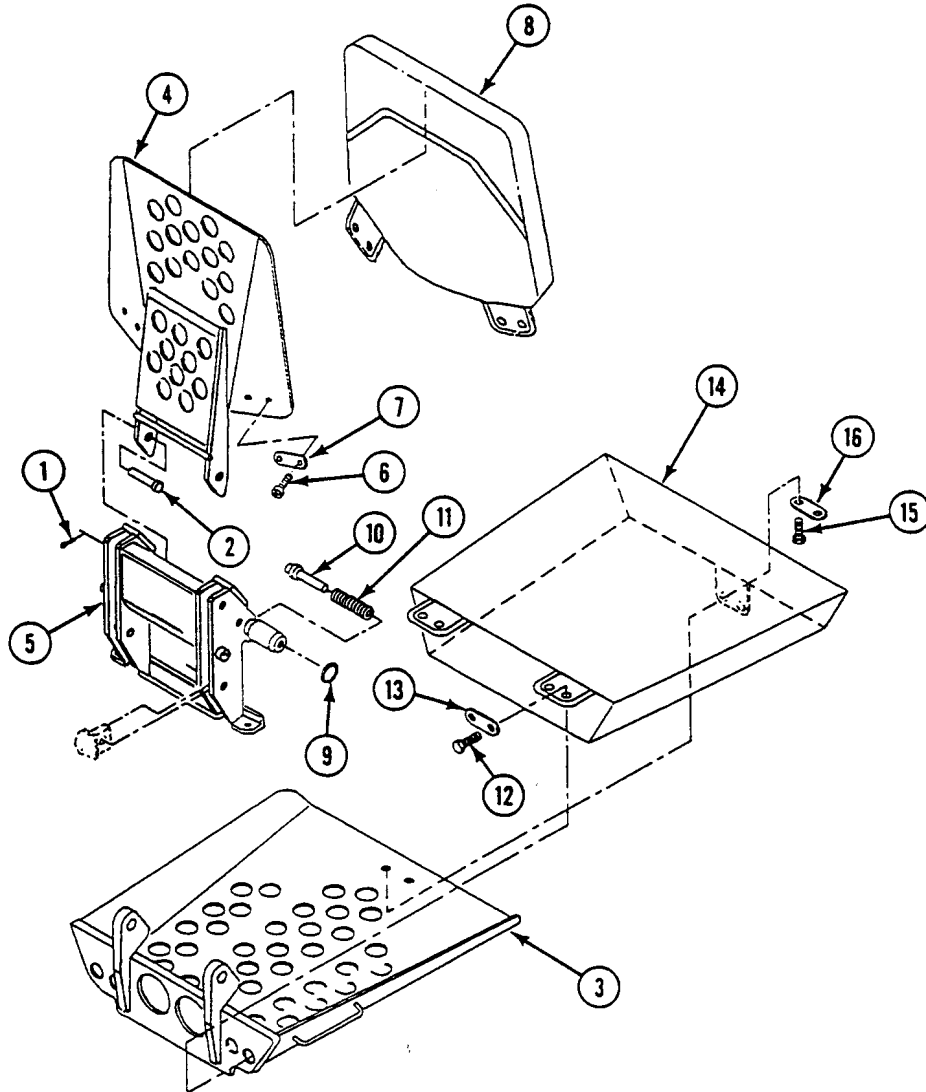
1. Remove two screws (3), washers (4), locknuts (5), and belts (6) from seat bracket (7). Discard locknuts.
2. Remove two screws (8) and four pins (1) from seat bracket (7).
3. Remove two springs (9) from seat back (10) and seat bracket (7).



REPLACE/REPAIR COMMANDER'S SEAT (M1068 ONLY) — Continued

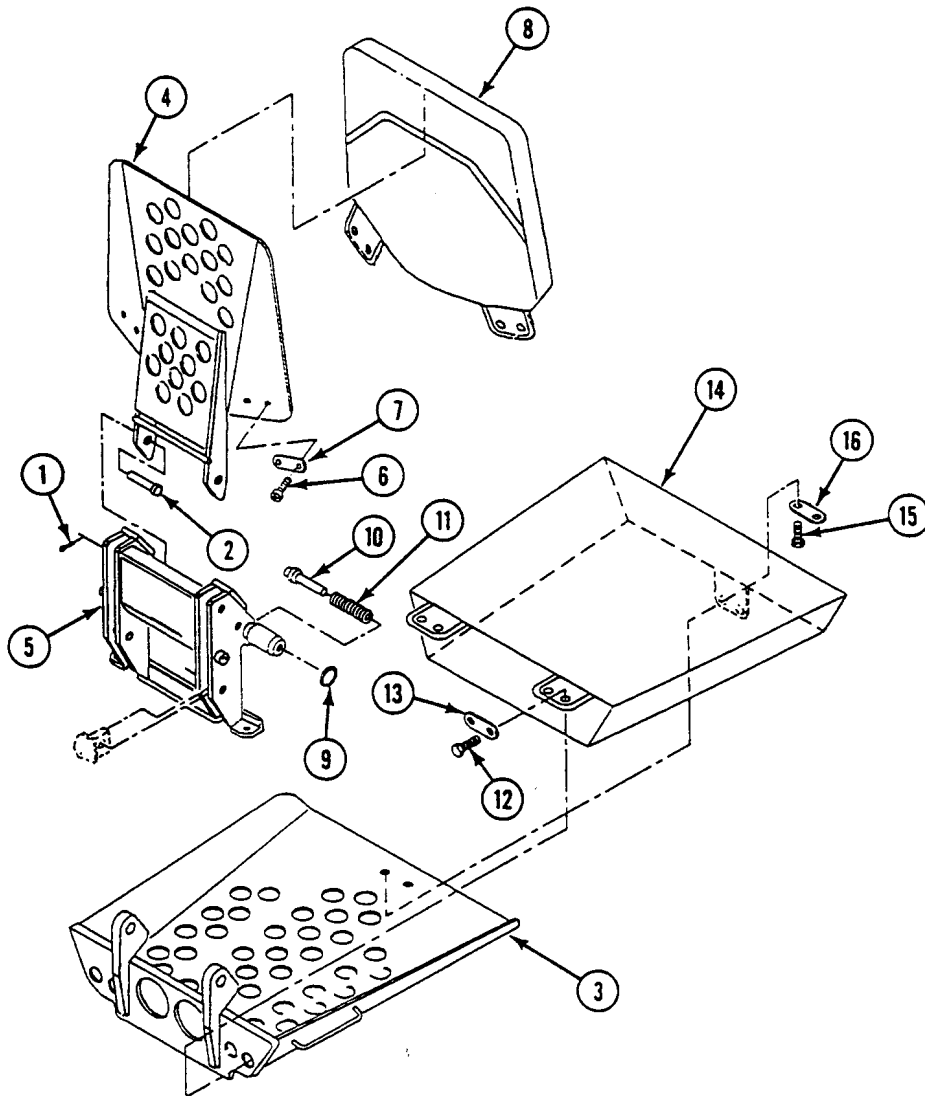
0486 00

4. Remove two cotter pins (1), pins (2), seat bottom (3), and seat back (4) from seat bracket (5). Discard cotter pins.
5. Remove four screws (6), two retainers (7), and back cushion (8) from seat back (4).
6. Remove ring (9), pin (10), and spring (11) from seat bracket (5).
7. Remove four screws (12) and two retainers (13) from cushion (14) and seat bottom (3).
8. Remove two screws (15), retainer (16), and cushion (14) from seat bottom (3).

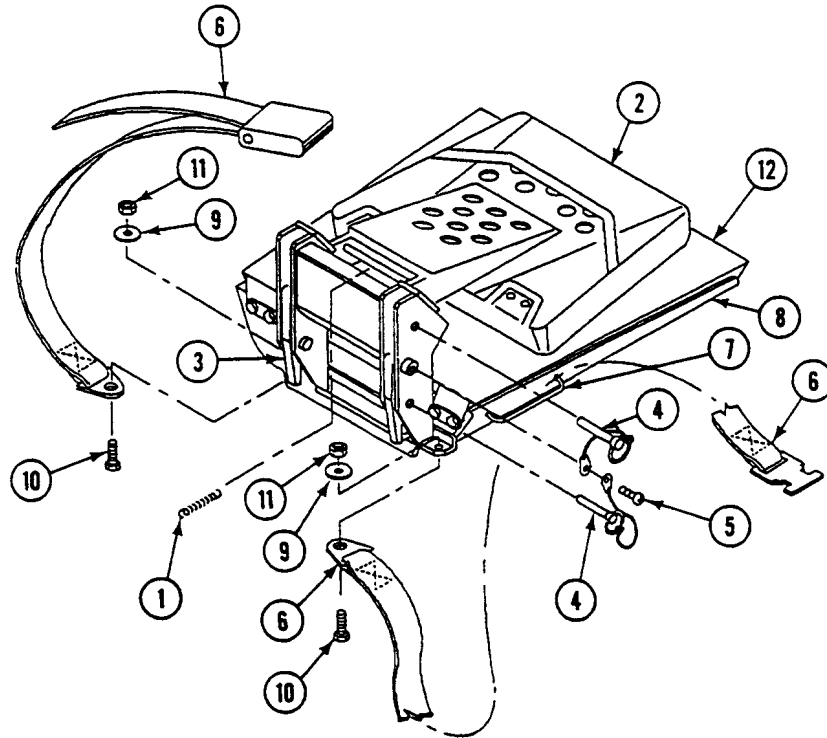


**ASSEMBLY**

1. Position cushion (14) on seat bottom (3). Secure with retainer (16), two screws (15), two retainers (13), and four screws (12).
2. Position cushion (8) on seat back (4). Secure with two retainers (7), and four screws (6).
3. Position seat bracket (5) on seat bottom (3), and seat back (4) on seat bracket (5). Secure with two pins (2) and new cotter pins (1).
4. Install spring (11), pin (10), and ring (9) in seat bracket (5).

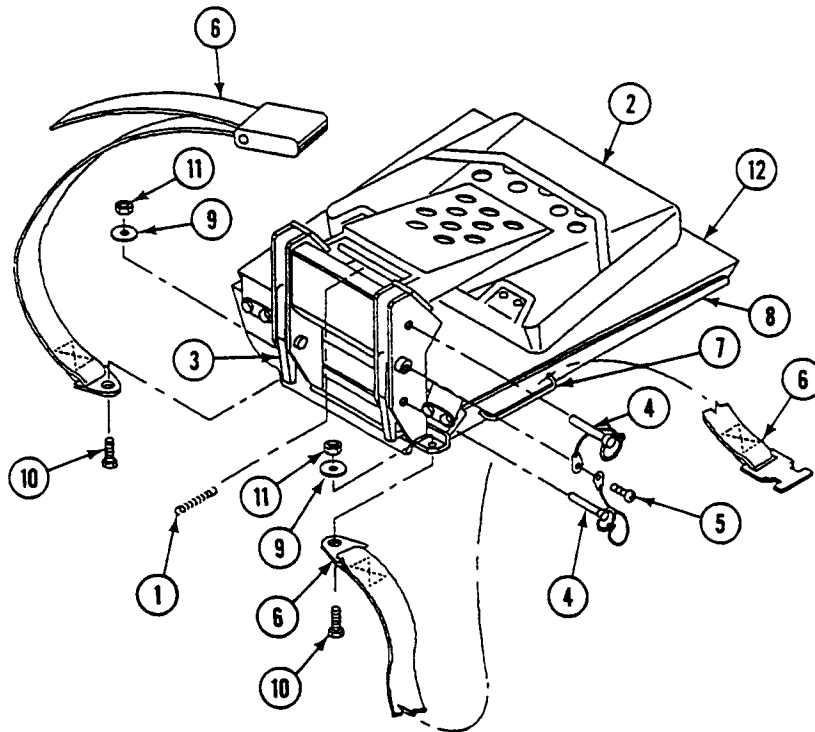


5. Install two springs (1) on seat back (2) and seat bracket (3).
6. Install four pins (4) and two screws (5) on seat bracket (3).
7. Install two seat belts (6) as follows:
  - a. Position two seat belts (6) through loops (7) on seat bottom (8).
  - b. Secure two seat belts (6) to seat bracket (3) with two washers (9), screws (10), and new locknuts (11).



**INSTALLATION**

1. Position commander's seat (12) on track bracket. Secure with four pins (4).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**

**REPAIR COMMANDER'S SEAT (M113A2, M1059, AND M1064)**

**0487 00**

**THIS WORK PACKAGE COVERS:**

- Disassembly (page 0487 00-1).
- Clean, Inspect, and Repair (page 0487 00-4).
- Assembly (page 0487 00-5).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Commander's seat removed from post (WP 0484 00 or WP 0485 00)

Materials/Parts

- Cotter pin (4)
- Locknut (6)
- Splined nut, as needed (8)
- Splined washer, as needed (8)
- Spring pin (2)

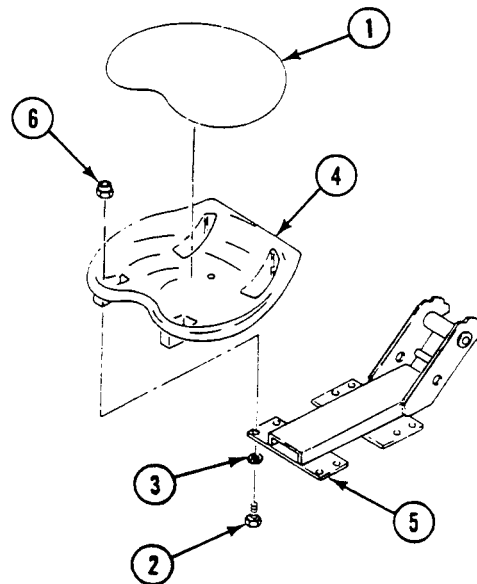
**DISASSEMBLY**

1. Remove seat cushion (1).
2. Remove eight screws (2) and washers (3). Remove seat (4) from seat support (5).

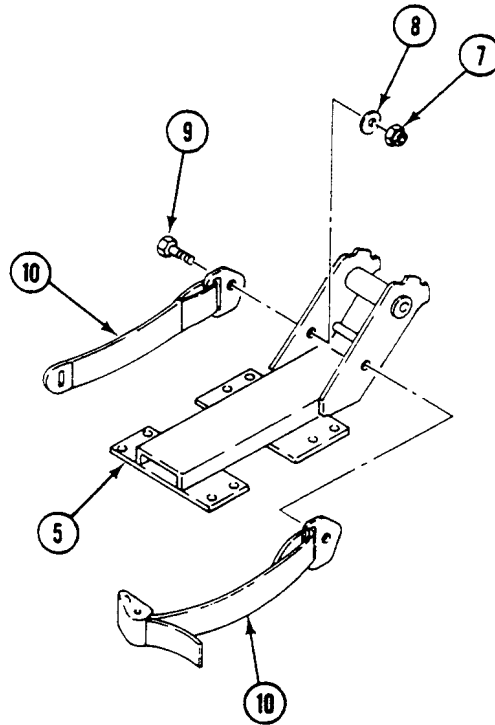
**NOTE**

**Remove splined nut(s) only if damaged.**

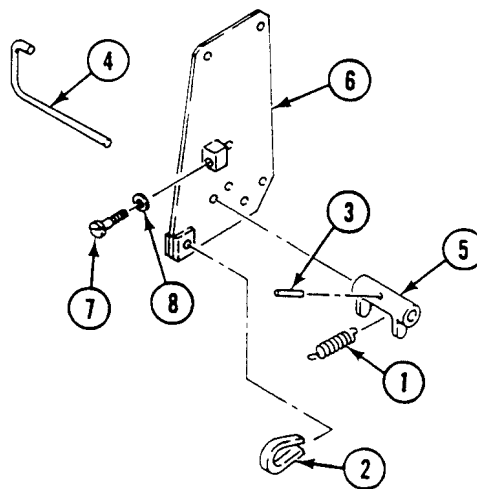
3. If splined nuts (6) need to be replaced, drive old nuts out of seat (4). Discard nuts.



4. Remove two locknuts (7), washers (8), screws (9), and seatbelt (10) from support (5). Discard locknuts.

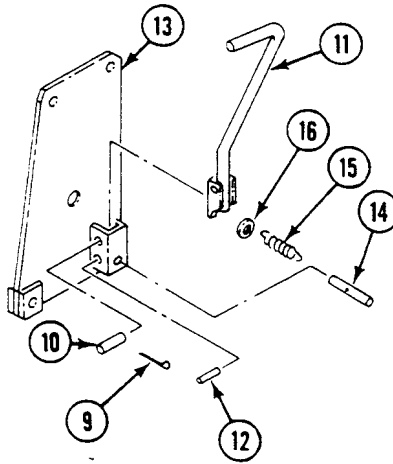


5. Remove spring (1), clip (2), spring pin (3), handle (4), and seat lock (5) from right mount (6). Discard spring pin.
6. Remove two screws (7) and jamnuts (8) from right mount (6).

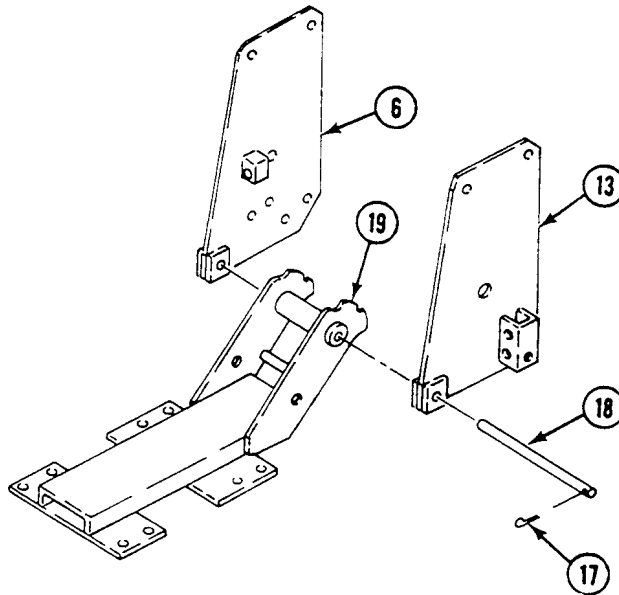




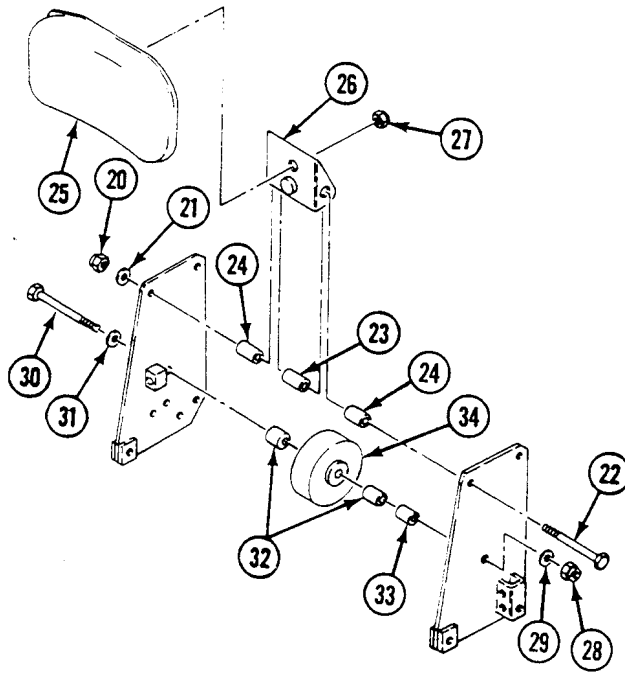
7. Remove two cotter pins (9), straight pin (10), handle (11), and spring pin (12) from left mount (13). Discard cotter pins and spring pin.
8. Remove stop pin (14), spring (15), and washer (16) from left mount (13).



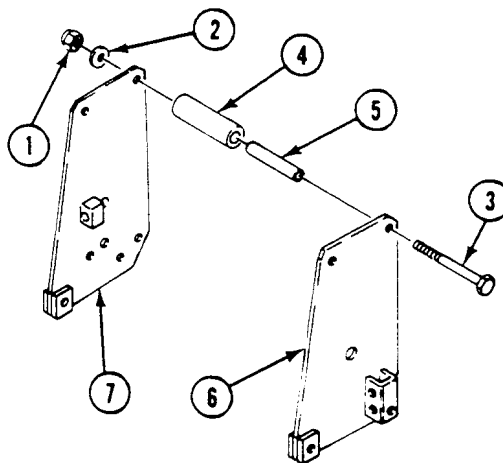
9. Remove two cotter pins (17) and straight pin (18) from left mount (13), support (19), and right mount (6). Discard cotter pins.



10. Remove locknut (20), washer (21), screw (22), short spacer (23), two long spacers (24), backrest (25), and bracket (26). Discard locknut.
11. Remove locknut (27) and backrest (25) from bracket (26). Discard locknut.
12. Remove locknut (28), washer (29), screw (30), washer (31), two spacers (32), one spacer (33), and wheel (34). Discard locknut.



13. Remove locknut (1), washer (2), screw (3), two rollers (4), and spacers (5) from left mount (6) and right mount (7). Discard locknut.

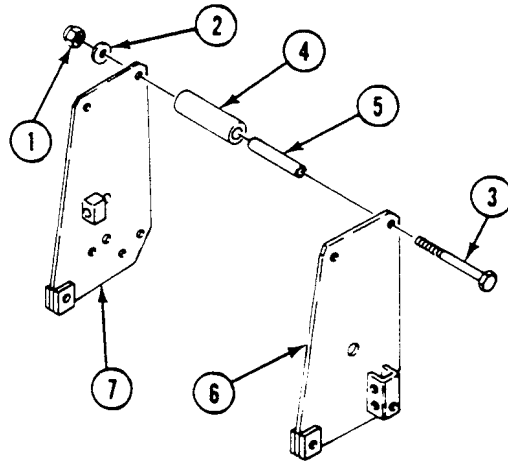


**CLEAN, INSPECT, AND REPAIR**

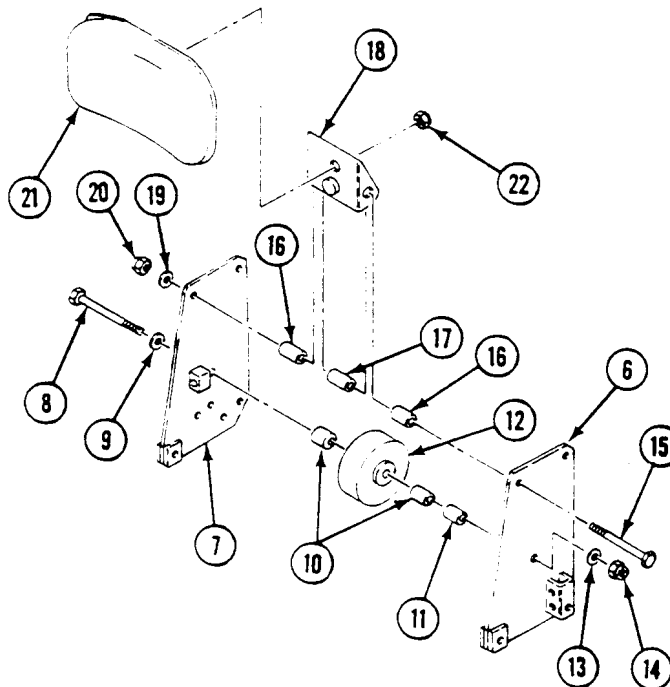
1. Clean and inspect parts for damage.
2. Replace worn, nicked or deformed parts.

**ASSEMBLY**

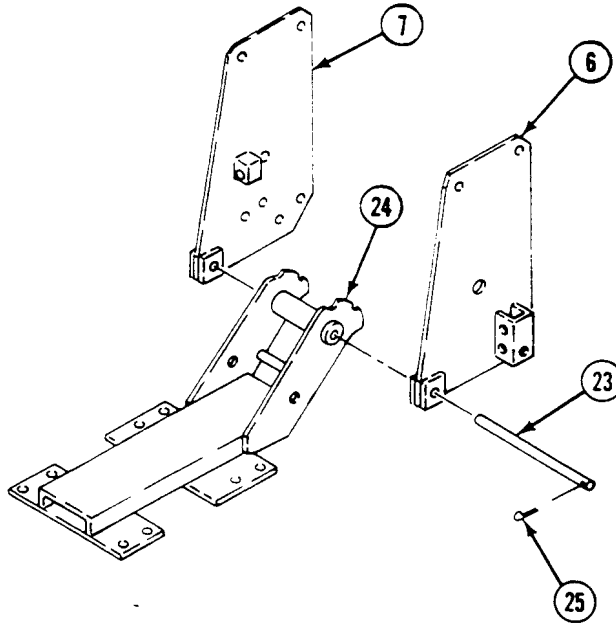
1. Install screw (3) in left mount (6). Assemble two spacers (5) and rollers (4) on screw.
2. Install screw (3) through right mount (7). Secure with washer (2) and new locknut (1).



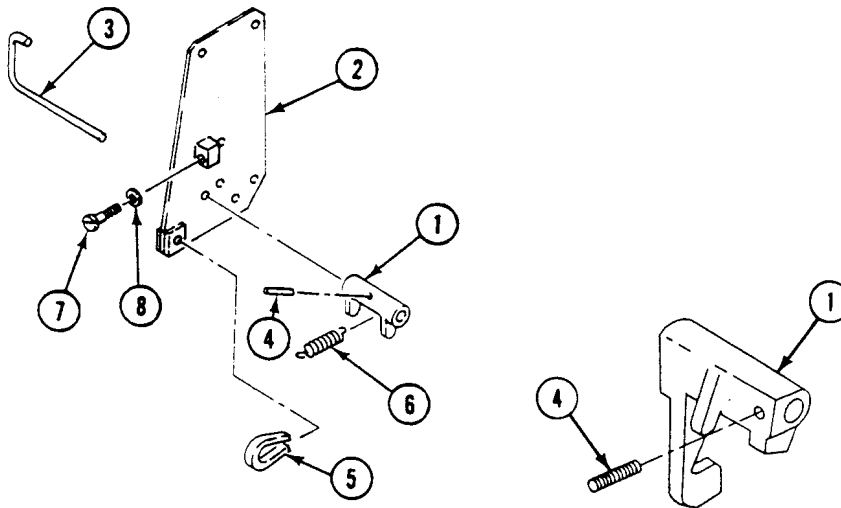
3. Install screw (8) and washer (9) in right mount (7). Assemble two spacers (10), one spacer (11), and wheel (12) on screw (8).
4. Install screw (8) through left mount (6). Secure with washer (13) and new locknut (14).
5. Install screw (15) in left mount (6). Assemble two long spacers (16), one short spacer (17), and bracket (18) on screw (15).
6. Install screw (15) in right mount (7). Secure with washer (19) and new locknut (20).
7. Secure backrest (21) to bracket (18) with new locknut (22).



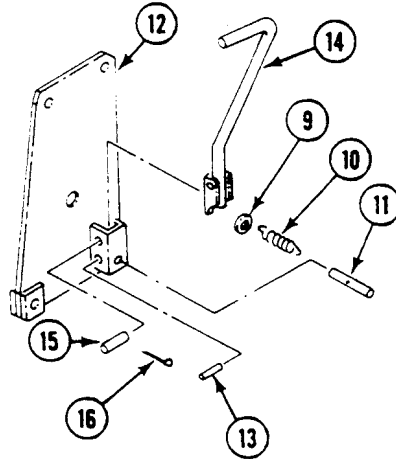
8. Install straight pin (23) through left mount (6), seat support (24), and right mount (7). Secure with two new cotter pins (25).



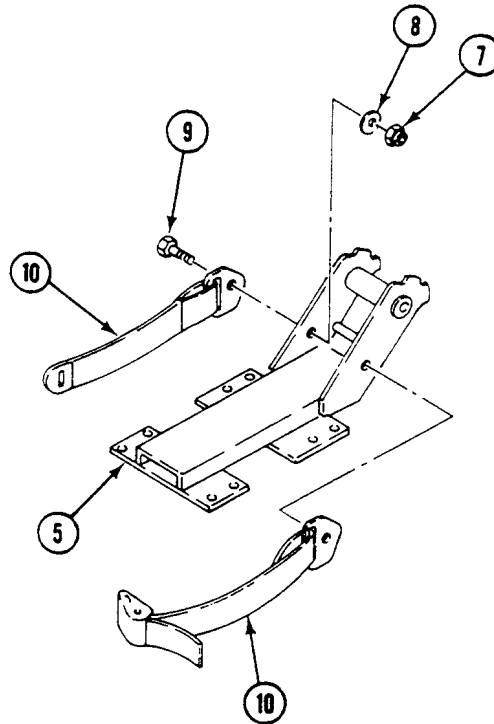
9. Install seat lock (1) on right mount (2). Secure with handle (3), new spring pin (4), clip (5), and spring (6).
10. Install two screws (7) and jamnuts (8) on right mount (2).



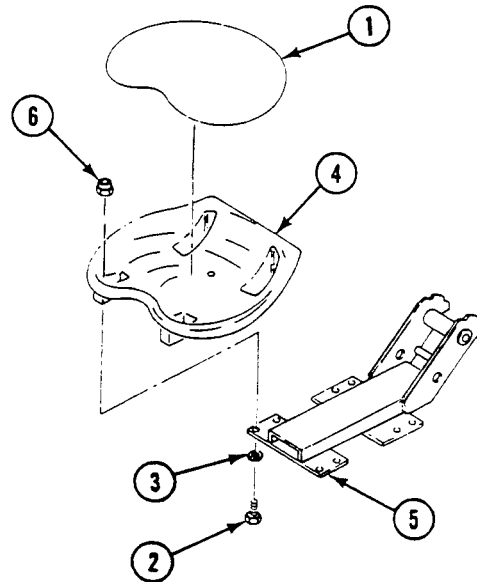
11. Install washer (9), spring (10), and stop pin (11) in left mount (12).
12. Install new spring pin (13), handle (14), and straight pin (15) in left mount (12).
13. Install two new cotter pins (16) through straight pin (15).



14. Install seatbelt (10) on support (5). Secure with two screws (9), washers (8), and new locknuts (7).



15. If removed, install new splined nuts (6) in seat (4).
16. Install seat (4) on support (5). Secure with eight screws (2) and washers (3).
17. Install seat cushion (1) on seat (4).



#### FOLLOW-THROUGH STEPS

1. Install commander's seat on post (WP 0484 00 or WP 0485 00).
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

#### END OF TASK

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**REPLACE/REPAIR OPERATOR'S SEAT (M1059 ONLY)**

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**0488 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0488 00-2).
  - Disassembly (page 0488 00-3).
  - Assembly (page 0488 00-4).
  - Installation (page 0488 00-5).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 102)

Materials/Parts

- Cotter pin (4)
- Locknut (2)
- Lockwasher (2)

Personnel Required

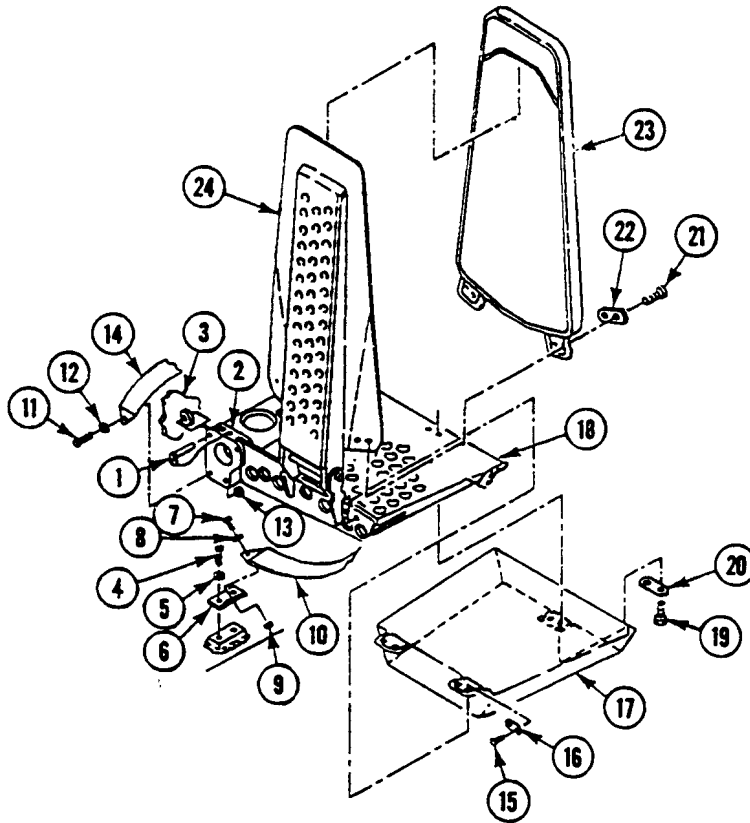
Unit Mechanic

Equipment Condition

- Engine stopped (see your -10)
  - Carrier blocked (see your -10)
-

**REMOVAL**

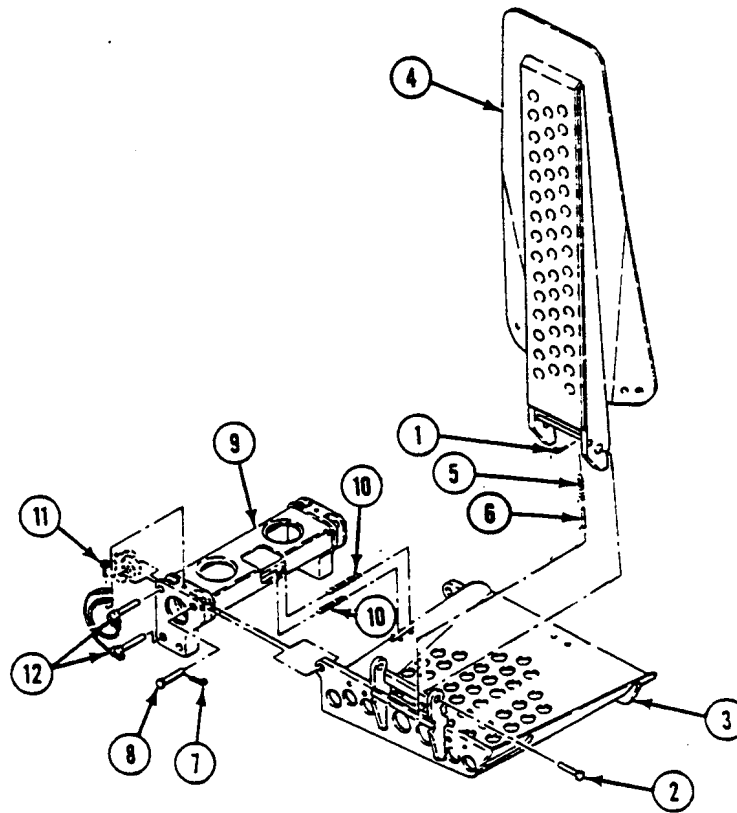
1. Remove four quick release pins (1) from seat bracket (2) and sponson bracket (3).
2. Remove two screws (4), lockwashers (5), and bracket (6) from box beam. Discard lockwashers.
3. Remove screw (7), washer (8), locknut (9), and seat belt (10) from bracket (6). Discard locknut.
4. Remove screw (11), washer (12), locknut (13), and seat belt (14) from bracket (2). Discard locknut.
5. Remove four screws (15) and two retainers (16) from cushion (17) and pan (18).
6. Remove two screws (19), retainer (20), and cushion (17) from pan (18).
7. Remove four screws (21), two retainers (22), and cushion (23) from seat back (24).





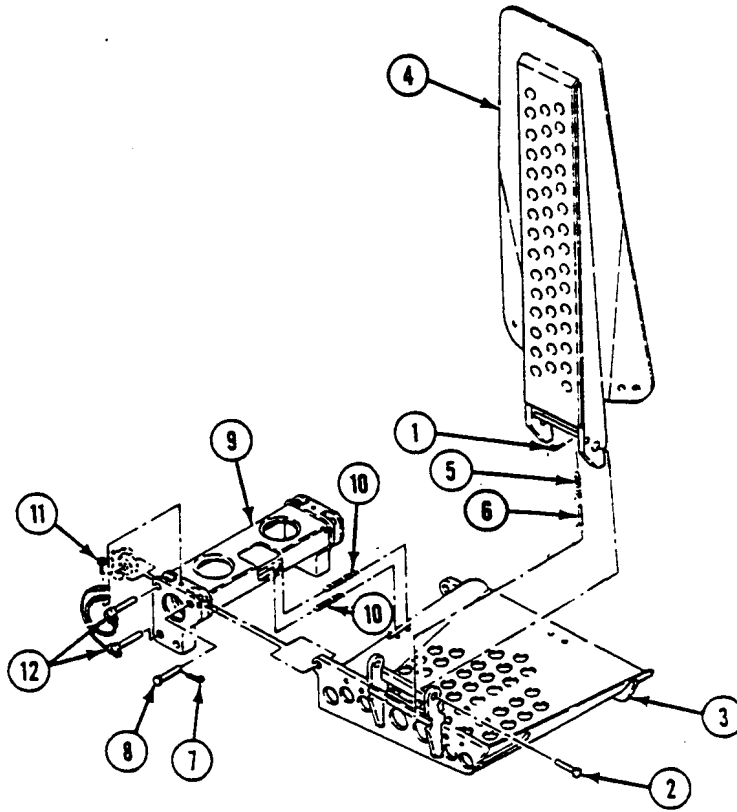
**DISASSEMBLY**

1. Remove two cotter pins (1) and headed pins (2) from seat pan (3) and seat back (4). Discard cotter pins.
2. Remove two springs (5) and pins (6) from seat back (4) and seat pan (3).
3. Remove two cotter pins (7) and headed pins (8) from seat pan (3) and seat bracket (9). Discard cotter pins.
4. Remove two springs (10) from seat bracket (9) and seat pan (3).
5. Remove two screws (11) and four lanyards (12), with quick release pins attached, from seat bracket (9).



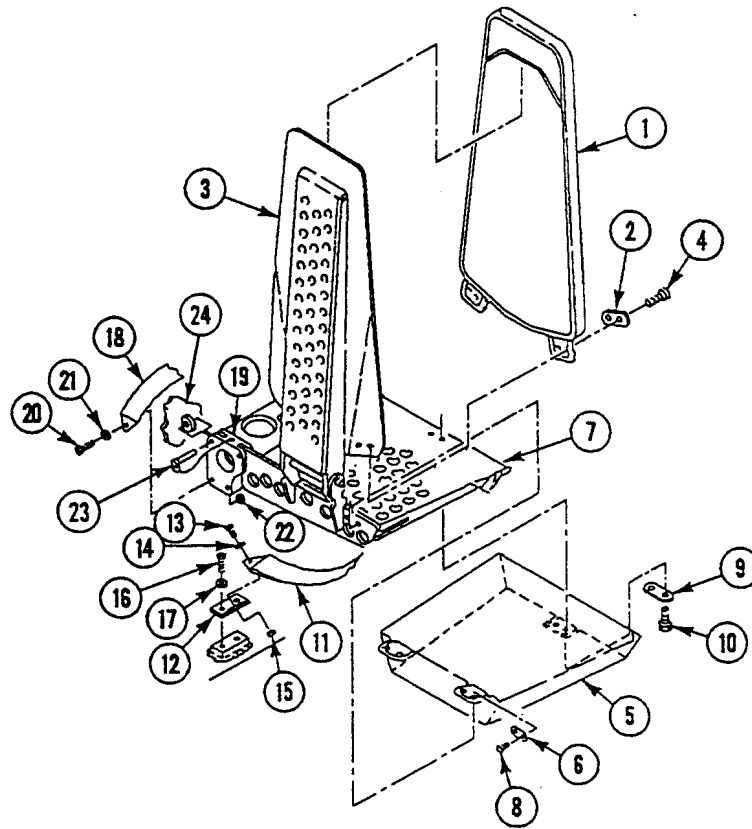
**ASSEMBLY**

1. Install four lanyards (12), with quick release pins attached, on seat bracket (9) with two screws (11).
2. Install seat bracket (9) on seat pan (3). Secure with two headed pins (8) and new cotter pins (7).
3. Tilt seat bracket (9) and install two springs (10) on seat bracket and seat pan (3).
4. Install seat back (4) on seat pan (3). Secure with two headed pins (2) and new cotter pins (1).
5. Tilt seat back (4) and install two springs (5) and pins (6) on seat back and seat pan (3).



**INSTALLATION**

1. Install cushion (1) and two retainers (2) on seat back (3). Secure with four screws (4).
2. Install cushion (5) and two retainers (6) on pan (7). Secure with four screws (8).
3. Install retainer (9) and two screws (10) on pan (7) and cushion (5).
4. Install seat belt (11) on bracket (12). Secure with screw (13), washer (14), and new locknut (15). TIGHTEN LOCKNUT TO 264-288 LB-IN (30-32 N·M) TORQUE. Use torque wrench and socket wrench set.
5. Install bracket (12) on box beam. Secure with two screws (16) and new lockwashers (17). TIGHTEN SCREWS TO 264-288 LB-IN (30-32 N·M) TORQUE. Use torque wrench and socket wrench set.
6. Install seat belt (18) on bracket (19). Secure with screw (20), washer (21), and new locknut (22). TIGHTEN LOCKNUT TO 264-288 LB-IN (30-32 N·M) TORQUE. Use torque wrench and socket wrench set.
7. Install four quick release pins (23) on seat bracket (19) and sponson bracket (24).

**END OF TASK**



**REPLACE/REPAIR RADIO OPERATOR'S SEAT (M1068 ONLY)**

**0489 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0489 00-1).
- Disassembly (page 0489 00-2).
- Assembly (page 0489 00-4).
- Installation (page 0489 00-6).

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

- Drill Set (WP 0780 00, Item 23)
- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Portable Electric Drill (WP 0780 00, Item 22)
- Torque Wrench (WP 0780 00, Item 100)

Materials/Parts

- Locknut (2)
- Locknut (6)
- Locknut (6)
- Lockwasher (2)
- Long spring pin (2)
- Short spring pin (2)

Personnel Required

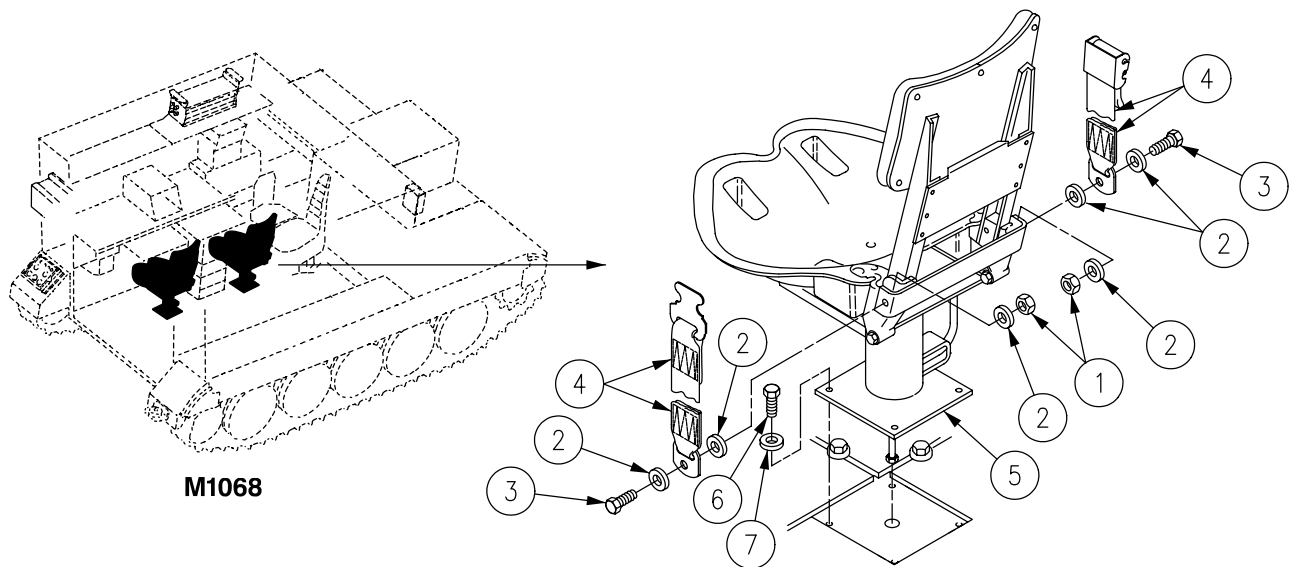
Unit Mechanic

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)

**REMOVAL**

1. Remove two locknuts (1), six washers (2), two screws (3), and seat belts (4) from radio operator's seat (5). Discard locknuts.
2. Remove four screws (6), washers (7), and radio operator's seat (5) from carrier.



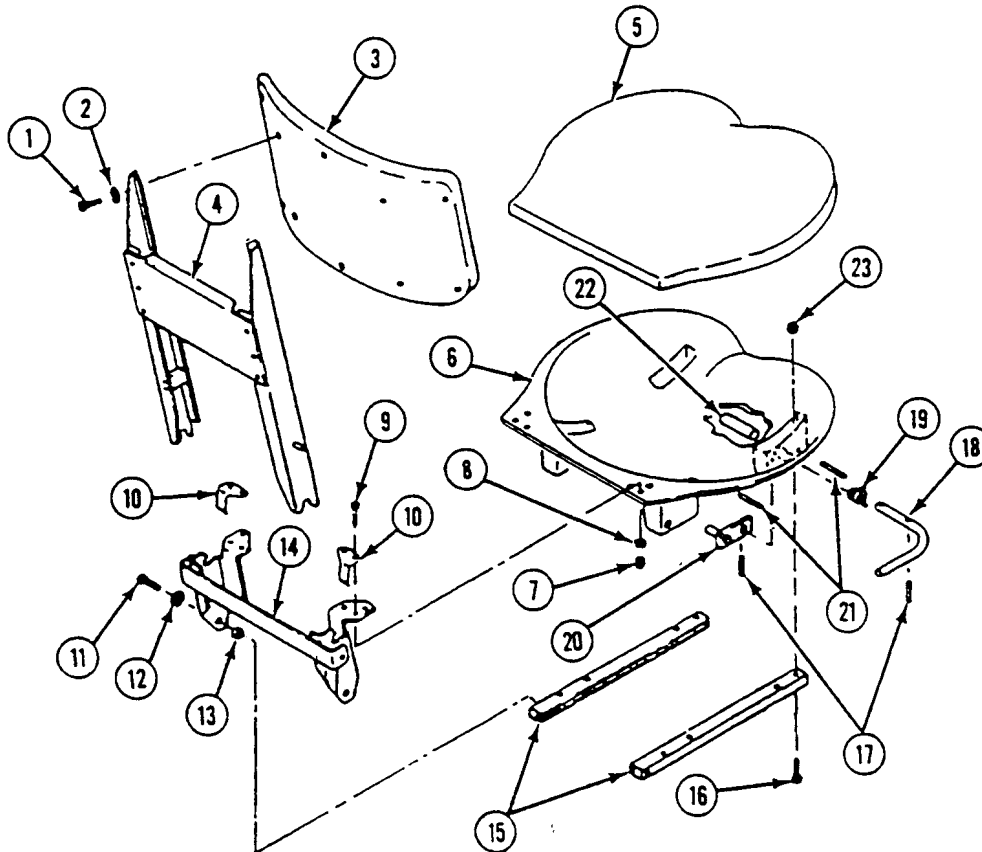
**DISASSEMBLY**

1. Remove four screws (1), washers (2), and backrest (3) from back brace (4). Lift back brace off seat (6).
2. Remove seat cushion (5) from seat (6).
3. Remove six locknuts (7), washers (8), screws (9), and two clips (10) from seat (6). Discard locknuts.
4. Remove two screws (11), lockwashers (12), spacers (13), and bracket (14) from two rails (15). Discard lockwashers.
5. Remove eight screws (16) and seat (6) from two rails (15).
6. Remove two short spring pins (17) from handle (18). Discard spring pins.
7. Remove handle (18), spring (19), and latch (20) from seat (6).
8. Remove two long spring pins (21) from seat (6). Discard spring pins.

**NOTE**

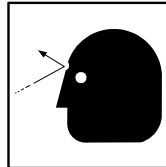
**If inspection shows that bushing (22) needs to be replaced, perform Step 9. Be careful. Do not damage seat when straightening ends.**

9. Straighten ends and remove bushing (22) from seat (6). Discard bushing.
10. If locknut(s) (23) need to be replaced, drive out old locknut(s) from seat (6). Discard locknut(s).



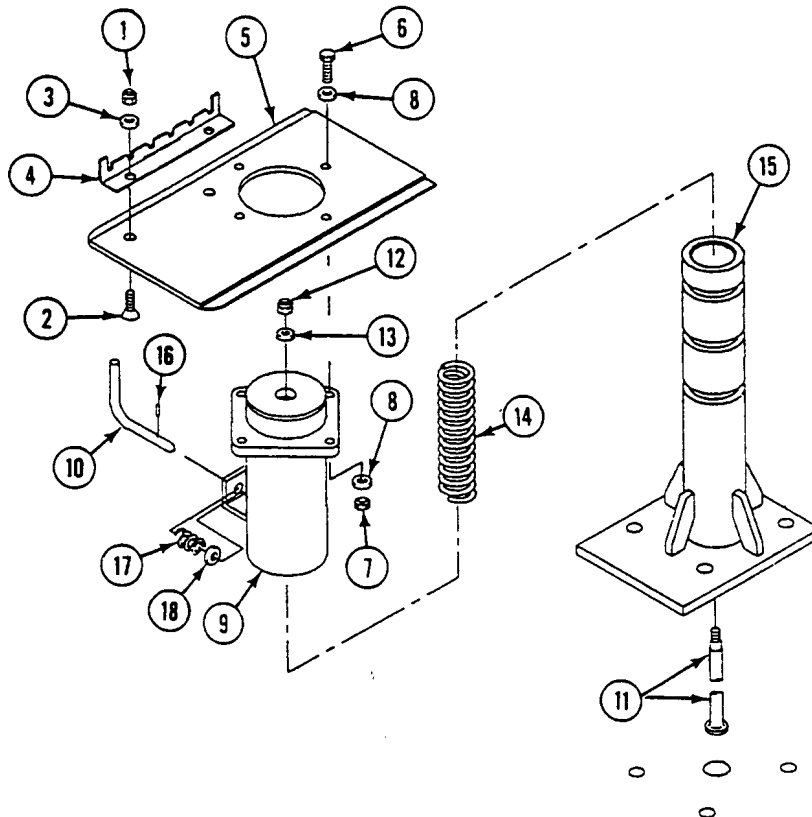
11. Remove two locknuts (1), screws (2), washers (3), and rack (4) from support plate (5). Discard locknuts.
12. Remove four screws (6), locknuts (7), eight washers (8), and support plate (5) from tube (9). Discard locknuts.
13. Pull handle (10) and push tube (9) down to its lowest position. Hold rod (11) and remove locknut (12) and washer (13) from rod. Discard locknut.

**WARNING**



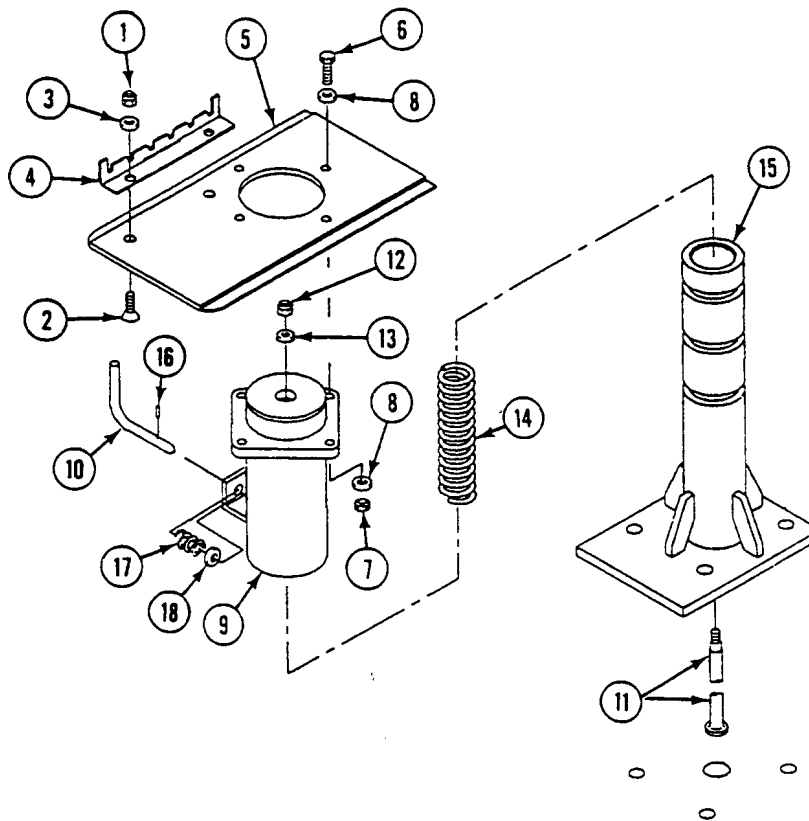
**Apply pressure on tube to prevent spring from releasing when handle is pulled out. Injury to personnel can result from flying tube and spring.**

14. While pushing down on tube (9), pull out handle (10) and slowly allow spring (14) to expand.
15. Remove rod (11), tube (9), and spring (14) from pedestal (15).
16. Remove pin (16), handle (10), spring (17), and washer (18) from tube (9).



**ASSEMBLY**

1. Install washer (18), spring (17), handle (10), and pin (16) on tube (9).
2. Install spring (14), tube (9), and rod (11) on pedestal (15).
3. Install tube (9). Push down on tube and lock handle (10) in the lowest position.
4. Hold rod (11) and install washer (13) and new locknut (12) on rod.
5. Install support plate (5), eight washers (8), four screws (6), and new locknuts (7) on tube (9). TIGHTEN SCREWS TO 80-90 LB-IN (9-10 N·M) TORQUE. Use torque wrench.
6. Install rack (4), two washers (3), screws (2), and new locknuts (1) on support plate (5).



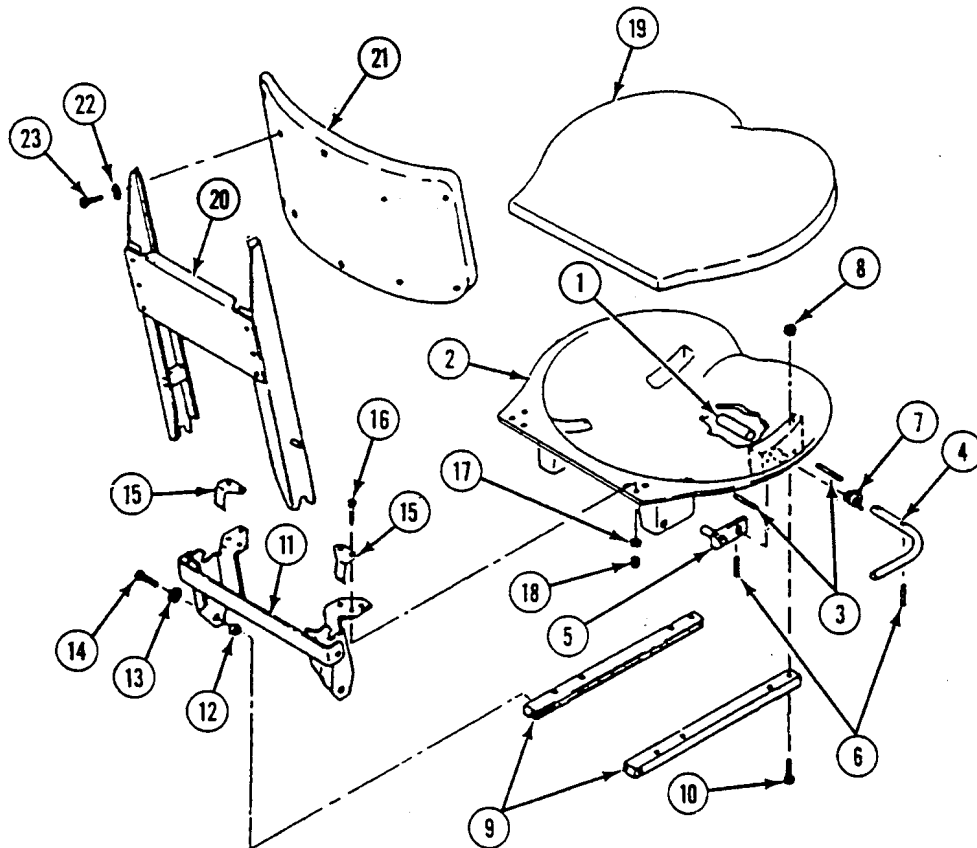


7. If removed, install new bushing (1) in seat (2). Peen both ends snugly to seat and secure.
8. Install two new long spring pins (3) in seat (2).

**NOTE**

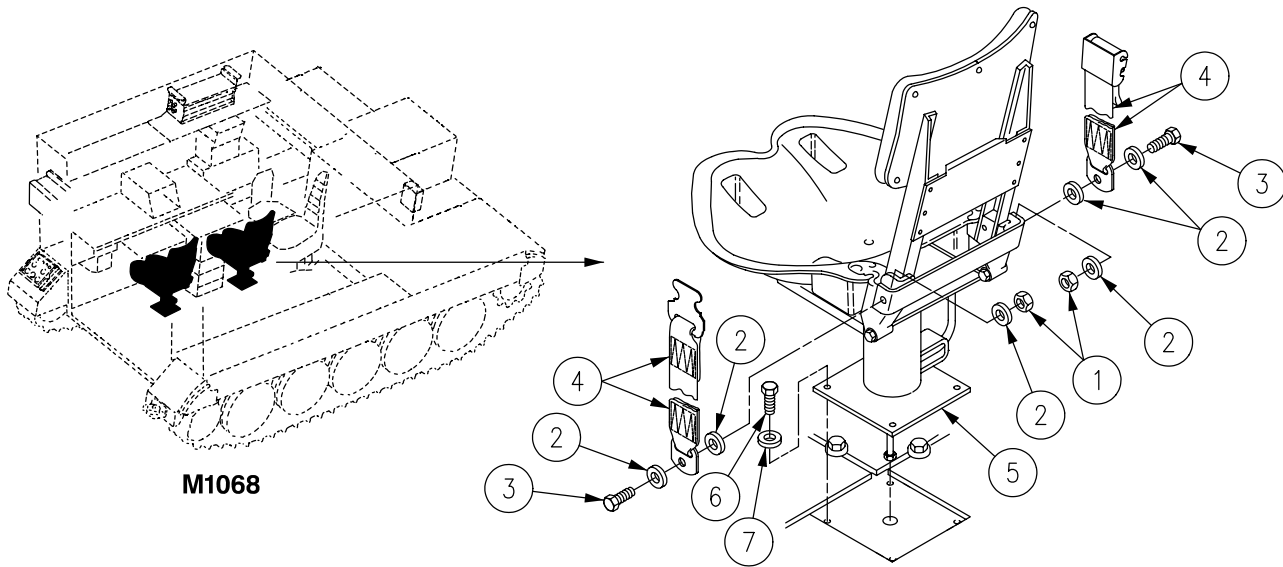
**If handle (4) is replaced, use latch (5) as a template, and drill 1/8 inch (3 mm) hole in handle for spring pin (6).**

9. Install latch (5), spring (7), and handle (4) in seat (2). Secure with two new short spring pins (6).
10. If locknut(s) (8) was removed, install new locknut(s) (8) in seat (2).
11. Secure seat (2) to rails (9) with eight screws (10).
12. Align backrest bracket (11) and two washers (12) with two rails (9). Secure with two new lockwashers (13) and screws (14).
13. Align two clips (15) and bracket (11) with seat (2). Secure with six screws (16), washers (17), and new locknuts (18).
14. Install seat cushion (19) on seat (2).
15. Install back brace (20) in bracket (11).
16. Align backrest (21) with back brace (20). Secure with four washers (22) and screws (23).



**INSTALLATION**

1. Position radio operator's seat (5) in carrier. Secure with four washers (7), and screws (6).
2. Position two seat belts (4) on radio operator's seat (5). Secure with six washers (2), two screws (3), and two new locknuts (1).



**END OF TASK**

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**REPLACE COMMANDER'S JUMP SEAT**

**0490 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0490 00-2).  
 Installation (page 0490 00-4).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Large cotter pin

Locknut (2)

Locknut (2)

Locknut

Small cotter pin (4)

Splined nut, as needed (8)

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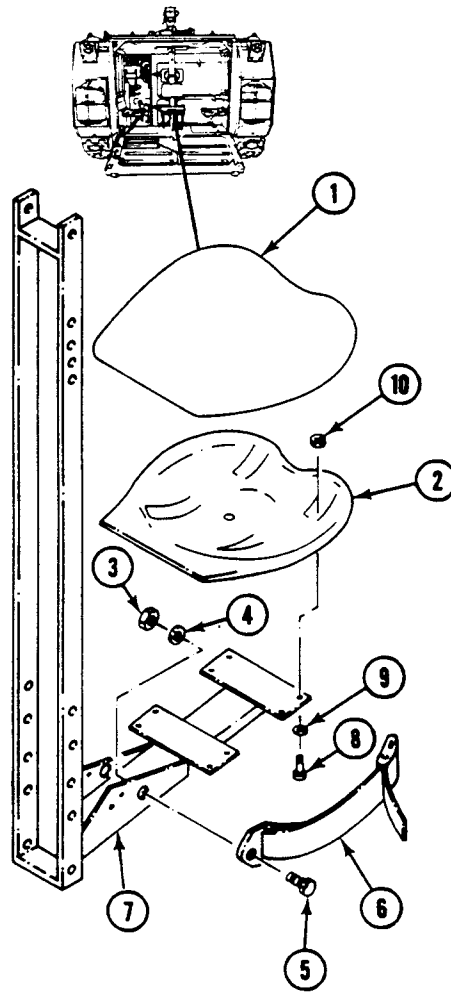
**REMOVAL**

1. Remove cushion (1) from seat (2).
2. Remove two locknuts (3), washers (4), screws (5), and seatbelt (6) from seat support (7). Discard locknuts.
3. Remove eight screws (8), washers (9), and seat (2) from support (7).

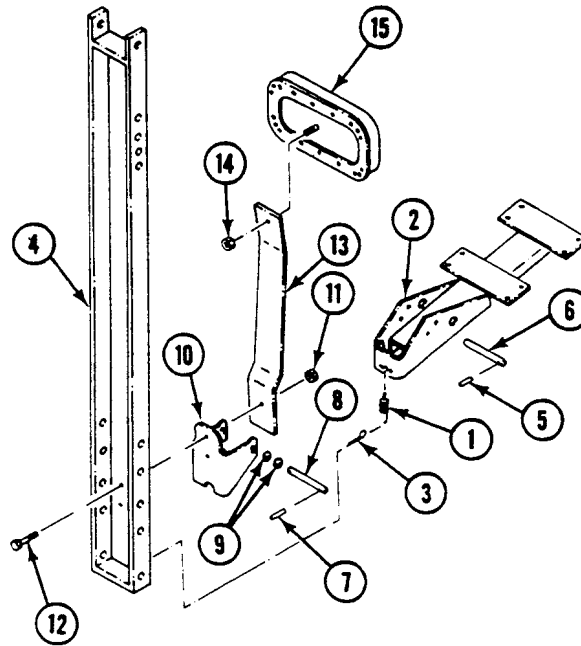
**NOTE**

Remove splined nut(s) only if damaged.

4. If splined nut(s) (10) need to be replaced, drive old splined nuts out of seat (2). Discard nuts.

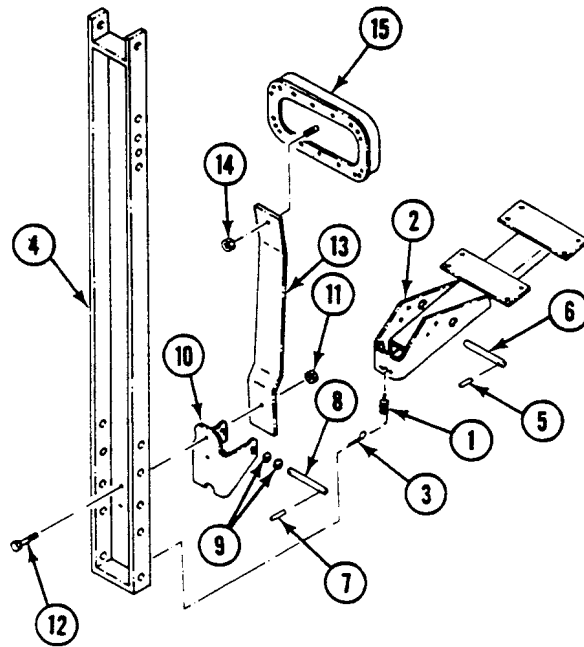


5. Remove spring (1) from support (2) and large cotter pin (3).
6. Remove large cotter pin (3) from post (4). Discard cotter pin.
7. Remove two small cotter pins (5) from pin (6). Remove pin from support (2). Discard cotter pins.
8. Remove two small cotter pins (7) from pin (8). Remove pin (8), two washers (9), and support (2) from bracket (10). Discard cotter pins.
9. Remove two locknuts (11), screws (12), backrest support (13), and bracket (10) from post (4). Discard locknuts.
10. Remove locknut (14) and backrest (15) from support (13). Discard locknut.



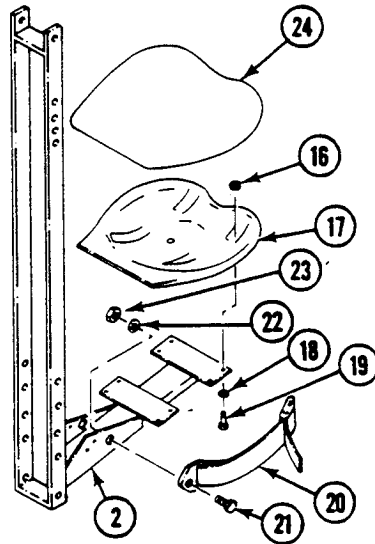
**INSTALLATION**

1. Install backrest (15) on backrest support (13). Secure with new locknut (14).
2. Align support (13) and bracket (10) with post (4). Secure with two screws (12) and new locknuts (11).
3. Align seat support (2) with bracket (10). Secure with pin (8), two washers (9), and new small cotter pins (7).
4. Install pin (6) in support (2). Secure with two new small cotter pins (5).
5. Install new large cotter pin (3) in post (4).
6. Install spring (1) on large cotter pin (3) and support (2).



**REPLACE COMMANDER'S JUMP SEAT — Continued****0490 00**

7. If removed, install new splined nuts (16) in seat (17).
8. Align seat (17) with support (2). Secure with eight washers (18) and screws (19).
9. Align seatbelt (20) with support (2). Secure with two screws (21), washers (22), and new locknuts (23).
10. Install cushion (24) on seat (17).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**





**REPLACE/REPAIR COMMANDER'S PLATFORM**

**0491 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0491 00-1).
- Disassembly (page 0491 00-2).
- Clean, Inspect, and Repair (page 0491 00-3).
- Assembly (page 0491 00-3).
- Installation (page 0491 00-5).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

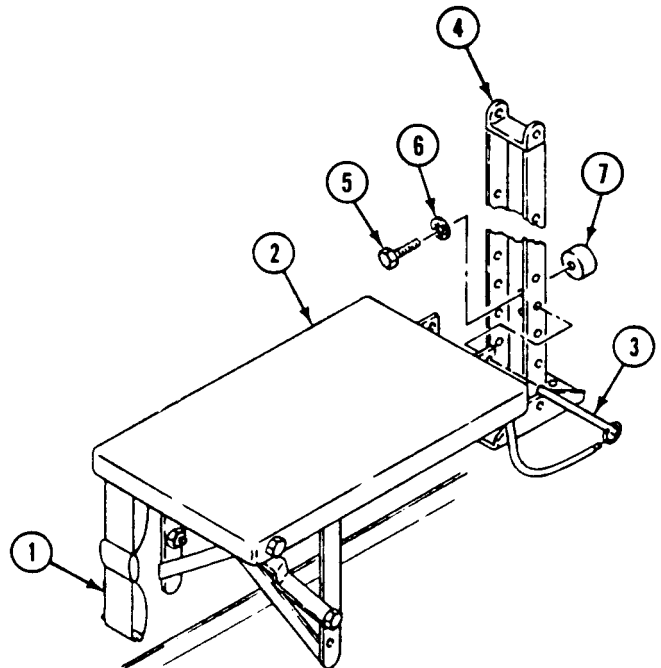
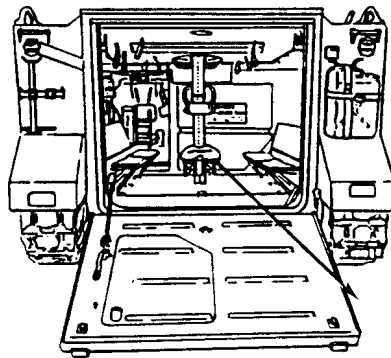
Engine stopped (see your -10)  
Carrier blocked (see your -10)

Materials/Parts

- Cotter pin (4)
- Cotter pin
- Locknut (4)
- Locknut (2)

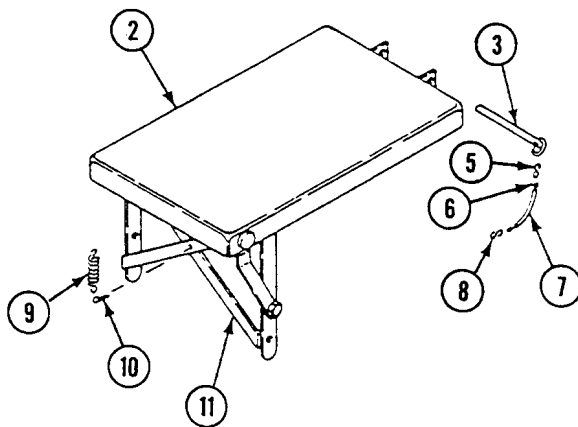
**REMOVAL**

1. Remove hold-down strap (1) from right front floor plate and platform (2).
2. Remove quick-release pin (3) and platform (2) from seat post (4).
3. Remove screw (5), washer (6), and nut (7) from post (4).

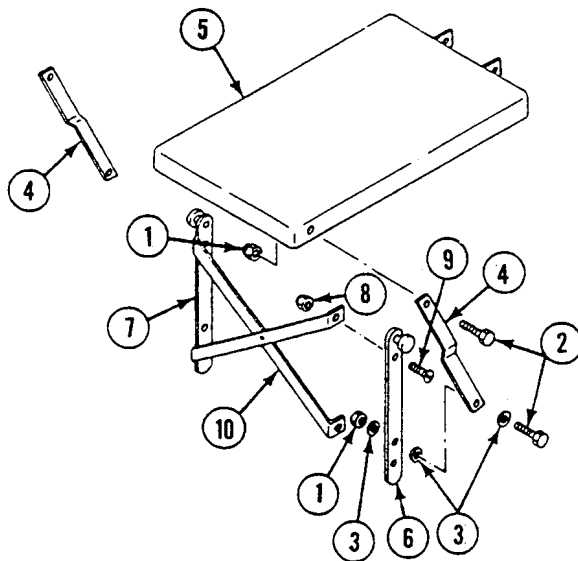


**DISASSEMBLY**

1. Open both ends of hook (5) and remove from quick-release pin (3) and chain (6).
2. Remove tube (7) from chain (6).
3. Open both ends of hook (8). Remove from chain (6) and platform (2).
4. Remove spring (9) from cotter pin (10) and platform (2).
5. Remove cotter pin (10) from two supports (11). Discard cotter pin.



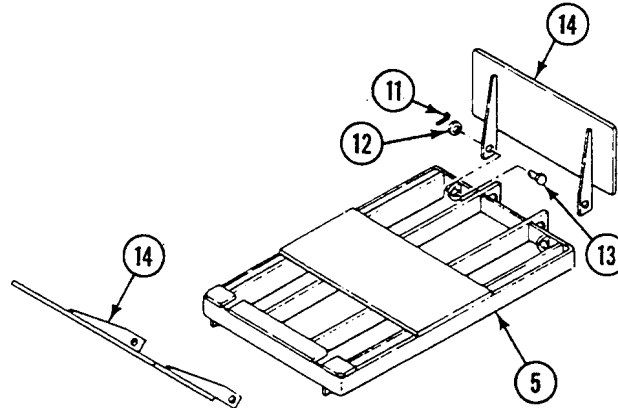
6. Remove four locknuts (1), screws (2), six washers (3), and two braces (4) from platform (5) and two posts (6) and (7). Discard locknuts.
7. Remove two posts (6) and (7) from platform (5). Remove two locknuts (8), screws (9), and post (6) from two supports (10). Discard locknuts.



**NOTE**

Do Step 8 for M1064 only.

8. Remove four cotter pins (11), washers (12), pins (13), and two plates (14) from platform (5). Discard cotter pins.

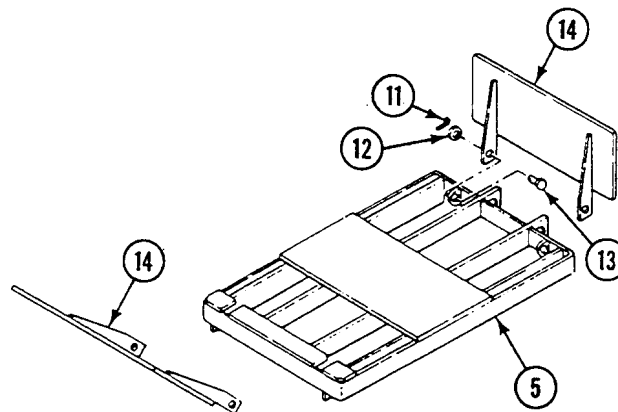
**CLEAN, INSPECT, AND REPAIR**

1. Inspect parts for corrosion, distortion, cracks, breaks, and loose or missing parts. Repair or replace damaged, loose, and missing parts.

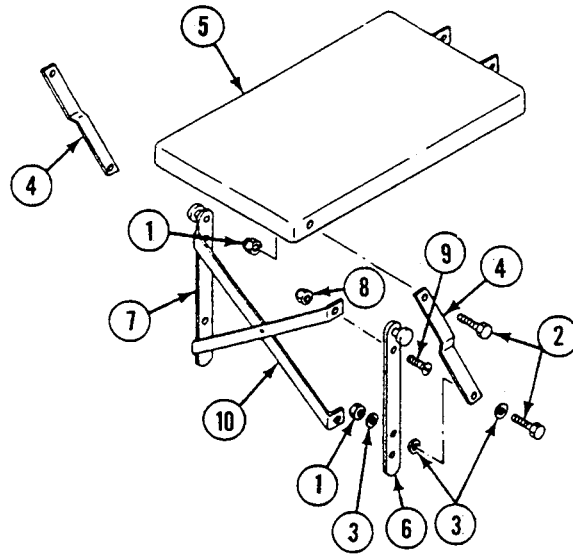
**ASSEMBLY****NOTE**

Do Step 1 for M1064 only.

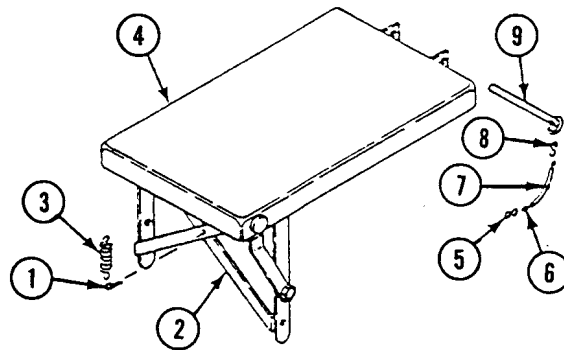
1. Align two plates (14) with platform (5). Secure with four pins (13), washers (12), and new cotter pins (11).



2. Install post (6) on two supports (10). Secure with two screws (9) and new locknuts (8). Install two posts (6) and (7) on platform (5).
3. Install two braces (4) on posts (6) and (7) and platform (5). Secure with four screws (2), six washers (3), and four new locknuts (1).

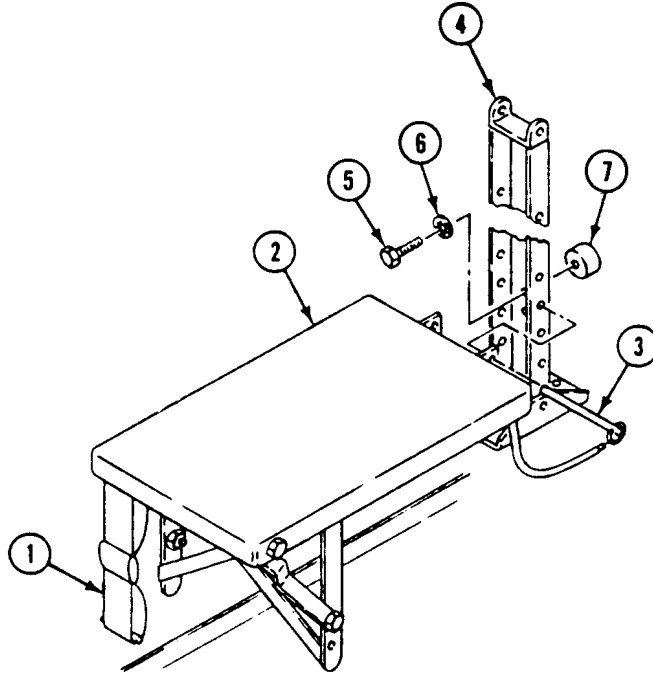


4. Install new cotter pin (1) in two supports (2).
5. Install spring (3) in cotter pin (1) and platform (4).
6. Install hook (5) on platform (4) and chain (6). Squeeze both ends of hook to secure platform and chain.
7. Install tube (7) on chain (6).
8. Install hook (8) on chain (6) and quick-release pin (9). Squeeze both ends of hook to secure chain and pin.



**INSTALLATION**

1. Install screw (5), washer (6), and nut (7) on seat post (4).
2. Align platform (2) with seat post (4). Secure with quick-release pin (3).
3. Install hold-down strap (1) in right front floor plate and platform (2). Tighten strap.

**END OF TASK**



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**REPLACE/REPAIR COMMANDER'S PLATFORM AND POST  
(M577A2 AND M1068 ONLY)**

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**0492 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0492 00-2).
  - Disassembly (page 0492 00-3).
  - Inspection–Acceptance and Rejection Criteria (page 0492 00-3).
  - Assembly (page 0492 00-4).
  - Installation (page 0492 00-5).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)

Materials/Parts

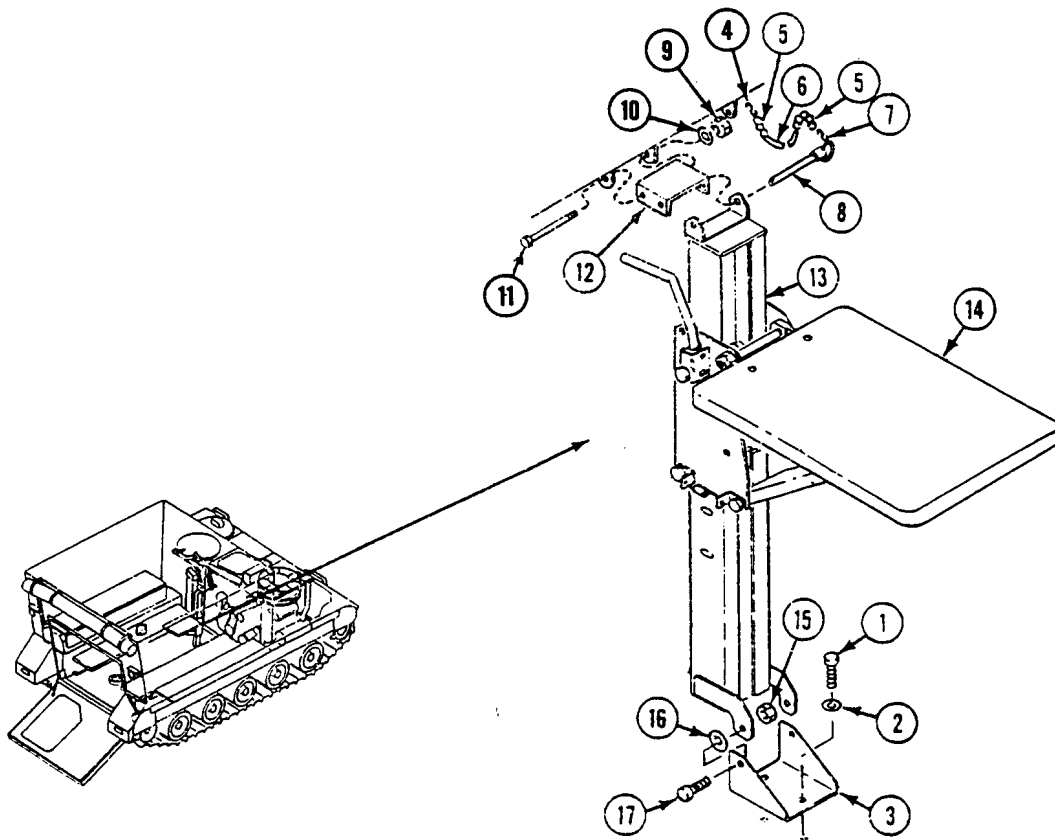
- Cotter pin (2)
  - Locknut (3)
  - Locknut (2)
  - Locknut (10)
  - Spring pin
-

**REPLACE/REPAIR COMMANDER'S PLATFORM AND POST (M577A2  
AND M1068 ONLY) — Continued**

0492 00

**REMOVAL**

1. Remove two screws (1) and washers (2) from base (3).
2. Open both ends of hook (4). Remove hook (4) from hull top plate lug and chain (5).
3. Remove tube (6) from chain (5).
4. Open both ends of hook (7). Remove hook (7) from chain (5) and quick-release pin (8).
5. Remove locknut (9), washer (10), screw (11), and link (12) from hull top plate brackets. Remove post (13) and platform (14) from carrier. Discard locknut.
6. Remove pin (8) and link (12) from post (13).
7. Remove two locknuts (15), washers (16), screws (17), and base (3) from post (13). Discard locknuts.
8. Unlock platform lock and remove platform (14) from post (13).



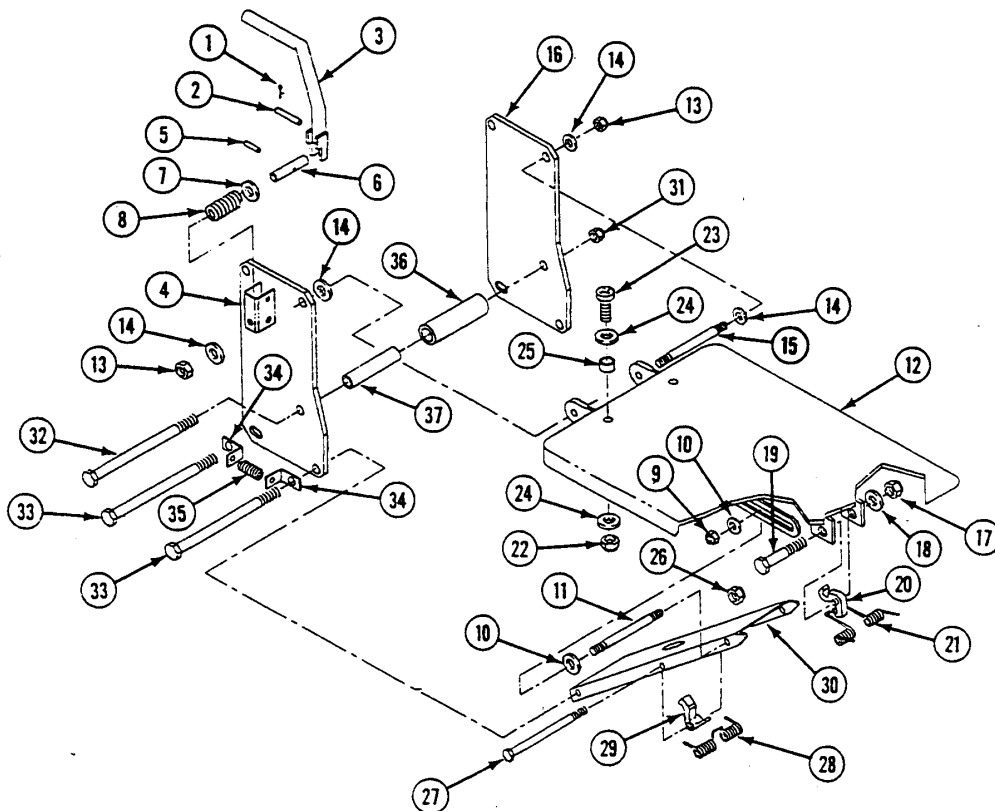


**REPLACE/REPAIR COMMANDER'S PLATFORM AND POST (M577A2  
AND M1068 ONLY) — Continued**

0492 00

**DISASSEMBLY**

1. Remove two cotter pins (1) from straight pin (2). Discard cotter pins.
2. Remove straight pin (2) and handle (3) from left mount (4).
3. Remove spring pin (5), stop pin (6), washer (7), and spring (8) from left mount (4). Discard spring pin.
4. Remove two locknuts (9), four washers (10), and rod (11) from platform (12). Discard locknuts.
5. Remove two locknuts (13), four washers (14), rod (15), and platform (12) from left mount (4), and right mount (16). Discard locknuts.
6. Remove locknut (17), washer (18), screw (19), catch (20), and spring (21) from platform (12). Discard locknut.
7. Remove two locknuts (22), screws (23), four washers (24), and two bumpers (25) from platform (12). Discard locknuts.
8. Remove locknut (26), screw (27), spring (28), and catch (29) from brace (30).
9. Remove four locknuts (31), two screws (32), two screws (33), lugs (34), and spring (35) from left mount (4). Discard locknuts.
10. Remove three rollers (36) and spacers (37) from between left mount (4) and right mount (16).


**INSPECTION-ACCEPTANCE AND REJECTION CRITERIA**

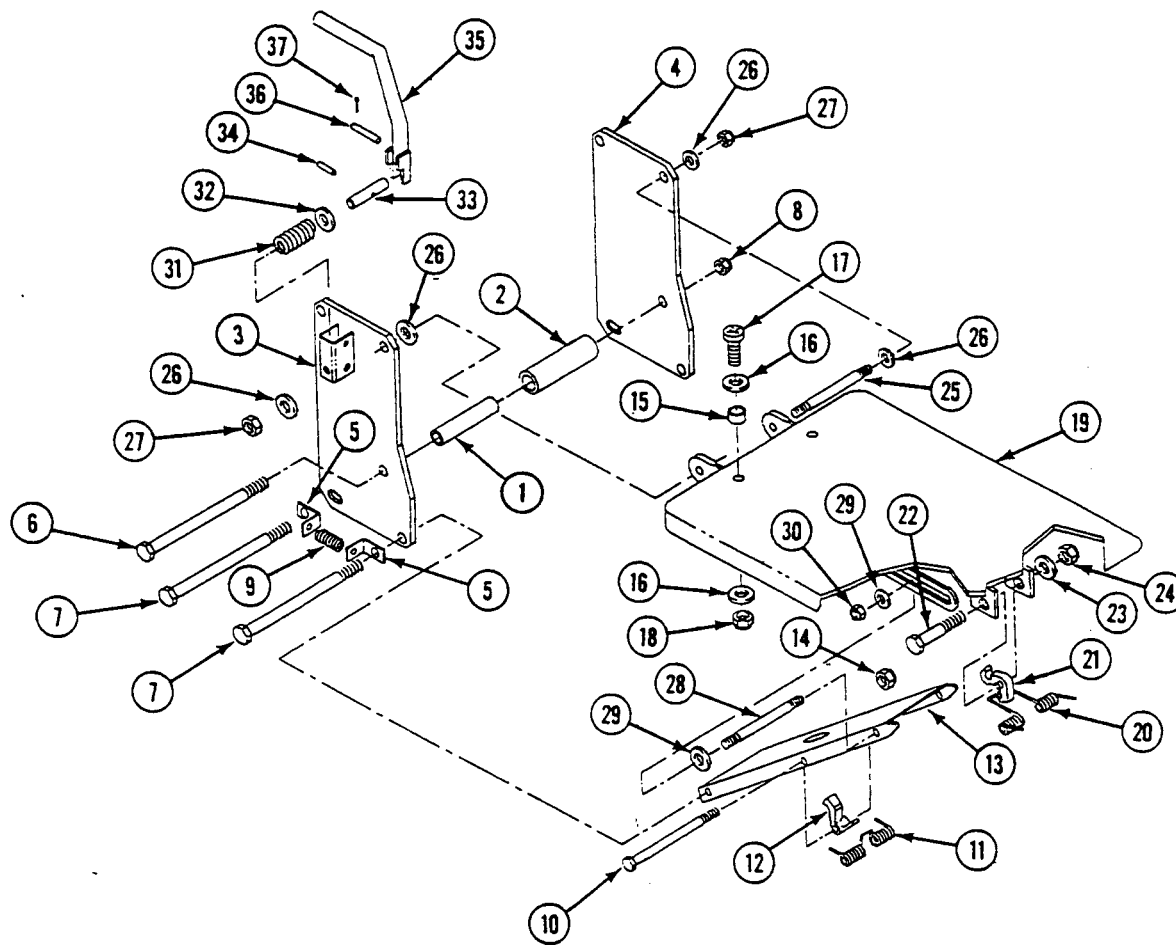
1. Inspect parts for corrosion, distortion, cracks, breaks, and loose or missing parts. Repair or replace damaged or missing parts.

**REPLACE/REPAIR COMMANDER'S PLATFORM AND POST (M577A2 AND M1068 ONLY) — Continued**

0492 00

**ASSEMBLY**

1. Install three spacers (1) and rollers (2) between left mount (3) and right mount (4).
2. Install two lugs (5) on left mount (3).
3. Install two screws (6) and two screws (7) through left mount (3), three spacers (1) rollers (2) four lugs (5), and right mount (4). Secure with four new locknuts (8). Install spring (9) on lugs (5).
4. Install screw (10), spring (11), and catch (12) on brace (13). Secure with new locknut (14).
5. Install two bumpers, (15), four washers (16), two screws (17), and new locknuts (18) on platform (19).
6. Install spring (20), catch (21), screw (22), washer (23), and nut (24) on platform (19).
7. Install platform (19) between left mount (3) and right mount (4). Secure with rod (25), four washers (26), and two new locknuts (27).
8. Install rod (28) through platform (19) and brace (13). Secure with four washers (29) and two new locknuts (30).
9. Install spring (31), washer (32), stop pin (33), new spring pin (34), and handle (35) on left mount (3).
10. Secure handle (35) with straight pin (36) and two new cotter pins (37).



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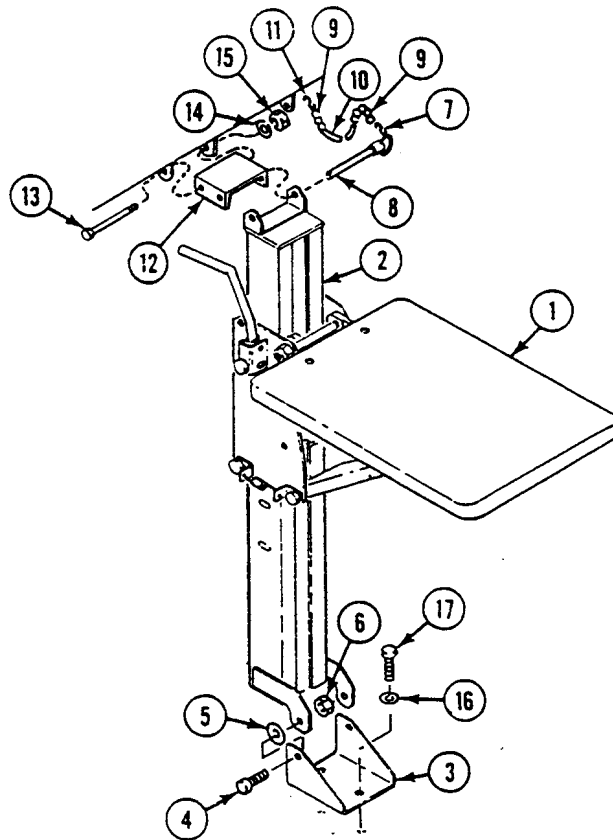
**REPLACE/REPAIR COMMANDER'S PLATFORM AND POST (M577A2  
AND M1068 ONLY) — Continued**


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0492 00

**INSTALLATION**

1. Hold platform lock in unlocked position and install platform (1) on post (2).
2. Align base (3) with post (2). Secure with two screws (4), washers (5), and new locknuts (6).
3. Install hook (7) on quick-release pin (8) and chain (9). Squeeze both ends of hook to secure.
4. Install tube (10) on chain (9).
5. Install hook (11) on chain (9) and hull top lug plate. Squeeze both ends of hook to secure.
6. Align link (12) with hull top plate brackets. Secure with screw (13), washer (14), and new locknut (15).
7. Place post (2) and platform (1) in carrier. Align post with link (12). Secure with quick-release pin (8).
8. Align base (3) with hull crossmember. Secure with two washers (16) and screws (17).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



**REPLACE RIFLE RACK (M1064 ONLY)**

**0493 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0493 00-1).  
 Installation (page 0493 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Sight extension arm stowage brackets removed  
 (WP 0543 00)  
 Rifle brackets removed (WP 0525 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

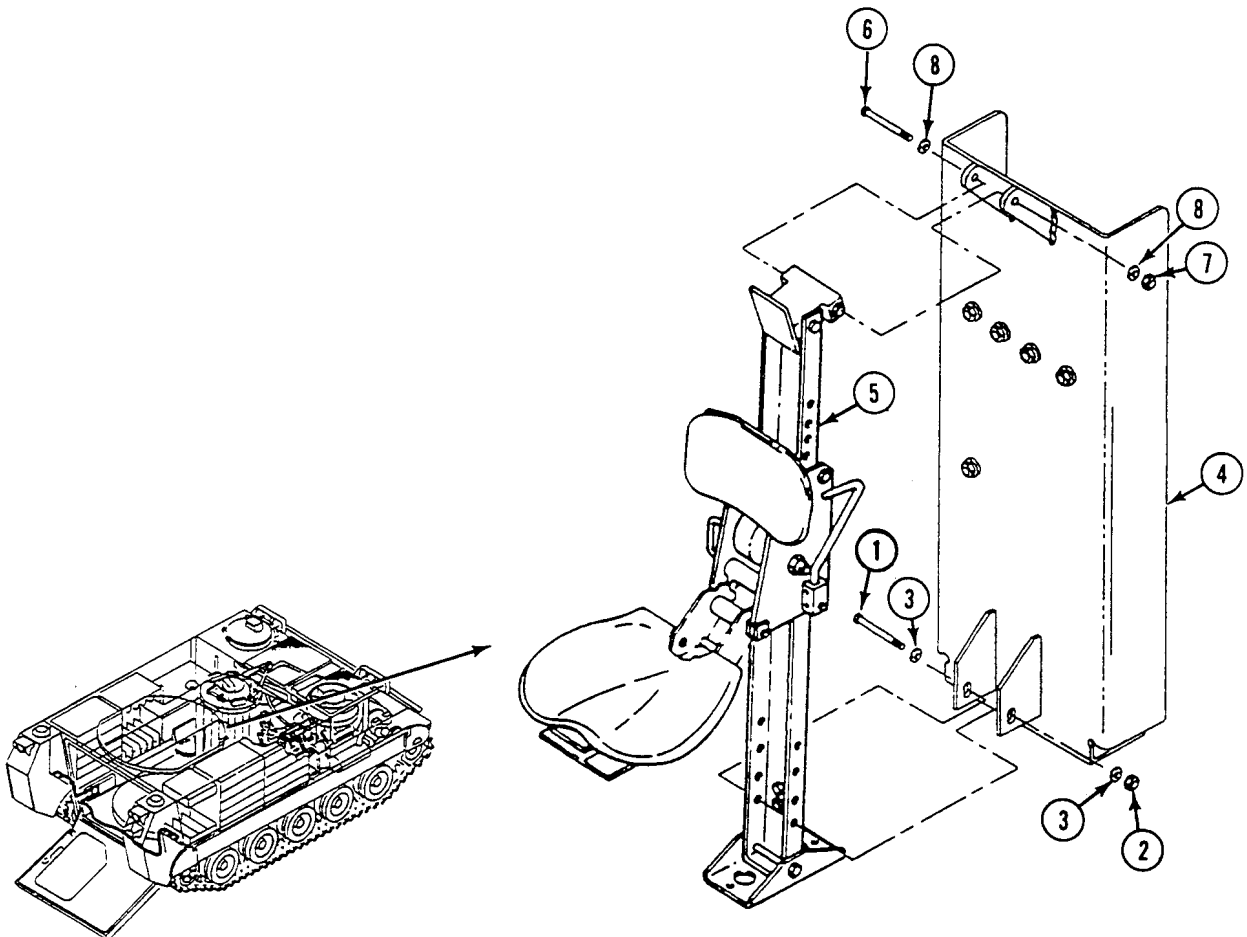
Locknut (2)

Personnel Required

Unit Mechanic

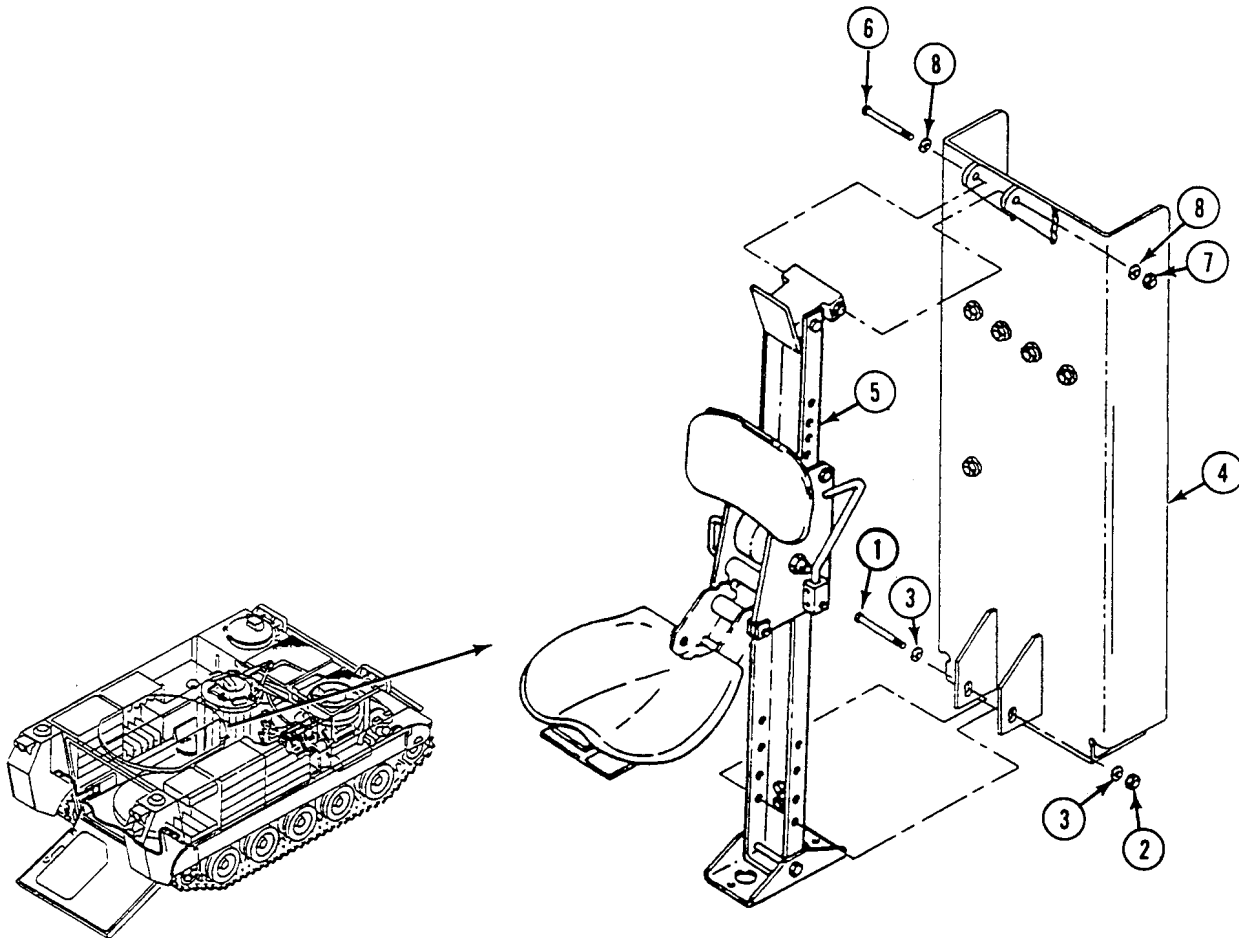
**REMOVAL**

1. Remove screw (1), locknut (2), and two washers (3) from rifle rack (4) and commander's seat post (5). Discard locknut.
2. Remove screw (6), locknut (7), and two washers (8) from rifle rack (4) and commander's seat post (5). Discard locknut.



**INSTALLATION**

1. Position rifle rack (4) on commander's seat post (5) and secure with screw (6), two washers (8), and new locknut (7).
2. Secure base of rifle rack (4) with screw (1), two washers (3), and new locknut (2).

**FOLLOW-THROUGH STEPS**

1. Install rifle brackets (WP 0525 00).
2. Install sight extension arm stowage brackets (WP 0543 00).

**END OF TASK**

**REPLACE COMMANDER'S SEAT (OBSERVATION PERISCOPE)  
(M901A1 ONLY)**

0494 00

**THIS WORK PACKAGE COVERS:**

Removal (page 0494 00-1).  
Installation (page 0494 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

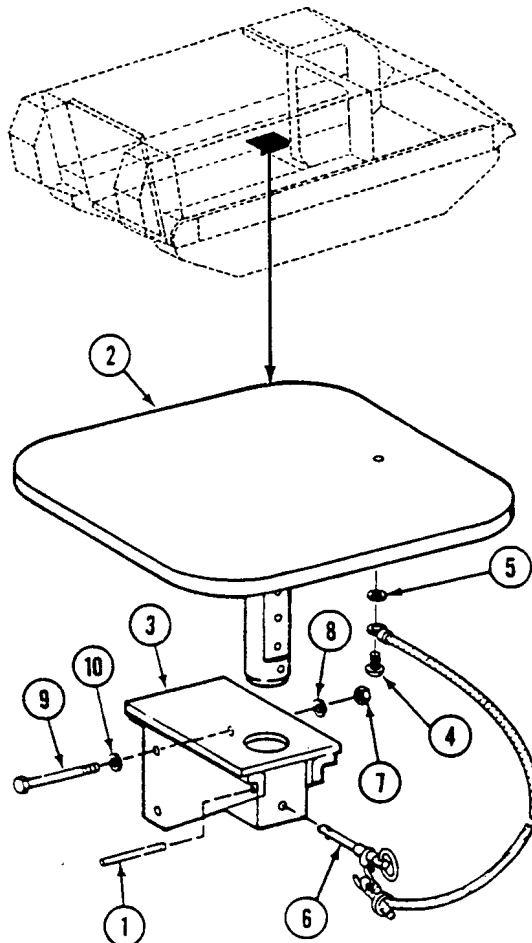
Carrier blocked (see your -10)

Materials/Parts

Locknut (2)

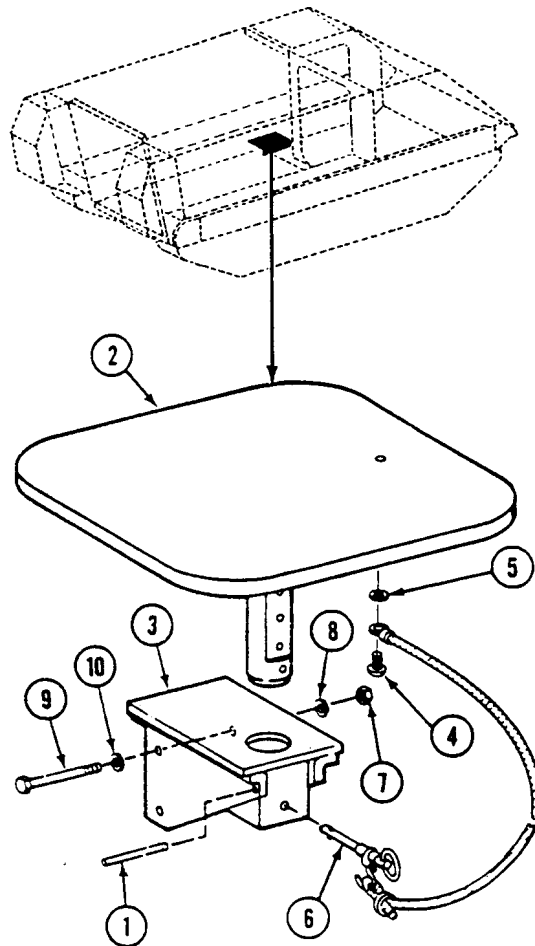
**REMOVAL**

1. Remove pin (1) and seat (2) from support (3).
2. Remove screw (4), washer (5), and quick-release pin and cable assembly (6) from seat (2).
3. Remove two locknuts (7), washers (8), screws (9), and washers (10) from support (3). Remove support from carrier. Discard locknuts.



**REPLACE COMMANDER'S SEAT (OBSERVATION PERISCOPE) (M901A1 ONLY) — Continued****0494 00****INSTALLATION**

1. Install support (3) in carrier and secure with two screws (9), washers (10), washers (8), and new locknuts (7).
2. Install quick-release pin and cable assembly (6) on seat (2) and secure with washer (5) and screw (4).
3. Install seat (2) on support (3). Secure with pin (1).

**END OF TASK**



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**REPLACE PERSONNEL SEATS, BACKRESTS, CUSHIONS,  
AND STRAPS (M113A2 ONLY)**

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**0495 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0495 00-2).
  - Installation (page 0495 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanics Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Cotter pin, per seat (8)

Locknut, per seat (2)

Locknut, per seatbelt (2)

Rivet, per strap

---

**REPLACE PERSONNEL SEATS, BACKRESTS, CUSHIONS, AND STRAPS  
(M113A2 ONLY) — Continued**

0495 00

**REMOVAL****NOTE**

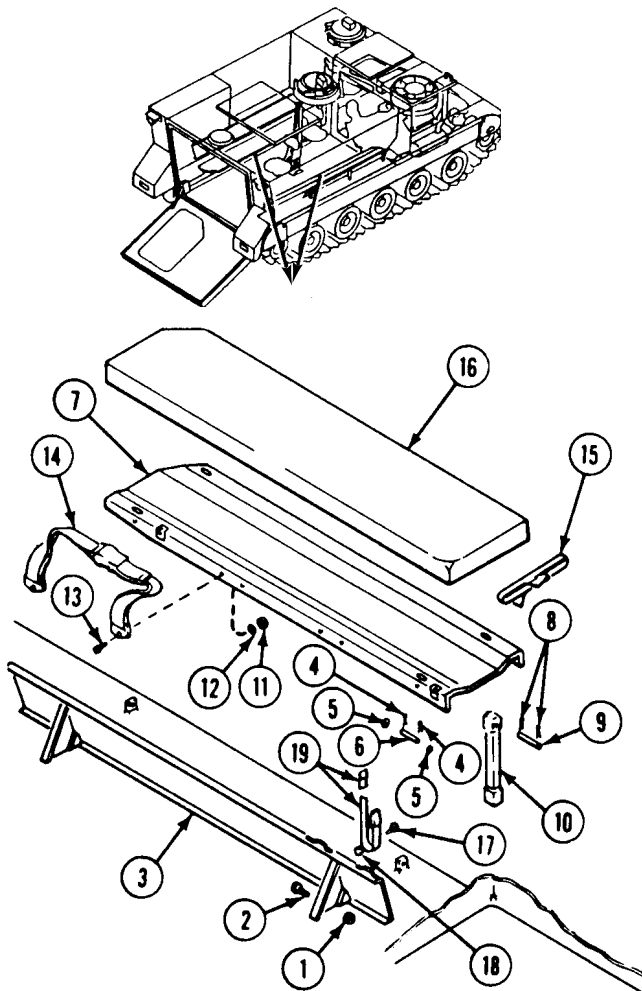
**There are four seats and two backrests in the M113A2. Remove and install all seats and backrests the same way.**

1. Remove two locknuts (1), screws (2), and backrest (3) from sponson brackets. Discard locknuts.
2. Remove four cotter pins (4), washers (5), two straight pins (6), and seat (7) from sponson brackets. Discard cotter pins.
3. Remove four cotter pins (8), two straight pins (9), and two legs (10) from seat (7). Discard cotter pins.
4. Remove two locknuts (11), washers (12), screws (13), and seatbelt (14) from each position on seat (7). Discard locknuts.
5. Remove two straps (15) and cushion (16) from seat (7).

**NOTE**

**There are two straps on the long backrest and one strap on the short backrest. On the M113A2 with external fuel tanks, remove strap from fuel tank support.**

6. If needed, remove rivet (17), washer (18), and strap (19) from backrest (3). Discard rivet.



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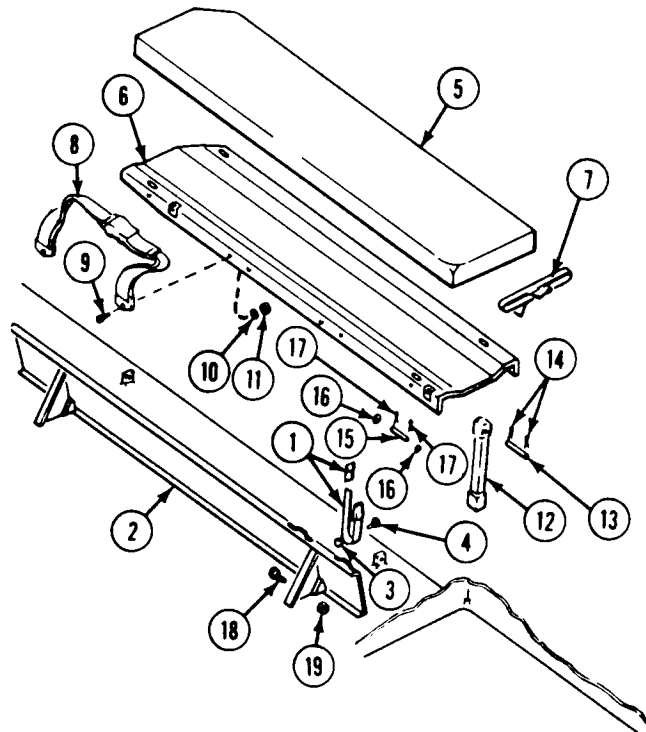
**REPLACE PERSONNEL SEATS, BACKRESTS, CUSHIONS, AND STRAPS  
(M113A2 ONLY) — Continued**


---

0495 00

**INSTALLATION**

1. If removed, install strap (1) on backrest (2). Secure with washer (3) and new rivet (4).
2. Place cushion (5) on seat (6). Secure with two straps (7).
3. Place seatbelt (8) for each position on seat (6). Secure with two screws (9), washers (10), and new locknuts (11).
4. Align two legs (12) with seat (6). Secure with two straight pins (13) and four new cotter pins (14).
5. Align seat (6) with sponson brackets. Secure with two straight pins (15), four washers (16), and four new cotter pins (17).
6. Align backrest (2) with sponson brackets. Secure with two screws (18) and two new locknuts (19).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



---

**REPLACE PERSONNEL SEATS, CUSHIONS, AND BELTS (M577A2 ONLY)**

---

**0496 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0496 00-2).  
 Installation (page 0496 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Cotter pin (6)

Locknut (2)

---

REMOVAL

**NOTE**

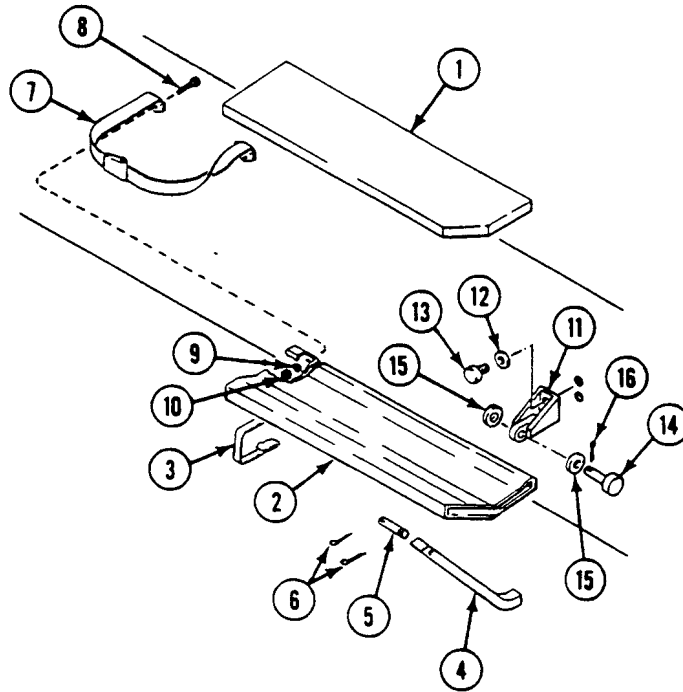
There are two personnel seats in the M577A2 carriers. Remove and install both seats the same way.

1. Remove two cotter pins (16), four washers (15), two headed pins (14), and seat (2) from two brackets (11). Discard cotter pins.
2. Remove four screws (13), washers (12), and two brackets (11) from sponson.
3. Remove two locknuts (10), washers (9), screws (8), and seatbelt (7) from seat (2). Discard locknuts.

**NOTE**

Remove two washers (9) on two center positions on right seat (2).

4. Remove four cotter pins (6), two straight pins (5), and two legs (4) from seat (2). Discard cotter pins.
5. Remove two straps (3) and cushion (1) from seat (2).



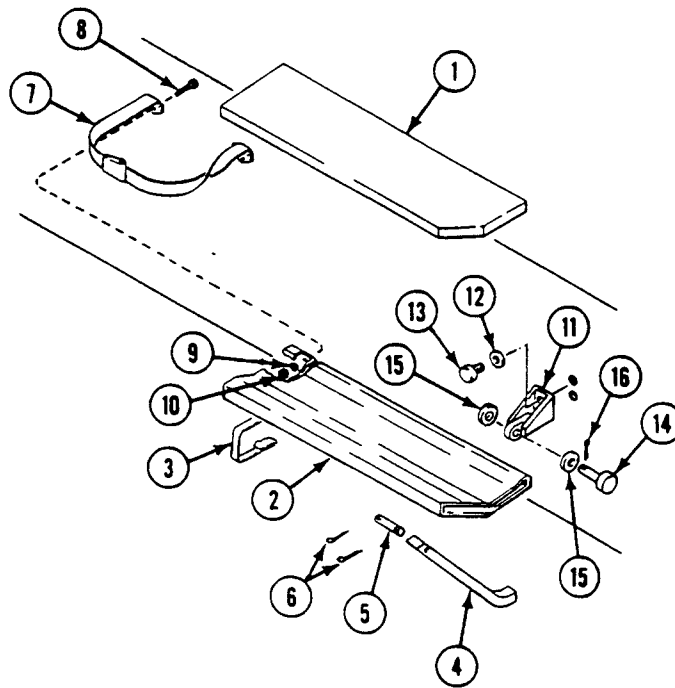
**INSTALLATION**

1. Place cushion (1) on seat (2). Secure with two straps (3).
2. Align two legs (4) with seat (2). Secure with two straight pins (5) and four new cotter pins (6).
3. Place seatbelt (7) on seat (2). Secure with two screws (8), washers (9), and new locknuts (10).

**NOTE**

**Install two washers (9) on two center positions on right seat (2).**

4. Align two brackets (11) with sponson. Secure with four washers (12) and screws (13).
5. Align seat (2) with two brackets (11). Secure with two headed pins (14), four washers (15), and two new cotter pins (16).



**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**





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**REPLACE PERSONNEL SEATS, BACKREST, CUSHIONS,  
AND STRAPS (M1064 ONLY)**

---

**0497 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0497 00-2).  
Installation (page 0497 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Cotter pin, per seat (10)

Locknut (4)

Rivet, per seat

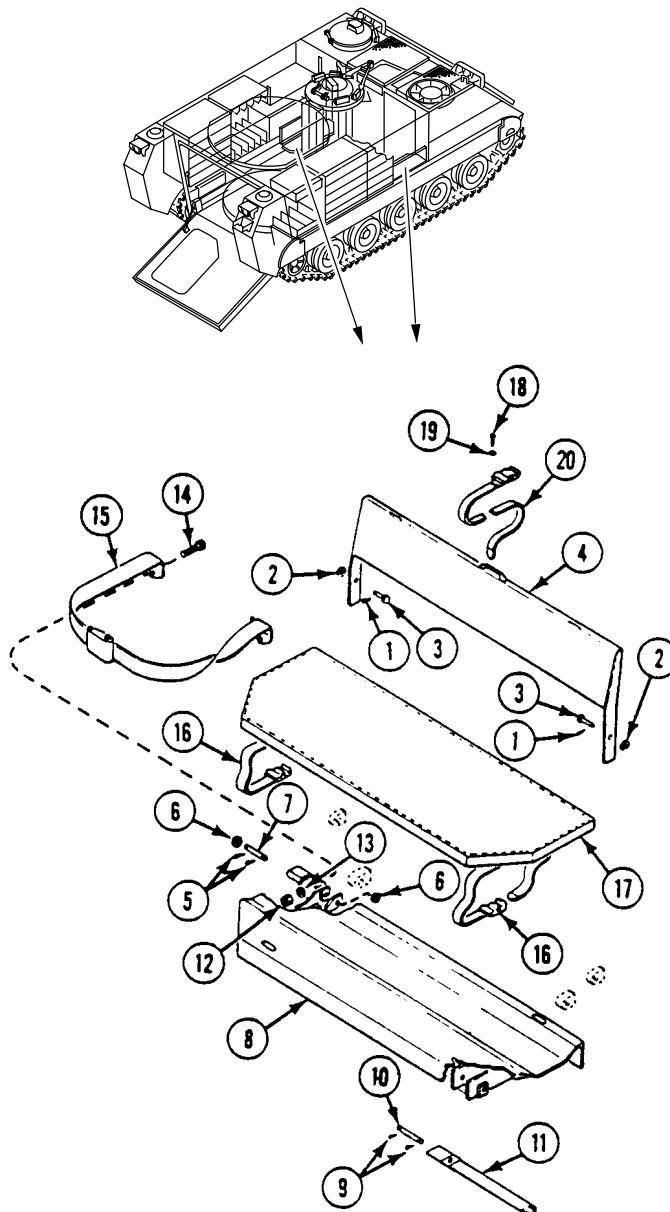
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**REPLACE PERSONNEL SEATS, BACKREST, CUSHIONS, AND STRAPS  
(M1064 ONLY) — Continued**

0497 00

**REMOVAL**

1. Remove two cotter pins (1), washers (2), headed pins (3), and backrest (4) from sponson lugs. Discard cotter pins.
2. Remove four cotter pins (5), washers (6), two straight pins (7), and seat (8) from sponson brackets. Discard cotter pins.
3. Remove four cotter pins (9), two straight pins (10), and two legs (11) from seat (8). Discard cotter pins.
4. Remove four locknuts (12), washers (13), screws (14), and two seatbelts (15) from seat (8). Discard locknuts.
5. Remove two straps (16) and cushion (17) from seat (8).
6. If needed, remove rivet (18), washer (19), and strap (20) from backrest (4). Discard rivet.

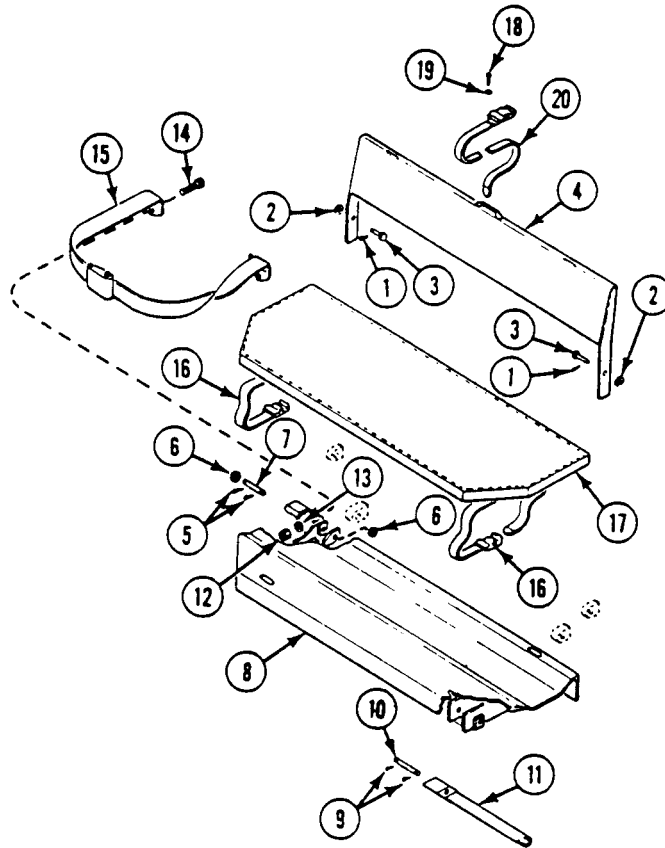


**REPLACE PERSONNEL SEATS, BACKREST, CUSHIONS, AND STRAPS  
(M1064 ONLY) — Continued**

0497 00

**INSTALLATION**

1. If removed, install strap (20) on backrest (4). Secure with washer (19) and new rivet (18).
2. Place cushion (17) on seat (8). Secure with two straps (16).
3. Place two seatbelts (15) on seat (8). Secure with four screws (14), washers (13), and new locknuts (12).
4. Align two legs (11) with seat (8). Secure with two straight pins (10) and four new cotter pins (9).
5. Align seat (8) with sponson brackets. Secure with two straight pins (7), four washers (6), and four new cotter pins (5).
6. Align backrest (4) with sponson lugs. Secure with two headed pins (3), washers (2), and two new cotter pins (1).


**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



**REPLACE CREW SEAT (M901A1 ONLY)**

**0498 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0498 00-1).  
 Installation (page 0498 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Cotter pin (2)

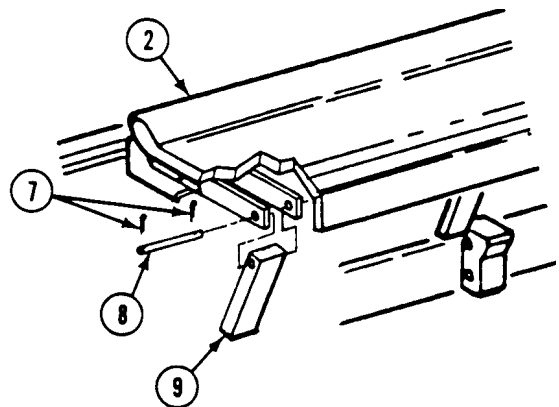
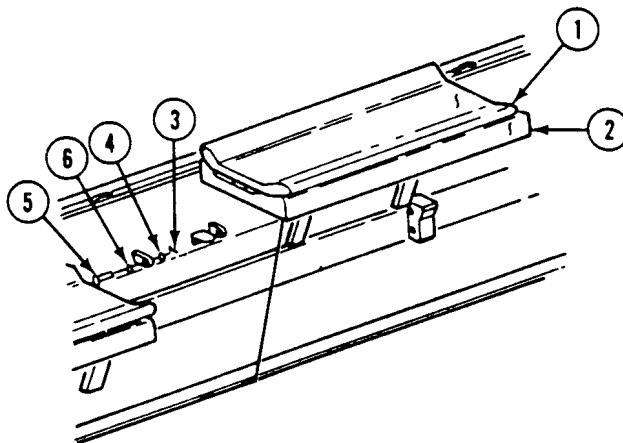
Cotter pin (4)

**REMOVAL**

**NOTE**

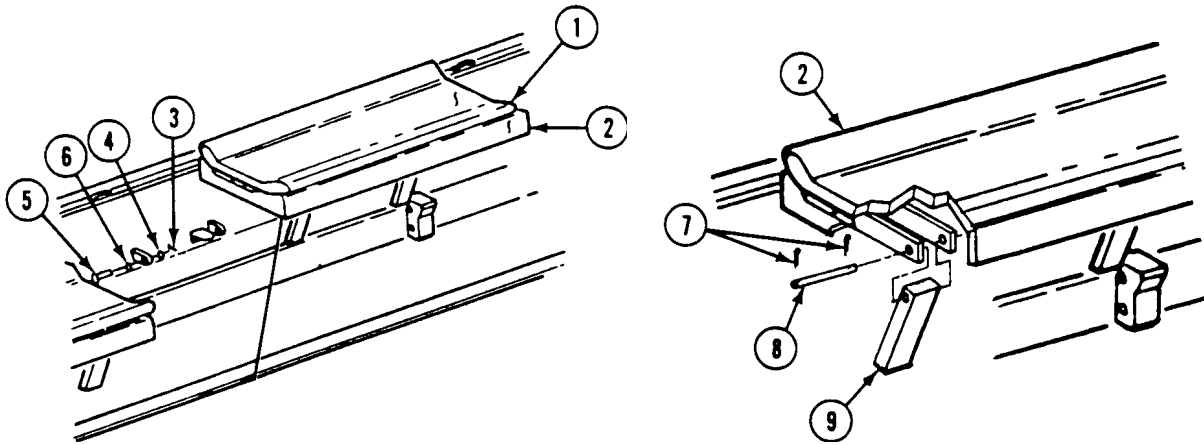
**The cushion is secured to the seat with either one or two straps. Each strap is inserted through two loops on the bottom of the cushion and through two holes in the seat and buckled beneath the seat.**

1. Remove straps and cushion (1) from seat (2).
2. Remove cotter pin (3), washer (4), straight pin (5), and washer (6) from each end of seat (2). Discard cotter pins.
3. Remove seat (2).
4. Remove four cotter pins (7), two straight pins (8), and legs (9) from seat (2). Discard cotter pins.



**INSTALLATION**

1. Install two legs (9), straight pins (8), and four new cotter pins (7) on seat (2).
2. Install seat (2). Secure with washer (6), straight pin (5), washer (4), and new cotter pin (3) on each end of seat.
3. Install straps through loops on bottom of cushion (1) and through holes in seat (2).
4. Secure straps beneath seat (2).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Shutdown engine (see your -10).

**END OF TASK**

**REPLACE BLACKOUT CURTAIN AND FRAME (M577A2 AND M1068 ONLY)**

**0499 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0499 00-1).  
 Installation (page 0499 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Grommet

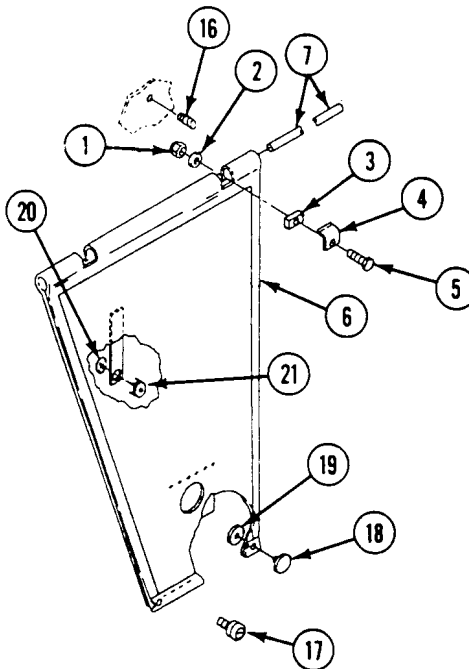
Locknut

Locknut (2)

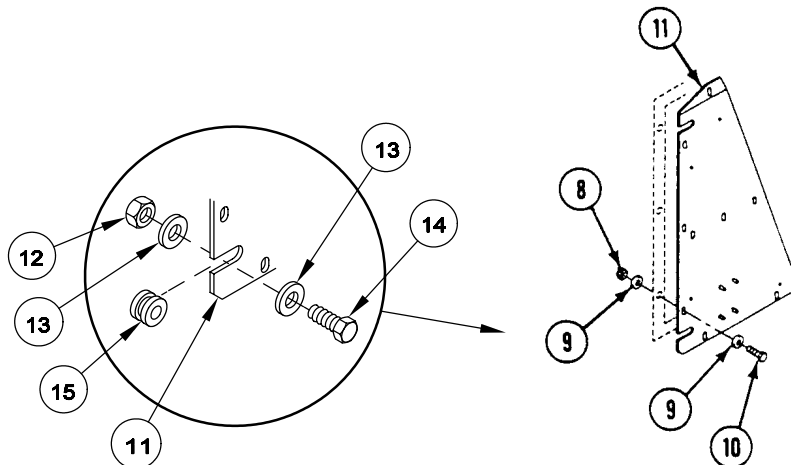
Locknut (6)

**REMOVAL**

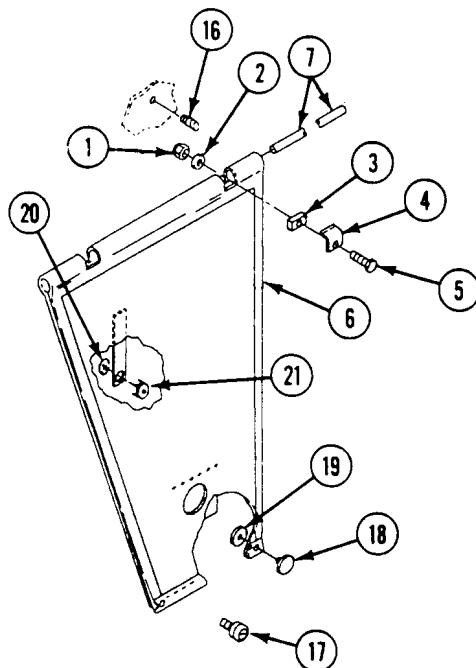
1. Remove two locknuts (1), washers (2), blocks (3), clips (4), screws (5), and blackout curtain (6) from driver's compartment opening. Discard locknuts.
2. Remove rod (7) from curtain (6).



3. Remove six locknuts (8), 12 washers (9), six screws (10), and frame (11) from bulkhead and sponson. Discard locknuts.
4. Remove locknut (12), two washers (13), screw (14), and grommet (15) from frame (11). Discard grommet and locknut.



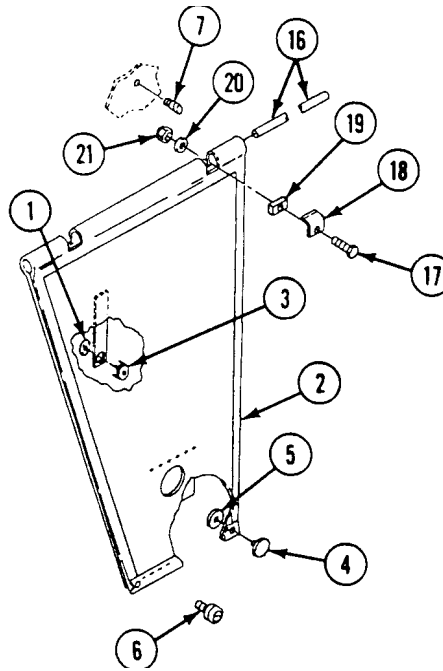
5. If damaged, remove two fasteners (16) from driver's compartment rear bulkhead.
6. Remove two studs (17) from lower frame and traverse beam in driver's compartment.
7. If needed, remove four buttons (18) and sockets (19) from curtain (6).
8. If needed, remove two eyelets (20) and washers (21) from curtain (6).



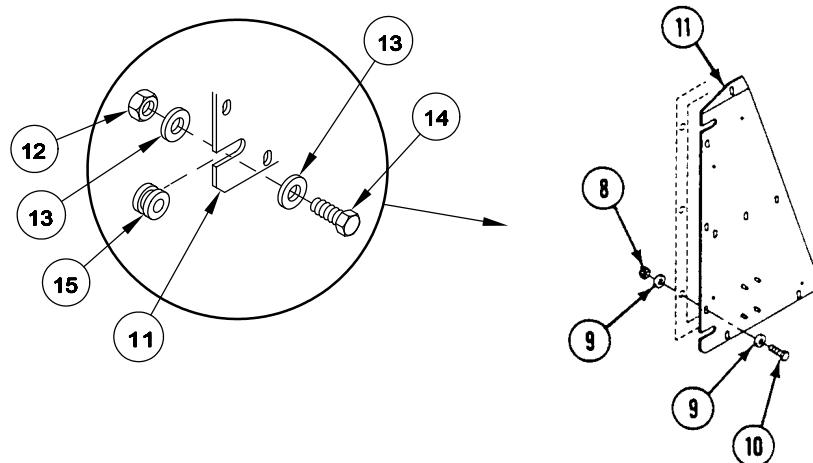


**INSTALLATION**

1. If removed, place two eyelets (1) on curtain (2). Secure with two washers (3).
2. If removed, place four buttons (4) on curtain (2). Secure with four sockets (5).
3. Install two studs (6) on lower frame and traverse beam in driver's compartment.
4. If removed, install two fasteners (7) on rear bulkhead in driver's compartment.

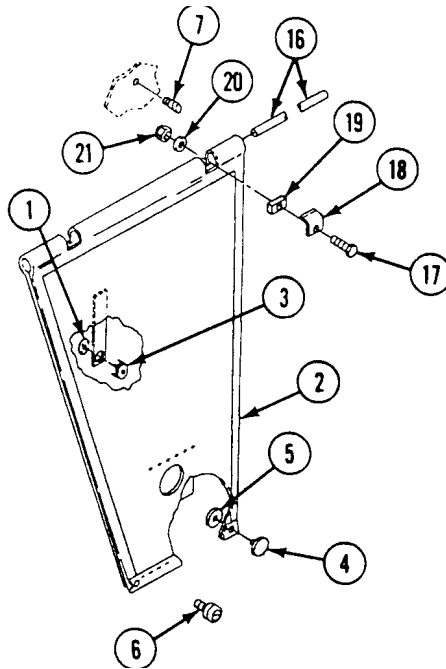


5. Install new grommet (15), screw (14), two washers (13), and new locknut (12) on frame (11).
6. Align frame (11) with bulkhead and sponson. Secure with six screws (10), 12 washers (9), and six new locknuts (8).



**REPLACE BLACKOUT CURTAIN AND FRAME (M577A2 AND M1068 ONLY) — Continued****0499 00**

7. Install rod (16) in curtain (2).
8. Align curtain (2) with driver's compartment. Secure with two screws (17), clips (18), blocks (19), washers (20), and new locknuts (21).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**

---

**REPLACE RIGHT REARWARD TABLE (M577A2 ONLY)**

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**0500 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0500 00-2).  
 Installation (page 0500 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Locknut (12)

Locknut (2)

Lockwasher (8)

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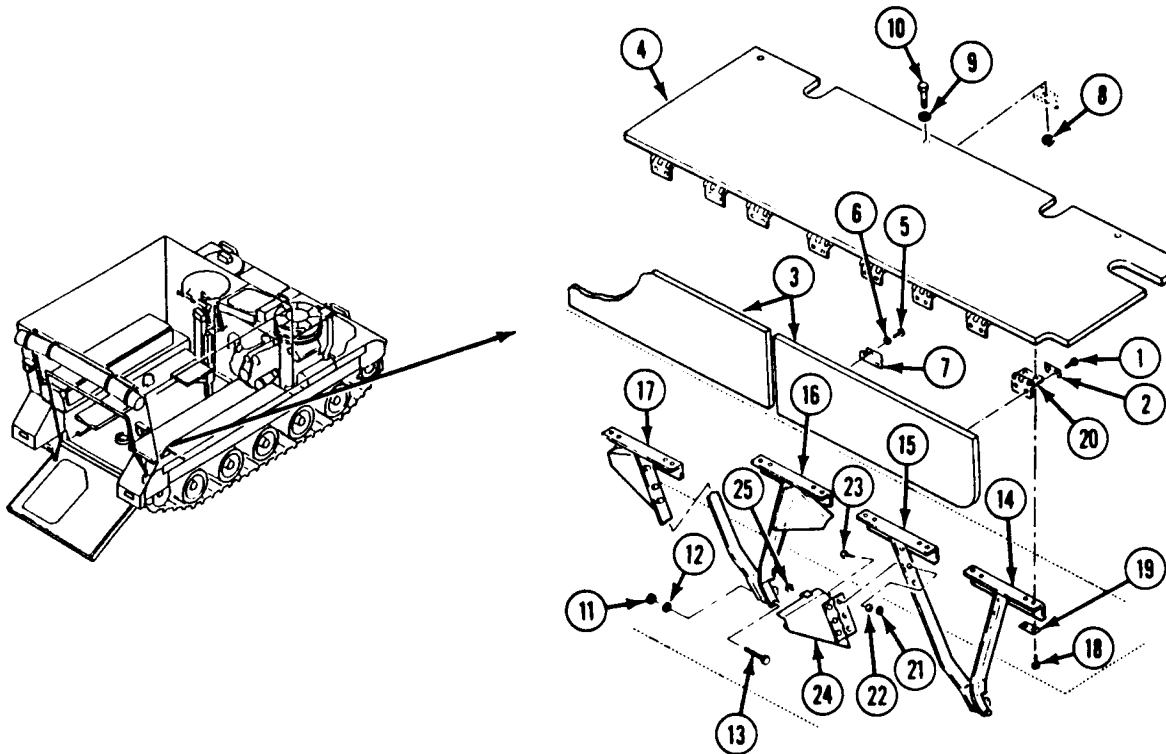
**REMOVAL**

1. Remove 16 screws (1), eight spacers (2), and two drop leaves (3) from table top (4).
2. Remove eight screws (5), lockwashers (6), and four catches (7) from two drop leaves (3). Discard lockwashers.
3. Remove three nuts (8), washers (9), and screws (10) that hold table top (4) to hull.

**NOTE**

**Shims might be required to obtain clearance between screw and support bracket. (Use flat washers as shims, two maximum.)**

4. Remove two locknuts (11), washers (12), and screws (13) that hold table supports (14), (15), (16), and (17) to hull. Discard locknuts.
5. Remove 16 screws (18), eight spacers (19), hinges (20), and supports (14), (15), (16), and (17) from table top (4).
6. Remove 12 locknuts (21), washers (22), screws (23), and four braces (24) from supports (14), (15), (16), and (17). Discard locknuts.
7. Remove four bumpers (25) from braces (24).



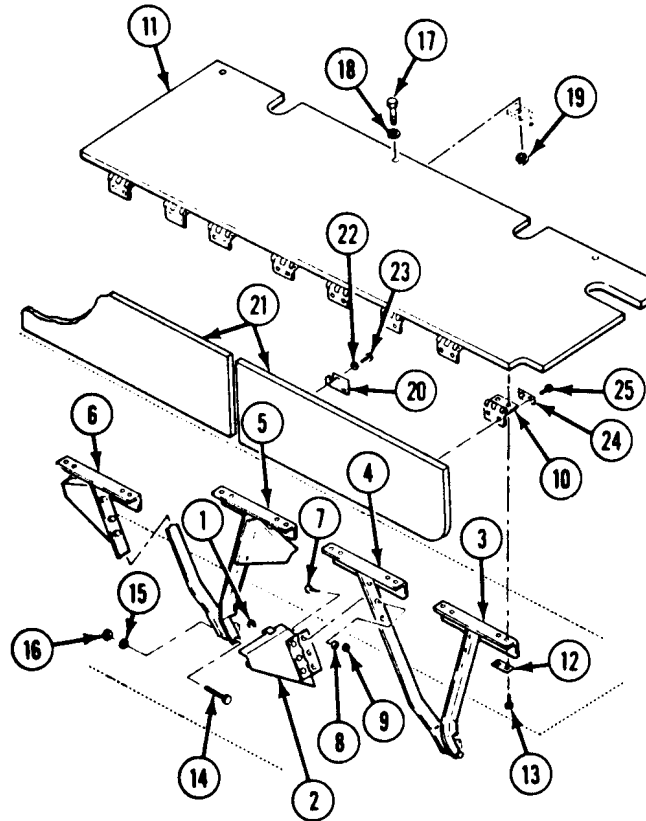
**INSTALLATION**

1. Install four bumpers (1) in braces (2).
2. Install four braces (2) on supports (3), (4), (5), and (6). Secure with 12 screws (7), washers (8), and new locknuts (9).
3. Install four supports (3), (4), (5), and (6) and hinges (10) on table top (11). Secure with eight spacers (12) and 16 screws (13).

**NOTE**

**Shims might be required to obtain clearance between screw and support bracket. (Use flat washers as shims, two maximum.)**

4. Install table top with supports on hull. Secure with two screws (14), washers (15), and new locknuts (16).
5. Install three screws (17) through table top and brackets on hull. Secure with three washers (18) and nuts (19).
6. Install four catches (20) on two drop leaves (21) Secure with eight new lockwashers (22) and screws (23).
7. Install two drop leaves (21) on hinges (10) Secure with eight spacers (24) and 16 screws (25).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



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**REPLACE RIGHT FORWARD TABLE (M577A2 ONLY)**

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**0501 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0501 00-2).  
 Installation (page 0501 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Ramp lowered (see your -10)

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Cotter pin (2)

Locknut

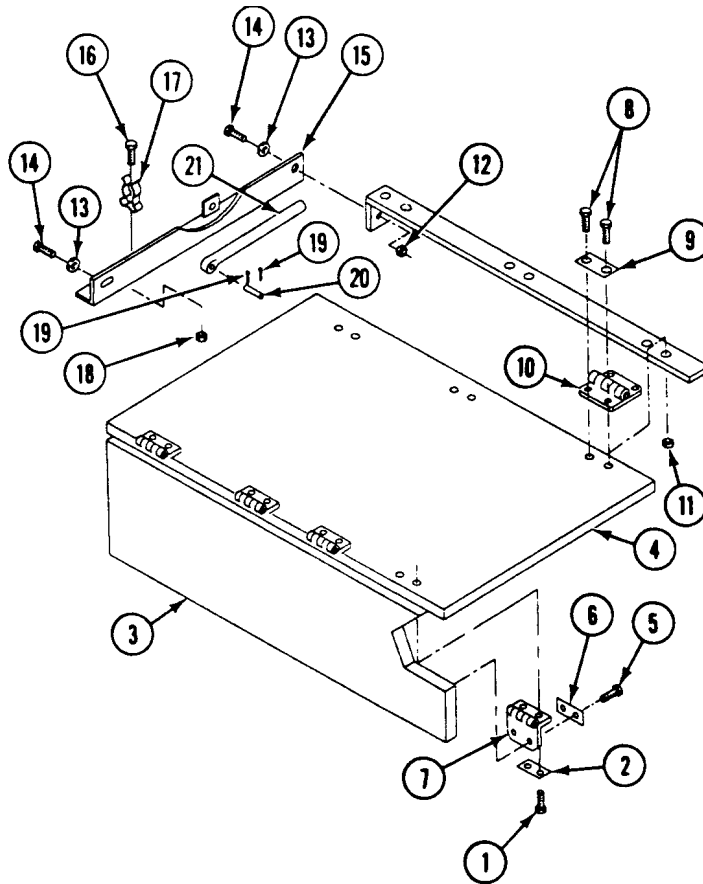
Locknut (4)

Locknut (13)

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**REMOVAL**

1. Remove eight screws (1), four spacers (2), and drop leaf (3) from table top (4).
2. Remove eight screws (5), four spacers (6), and hinges (7) from drop leaf (3).
3. Remove six screws (8), three spacers (9), three hinges (10), six locknuts (11), and table top (4) from hull. Discard locknuts.
4. Remove two locknuts (12), washers (13), and screws (14) from bracket (15). Discard locknuts.
5. Remove screws (16), clip (17), and locknut (18). Discard locknut.
6. Remove two cotter pins (19), straight pin (20), and rod (21). Discard cotter pins.

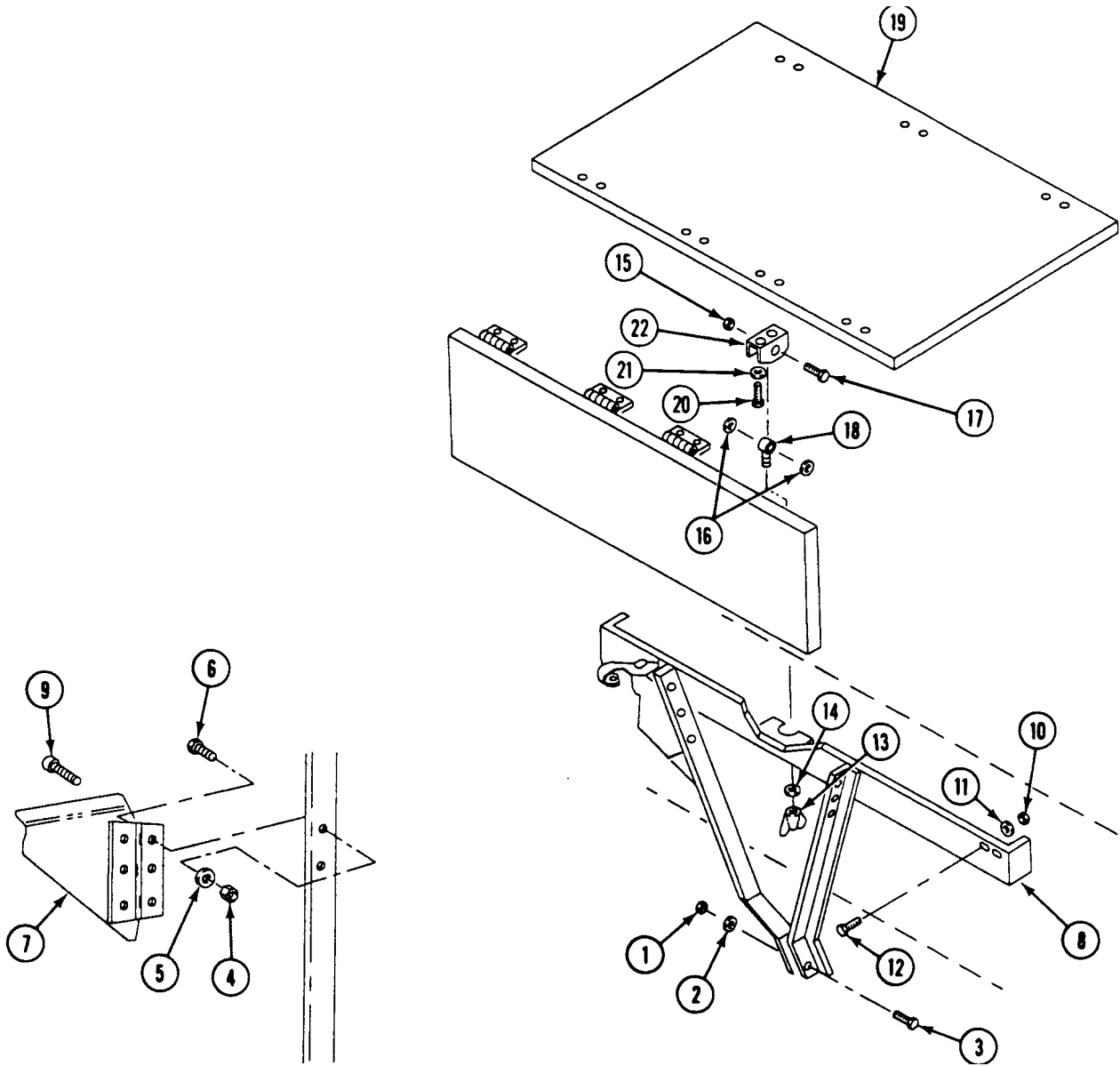




REPLACE RIGHT FORWARD TABLE (M577A2 ONLY) — Continued

0501 00

7. Remove locknut (1), washer (2), and screw (3) from hull. Discard locknut.
8. Remove six locknuts (4), washers (5), screws (6), and two braces (7) from support (8). Discard locknuts.
9. Remove two bumpers (9) from braces (7).
10. Remove locknut (10), washer (11), and screw (12) from support (8). Discard locknut.
11. Remove wing nut (13), washer (14), and support (8) from hull.
12. Remove locknut (15), two washers (16), screw (17), and eyebolt (18) from table top (19). Discard locknut.
13. Remove screw (20), washer (21), and bracket (22) from table (19).

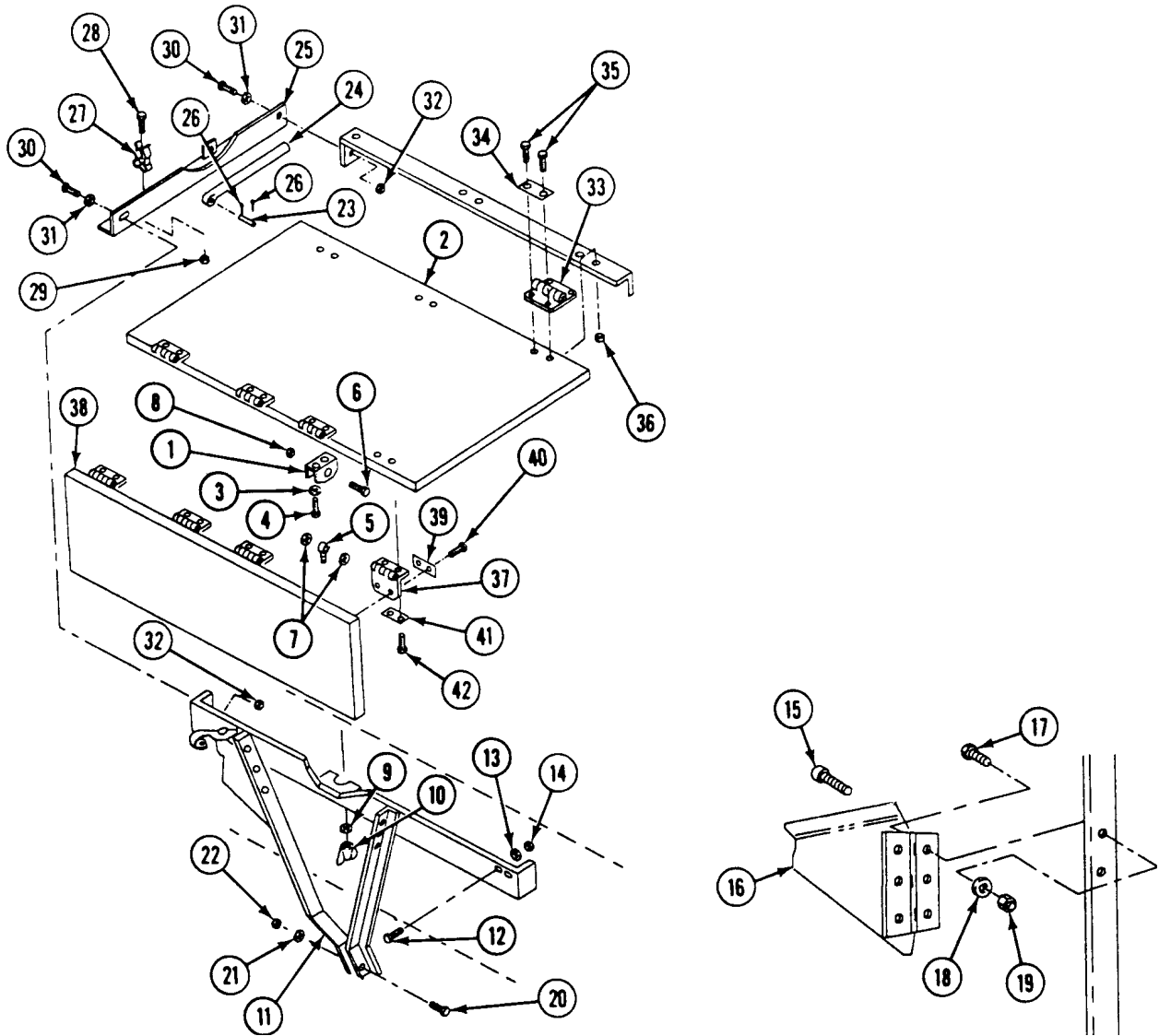


**INSTALLATION**

1. Install bracket (1) on table top (2). Secure with washer (3) and screw (4).
2. Install eyebolt (5) on bracket (1). Secure with screw (6), two washers (7), and new locknut (8).
3. Install washer (9) and wing nut (10) on eyebolt (5).
4. Install support (11) on hull. Secure with screw (12), washer (13), and new locknut (14).
5. Install two bumpers (15) on braces (16).
6. Install two braces (16) on support (11). Secure with six screws (17), washers (18), and new locknuts (19).
7. Install screw (20), washer (21), and new locknut (22) to secure support (11) to hull.
8. Install straight pin (23) in rod (24) and bracket (25). Secure with two new cotter pins (26).
9. Install clip (27) on bracket (25). Secure with screw (28) and new locknut (29).
10. Install bracket (25). Secure to hull angle and support (11) with two screws (30), washers (31), and new locknuts (32).
11. Install table top (2) on hull and support (11). Secure with three hinges (33), spacers (34), six screws (35), and new locknuts (36).
12. Install four hinges (37) on drop leaf (38). Secure with four spacers (39) and eight screws (40).
13. Install drop leaf (38) on table top (2). Secure with four spacers (41) and eight screws (42).

REPLACE RIGHT FORWARD TABLE (M577A2 ONLY) — Continued

0501 00



**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



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**REPLACE LEFT TABLE (M577A2 ONLY)**

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**0502 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0502 00-2).  
Installation (page 0502 00-4).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Locknut (3)

Locknut (18)

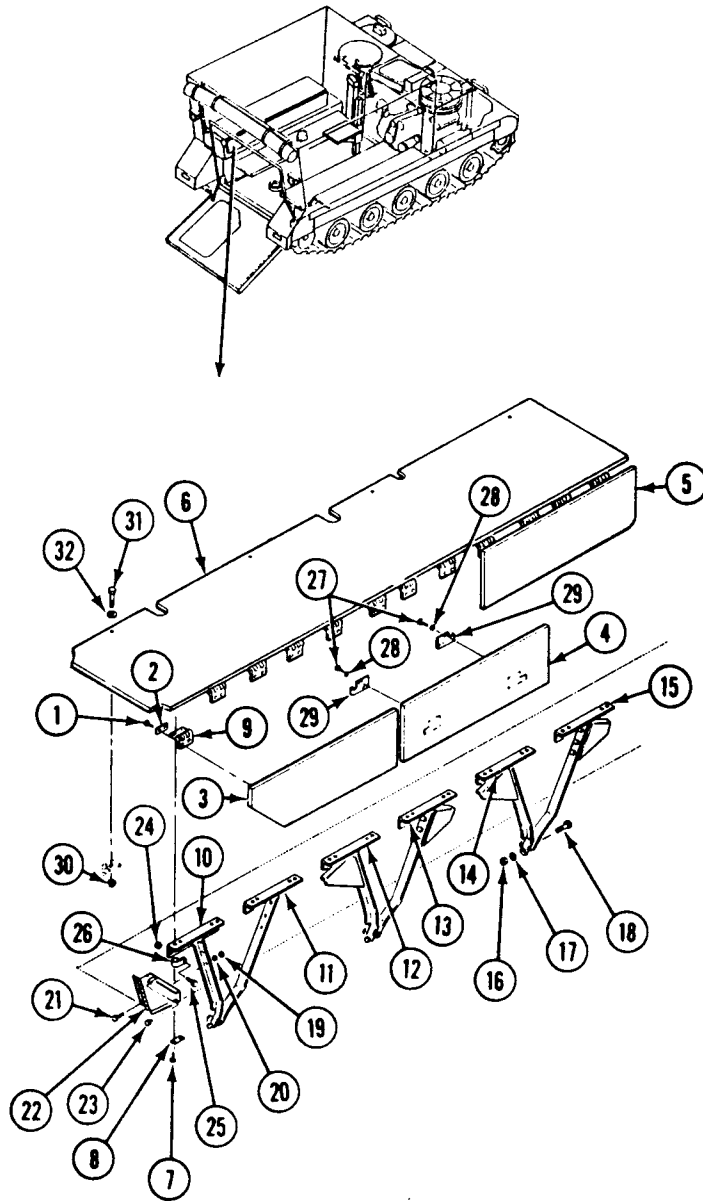
Locknut

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**REMOVAL**

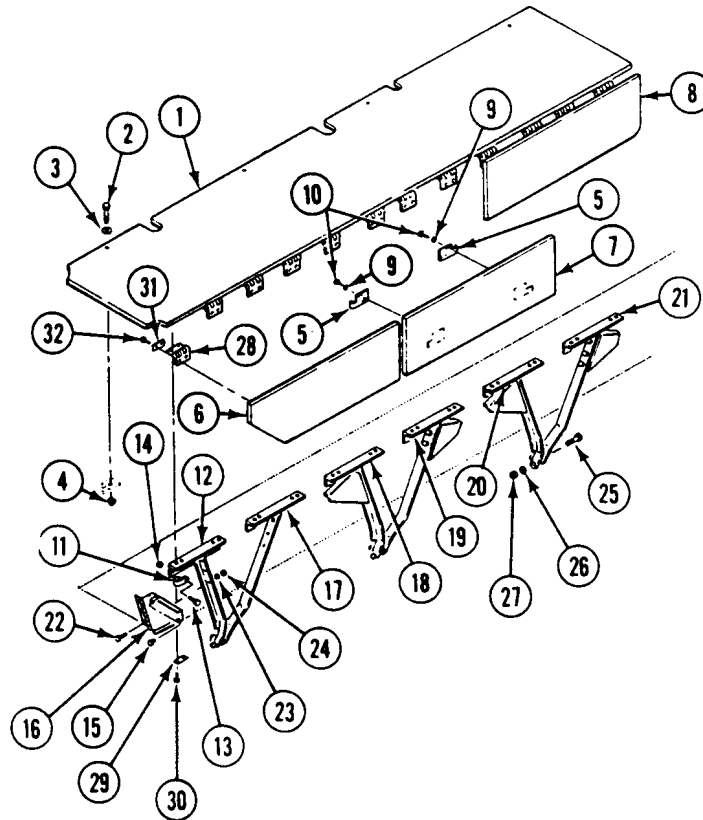
1. Remove 24 screws (1), 12 spacers (2), and three drop leaves (3), (4), and (5) from table top (6).
2. Remove 24 screws (7), 12 spacers (8), and hinges (9) from table top (6) and six supports (10), (11), (12), (13), (14), and (15).
3. Remove three locknuts (16), washers (17), screws (18), and supports (10), (11), (12), (13), (14), and (15) from hull. Discard locknuts.
4. Remove 18 locknuts (19), washers (20), screws (21), and six braces (22) from supports (10), (11), (12), (13), (14), and (15). Discard locknuts.
5. Remove six bumpers (23) from braces (22).
6. Remove locknut (24), screw (25), and clamp (26) from support (10). Discard locknut.
7. Remove 12 screws (27), washers (28), and six catches (29) from three drop leaves (3), (4), and (5).
8. Remove four nuts (30), screws (31), washers (32), and table top (6) from hull.

REPLACE LEFT TABLE (M577A2 ONLY) — Continued



**REPLACE LEFT TABLE (M577A2 ONLY) — Continued****0502 00****INSTALLATION**

1. Install table top (1) on hull. Secure with four screws (2), washers (3), and nuts (4).
2. Install six catches (5) on three drop leaves (6), (7), and (8). Secure with 12 washers (9) and screws (10).
3. Install clamp (11) on support (12). Secure with screw (13) and new locknut (14).
4. Install six bumpers (15) on braces (16).
5. Install six braces (16) on six supports (12), (17), (18), (19), (20), and (21). Secure with 18 screws (22), washers (23), and new locknuts (24).
6. Install six supports (12), (17), (18), (19), (20), and (21) on hull. Secure with three screws (25), washers (26), and new locknuts (27).
7. Install 12 hinges (28) and six supports on table top (1). Secure with 12 spacers (29) and 24 screws (30).
8. Install three drop leaves (6), (7), and (8) on table top (1). Secure with 12 spacers (31) and 24 screws (32).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



---

**REPLACE EQUIPMENT STOWAGE SHELF (M901A1 ONLY)**

---

**0503 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0503 00-1).  
 Installation (page 0503 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine shutdown (see your -10)

Carrier blocked (see your -10)

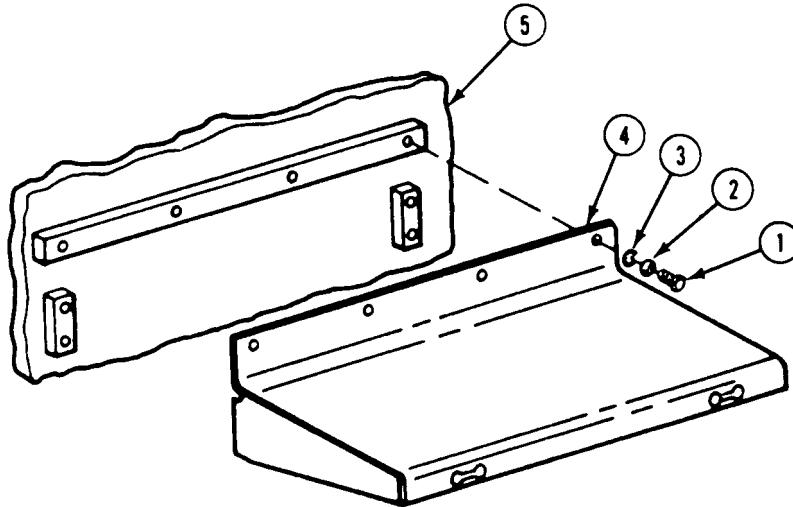
Materials/Parts

Lockwasher (8)

---

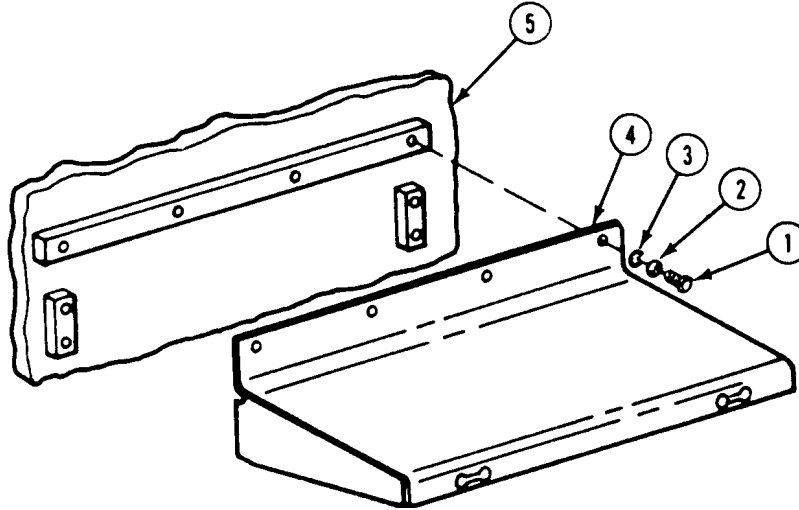
**REMOVAL**

1. Remove eight screws (1), washers (2), and lockwashers (3) from shelf (4). Discard lockwashers.
2. Remove shelf (4) from bulkhead (5).



**INSTALLATION**

1. Install shelf (4) on bulkhead (5). Secure with eight new lockwashers (3), washers (2), and screws (1).

**END OF TASK**

**REPLACE TENT AND CLAMPS (M577A2 ONLY)**

**0504 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0504 00-1).  
 Installation (page 0504 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

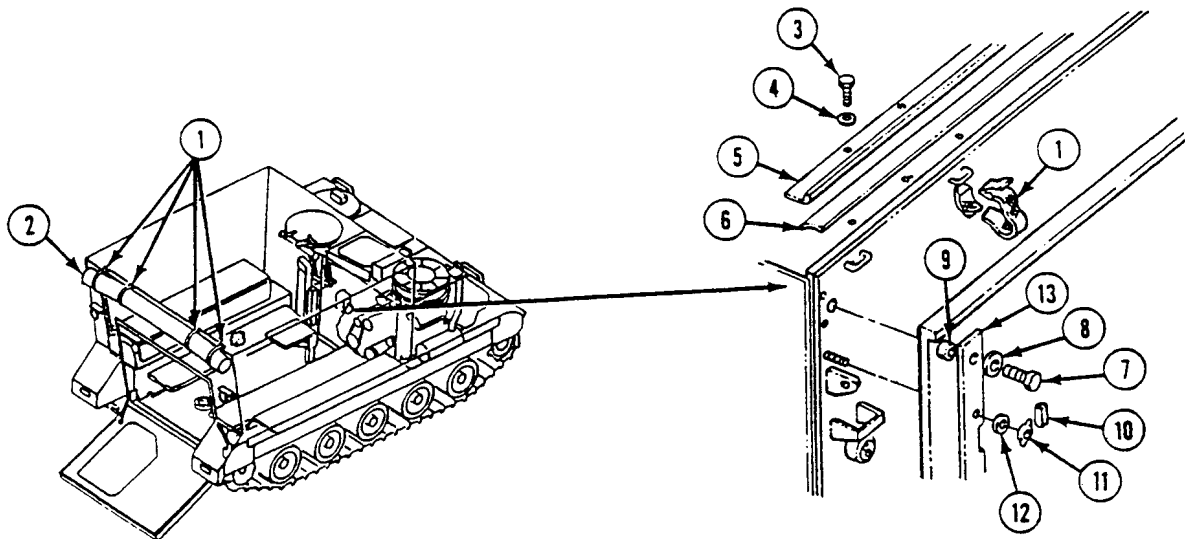
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)

Materials/Parts

Spring pin (6)

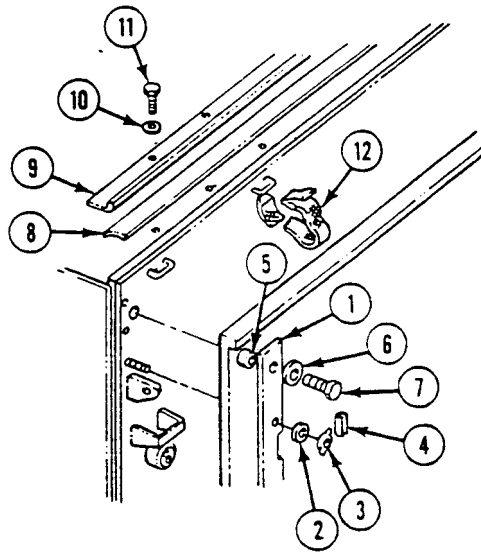
**REMOVAL**

1. Release four straps (1). Remove tent (2) and straps from hull top plate. Have helper assist.
2. Remove nine screws (3), washers (4), retainer strip (5), and rubber strip (6) from hull top plate.
3. Remove two screws (7), washers (8), and spacers (9) from rear bulkhead.
4. Remove six spring pins (10), wing nuts (11), washers (12), and two retainer strips (13) from rear bulkhead. Discard spring pins.



**INSTALLATION**

1. Place two retainer strips (1) on rear bulkhead. Secure with six washers (2) and wing nuts (3). Secure wing nuts with six new spring pins (4).
2. Install two spacers (5), washers (6), and screws (7) in rear bulkhead.
3. Place rubber strip (8) and retainer strip (9) on hull top plate. Secure with nine washers (10) and screws (11).
4. Place tent on hull top plate. Secure with four straps (12). Have helper assist.

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**

**REPLACE TENT AND FRAME MOUNTS (M577A2 ONLY)**

**0505 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0505 00-1).  
 Installation (page 0505 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque wrench (WP 0780 00, Item 104)

Equipment Condition

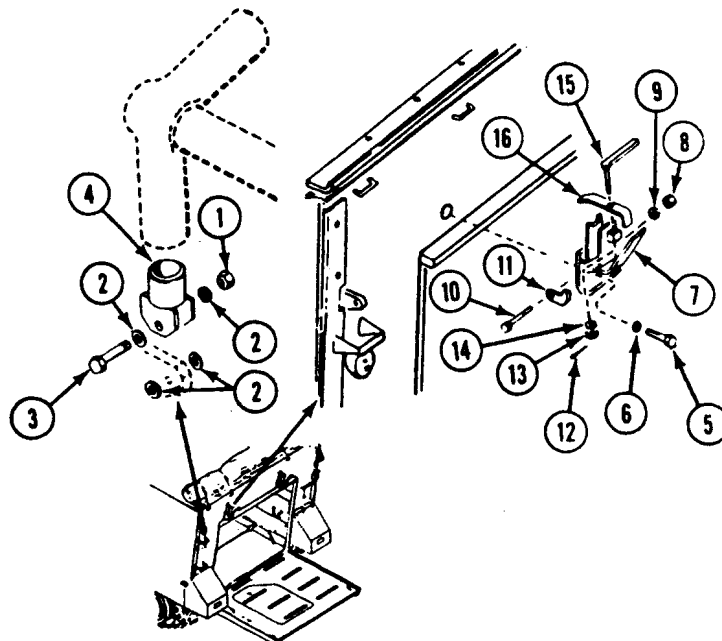
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Tent frame removed from carrier (see your -10)

Materials/Parts

Cotter pin (2)  
 Locknut (2)  
 Locknut (2)

**REMOVAL**

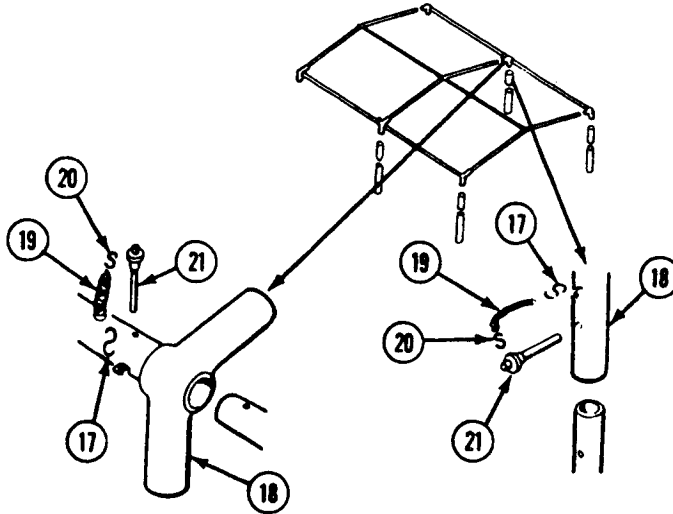
1. Remove two locknuts (1), eight washers (2), two screws (3), and two end fittings (4) from rear bulkhead lugs. Discard locknuts.
2. Remove four screws (5), washers (6), and two brackets (7) from rear bulkhead.
3. Remove two locknuts (8), washers (9), screws (10), and retainers (11) from brackets (7). Discard locknuts.
4. Remove two cotter pins (12), nuts (13), washers (14), hand screws (15), and clamps (16) from brackets (7). Discard cotter pins.



**NOTE**

There are six quick release pins and attaching chains on the frame assembly. Remove quick release pins and chains, as needed.

5. Open both ends of hook (17). Remove hook from bracket on frame (18) and from chain (19).
6. Open both ends of hook (20). Remove hook from chain (19) and quick release pin (21).

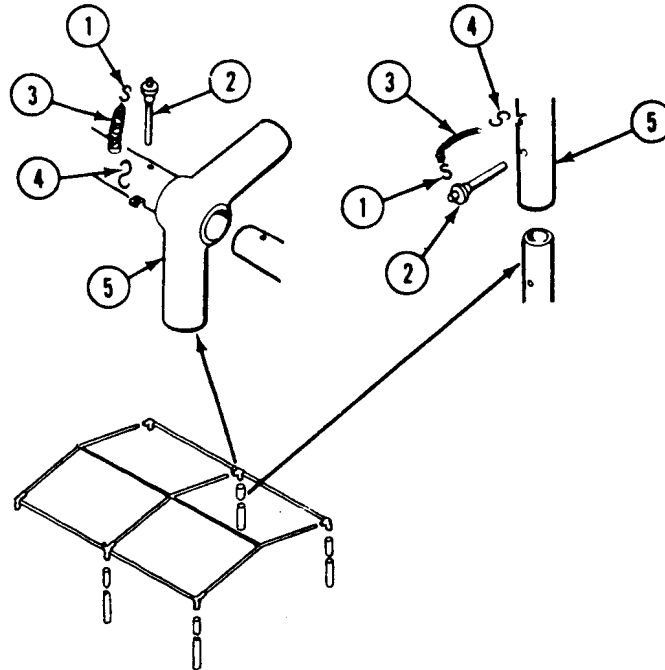


INSTALLATION

NOTE

There are six quick release pins and attaching chains on the frame assembly. Install quick release pins and chains, as needed.

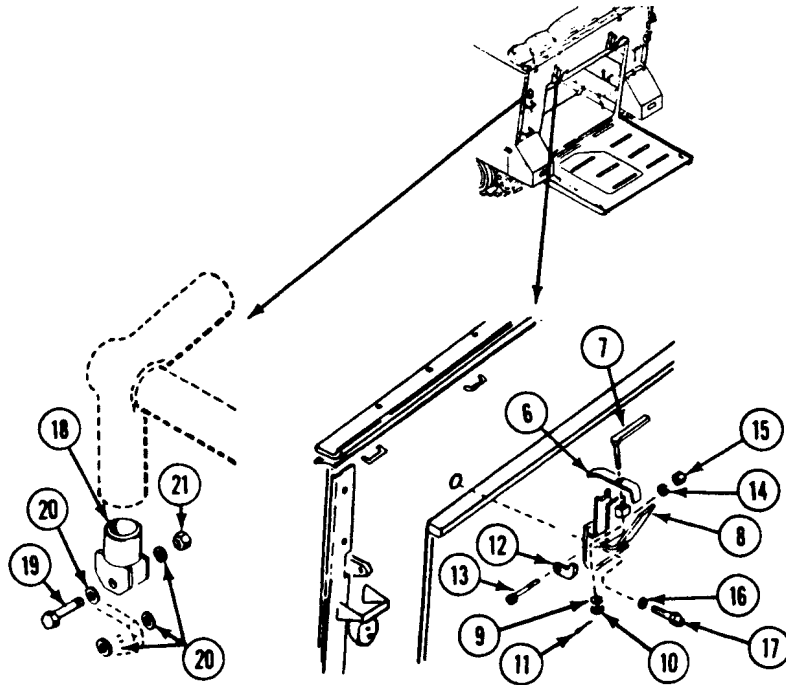
1. Install hook (1) on quick release pin (2) and chain (3). Squeeze both ends of hook to secure.
2. Install hook (4) on chain (3) and bracket on frame (5). Squeeze both ends of hook to secure.



**REPLACE TENT AND FRAME MOUNTS (M577A2 ONLY) — Continued**

**0505 00**

3. Install two clamps (6) and hand screws (7) on brackets (8). Secure with two washers (9), nuts (10), and new cotter pins (11).
4. Install two retainers (12) on brackets (8). Secure with two screws (13), washers (14), and new locknuts (15).
5. Align two brackets (8) on rear bulkhead. Secure with four washers (16) and screws (17). **TIGHTEN SCREWS TO 60-65 LB-FT (81-88 N·M) TORQUE.** Use torque wrench.
6. Align two end fittings (18) with rear bulkhead lugs. Secure with two screws (19), eight washers (20), and two new locknuts (21)



**FOLLOW-THROUGH STEPS**

1. Install tent frame on carrier (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



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**REPLACE VERTICAL AMMUNITION RACK (M1064 ONLY)**

---

**0506 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0506 00-2).  
Installation (page 0506 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Personnel Required

Unit Mechanic

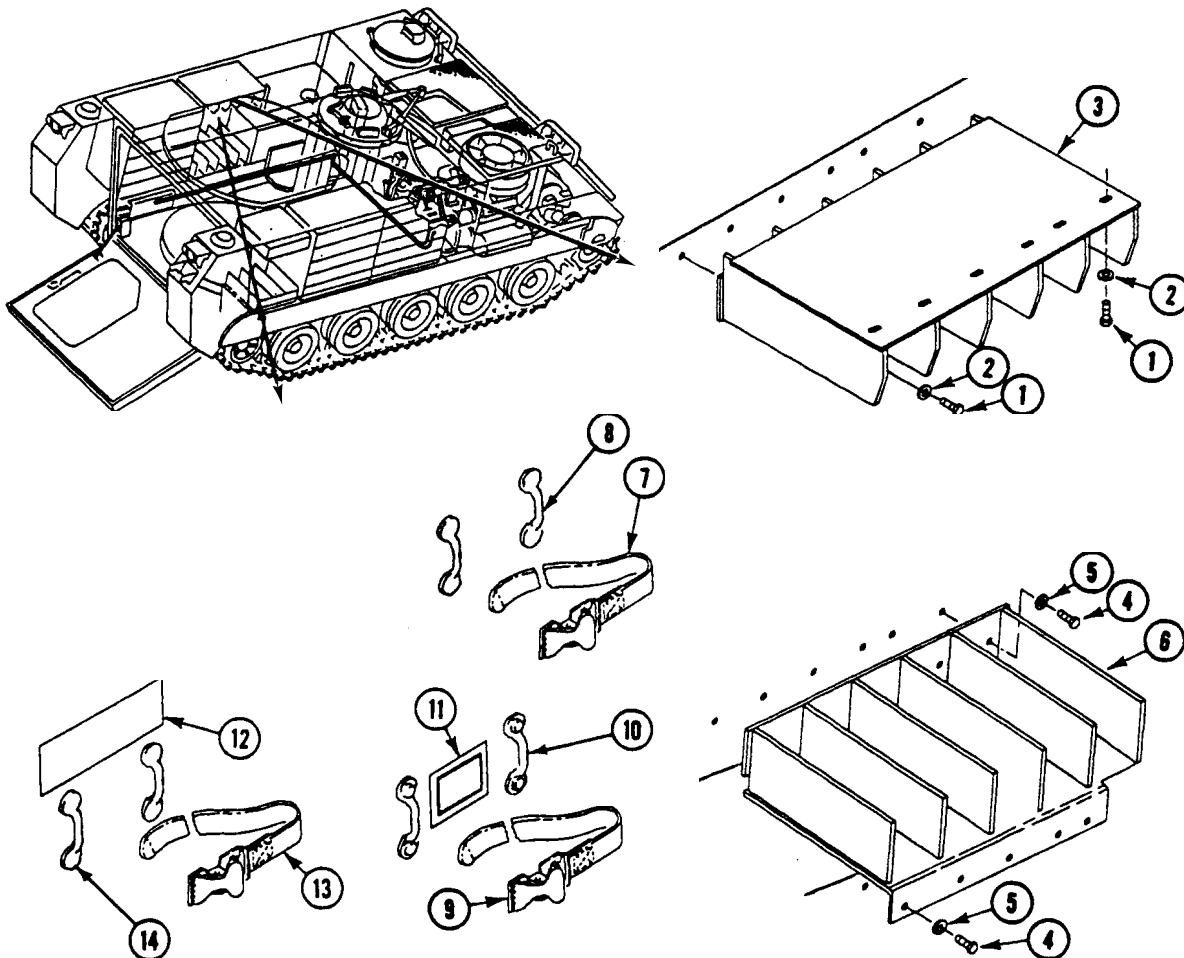
---

REMOVAL

NOTE

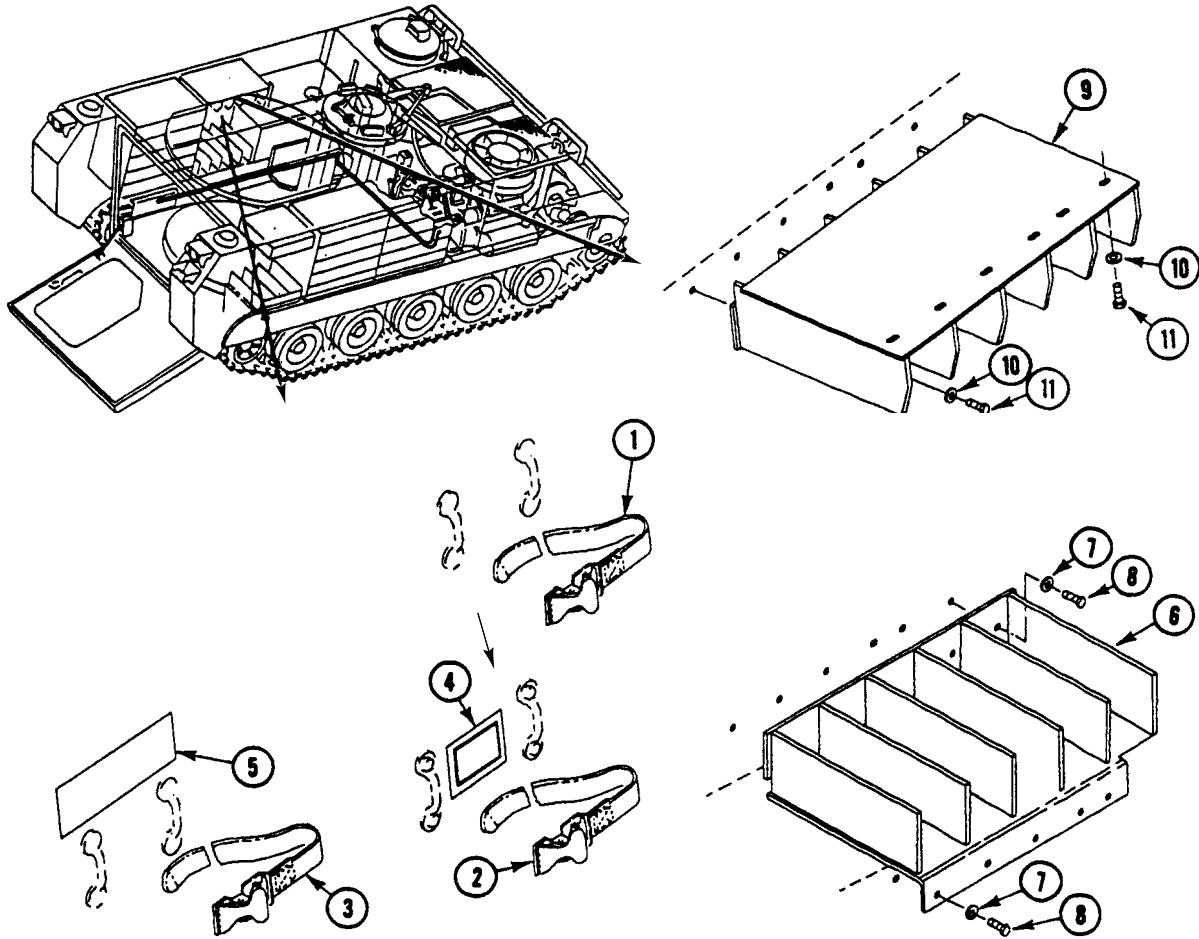
Vertical ammunition racks in the M1064 carrier are removed and installed the same way. Racks differ in size and capacity. Left racks are shown.

1. Remove 12 screws (1), washers (2), and rack (3) from side hull and top plate.
2. Remove 11 screws (4), washers (5), and rack (6) from side hull and sponson.
3. If damaged, remove ten straps (7) from loops (8) on left side hull.
4. If damaged, remove two straps (9) from loops (10) on sponson side plate.
5. If damaged, remove two decals (11) from sponson side plate.
6. If damaged, remove decal (12) from sponson side plate.
7. If damaged, remove strap (13) from loops (14) on sponson side plate.



**INSTALLATION**

1. If straps (1), (2), and (3) were removed, replace with new straps.
2. If decals (4) and (5) were removed, clean area and apply new decal.
3. Install rack (6), 11 washers (7), and screws (8) on side hull and sponson.
4. Install rack (9), 12 washers (10), and screws (11) on side hull and top plate.



**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Unblock carrier (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



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**REPLACE HORIZONTAL AMMUNITION RACK (M1064 ONLY)**

---

**0507 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0507 00-2).  
Installation (page 0507 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Personnel Required

Unit Mechanic

Helper (H)

---

**REMOVAL**

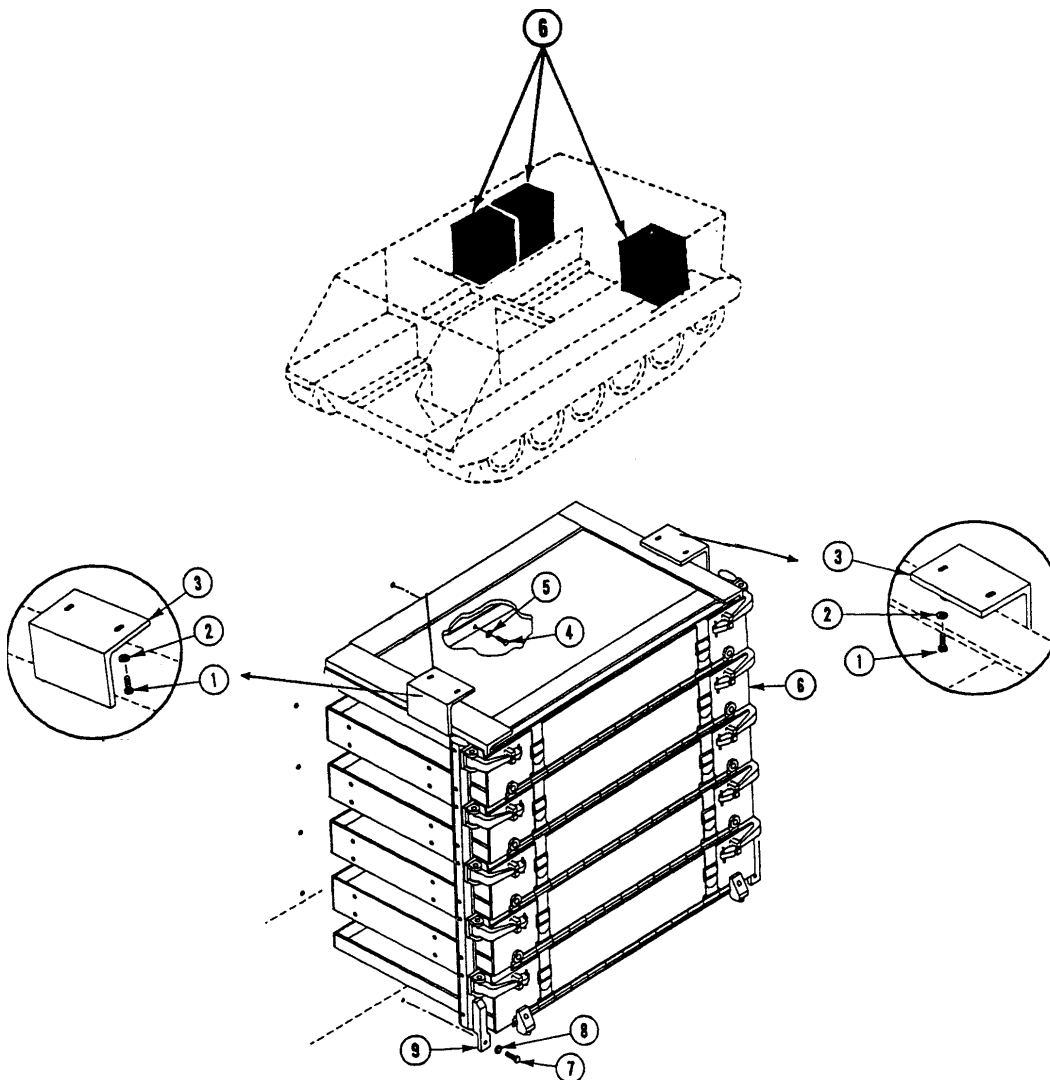
1. Remove four screws (1), washers (2), and two brackets (3) from hull top plate.
2. Remove 18 screws (4) and washers (5) from rack assembly (6) and side hull.
3. Remove two screws (7) and washers (8) from two vertical posts (9) and sponson.

**WARNING**



**Rear trays of ammo rack could collapse when removed. To prevent injury, move ammo rack from the front. Keep fingers away from spaces between trays on the back of ammo rack.**

4. Remove horizontal ammunition rack (6) from carrier. Have helper assist.



INSTALLATION

**WARNING**



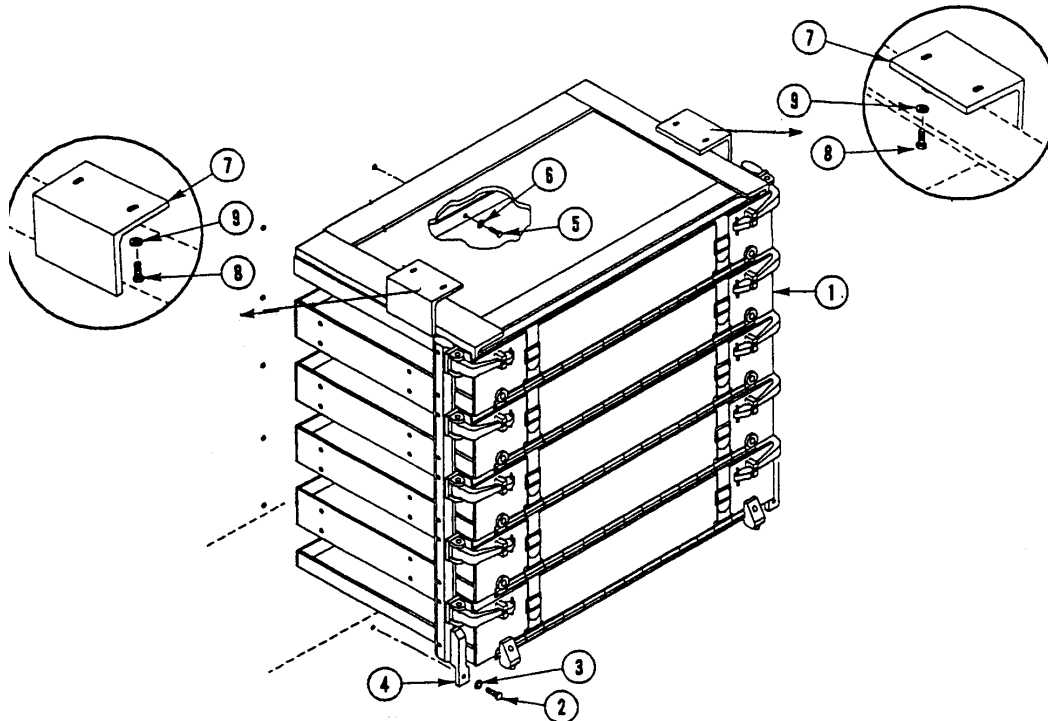
**Rear trays of ammo rack could collapse when removed. To prevent injury, move ammo rack from the front. Keep fingers away from spaces between trays on the back of ammo rack.**

1. Position horizontal ammunition rack (1) on sponson. Jam rack against other rack, if installed. Have helper assist.
2. Install two screws (2), washers (3), and vertical posts (4) on sponson.

**NOTE**

**Start installation of 18 screws inside hull from top and work down. Rack mounting holes may be elongated to 3/16 inch (5 mm) to match hole pattern.**

3. Install 18 screws (5) and washers (6) in rack assembly (1) and side hull.
4. Position two brackets (7) against hull top plate and top of rack (1). Install four screws (8) and washers (9) in brackets (7) and hull top plate. Close all ammo doors.



**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).
3. Unblock carrier (see your -10).

**END OF TASK**



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**REPAIR HORIZONTAL AMMUNITION RACK (M1064 ONLY)**

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**0508 00**

**THIS WORK PACKAGE COVERS:**

- Disassembly (page 0508 00-2).
  - Cleaning (page 0508 00-4).
  - Inspection and Repair (page 0508 00-4).
  - Assembly (page 0508 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Horizontal ammo rack removed from carrier  
(WP 0507 00)

Materials/Parts

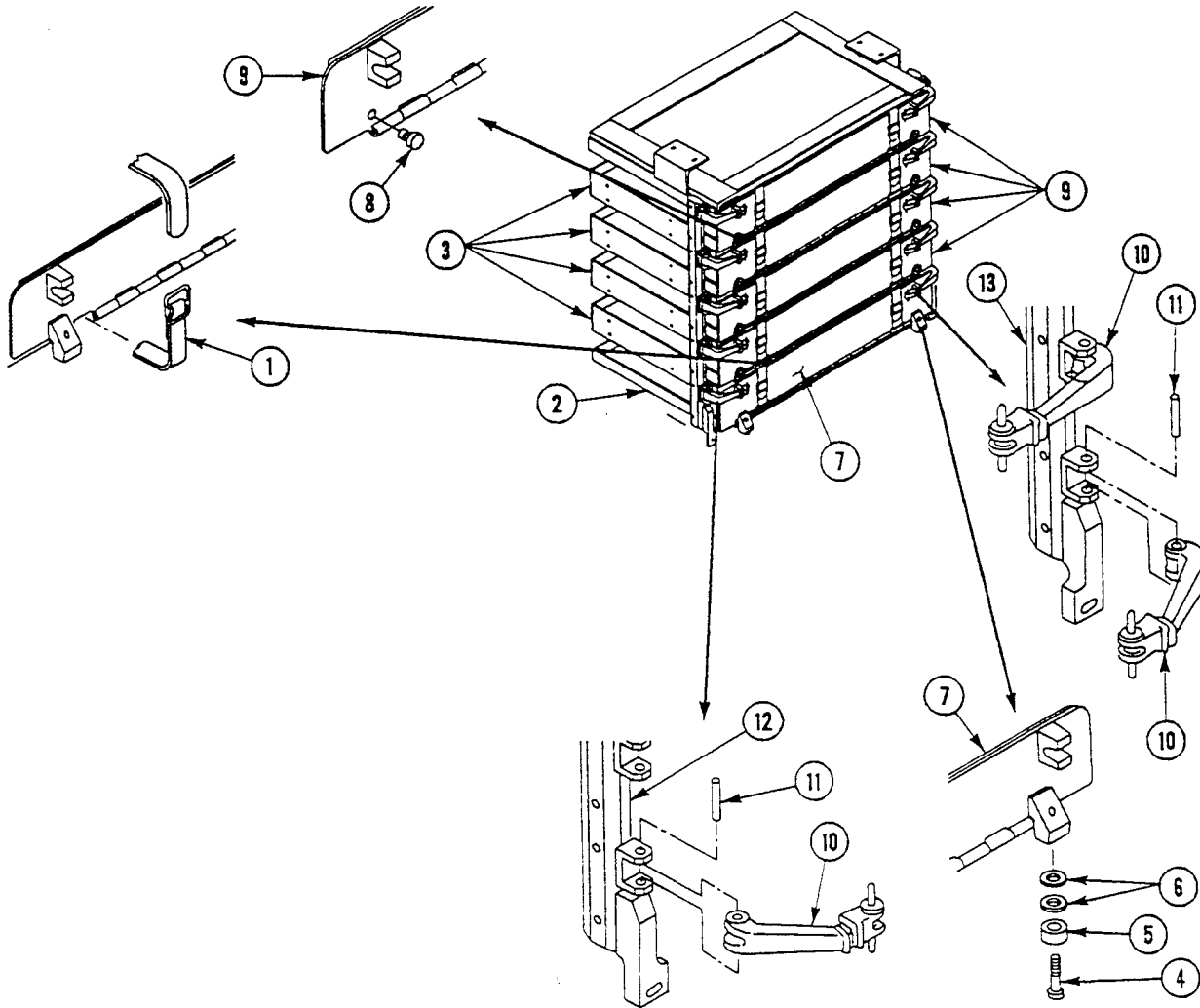
- Adhesive (WP 0782 00, Item 3)
  - Cleaning compound, solvent (WP 0782 00, Item 16)
  - Locknut (4)
-

## REPAIR HORIZONTAL AMMUNITION RACK (M1064 ONLY) — Continued

0508 00

## DISASSEMBLY

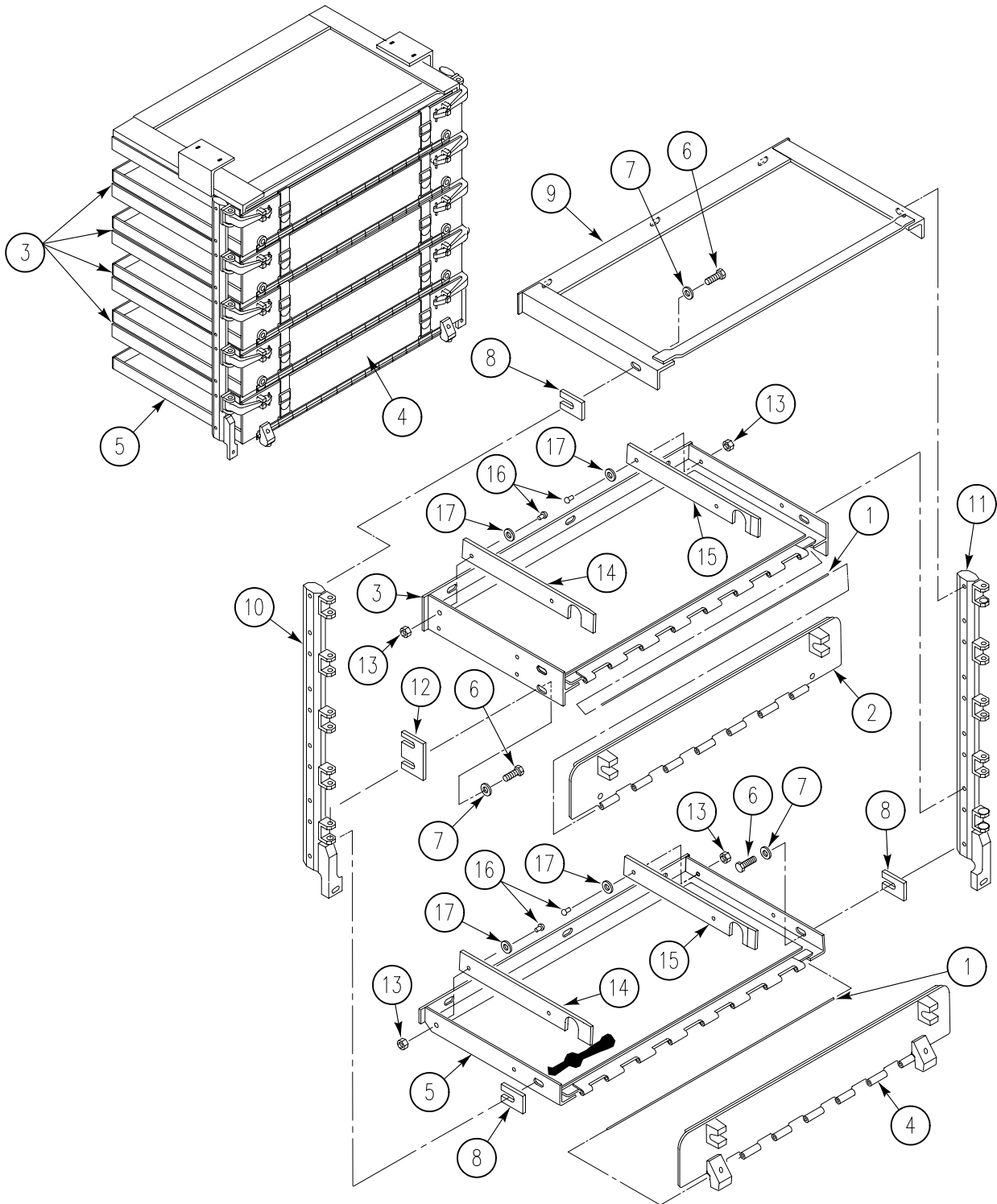
1. Remove two webbing straps (1) from lower rack (2) and four middle racks (3).
2. Remove two screws (4), metallic bumpers (5), and four washers (6) from lugs on lower door (7).
3. Remove eight spacer bumpers (8) from four doors (9).
4. Release ten hooks (10) from five doors (7) and (9). Open doors.
5. Remove ten spring pins (11) and hooks (10) from vertical posts (12) and (13).



6. Remove four hinge pins (1) and doors (2) from four middle ammo racks (3).
7. Remove hinge pin (1) and door (4) from lower ammo rack (5).
8. Remove two screws (6), washers (7), shims (8), and upper stowage rack (9) from two vertical posts (10) and (11).
9. Remove two screws (6), washers (7), shims (12), and middle stowage rack (3) from two vertical posts (10) and (11).
10. Repeat Step 9 for four middle stowage racks (3).
11. Remove two screws (6), washers (7), shims (8), and lower stowage rack (5) from two vertical posts (10) and (11).

REPAIR HORIZONTAL AMMUNITION RACK (M1064 ONLY) — Continued

12. Remove four locknuts (13), screws (16), washers (17), and two mortar wear bars (14) and (15) from each of five storage racks (3) and (5). Discard locknuts.



**CLEANING**

1. Clean all parts of stowage rack.

**INSPECTION AND REPAIR**

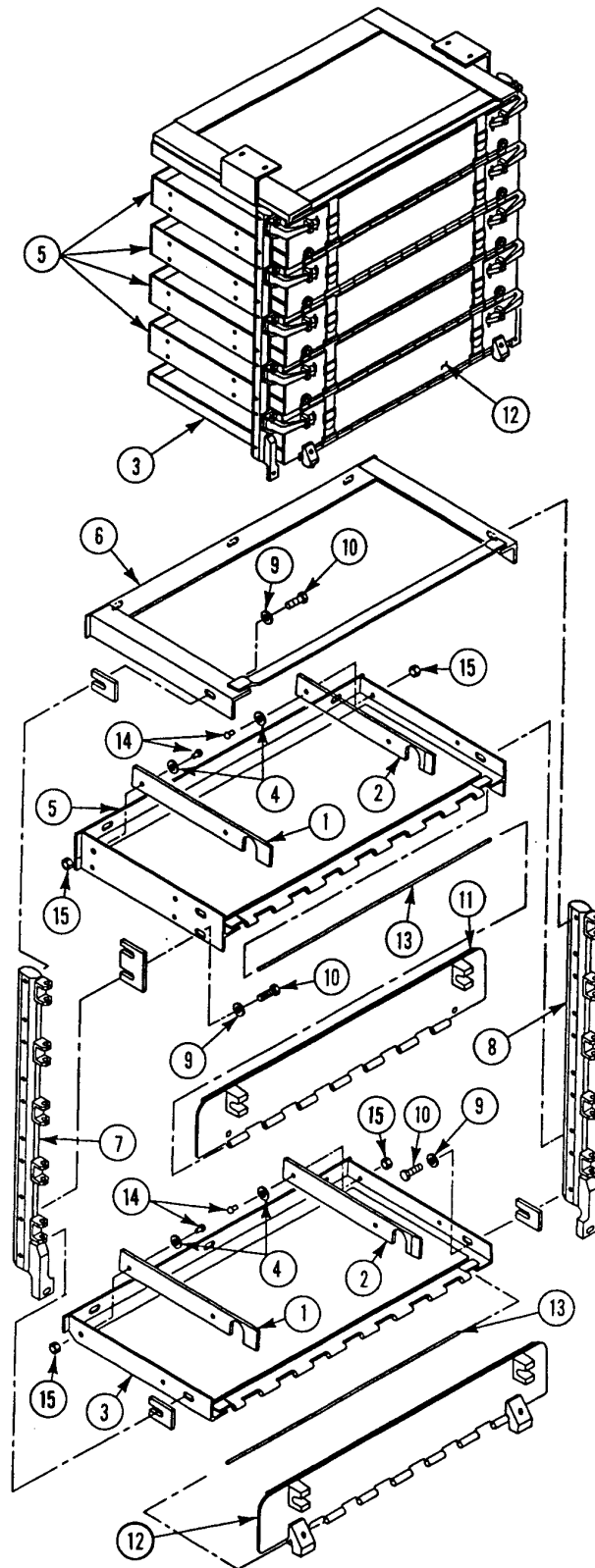
1. Inspect all metal parts for cracks, bends, or breaks. Repair minor defects. Replace parts that cannot be repaired.
2. Inspect webbing straps and door hooks for excessive wear, cuts, or fraying. Replace defective parts.

**ASSEMBLY****NOTE**

**Assemble each horizontal stowage rack without shims and straps outside the carrier. Do not tighten any mounting screws until after installation in the carrier.**

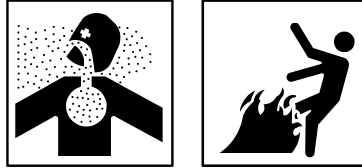
1. Install two mortar wear bars (1) and (2) on lower stowage rack (3) with four washers (4), screws (14), and new locknuts (15).
2. Install upper stowage rack (6) on vertical posts (7) and (8) with two washers (9) and screws (10).
3. Install lower stowage rack (3) on vertical posts (7) and (8) with two washers (9) and screws (10).
4. Install four middle stowage racks (5) on vertical posts (7) and (8) with 16 washers (9) and screws (10).
5. Install five doors (11) and (12) on five stowage racks (3) and (5) with five hinge pins (13).

6. Stake ends of five hinge pins (13) to five doors (11) and (12).



7. Install eight spacer bumpers (1) on four doors (2) as follows:
  - a. Clean mating surfaces on four doors (2) with solvent, cleaning compound.

**WARNING**

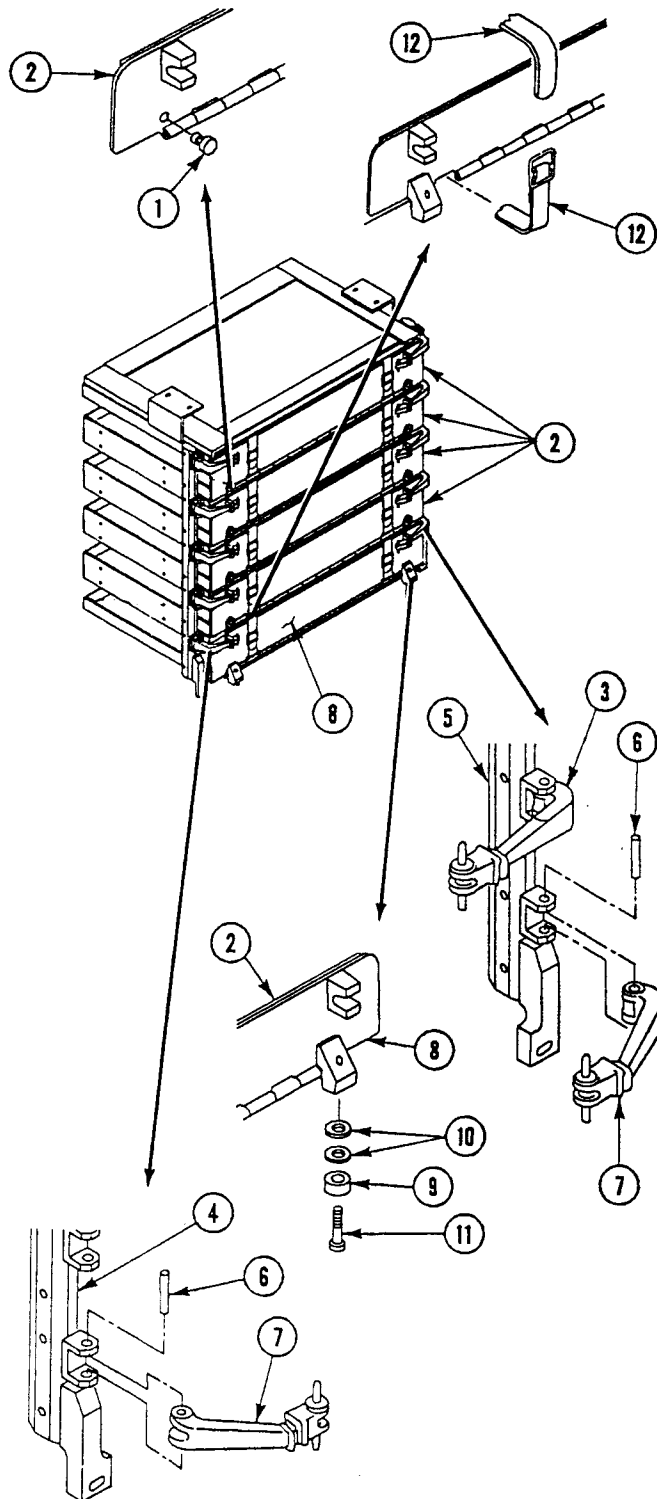


**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

- b. Apply a thin, even coat of adhesive to mating surfaces. Allow adhesive to dry until tacky (10 to 20 minutes). Press spacer bumpers firmly on doors (2).
8. Install ten hooks (3) on vertical posts (4) and (5) with ten spring pins (6).
9. Secure ten hooks (7) on five doors (2) and (8).
10. Install two metallic bumpers (9), four washers (10), and two screws (11) on lugs of lower door (8).

11. Install two mortar stowage webbing straps (12) in bottom slots of five doors (2) and (8). Secure each strap around door.



**FOLLOW-THROUGH STEPS**

1. Install horizontal ammo rack (WP 0507 00).

**END OF TASK**



**REPLACE CABLE REEL HOLDER ASSEMBLY (M1064 ONLY)**

**0509 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0509 00-1).  
 Installation (page 0509 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

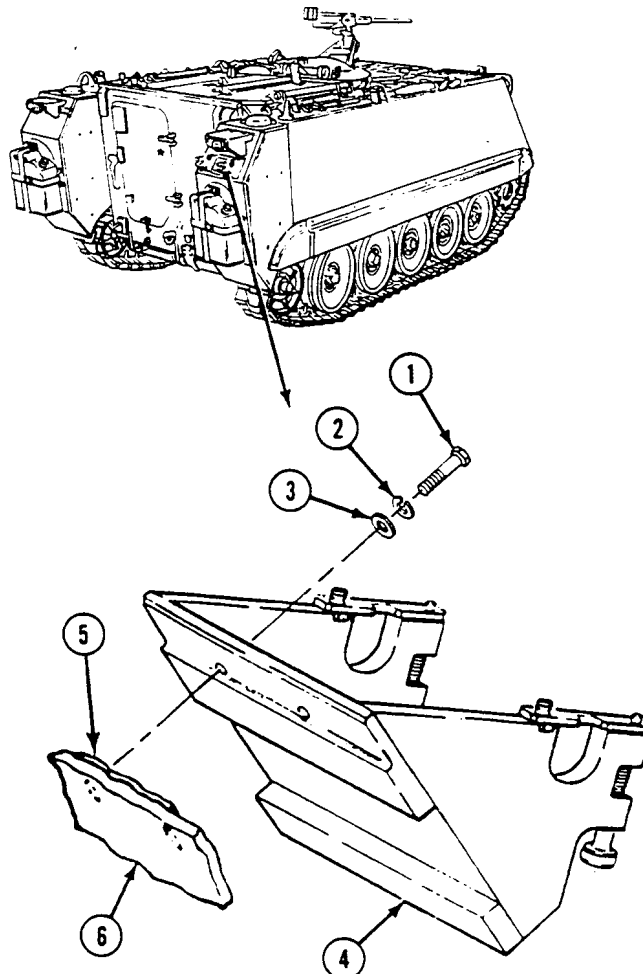
Carrier blocked (see your -10)

Materials/Parts

Lockwasher (2)

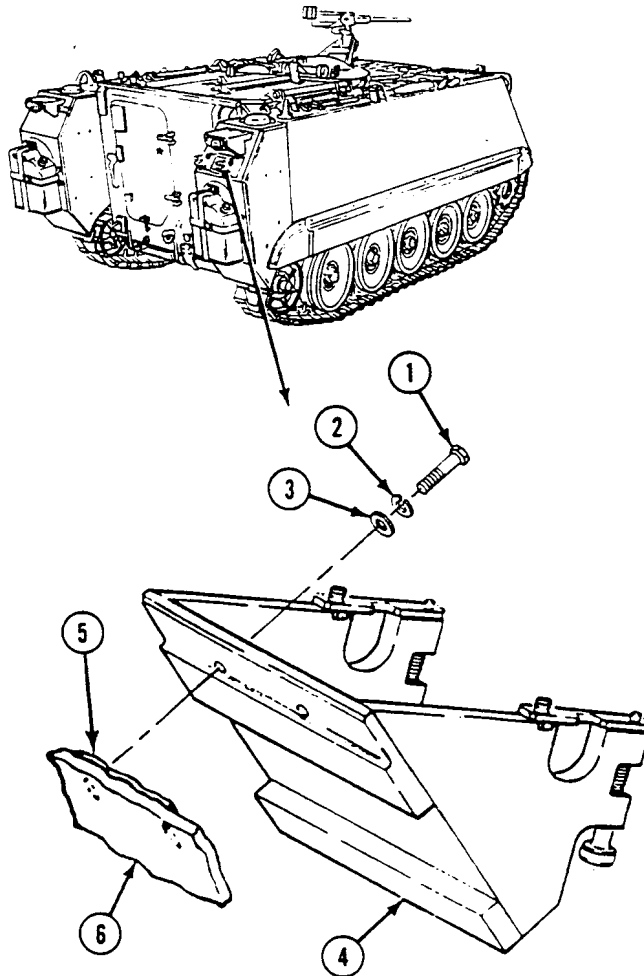
**REMOVAL**

1. Remove two screws (1), lockwashers (2), and washers (3) securing holder assembly (4) to stoplight-taillight guard (5) and external fuel tank (6). Discard lockwashers.
2. Remove holder assembly (4) from fuel tank (6).



**INSTALLATION**

1. Install holder assembly (4) on fuel tank (6).
2. Secure holder assembly (4) to stoplight-tailight guard (5) and external fuel tank (6) with two screws (1), new lockwashers (2), and washers (3).

**END OF TASK**

**REPAIR CABLE REEL HOLDER ASSEMBLY (M1064 ONLY)**

**0510 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0510 00-1).  
 Assembly (page 0510 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

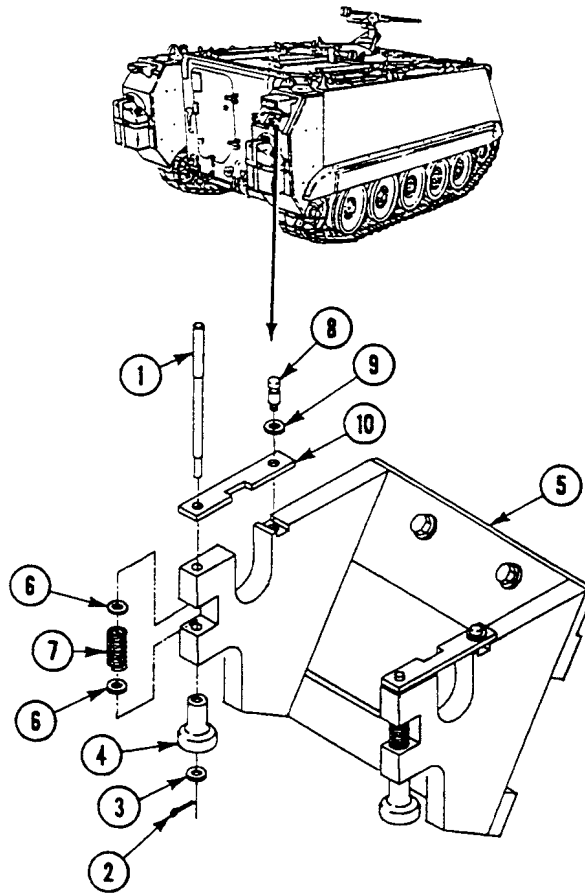
Cable reel holder assembly removed (WP 0509 00)

Materials/Parts

Cotter pin

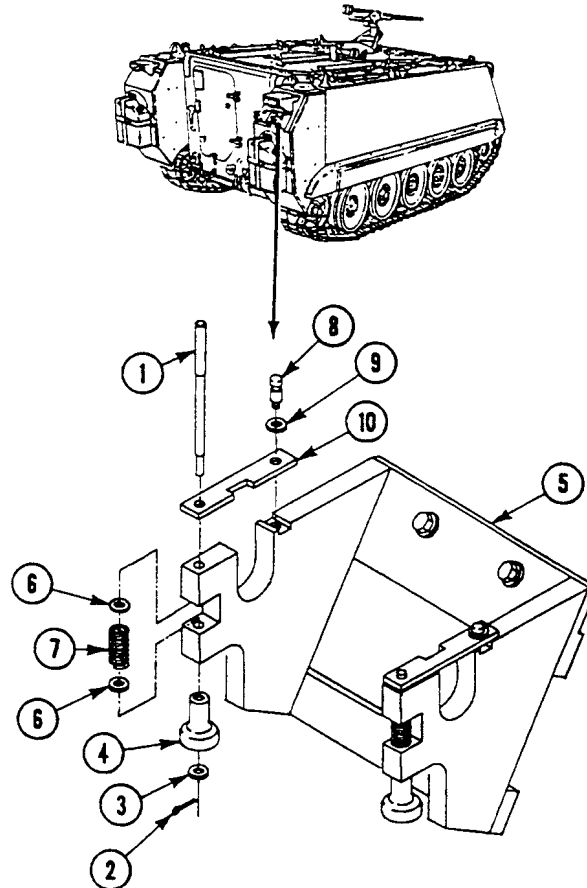
**DISASSEMBLY**

1. Push pin (1) down and remove cotter pin (2), washer (3), and pin from handle (4). Remove handle from cable reel holder (5). Discard cotter pin.
2. Remove two washers (6) and spring (7) from cable reel holder (5).
3. Remove screw (8), washer (9), and retainer (10) from cable reel holder (5).



**ASSEMBLY**

1. Install retainer (10) on cable reel holder (5) with washer (9) and screw (8).
2. Install two washers (6), spring (7), and pin (1) in cable reel holder (5).
3. Push pin (1) down and attach handle (4) to pin with washer (3) and new cotter pin (2).

**FOLLOW-THROUGH STEPS**

1. Install cable reel holder assembly (WP 0509 00).

**END OF TASK**

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**REPLACE DATAPLATES, STENCILS, MARKERS, AND DECALS**

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**0511 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0511 00-2).
  - Cleaning (page 0511 00-2).
  - Installation (page 0511 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Drill (WP 0780 00, Item 21)
- Drill Set (WP 0780 00, Item 23)

References

TM 43-0139

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)

Materials/Parts

- Cleaning compound (WP 0782 00, Item 16)
  - Drive screw (as needed)
-

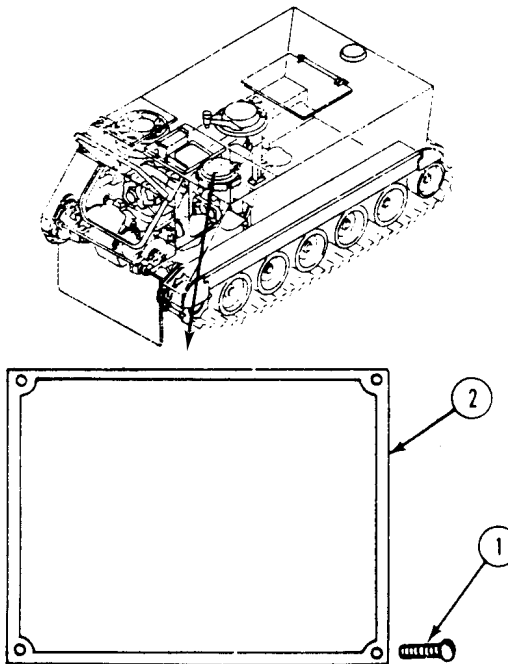
**REMOVAL****NOTE**

Dataplates and markers should be cleaned or replaced when they become too hard to read.

**NOTE**

Dataplates are secured to bulkheads with drive screws.

1. Remove heads of drive screws (1) from dataplate (2). Remove dataplate from hull.
2. Remove hard to read stencils with cleaning compound.
3. Remove hard to read or damaged markers and decals by scraping.

**CLEANING**

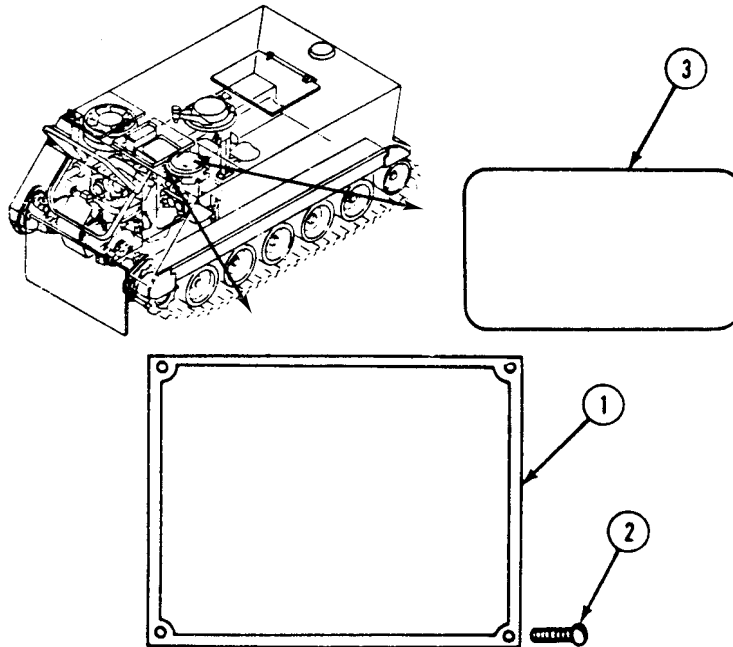
1. Clean hull surface where dataplate, stencil, marker, or decal is to be applied with cleaning compound.

## INSTALLATION

## NOTE

**If carrier identification plate is being replaced, make sure replacement dataplate contains data that belongs to specific carrier.**

1. Place old dataplate on hull so that holes in plate do NOT align with holes in hull. Using old dataplate as a template, drill four new holes.
2. Align new dataplate (1) with four new holes. Secure dataplate to hull with four new drive screws (2).
3. Check applicable stencil chart (WP 0512 00 - WP 0517 00) for location of stencil, and paint new stencil. See TM 43-0139.
4. Check applicable decal and marker chart (WP 0518 00 - WP 0522 00) for location of decal or marker (3). Remove backing from decal or marker and press on surface.



END OF TASK





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**STENCILS (M113A2 ONLY)**

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**0512 00**

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**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0512 00-2).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Equipment Condition

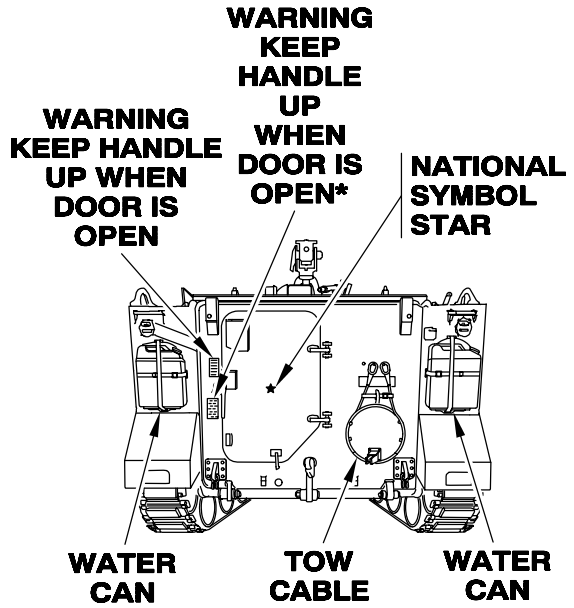
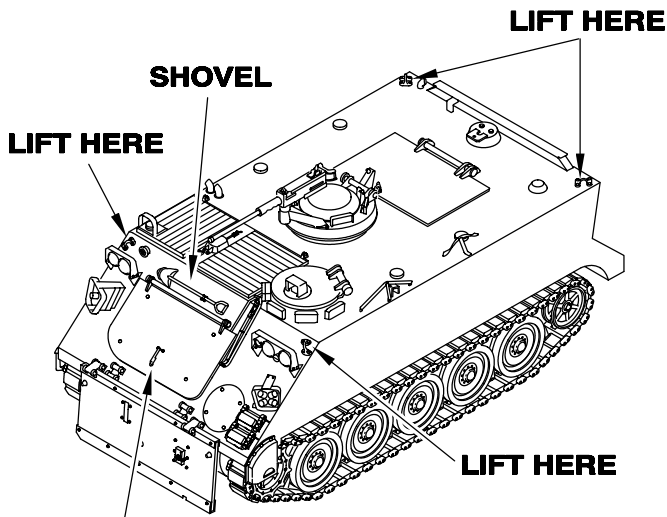
Engine stopped (see your -10)

Carrier blocked (see your -10)

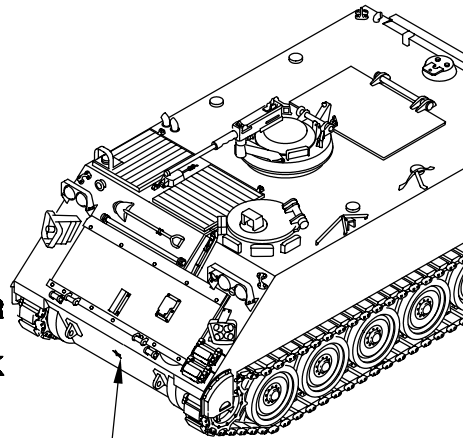
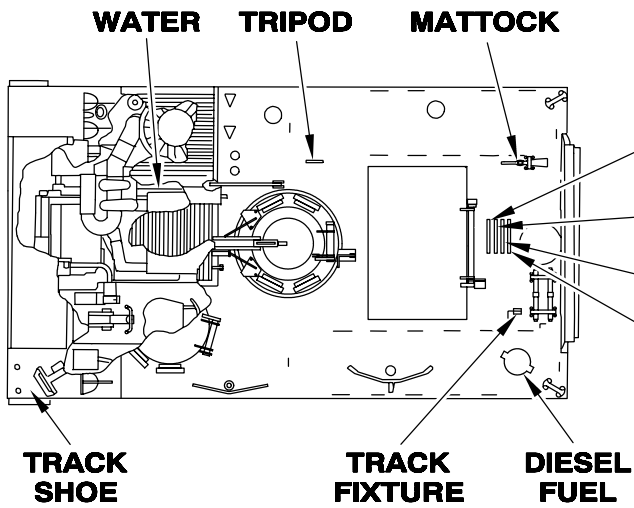
---

INSPECTION OF INSTALLED ITEMS

STENCIL LOCATIONS



ACCESS DOOR  
RELEASE



TOP VIEW

\*Stencil on inside of ramp

END OF TASK

**STENCILS (M577A2 ONLY)**

**0513 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0513 00-1).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

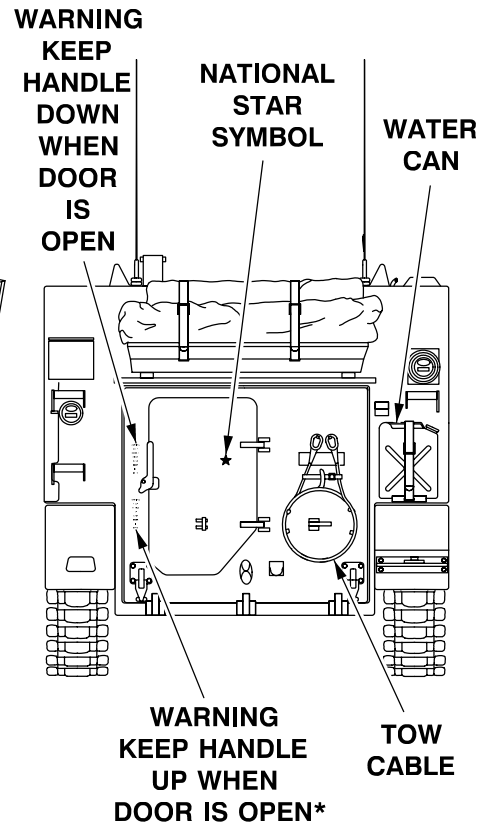
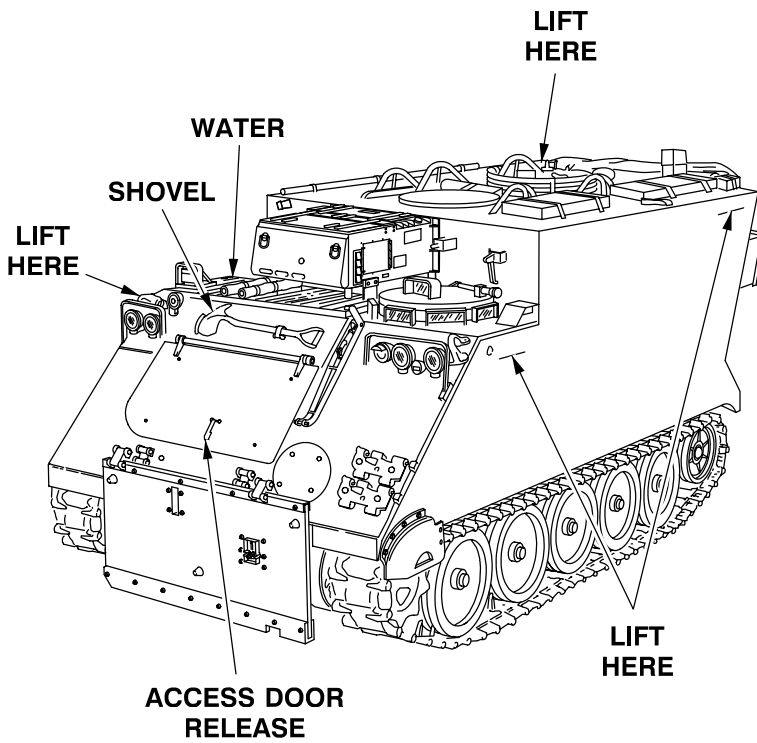
Unit Mechanic

Equipment Condition

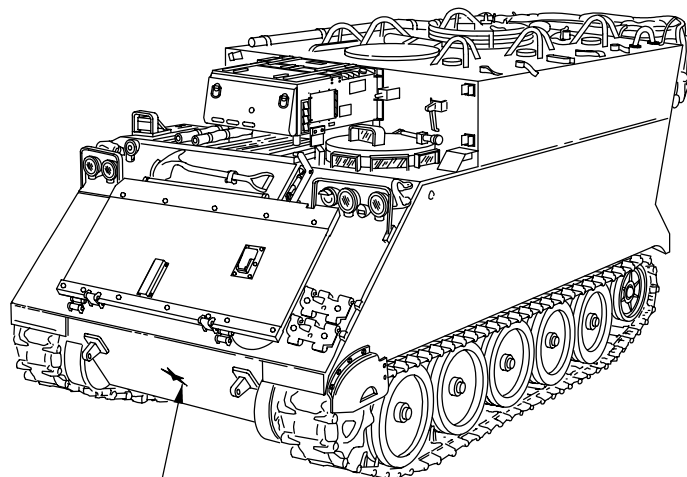
Engine stopped (see your -10)

Carrier blocked (see your -10)

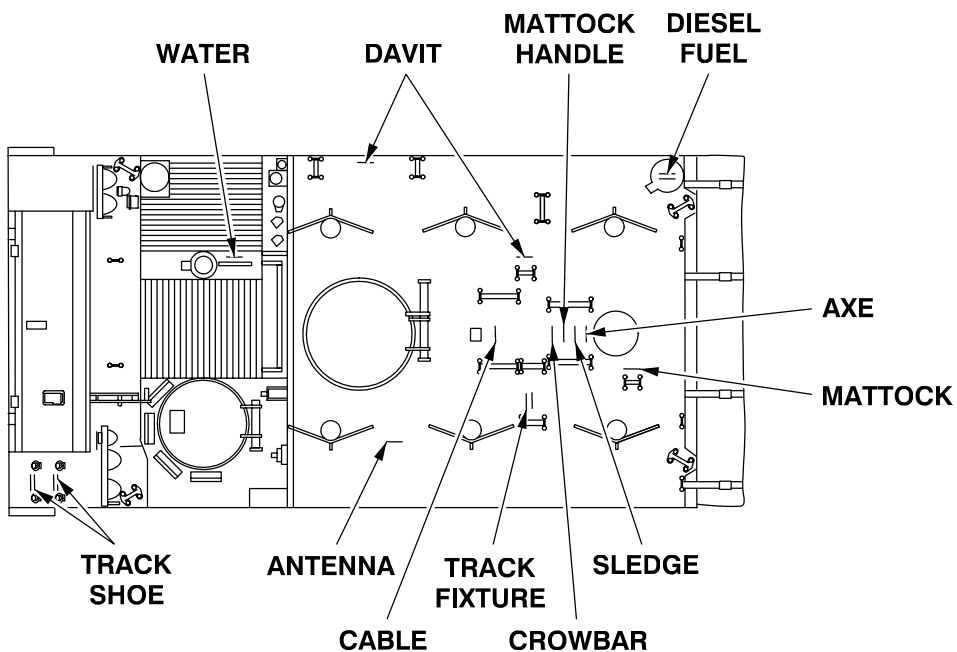
**INSPECTION OF INSTALLED ITEMS**



\*Stencil on inside of ramp



NATIONAL  
SYMBOL  
STAR



END OF TASK

**STENCILS (M1059 ONLY)**

**0514 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0514 00-1).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

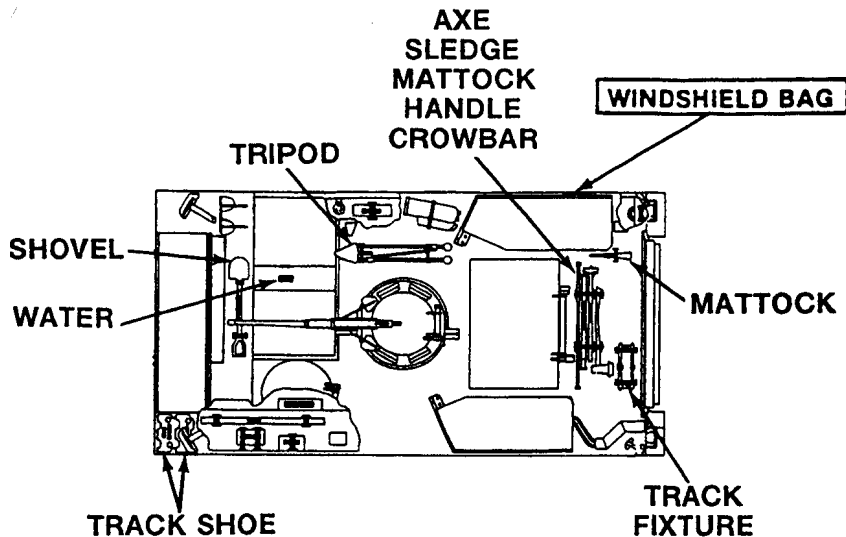
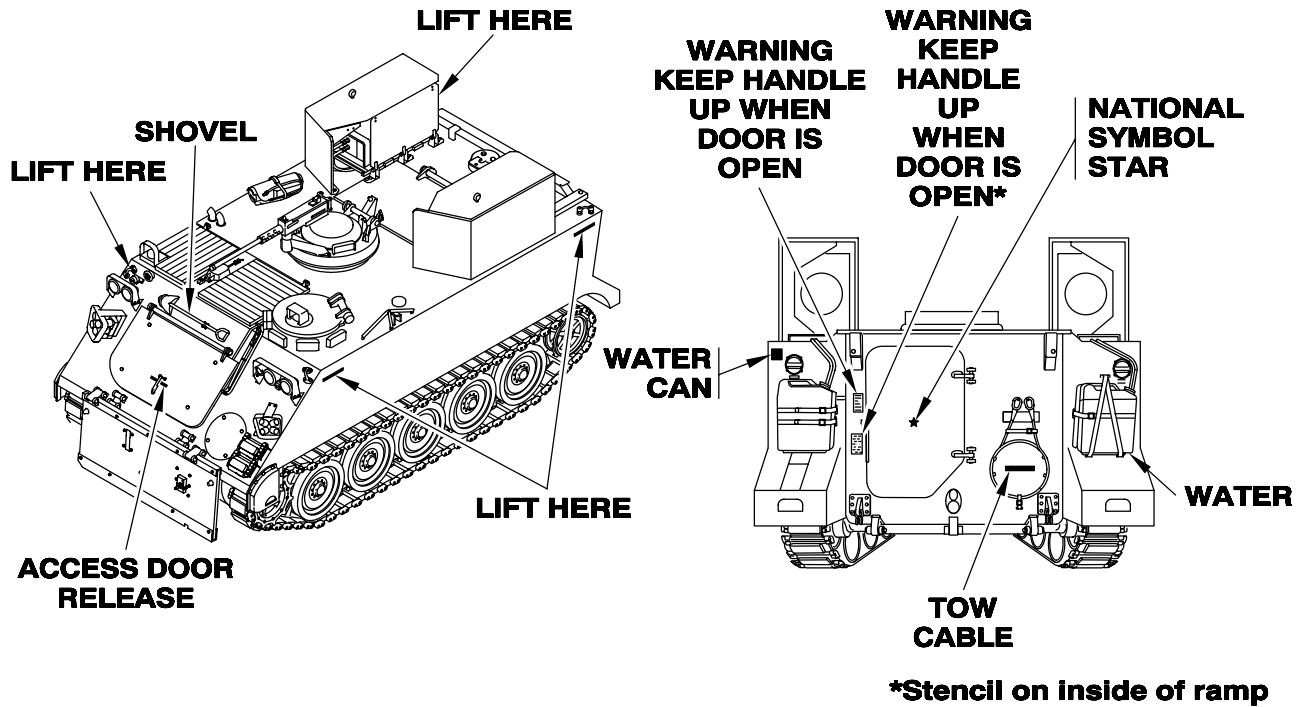
Unit Mechanic

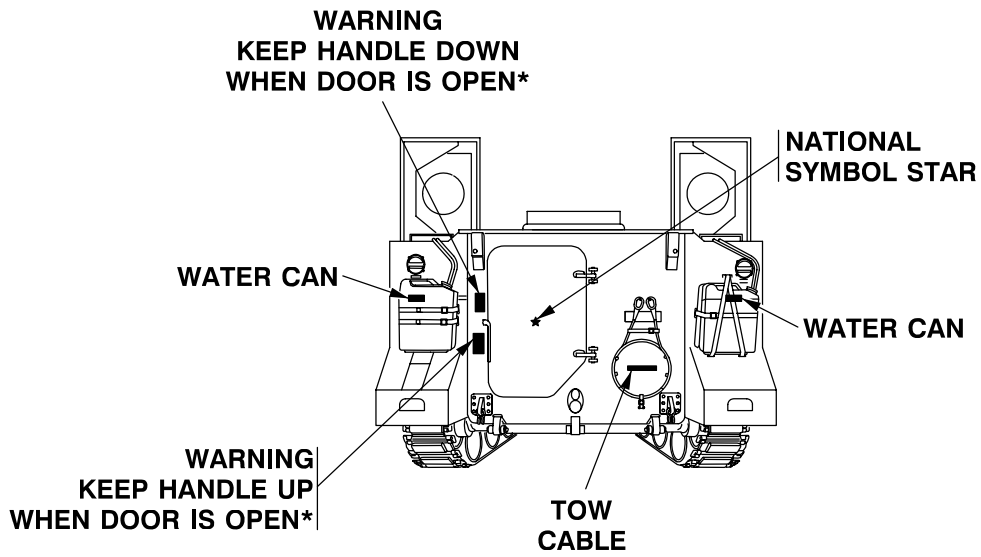
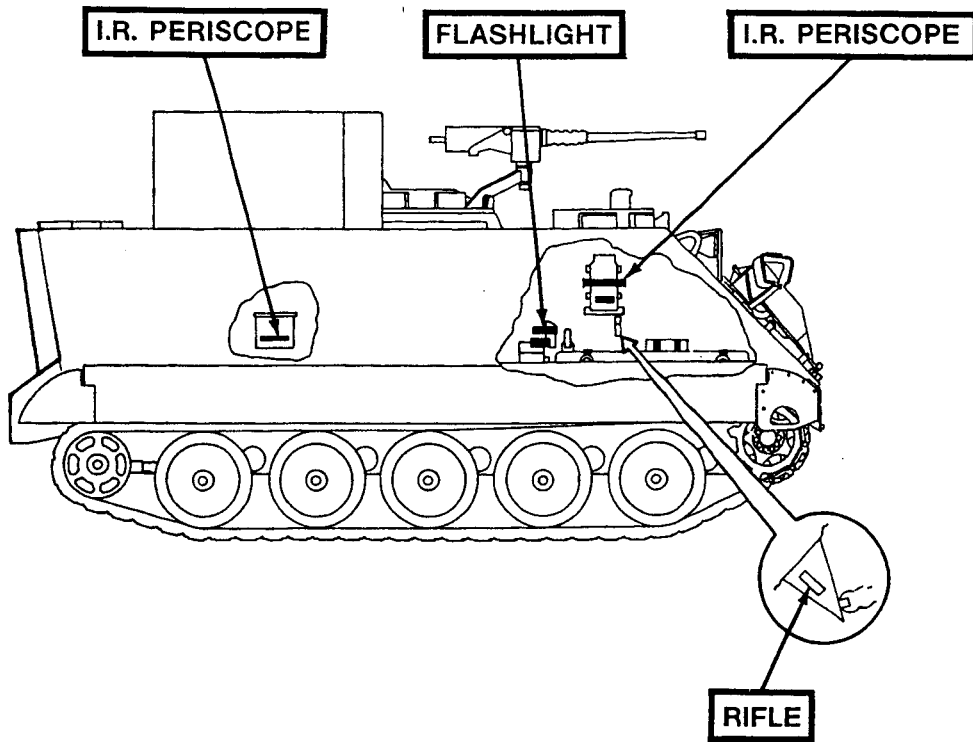
Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

**INSPECTION OF INSTALLED ITEMS**





\*Stencil on inside of ramp

END OF TASK

**STENCILS (M1068 ONLY)**

**0515 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0515 00-1).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

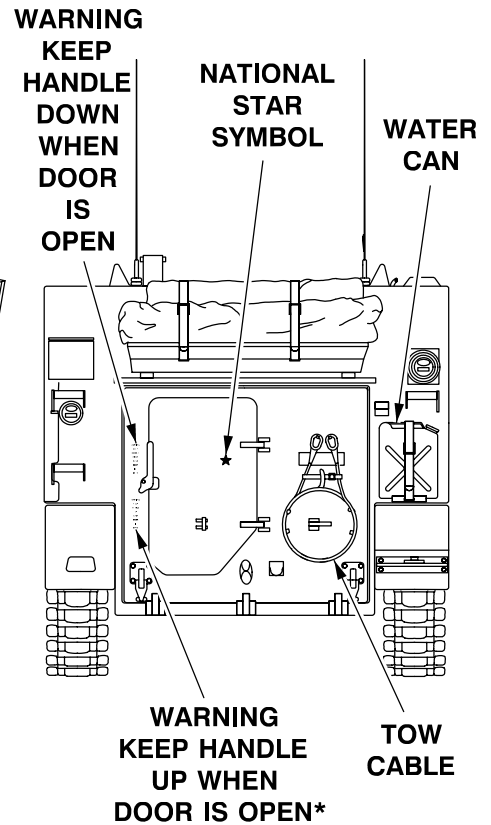
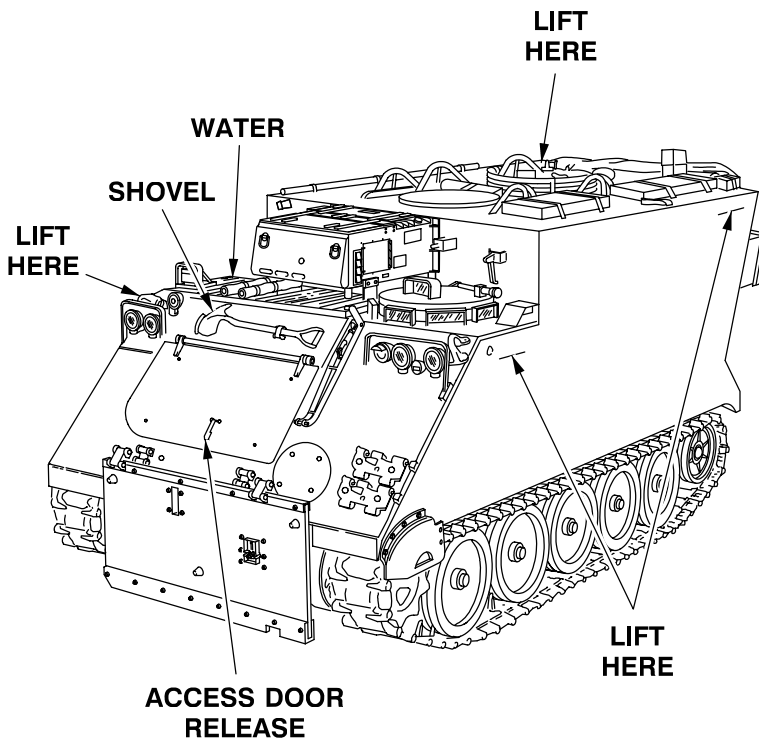
Unit Mechanic

Equipment Condition

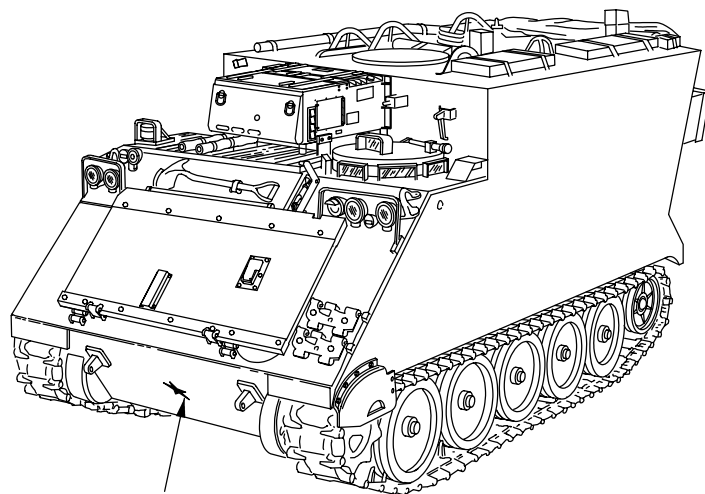
Engine stopped (see your -10)

Carrier blocked (see your -10)

**INSPECTION OF INSTALLED ITEMS**



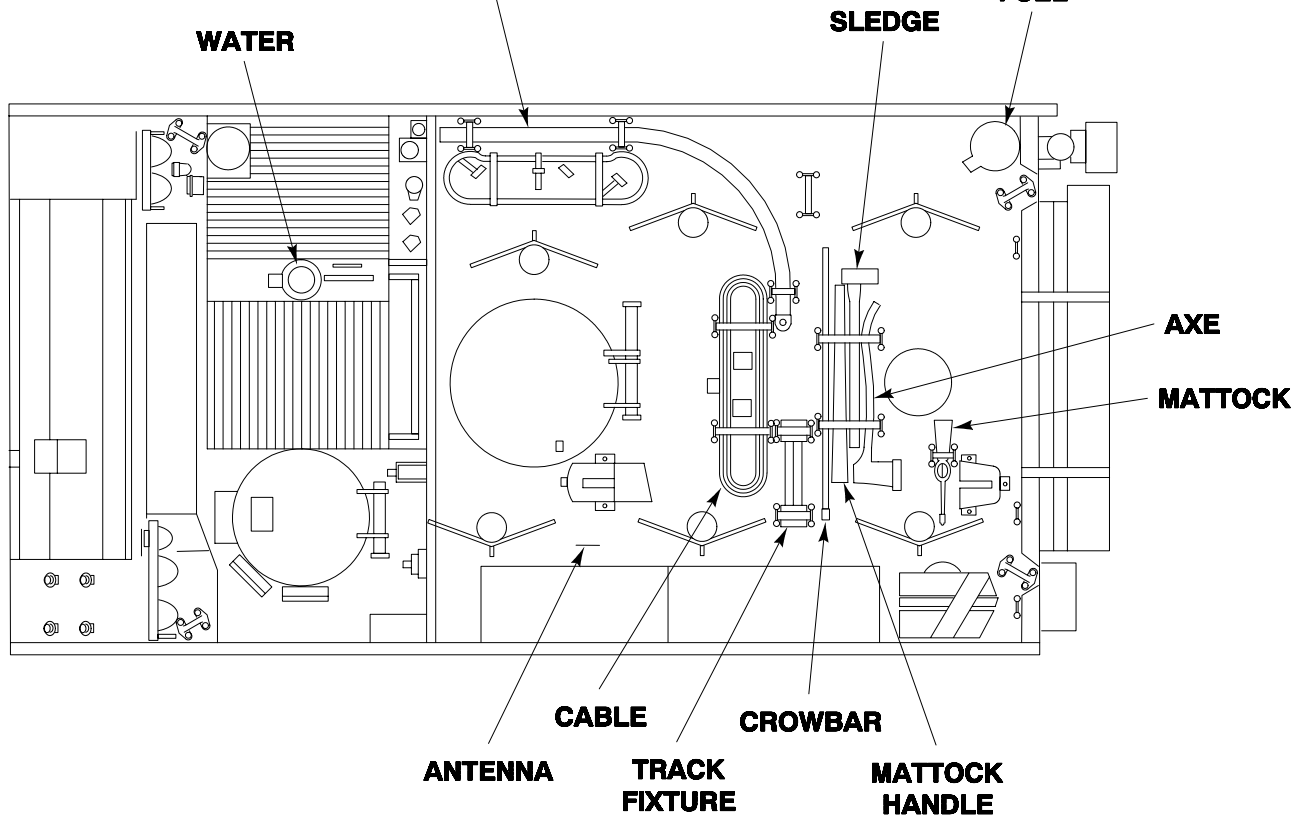
\*Stencil on inside of ramp



NATIONAL  
SYMBOL  
STAR

DAVIT  
(USE WITH 4.2 KW  
GENERATOR SET ONLY)

DIESEL  
FUEL



END OF TASK



---

**STENCILS (M901A1 ONLY)**

---

**0516 00**

---

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0516 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

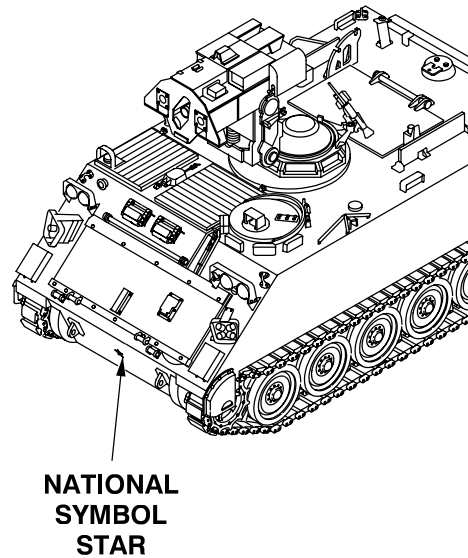
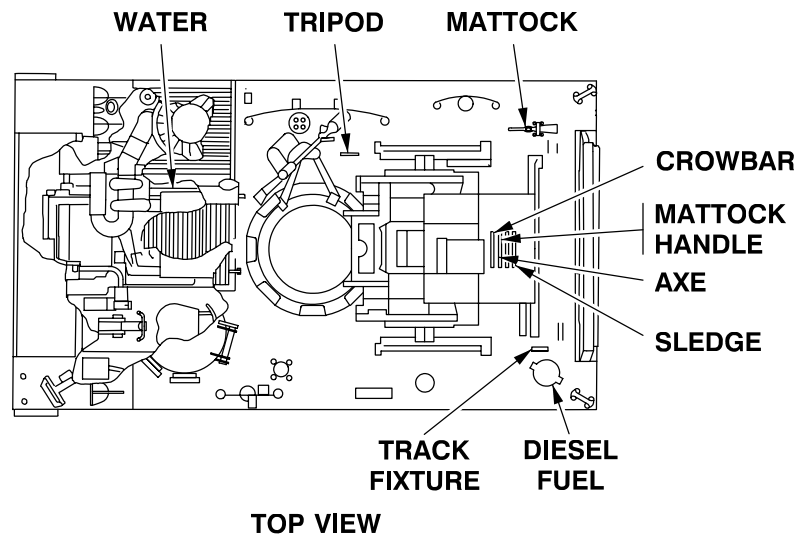
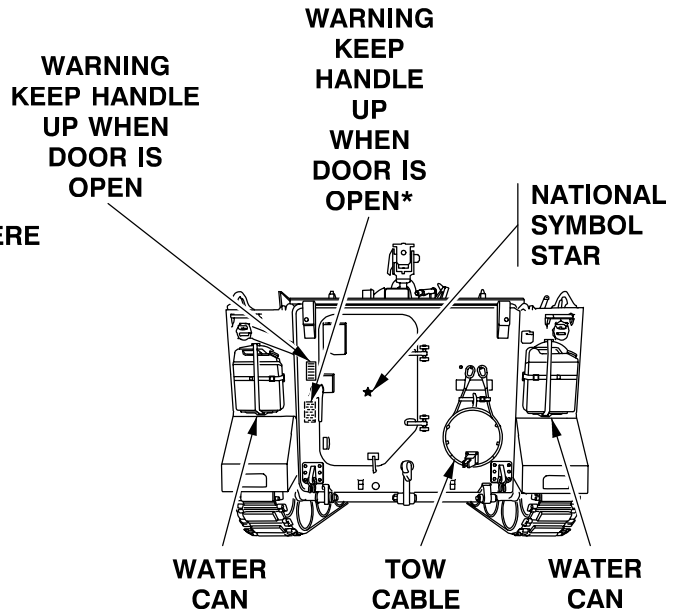
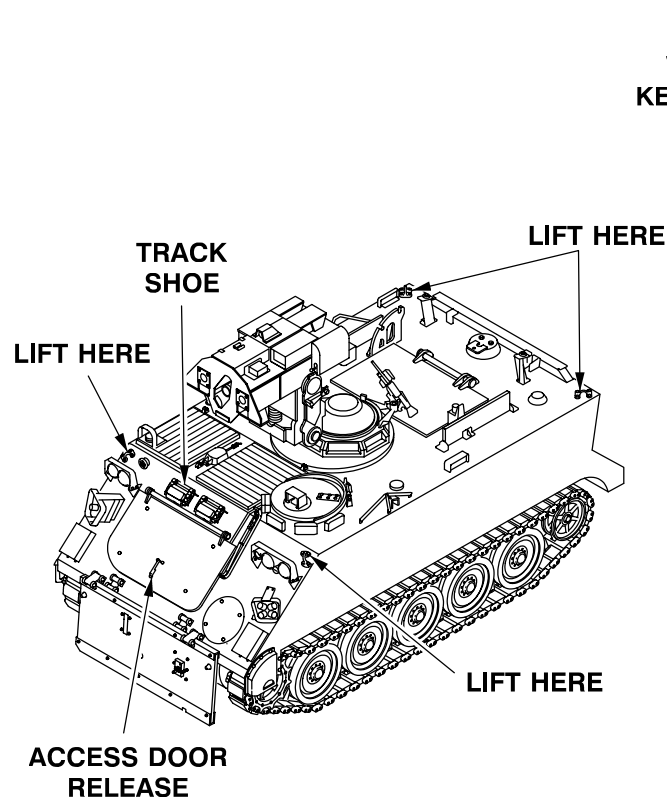
Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

---

INSPECTION OF INSTALLED ITEMS



\*Stencil on inside of ramp

END OF TASK

---

**STENCILS (M1064 ONLY)**

---

**0517 00**

---

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0517 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

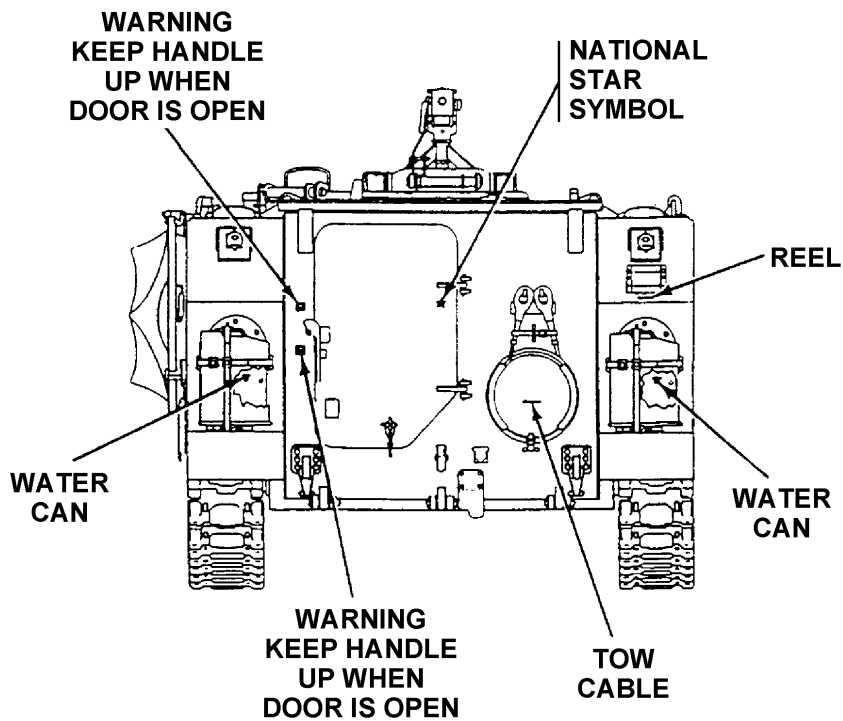
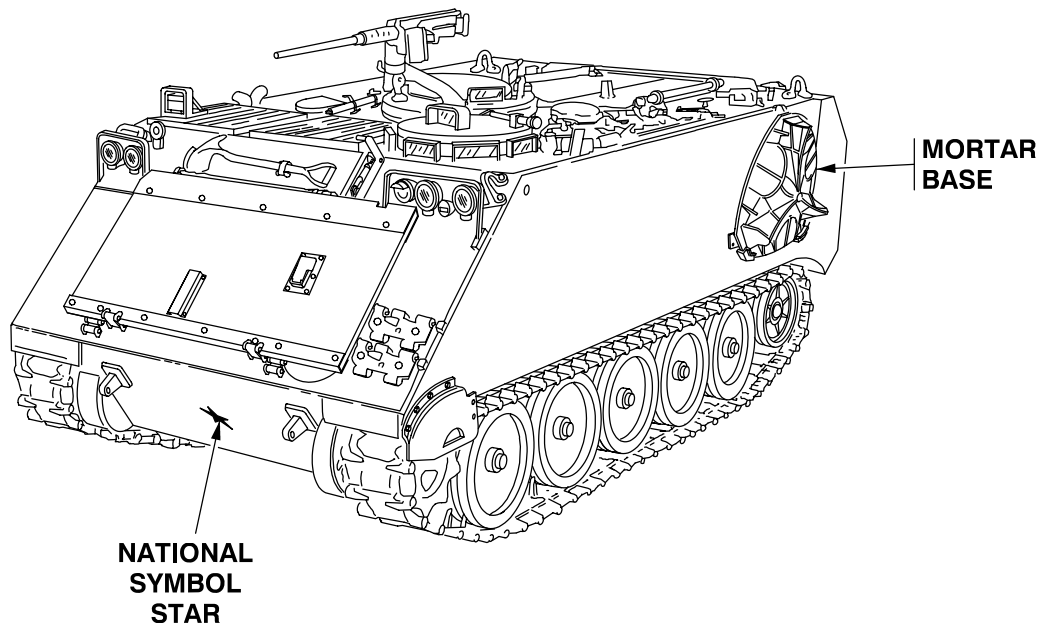
Equipment Condition

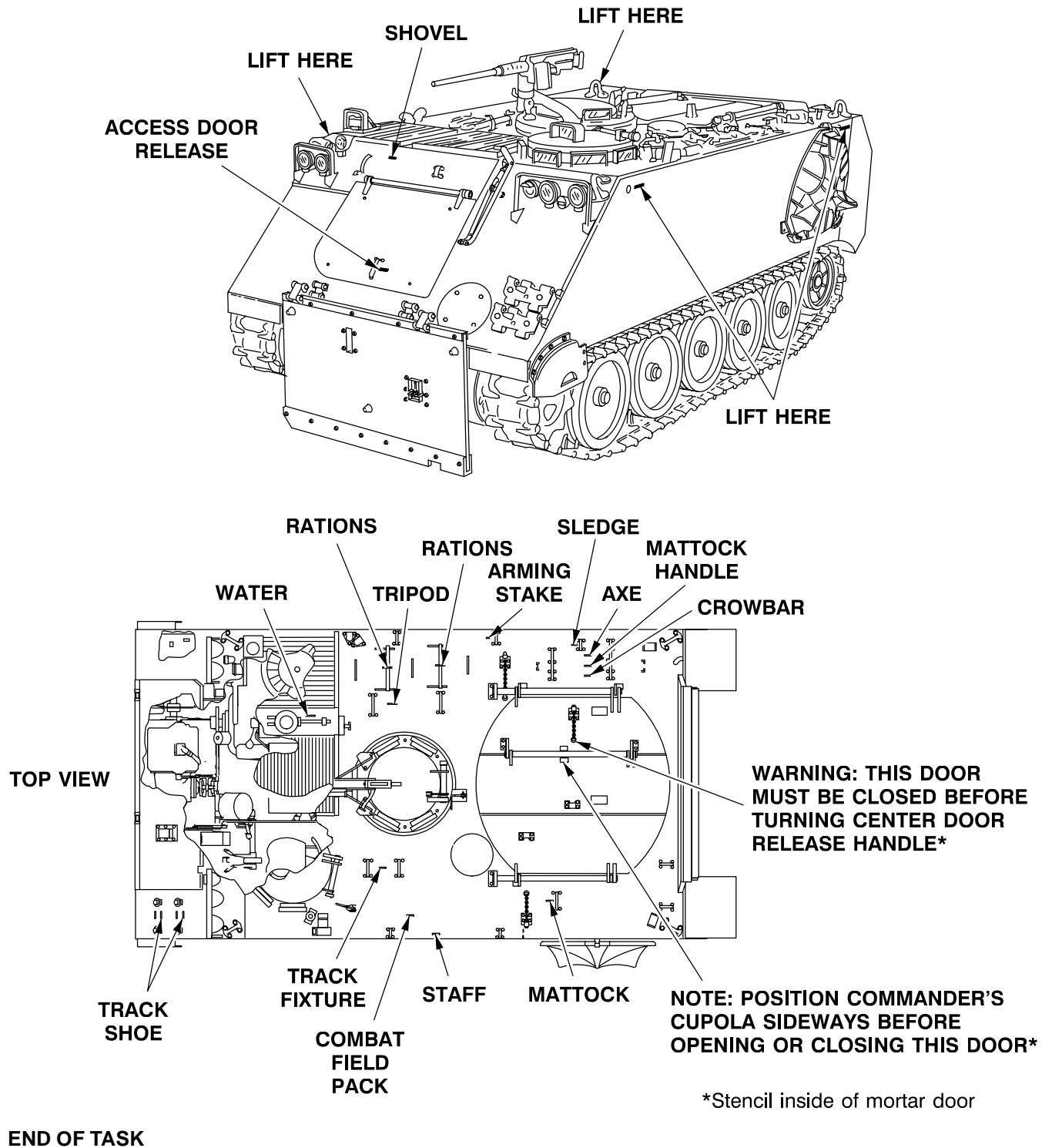
Engine stopped (see your -10)

Carrier blocked (see your -10)

---

INSPECTION OF INSTALLED ITEMS







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**DATAPLATES, DECALS, AND MARKERS (ALL MODELS EXCEPT M901A1)**

---

**0518 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0518 00-1).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Equipment Condition

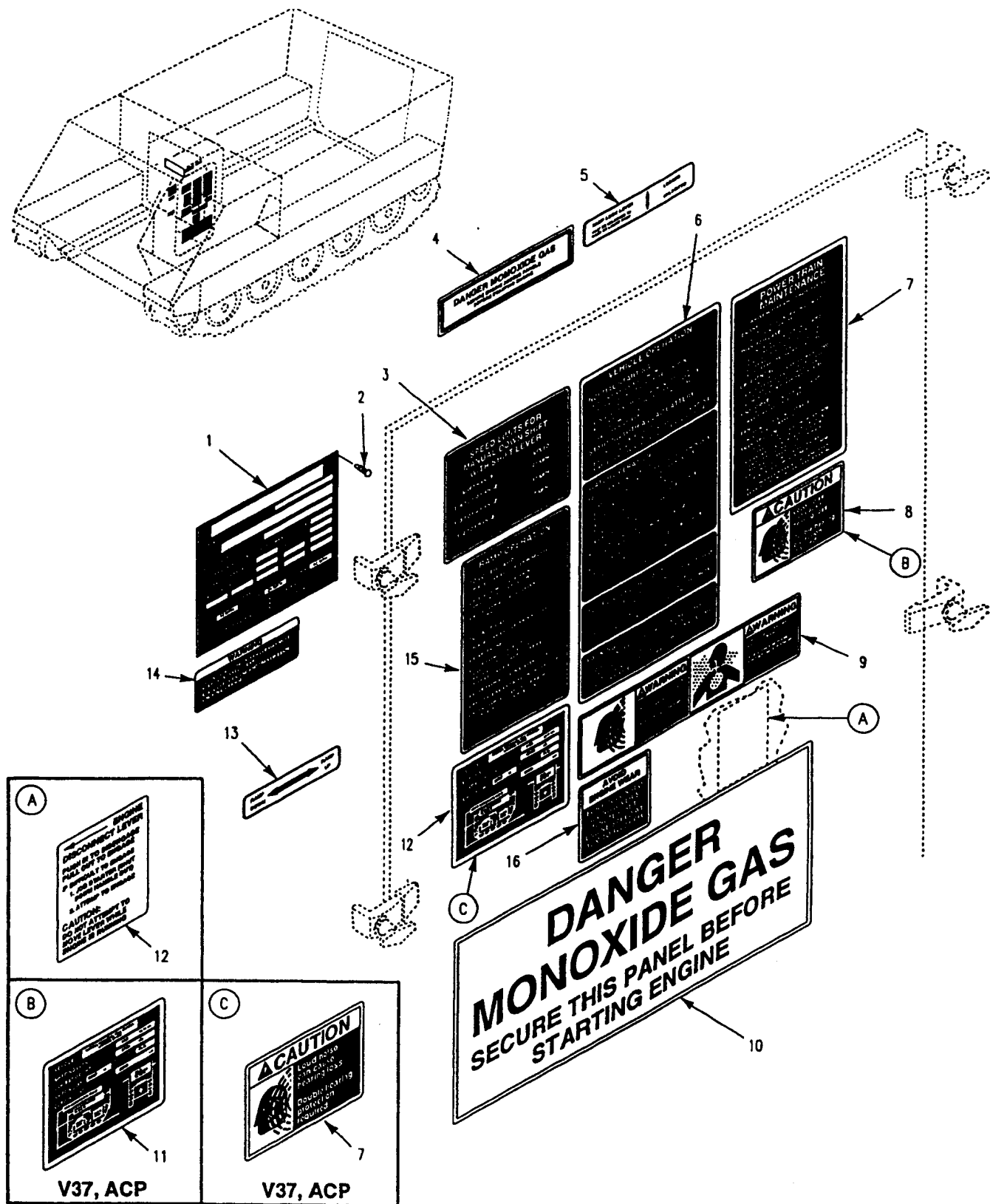
Engine stopped (see your -10)

Carrier blocked (see your -10)

---

**INSPECTION OF INSTALLED ITEMS**

This task shows the location of dataplates, decals, and markers for all models (except M901A1).



END OF TASK



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**DATAPLATES, DECALS, AND MARKERS (M901A1 ONLY)**

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**0519 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0519 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Equipment Condition

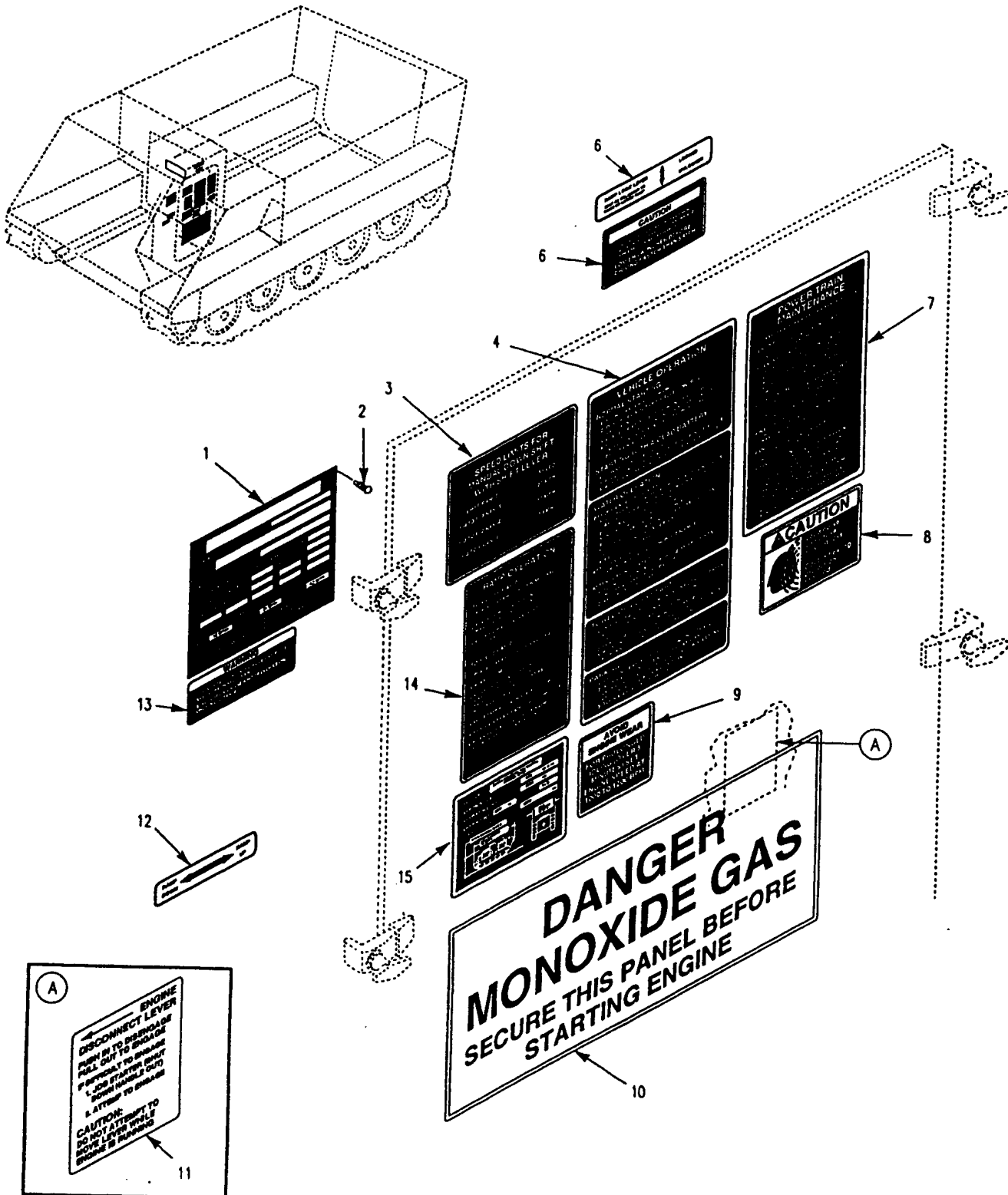
Engine stopped (see your -10)

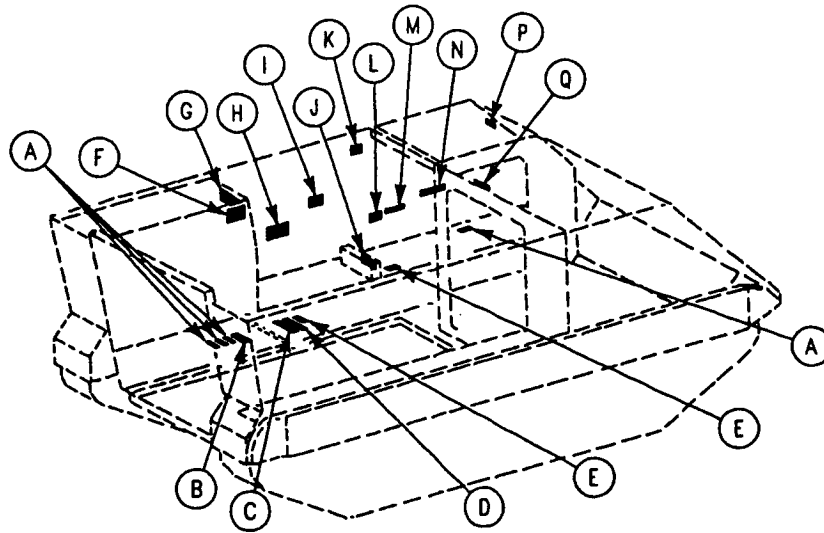
Carrier blocked (see your -10)

---

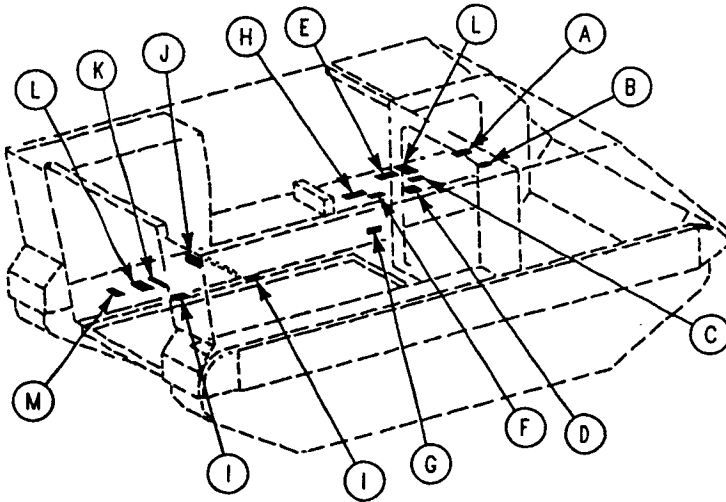
INSPECTION OF INSTALLED ITEMS

This task shows the location of dataplates, decals, and markers on the M901A1 carrier.

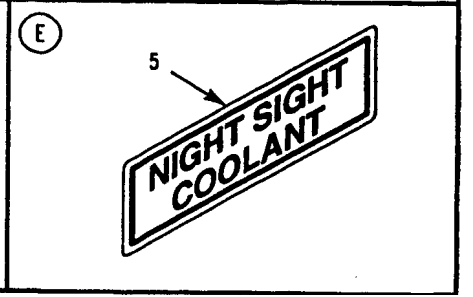
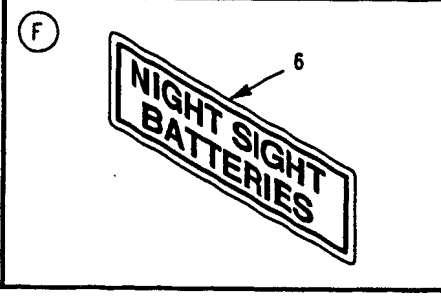
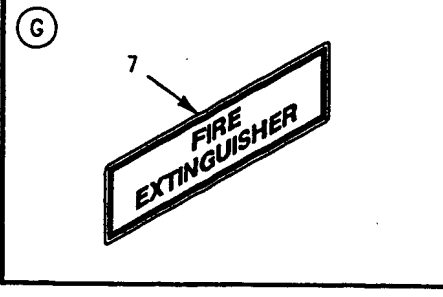
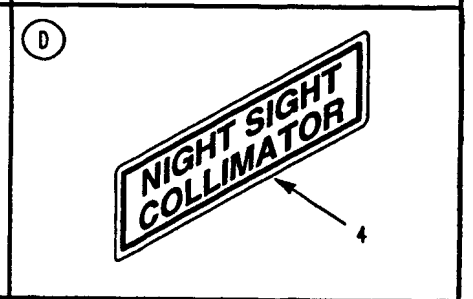
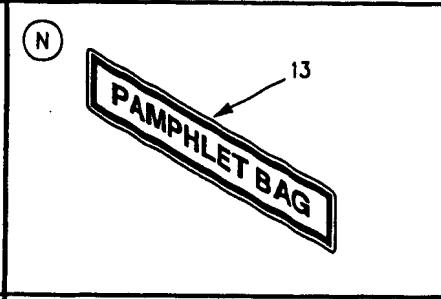
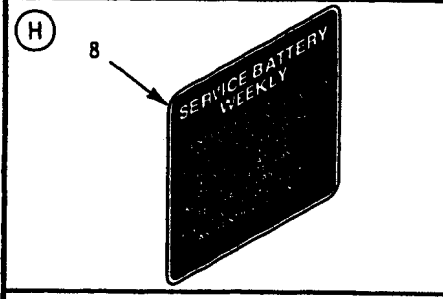
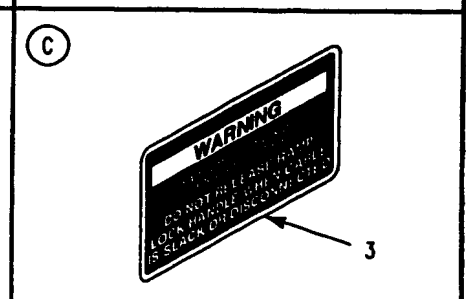
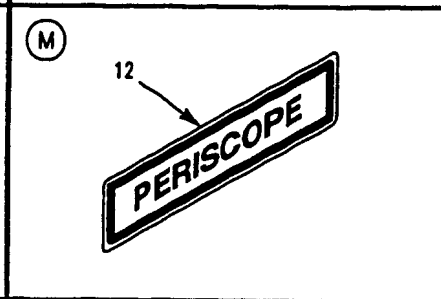
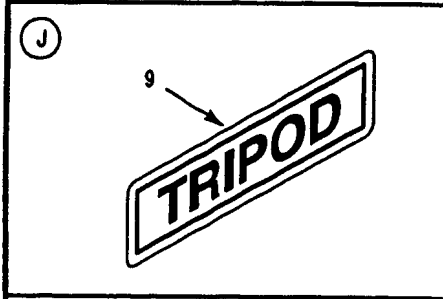
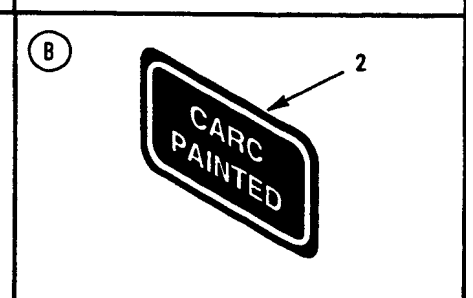
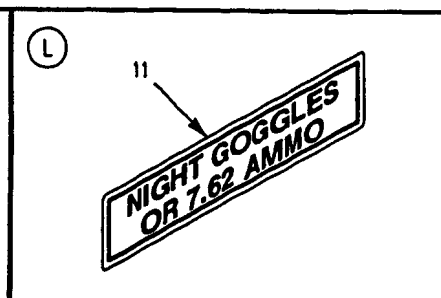
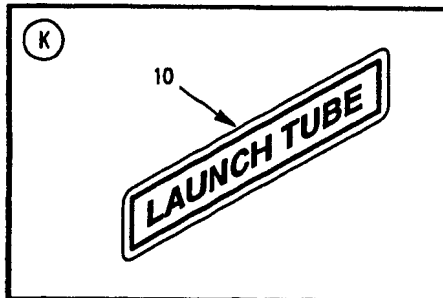
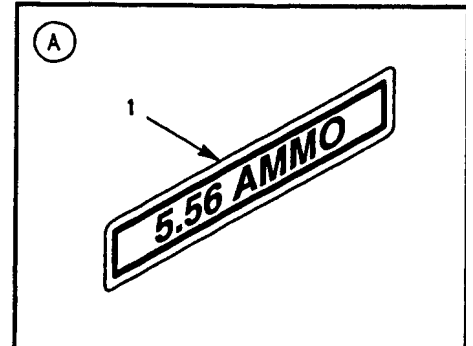
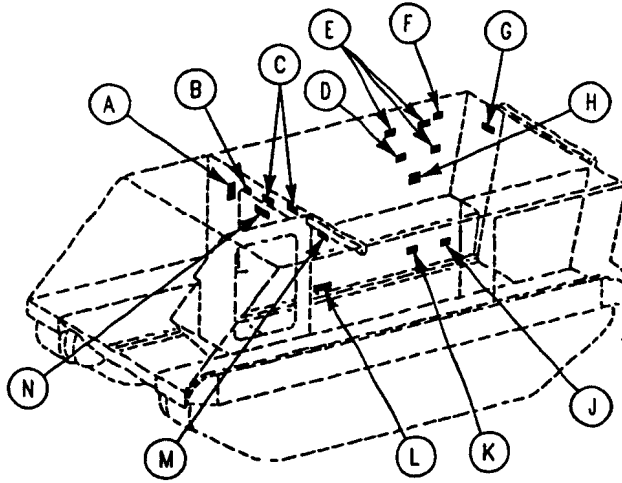




<p>(A) 1</p>	<p>(B) 2</p>	<p>(C) 3</p>	<p>(D) 4</p>
<p>(L) 12</p>	<p>(M) 13</p>	<p>(N) 14</p>	<p>(E) 5</p>
<p>(K) 11</p>	<p>(Q) 16</p>	<p>(P) 15</p>	<p>(F) 6</p>
<p>(J) 10</p>	<p>(I) 9</p>	<p>(H) 8</p>	<p>(G) 7</p>



<p>(J)</p> <p>10</p> <p>GRENADE, INCEND.</p>	<p>(K)</p> <p>11</p> <p>GRENADE, COLOR &amp; H. C. SMOKE</p>	<p>(A)</p> <p>1</p> <p>STOVE</p>
<p>(I)</p> <p>9</p> <p>LAW MISSILE</p>	<p>(L)</p> <p>12</p> <p>5.56 AMMO</p>	<p>(B)</p> <p>2</p> <p>TOOLS</p>
<p>(H)</p> <p>8</p> <p>M159 GROUND SIGNAL</p>	<p>(M)</p> <p>13</p> <p>FIRE EXTINGUISHER</p>	<p>(C)</p> <p>3</p> <p>TELEPHONE</p>
<p>(G)</p> <p>7</p> <p>RATIONS</p>	<p>(F)</p> <p>6</p> <p>BINOCULARS</p>	<p>(D)</p> <p>4</p> <p>SPARE HEAD</p>
		<p>(E)</p> <p>5</p> <p>FIRST AID KIT</p>





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**DATAPLATES, DECALS, AND MARKERS (M1064 ONLY)**

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**0520 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0520 00-1).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

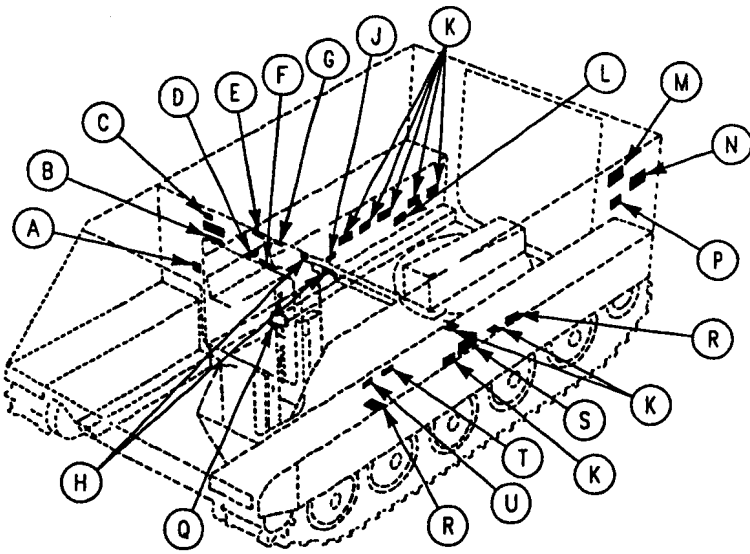
Personnel Required

Unit Mechanic

---

**INSPECTION OF INSTALLED ITEMS**

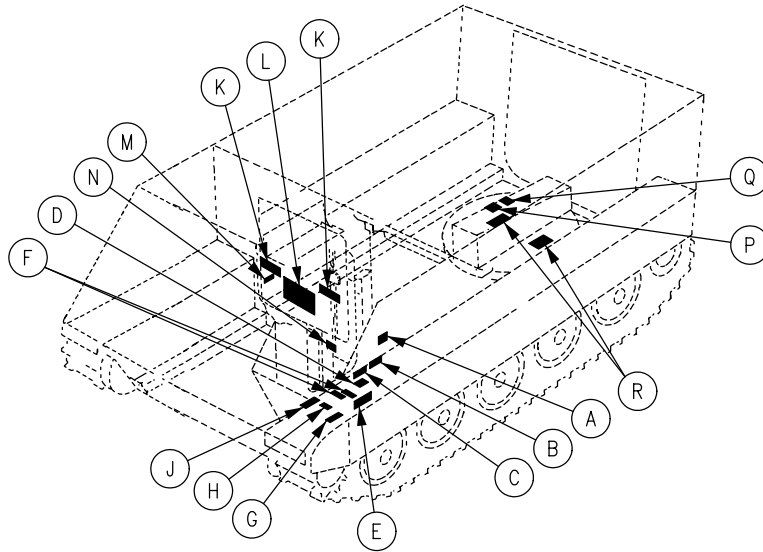
This task shows the location of dataplates, decals, and markers on the M1064 carrier.


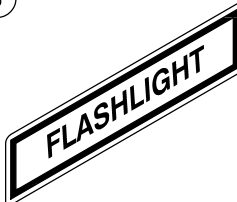




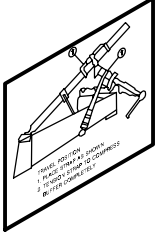



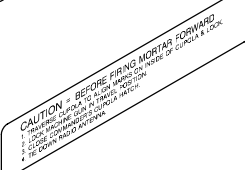

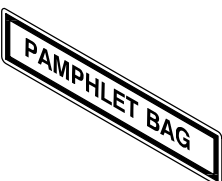





<p>(A) 1</p>	<p>(B) 2</p>
<p>(R) 15</p>	<p>(C) 3</p>
<p>(S) 16</p>	<p>(D) 4</p>
<p>(T) 17</p>	<p>(E) 5</p>
<p>(U) 18</p>	<p>(F) 6</p>
<p>(H) 8</p>	<p>(G) 7</p>

<p>(P) 14</p>	<p>(Q)</p> <p>M1064</p>
<p>(N) 13</p>	
<p>(M) 12</p>	
<p>(L) 11</p>	
<p>(K) 10</p>	<p>(J) 9</p>





<p>(A)</p> 	<p>(B)</p> 	<p>(C)</p> 	<p>(D)</p> 
<p>(M)</p> 	<p>(N)</p> 	<p>(P)</p> 	<p>(E)</p> 
<p>(L)</p> 	<p>(R)</p> 	<p>(Q)</p> 	<p>(F)</p> 
<p>(K)</p> 	<p>(J)</p> 	<p>(H)</p> 	<p>(G)</p> 

END OF TASK



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**DATAPLATES, DECALS, AND MARKERS (M1059 AND M113A2 ONLY)**

---

**0521 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0521 00-1).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

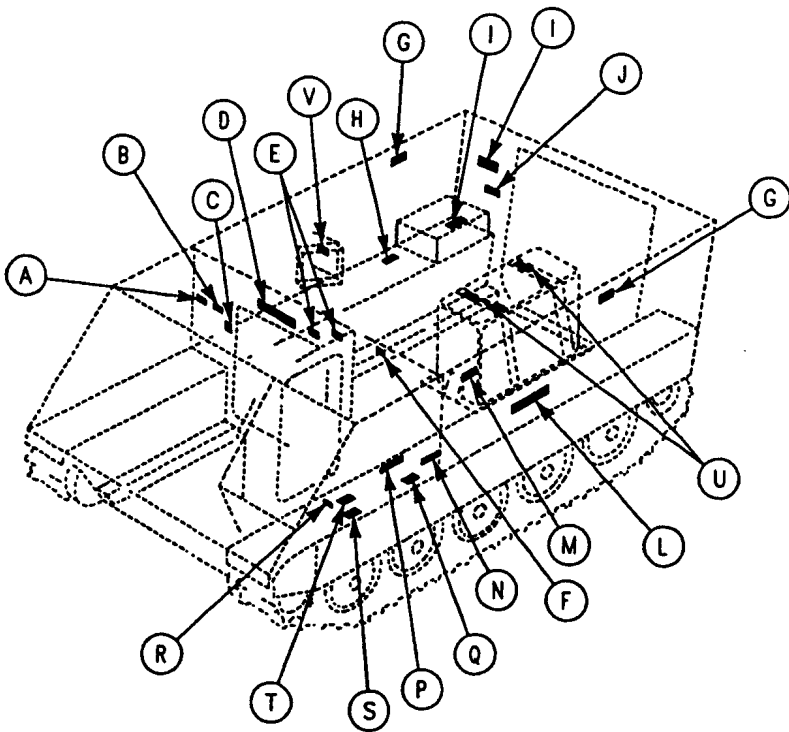
Personnel Required

Unit Mechanic

---

**INSPECTION OF INSTALLED ITEMS**

This task shows the location of dataplates, decals, and markers on the M1059 and M113A2 carrier.



<p>(A) 1</p>	<p>(B) 2</p>			
<p>(N) 13</p>	<p>(C) 3</p>			
<p>(P) 14</p>	<p>(D) 4</p>			
<p>(M) 12</p>	<p>(U) 19</p>	<p>(V) 20</p>	<p>(Q) 15</p>	<p>(E) 5</p>
<p>(L) 11</p>	<p>(T) 18</p>	<p>(S) 17</p>	<p>(R) 16</p>	<p>(F) 6</p>
<p>(K) 10</p>	<p>(J) 9</p>	<p>(I) 9</p>	<p>(H) 8</p>	<p>(G) 7</p>

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**DATAPLATES, DECALS, AND MARKERS (M577A2 AND M1068 ONLY)**

---

**0522 00**

**THIS WORK PACKAGE COVERS:**

Inspection of Installed Items (page 0522 00-1).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Equipment Condition

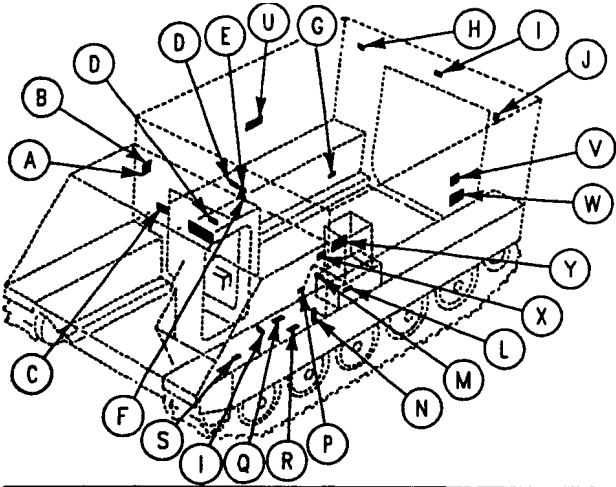
Engine stopped (see your -10)

Carrier blocked (see your -10)

---

**INSPECTION OF INSTALLED ITEMS**

This task shows the location of dataplates, decals, and markers on the M577A2 and M1068 carriers.



<p>(A) 1</p>	<p>(B) 2</p>		
<p>(R) 17</p>	<p>(C) 3</p>		
<p>(P) 15</p>	<p>(Q) 16</p>	<p>(S) 18</p>	<p>(D) 4</p>
<p>(N) 14</p>	<p>(Y) 24</p>	<p>(T) 19</p>	<p>(E) 5</p>
<p>(M) 13</p>	<p>(X) 23</p>	<p>(U) 20</p>	<p>(F) 6</p>
<p>(L) 12</p>	<p>(W) 22</p>	<p>(V) 21</p>	<p>(G) 7</p>
<p>(K) 11</p>	<p>(J) 10</p>	<p>(I) 9</p>	<p>(H) 8</p>

END OF TASK

**REPLACE CUSHIONING PADS**

**0523 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0523 00-1).  
 Installation (page 0523 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Adhesive (WP 0782 00, Item 2)

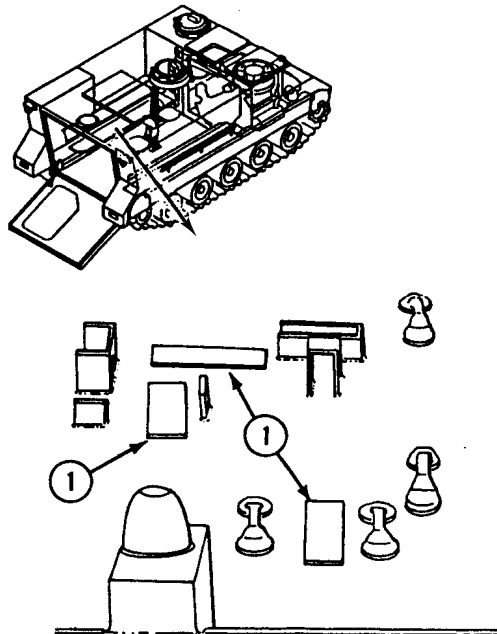
Cleaning compound solvent (WP 0782 00, Item 16)

**REMOVAL**

**NOTE**

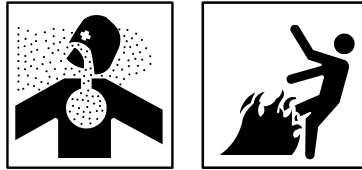
**Cushioning pads are used at various stowage locations (pioneer tools, tow cables, etc.). All pads are replaced the same way. Replace only cut, torn, or hard pads.**

1. Using putty knife or similar tool, lift corner of cushioning pad (1) and peel pad from hull.
2. Scrape any remaining adhesive from hull.



**INSTALLATION**

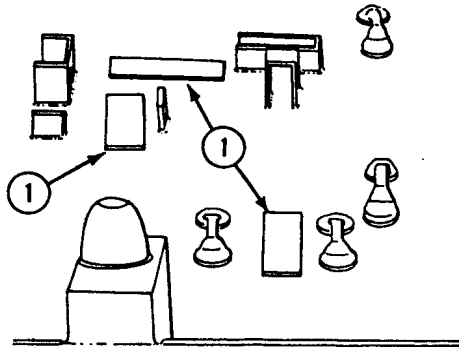
1. Thoroughly clean hull mating surface with cleaning compound.

**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

2. Apply thin coat of adhesive to hull mating surface and back of new pad (1).
3. Allow 10 to 20 minutes for adhesive to dry. Surface should be tacky, but not too sticky. Warmer temperature will speed drying time.
4. Position pad (1) on hull and press firmly into place.

**END OF TASK**



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**REPLACE OIL CAN BRACKET**

**0524 00**

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**THIS WORK PACKAGE COVERS:**

- Removal (page 0524 00-1).
  - Clean, Inspect, and Repair (page 0524 00-1).
  - Installation (page 0524 00-2).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Materials/Parts

Locknut (2)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

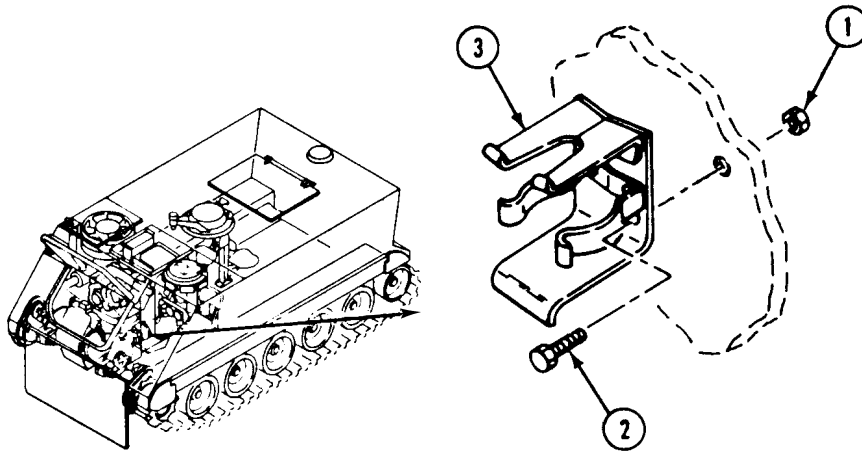
- Engine stopped (see your -10)
  - Carrier blocked (see your -10)
  - Trim vane lowered (see your -10)
  - Power plant access door open (see your -10)
- 

Personnel Required

Unit Mechanic  
Helper (H)

**REMOVAL**

1. Remove oil can, if present.
2. Have helper hold two locknuts (1) in driver's compartment.
3. Remove two locknuts (1), screws (2), and oil can bracket (3) from power plant compartment. Discard locknuts.

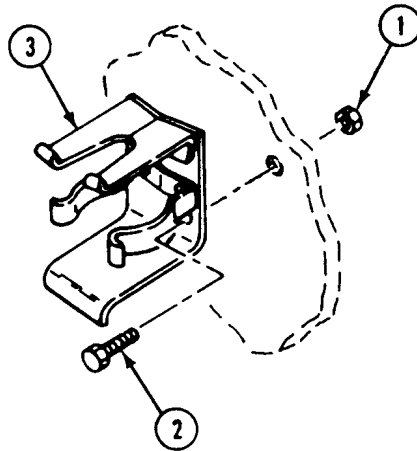


**CLEAN, INSPECT, AND REPAIR**

1. Check oil can bracket. Replace bracket that is cracked, damaged, or has a loose clamp.

**INSTALLATION**

1. Align holes in oil can bracket (3) with holes in bulkhead in power plant compartment.
2. Secure with two screws (2) and new locknuts (1). Have helper assist.

**FOLLOW-THROUGH STEPS**

1. Install oil can, if present.
2. Close power plant access door (see your -10).
3. Raise trim vane (see your -10).

**END OF TASK**

**REPLACE RIFLE BRACKETS**

**0525 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0525 00-1).  
 Installation (page 0525 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

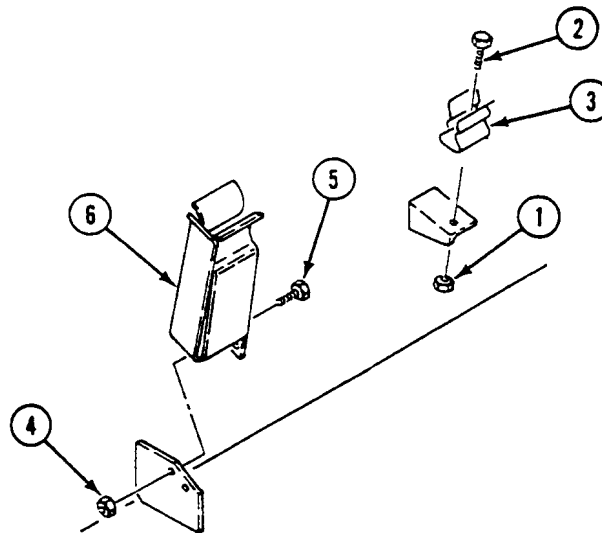
Locknut (3)

**REMOVAL**

**NOTE**

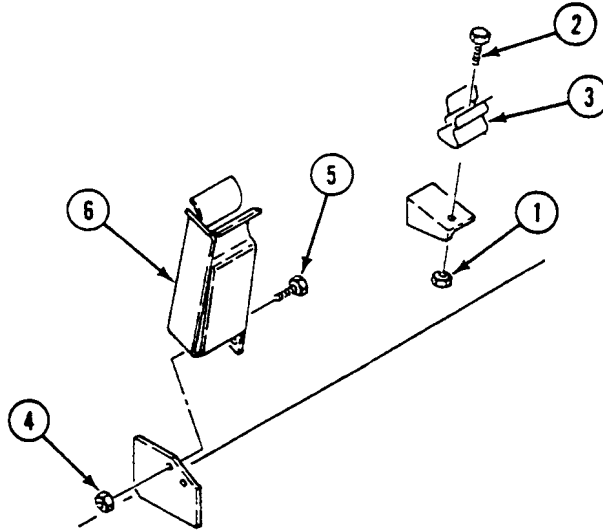
**Rifle brackets are located in various places in the different carriers. Removal and installation of all brackets are the same.**

1. Remove locknut (1), screw (2), and front bracket (3) from hull mount. Discard locknut.
2. Remove two locknuts (4), screws (5), and clip (6) from hull mount. Discard locknuts.



**INSTALLATION**

1. Align clip (6) with hull mount. Secure with two screws (5) and new locknuts (4).
2. Align front bracket (3) with hull mount. Secure with screw (2) and new locknut (1).

**END OF TASK**

**REPLACE SPARE IR (M19) PERISCOPE STOWAGE BOX**

**0526 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0526 00-1).  
 Installation (page 0526 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

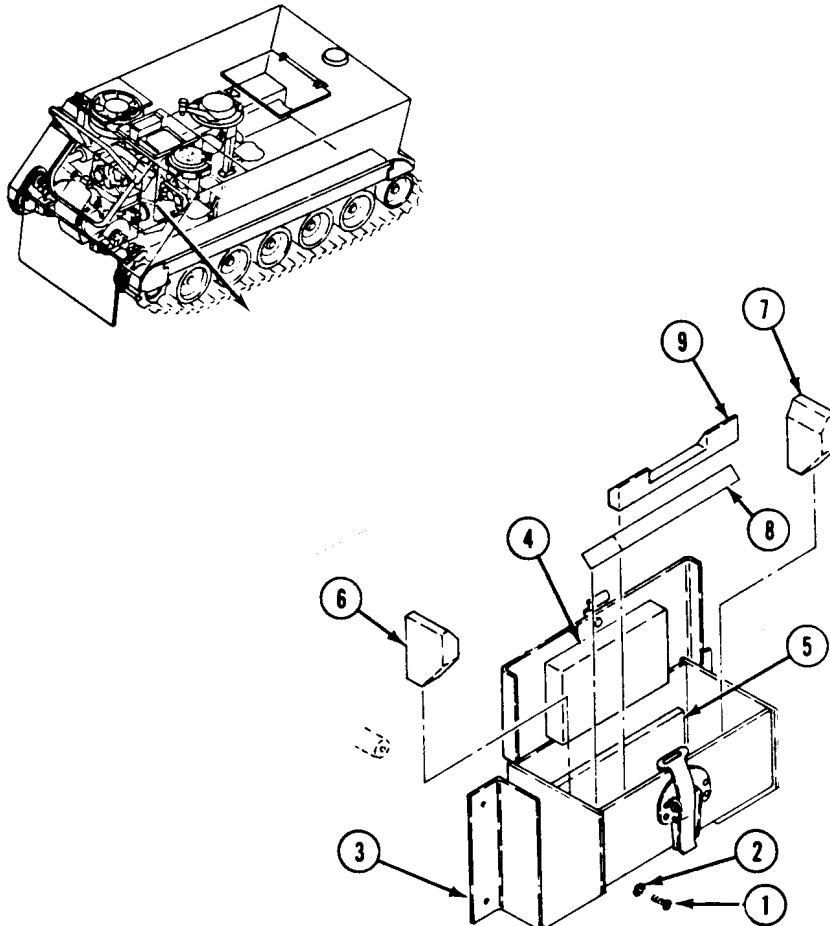
Materials/Parts

Adhesive (WP 0782 00, Item 2)

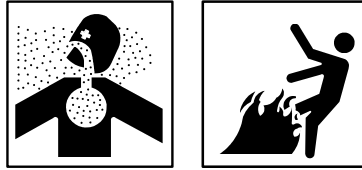
Lockwasher (4)

**REMOVAL**

1. Remove four screws (1), lockwashers (2), and periscope stowage box (3) from driver's sponson. Discard lockwashers.
2. If needed, remove top pad (4), back pad (5), left pad (6), right pad (7), lower front pad (8), or upper front pad (9) from box (3).



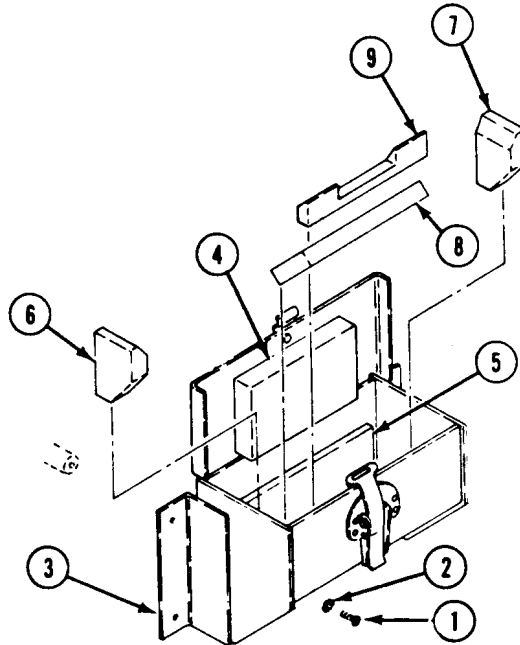
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. If any pad was removed, apply a thin coat of adhesive to pad. Allow to dry 20 to 40 minutes. Apply thin, even coat of adhesive to metal surface. Allow to dry 30 seconds to 2 minutes. Press surfaces firmly together.
2. Align periscope stowage box (3) with driver's sponson. Secure with four new lockwashers (2) and screws (1).



END OF TASK

**REPLACE ANTENNA GUARD**

**0527 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0527 00-1).  
 Installation (page 0527 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

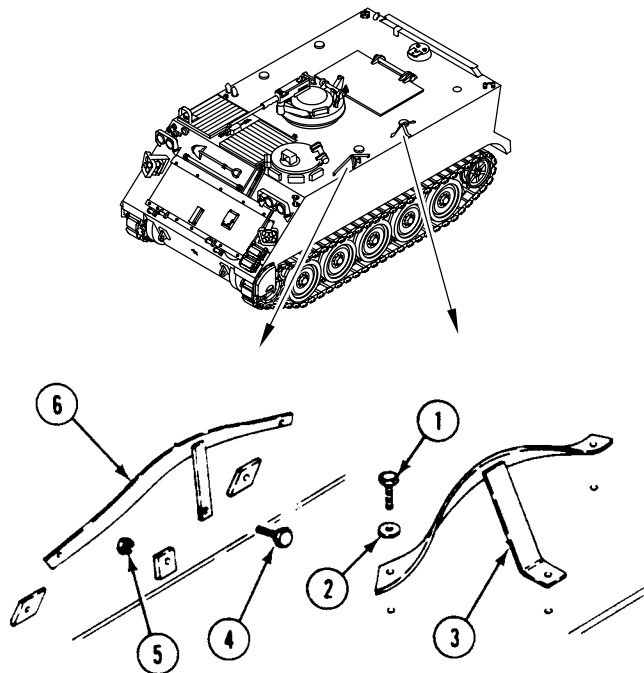
Carrier blocked (see your -10)

Materials/Parts

Locknut (3)

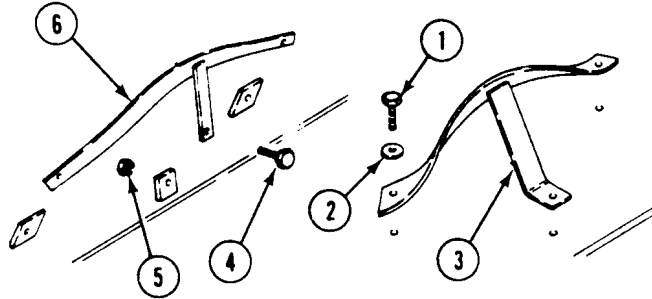
**REMOVAL**

1. Remove three screws (1), washers (2), and guard (3) from hull top plate.
2. Remove three screws (4), locknuts (5), and guard (6) from bracket on hull top plate. Discard locknuts.



**INSTALLATION**

1. Align guard (6) with brackets on hull top plate. Secure with three screws (4) and new locknuts (5).
2. Align guard (3) with hull top plate. Secure with three washers (2) and screws (1).

**END OF TASK**



**REPLACE ANTENNA COVERS**

**0528 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0528 00-1).  
 Installation (page 0528 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

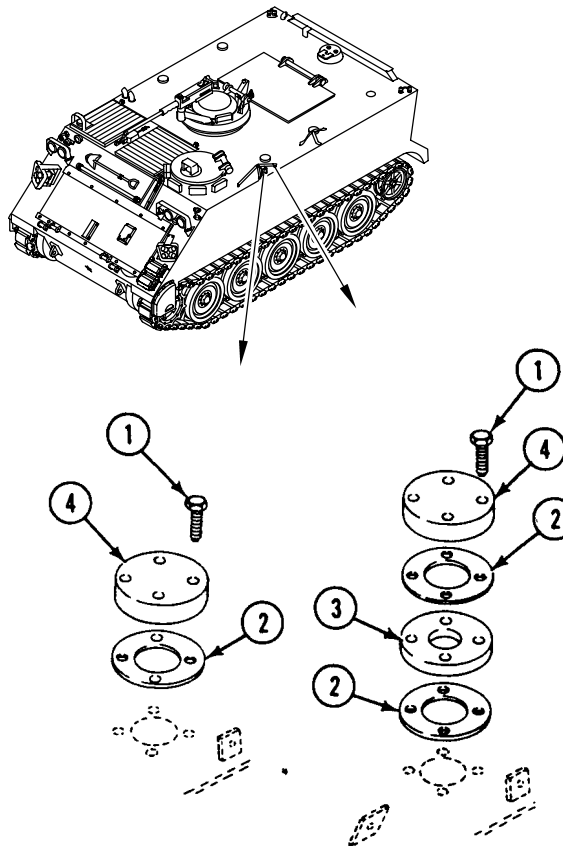
Gasket (2)

**REMOVAL**

**NOTE**

**Screws and adapters are different sizes for different locations. Remove and install one cover at a time. One some locations, adapter is not installed.**

1. Remove four screws (1), two gaskets (2), adapter (3), and cover (4) from hull top plate. Discard gaskets.

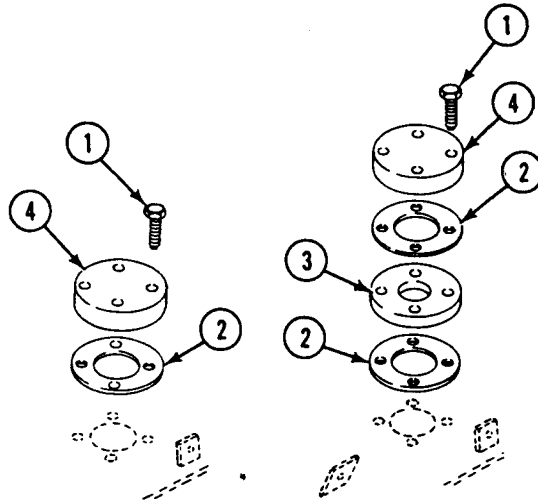


INSTALLATION

NOTE

Screws and adapters are different sizes for different locations. Remove and install one cover at a time. On some locations, adapter is not installed.

1. Align one new gasket (2), adapter (3), one new gasket (2), and cover (4) with hull top plate. Secure with four screws (1).



END OF TASK

**REPLACE RIGHT FRONT RADIO STOWAGE RACK (M577A2 ONLY)**

**0529 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0529 00-1).  
 Installation (page 0529 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Electronic equipment heater removed, if installed  
 (WP 0633 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Electronic equipment heater control box removed, if  
 installed (WP 0630 00)

Materials/Parts

Locknut (5)

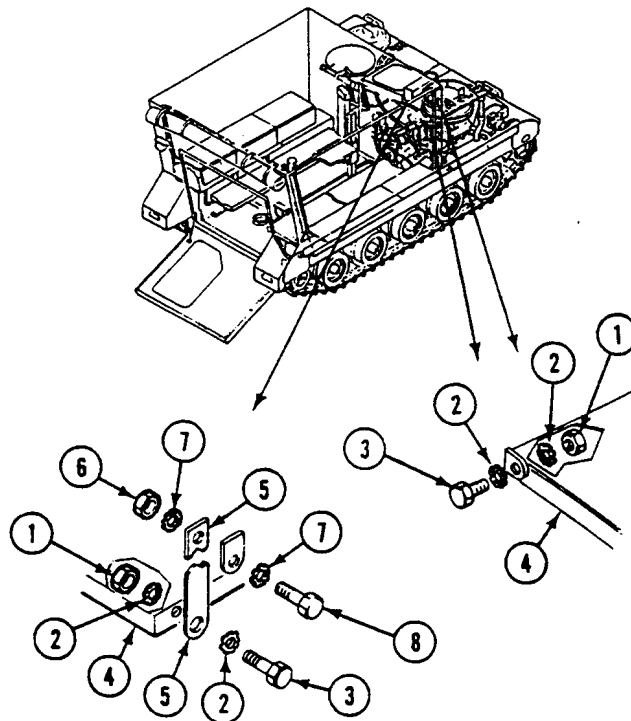
Lockwasher (10)

Personnel Required

Unit Mechanic

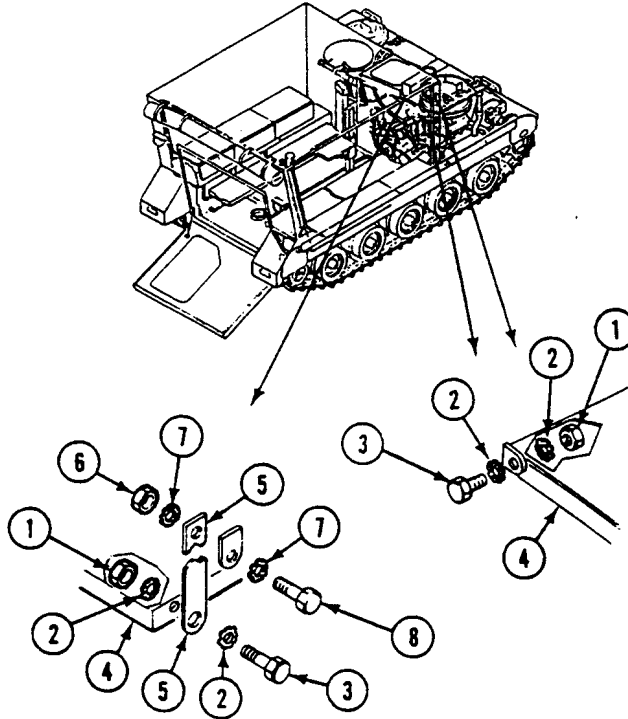
**REMOVAL**

1. Remove four locknuts (1), eight lockwashers (2), four screws (3), and rack (4) from hanger (5) and bulkhead mounts. Discard locknuts and lockwashers.
2. Remove locknut (6), two lockwashers (7), screw (8), and hanger (5) from hull top plate mount. Discard locknut and lockwashers.



**INSTALLATION**

1. Align hanger (5) with hull top plate mount. Secure with screw (8), two new lockwashers (7), and new locknut (6).
2. Align rack (4) with hanger (5) and bulkhead mounts. Secure with four screws (3), eight new lockwashers (2), and four new locknuts (1).

**FOLLOW-THROUGH STEPS**

1. Install electronic equipment heater control box (WP 0630 00).
2. Install electronic equipment heater (WP 0633 00).

**END OF TASK**

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**REPLACE RIGHT SIDE SHELF ASSEMBLY (M1068 ONLY)**

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**0530 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0530 00-2).  
 Installation (page 0530 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Locknut (28)

Locknut (2)

Personnel Required

Unit Mechanic

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Battery ground lead disconnected (WP 0294 00)

Electrical/communication equipment removed  
 (TM 11-7010-256-12&P)

A.C. power extension box A7 removed (WP 0719 00)

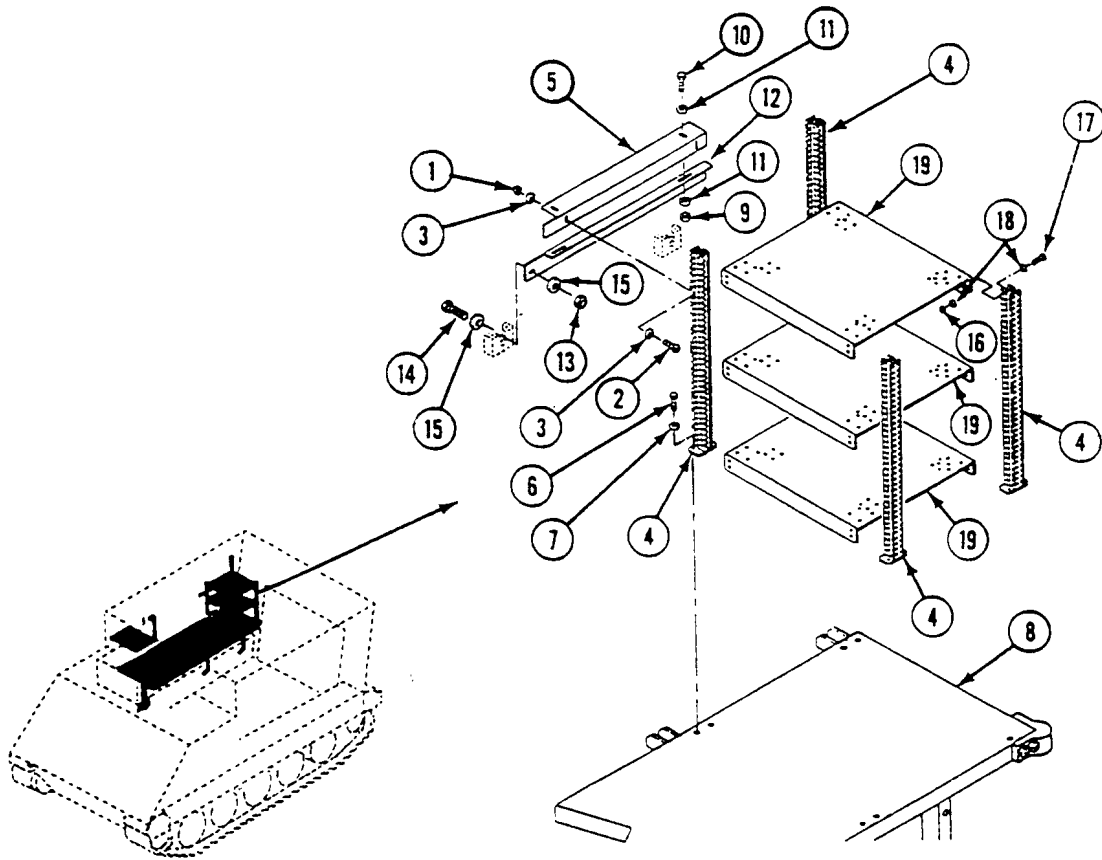
LAN ground box assembly A15 removed (WP 0721 00)

Right equipment rack brackets and mounts removed  
 (WP 0718 00)

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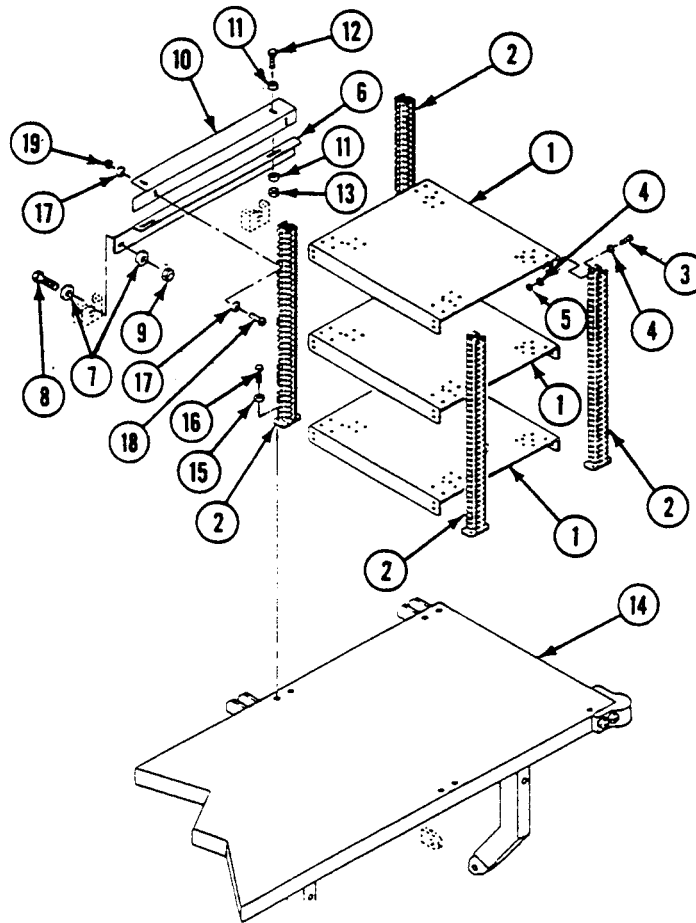
**REMOVAL**

1. Remove two locknuts (1), screws (2), and four washers (3) from two vertical posts (4) and bracket (5). Discard locknuts.
2. Remove two screws (6) and washers (7) from bottom of each of four posts (4) and base (8). Move shelf assembly to work station.
3. Remove two locknuts (9), screws (10), four washers (11), and bracket (5) from bracket (12). Discard locknuts.
4. Remove two locknuts (13), screws (14), four washers (15), and bracket (12) from right bulkhead. Discard locknuts.
5. Remove 24 locknuts (16), screws (17), 48 washers (18), and three shelves (19) from four posts (4). Discard locknuts.



**INSTALLATION**

1. Position three shelves (1) on four vertical posts (2). Secure with 24 screws (3), 48 washers (4), and 24 new locknuts (5).
2. Install bracket (6), four washers (7), two screws (8), and new locknuts (9) on right bulkhead.
3. Install bracket (10), four washers (11), two screws (12), and new locknuts (13) on bracket (6).
4. Position shelf assembly on base (14). Secure each of four posts (2) to base (14) with two washers (15) and screws (16).
5. Install four washers (17), two screws (18), and new locknuts (19) in two posts (2) and bracket (10).



**FOLLOW-THROUGH STEPS**

1. Install right equipment rack brackets and mounts (WP 0718 00).
2. Install LAN ground box assembly A15 (WP 0721 00).
3. Install A.C. power extension box A7 (WP 0719 00).
4. Install electrical/communication equipment. See TM 11-7010-256-12&P.
5. Connect battery ground lead (WP 0294 00).
6. Start engine (see your -10).
7. Raise and lock ramp (see your -10).
8. Stop engine (see your -10).

**END OF TASK**



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**REPLACE RIGHT SIDE RACK BASE (M1068 ONLY)**

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**0531 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0531 00-2).  
 Installation (page 0531 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Battery ground lead disconnected (WP 0294 00)

Materials/Parts

Locknut (3)

Lockwasher

Batteries removed (WP 0302 00)

Right side shelf assembly removed (WP 0530 00)

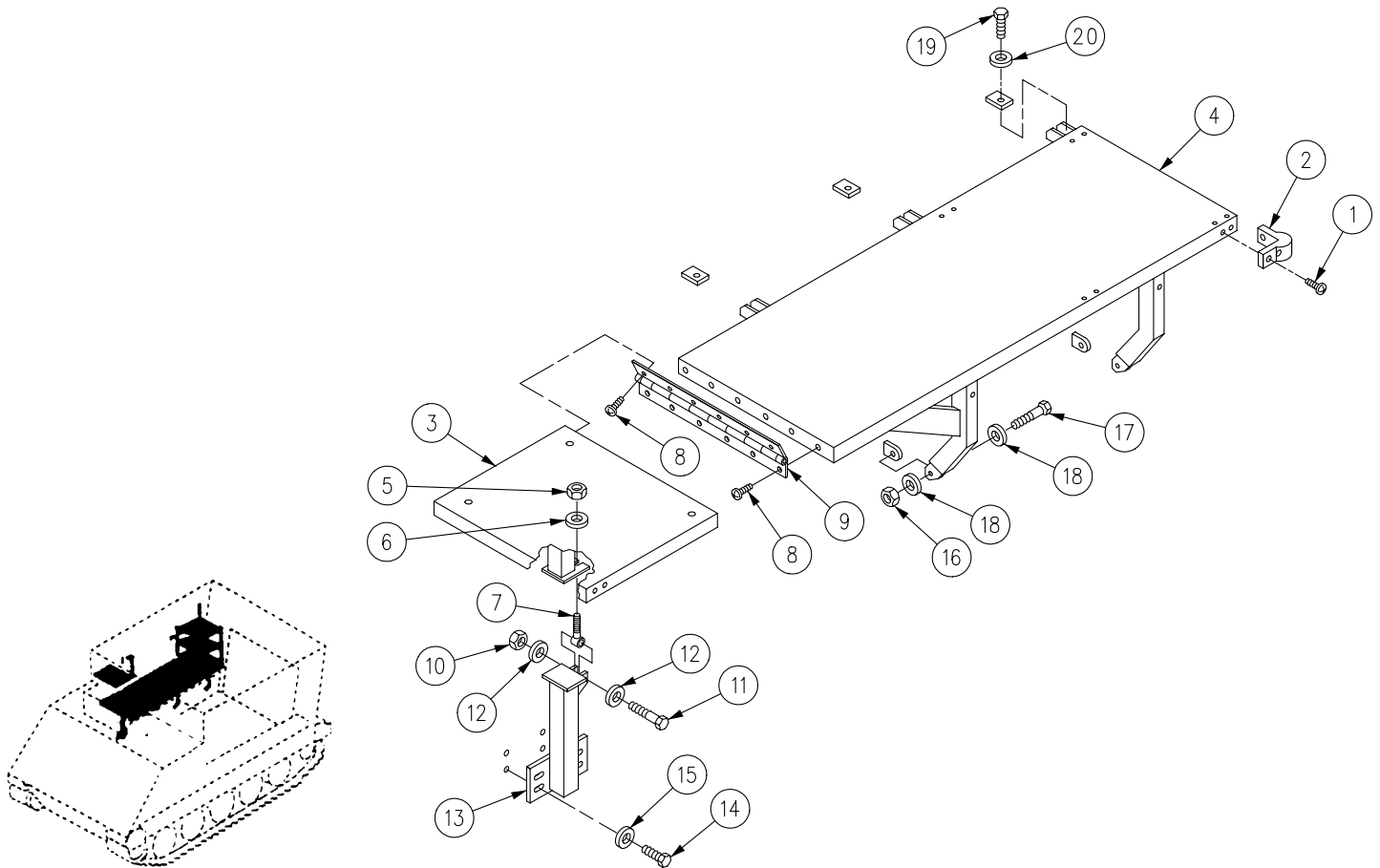
Personnel Required

Unit Mechanic

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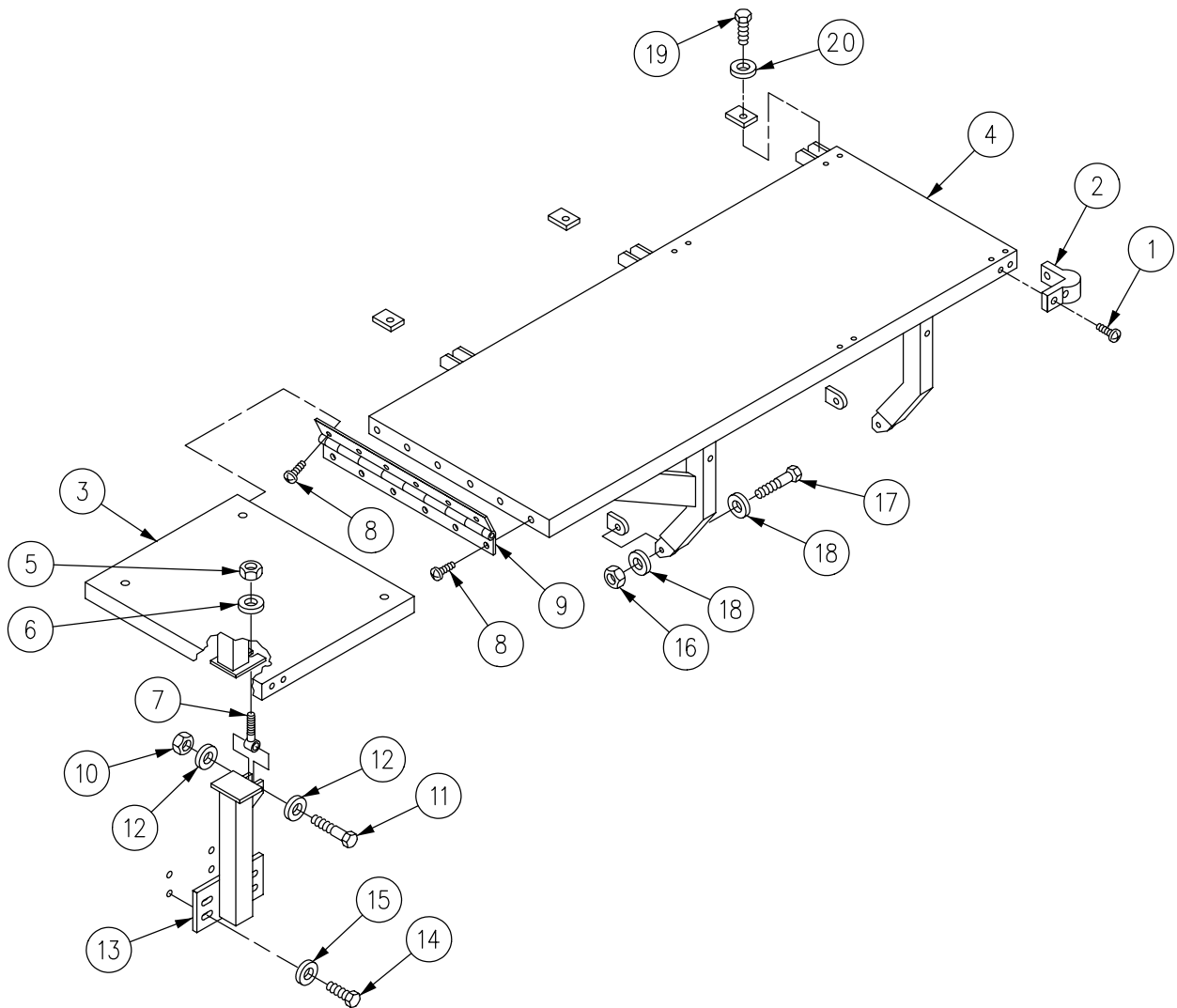
**REMOVAL**

1. Remove four screws (1) and bumper (2) from base extension (3).
2. Remove three screws (1) and bumper (2) from base (4).
3. Loosen nut (5) and lockwasher (6) from bolt (7) securing base extension (3). Raise base extension (3) and position on base (4). Discard lockwasher.
4. Remove 12 screws (8) and hinge (9) from base extension (3) and base (4).
5. Remove locknut (10), screw (11), two washers (12), and bolt (7) from base extension mount (13). Discard locknut.
6. Remove four screws (14), washers (15), and base extension mount (13) from right sponson.
7. Remove two locknuts (16), screws (17), and four washers (18) from base (4) and sponson. Discard locknuts.
8. Remove three screws (19), washers (20), and base (4) from bulkhead mounts.



**INSTALLATION**

1. Position base (4) on bulkhead mounts. Secure with three washers (20) and screws (19).
2. Install four washers (18), two screws (17), and new locknuts (16) on base (4) and sponson.
3. Position base extension mount (13) on sponson. Secure with four washers (12) and screws (14).
4. Install bolt (7), two washers (12), screw (11), and new locknut (10) on base extension mount (13).
5. Position hinge (9) between base (4) and base extension (3). Secure with 12 screws (8).
6. Position base extension (3) on bolt (7) on base extension mount (13). Secure with new lockwasher (6) and nut (5).
7. Install bumper (2) on base extension (3). Secure with four screws (1).
8. Install bumper (2) on base (4). Secure with three screws (1).



**FOLLOW-THROUGH STEPS**

1. Install right side shelf assembly (WP 0530 00).
2. Install batteries (WP 0302 00).
3. Connect battery ground lead (WP 0294 00).
4. Start engine (see your -10).
5. Raise and lock ramp (see your -10).
6. Stop engine (see your -10).

**END OF TASK**

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**REPLACE LEFT SIDE RACK BASE (M1068 ONLY)**

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**0532 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0532 00-2).  
 Installation (page 0532 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Locknut (10)

Personnel Required

Unit Mechanic

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

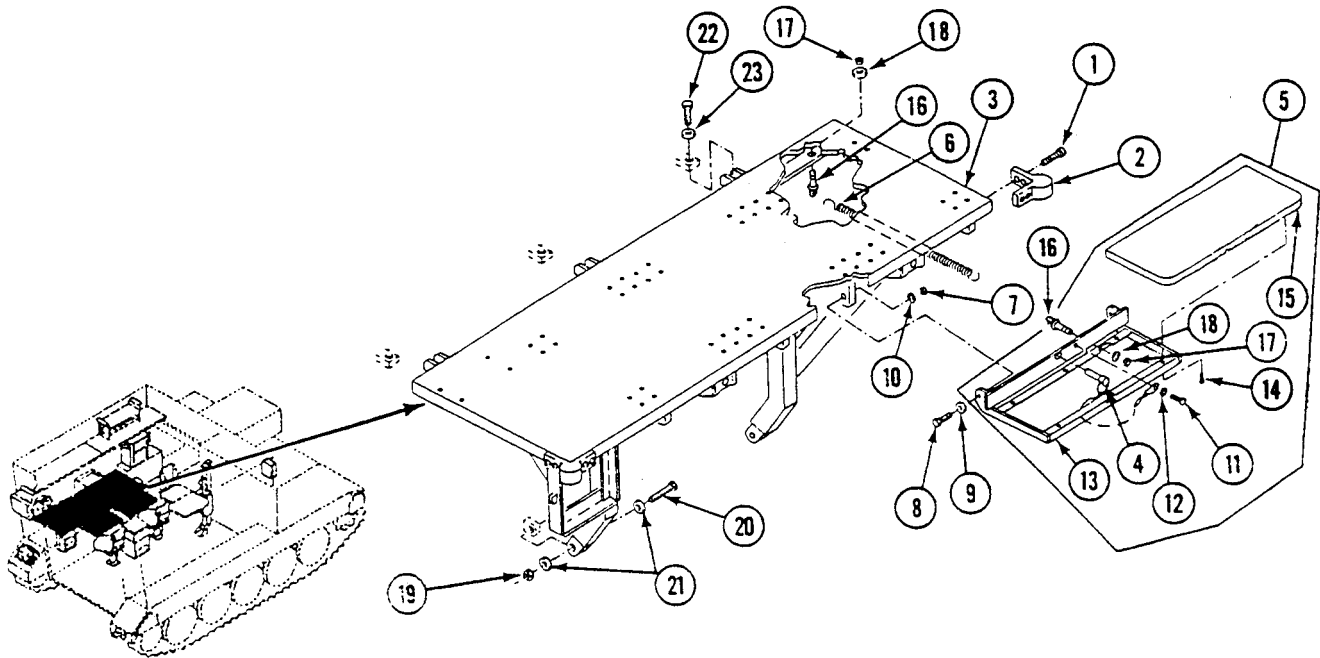
Electronic/communication equipment removed  
 (TM 11-7010-256-12&P)

A.C. and D.C. power extension boxes and mounts  
 removed (WP 0735 00)

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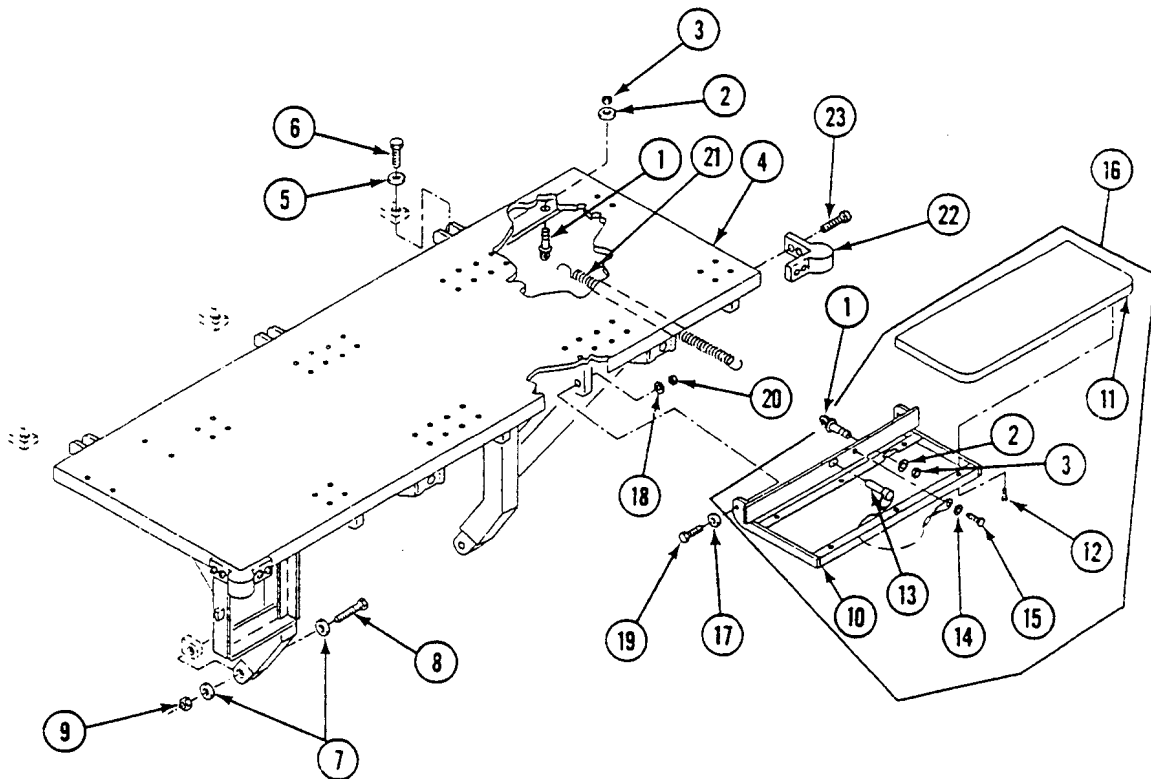
**REMOVAL**

1. Remove eight screws (1) and two bumpers (2) from rack base (3).
2. Remove two pins (4), lower two work surface assemblies (5), and remove two springs (6).
3. Raise two work surface assemblies (5). Remove four locknuts (7), screws (8), washers (9), washers (10), and two work surface assemblies (5) from rack base (3). Discard locknuts.
4. Remove two screws (11), washers (12), and pins (4) with lanyards from two frames (13).
5. Remove 12 screws (14) and two work surfaces (15) from two frames (13).
6. Remove two bolts (16), locknuts (17), and washers (18) from two frames (13). Discard locknuts.
7. Remove two bolts (16), locknuts (17), and washers (18) from rack base (3). Discard locknuts.
8. Remove two locknuts (19), screws (20), four washers (21), and rack base (3) from sponson lugs. Discard locknuts.
9. Remove three screws (22), washers (23), and rack base (3) from bulkhead mounts.



**INSTALLATION**

1. Install two bolts (1), washers (2), and new locknuts (3) in rack base (4).
2. Position rack base (4) on bulkhead mounts. Secure with three washers (5) and screws (6).
3. Position rack base (4) to sponson lugs. Secure with four washers (7), two screws (8), and new locknuts (9).
4. Install two bolts (1), washers (2), and new locknuts (3) in two frames (10).
5. Install two work surfaces (11) and 12 screws (12) on two frames (10).
6. Install two pins (13) with lanyards, washers (14), and screws (15) on frames (10).
7. Position two work surface assemblies (16) under rack base (4). Secure with four washers (17), washers (18), screws (19), and new locknuts (20).
8. Install two springs (21) onto four bolts (1).
9. Install two bumpers (22) and eight screws (23) on rack base (4).
10. Install two pins (13) in work surface assemblies (16).



**FOLLOW-THROUGH STEPS**

1. Install A.C. and D.C. power extension boxes and mounts (WP 0735 00).
2. Install electronic/communication equipment. See TM 11-7010-256-12&P.
3. Start engine (see your -10).
4. Raise and lock ramp (see your -10).
5. Stop engine (see your -10).

**END OF TASK**





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**REPLACE LEFT BULKHEAD RADIO STOWAGE RACKS  
(M577A2 AND M1068 ONLY)**

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**0533 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0533 00-2).  
Installation (page 0533 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Locknut (12)

Lockwasher (12)

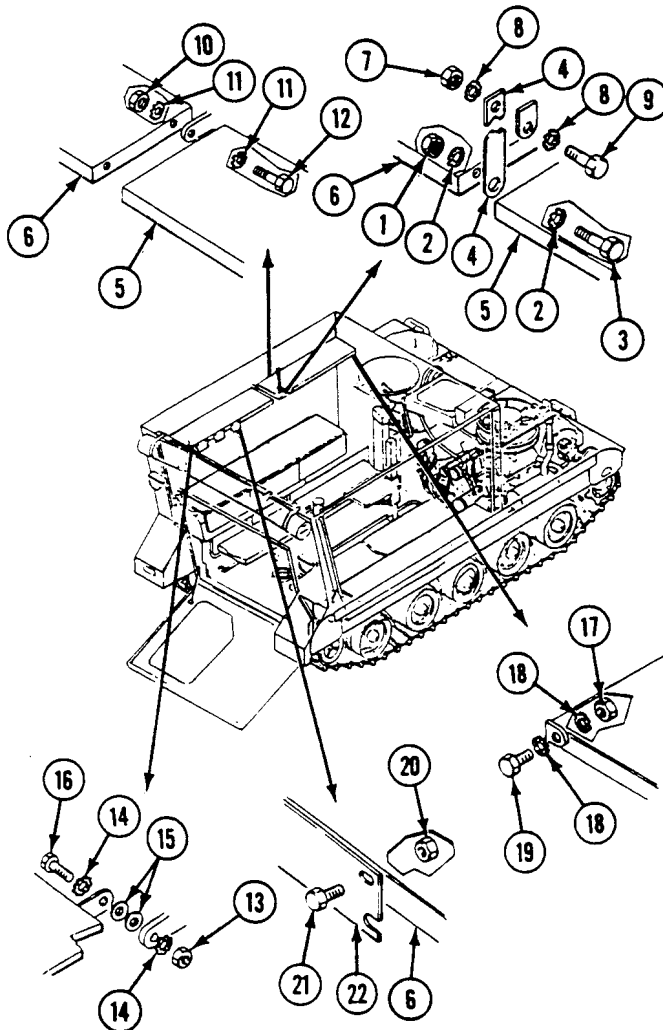
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**REPLACE LEFT BULKHEAD RADIO STOWAGE RACKS (M577A2 AND M1068 ONLY) — Continued**

0533 00

**REMOVAL**

1. Remove locknut (1), two lockwashers (2), and screw (3) from hanger (4), front rack (5), and rear rack (6). Discard lockwashers and locknut.
2. Remove locknut (7), two lockwashers (8), screw (9), and hanger (4) from hull top plate lug. Discard lockwashers and locknut.
3. Remove locknut (10), two lockwashers (11), and screw (12) from rack (5), rack (6), and bulkhead lug. Discard lockwashers and locknut.
4. Remove locknut (13), two lockwashers (14), washers (15), and screw (16) from each rack (5) and (6). Discard lockwashers and locknut.
5. Remove two locknuts (17), four lockwashers (18), and two screws (19) from each rack (5) and (6). Discard lockwashers and locknuts.
6. Remove six locknuts (20), screws (21), and three intercom brackets (22) from rack (6). Discard locknuts.

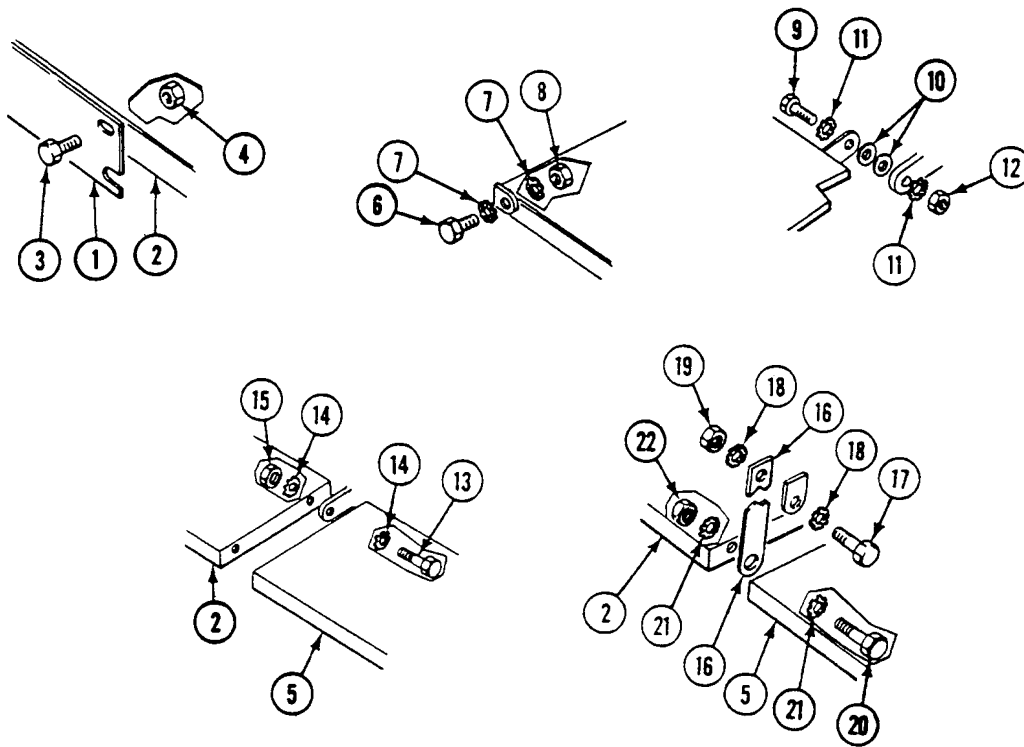


**REPLACE LEFT BULKHEAD RADIO STOWAGE RACKS (M577A2 AND M1068 ONLY) — Continued**

**0533 00**

**INSTALLATION**

1. Align three intercom brackets (1) with rack (2). Secure with six screws (3) and new locknuts (4).
2. Align racks (5) and (2) with front and rear bulkhead lugs. Secure with two screws (6), four new lockwashers (7), and two new locknuts (8) on each rack.
3. Align racks (5) and (2) to left bulkhead lugs. Secure with screw (9), washer(s) (10) (to shim), two new lockwashers (11), and new locknut (12) on each rack.
4. Align racks (5) and (2) with left bulkhead lug. Secure with screw (13), two new lockwashers (14), and new locknut (15).
5. Align hanger (16) with hull top plate lug. Secure with screw (17), two new lockwashers (18), and new locknut (19).
6. Align hanger (16) with rear rack (2) and front rack (5). Secure with screw (20), two new lockwashers (21), and new locknut (22).



**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



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**REPLACE MAP BOARD (M577A2 ONLY)**

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**0534 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0534 00-2).  
Installation (page 0534 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Cotter pin (2)

Locknut (8)

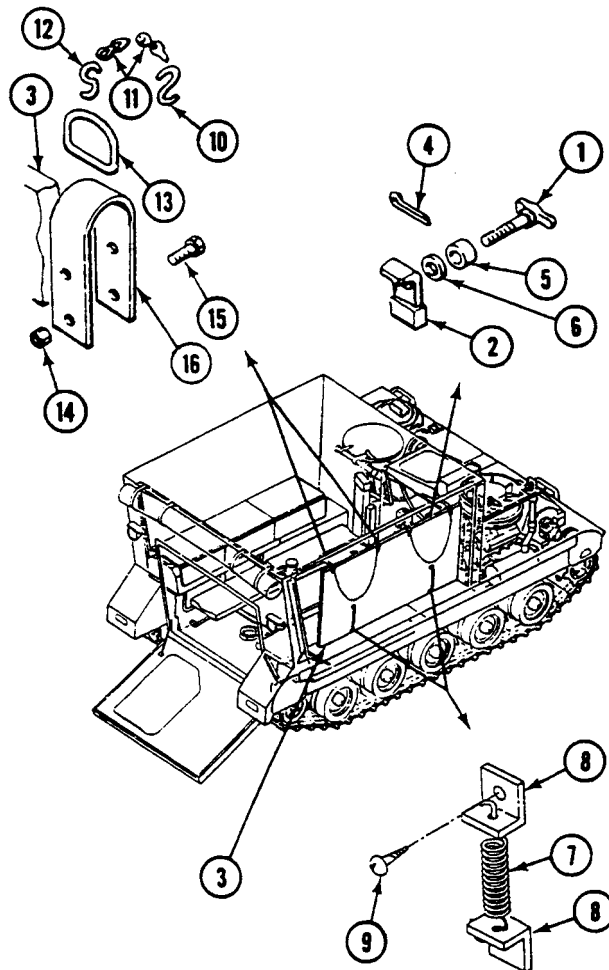
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## REPLACE MAP BOARD (M577A2 ONLY) — Continued

0534 00

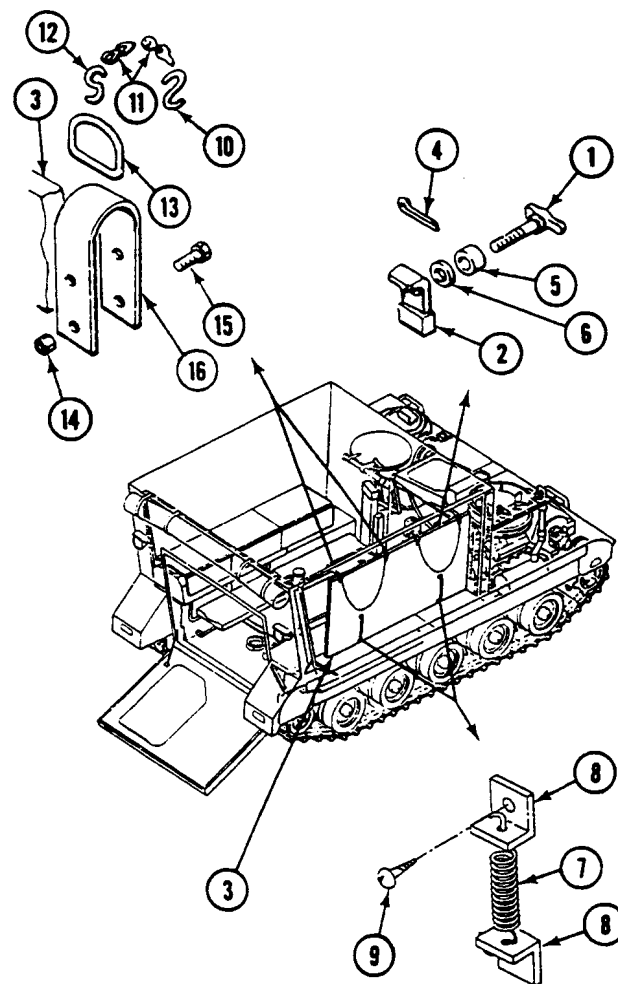
## REMOVAL

1. Loosen two bolts (1) and clamps (2). Remove map board (3) from right bulkhead mounts.
2. Remove two cotter pins (4), bolts (1), clamps (2), spacers (5), and washers (6) from bulkhead stops. Discard cotter pins.
3. Remove two springs (7) from four brackets (8).
4. Remove four screws (9) and brackets (8) from map board (3).
5. Open one end of four hooks (10). Remove hooks from four chains (11).
6. Open both ends of four hooks (12). Remove hooks from four chains (11) and D-rings (13).
7. Remove eight locknuts (14), screws (15), four hangers (16), and D-rings (13) from map board (3). Discard locknuts.



**INSTALLATION**

1. Pass four hangers (16) through four D-rings (13) and align hangers on map board (3). Secure hangers with eight screws (15) and new locknuts (14).
2. Install four hooks (12) on four D-rings (13) and chains (11). Squeeze both ends of hooks to secure.
3. Install four hooks (10) on four chains (11). Squeeze on end of hooks to secure.
4. Align four brackets (8) on map board (3). Secure with four screws (9).
5. Install two springs (7) on four brackets (8).
6. Install two clamps (2) on two bulkhead stops. Secure with two washers (6), spacers (5), bolts (1), and new cotter pins (4).
7. Place map board (3) on right bulkhead mounts. Secure with two clamps (2) and bolts (1).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**





**REPLACE/REPAIR MAP BOARD (M1068 ONLY)**

**0535 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0535 00-1).  
 Installation (page 0535 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

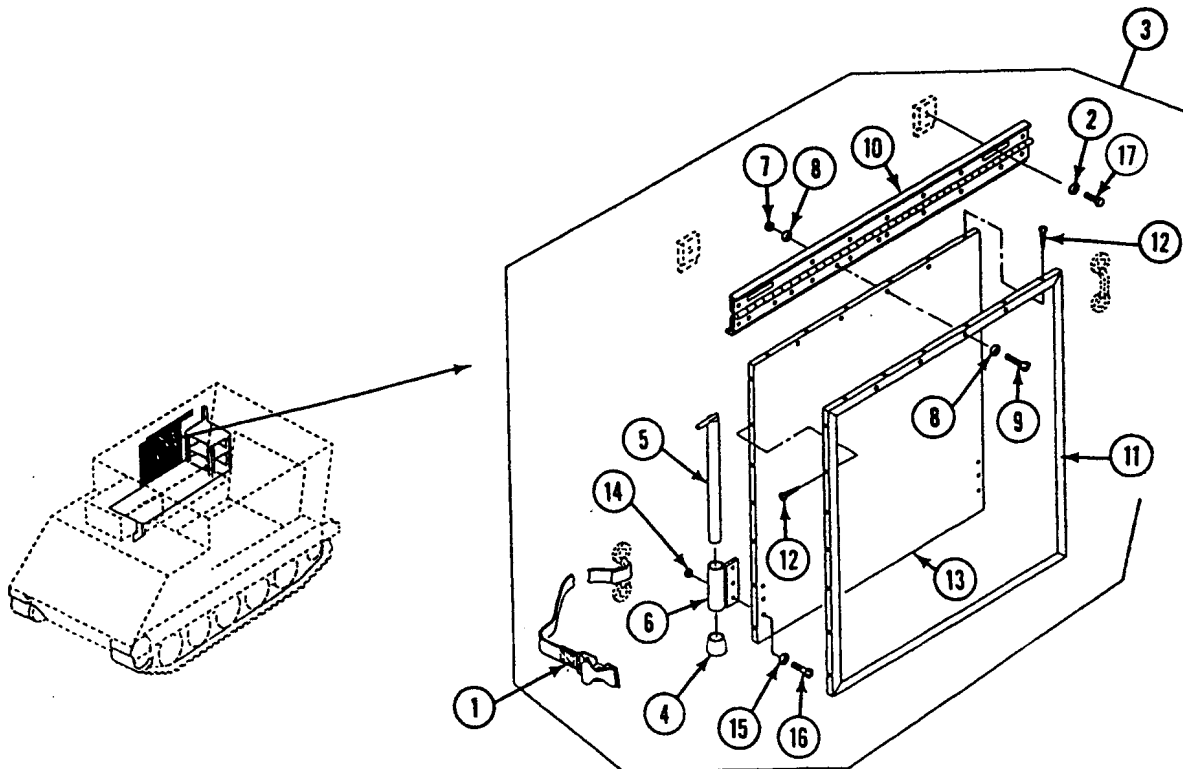
Materials/Parts

Locknut (4)

Locknut (6)

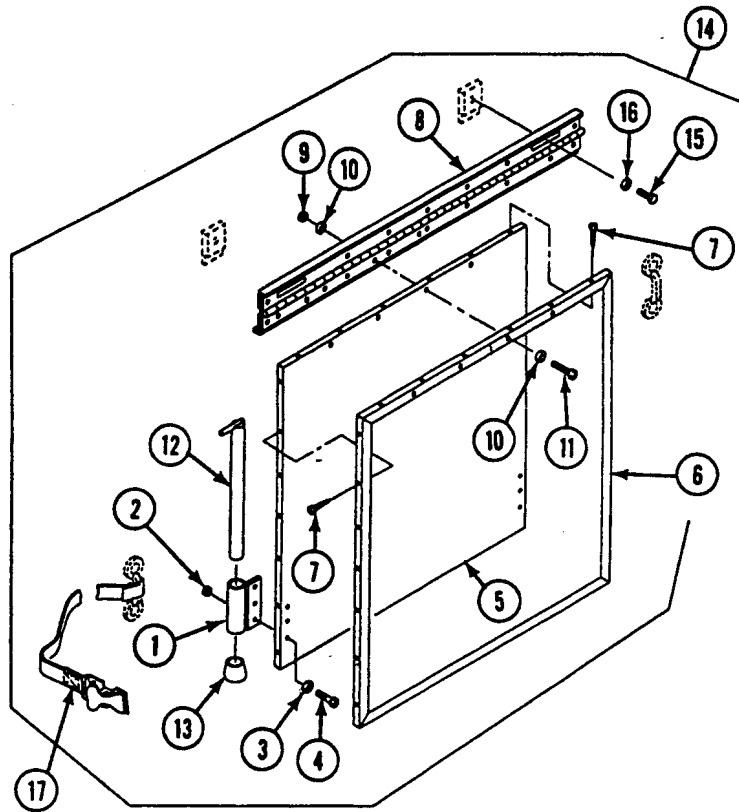
**REMOVAL**

1. Remove strap (1) securing map board.
2. Remove two screws (17), washers (2), and map board assembly (3) from right side bulkhead mounts.
3. Remove two tips (4) from two stakes (5).
4. Remove two stakes (5) from two brackets (6).
5. Remove four locknuts (7), eight washers (8), four screws (9), and hinge (10) from frame (11). Discard locknuts.
6. Remove 14 screws (12) from sides of frame (11).
7. Remove 12 screws (12) and frame (11) from map board (13).
8. Remove six locknuts (14), washers (15), screws (16), and two brackets (6) from map board (13). Discard locknuts.



**INSTALLATION**

1. Install two brackets (1), new locknuts (2), washers (3), and six screws (4) on map board (5).
2. Install frame (6) and 12 screws (7) on map board (5).
3. Install 14 screws (7) in sides of frame (6).
4. Install hinge (8), new locknuts (9), eight washers (10), and four screws (11) on frame (6).
5. Install two stakes (12) in brackets (1).
6. Install two tips (13) on stakes (12).
7. Install strap (17) securing map board (14) to stowed position.
8. Align map board assembly (14) with right side bulkhead mounts. Secure with two screws (15) and washers (16).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**

**REPLACE MAP STORAGE BOX (M1068 ONLY)**

**0536 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0536 00-1).
- Installation (page 0536 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Tools and Special Tools

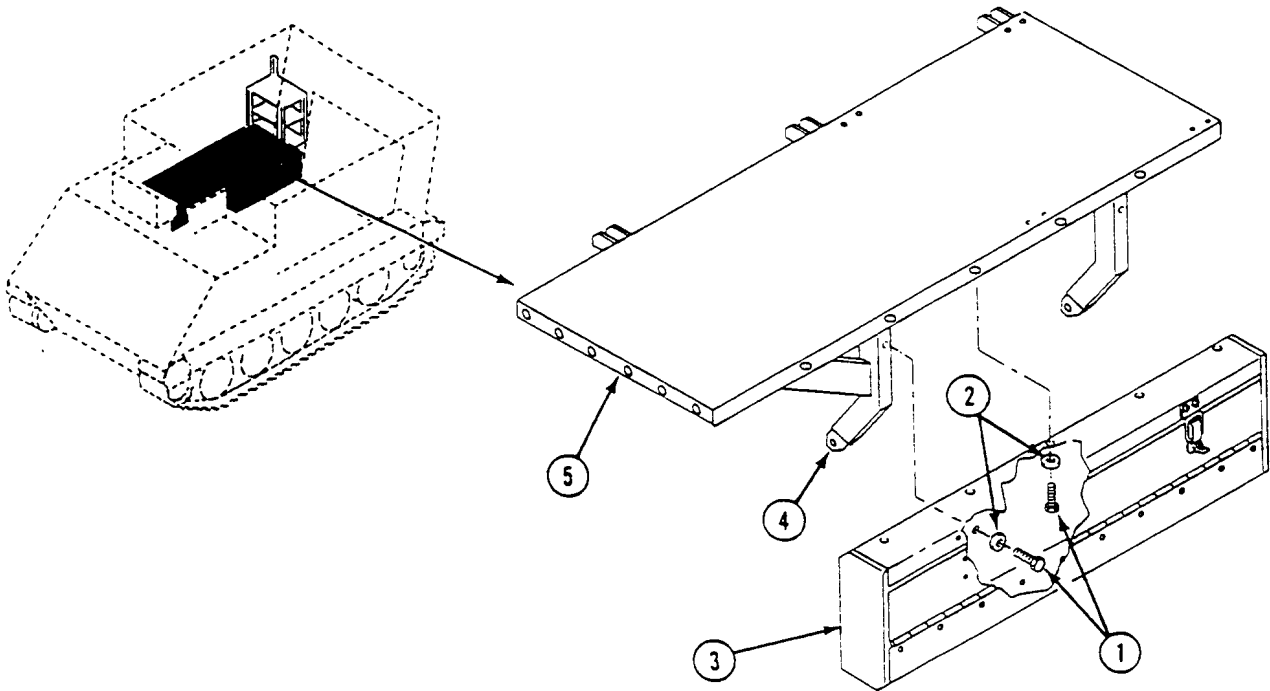
General Mechanic's Tool Kit (WP 0780 00, Item 29)

Personnel Required

Unit Mechanic

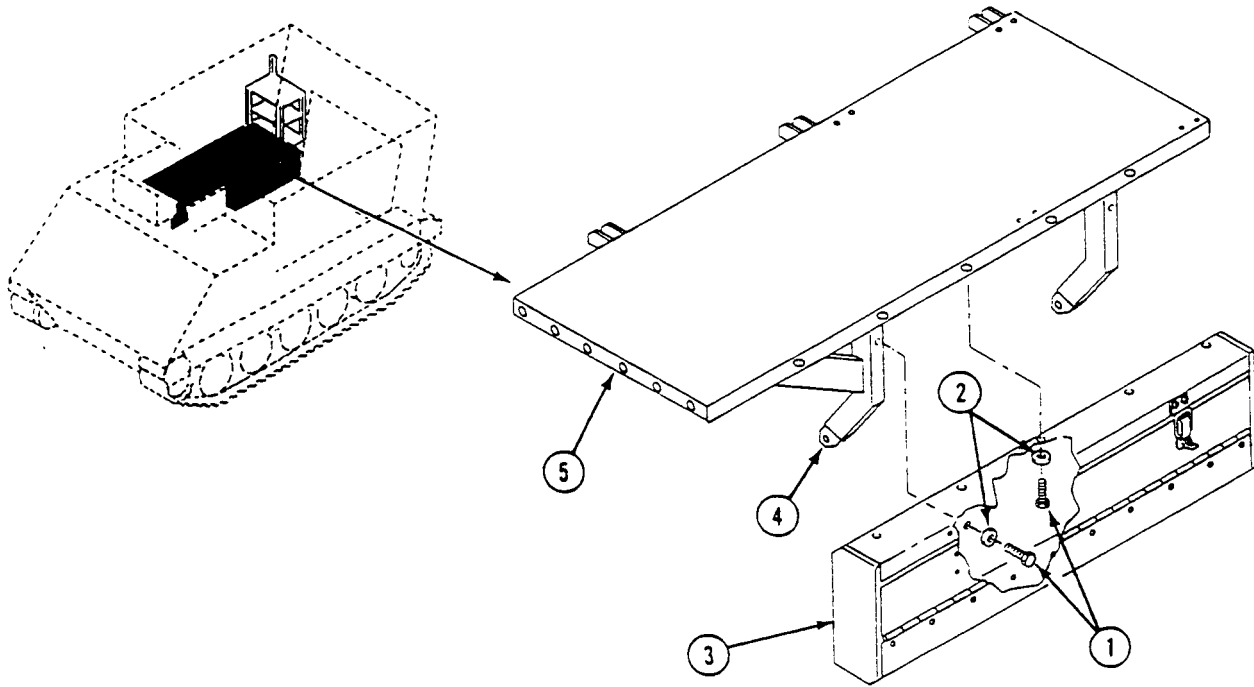
**REMOVAL**

1. Remove two screws (1) and washers (2) from storage box (3) and two right side rack base legs (4).
2. Remove five screws (1), washers (2), and storage box (3) from right side rack base (5).



**INSTALLATION**

1. Position map storage box (3) under top of right side rack base (5). Secure with five washers (2) and screws (1).
2. Position map storage box (3) to two right side rack base legs (4). Secure with two washers (2) and screws (1).

**END OF TASK**

**REPAIR MAP STORAGE BOX (M1068 ONLY)**

**0537 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0537 00-1).  
 Assembly (page 0537 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

Drill Set (WP 0780 00, Item 23)  
 General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Portable Electrical Drill (WP 0780 00, Item 21)

References

MIL-PRF-22750F

Equipment Condition

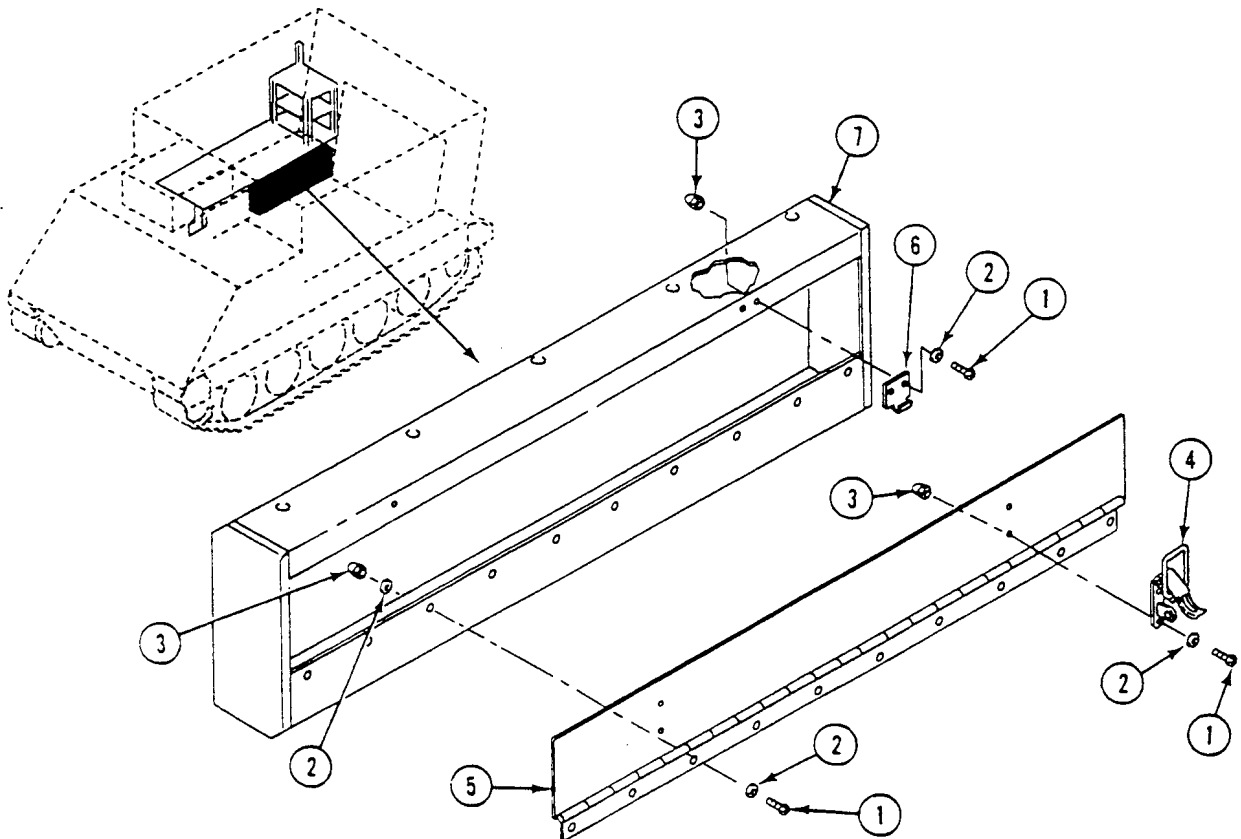
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Map storage box removed (WP 0536 00)

Materials/Parts

Paint (WP 0782 00, Item 49)  
 Paint brush (WP 0782 00, Item 11)  
 Primer (WP 0782 00, Item 53)

**DISASSEMBLY**

1. Remove four screws (1), washers (2), nuts (3), and catch (4) from door (5).
2. Remove four screws (1), washers (2), nuts (3), and strike (6) from map storage box (7).
3. Remove ten screws (1), 20 washers (2), ten nuts (3), and door (5) from map storage box (7).



**ASSEMBLY**

1. Install door (1), 20 washers (2), ten screws (3), and ten nuts (4) on map storage box (5).
2. Install strike (6), four washers (2), screws (3), and nuts (4) on map storage box (5).

**WARNING**

Chemical agent resistant coating (CARC) paint contains isocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can cause itching and reddening of skin, a burning sensation in throat and nose, and watering eyes. In extreme concentrations, HDI can cause coughing, shortness of breath, pain during breathing, increased sputum production, and chest tightness. The following precautions must be taken whenever using CARC paint:

**ALWAYS** use air line respirators when using CARC paint unless air sampling shows exposure to be below standards.

**DO NOT** let skin or eyes come in contact with CARC paint. Always wear protective equipment (gloves, ventilation mask, goggles, etc.)

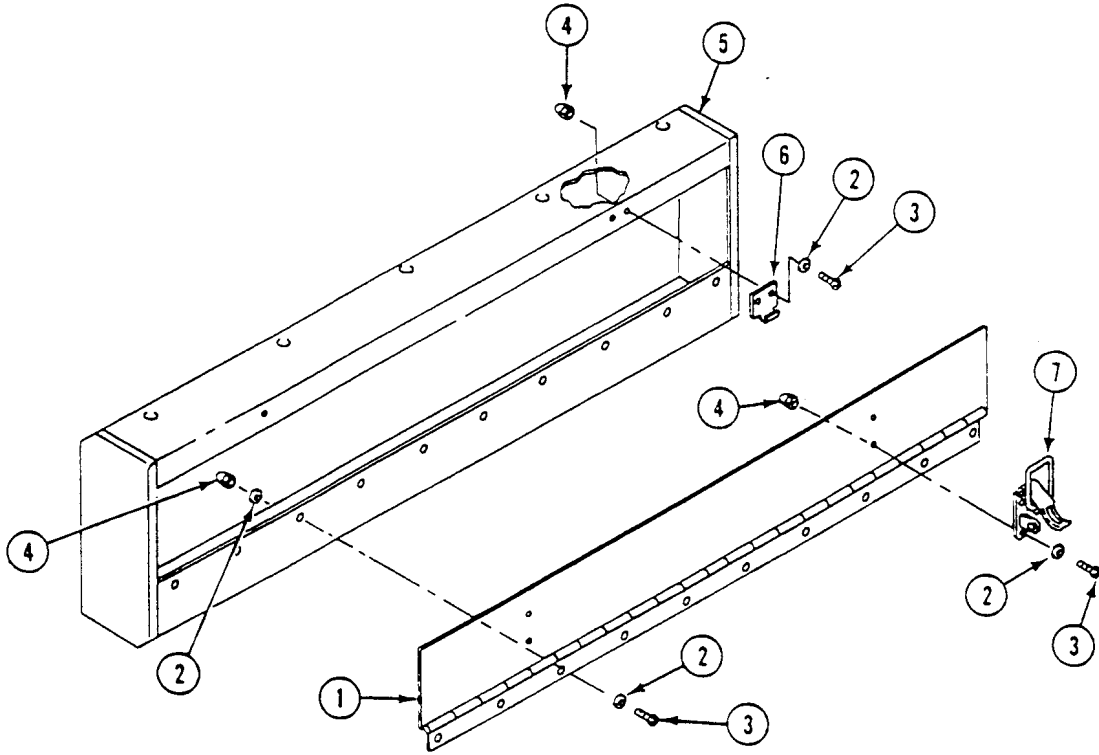
**DO NOT** use CARC paint without adequate ventilation.

**NEVER** weld or cut CARC-painted materials.

**DO NOT** grind or sand CARC-painted equipment without high-efficiency air purifying respirators in use.

**BE AWARE** of CARC paint exposure symptoms, which can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.

3. Using catch (7) as a template, drill four 0.191-0.208 holes through door (1). Primer and paint strike (6) and catch per MIL-PRF-22750F.
4. Install catch (7), four washers (2), screws (3), and nuts (4) on door (1).



**FOLLOW-THROUGH STEPS**

1. Install map storage box (WP 0536 00).
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

**END OF TASK**





**REPLACE REAR EXTERNAL STOWAGE FRAME (M1068 ONLY)**

**0538 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0538 00-1).  
 Installation (page 0538 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

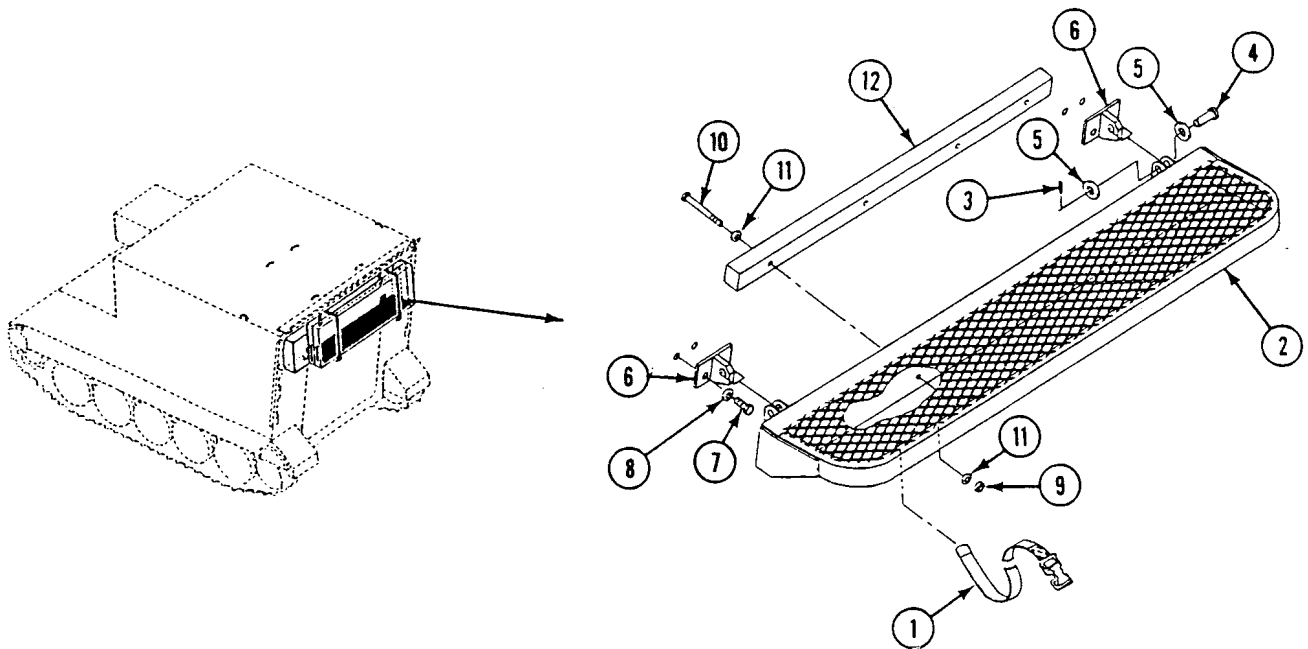
Engine stopped (see your -10)  
 Carrier blocked (see your -10)

Materials/Parts

Cotter pin (2)  
 Locknut (4)

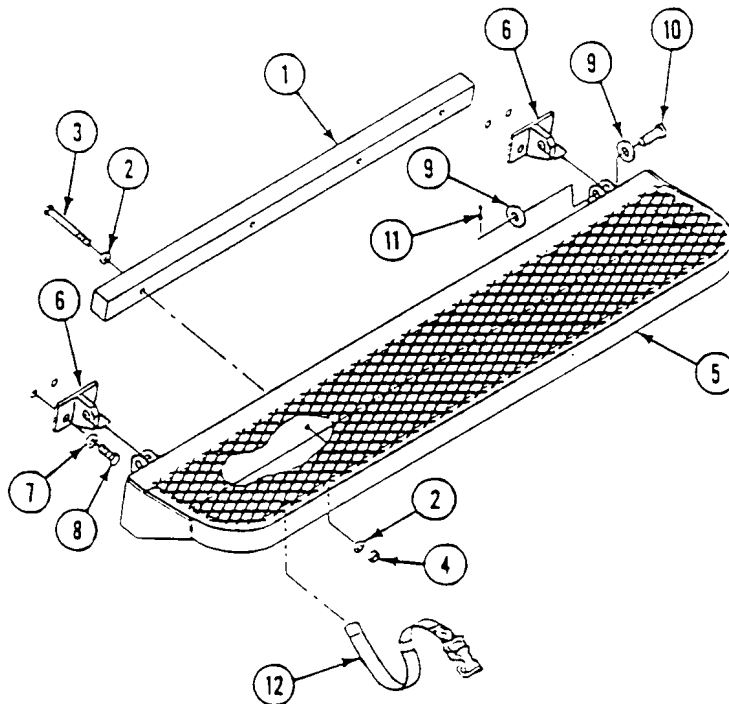
**REMOVAL**

1. Loosen two straps (1) and remove stowed equipment from rear external stowage frame (2).
2. Remove two straps (1) from loops on hull rear plate and frame (2).
3. Remove two cotter pins (3), shouldered pins (4), four washers (5), and rear external stowage frame (2) from two mounts (6). Discard cotter pins. Have helper hold up one side.
4. Remove four screws (7), washers (8), and two mounts (6) from hull rear plate.
5. Remove four locknuts (9), screws (10), eight washers (11), and pad (12) from rear external stowage frame (2). Discard locknuts.



**INSTALLATION**

1. Install pad (1), eight washers (2), four screws (3), and new locknuts (4) on rear external stowage frame (5).
2. Install two mounts (6), four washers (7), and screws (8) on hull rear plate.
3. Install rear external stowage frame (5), four washers (9), two shouldered pins (10), and new cotter pins (11) on two mounts (6). Have helper hold up one side.
4. Connect two strap assemblies (12) to two loops on hull rear plate and frame (5).
5. Stow equipment on rear external stowage frame (5) with two straps (12).

**END OF TASK**

**REPLACE RADIO STOWAGE RACK (M1064 ONLY)**

**0539 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0539 00-1).  
 Installation (page 0539 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

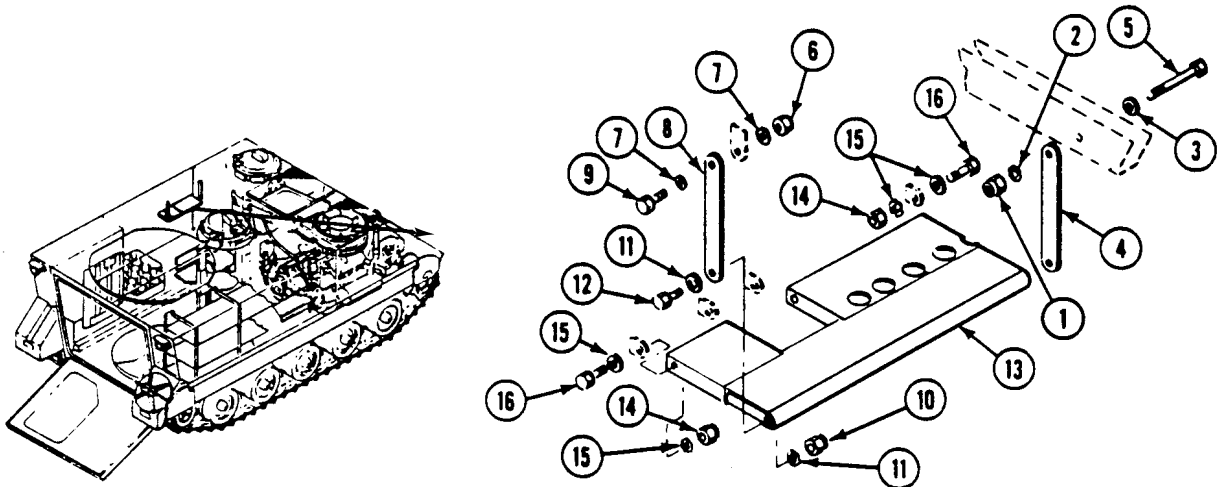
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Radio and mount removed

Materials/Parts

Locknut (8)  
 Lockwasher (15)

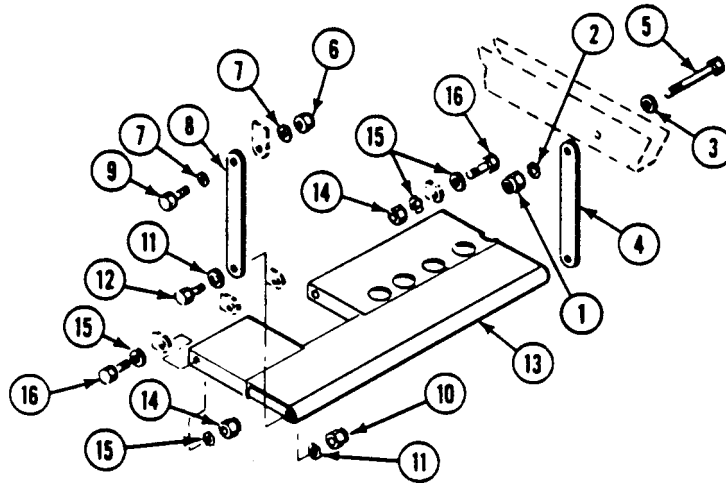
**REMOVAL**

1. Remove locknut (1), lockwasher (2), washer (3), hanger (4), and screw (5) from top plate crossmember. Discard locknut and lockwasher.
2. Remove locknut (6), two lockwashers (7), hanger (8), and screw (9) from top plate lug. Discard locknut and lockwashers.
3. Remove two locknuts (10), four lockwashers (11), two hangers (4) and (8), and two screws (12) from rack (13). Discard locknuts and lockwashers.
4. Remove four locknuts (14), eight lockwashers (15), four screws (16), and rack (13) from bulkhead lugs. Discard locknuts and lockwashers.



**REPLACE RADIO STOWAGE RACK (M1064 ONLY) — Continued****0539 00****INSTALLATION**

1. Align rack (13) with bulkhead lugs. Secure with four screws (16), eight new lockwashers (15), and four new locknuts (14).
2. Align two hangers (4) and (8) with rack (13). Secure with two screws (12), four new lockwashers (11), and two new locknuts (10).
3. Align hanger (8) with top plate lug. Secure with screw (9), two new lockwashers (7), and new locknut (6).
4. Align hanger (4) with top plate crossmember. Secure with screw (5), new lockwasher (2), washer (3), and new locknut (1).

**FOLLOW-THROUGH STEPS**

1. Install radio and mount.
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

**END OF TASK**

**REPLACE GRENADE STOWAGE BOX (M1064 ONLY)**

**0540 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0540 00-1).  
 Installation (page 0540 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

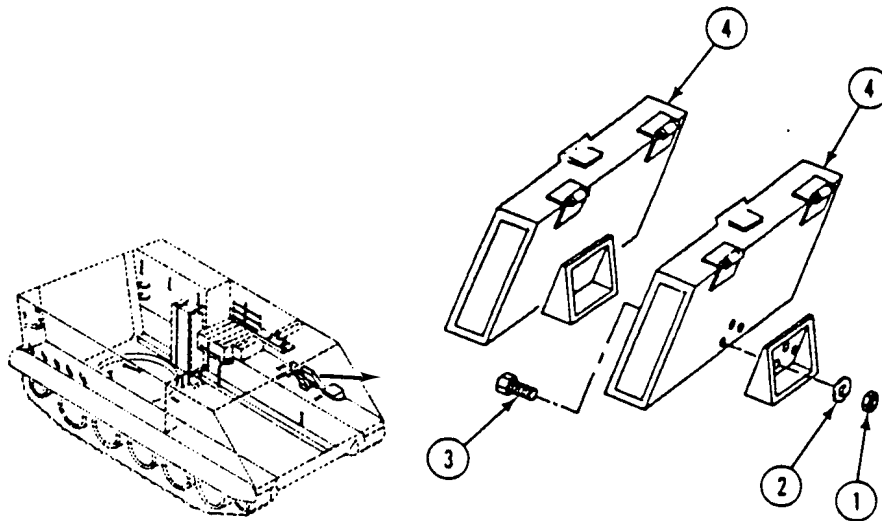
Carrier blocked (see your -10)

Materials/Parts

Locknut (6)

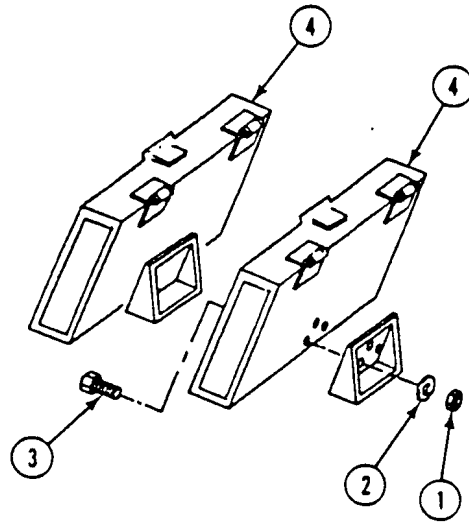
**REMOVAL**

1. Remove six locknuts (1), washers (2), screws (3), and two grenade stowage boxes (4) from sponson mounts. Discard locknuts.



**INSTALLATION**

1. Align two grenade stowage boxes (4) with sponson mounts. Secure with six screws (3), washers (2), and new locknuts (1).

**END OF TASK**

**REPLACE PERISCOPE STOWAGE BOX (M1064 ONLY)**

**0541 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0541 00-1).  
 Installation (page 0541 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

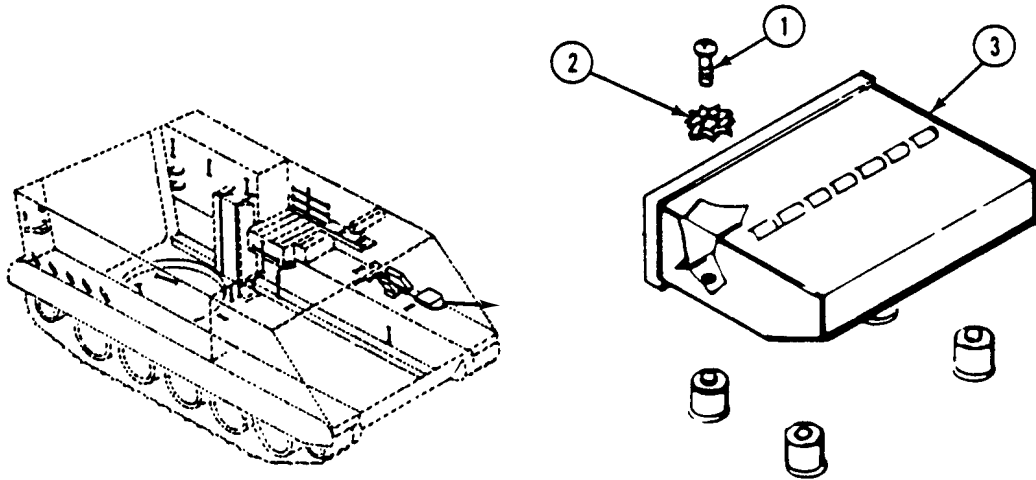
Ramp lowered (see your -10)

Materials/Parts

Lockwasher (4)

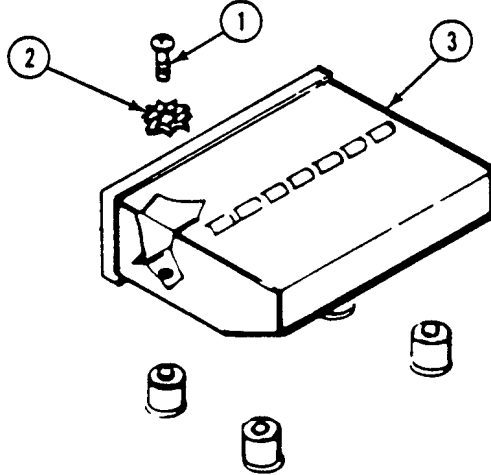
**REMOVAL**

1. Remove four screws (1), lockwashers (2), and periscope stowage box (3) from driver's sponson. Discard lockwashers.



**INSTALLATION**

1. Align periscope stowage box (3) with driver's sponson. Secure with four new lockwashers (2) and screws (1).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



**REPLACE WINDSHIELD STOWAGE BRACKET (M1064 ONLY)**

**0542 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0542 00-1).  
 Installation (page 0542 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

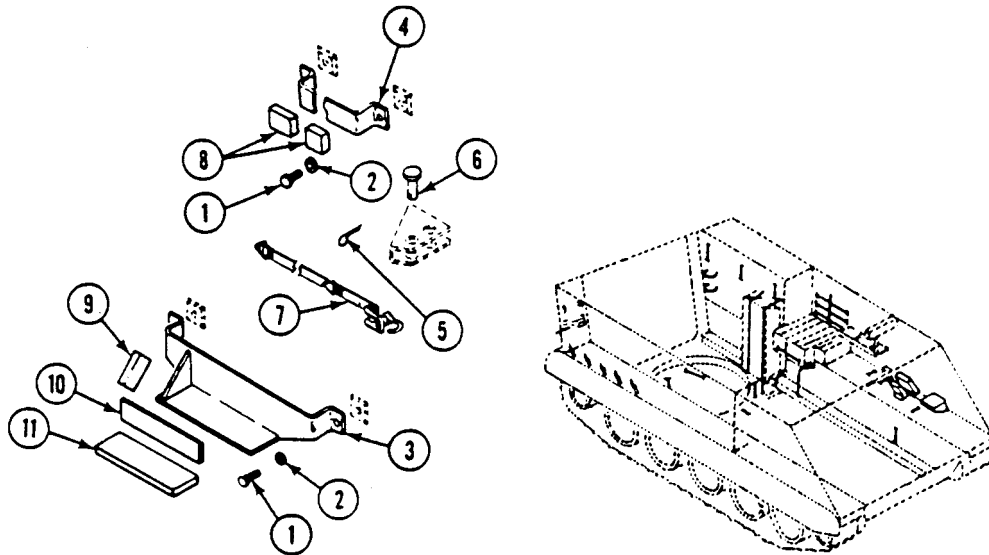
Materials/Parts

Adhesive (WP 0782 00, Item 2)

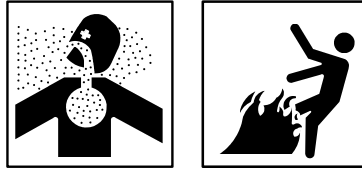
Cotter pin

**REMOVAL**

1. Remove four screws (1), washers (2), bracket (3), and retainer (4) from rear bulkhead.
2. Remove cotter pin (5), from pin (6) and strap (7) from bulkhead bracket. Discard cotter pin.
3. If needed, remove pads (8) from retainer (4) and pads (9), (10), and (11) from bracket (3).



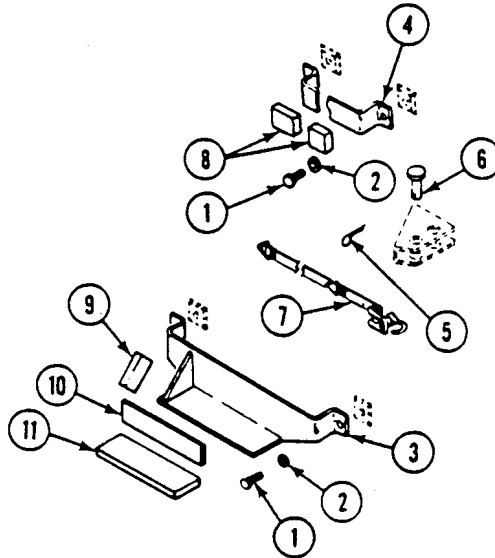
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. If removed, apply thin coat of adhesive to pad and mounting surface. Press pads (9), (10), and (11) firmly in place on bracket (3) or pads (8) on retainer (4).
2. Place strap (7) on bulkhead bracket. Secure with pin (6) and new cotter pin (5).
3. Align retainer (4) and bracket (3) on rear bulkhead. Secure with four washers (2) and screws (1).



END OF TASK

**REPLACE SIGHT EXTENSION ARM STOWAGE BRACKETS (M1064 ONLY)**

**0543 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0543 00-1).  
 Installation (page 0543 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

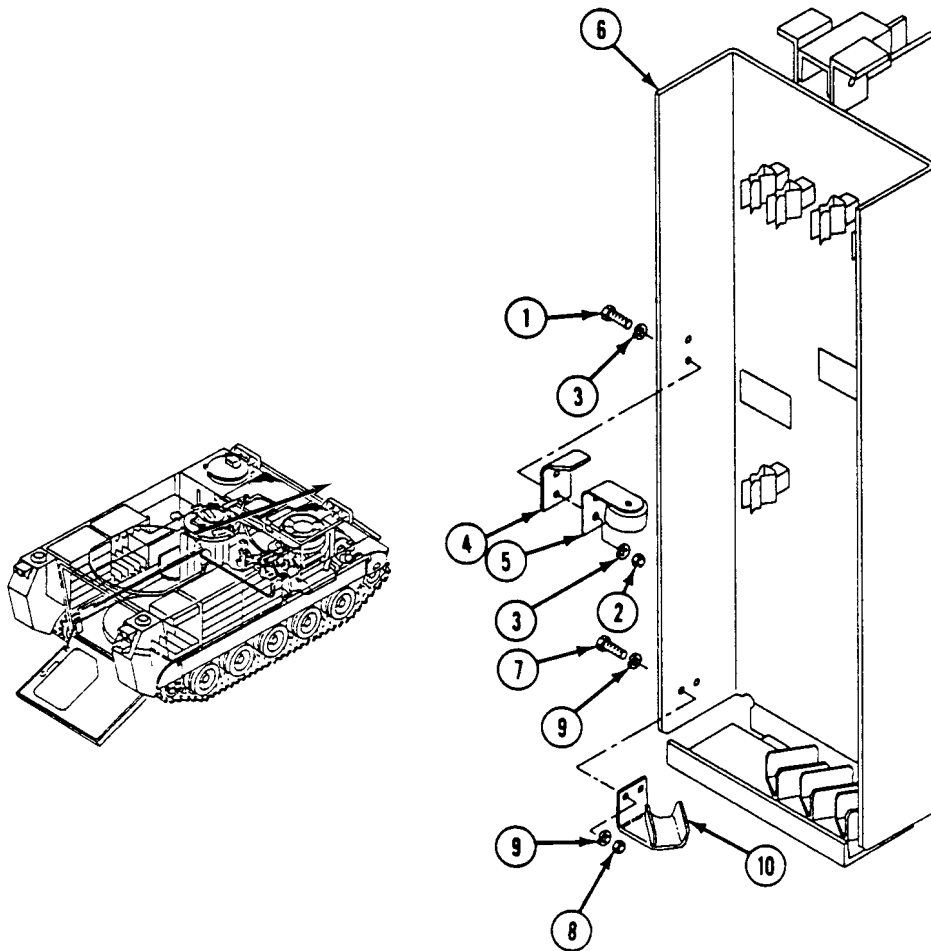
Ramp lowered (see your -10)

Materials/Parts

Locknut (4)

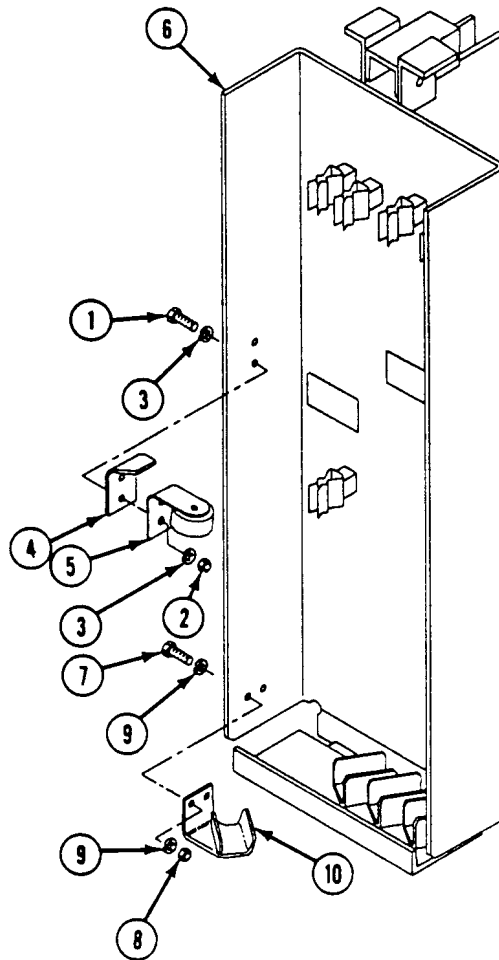
**REMOVAL**

1. Remove two screws (1), locknuts (2), four washers (3), and two brackets (4) and (5) from rifle rack (6). Discard locknuts.
2. Remove two screws (7), locknuts (8), four washers (9), and bracket (10) from rifle rack (6). Discard locknuts.



**INSTALLATION**

1. Install bracket (10) on rifle rack (6) with two screws (7), four washers (9), and two new locknuts (8).
2. Align two brackets (4) and (5) with rifle rack (6). Secure with two screws (1), four washers (3), and two new locknuts (2).

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**

**REPLACE MORTAR BASE STOWAGE BRACKET (M1064 ONLY)**

**0544 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0544 00-1).  
 Installation (page 0544 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Mortar base removed (TM 9-1015-250-10)

Materials/Parts

Locknut

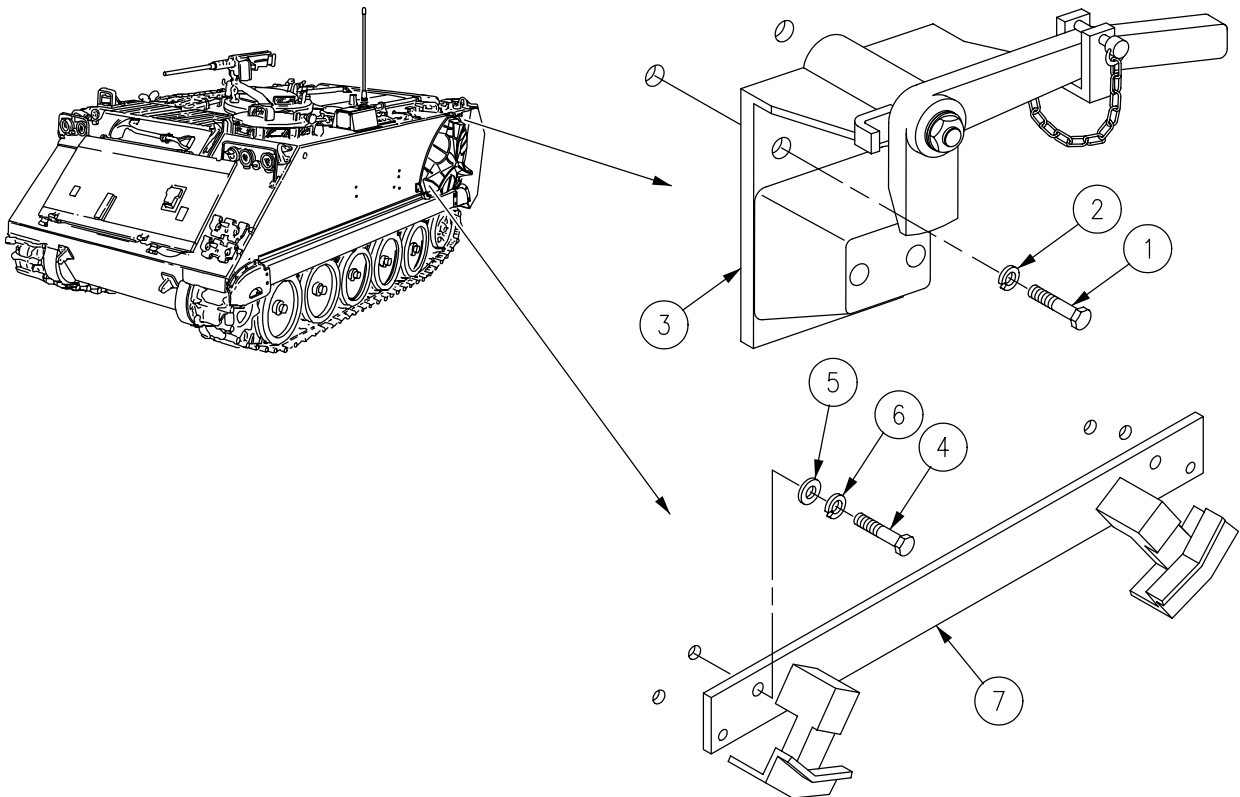
Lockwasher (3)

Lockwasher (4)

Lockwasher

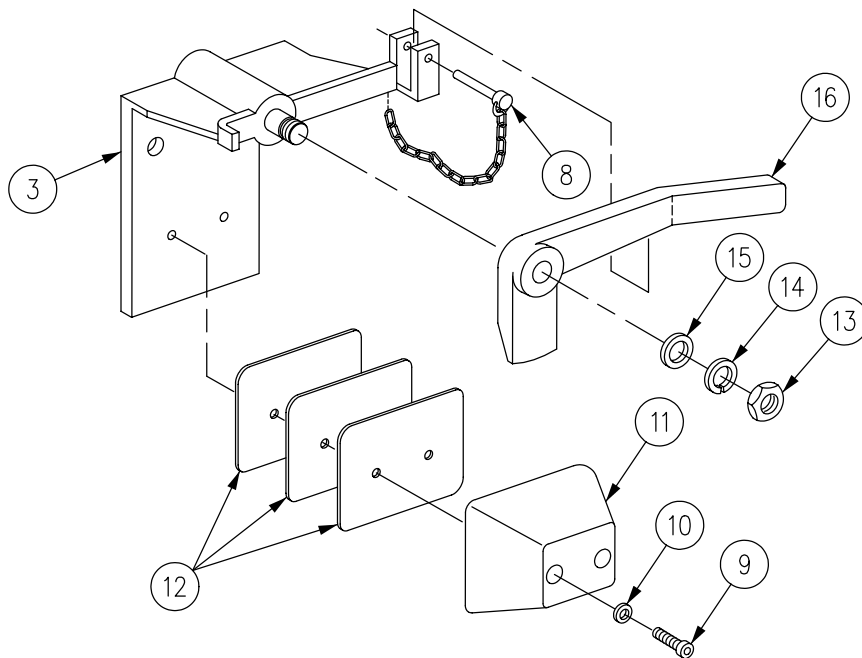
**REMOVAL**

1. Remove three screws (1), lockwashers (2), and mounting bracket (3) from exterior bulkhead. Discard lockwashers.
2. Remove four screws (4), washers (5), lockwashers (6), and mounting bracket (7) from exterior bulkhead. Discard lockwashers.

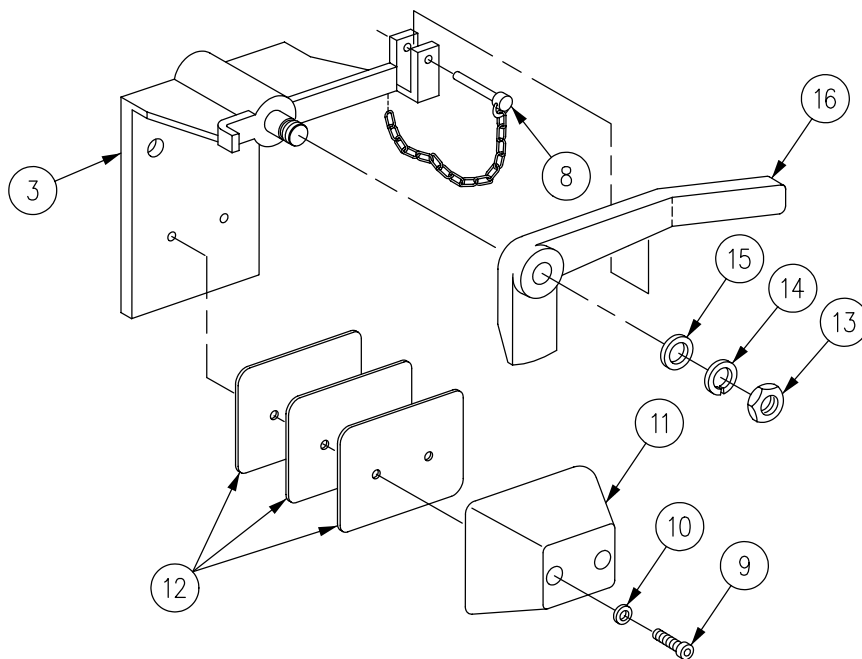


**REPLACE MORTAR BASE STOWAGE BRACKET (M1064 ONLY) — Continued****0544 00**

3. Remove locking pin assembly (8) from mounting bracket (3).
4. Remove two screws (9), flat washers (10), rubber bumper (11), and three spacers (12) from mounting bracket (3).
5. Remove locknut (13), lockwasher (14), flat washer (15), and control handle (16) from mounting bracket (3). Discard locknut and lockwasher.

**INSTALLATION**

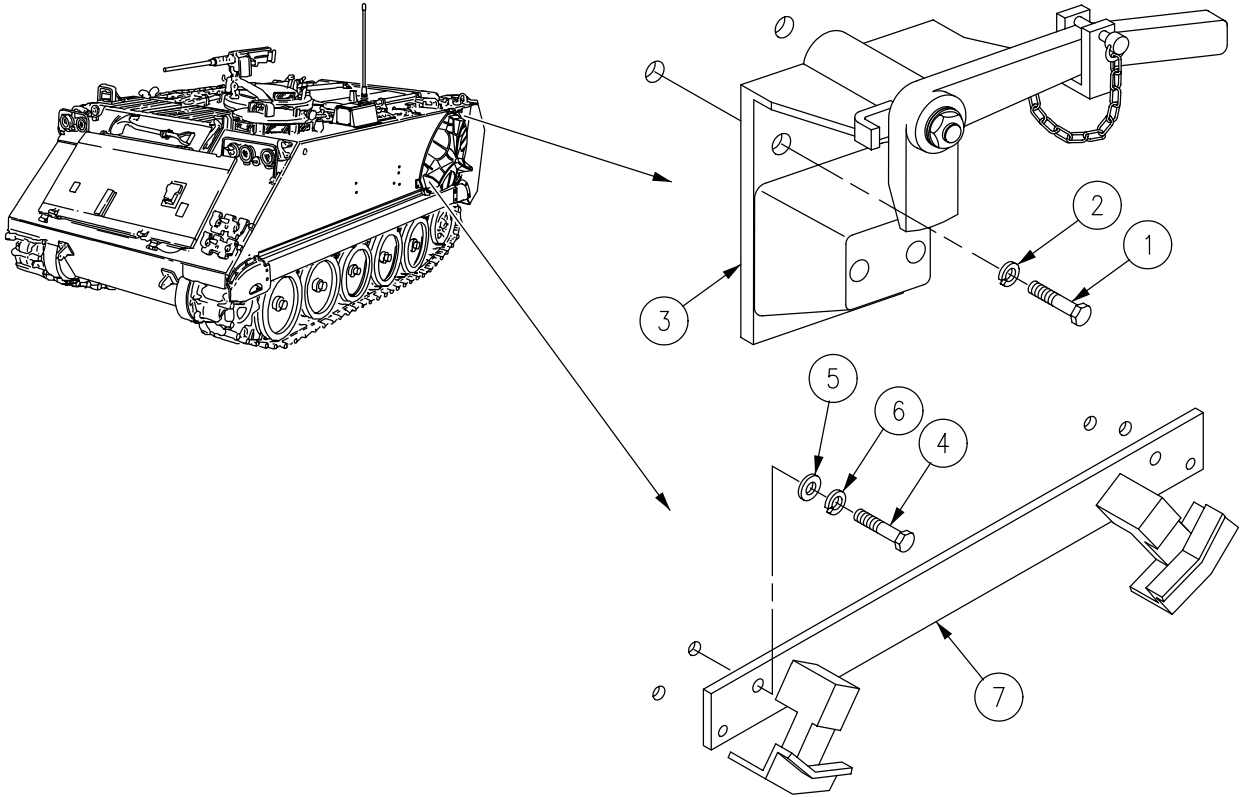
1. Install control handle (16), flat washer (15), new lockwasher (14), and new locknut (13) on mounting bracket (3).
2. Install three spacers (12), rubber bumper (11), two screws (9), and flat washers (10) on mounting bracket (3).
3. Install locking pin assembly (8) on mounting bracket (3).



**REPLACE MORTAR BASE STOWAGE BRACKET (M1064 ONLY) — Continued**

**0544 00**

4. Install mounting bracket (7) on exterior bulkhead with four washers (5), new lockwashers (6), and screws (4).
5. Install mounting bracket (3) on exterior bulkhead with three new lockwashers (2) and screws (1).



**FOLLOW-THROUGH STEPS**

1. Install mortar base. See TM 9-1015-250-10.

**END OF TASK**





**REPLACE STOWAGE BRACKETS FOR W1, W2, AND NATO  
SLAVE CABLES (M1068 ONLY)**

**0545 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0545 00-1).
- Installation (page 0545 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

All cables removed from brackets (see your -10)

Materials/Parts

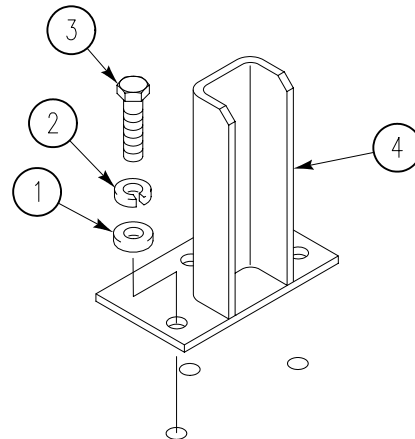
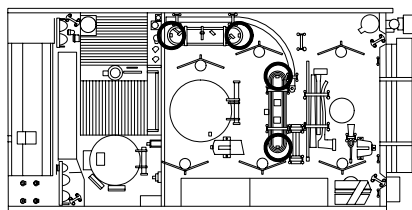
Lockwasher (3)

**REMOVAL**

**NOTE**

**There are two stowage brackets per location. Two stowage brackets secure the stowed NATO slave cables and the other two stowage brackets secure the stowed W1 and W2 power distribution cables. They are all removed and installed the same way. Only one is shown.**

1. Remove three screws (3), washers (1), lockwashers (2), and bracket (4) from carrier. Discard lockwashers.



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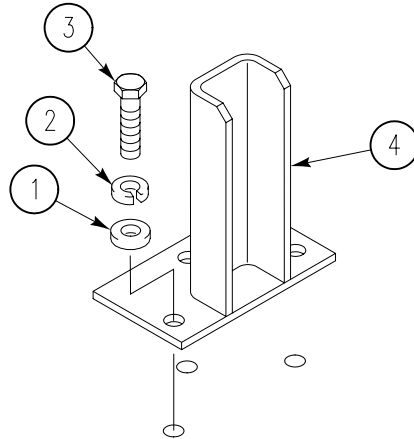
**REPLACE STOWAGE BRACKETS FOR W1, W2, AND NATO SLAVE  
CABLES (M1068 ONLY) — Continued**

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0545 00

**INSTALLATION**

1. Install bracket (4), three new lockwashers (2), washers (1), and screws (3) on carrier.

**END OF TASK**

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**REPLACE PERISCOPE MOUNTING BRACKET (M901A1 ONLY)**

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**0546 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0546 00-2).  
 Installation (page 0546 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Corrosion preventive compound (WP 0782 00, Item 17)

Cotter pin (2)

Gasket

Lockwasher (4)

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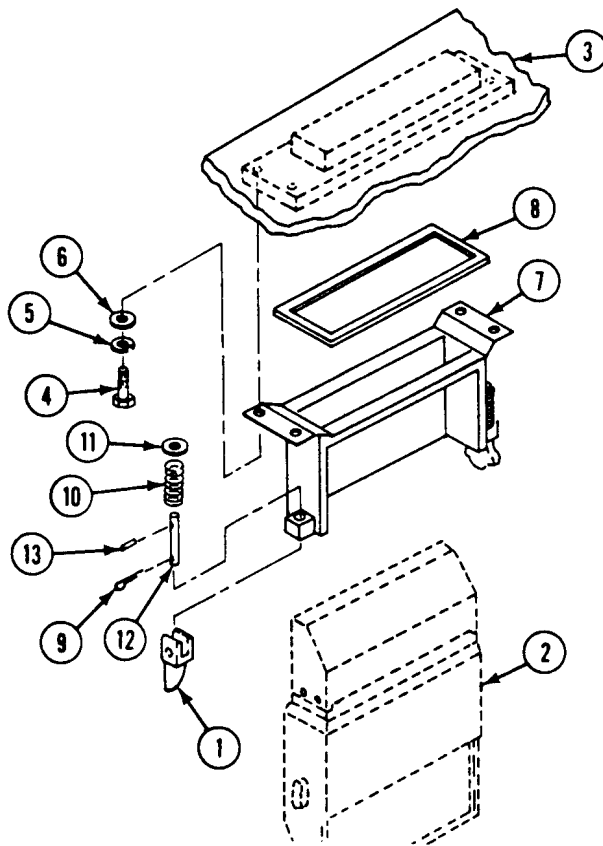
**REMOVAL**

1. Unlatch two latches (1) and remove periscope (2) from deck (3).
2. Remove four screws (4), lockwashers (5), and washers (6) from periscope mount (7) and deck (3). Remove periscope mount and gasket (8) from deck. Discard lockwashers and gasket.
3. Remove two cotter pins (9), latches (1), springs (10), washers (11) and headless pins (12) with spring pins (13) from periscope mount (7). Discard cotter pins.

**NOTE**

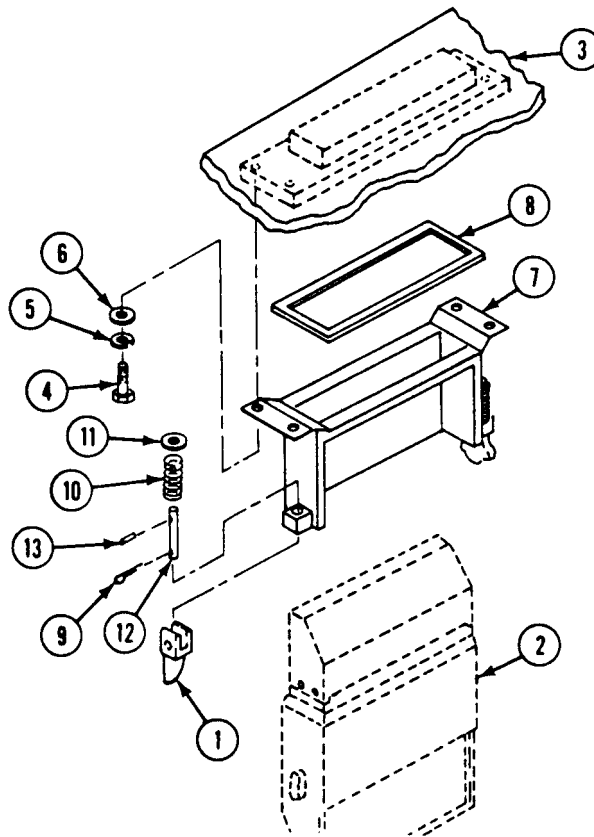
**If spring pins are not damaged, go to INSTALLATION Step 2.**

4. If necessary, remove spring pins (13) from headless pins (12). Discard spring pins.



**INSTALLATION**

1. If removed, install new spring pins (13) on headless pins (12).
2. Install two washers (11) and springs (10) on two headless pins (12).
3. Install two headless pins (12) in periscope mount (7).
4. Install two latches (1) and new cotter pins (9) on headless pins (12).
5. Apply corrosion preventive compound to four screws (4).
6. Install new gasket (8) and periscope mount (7) on deck (3). Secure with four washers (6), new lockwashers (5), and screws (4).
7. Install periscope (2) on deck (3). Secure with two latches (1).

**END OF TASK**



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**REPLACE AMMUNITION STOWAGE RACK (M901A1 ONLY)**

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**0547 00****THIS WORK PACKAGE COVERS:**

Removal (page 0547 00-1).  
Installation (page 0547 00-2).

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**INITIAL SETUP:**Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

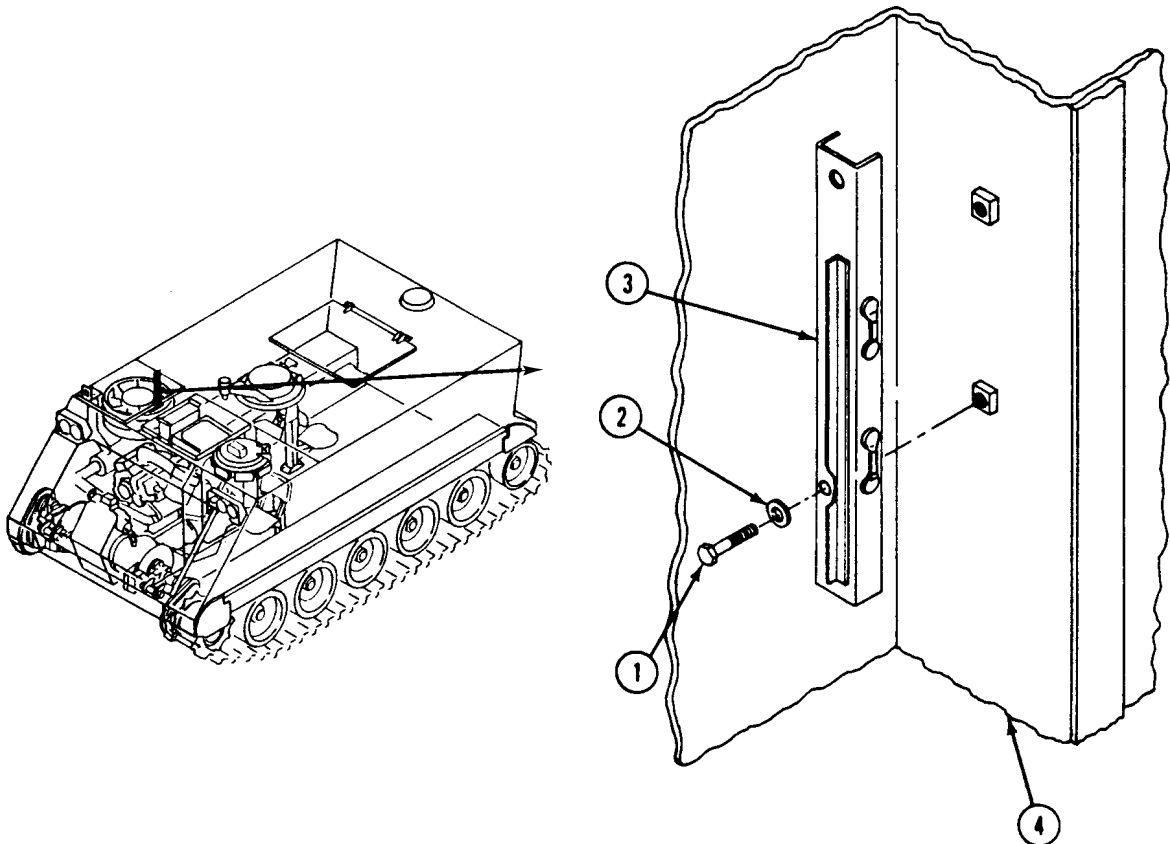
Personnel Required

Unit Mechanic

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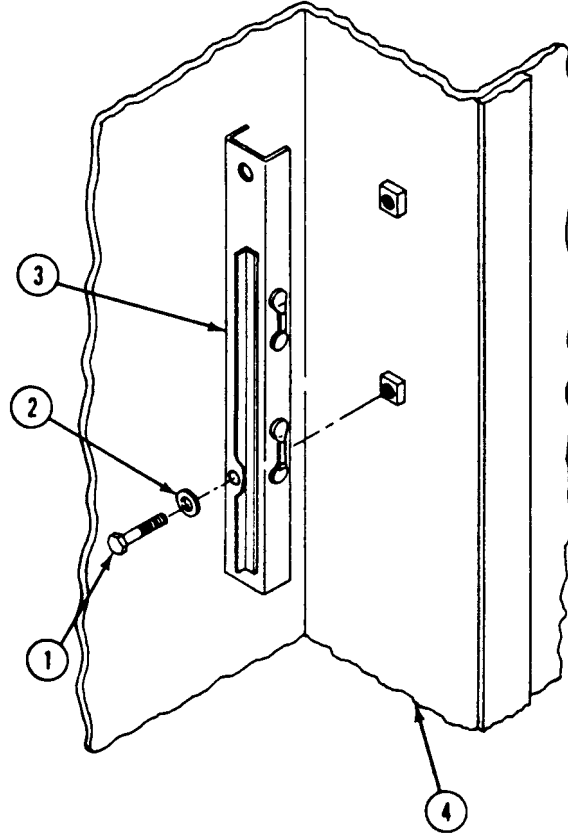
**REMOVAL**

1. Remove two screws (1) and washers (2) from ammunition storage rack (3) and sponson (4). Remove storage rack from sponson.



**INSTALLATION**

1. Install ammunition storage rack (3) on sponson (4). Secure with two washers (2) and screws (1).

**END OF TASK**



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**REPLACE MISSILE RACK (M901A1 ONLY)**

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**0548 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0548 00-2).
  - Disassembly (page 0548 00-3).
  - Clean, Inspect, and Repair (page 0548 00-3).
  - Assembly (page 0548 00-4).
  - Installation (page 0548 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 102)

Equipment Condition

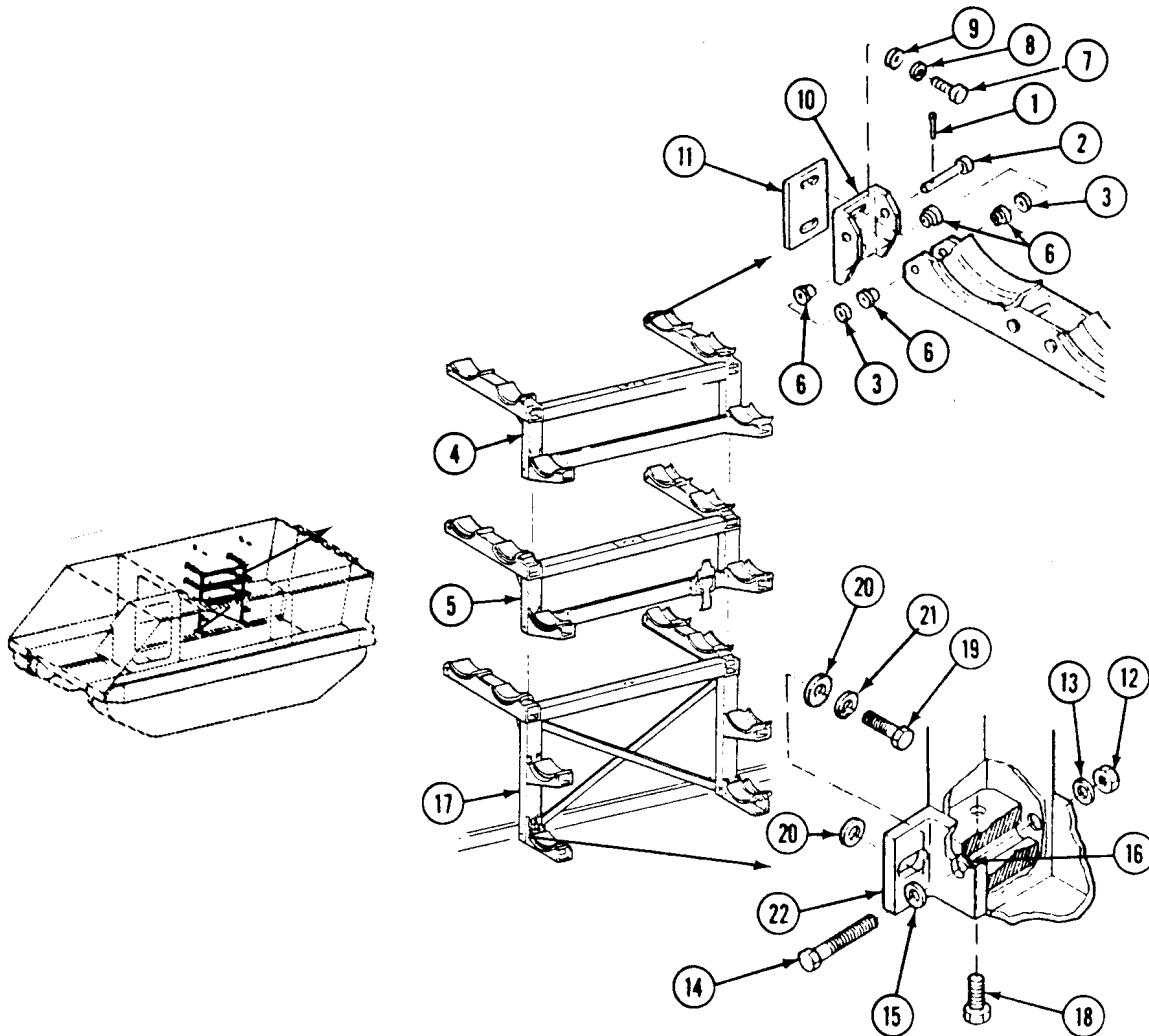
- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Missiles removed (see your -10)

Materials/Parts

- Adhesive (WP 0782 00, Item 3)
  - Cleaning compound solvent (WP 0782 00, Item 16)
  - Cotter pin (22)
  - Locknut (20)
  - Lockwasher (2)
  - Lockwasher (12)
-

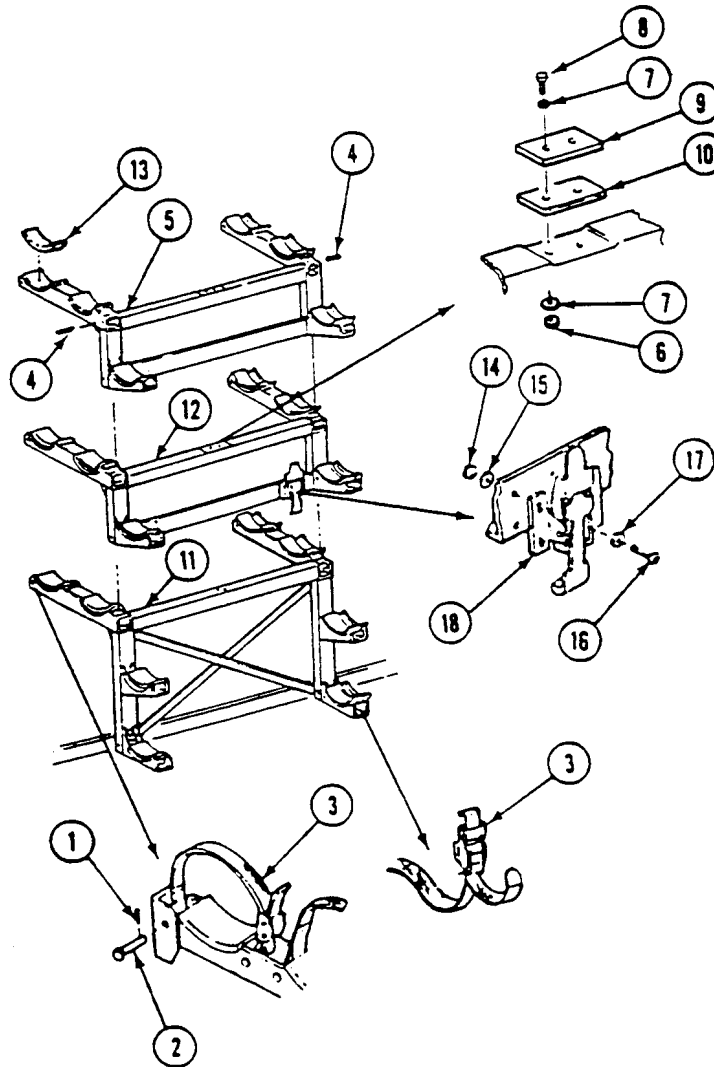
**REMOVAL**

1. Remove six cotter pins (1), headed straight pins (2), and 12 shim washers (3) from rack assembly. Discard cotter pins.
2. Remove upper rack (4) and middle rack (5) from carrier.
3. Remove 24 flanged bushings (6), if required, and remove 12 screws (7), lockwashers (8), washers (9), six clevises (10), and shims (11) from carrier. Discard lockwashers.
4. Remove two nuts (12), washers (13), screws (14), washers (15), and shims (16) from lower rack (17). Remove lower rack from carrier.
5. Remove two screws (18), if required, and remove two screws (19), washers (20), lockwashers (21), and brackets (22) from carrier. Discard lockwashers.



**DISASSEMBLY**

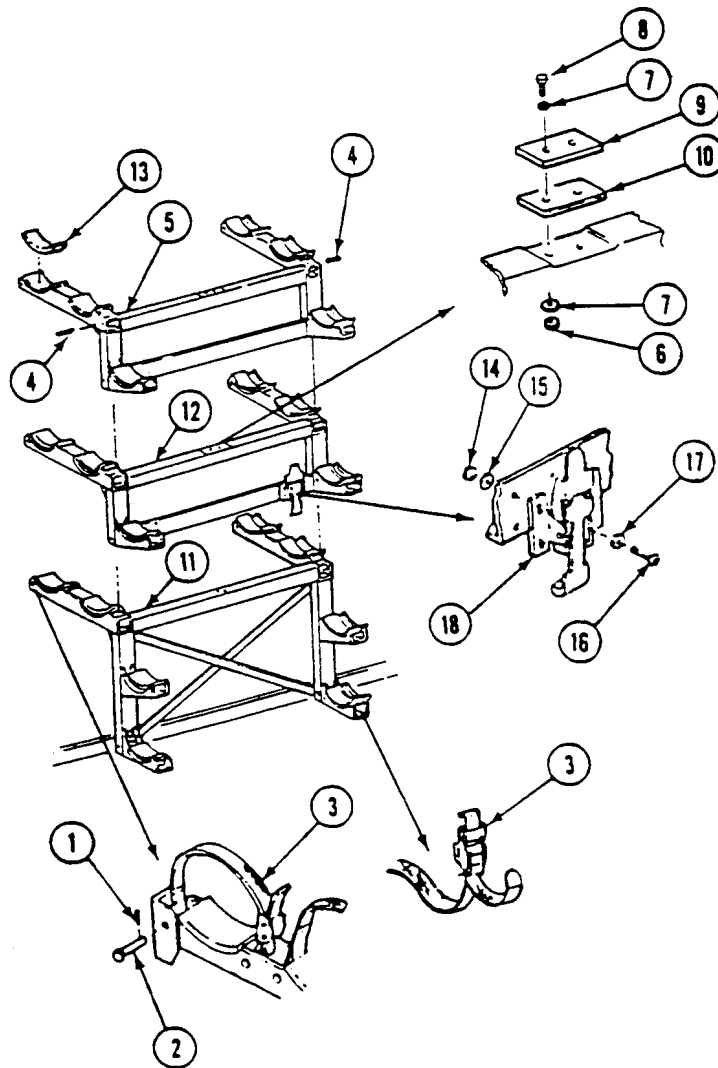
1. Remove 16 cotter pins (1), headed straight pins (2), and 20 tiedown straps (3) from rack. Discard cotter pins.
2. Remove two pins (4) from upper rack (5).
3. Remove four locknuts (6), washers (7), screws (8), rubber pads (9), and shims (10) from lower rack (11) and middle rack (12). Discard locknuts.
4. Remove 20 missile pads (13) from upper rack (5), middle rack (12), and lower rack (11).
5. Remove 16 locknuts (14), washers (15), screws (16), washers (17), and four latches (18) from lower rack (11) and middle rack (12). Discard locknuts.

**CLEAN, INSPECT, AND REPAIR**

1. Inspect parts for corrosion, distortion, cracks, breaks, and loose or missing parts. Repair or replace damaged or missing parts.

**REPLACE MISSILE RACK (M901A1 ONLY) — Continued****0548 00****ASSEMBLY**

1. Install four latches (18) on middle rack (12) and lower rack (11). Secure with 16 washers (17), screws (16), washers (15), and new locknuts (14).
2. Clean pad mounts with cleaning compound, solvent.
3. Apply adhesive to 20 missile pads (13), and install pads on upper rack (5), middle rack (12), and lower rack (11).
4. Install two shims (10) and rubber pads (9) on lower rack (11) and middle rack (12). Secure with four screws (8), washers (7), and new locknuts (6).
5. **TIGHTEN FOUR SCREWS (8) TO 336-384 LB-IN (38-43 N·M) TORQUE.** Use torque wrench and socket set.
6. Install two pins (4) on upper rack (5).
7. Install 20 tiedown straps (3) on missile rack. Secure with 14 headed straight pins (2) and new cotter pins (1).

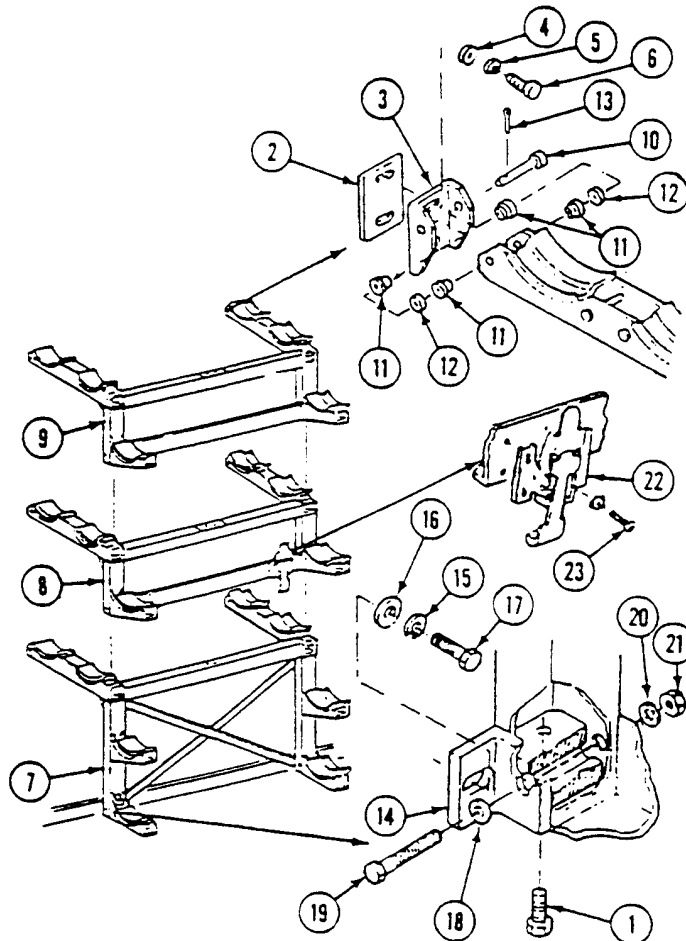
**INSTALLATION**

1. If removed, install two screws (1).
2. Install six shims (2) and clevises (3) on carrier. Secure with 12 washers (4), new lockwashers (5), and screws (6). Do not tighten screws.

REPLACE MISSILE RACK (M901A1 ONLY) — Continued

0548 00

3. Install lower rack (7), middle rack (8), and upper rack (9).
4. Install six headed straight pins (10).
5. Tighten 12 screws (6) to secure clevises (3).
6. Remove six headed straight pins (10), upper rack (9), middle rack (8), and lower rack (7).
7. TIGHTEN 12 SCREWS (6) TO 216-264 LB-IN (24-30 N·M) TORQUE. Use torque wrench and socket set.
8. Install lower rack (7). Secure with eight flanged bushings (11), if removed, four shim washers (12), headed straight pins (10), and new cotter pins (13).
9. Install two brackets (14) on carrier. Secure with two new lockwashers (15), washers (16), and screws (17).
10. TIGHTEN TWO SCREWS (17) TO 216-264 LB-IN (24-30 N·M) TORQUE. Use torque wrench and socket set.
11. Install two brackets (14) on lower rack (7). Secure with two washers (18), screws (19), washers (20), and nuts (21).
12. TIGHTEN TWO SCREWS (19) TO 216-264 LB-IN (24-30 N·M) TORQUE. Use torque wrench and socket set.
13. Install middle rack (8) and upper rack (9) on carrier. If removed, secure with 16 flanged bushings (11), eight shim washers (12), four headed straight pins (10), and four new cotter pins (13). Use shim washers (12) as required at missile clevis points to ensure no more than 0.002-inch end movement.
14. Adjust latches (22) for positive overcenter locking action.
15. TIGHTEN LATCH SECURING SCREWS (23) TO 84-108 LB-IN (10-12 N·M) TORQUE. Use torque wrench and socket set.



**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**

**REPLACE MISSILE RACK RETAINERS (M901A1 ONLY)**

**0549 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0549 00-1).
- Installation (page 0549 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Materials/Parts

- Cotter pins (2)
- Lockwashers (4)

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 100)
- Torque Wrench (WP 0780 00, Item 102)

Personnel Required

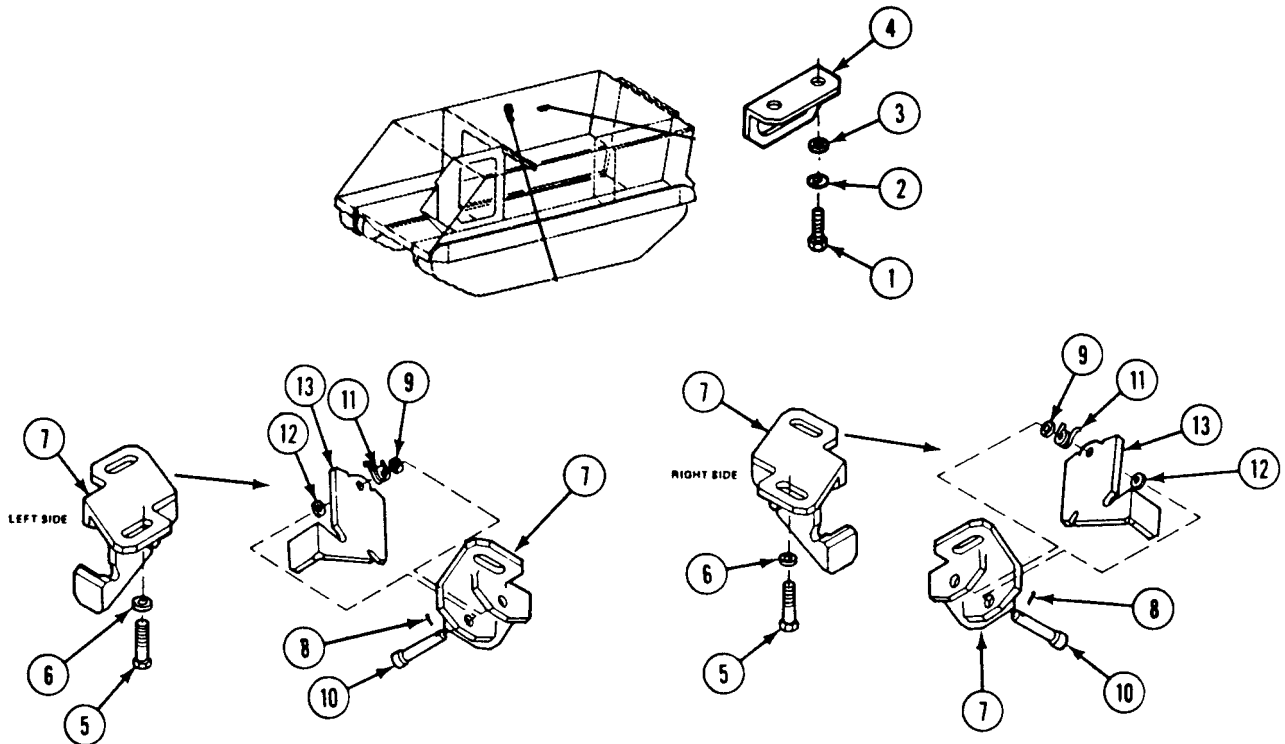
Unit Mechanic

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)

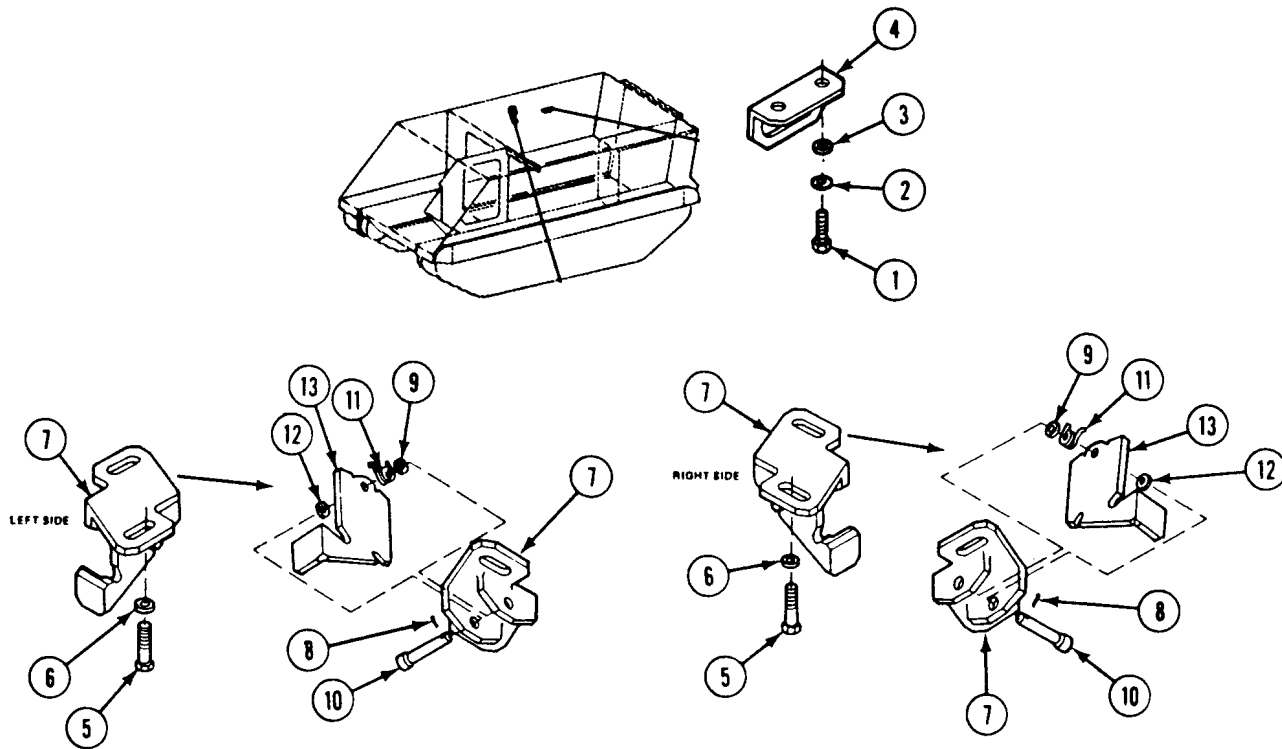
**REMOVAL**

1. Remove four screws (1), lockwashers (2), and washers (3) from two strap retainers (4). Remove strap retainers from carrier. Discard lockwashers.
2. Remove four screws (5) and washers (6) from two latch brackets (7). Remove latch brackets from carrier.
3. Remove two cotter pins (8), washers (9), headed straight pins (10), torsion springs (11), and washers (12) from retainer latches (13) and latch brackets (7). Remove retainer latches from latch brackets. Discard cotter pins.



**INSTALLATION**

1. Install two retainer latches (13) on latch brackets (7). Secure with two washers (12), torsion springs (11), headed straight pins (10), washers (9), and new cotter pins (8).
2. Install two latch brackets (7) on carrier with slot toward bulkhead. Secure with four washers (6) and screws (5).
3. TIGHTEN SCREWS (5) TO 216-264 LB-IN (24-30 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).
4. Install two strap retainers (4) on carrier. Secure with four washers (3), new lockwashers (2), and screws (1).
5. TIGHTEN SCREWS (1) TO 72-84 LB-IN (8-10 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 100).



**END OF TASK**



**REPLACE LAUNCH TUBE STOWAGE BRACKET (M901A1 ONLY)**

**0550 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0550 00-1).  
 Installation (page 0550 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

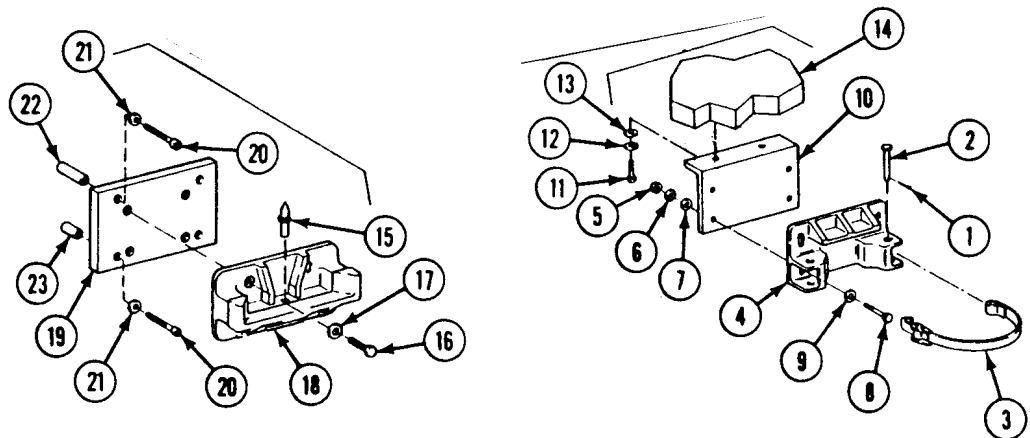
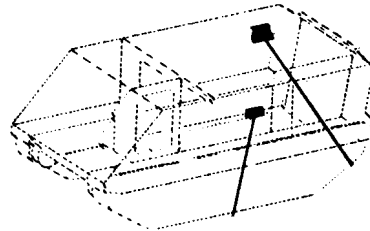
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Launch tube removed (see your -10)

Materials/Parts

Cotter pin  
 Lockwasher (10)

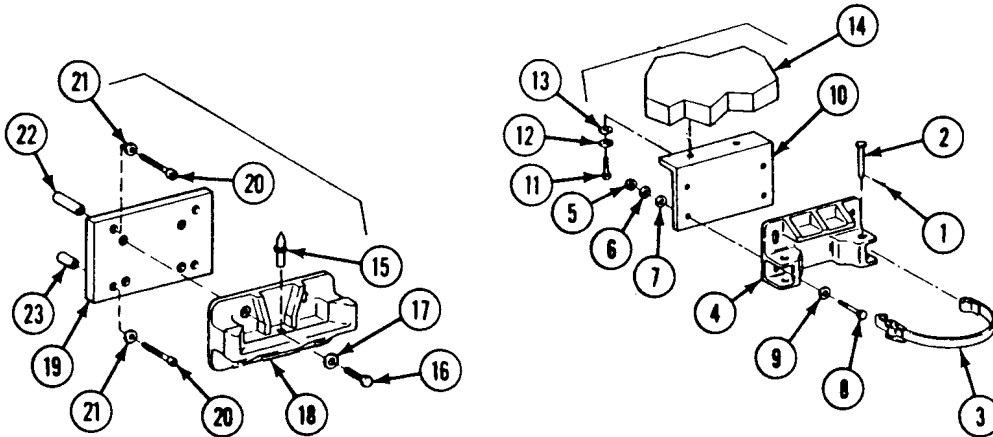
**REMOVAL**

1. Remove cotter pin (1), headed straight pin (2), strap (3), and upper support (4). Remove strap. Discard cotter pin.
2. Remove four nuts (5), lockwashers (6), washers (7), screws (8), and washers (9) from upper support (4) and bracket (10). Remove support from bracket. Discard lockwashers.
3. Remove two screws (11), lockwashers (12), and washers (13) from bracket (10) and hull (14). Remove bracket. Discard lockwashers.
4. Remove pin (15), four screws (16), and washers (17) from lower support (18) and plate (19). Remove lower support.
5. Remove four screws (20), lockwashers (21), two spacers (22), and two spacers (23) from plate (19) and hull. Remove plate. Discard lockwashers.



**INSTALLATION**

1. Install plate (19) on hull. Secure with two spacers (23), spacers (22), four new lockwashers (21), and screws (20).
2. Install lower support (18) on plate (19). Secure with four washers (17), screws (16), and pin (15).
3. Install bracket (10) on hull (14). Secure with two washers (13), new lockwashers (12), and screws (11).
4. Install upper support (4) on bracket (10). Secure with four washers (9), washers (7), new lockwashers (6), screws (8), and nuts (5).
5. Install strap (3) on upper support (4). Secure with headed straight pin (2) and new cotter pin (1).



**FOLLOW-THROUGH STEPS**

1. Install launch tube (see your -10).

**END OF TASK**

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**REPLACE TRIPOD STOWAGE BRACKETS (M901A1 ONLY)**

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**0551 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0551 00-2).  
 Installation (page 0551 00-4).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 102)  
 Torque Wrench (WP 0780 00, Item 103)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Tripod removed (see your -10)

Materials/Parts

Cotter pin  
 Cotter pin (2)  
 Cotter pin (2)  
 Locknut (2)  
 Lockwasher (3)  
 Lockwasher (2)

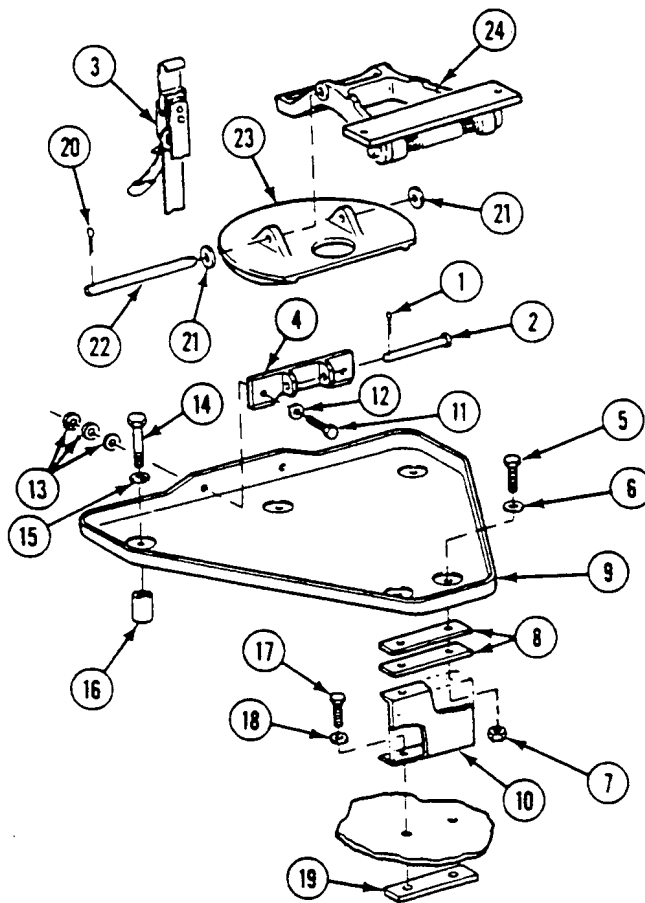
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## REPLACE TRIPOD STOWAGE BRACKETS (M901A1 ONLY) — Continued

0551 00

## REMOVAL

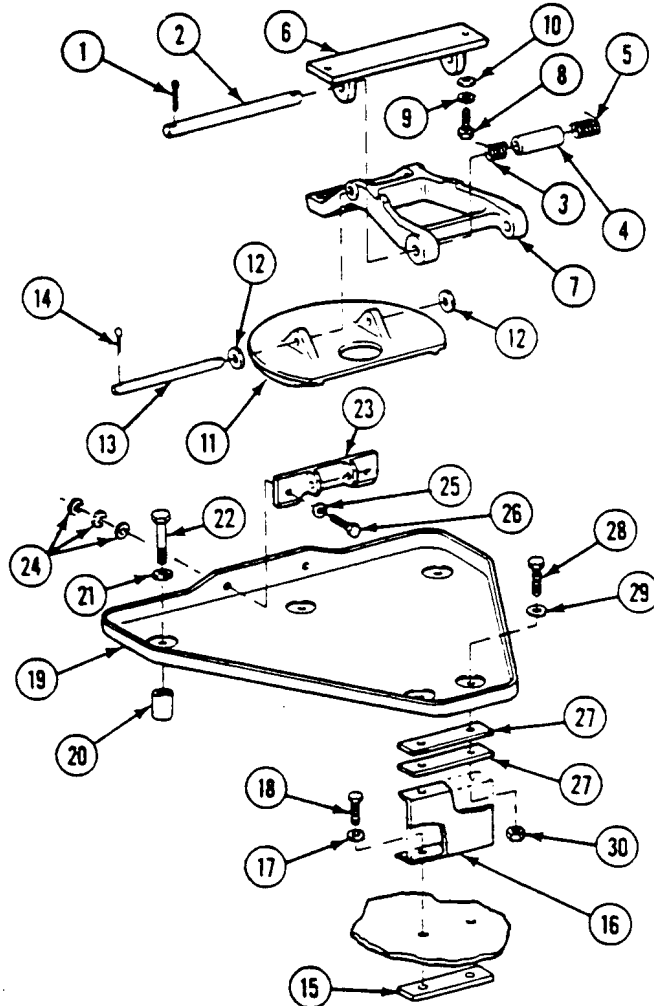
1. Remove cotter pin (1), headed straight pin (2), and restraining strap (3) from tripod plate strap (4).
2. Remove two screws (5), washers (6), locknuts (7), and support shims (8) from lower support bracket (9) and support channel (10). Remove support bracket from support channel. Discard locknuts.
3. Remove two screws (11), washers (12), six washers (13), and tripod plate strap (4) from lower support bracket (9).
4. Remove three screws (14), lockwashers (15), and spacers (16) from lower support bracket (9). Remove lower support bracket from carrier. Discard lockwashers.
5. Remove two screws (17) and washers (18) from support channel (10) and floorboard. Remove support channel and support cushion (19) from under floorboard.
6. Remove two cotter pins (20), washers (21), and cap pivot pin (22) from tripod tiedown cap (23) and tripod tiedown arm (24). Remove tripod tiedown cap from tripod tiedown arm. Discard cotter pins.



REPLACE TRIPOD STOWAGE BRACKETS (M901A1 ONLY) — Continued

0551 00

7. Remove two cotter pins (1), support pivot pin (2), spring (3), spacer (4), and spring (5) from tripod tiedown support (6) and tripod tiedown arm (7). Remove tripod tiedown arm from tripod tiedown support. Discard cotter pins.
8. Remove two screws (8), lockwashers (9), and washers (10) from tripod tiedown support (6). Remove tripod tiedown support from hull. Discard lockwashers.



**INSTALLATION**

1. Install tiedown support (6) on hull. Secure with two washers (10), new lockwashers (9), and screws (8).
2. TIGHTEN TWO SCREWS (8) TO 216-264 LB-IN (24-30 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).
3. Install tripod tiedown arm (7) on tiedown support (6). Secure with spring (5), spacer (4), spring (3), pivot support pin (2), and two new cotter pins (1).

**NOTE**

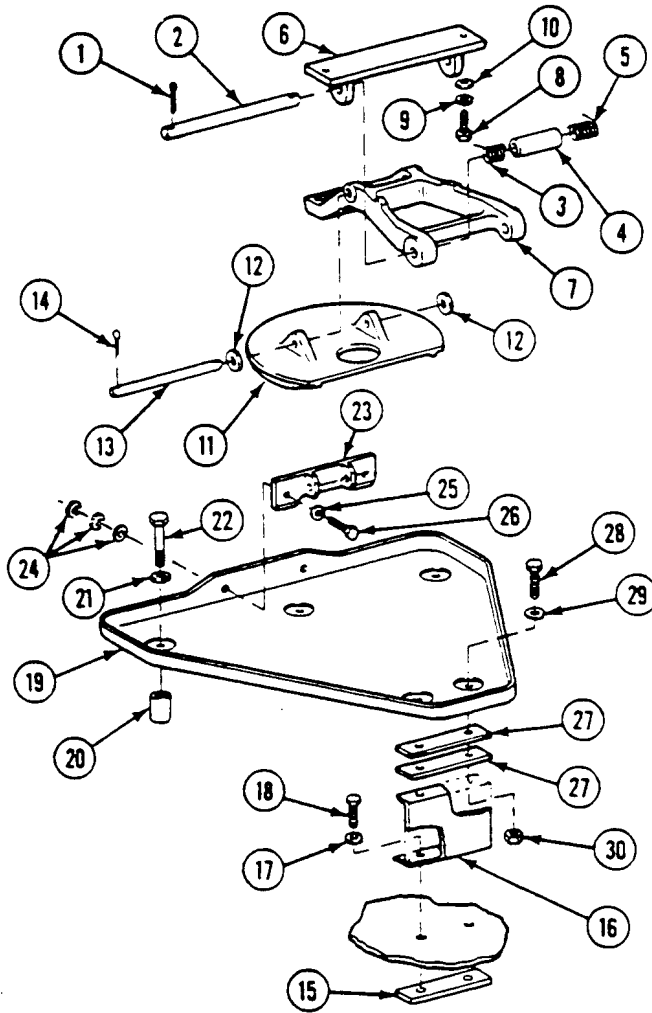
**Short end of springs touch tripod tiedown support and long ends touch grooved slot of tripod tiedown arm.**

4. Install tripod tiedown cap (11) on tripod tiedown arm (7). Secure with two washers (12), cap pivot pin (13), and two new cotter pins (14).

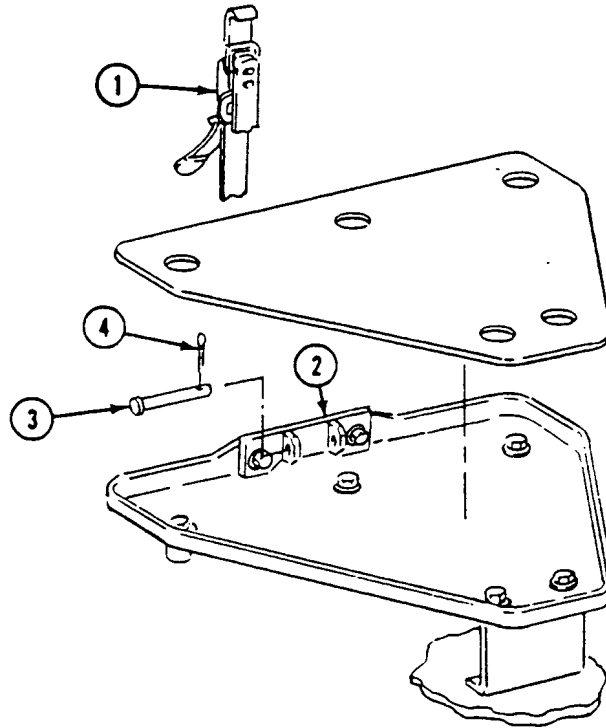
**NOTE**

**Flat edge of tripod tiedown cap must face springs.**

5. Install support cushion (15) and support channel (16) on floorboard. Secure with two washers (17) and screws (18).
6. TIGHTEN TWO SCREWS (18) TO 72-84 LB-IN (8-10 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).
7. Install lower support bracket (19) on carrier. Secure with three spacers (20), new lockwashers (21), and screws (22).
8. TIGHTEN TWO SCREWS (22) TO 72-84 LB-IN (8-10 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).
9. Install tripod plate strap (23) on lower support bracket (19). Secure with six washers (24), two washers (25), and screws (26).
10. TIGHTEN TWO SCREWS (26) TO 50-55 LB-FT (68-75 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 103).
11. Install two support shims (27) and lower support bracket (19) on support channel (16). Secure with two screws (28), washers (29), and new locknuts (30).
12. TIGHTEN TWO SCREWS (28) TO 84-108 LB-IN (10-12 N·M) TORQUE. Use torque wrench (WP 0780 00, Item 102).



13. Install restraining strap (1) on tripod plate strap (2). Secure with headed straight pin (3) and new cotter pin (4).



#### FOLLOW-THROUGH STEPS

1. Install tripod (see your -10).
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

#### END OF TASK



**REPLACE TRAVERSING UNIT MOUNT AND SPACER (M901A1 ONLY)**

**0552 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0552 00-1).  
 Installation (page 0552 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

M59 traversing unit removed (see your -10)

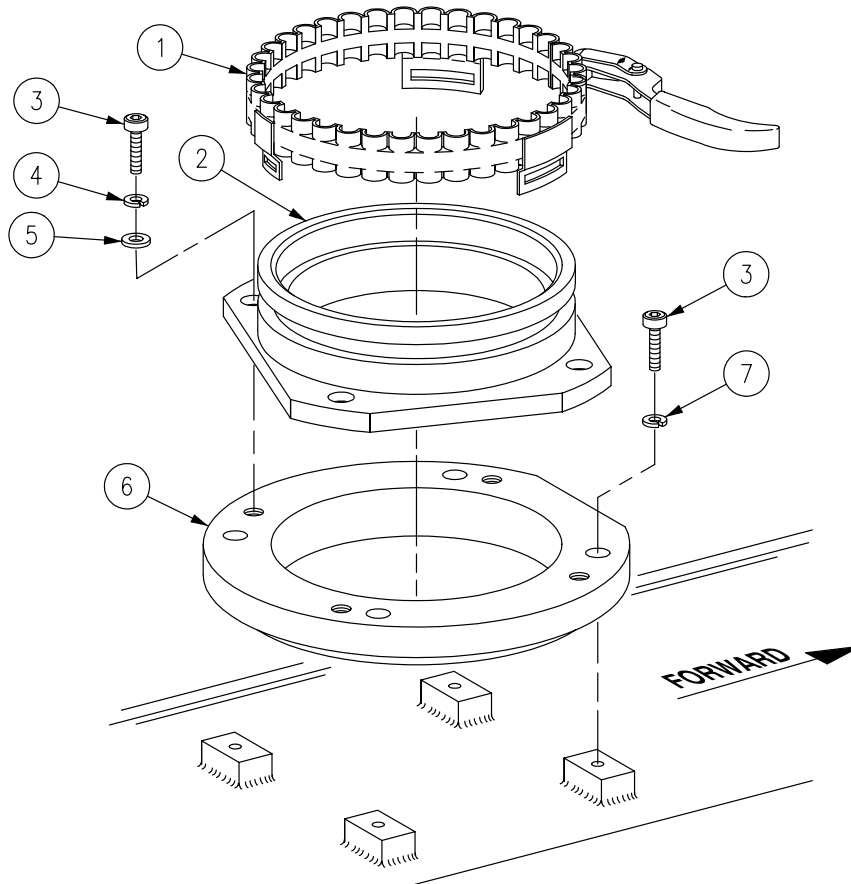
Materials/Parts

Lockwasher (4)

Lockwasher (4)

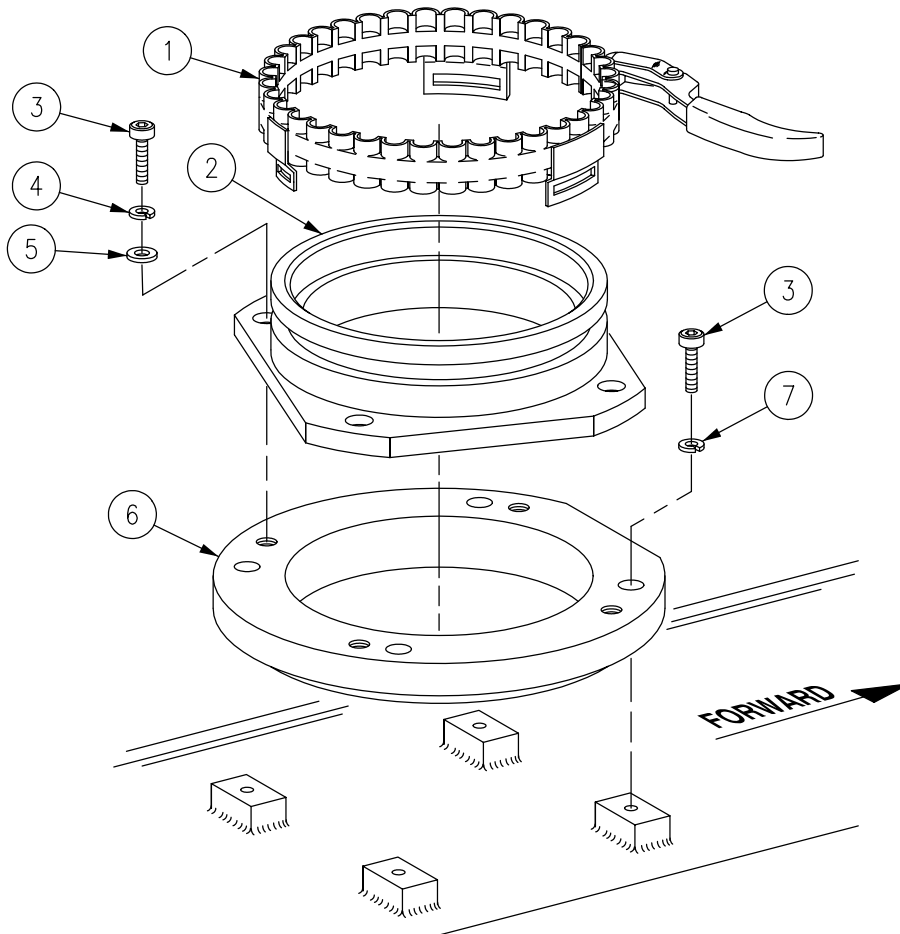
**REMOVAL**

1. Remove clamp strap (1) from mount (2).
2. Remove four screws (3), lockwashers (4), and washers (5), from mount (2) and spacer (6). Remove mount from spacer. Discard lockwashers.
3. Remove four screws (3) and lockwashers (7) from spacer (6). Remove spacer (6) from carrier. Discard lockwashers.



**INSTALLATION**

1. Install spacer (6) on carrier. Secure with four new lockwashers (7) and screws (3).
2. Install mount (2) on spacer (6). Secure with four washers (5), new lockwashers (4), and screws (3).
3. Install clamp strap (1) on mount (2).

**FOLLOW-THROUGH STEPS**

1. Install M59 traversing unit (see your -10).
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

**END OF TASK**

**REPLACE T150 TRACK SHOE STOWAGE BRACKET**

**0553 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0553 00-1).  
 Installation (page 0553 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Personnel Required

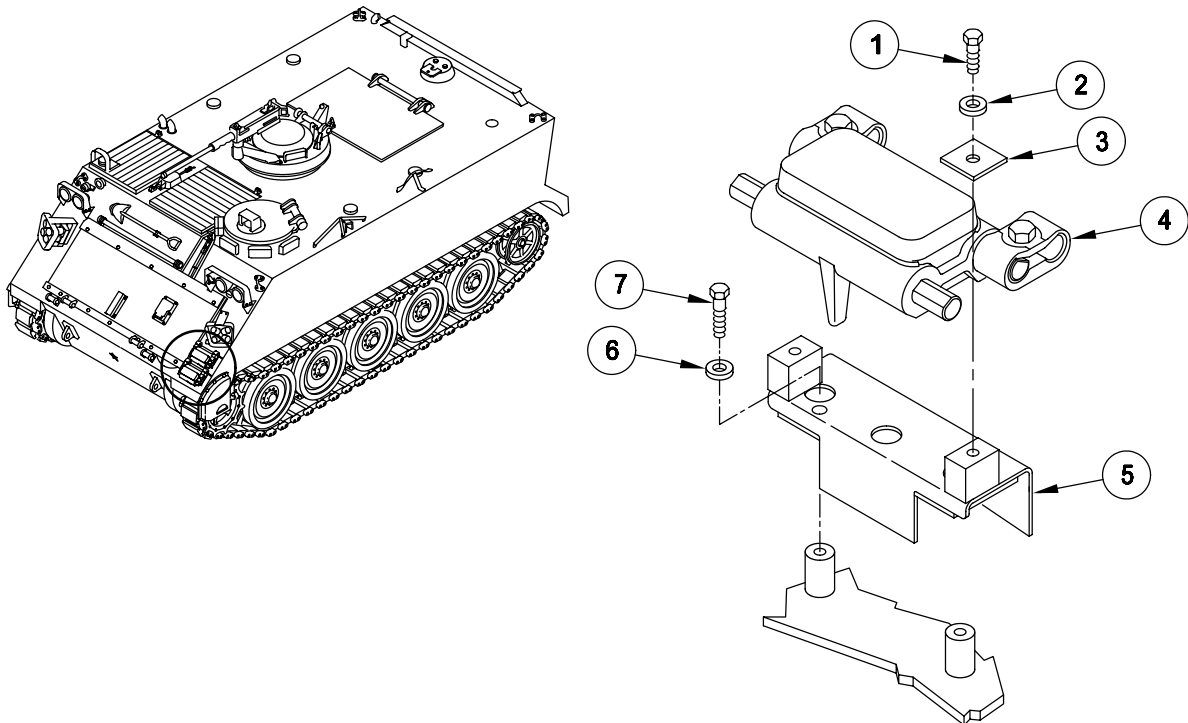
Unit Mechanic

**REMOVAL**

**NOTE**

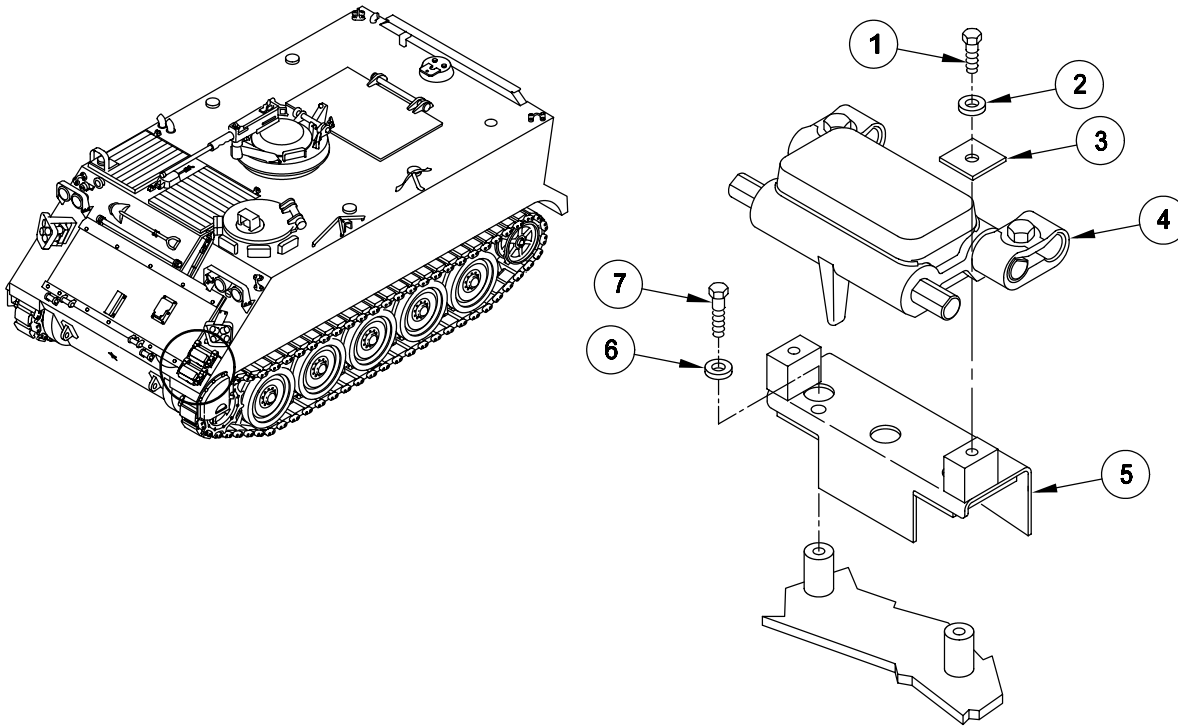
**There are two brackets to stow track shoes. Both are replaced the same way, only one is shown.**

1. Remove two screws (1), flat washers (2), square flat washers (3), and track shoe assembly (4) from carrier.
2. Remove two screws (7), flat washers (6), and bracket (5) from carrier.



**INSTALLATION**

1. Install bracket (5) on carrier and secure with two flat washers (6) and screws (7).
2. Install track shoe assembly (4) on carrier and secure with two square flat washers (3), flat washers (2), and screws (1).

**END OF TASK**

**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY,  
TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE  
ASSEMBLY (M1068 ONLY)**

**0554 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0554 00-1).
- Disassembly (page 0554 00-6).
- Assembly (page 0554 00-7).
- Installation (page 0554 00-7).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- Drill Set (WP 0780 00, Item 23)
- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Hand Blind Riveter (WP 0780 00, Item 60)
- Portable Electric Drill (WP 0780 00, Item 22)

Equipment Condition

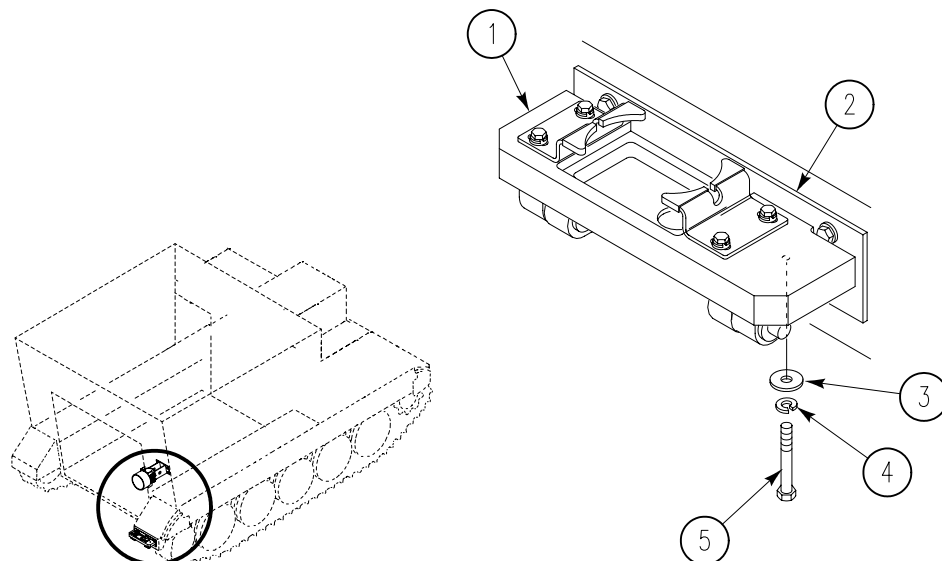
- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Antenna mast removed (TM 11-7010-256-12&P)
- All external power disconnected (TM 11-7010-256-12&P)
- Battery ground lead disconnected (WP 0294 00)

Materials/Parts

- Adhesive (WP 0782 00, Item 2)
- Cleaning compound (WP 0782 00, Item 16)
- Wiping rag (WP 0782 00, Item 76)
- Cotter pin
- Cotter pin (2)
- Grommet (2)
- Lockwasher
- Lockwasher (4)
- Lockwasher (6)

**REMOVAL**

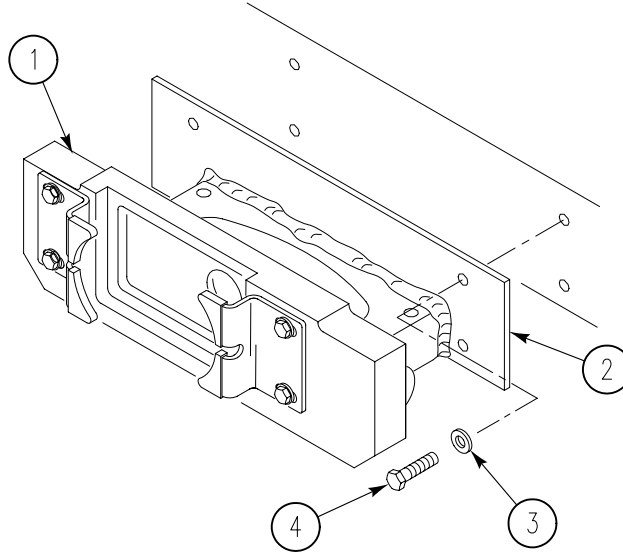
1. Remove two screws (5), washers (3), and lockwashers (4) from bracket (2) and base (1). Discard lockwashers.



REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued

0554 00

2. Raise antenna mast base (1). Remove four screws (4), washers (3), and bracket (4) with attached base from right rear fender.



3. Remove two screws (1), washers (2), and guard (3) from hull.

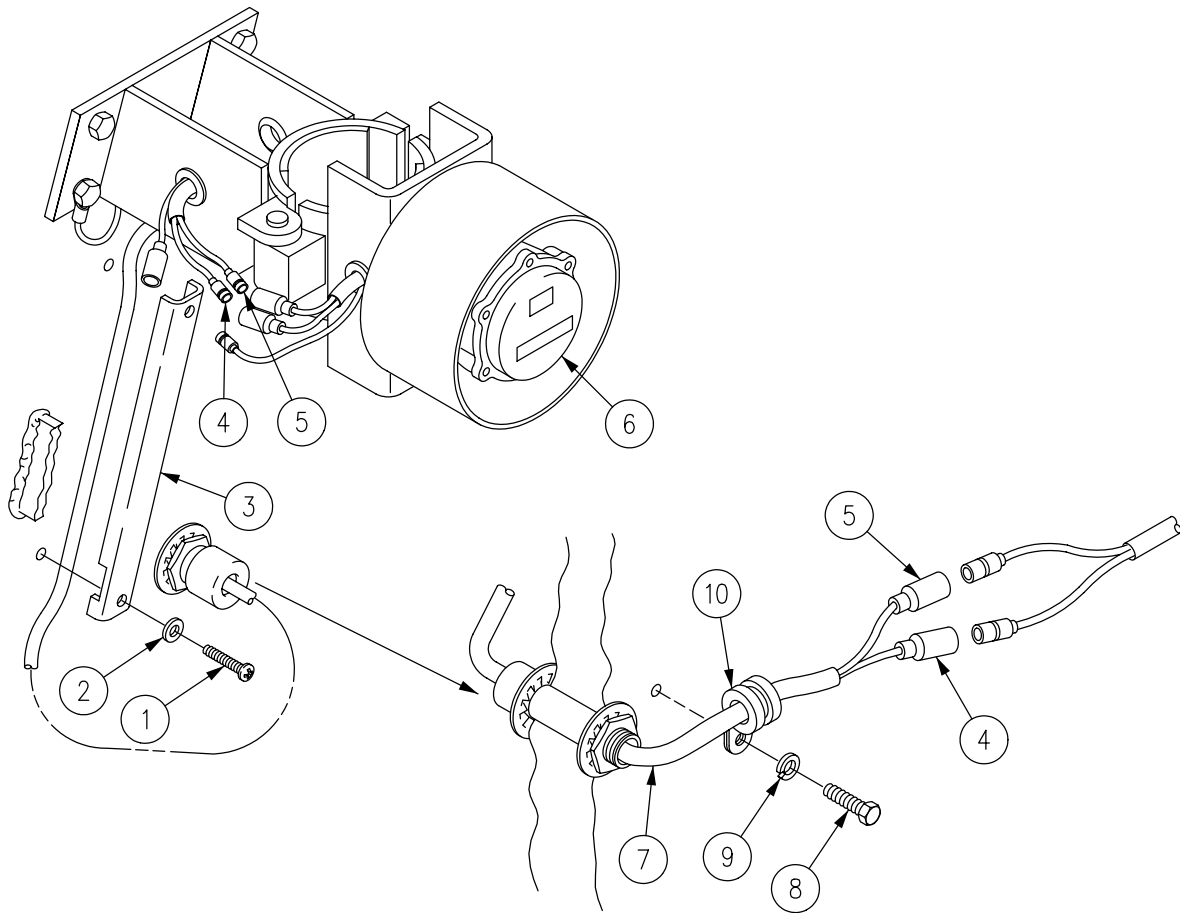
**NOTE**

**There are two sets of circuit leads 23 and 24. One set connects inside the carrier and the other set connects outside the carrier.**

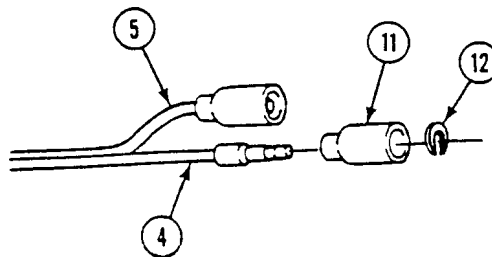
4. Disconnect circuits 23 and 24 leads (4) and (5) from right taillight (6).
5. Disconnect taillight wiring harness (7) inside carrier.
  - a. Remove screw (8), lockwasher (9), and clamp (10) securing taillight wiring harness (7) to rear of hull. Discard lockwasher.

REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued

0554 00



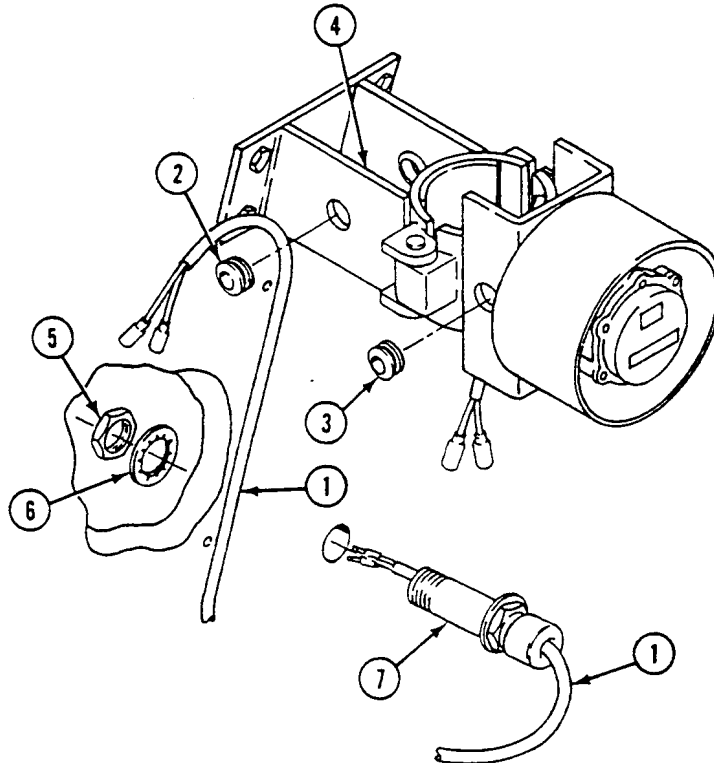
6. Disconnect circuit leads 23 (4) and 24 (5) connectors.
  - a. Slide two shells (11) up connectors (4) and (5).
  - b. Remove two washers (12) from connectors (4) and (5).
  - c. Remove two shells (11) off connectors (4) and (5).



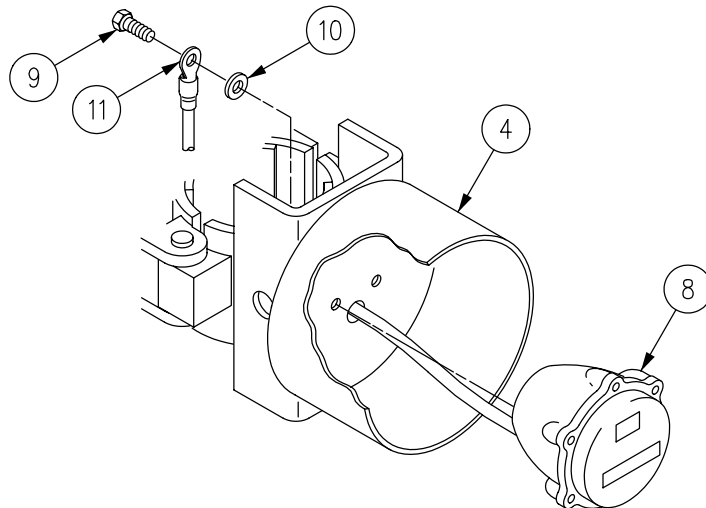
**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

0554 00

7. Remove taillight wiring harness (1) with shield from hull.
  - a. Remove taillight wiring harness (1) from two grommets (2) and (3) in antenna mast bracket (4).
  - b. Remove nut (5) and lockwasher (6) from shield (7) containing taillight wiring harness (1). Pull wiring harness and shield toward the rear and through the mounting hole in the carrier.
8. Remove two grommets (2) and (3) from antenna mast bracket (4). Discard grommets.



9. Remove taillight (8).
  - a. Remove two screws (9), washers (10), ground lead (11), and taillight from antenna mast bracket (4).





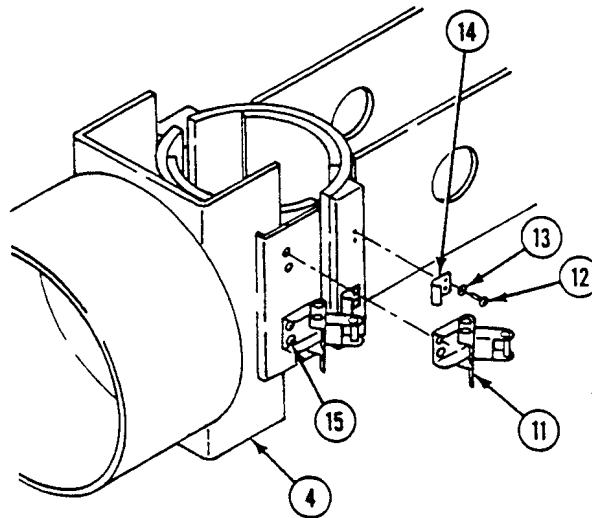
**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

0554 00

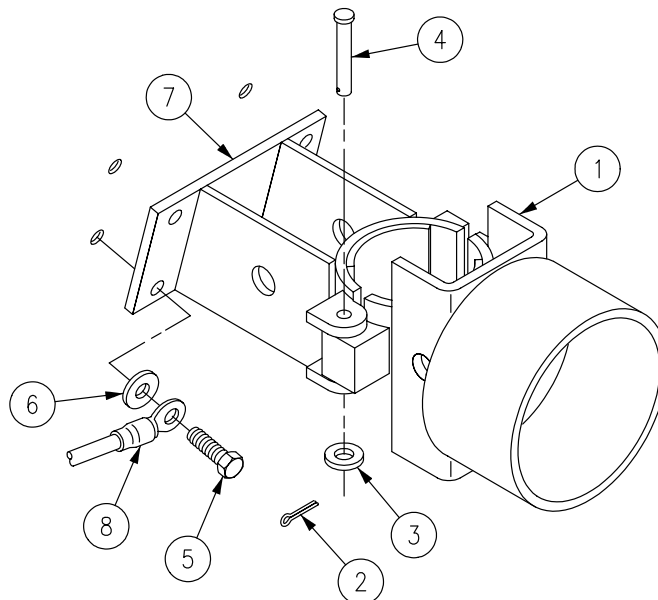
**NOTE**

**If catches or strikes are damaged, do Step 10a or Step 10b.**

10. Unlatch two catches (11) on antenna mast bracket (4).
  - a. Remove four screws (12), lockwashers (13), and two strikes (14) from antenna mast bracket (4). Check catches (11) for damage. Discard lockwashers.
  - b. Drill out four rivets (15) securing two catches (11) to bracket (4). Remove and discard catches and rivets.



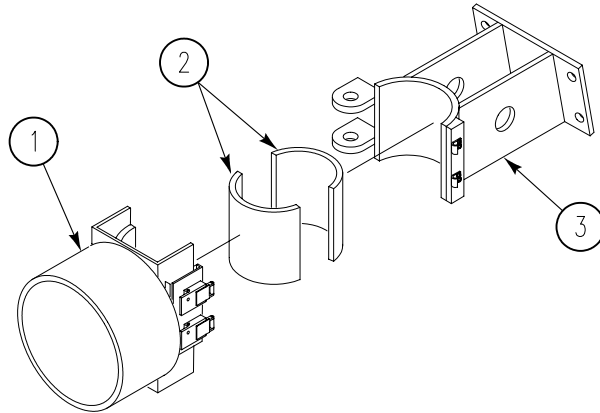
11. Remove hinged portion of antenna mast bracket (1).
  - a. Remove cotter pin (2), washer (3), hinge pin (4), and the front portion of antenna mast bracket (1). Discard cotter pin.
12. Remove four screws (5), washers (6), ground lead (8), and that portion of the antenna mast bracket (7) against the right rear hull.



**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

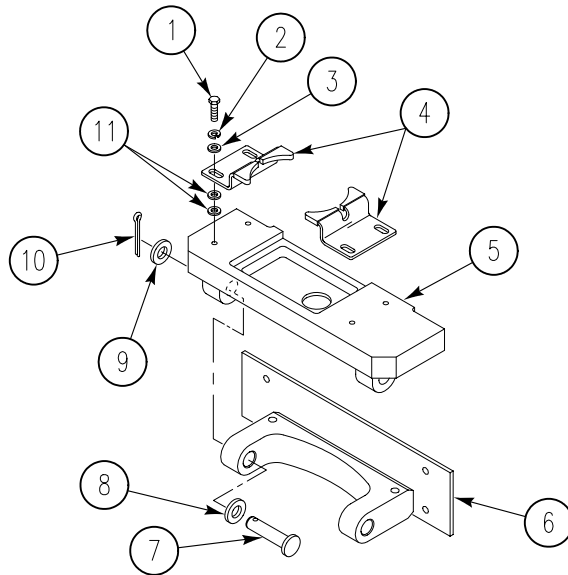
0554 00

13. Replace two rubber pads (2) on antenna mast brackets (1) and (3).
  - a. If damaged, remove rubber pads (2) from brackets (1) and (3). Clean off all excess adhesive. Use cleaning compound and wiping rags.



**DISASSEMBLY**

1. Remove four screws (1), lockwashers (2), washers (3), two brackets (4), and eight adjustment washers (11) from base (5). Discard lockwashers.
2. Remove two cotter pins (10), headed pins (7), four washers (8) and (9), and base (5) from mounting bracket (6). Discard cotter pins.



**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

0554 00

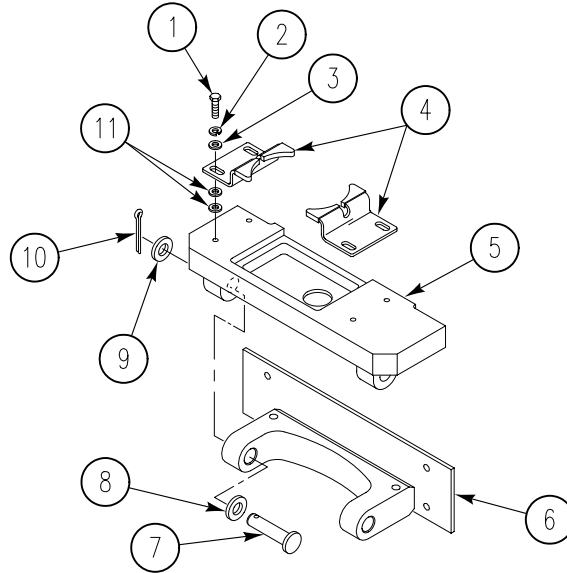
**ASSEMBLY**

1. Align base (5) on bracket (6) and install two headed pins (7), four washers (8) and (9), and two new cotter pins (10).

**NOTE**

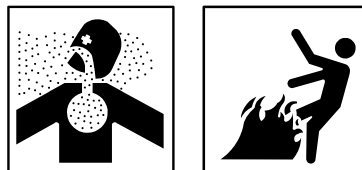
**Install washers (11) as required for proper adjustment of brackets.**

2. Install four screws (1), washers (3), new lockwashers (2), two brackets (4), and eight adjusting washers (11) on base (5).



**INSTALLATION**

**WARNING**



Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

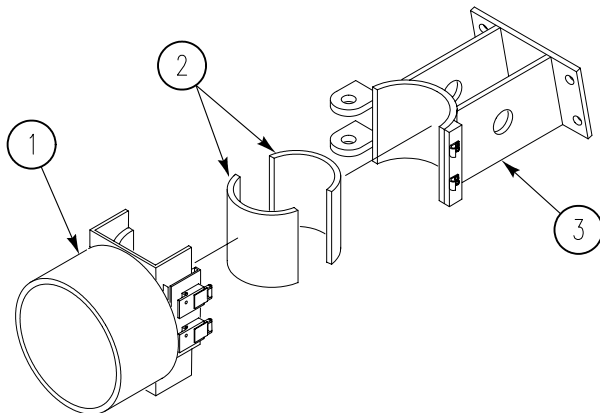
**NOTE**

Replace damaged rubber pads.

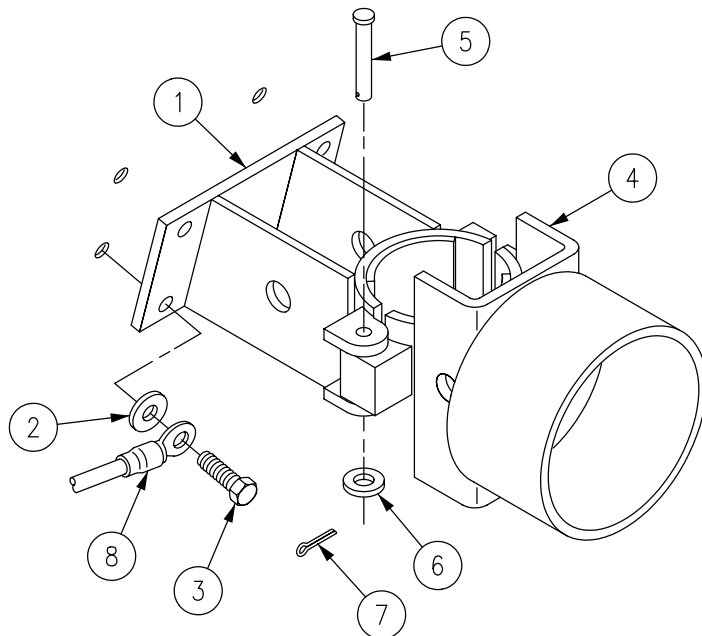
**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

0554 00

1. Install new rubber pads (2) on antenna mast brackets (1) and (3).
  - a. Apply a thin, even coat of adhesive to the rubber pad surfaces (2). Allow to dry 20 to 40 minutes. Apply a thin, even coat of adhesive to the inside of the brackets (1) and (3). Allow to dry 30 to 120 seconds. Press the surfaces of the rubber pads and brackets with the adhesive on them together firmly.



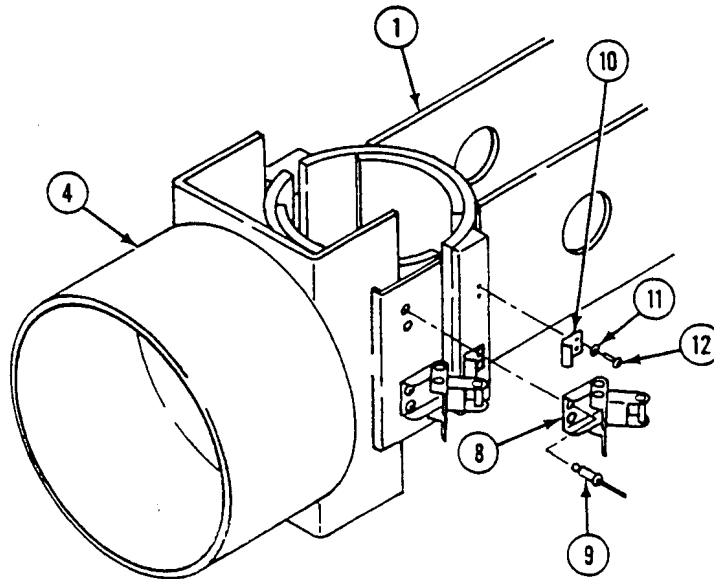
2. Install stationary part of antenna mast (1) to right rear of hull.
  - a. Install antenna mast (1), four washers (2), ground lead (8), and four screws (3) to right rear of hull.
3. Install hinged portion of antenna mast (4).
  - a. Install antenna mast (4), hinge pin (5), washer (6), and new cotter pin (7).



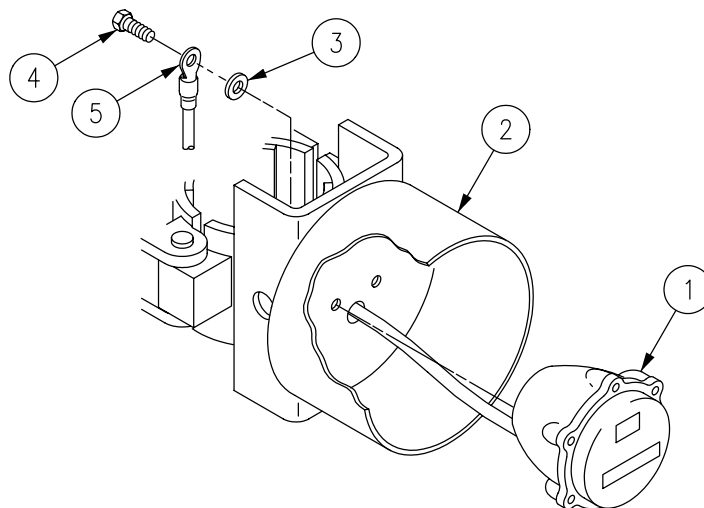
**NOTE**

If catches or strikes were removed in REMOVAL Step 10, first do Step 4a or Step 4b.

4. Latch two catches (8) on antenna mast brackets (1) and (4).
  - a. Install two catches (8) and four rivets (9) to antenna bracket (1).
  - b. Install two strikes (10), four new lockwashers (11), and screws (12) on antenna mast (4). Tighten screws securely.

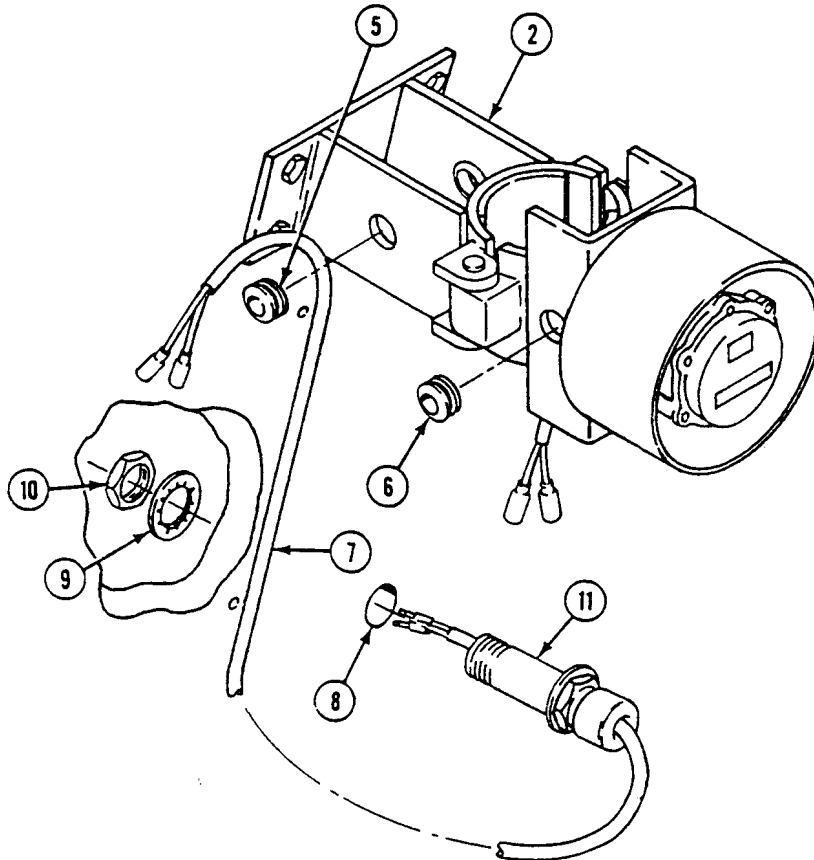


5. Install taillight (1) to antenna mast bracket (2).
  - a. Install taillight (1), two washers (3), ground lead (5), and two screws (4) on antenna mast bracket (2). Tighten screws securely.



**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued****0554 00**

6. Install two new grommets (5) and (6) in antenna mast (2).
7. Install taillight wiring harness (7) with shield through mounting hole (8) in hull.
  - a. Install lockwasher (9) and nut (10) over circuit leads and onto shield (11). Tighten nut securely on shield.
  - b. Install the other end of wiring harness (7) through grommet (5) on antenna mast bracket (2). Route wires and connectors for taillight through grommet (6).



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**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

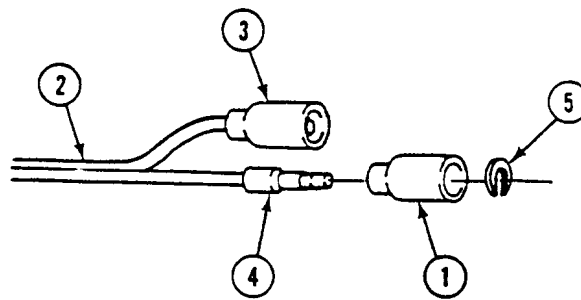

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0554 00

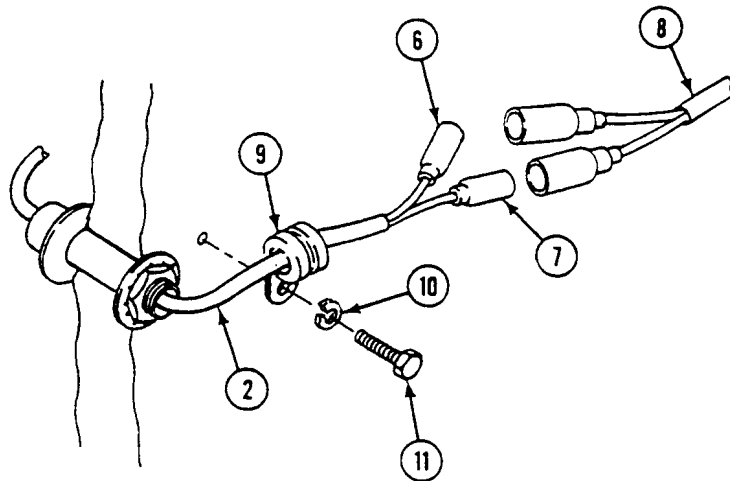
**NOTE**

**There are two sets of circuit leads 23 and 24. One set connects inside the carrier and the other set connects outside the carrier.**

8. Install shells (1) on wiring harness (2) inside of carrier.
  - a. Install shells (1) on connectors (3) and (4).
  - b. Install washers (5) for holding pins in place on connectors (3) and (4).
  - c. Slide shells up connectors (3) and (4).



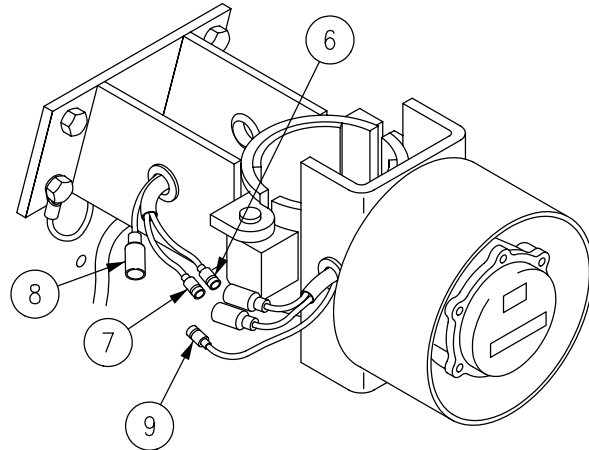
9. Connect taillight wiring harness (2) inside carrier.
  - a. Connect circuit lead 23 (6) and circuit lead 24 (7) to main rear wiring harness (8).
  - b. Install taillight wiring harness (2), clamp (9), new lockwasher (10), and screw (11) to the rear of hull.



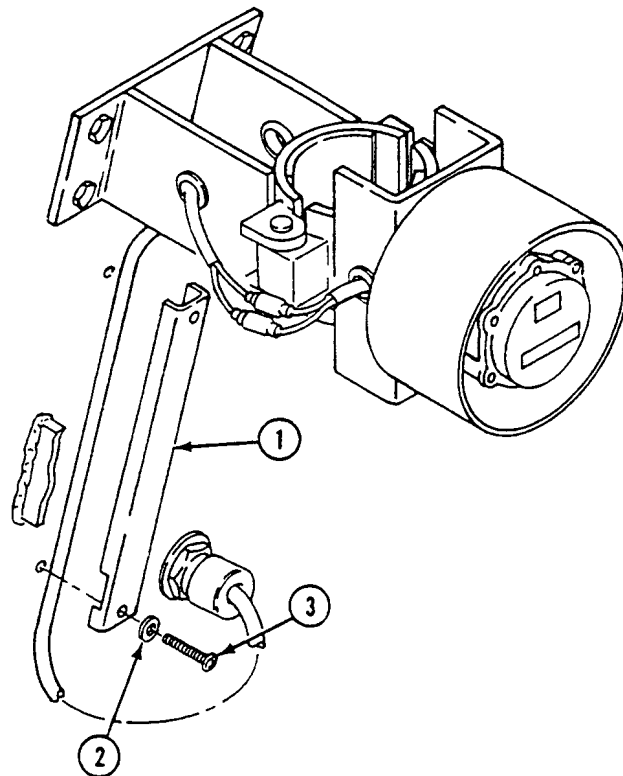
**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

0554 00

10. Connect circuit leads 23 (6) and 24 (7) to taillight leads.
11. Connect ground lead (8) and ground lead (9).



12. Install guard (1), washers (2), and screws (3) on hull.

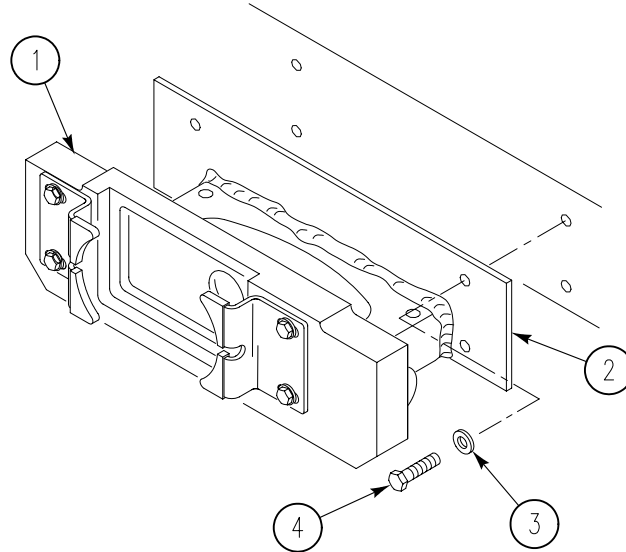




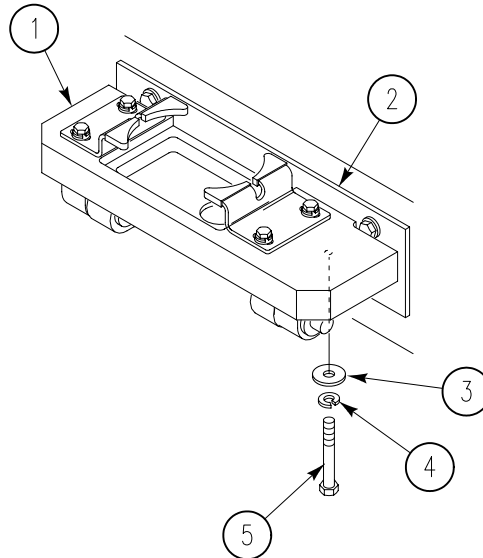
**REPLACE/REPAIR ANTENNA MAST BRACKET ASSEMBLY, TAILLIGHT WIRING HARNESS, AND ANTENNA MAST BASE ASSEMBLY (M1068 ONLY) — Continued**

0554 00

13. Raise antenna base assembly (1) and install mounting bracket (2) with base attached on right rear fender. Secure with four washers (3) and screws (4).



14. Stow base (1) and secure to mounting bracket (2) with two washers (3), new lockwashers (4), and screws (5).



**FOLLOW-THROUGH STEPS**

1. Connect battery ground lead (WP 0294 00).

**END OF TASK**



**REPLACE PERSONNEL HEATER CONTROL BOX AND INTERCOM BOX BRACKET (M1068 ONLY)**

**0555 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0555 00-1).
- Installation (page 0555 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- All external power disconnected (TM 11-7010-256-12&P)
- Battery ground lead disconnected (WP 0294 00)
- Personnel heater control box removed (WP 0613 00)

Tools and Special Tools

- Electrical Tool Kit (WP 0780 00, Item 80)
- General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

- Lockwasher (2)
- Lockwasher (2)

Personnel Required

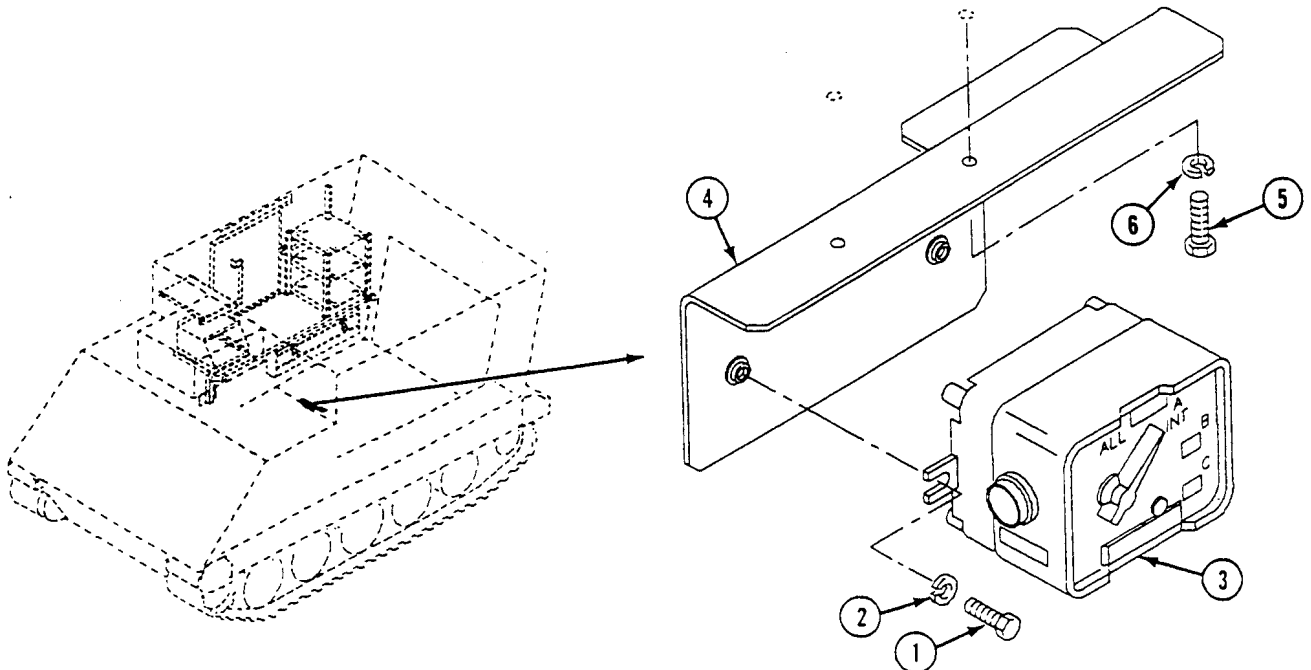
Unit Mechanic

**REMOVAL**

**NOTE**

**Make sure that intercom box is free to be removed.**

1. Remove two screws (1), lockwashers (2), and intercom box (3) from bracket (4). Discard lockwashers.
2. Remove two screws (5), lockwashers (6), and bracket (4) from beam on hull. Discard lockwashers.

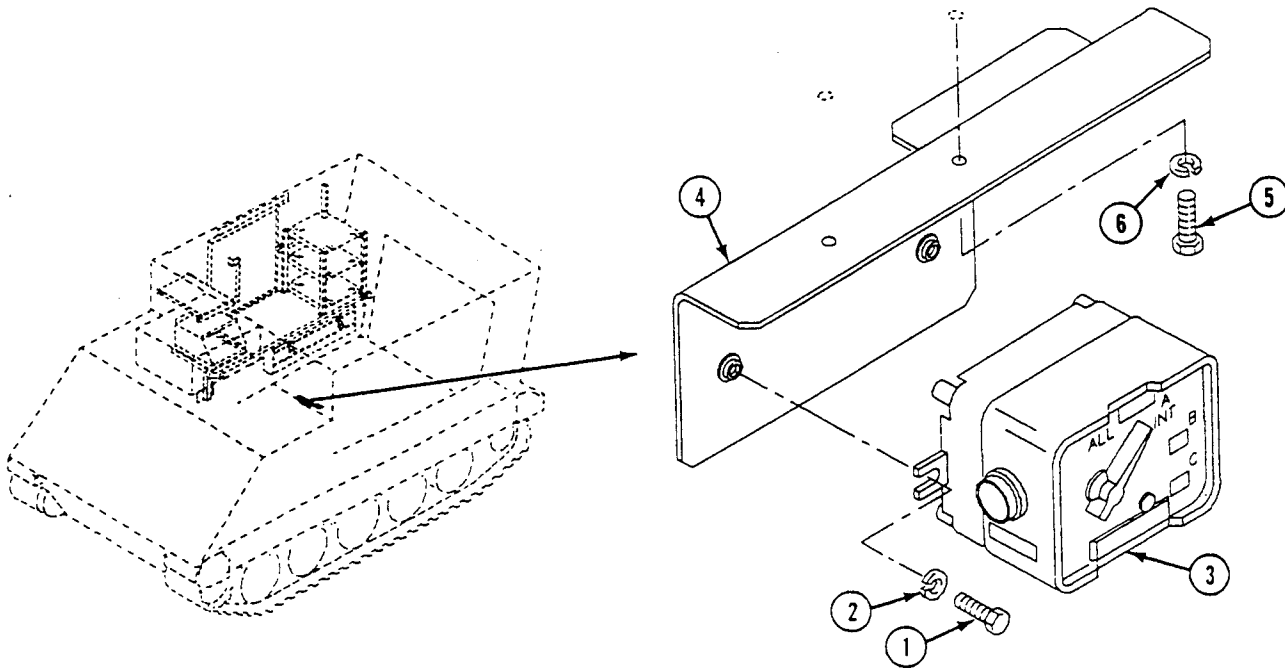


**REPLACE PERSONNEL HEATER CONTROL BOX AND INTERCOM BOX BRACKET (M1068 ONLY) — Continued**

0555 00

**INSTALLATION**

1. Install bracket (4), two new lockwashers (6), and screws (5) to beam on hull.
2. Install intercom box (3), two new lockwashers (2), and screws (1) to bracket (4).

**FOLLOW-THROUGH STEPS**

1. Install personnel heater control box (WP 0613 00).
2. Connect battery ground lead (WP 0294 00).

**END OF TASK**

CHAPTER 25

UNIT MAINTENANCE INSTRUCTIONS  
FOR RAMP CONTROLS, RAMP, AND RAMP DOOR

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**WORK PACKAGE INDEX**

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<u>Title</u>	<u>Sequence No.</u>
ADJUST RAMP LOCK (M113A2, M901A1, AND M1059 ONLY).....	.0556 00
REPLACE RAMP LOCK HANDLE AND ARMS .....	.0557 00
REPLACE RAMP LINKAGE (M113A2, M901A1, AND M1059 ONLY).....	.0558 00
ADJUST RAMP LOCK (M1064 ONLY).....	.0559 00
REPLACE RAMP LINKAGE (M1064 ONLY).....	.0560 00
ADJUST RAMP LOCK (M577A2 AND M1068 ONLY).....	.0561 00
REPLACE RAMP LOCK LEVER AND CABLE (M577A2 AND M1068 ONLY).....	.0562 00
REPLACE RAMP LINKAGE (M577A2 AND M1068 ONLY).....	.0563 00
REPLACE WIRE ROPE AND PULLEYS (ALL EXCEPT M1064).....	.0564 00
REPLACE WIRE ROPE AND PULLEYS (M1064 ONLY).....	.0565 00
REPLACE RAMP DOOR SEAL.....	.0566 00
REPLACE RAMP DOOR HOOK AND SPRING (M981 AND M1064 ONLY).....	.0567 00
REPLACE RAMP DOOR HOOK AND SPRING (ALL EXCEPT M981 AND M1064).....	.0568 00
REPLACE RAMP DOOR HANDLES AND SHAFT.....	.0569 00
REPLACE RAMP SEAL.....	.0570 00
REPLACE/REPAIR RAMP VISION PORT AND SHIELD (M901A1 AND M981 ONLY).....	.0571 00
REPLACE RAMP BRACKET (M981 AND M1064 ONLY).....	.0572 00
REPLACE RAMP DOOR STOP BRACKET (M981 AND M1064 ONLY).....	.0573 00
REPLACE DRAIN PLUGS (M981 AND M1064 ONLY).....	.0574 00



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**ADJUST RAMP LOCK (M113A2, M901A1, AND M1059 ONLY)**

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**0556 00****THIS WORK PACKAGE COVERS:**

- Ramp Lock Test (page 0556 00-1).
  - Ramp Seal Test (page 0556 00-2).
  - Ramp Lock Adjustment (page 0556 00-3).
- 

**INITIAL SETUP:**Maintenance Level

Unit

Personnel Required

Unit Mechanic

Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

See your -10

Materials/Parts

Cotter pin

Flat washer (as needed)

Key washer (8)

Key washer (carriers with hex shaped ramp lock rods only) (2)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

---

**RAMP LOCK TEST**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. With ramp up, ramp lock handle should latch tight. Swing handle forward until it clicks. If linkage is adjusted right, it should take a good push to latch the handle.
4. Check that top, sides, and bottom of ramp are aligned right.

**NOTE**

**Ramp seal should be compressed enough to prevent water leakage, yet without metal-to-metal contact between ramp and hull.**

5. If ramp handle will not latch or ramp does not seal, perform RAMP SEAL TEST Step 1 and RAMP LOCK ADJUSTMENT Step 1.

## RAMP SEAL TEST

**WARNING**

**Lowering ramp could injure personnel. Make sure no one is in ramp zone before you lower ramp. If tactical situation permits, sound horn before dropping ramp.**

1. Lower ramp (see your -10).
2. Check ramp-to-hull seal. Replace cracked, worn, or torn seal (WP 0566 00).
3. If seal looks all right, apply a heavy coat of white chalk to sealing lip of ramp seal.
4. Raise and lock ramp. Unlock and lower ramp (see your -10).
5. Check ramp for chalk transfer from seal to ramp surface.
6. If chalk is not evenly distributed, do RAMP LOCK ADJUSTMENT Step 1.
7. If there is no chalk along bottom of ramp, replace seal (WP 0566 00).



## RAMP LOCK ADJUSTMENT

## NOTE

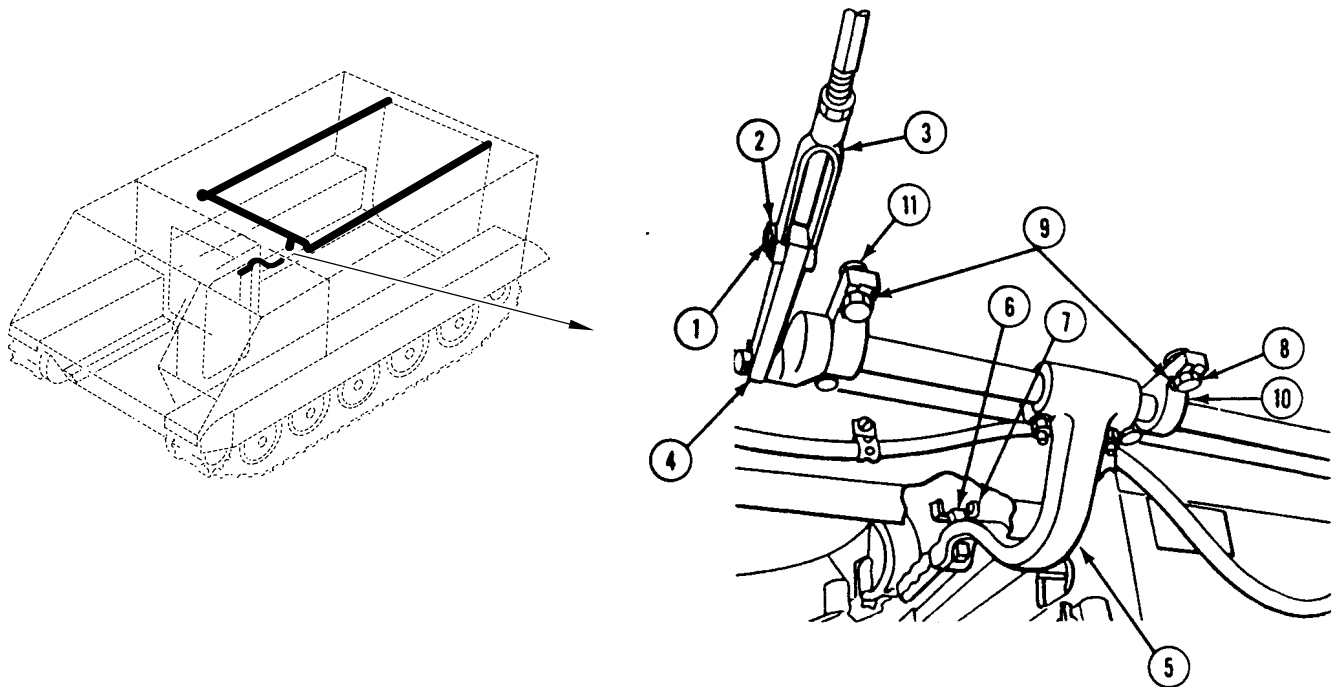
All ramp adjustments must be done with the ramp down. Always adjust forward linkage first.

1. Lower ramp (see your -10).
2. Remove cotter pin (1) and headed pin (2) from clevis (3). Discard cotter pin.
3. Disconnect clevis (3) from link (4).
4. Swing ramp lock handle (5) forward. If catch (6) does not engage with striker (7), adjust catch (Step 5). If catch and striker adjustment is correct, go to Step 7.

## NOTE

Install the same number of flat washers on each side of all four supports.

5. To adjust catch (6) and striker (7), remove eight screws (8) and key washers (9) from four supports (10). Discard key washers. Remove or add new flat washers (11), as required, to shim between supports (10) and hull top plate.
6. Install eight new key washers (9). Tighten eight screws (8). If shimmed right, catch (6) on lock handle (5) will engage firmly with striker (7). Bend keys to secure screws.



**NOTE**

**Test is for one side of ramp lock adjustment. Adjust both sides of carrier at the same time. Have helper assist.**

**NOTE**

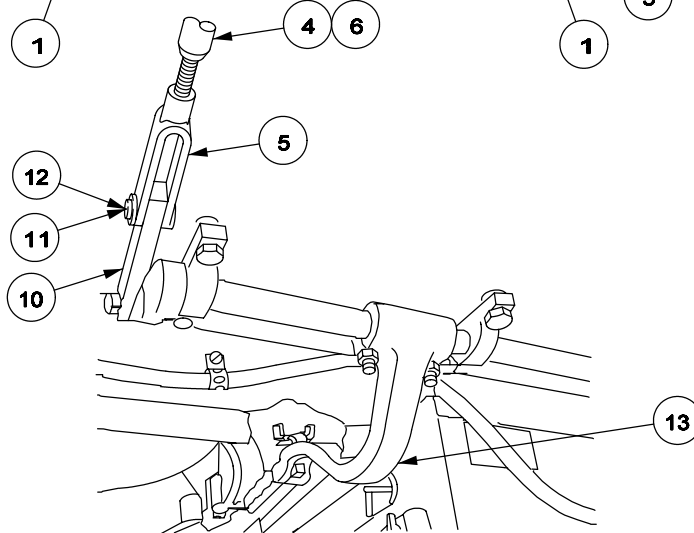
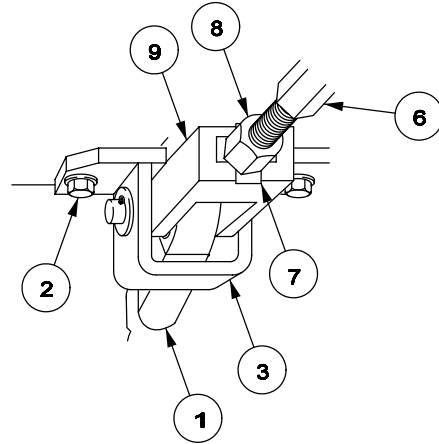
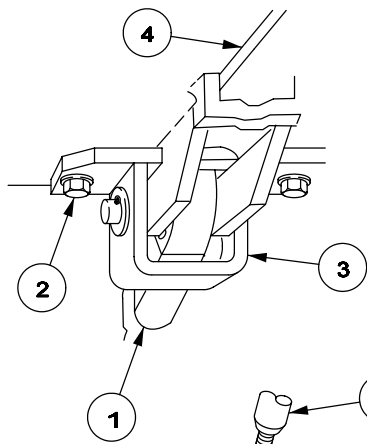
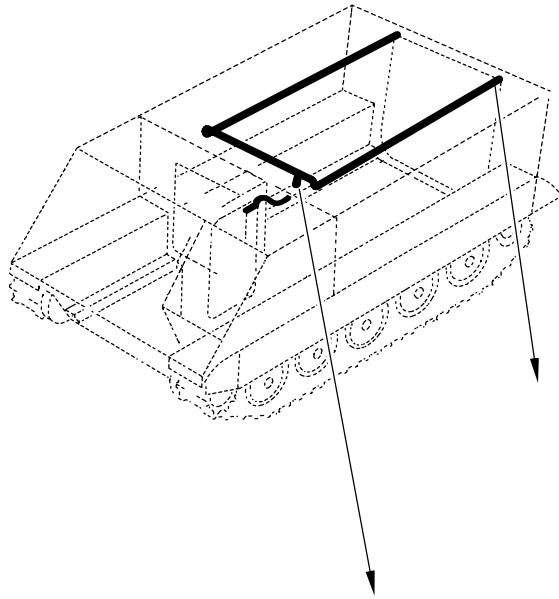
**Some carriers are equipped with flat shaped ramp lock rods, while other carriers are equipped with hex shaped ramp lock rods. Adjustment is different, as described below.**

7. To adjust rear latches (1), loosen two screws (2) that secure bracket (3) to hull top plate.
8. For carriers with flat shaped rod (4), turn clevis (5) on rod, as needed, to lengthen or shorten linkage.

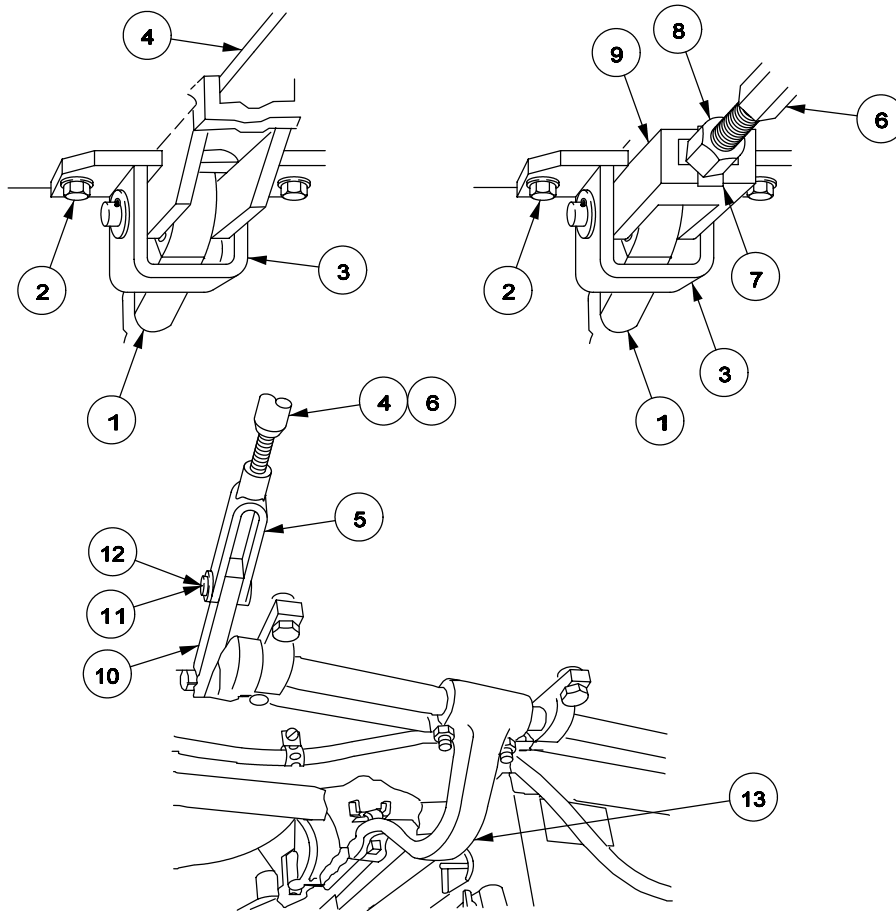
**NOTE**

**Making linkage shorter pulls the ramp in and puts a tight squeeze on the ramp seal. Making linkage longer lessens the squeeze on the seal.**

9. For carriers with hex shaped rod (6), bend back tabs on washer (7), loosen jamnut (8), remove rod from clevis (9), and discard washer. Install new washer (7), and install rod in clevis (9). Place link (10) in clevis (5). Secure with headed pin (11) and new cotter pin (12). Turn rod as needed to lengthen or shorten linkage. Tighten jamnut (8) and secure by bending tabs of new washer (7).



10. For carriers with flat shaped rod (4), place link (10) in clevis (5). Secure with headed pin (11) and new cotter pin (12).
11. Push handle (13) in full forward position. Push bracket (3) to the rear until forward edge of slot in bracket makes contact with cam surface on latch (1).
12. Tighten two screws (2).
13. The latch (1) should point down as shown in illustration. Put your hand under latch and try to lift latch. If adjustment is right, latch will not move.
14. Move handle (13) to full released position. Latch (1) will contact rear edge of bolt in bracket (3) and will move up as shown in illustration.



15. Wipe chalk off ramp surface and repeat SEAL TEST Steps 1 - 6.
16. If ramp fails test, check and repeat ADJUSTMENT Steps 1 - 14, as needed.

**END OF TASK**

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**REPLACE RAMP LOCK HANDLE AND ARMS**

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**0557 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0557 00-2).  
 Installation (page 0557 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Cotter pin (2)

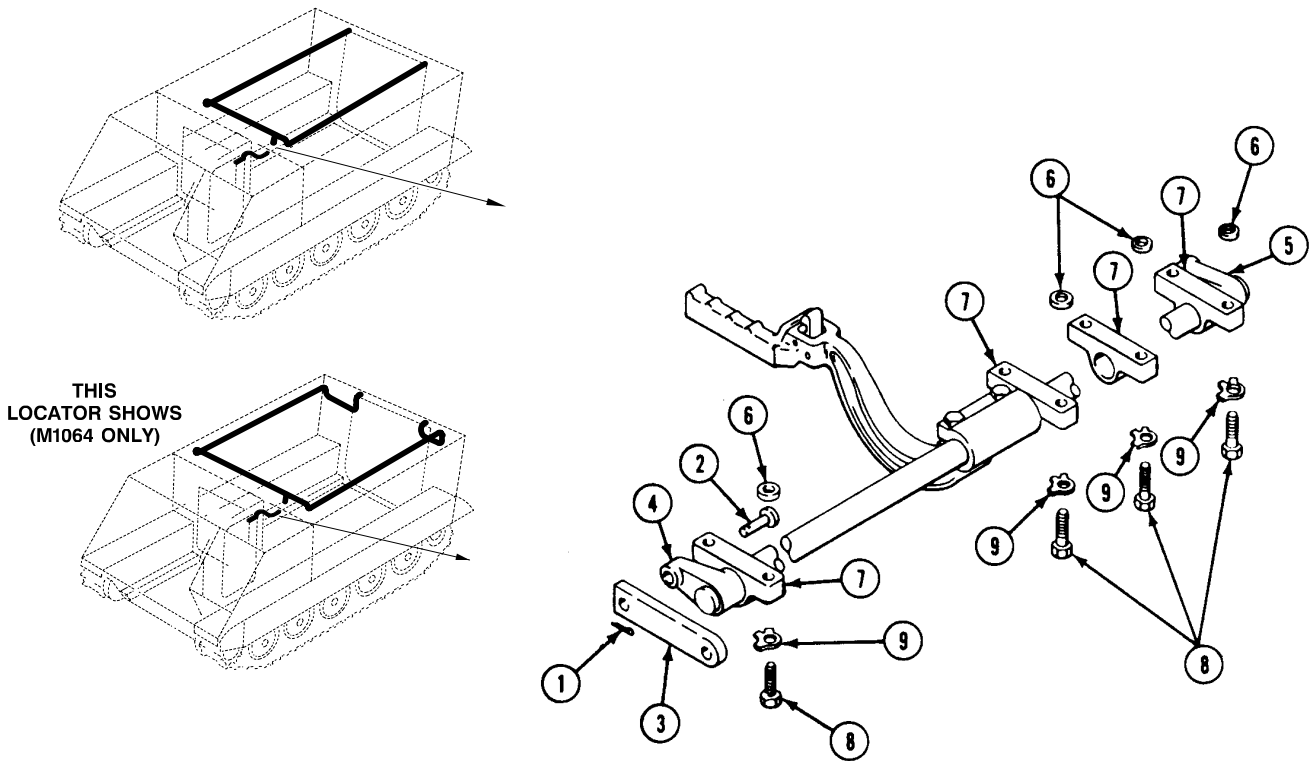
Key washer (8)

Spring pin (2)

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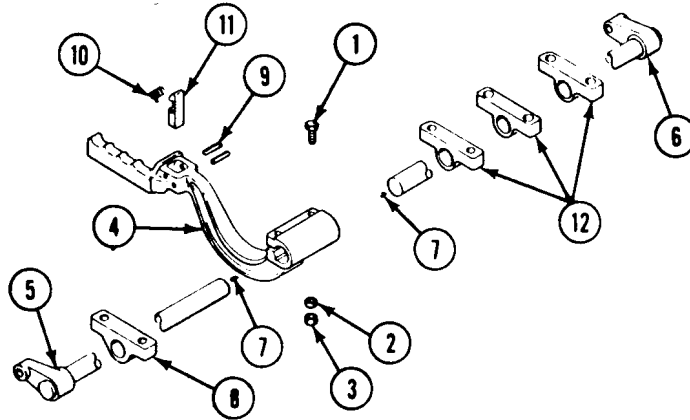
**REMOVAL**

1. Remove two cotter pins (1), headed pins (2), and connecting links (3) from arms (4) and (5). Discard cotter pins.
2. Note the number and location of steel washers (6) used as shims between supports (7) and top plate.
3. Bend back keys. Remove eight screws (8), key washers (9), four supports (7), and eight steel washers (6). Discard key washers.

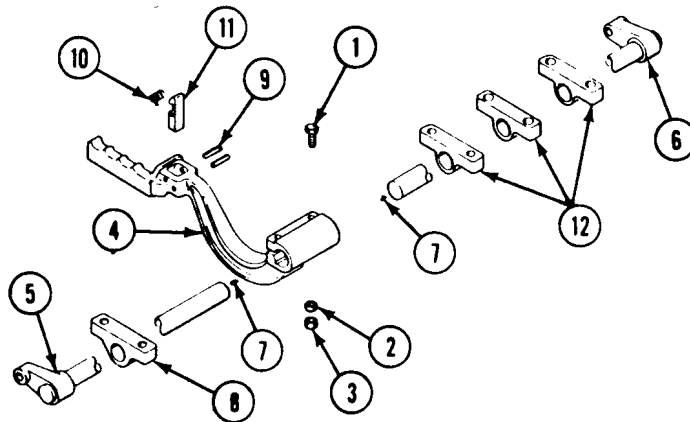


**REPLACE RAMP LOCK HANDLE AND ARMS — Continued****0557 00**

4. Remove two screws (1), washers (2), and nuts (3) from ramp lock handle (4).
5. Remove arms (5) and (6) from handle (4).
6. Remove two keys (7) from arms (5) and (6). Remove supports (8) and (12) from arms.
7. Remove two spring pins (9), spring (10), and catch (11) from handle (4). Discard spring pins.

**INSTALLATION**

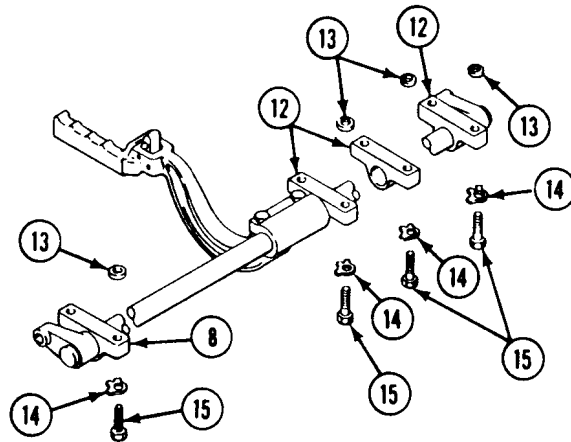
1. Install catch (11) and spring (10) in ramp lock handle (4). Secure with two new spring pins (9).
2. Install one support (8) on arm (5) and three supports (12) on arm (6).
3. Install two keys (7) in arms (5) and (6).
4. Install arms (5) and (6) in handle (4). Secure with two screws (1), washers (2), and nuts (3).



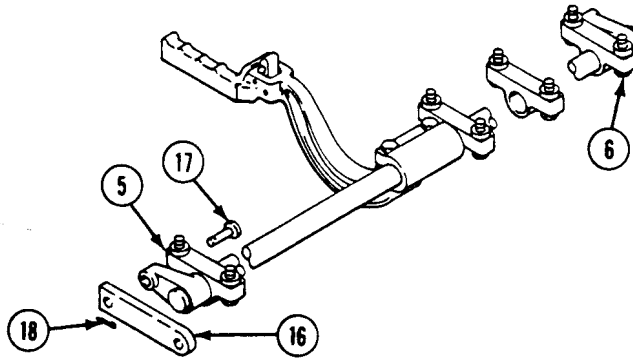
REPLACE RAMP LOCK HANDLE AND ARMS — Continued

0557 00

5. Align four supports (8) and (12) with holes in hull top plate. Shim with steel washers (13). Make sure you put the same number of steel washers in same position from which they were removed.
6. Secure with eight new key washers (14) and screws (15). Bend keys on washers to secure screws.



7. Align two connecting links (16) with two arms (5) and (6). Secure with two headed pins (17) and new cotter pins (18).



**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp to check that ramp lock linkage works right (see your -10).
2. Adjust ramp lock linkage, if needed (WP 0558 00 or WP 0560 00).

**END OF TASK**



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**REPLACE RAMP LINKAGE (M113A2, M901A1, AND M1059 ONLY)**

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**0558 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0558 00-2).  
 Installation (page 0558 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Torque Wrench (WP 0780 00, Item 103)

References

WP 0556 00

Materials/Parts

Cotter pin (3)  
 Key washer  
 Square washer

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)

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## REMOVAL

## NOTE

Some carriers are equipped with flat shaped ramp lock rods while other carriers are equipped with hex shaped ramp lock rods. They are removed and installed differently, as described below.

## NOTE

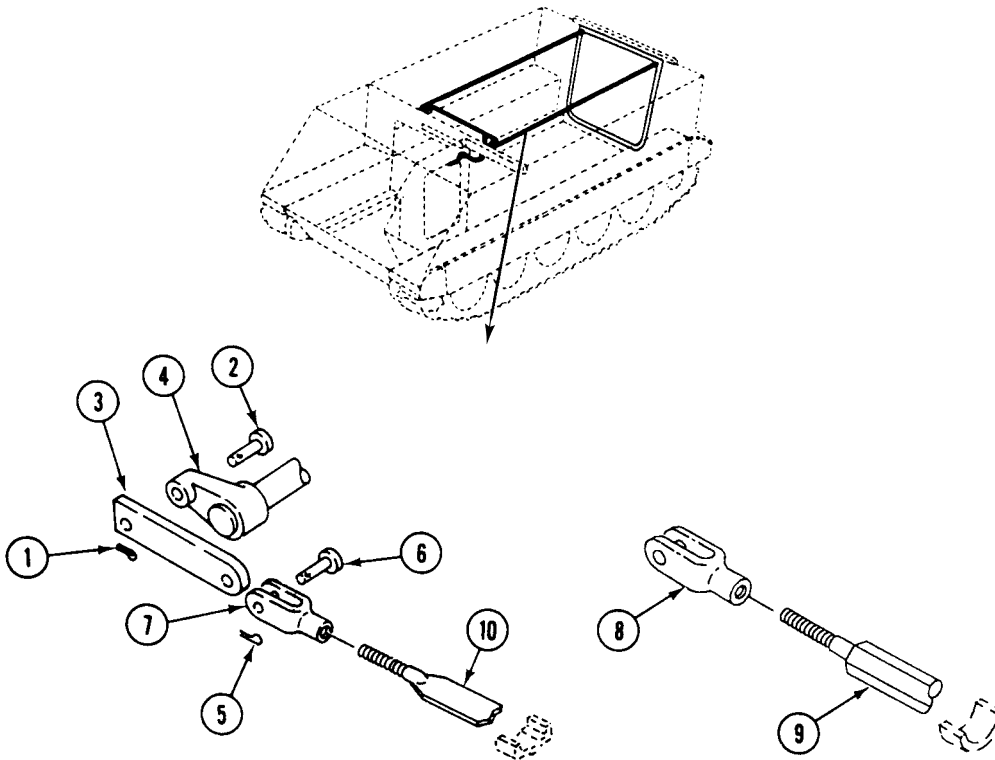
Removal and installation of ramp linkage is the same for both sides of carrier. Text is for one side only.

1. Remove cotter pin (1), headed pin (2), and connecting link (3) from arm (4). Discard cotter pin.
2. Remove cotter pin (5), headed pin (6), and connecting link (3) from clevis (7). Discard cotter pin.

## NOTE

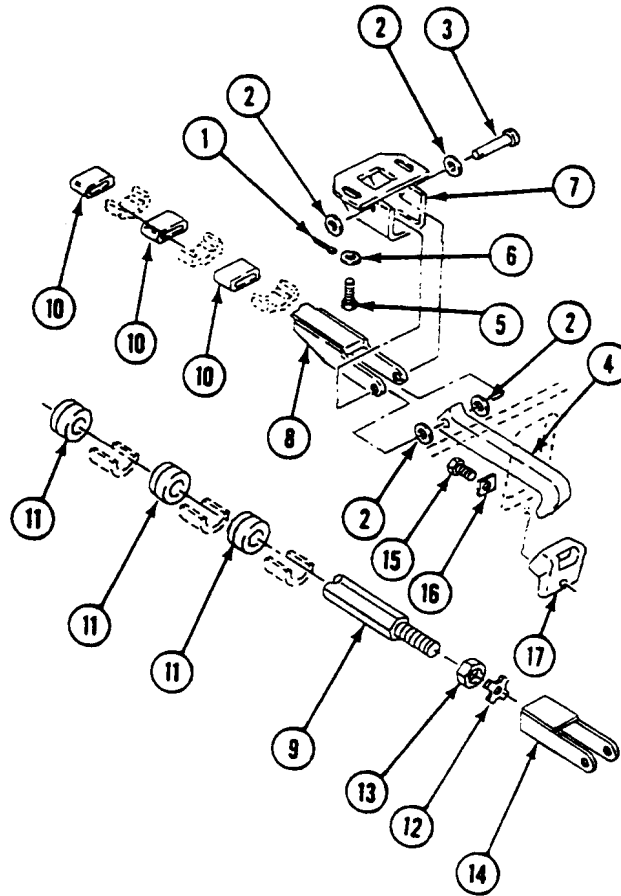
Clevis (8) and one end of hex shaped rod (9) have left-hand threads.

3. Remove clevis (7) from flat shaped rod (10), or clevis (8) from hex shaped rod (9).



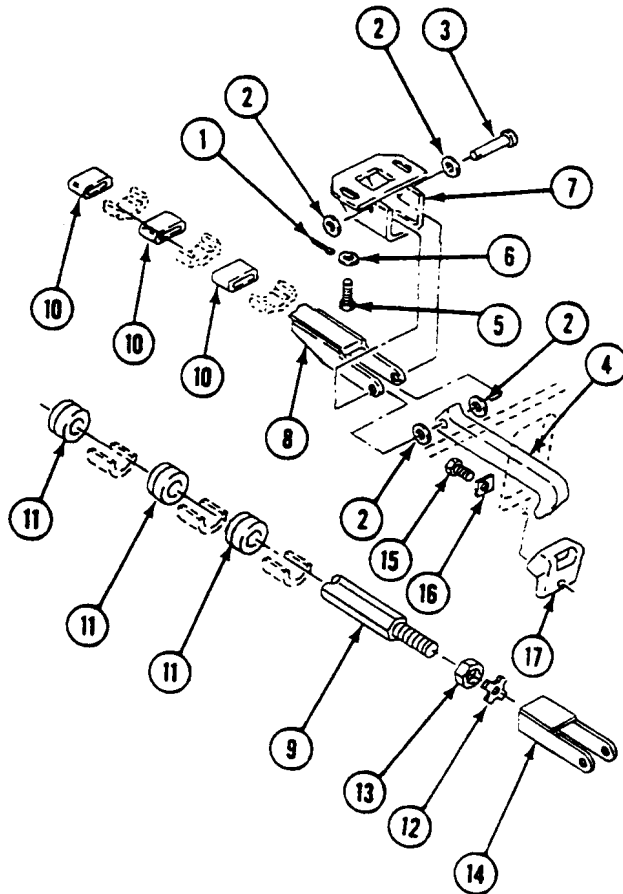
**REPLACE RAMP LINKAGE (M113A2, M901A1, AND M1059 ONLY) — Continued****0558 00**

4. Remove cotter pin (1), four washers (2), headed pin (3), and latch (4). Discard cotter pin.
5. Remove two screws (5), washers (6), and bracket (7) from hull top plate.
6. Pull flat shaped rod (8) or hex shaped rod (9) from welded brackets on hull top plate. Remove three bumpers (10) as flat shaped rod is removed, or three bushings (11) as hex shaped rod is removed.
7. For hex shaped rod (9), bend back tabs on key washer (12), loosen jamnut (13), and remove clevis (14) from rod (9). Remove jamnut (13) from rod (9) and discard key washer.
8. Bend back tab corner and remove screw (15), square washer (16), and catch (17) from ramp. Discard square washer.

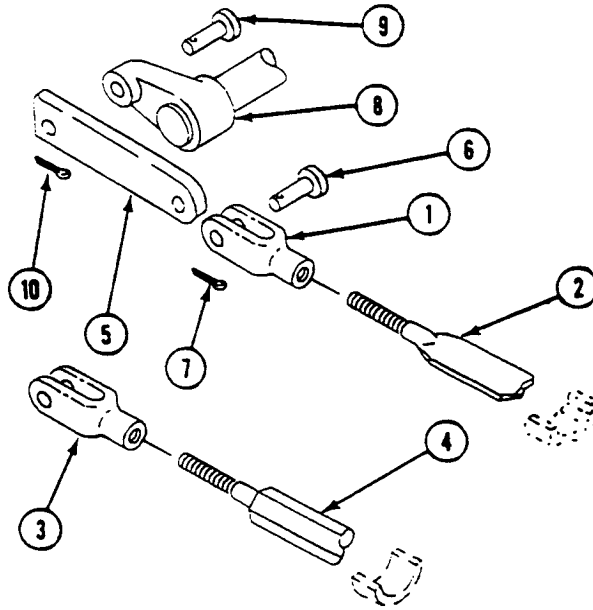


**INSTALLATION**

1. Place catch (17) on ramp. Secure with new square washer (16) and screw (15). **TIGHTEN SCREW TO 60-70 LB-FT (81-95 N·M) TORQUE.** Use torque wrench. Bend corner of square washer to lock screw.
2. For hex shaped rod (9), install nut (13), new key washer (12), and clevis (14) on right-hand threaded end of rod (9). Do not bend tabs on key washer until lock adjustment (Step 9).
3. Install flat shaped rod (8) or hex shaped rod (9) in welded brackets. As rod passes through each bracket, install three bumpers (10) on flat shaped rod (8), or three bushings (11) on hex shaped rod (9).
4. Place bracket (7) on hull top plate. Install two washers (6) and screws (5). Do not tighten screws until lock adjustment (Step 9).
5. Align flat shaped rod (8) or hex shaped rod (9) and latch (4) in bracket (7). Secure with four washers (2), headed pin (3), and new cotter pin (1).



6. Install clevis (1) on flat shaped rod (2) or clevis (3) on left hand threaded end of hex shaped rod (4).
7. Align connecting link (5) with clevis (1) or (3). Secure with headed pin (6) and new cotter pin (7).
8. Align connecting link (5) with arm (8). Secure with headed pin (9) and new cotter pin (10).



**WARNING**



**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

9. Adjust ramp lock (WP 0556 00).

**FOLLOW-THROUGH STEPS**

1. Raise and lock ramp to check that ramp linkage works right (see your -10).
2. Stop engine (see your -10).

**END OF TASK**



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**ADJUST RAMP LOCK (M1064 ONLY)**

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**0559 00**

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**THIS WORK PACKAGE COVERS:**

Adjustment (page 0559 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

See your -10

Materials/Parts

Cotter pin

Flat steel washer (as needed)

Key washer (8)

Lockwasher (2)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

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## ADJUSTMENT

**WARNING**

**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

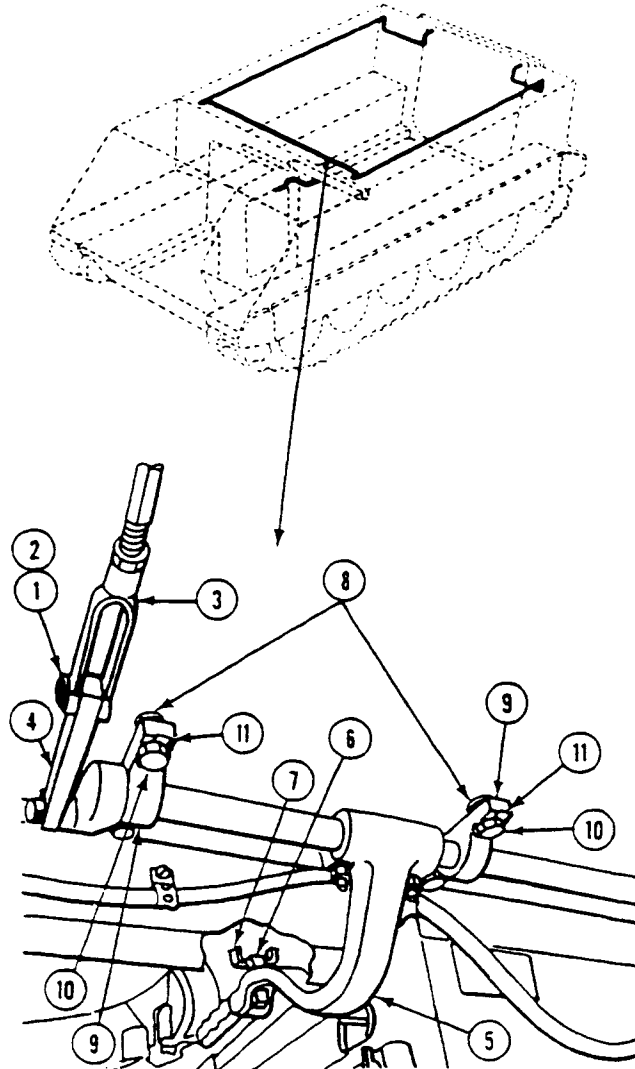
1. Lower ramp (see your -10).
2. Remove cotter pin (1) and headed pin (2) from clevis (3). Discard cotter pin.
3. Disconnect link (4) from clevis (3).
4. Swing lever (5) forward. If catch (6) does not engage with striker (7), adjust catch (Step 5). If catch and striker adjustment is correct, go to Step 7.

**NOTE**

**Install the same number of flat washers (8) on each side of all four supports (9).**

5. To adjust catch (6) and striker (7), remove eight screws (10) and key washers (11) from four supports (9). Discard key washers. Install new flat washers (8) to shim between supports (9) and hull top plate.





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**ADJUST RAMP LOCK (M1064 ONLY) — Continued**

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**0559 00**

6. Install eight new key washers (1). Tighten eight screws (2) and bend washer keys to secure screws. If shimmed right, catch (3) on lever (4) will engage firmly with striker (5).
7. For carriers with flat shaped rod (6), place link (7) in clevis (8). Secure with headed pin (9) and new cotter pin (10).
8. Start engine (see your -10).
9. Raise and lock ramp (see your -10).
10. Stop engine (see your -10).

**NOTE**

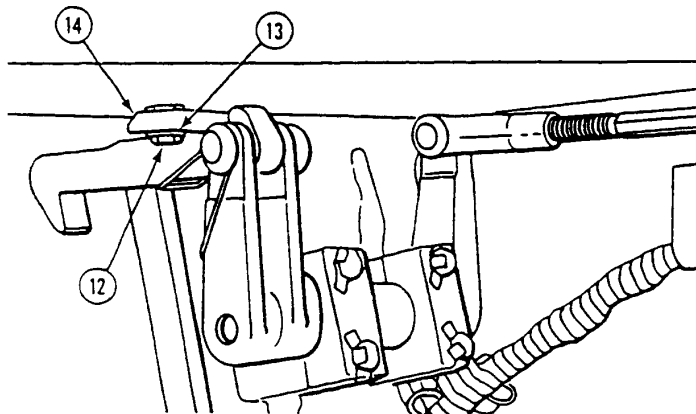
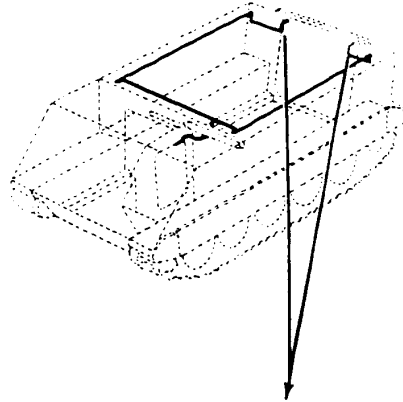
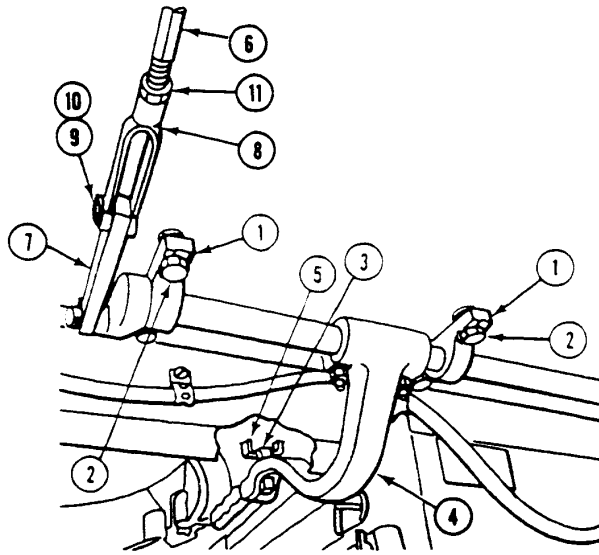
**The steps below are for one side of ramp lock adjustment. Adjust both sides of carrier at the same time.**

11. Loosen locknut (11) on forward clevis (8).

**NOTE**

**Making linkage shorter pulls the ramp in and puts a tight squeeze on the ramp seal. Making linkage longer lessens the squeeze on the seal.**

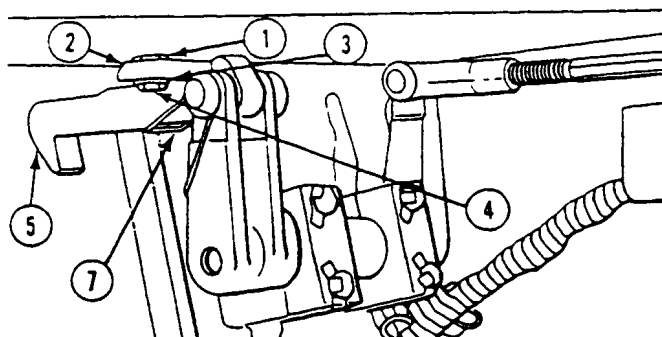
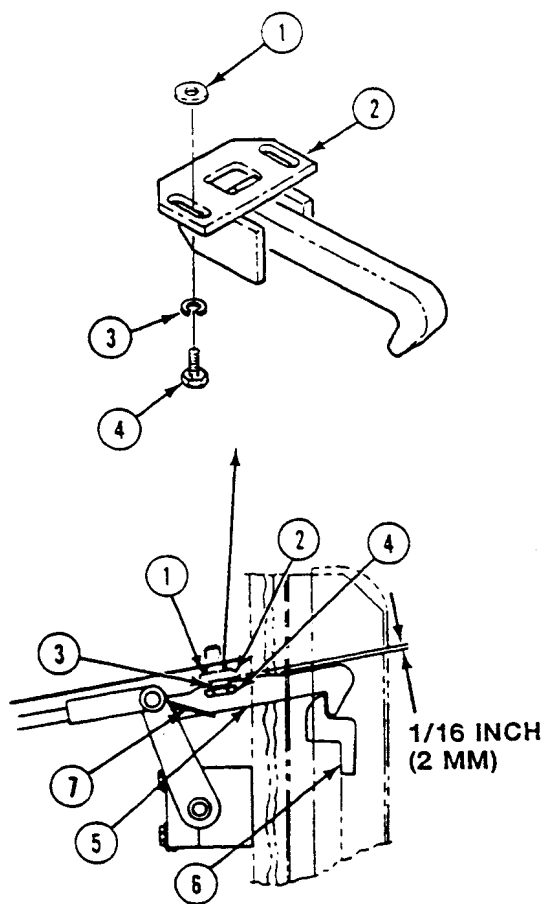
12. Turn rod (6), as needed, to make sure ramp seal is compressed right. Tighten locknut (11) on clevis (8).
13. Lower ramp (see your -10). Return lever (4) to closed position.
14. Remove two screws (12) and lockwashers (13) from trip plate (14). Discard lockwashers.



ADJUST RAMP LOCK (M1064 ONLY) — Continued

0559 00

15. Add or remove flat steel washers (1) between ramp trip plates (2) and hull top plate. Use same number of washers as shims on each side of trip plate. Install two new lockwashers (3) and screws (4) in trip plate (2). Do not tighten screws at this time.
16. Measure distance between trip plates (2) and latch (5). It should be 1/16 inch (2 mm) maximum. Add or delete flat steel washers (1) until this clearance is obtained.
17. Start engine (see your -10).
18. Raise and lock ramp (see your -10).
19. Stop engine (see your -10).
20. Check both trip plates (2) to see that they bear against top of latches (5).
21. Check that latch (5) and catch (6) are firm and flush against each other.
22. Lower ramp (see your -10). Adjust trip plates (2). Slide plates forward or rearward until latches (5) open, both at the same time, when ramp lock lever is pulled all the way to the rear. Latches (5) should raise up to clear catch. Tighten two screws (4).
23. If latches (5) do not raise when trip plates (2) are adjusted correctly, replace spring (7) (WP 0560 00).



**FOLLOW-THROUGH STEPS**

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**WARNING**

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**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. Perform lock test (WP 0559 00).
2. Perform seal test (WP 0559 00).

**END OF TASK**



**REPLACE RAMP LINKAGE (M1064 ONLY)**

**0560 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0560 00-1).
- Clean, Inspect, and Repair (page 0560 00-3).
- Installation (page 0560 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

WP 0559 00

Materials/Parts

- Cotter pin (4)
- Key washer (4)
- Locknut
- Lockwasher (2)
- Square washer

Equipment Condition

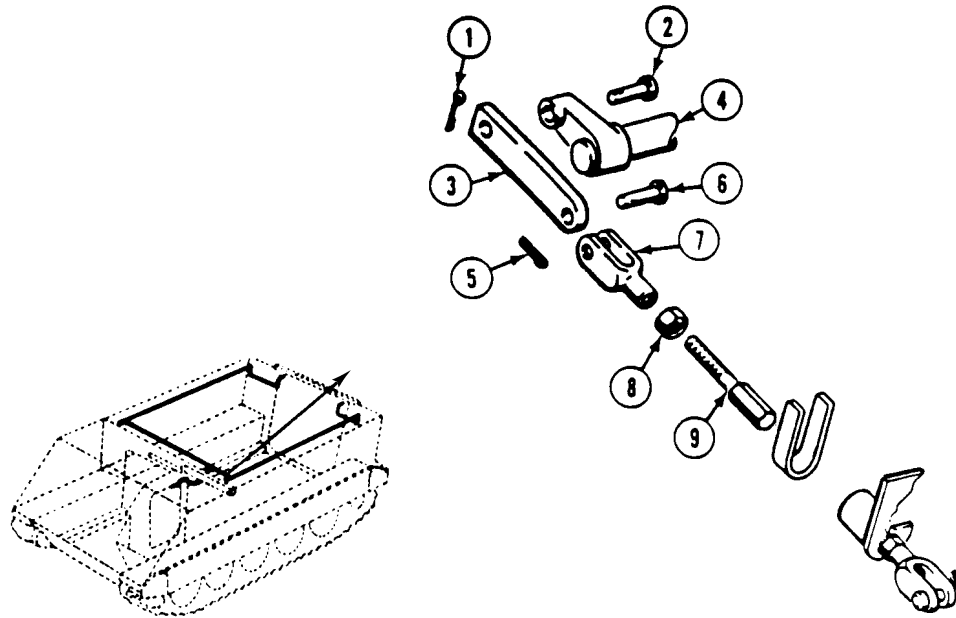
- Engine stopped (see your -10)
- Ramp lowered (see your -10)
- On right side only, mortar ammunition racks removed (WP 0507 00)

**REMOVAL**

**NOTE**

**Removal and installation of ramp linkage are the same for both sides of carrier. Text is for one side only.**

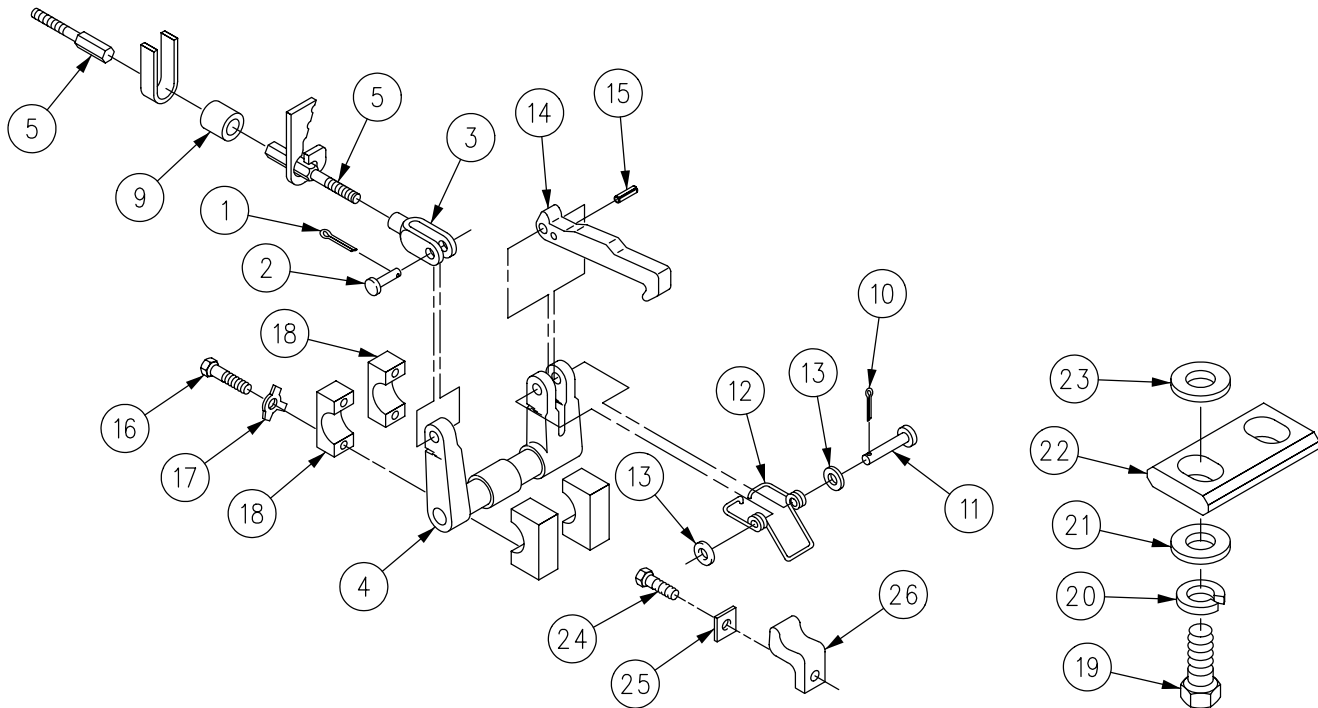
1. Remove cotter pin (1), headed pin (2), and connecting link (3) from arm (4). Discard cotter pin.
2. Remove cotter pin (5), headed pin (6), and connecting link (3) from clevis (7). Discard cotter pin.
3. Loosen locknut (8). Remove clevis (7) and locknut from rod (9). Discard locknut.



REPLACE RAMP LINKAGE (M1064 ONLY) — Continued

0560 00

4. Remove cotter pin (1), headed pin (2), and clevis (3) from cross-shaft arm (4). Discard cotter pin.
5. Remove clevis (3) from rod (5).
6. Remove rod (5) and three bumpers (9) from carrier.
7. Remove three bumpers (9) from rod (5) as rod is pulled from carrier.
8. Remove cotter pin (10), headed pin (11), spring (12), two washers (13), and latch (14) from arm (4). Discard cotter pin.
9. Remove pin (15) from latch (14).
10. Bend back keys. Remove four screws (16), key washers (17), two support blocks (18), and arm (4) from rear bulkhead.
11. Remove two screws (19), lockwashers (20), washers (21), trip plate (22), and washers (23) from hull top plate. Note position and number of washers (23) removed. Discard lockwashers.
12. Bend back key corner and remove screw (24), square washer (25), and catch (26) from ramp. Discard square washer.



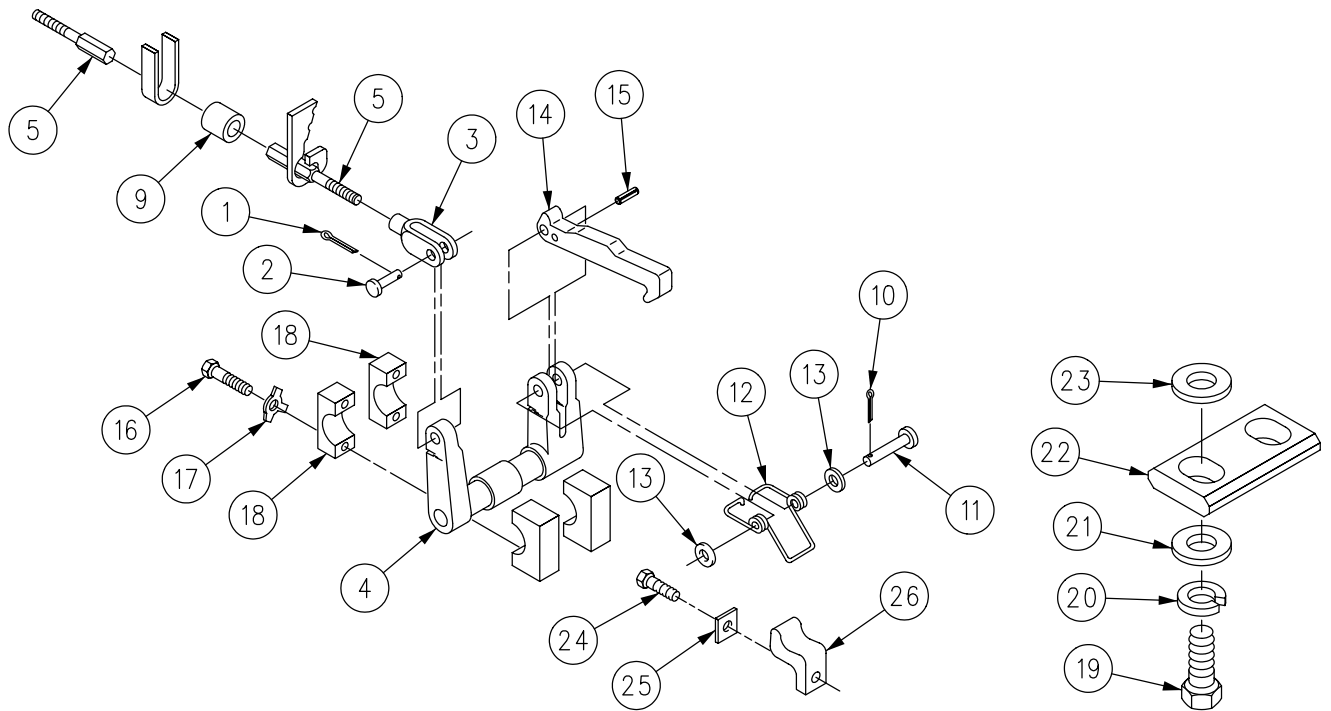


**CLEAN, INSPECT, AND REPAIR**

1. Check rods. Replace any rod that is bent, damaged or has stripped threads.
2. Check bumpers. Replace bumpers that are cracked, torn, or not flexible.
3. Check support blocks. Replace blocks that are worn or binding.
4. Check cross-shaft arm. Remove grooves and scratches with fine sandpaper. Replace worn or pitted arm.
5. Check catch and latch. Replace damaged catch or latch.

**INSTALLATION**

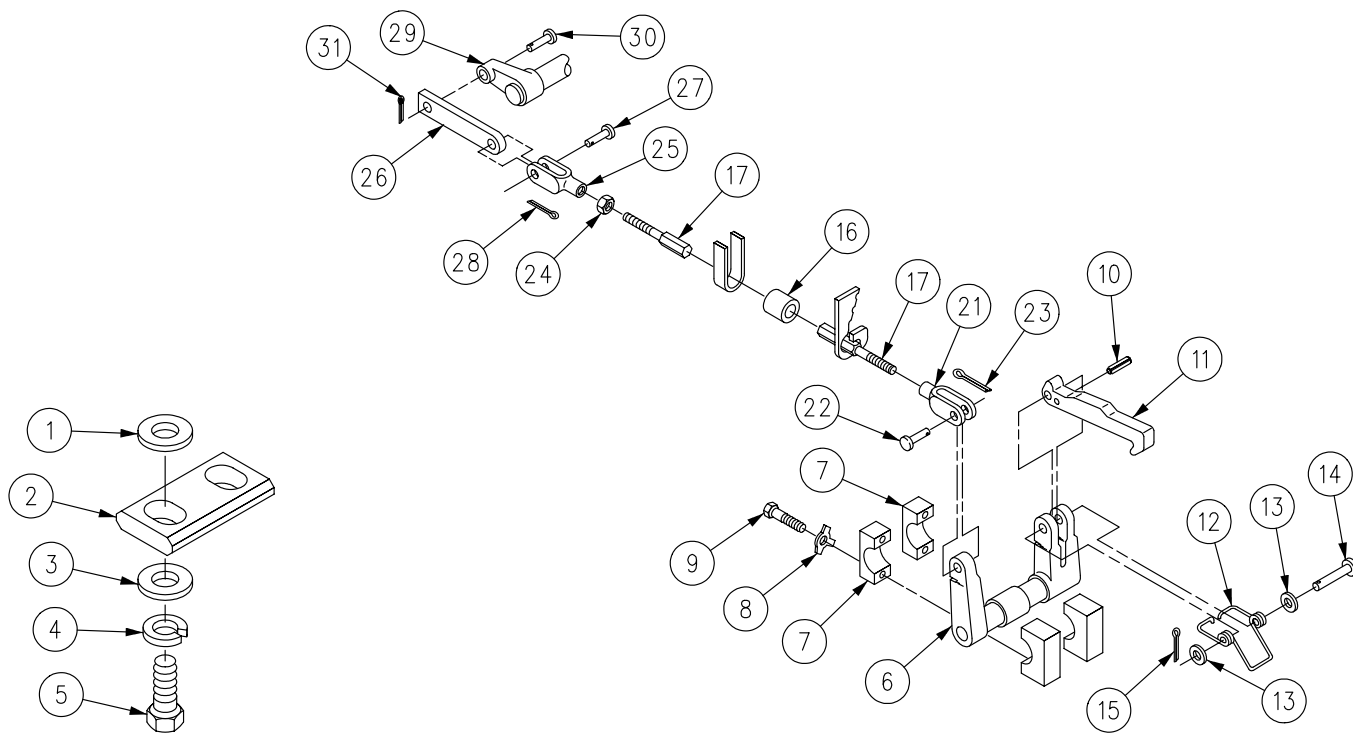
1. Place catch (26) on ramp. Secure with new square washer (25) and screw (24). Bend corner on washer to secure screw.
2. Place washers (23) and trip plate (22) on hull top plate. Make sure you install the same number of washers (23) in the same positions from which they were removed. Secure with two washers (21), new lockwashers (20), and screws (19). Do not tighten screws at this time.



REPLACE RAMP LINKAGE (M1064 ONLY) — Continued

0560 00

3. Place cross-shaft arm (6) on rear bulkhead. Secure with two support blocks (7), four new key washers (8), and screws (9). Bend keys to secure screws.
4. Install pin (10) in latch (11).
5. Align spring (12), latch (11), and two washers (13) with arm (6). Secure with headed pin (14) and new cotter pin (15).
6. Install three bumpers (16) on rod (17).
7. Install rod (17) and three bumpers (16) in carrier.
8. Install clevis (21) on rod (17).
9. Align clevis (21) with arm (6). Secure with headed pin (22) and new cotter pin (23).
10. Install new locknut (24) and clevis (25) on rod (17). Do not tighten locknut.
11. Align connecting link (26) with clevis (25). Secure with headed pin (27) and new cotter pin (28).
12. Align connecting link (26) with arm (29). Secure with headed pin (30).
13. Adjust ramp lock ().
14. Tighten screws (5) and locknut (24).
15. Install new cotter pin (31).



**FOLLOW-THROUGH STEPS**

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**WARNING**

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**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. On right side only, install mortar ammunition racks (WP 0507 00).
2. Start engine. Raise and lock ramp to check that ramp linkage operates properly (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



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**ADJUST RAMP LOCK (M577A2 AND M1068 ONLY)**

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**0561 00**

**THIS WORK PACKAGE COVERS:**

Adjustment (page 0561 00-1).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

See your -10

Materials/Parts

Cotter pin (3)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

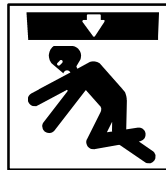
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**ADJUSTMENT**

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**WARNING**

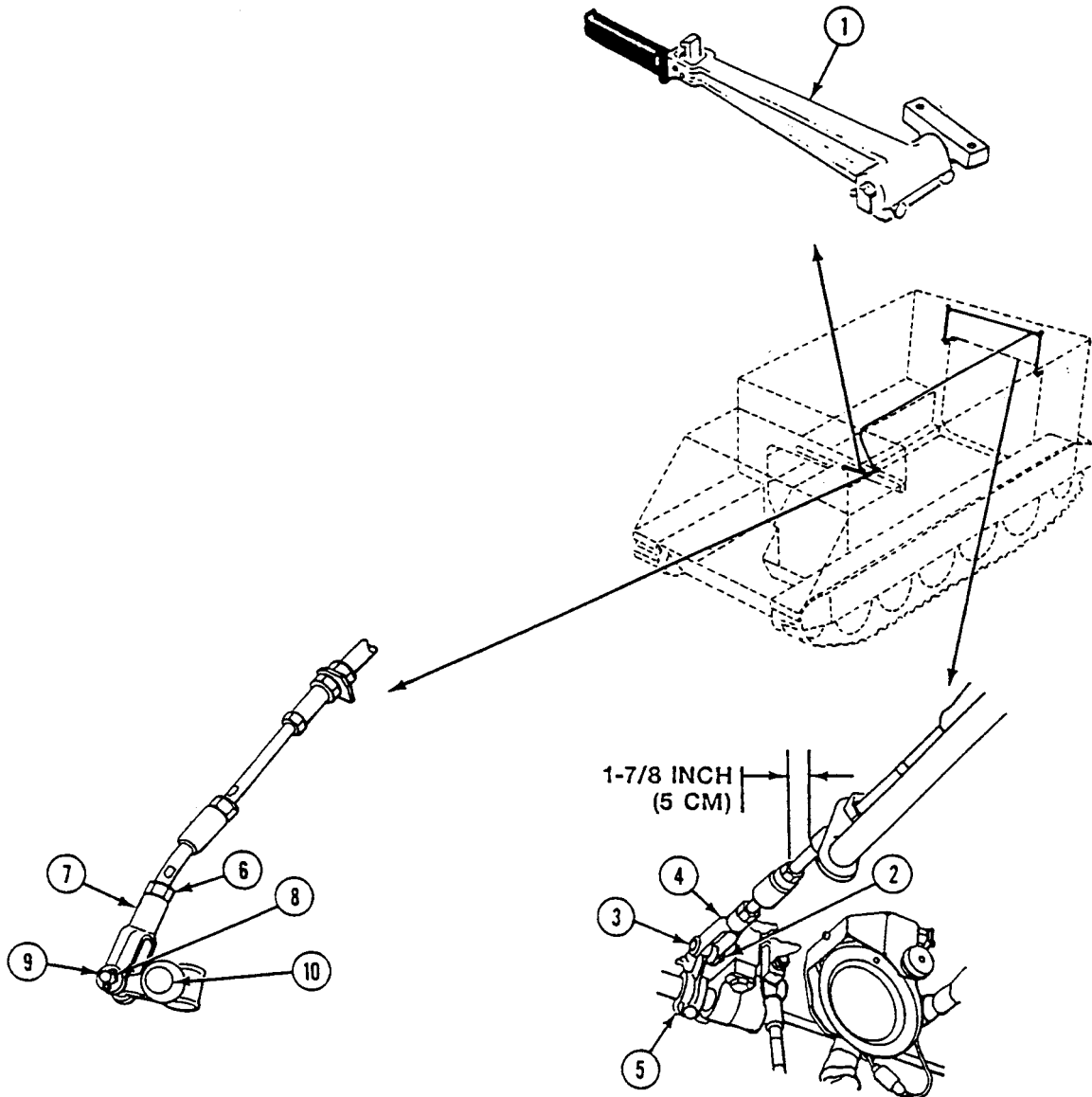
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**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. Lower ramp (see your -10).

2. Latch ramp lock lever (1) with ramp down.
3. Remove cotter pin (2) and headed pin (3) from clevis (4) at arm (5). Discard cotter pin.
4. Loosen locknut (6) on clevis (7).
5. Remove cotter pin (8) and headed pin (9) from clevis (7) and arm (10). Discard cotter pin.



6. Loosen locknuts (1) on both sides of the carrier.

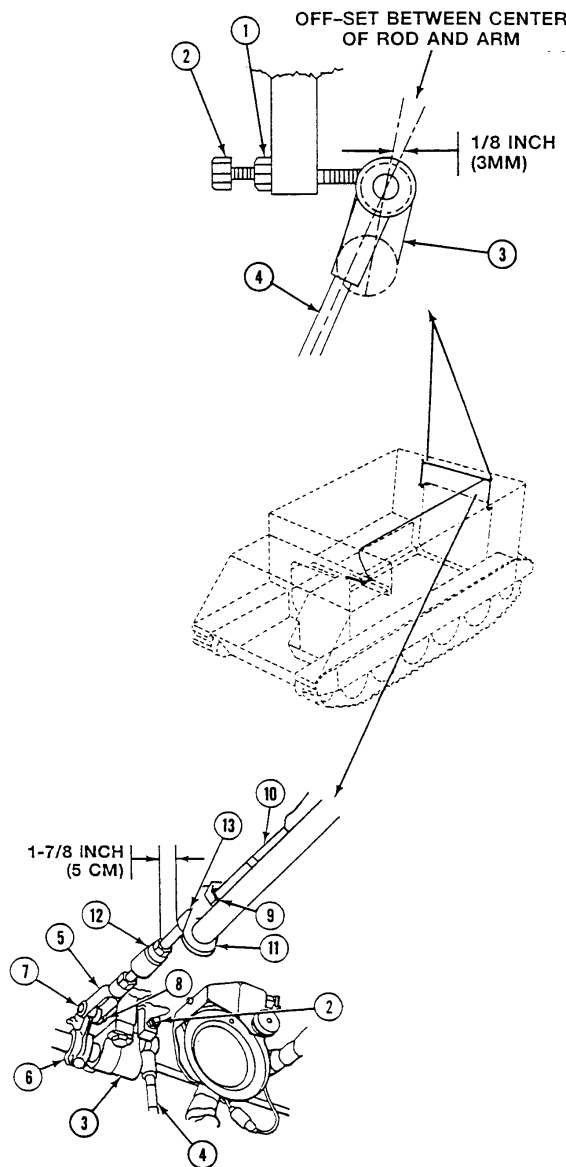
**CAUTION**

Insure proper thread engagement after clevis adjustment. Thread engagement should be at least 1-1/2 times diameter of rod.

**NOTE**

Setscrew must be adjusted so the center of the top arm is offset toward front of carrier in reference to the center of rod.

- Adjust two setscrews (2) and rotate arm (3) until center line of arm (3) is aligned with center line of rod (4). Continue to rotate arm (3) until it is tilted 1/8 inch (3 mm) past center in reference to rod (4) toward front of carrier.

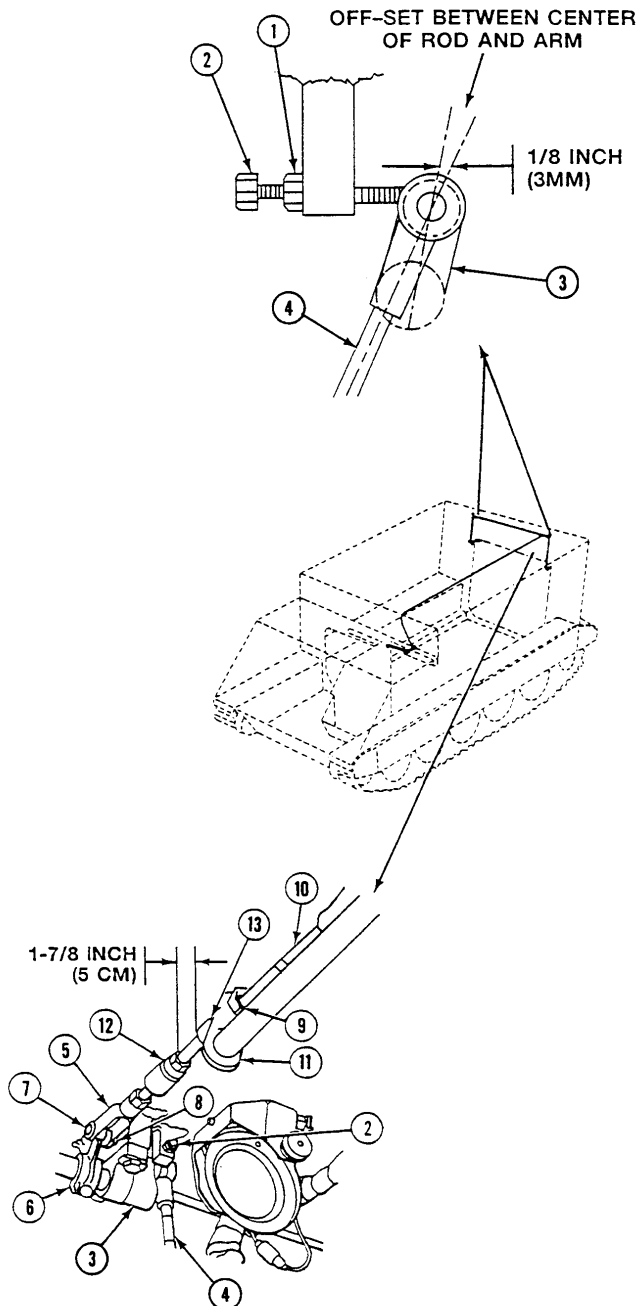


8. Tighten locknut (1) on setscrew (2).

**NOTE**

**After attaching clevis to the arm, make sure arm is still against the setscrews.**

9. Align clevis (5) with arm (6). Secure with headed pin (7) and new cotter pin (8).
10. Loosen two nuts (9) on cable (10) at bracket (11).
11. Adjust length of cable (10) to obtain 1-7/8 inches (5 cm) clearance between nut (12) and seal (13). Tighten two nuts (9).



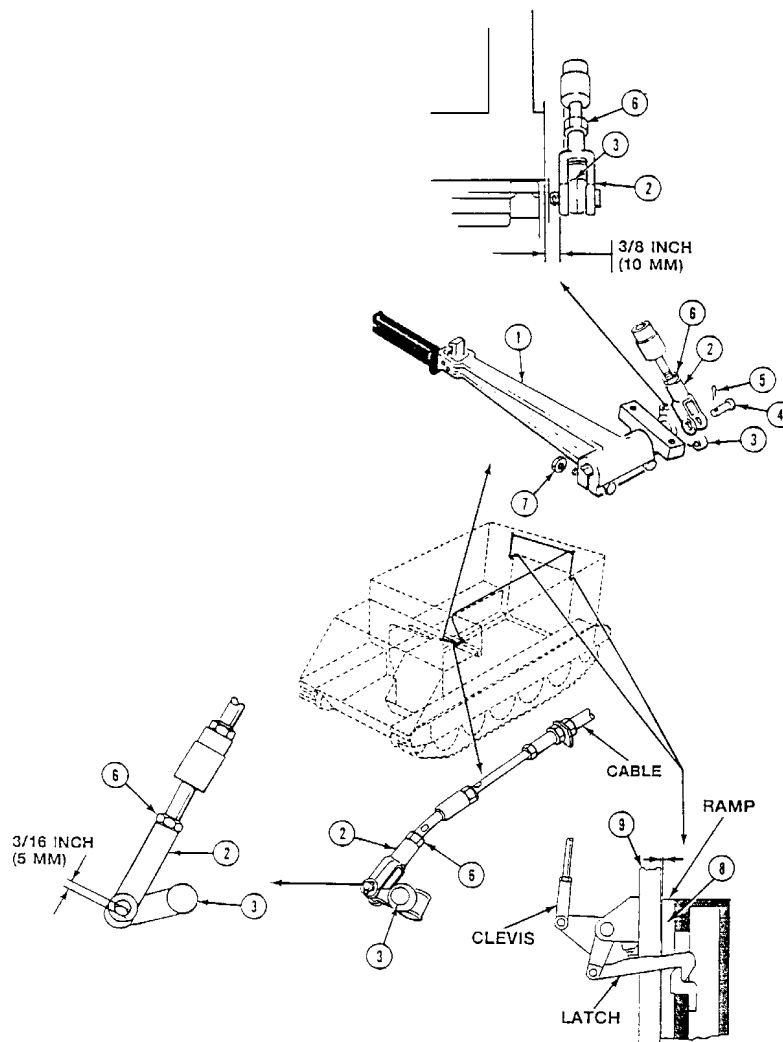


12. With ramp lock lever (1) remaining in locked position, adjust clevis (2) 3/16 inch (5 mm) short of pin (4) fitting freely with arm (3).
13. Release lever (1) and align clevis (2) with arm (3). Secure with headed pin (4) and new cotter pin (5). Tighten locknut (6).
14. Loosen two nuts (7) on lever (1) and move arm (3) to obtain 3/8 inch (10 mm) clearance between end of clevis (2) and bulkhead. Tighten nuts (7).
15. Raise and lock ramp (see your -10).

**NOTE**

**Ramp seal should be compressed enough to prevent water leakage, yet without metal-to-metal contact between ramp and hull. Make linkage shorter to compress seal more. Make linkage longer to compress seal less.**

16. Check ramp for proper seal. Stand inside the carrier with ramp up. Insert a thick piece of paper or inspection tag between ramp (8) and hull (9). The paper should slide freely around edge with no metal to metal contact. If ramp is too tight or too loose, repeat Steps 1 - 16.
17. With ramp up, release lock lever (1).



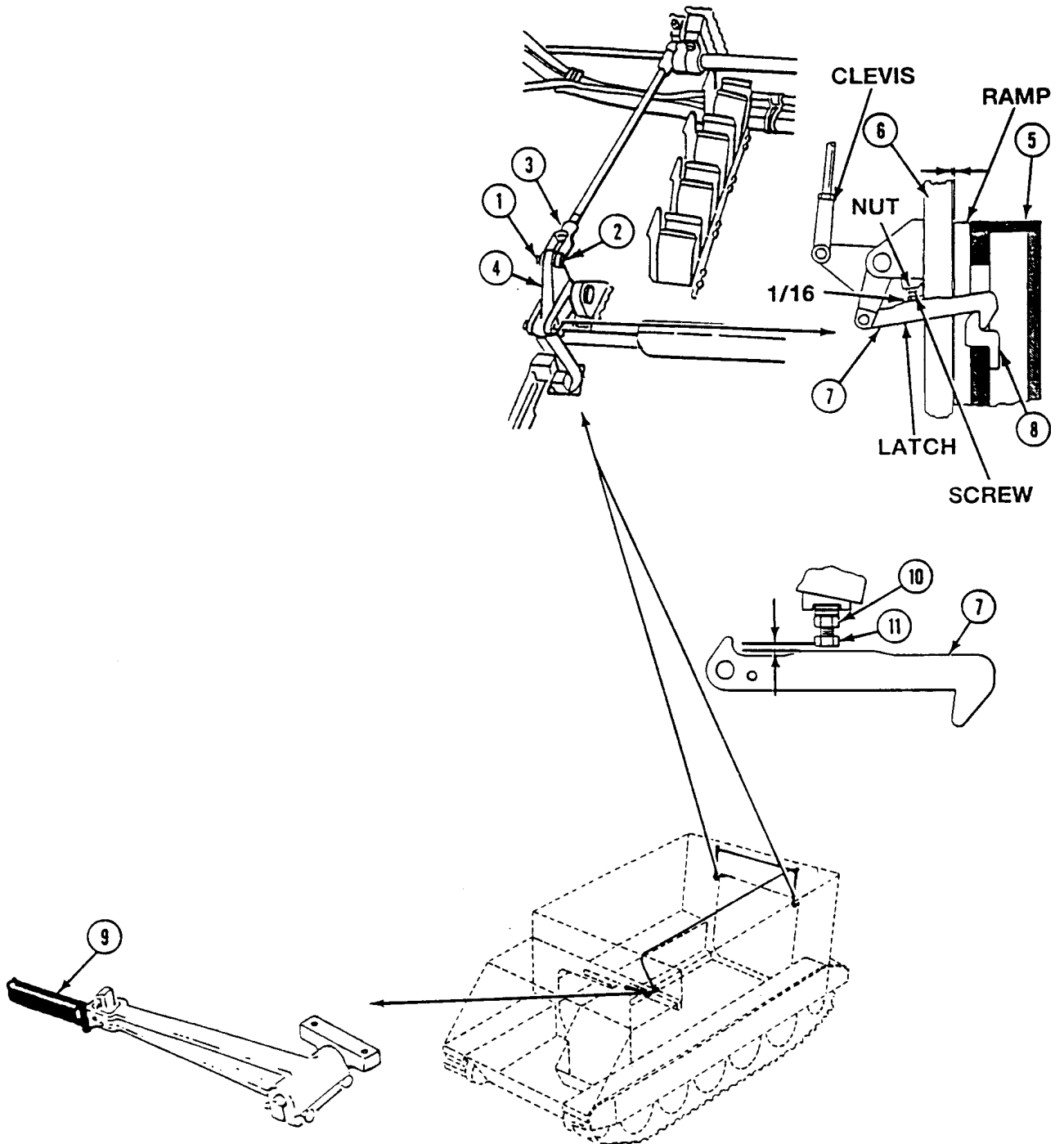
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**ADJUST RAMP LOCK (M577A2 AND M1068 ONLY) — Continued**

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**0561 00**

18. Remove cotter pin (1), headed pin (2), and clevis (3) from lever (4) for one side of vehicle only. Discard cotter pin.
19. Adjust clevis (3) to lengthen or shorten linkage and obtain a water tight seal between ramp (5) and hull (6). Latches (7) must pull tight on catches (8).
20. Align clevis (3) with lever (4). Secure with headed pin (2).
21. Latch ramp lock lever (9).
22. Check for adequate tension on ramp latch (7) and catch (8). There should be no free play in latches (7) when ramp lock lever (9) is latched.
23. Repeat Steps 17 - 22 until latch (7) is under proper tension. Install new cotter pin (1) in headed pin (2).
24. Repeat Steps 17 - 23 for latch (7) on opposite side of carrier.
25. With ramp up and locked, loosen locknuts (10) on setscrew (11). Adjust setscrew (11) to obtain 1/16 inch (2 mm) to 3/32 inch (3 mm) maximum clearance between latches (7) and setscrew (11)
26. Tighten locknut (10) on setscrew (11).



**FOLLOW-THROUGH STEPS**

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**WARNING**

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**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. Perform ramp lock test (WP 0556 00).
2. Perform ramp seal test (WP 0556 00).

**END OF TASK**

**REPLACE RAMP LOCK LEVER AND CABLE (M577A2 AND M1068 ONLY)**

**0562 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0562 00-1).
- Clean, Inspect, and Repair (page 0562 00-2).
- Installation (page 0562 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

WP 0561 00

Materials/Parts

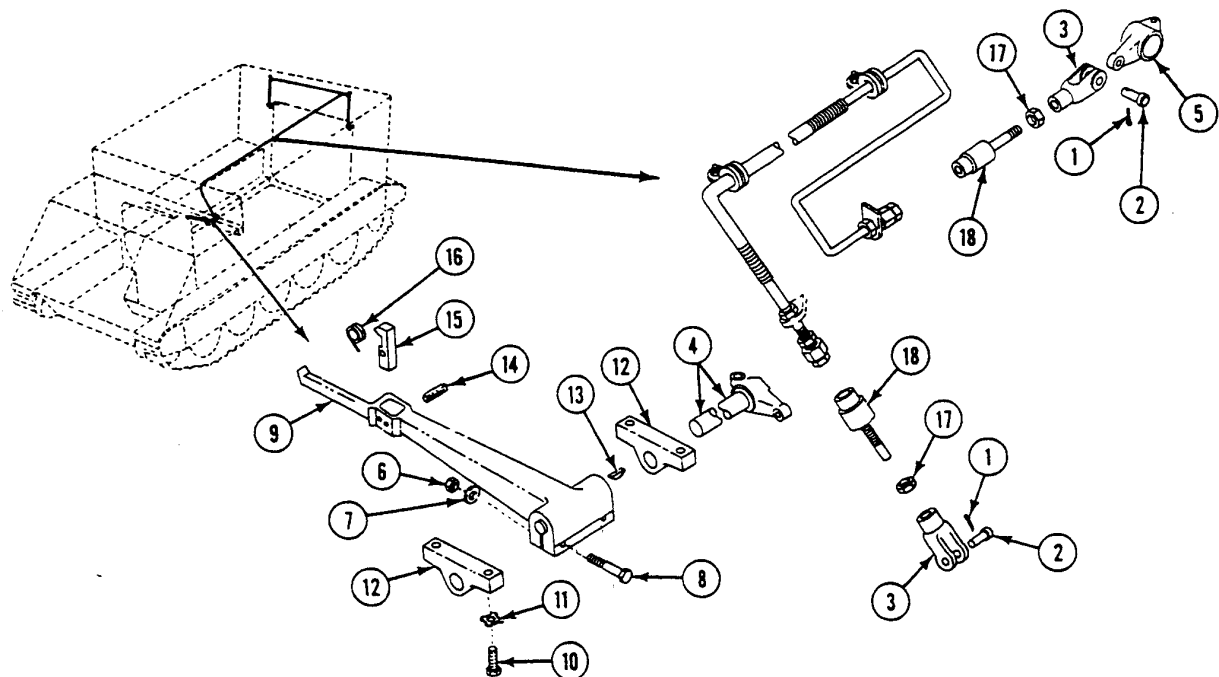
- Cotter pin (2)
- Key washer (4)
- Locknut (4)
- Locknut (2)
- Lockwasher
- Spring pin (2)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)

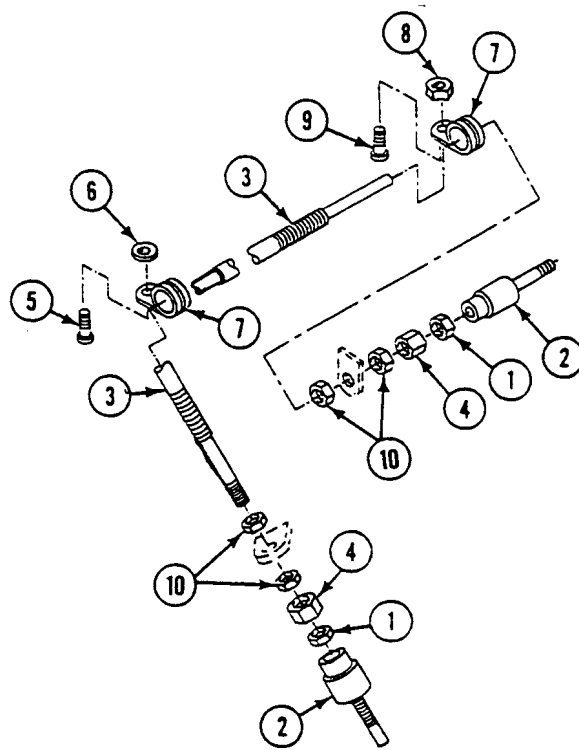
**REMOVAL**

1. Remove two cotter pins (1), headed pins (2), and clevises (3) from arms (4) and (5). Discard cotter pins.
2. Remove two locknuts (6), washers (7), and screws (8) from lever (9). Discard locknuts.
3. Bend back tabs on key washers. Remove four screws (10), key washers (11), and lever assembly (9) from hull top plate. Discard key washers.
4. Remove front support (12), lever (9), key (13), and rear support (12) from arm (4). Remove arm from bulkhead.
5. Remove two spring pins (14), catch (15), and spring (16) from lever (9). Discard spring pins.
6. Loosen two locknuts (17). Remove two clevises (3) and locknuts (17) from two joints (18). Discard locknuts.



**REPLACE RAMP LOCK LEVER AND CABLE (M577A2 AND M1068 ONLY) — Continued****0562 00**

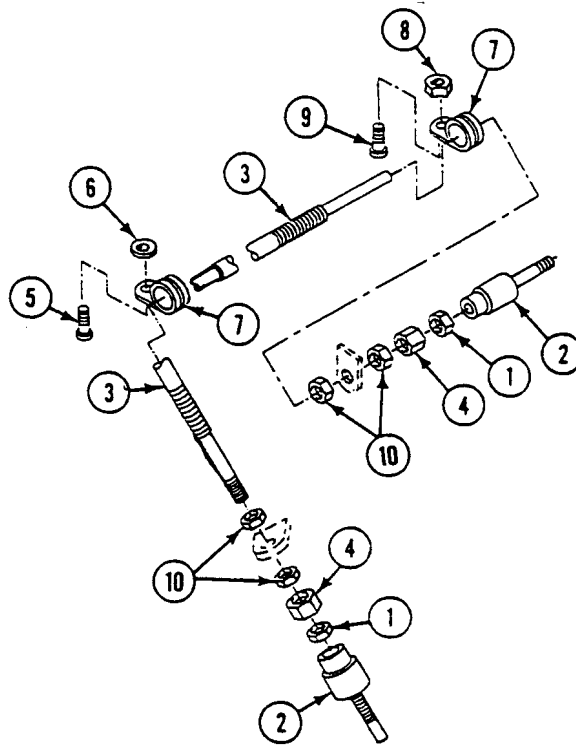
7. Loosen two locknuts (1). Remove two joints (2) and locknuts (1) from cable (3). Discard locknuts.
8. Remove two seal assemblies (4) from cable (3).
9. Remove screw (5), lockwasher (6), and clamp (7) from forward bulkhead weldnut. Discard lockwasher.
10. Remove five nuts (8), screws (9), and clamps (7) from overhead rail.
11. Remove four nuts (10) on cable (3) and on seal assemblies (4) from two hull retainers.
12. Remove two nuts (10) and six clamps (7) from cable (3).

**CLEAN, INSPECT, AND REPAIR**

1. Check cable. Replace parts that are cut, worn, binding, or have stripped threads.
2. Check ball joints. Replace joints that are binding or that have stripped threads.
3. Check ramp lock lever supports and arm. Remove scratches and grooves with fine sandpaper. Replace parts that are worn, cracked, or pitted.

**INSTALLATION**

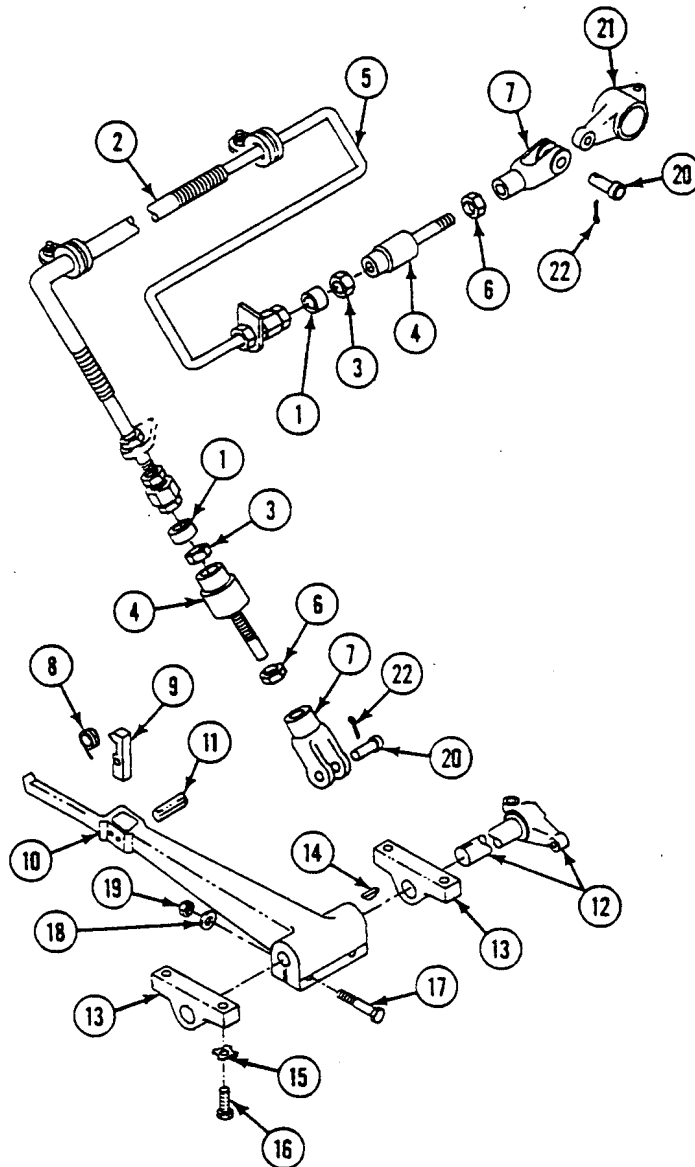
1. Install six clamps (7) and four nuts (10) on cable (3).
2. Install cable (3) in two hull retainers. Secure with four nuts (10).
3. Align five clamps (7) with overhead rail. Secure with five screws (9) and nuts (8).
4. Align clamp (7) with forward bulkhead weldnut. Secure with new lockwasher (6) and screw (5).



REPLACE RAMP LOCK LEVER AND CABLE (M577A2 AND M1068 ONLY) — Continued

0562 00

5. Install two seal assemblies (1) on cable (2).
6. Install two new locknuts (3) and joints (4) on cable (5). Secure joints with locknuts.
7. Install two new locknuts (6) and clevises (7) on two joints (4). Do not tighten locknuts.
8. Align spring (8) and catch (9) with lever (10). Secure with two new spring pins (11).
9. Position arm (12) through bulkhead. Slide rear support (13) into place.
10. Install key (14) on arm (12). Align lever (10) over key. Position front support (13) on arm.
11. Place two supports (13) on hull top plate. Secure with four new key washers (15) and screws (16), bend keys on washers to secure.
12. Install two screws (17), washers (18), and new locknuts (19) in lever (10). Do not tighten locknuts.
13. Install headed pins (20) in clevises (7) and arms (12) and (21). Secure with two new cotter pins (22). Tighten locknuts (19).





14. Adjust ramp lock (WP 0561 00).

**FOLLOW-THROUGH STEPS**

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**WARNING**

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**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10). Check that ramp lock lever and cable work properly.
3. Stop engine (see your -10).

**END OF TASK**



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**REPLACE RAMP LINKAGE (M577A2 AND M1068 ONLY)**

---

**0563 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0563 00-2).
  - Clean, Inspect, and Repair (page 0563 00-3).
  - Installation (page 0563 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

WP 0561 00

Materials/Parts

- Cotter pin (6)
- Key washer (10)
- Locknut (4)
- Square washer

Equipment Condition

- Engine stopped (see your -10)
  - Carrier blocked (see your -10)
  - Ramp lowered (see your -10)
-

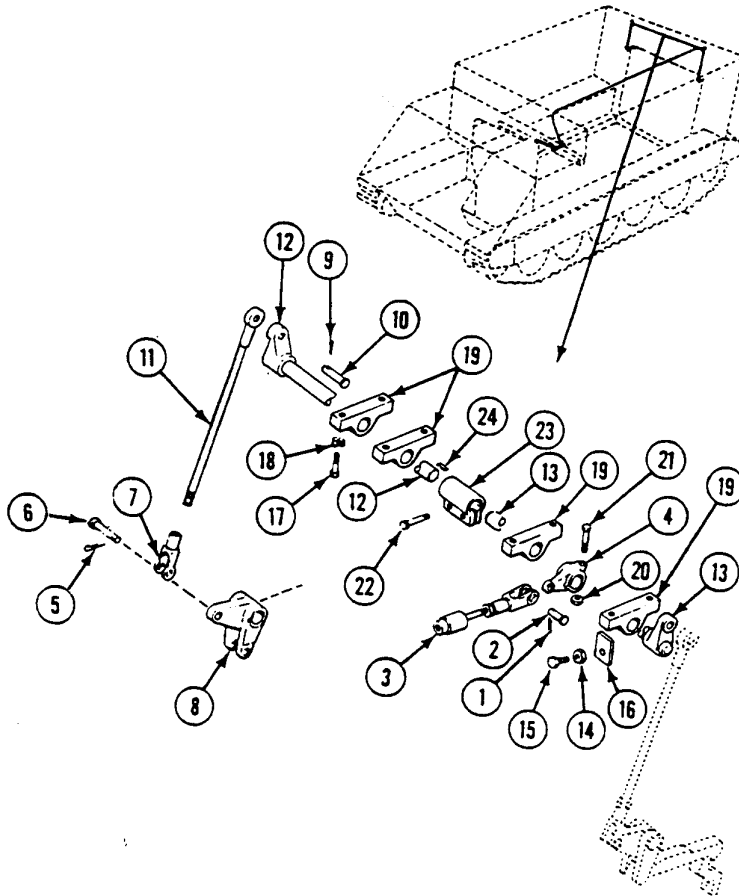
REMOVAL

**WARNING**



**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. Remove cotter pin (1), headed pin (2), and clevis (3) from arm (4). Discard cotter pin.
2. Remove cotter pin (5), headed pin (6), and clevis (7) from lever (8). Discard cotter pin.
3. Remove two cotter pins (9), headed pins (10), and eyebolts (11) from arms (12) and (13). Discard cotter pins.
4. Remove eyebolt (11) from clevis (7).
5. Loosen two locknuts (14). Remove two adjusting screws (15) and locknuts from two hull brackets (16). Discard locknuts.
6. Remove eight screws (17), key washers (18), and four supports (19) with arm assembly from hull top plate. Discard key washers.
7. Remove locknut (20) and screw (21) from arm (4). Discard locknut.
8. Remove two screws (22) from connector (23).
9. Remove arm (12) from connector (23) and key (24) from arm.

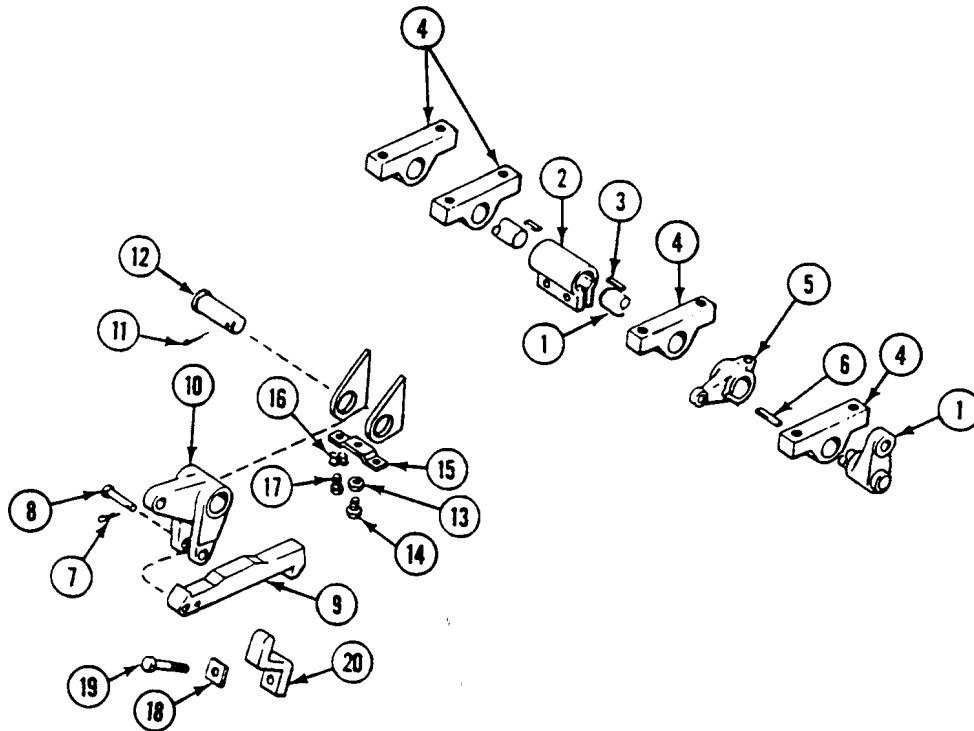


10. Remove arm (1) from connector (2) and key (3) from arm (1).

**NOTE**

**Both sides are disassembled the same way.**

11. Remove two supports (4), lever (5), and key (6) from arm (1).
12. Remove cotter pin (7), headed pin (8), and latch (9) from lever (10). Discard cotter pin.
13. Remove cotter pin (11), headed pin (12), and lever (10) from hull bracket.
14. Loosen locknut (13). Remove adjusting screw (14) and locknut from plate (15). Remove locknut from screw. Discard locknut.
15. Bend back tabs on key washers (16). Remove two screws (17), key washers (16), and plate (15) from hull bracket.
16. Bend back corner on square washer (18). Remove screw (19), square washer (18), and catch (20) from ramp. Discard square washer.

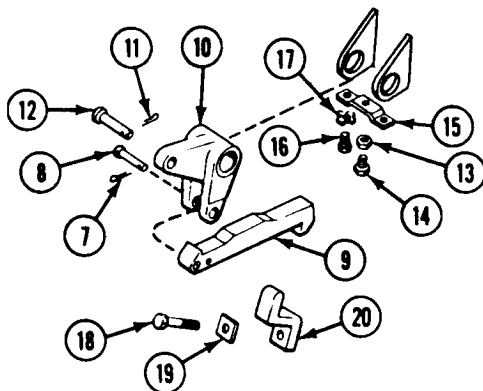


**CLEAN, INSPECT, AND REPAIR**

1. Check arms, supports, latch, catch, and lever. Remove scratches and grooves with fine sandpaper. Replace parts that are worn or pitted.

**INSTALLATION**

1. Place catch (20) on ramp. Secure with new square washer (19) and screw (18). Bend corner on square washer to secure screw.
2. Place plate (15) on hull bracket. Secure with two new key washers (17) and screws (16). Bend tabs on key washers to secure screws.
3. Install new locknut (13) on adjusting screw (14). Install screw in plate (15). Do not tighten locknut.
4. Align lever (10) with hull bracket. Secure with headed pin (12) and new cotter pin (11).
5. Align latch (9) with lever (10). Secure with headed pin (8) and new cotter pin (7).

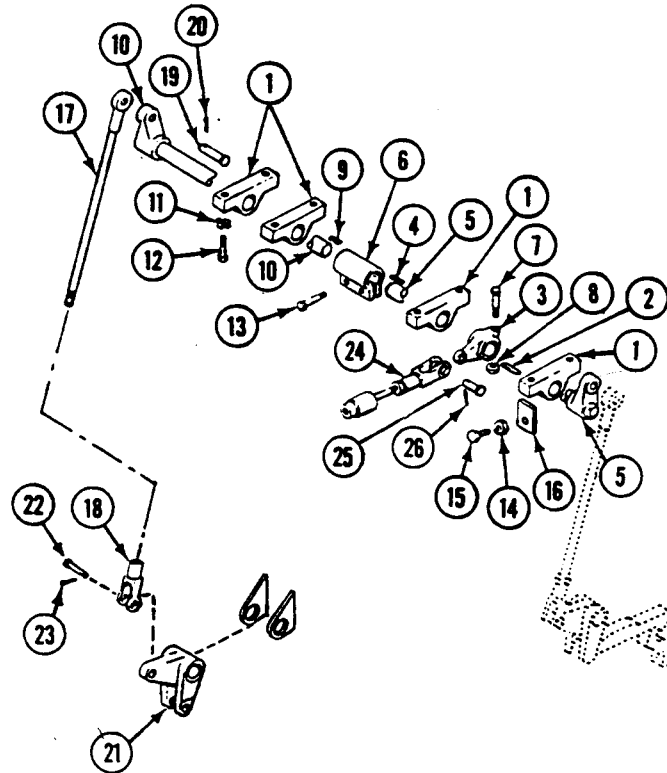


6. Install one support (1), key (2), arm (3), one support (1), and key (4) on arm (5). Install arm (5) in connector (6).
7. Secure arm (3) on arm (5) with screw (7) and new locknut (8).
8. Install two supports (1) and key (9) on arm (10).
9. Align four supports (1) with hull top plate. Secure with eight new key washers (11) and screws (12). Bend tabs on key washers to secure screws.
10. Insert arm (10) in connector (6). Install two screws (13) in connector (6). Tighten screws.
11. Install two new locknuts (14) on two screws (15). Install screws in hull brackets (16). Do not tighten locknuts.
12. Install eyebolt (17) in clevis (18).
13. Align two eyebolts (17) with arms (10) and (5). Secure with two headed pins (19) and new cotter pins (20).
14. Align clevis (18) with lever (21). Secure with headed pin (22) and new cotter pin (23).

**REPLACE RAMP LINKAGE (M577A2 AND M1068 ONLY) — Continued**

**0563 00**

15. Align clevis (24) with arm (3). Secure with headed pin (25) and new cotter pin (26).



16. Tighten all locknuts.

17. Adjust ramp lock (WP 0561 00).

**FOLLOW-THROUGH STEPS**

**WARNING**



**Falling ramp could cause severe injuries. Keep personnel clear of ramp area.**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10). Check that ramp lever and cable operate properly.
3. Stop engine (see your -10).

**END OF TASK**





**REPLACE WIRE ROPE AND PULLEYS (ALL EXCEPT M1064)**

**0564 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0564 00-1).
- Installation (page 0564 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

- Cotter pin (3)
- Spring pin

Personnel Required

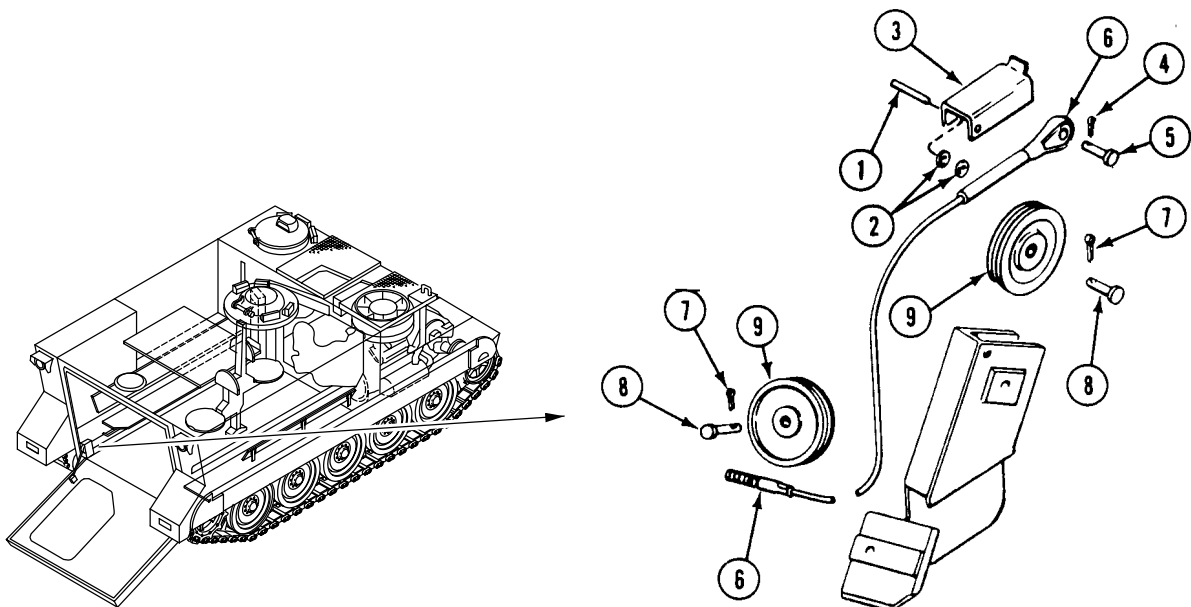
Unit Mechanic

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Rear floor plate removed (WP 0436 00)
- Wire rope disconnected from ramp cylinder (WP 0593 00)

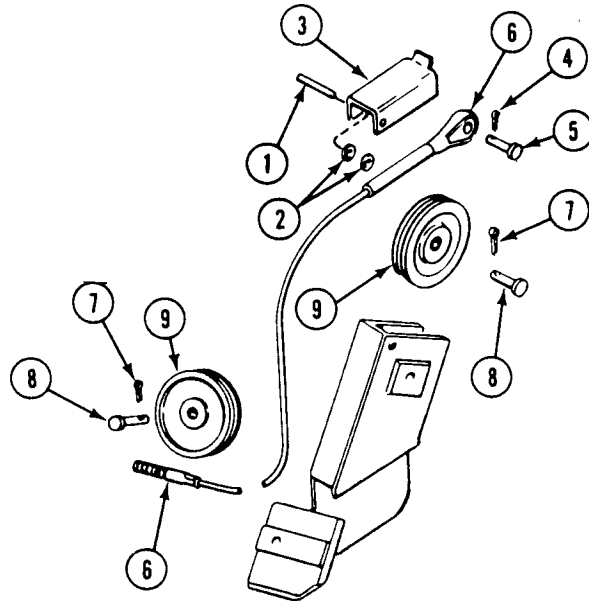
**REMOVAL**

1. Remove spring pin (1), two washers (2), and guard (3) from upper pulley mount. Discard spring pin.
2. Remove cotter pin (4), headed pin (5), and wire rope (6) from ramp mount bracket. Discard cotter pin.
3. Remove two cotter pins (7), headed pins (8), and pulleys (9) from pulley mount. Discard cotter pins.
4. Remove wire rope (6) from carrier.



**INSTALLATION**

1. Route wire rope (6) through pulley mount.
2. Align two pulleys (9) with pulley mount. Secure with two headed pins (8) and new cotter pins (7).
3. Align wire rope end fitting with ramp mount bracket. Secure with headed pin (5) and new cotter pin (4).
4. Align guard (3) and two washers (2) with upper pulley mount. Secure with new spring pin (1).



**FOLLOW-THROUGH STEPS**

1. Connect wire rope to ramp cylinder (WP 0593 00).
2. Install rear floor plate (WP 0436 00).
3. Raise ramp (see your -10). Check that wire rope and pulleys work right.
4. Stop engine (see your -10).

**END OF TASK**

**REPLACE WIRE ROPE AND PULLEYS (M1064 ONLY)**

**0565 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0565 00-1).  
 Installation (page 0565 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Rear floor plate removed (WP 0437 00)  
 Wire rope disconnected from ramp cylinder  
 (WP 0593 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

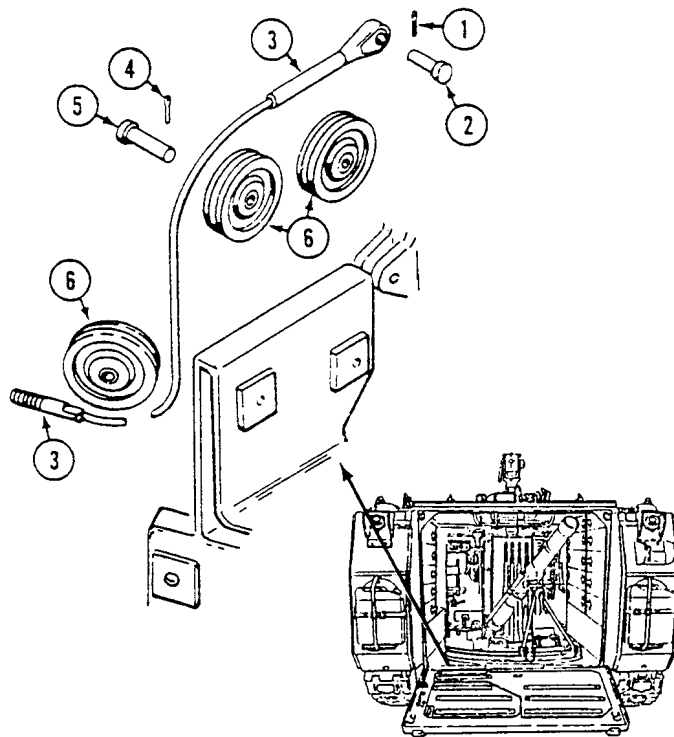
Cotter pins (4)

Personnel Required

Unit Mechanic

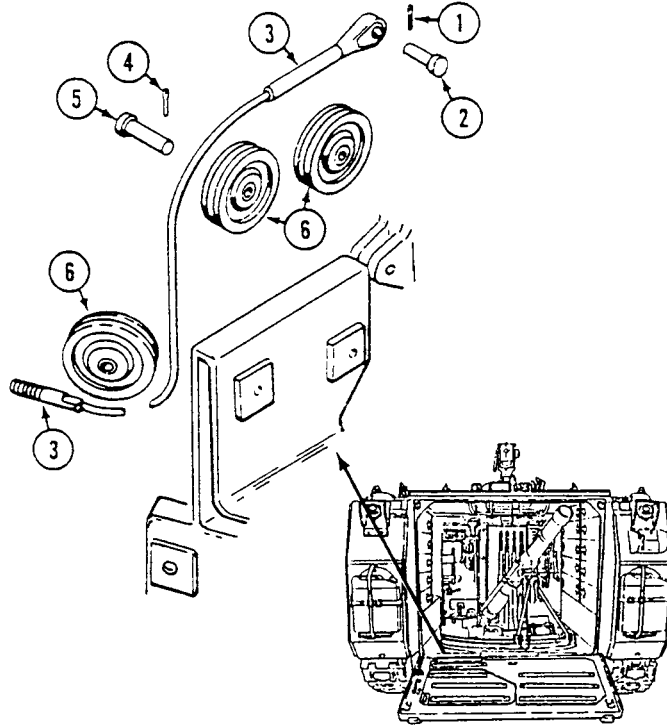
**REMOVAL**

1. Remove cotter pin (1), headed pin (2), and wire rope (3) from ramp mount bracket. Discard cotter pin.
2. Remove three cotter pins (4), headed pins (5), and pulleys (6) from pulley mount. Discard cotter pins.
3. Remove wire rope (3) from carrier.



**INSTALLATION**

1. Route wire rope (3) through pulley mount.
2. Align three pulleys (6) with pulley mount. Secure with three headed pins (5) and new cotter pins (4).
3. Align wire rope eye with ramp mount bracket. Secure with headed pin (2) and new cotter pin (1).



**FOLLOW-THROUGH STEPS**

1. Connect wire rope to ramp cylinder (WP 0593 00).
2. Install rear floor plate (WP 0437 00).
3. Start engine (see your -10).
4. Raise and lower ramp several times (see your -10). Check to see that wire rope and pulleys operate properly.
5. Raise and lock ramp (see your -10).
6. Stop engine (see your -10).

**END OF TASK**

**REPLACE RAMP DOOR SEAL**

**0566 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0566 00-1).  
 Installation (page 0566 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

References

See your -10  
 WP 0556 00

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp raised and locked (see your -10)

Personnel Required

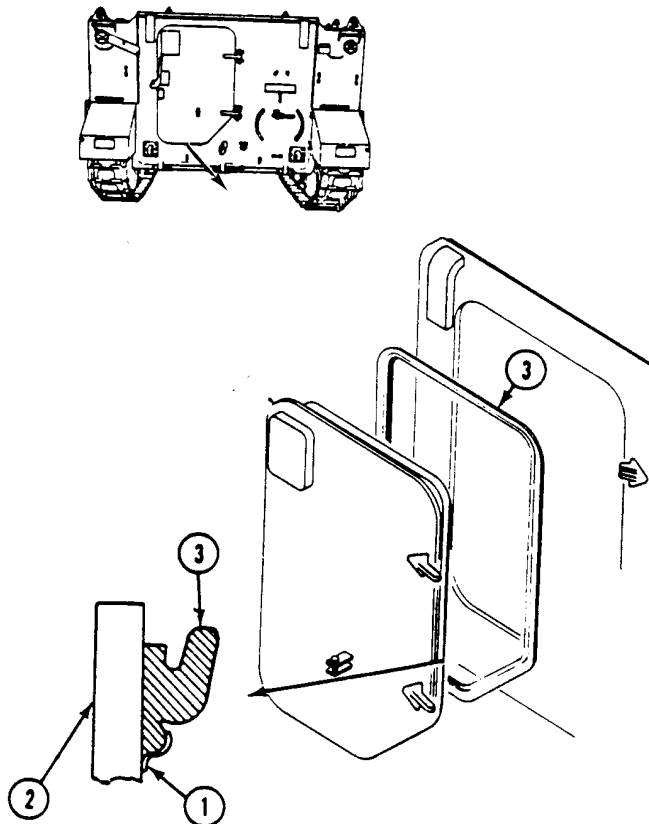
Unit Mechanic

**REMOVAL**

**NOTE**

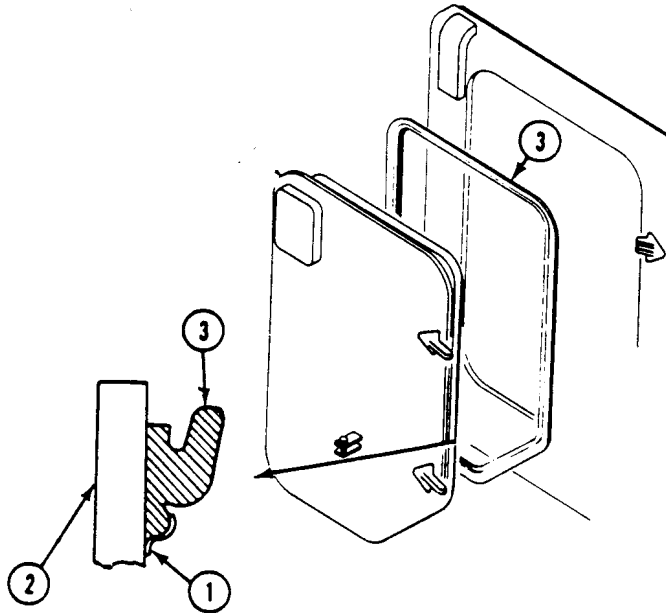
**Check ramp door seal in same manner as ramp seal (WP 0556 00). Chalk pattern should be evenly distributed over interior sealing lip of ramp door. If pattern is uneven, adjust door handle (WP 0569 00). If adjustment of handle does not solve problem, notify your supervisor.**

1. Open ramp door (see your -10).
2. Bend five retainer strips (1) on door (2) away from door seal (3).
3. Remove damaged seal (3) from door (2).



**INSTALLATION**

1. Place door seal (3) on door (2).
2. Bend five retainer strips (1) on door (2) down on seal (3) to secure in place.

**FOLLOW-THROUGH STEPS**

1. Close ramp door to check that ramp door seal works right (see your -10).
2. Perform chalk test (WP 0556 00).

**END OF TASK**

**REPLACE RAMP DOOR HOOK AND SPRING (M981 AND M1064 ONLY)**

**0567 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0567 00-1).  
 Installation (page 0567 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

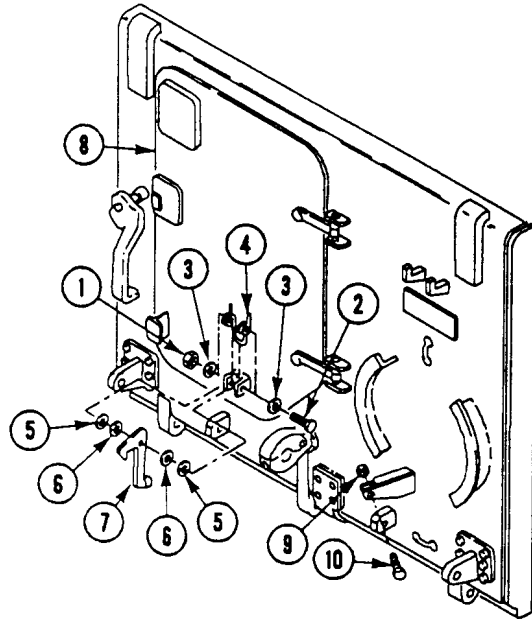
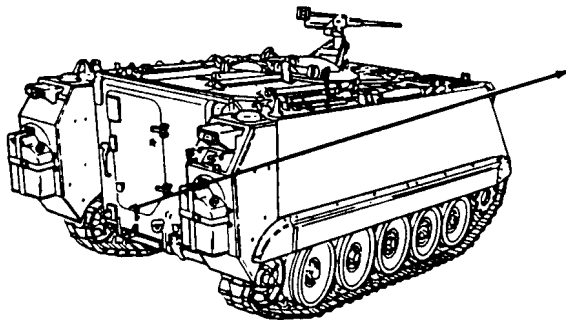
Ramp raised and locked (see your -10)

Materials/Parts

Locknut (2)

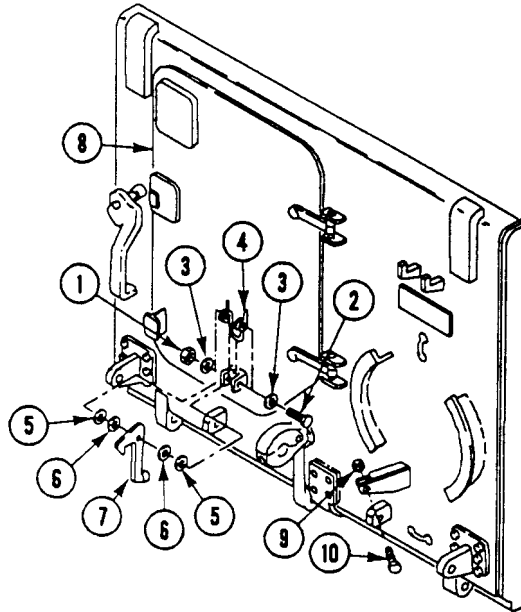
**REMOVAL**

1. Remove locknut (1), screw (2), two washers (3), spring (4), two spacers (5), two rubber washers (6), and hook (7) from mount on door (8). Discard locknut.
2. Remove locknut (9) and screw (10) from mount on ramp. Discard locknut.



**INSTALLATION**

1. Install screw (10) in mount on ramp with new locknut (9).
2. Align hook (7), two rubber washers (6), spacers (5), spring (4), and two washers (3) with mount on door (8). Secure with screw (2) and new locknut (1).

**FOLLOW-THROUGH STEPS**

1. Open and close ramp door to check that ramp door hook and spring work right.

**END OF TASK**



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**REPLACE RAMP DOOR HOOK AND SPRING (ALL EXCEPT M981 AND M1064)**

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**0568 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0568 00-2).
  - Clean, Inspect, and Repair (page 0568 00-2).
  - Installation (page 0568 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Locknut (2)

Ramp raised and locked (see your -10)

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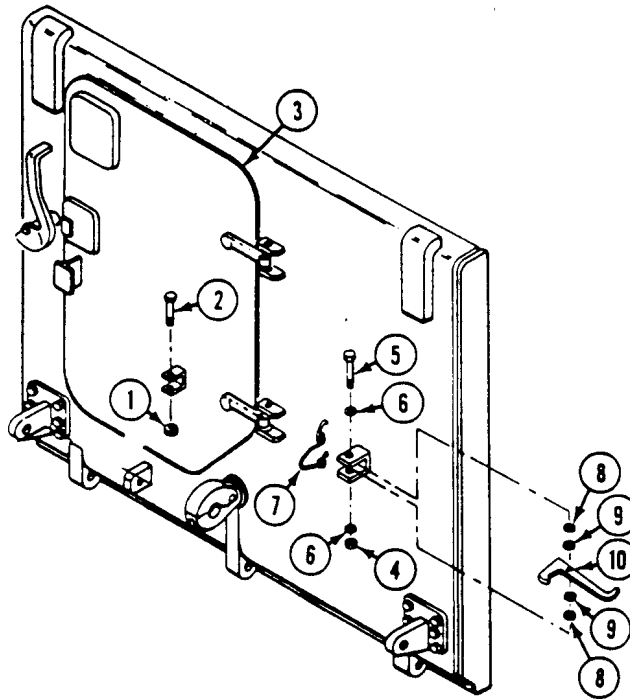
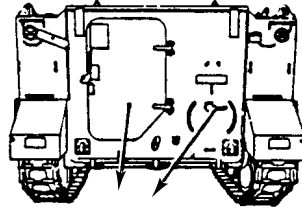
**REPLACE RAMP DOOR HOOK AND SPRING (ALL EXCEPT M981 AND M1064) — Continued**


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0568 00

**REMOVAL**

1. Remove locknut (1) and screw (2) from mount on ramp door (3). Discard locknut.
2. Remove locknut (4), screw (5), two washers (6), spring (7), two spacers (8), two rubber washers (9), and hook (10) from mount on ramp. Discard locknut.

**CLEAN, INSPECT, AND REPAIR**

1. Check hook. Replace cracked or worn hook.
2. Check spring. Replace broken or weak spring.
3. Check threaded parts. Remove burrs. Replace parts that have stripped threads.
4. Check rubber washers. Replace cracked washers.

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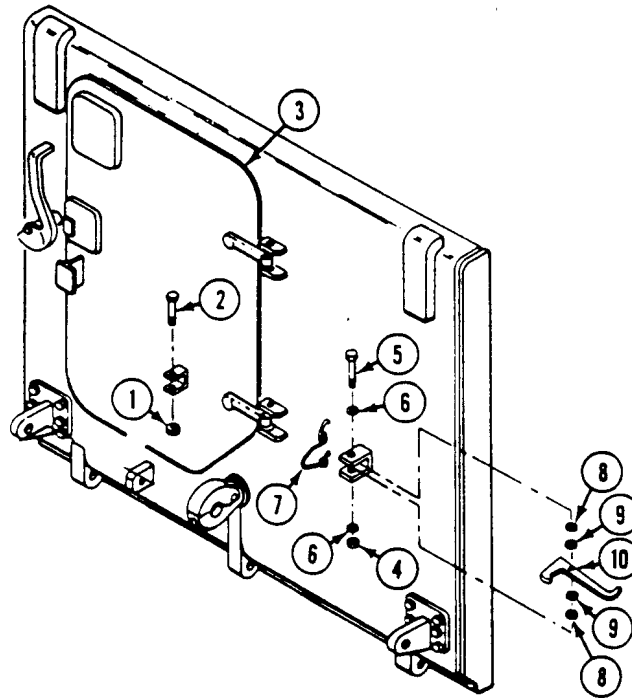
**REPLACE RAMP DOOR HOOK AND SPRING (ALL EXCEPT M981 AND M1064) — Continued**

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0568 00

**INSTALLATION**

1. Align hook (10), two rubber washers (9), spacers (8), spring (7), and two washers (6) with mount on ramp. Secure with screw (5) and new locknut (4).
2. Install screw (2) in mount on ramp door (3). Secure with new locknut (1).

**FOLLOW-THROUGH STEPS**

1. Open and close ramp door to check that ramp door hook and spring work right.

**END OF TASK**



**REPLACE RAMP DOOR HANDLES AND SHAFT**

**0569 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0569 00-1).
- Installation (page 0569 00-2).
- Adjustment (page 0569 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

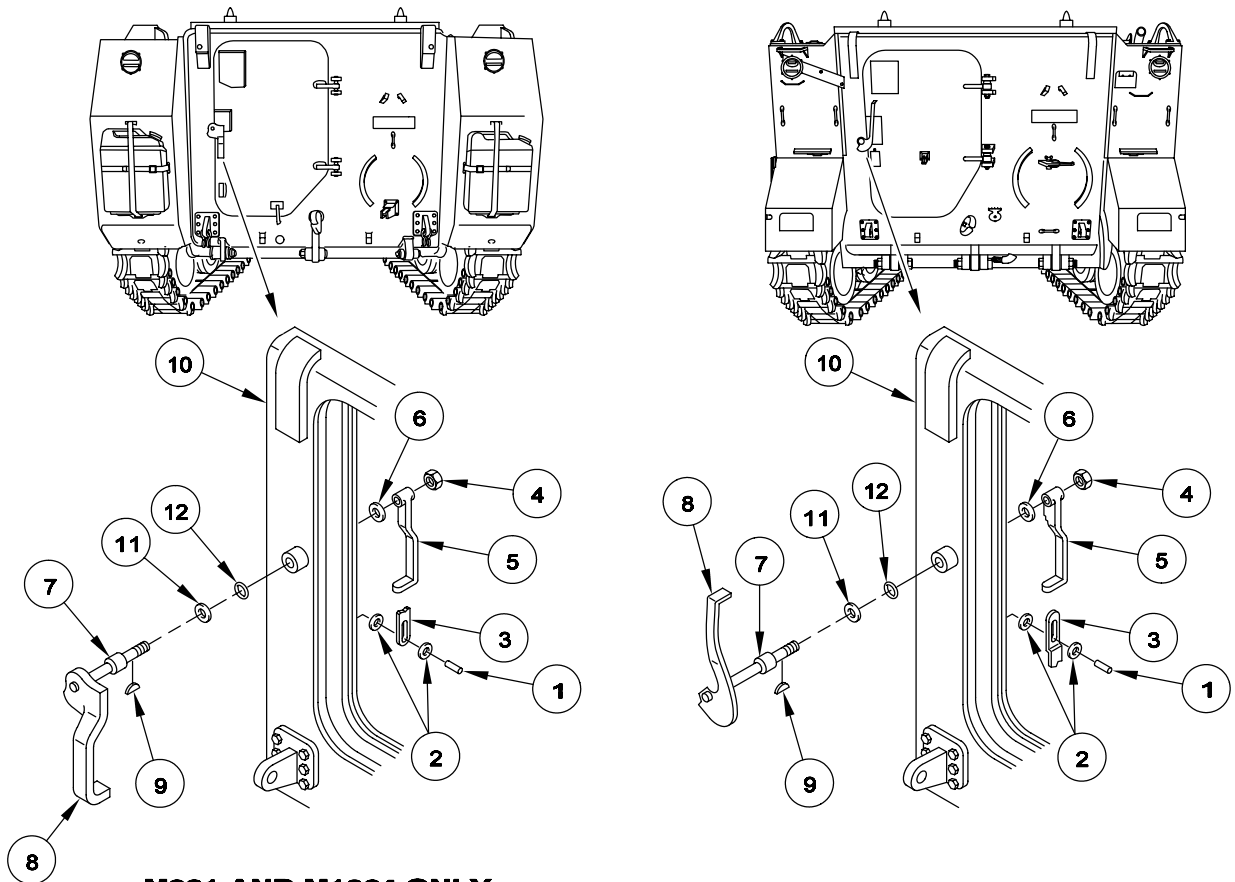
- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp raised and locked (see your -10)

Materials/Parts

- Locknut
- Preformed packing
- Spring pin

**REMOVAL**

1. Remove spring pin (1), two washers (2), and door lock (3) from mount on ramp. Discard spring pin.
2. Remove locknut (4), inside handle (5), inside washer(s) (6) from shaft (7) of outside handle (8). Discard locknut.
3. Remove key (9) from shaft (7).
4. Remove handle (8) from ramp (10). Remove outside washer(s) (11) and packing (12) from handle. Discard packing.



**M981 AND M1064 ONLY**

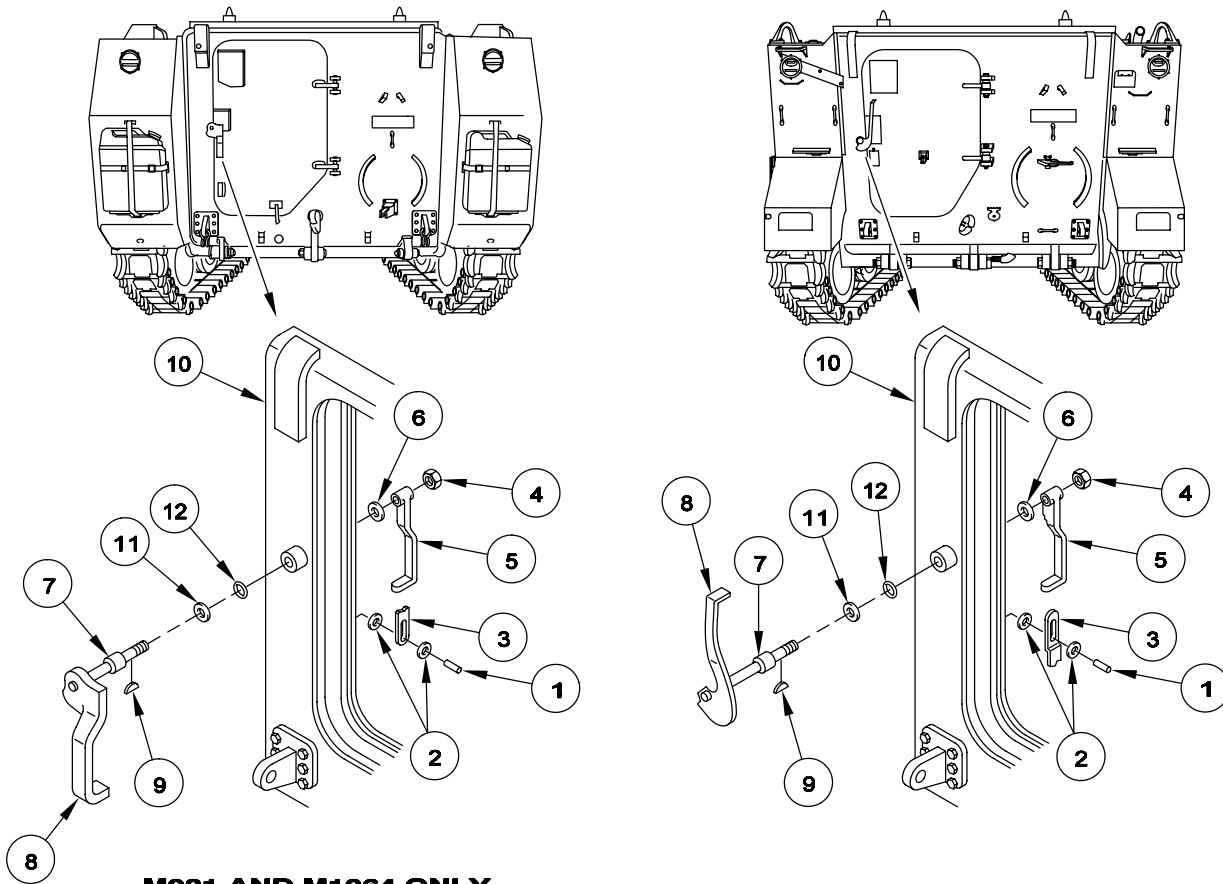
**INSTALLATION**

1. Install outside washer(s) (11), new packing (12), and handle (8) in ramp (10).
2. Install key (9) on shaft of outside handle (8).
3. Install inside washer(s) (6), and inside handle (5) on shaft (7) of outside handle (8). Secure with new locknut (4).

**NOTE**

**On M981 and M1064 carriers with external fuel tanks, the outside handle is mounted 180° differently from other carriers. Make sure key (9) fits properly into handle (5).**

4. Align door lock (3) and two washers (2) with mount on ramp (10). Secure with new spring pin (1).



**M981 AND M1064 ONLY**

**ADJUSTMENT****NOTE**

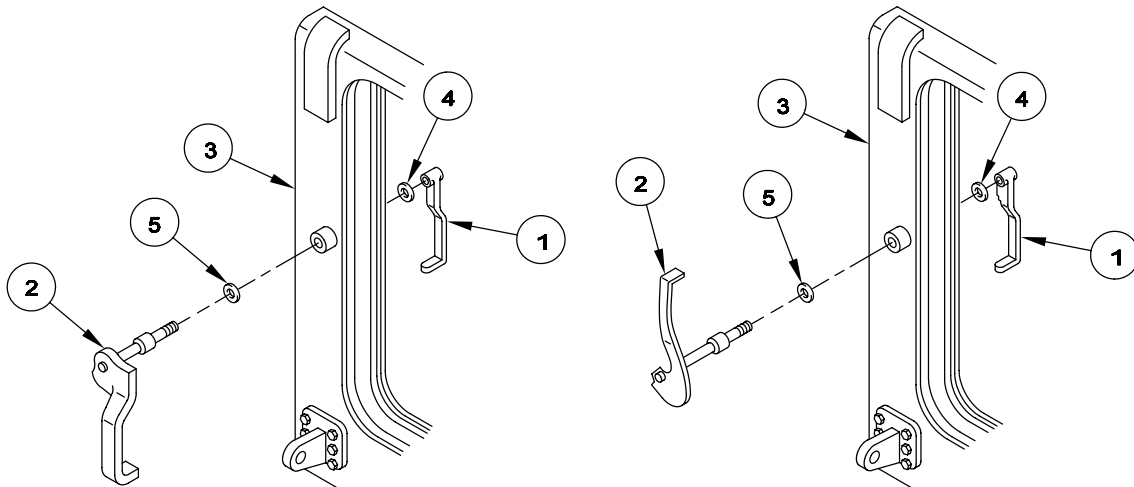
**When adjusted properly, door handle will have no end play. Ramp door should be flush with ramp in the closed position.**

1. Remove handles (1) and (2) from ramp (3). See REMOVAL Steps 2 - 4.
2. Remove or install washers (4) and (5) on shaft of handle (2) from inside and outside ramp (3) to obtain proper fit.

**NOTE**

**Install washers (4) on inside and washers (5) on outside of ramp up to a maximum of nine at each position.**

3. Install handles (1) and (2) on ramp. See INSTALLATION Steps 1 - 4.
4. Repeat steps as needed to obtain proper adjustment.



**M981 AND M1064 ONLY**

**FOLLOW-THROUGH STEPS**

1. Open and close ramp door to check that ramp door handles are installed properly.
2. Perform chalk test (WP 0556 00).

**END OF TASK**





**REPLACE RAMP SEAL**

**0570 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0570 00-1).  
 Installation (page 0570 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Tools and Special Tools

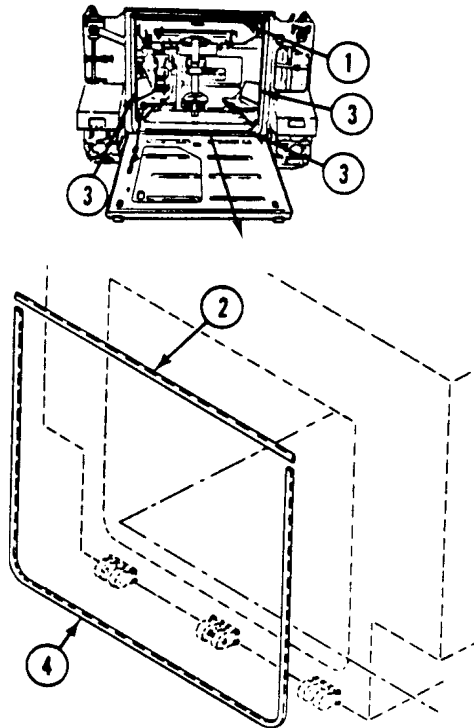
General Mechanic's Tool Kit (WP 0780 00, Item 29)

Personnel Required

Unit Mechanic

**REMOVAL**

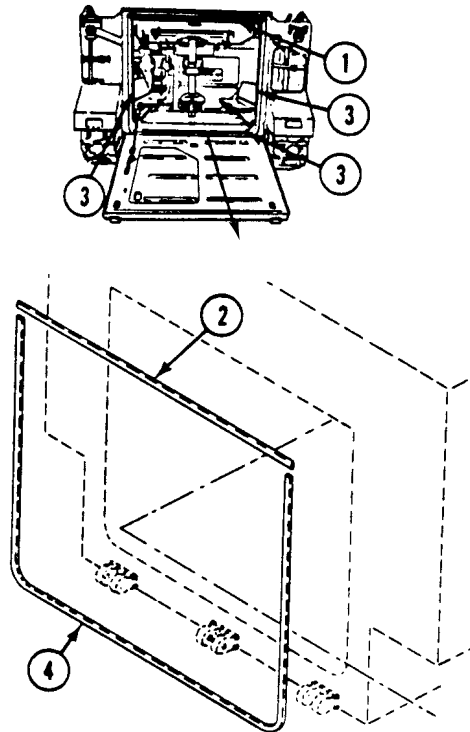
1. Bend retaining strip (1) up. Remove upper seal (2) from hull rear bulkhead.
2. Bend three retaining strips (3) up. Remove lower seal (4) from hull rear bulkhead.



**INSTALLATION****NOTE**

Trim seal to fit.

1. Place lower seal (4) on rear bulkhead. Bend three retaining strips (3) down on seal to secure in place.
2. Place upper seal (2) on rear bulkhead. Bend retaining strip (1) down on seal to secure in place.

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Perform ramp seal chalk test (WP 0556 00).
3. Stop engine (see your -10).

**END OF TASK**

**REPLACE/REPAIR RAMP VISION PORT AND SHIELD (M901A1 AND M981 ONLY)**

**0571 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0571 00-1).
- Installation (page 0571 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

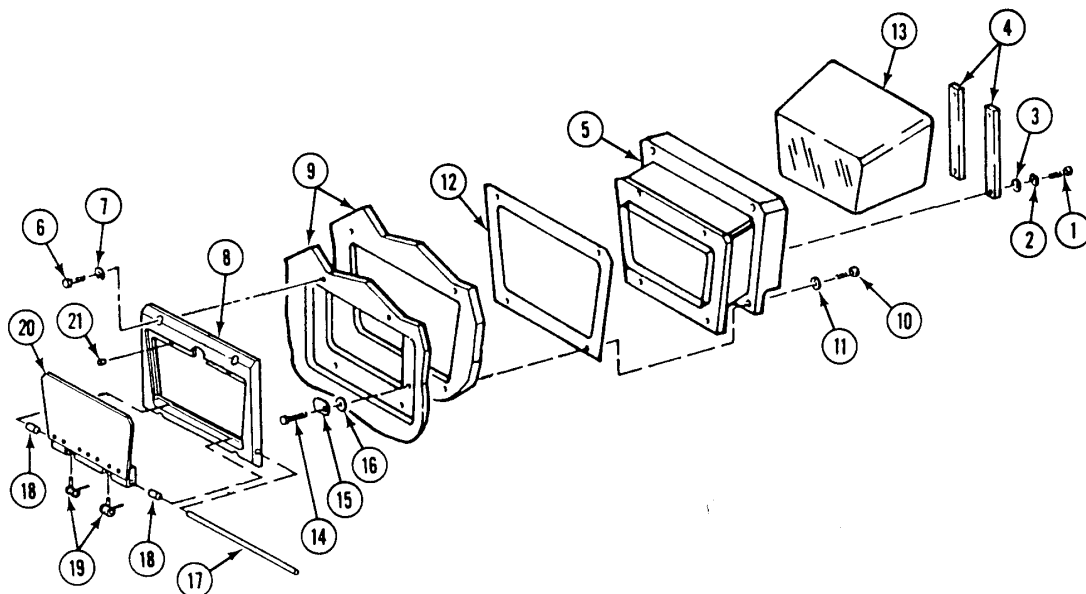
- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp raised (see your -10)
- Rear access door opened (see your -10)

Materials/Parts

- Corrosion preventive compound (WP 0782 00, Item 17)
- Grease (WP 0782 00, Item 24)
- Sealing compound (WP 0782 00, Item 63)
- Gasket
- Lockwasher (4)
- Preformed packing

**REMOVAL**

1. Remove four screws (1), lockwashers (2), washers (3), and two mending plates (4) from housing (5). Discard lockwashers.
2. Remove four screws (6), washers (7), and shield (8) from ramp hatch (9).
3. Remove four screws (10), washers (11), housing (5), gasket (12), and vision block (13) from ramp hatch (9). Discard gasket.
4. Remove two screws (14), clamps (15), and shims (16) from ramp hatch (9).
5. Remove shaft (17), two spacers (18), and two springs (19) from shield (8).
6. Remove door (20) and preformed packing (21) from shield (8). Discard packing.



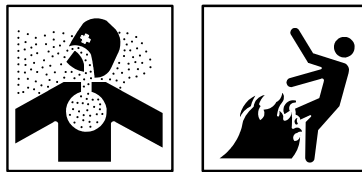
**INSTALLATION**

1. Install door (20) and new preformed packing (21) on shield (8).
2. Lubricate shaft (17) lightly with grease.
3. Install two spacers (18), two springs (19), and one shaft (17) on shield (8).
4. Apply corrosion preventive compound to two screws (14).
5. Install two shims (16), clamps (15), and screws (14) on ramp hatch (9).

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**WARNING**

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**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

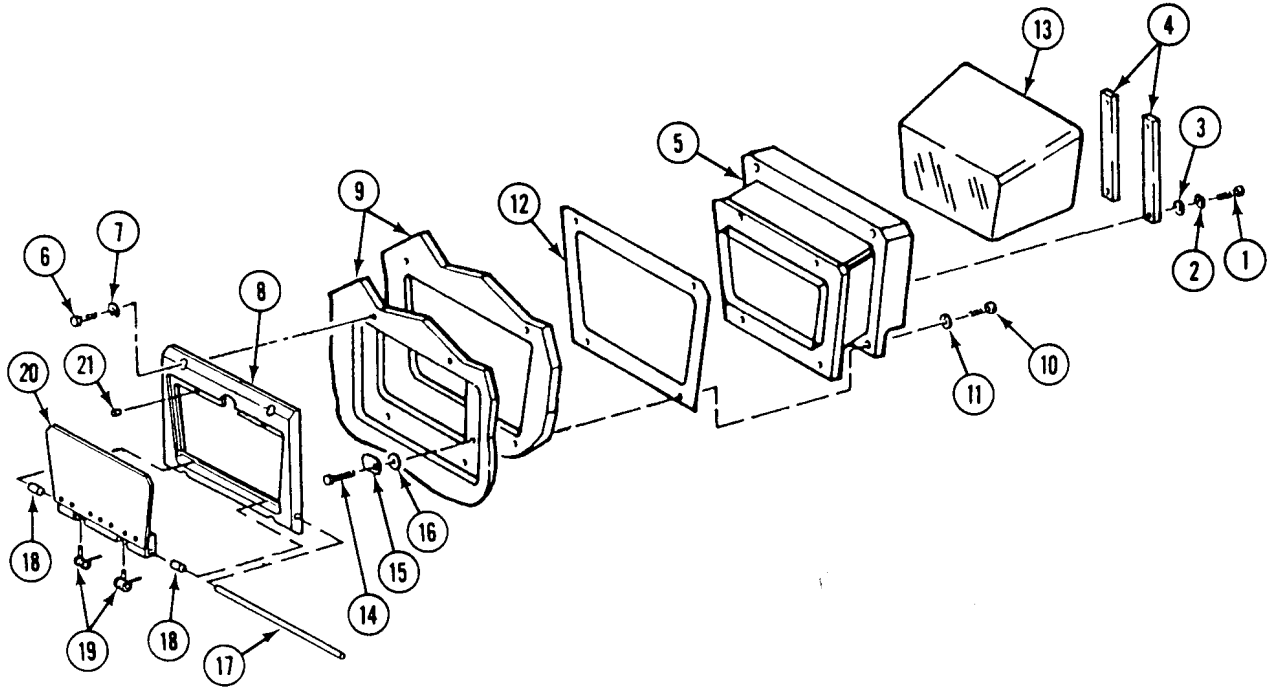
**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

6. Install vision block (13) in housing (5). Use sealing compound.
7. Apply corrosion preventive compound to four screws (10).
8. Install new gasket (12) and housing (5) on ramp hatch (9). Secure with four washers (11) and screws (10).
9. Apply corrosion preventive compound to four screws (6).
10. Install shield (8) on ramp hatch (9). Secure with four washers (7) and screws (6).
11. Apply corrosion preventive compound to four screws (1).

**REPLACE/REPAIR RAMP VISION PORT AND SHIELD (M901A1 AND M981 ONLY) — Continued**

0571 00

12. Install two mending plates (4) on housing (5). Secure with four washers (3), new lockwashers (2), and screws (1).



**FOLLOW-THROUGH STEPS**

1. Close rear access door (see your -10).

**END OF TASK**



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**REPLACE RAMP BRACKET (M981 AND M1064 ONLY)**

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**0572 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0572 00-2).  
Installation (page 0572 00-2).

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**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp raised and locked (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

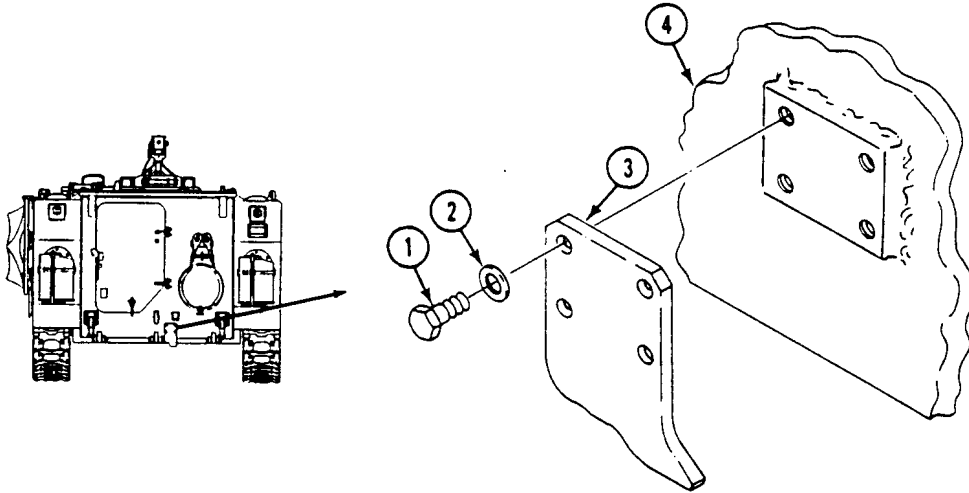
Personnel Required

Unit Mechanic

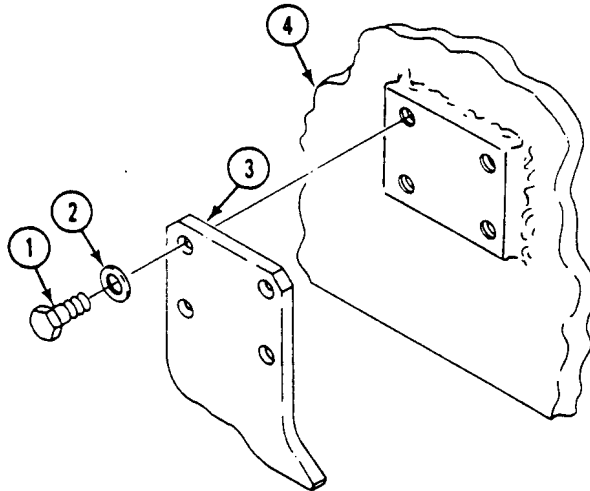
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**REPLACE RAMP BRACKET (M981 AND M1064 ONLY) — Continued****0572 00****REMOVAL**

1. Remove four screws (1), washers (2), and bracket (3) from ramp (4).

**INSTALLATION**

1. Install bracket (3) on ramp (4). Secure with four screws (1) and washers (2).

**END OF TASK**



**REPLACE RAMP DOOR STOP BRACKET (M981 AND M1064 ONLY)**

**0573 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0573 00-1).  
 Installation (page 0573 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

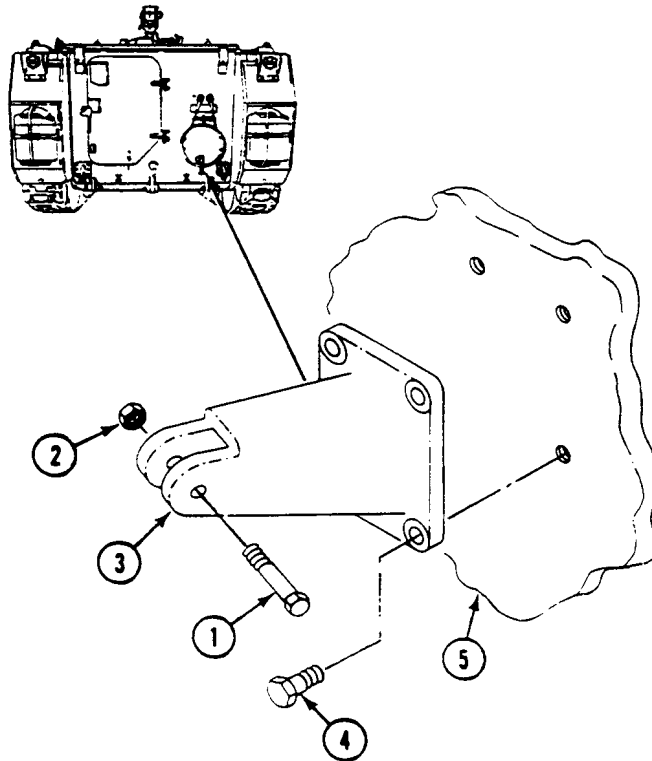
Ramp raised and locked (see your -10)

Materials/Parts

Locknut

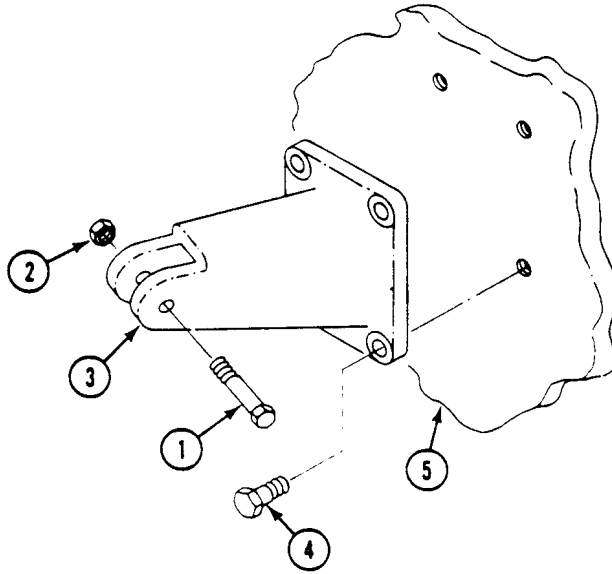
**REMOVAL**

1. Remove screw (1) and locknut (2) from bracket (3). Discard locknut.
2. Remove four screws (4) and bracket (3) from ramp (5).



**INSTALLATION**

1. Install bracket (3) on ramp (5). Secure with four screws (4).
2. Install screw (1) and new locknut (2) on bracket (3).

**END OF TASK**

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**REPLACE DRAIN PLUGS (M981 AND M1064 ONLY)**

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**0574 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0574 00-1).  
 Installation (page 0574 00-2).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp raised and locked (see your -10)

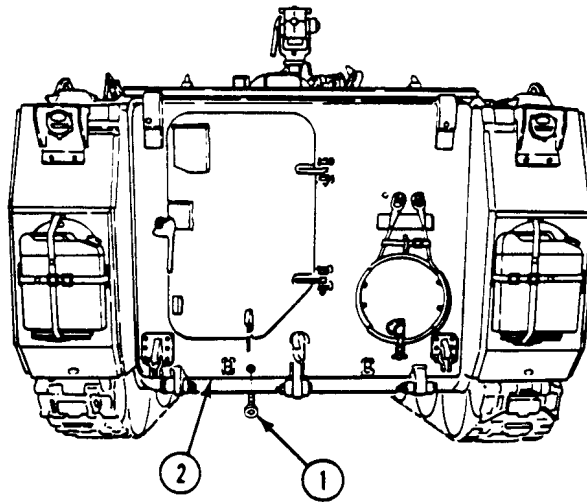
Materials/Parts

Antiseize compound (WP 0782 00, Item 8)

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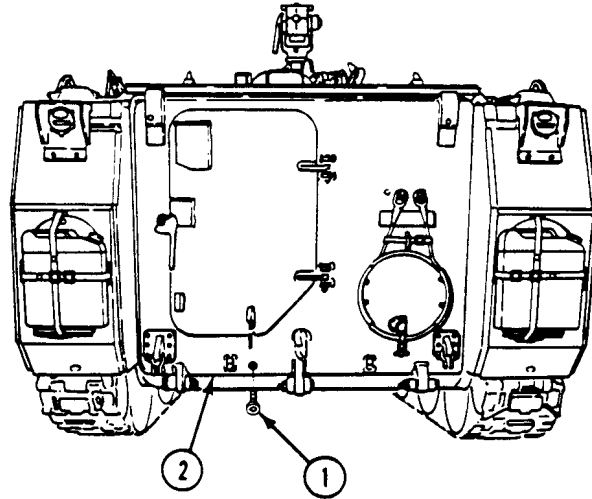
**REMOVAL**

1. Remove three pipe plugs (1) from ramp (2).



**INSTALLATION**

1. Apply thin coat of antiseize compound to external tapered threads of three pipe plugs (1).
2. Install three pipe plugs (1) on ramp (2).

**END OF TASK**

CHAPTER 26

UNIT MAINTENANCE INSTRUCTIONS  
FOR WELDING - CAUTIONS AND INSTRUCTIONS

---

**WORK PACKAGE INDEX**

---

<u>Title</u>	<u>Sequence No.</u>
REPAIR HULL BY WELDING.....	0575 00



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**REPAIR HULL BY WELDING**

**0575 00**

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**THIS WORK PACKAGE COVERS:**

- Safety Precautions (page 0575 00-1).
  - Aluminum Castings (page 0575 00-2).
  - Magnesium Castings (page 0575 00-2).
  - External Fuel Tanks (M981 and M1064 only)(page 0575 00-3).
  - Plastic Molding Material (page 0575 00-3).
  - Welding Near Mortar Ring (M1064 Only) (page 0575 00-4).
  - General Welding Instructions (page 0575 00-4).
  - MIG Welding Method (page 0575 00-5).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

References

- TC 9-237
- TM 43-0139
- TB 43-0242

Tools and Special Tools

- Body and Fender Repair Kit (WP 0780 00, Item 41)
- Trailer Mounted Welding Shop (WP 0780 00, Item 85)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Battery ground strap disconnected (WP 0294 00)
- Personnel heater power cable disconnected (see your -10)

Materials/Parts

- Cleaning compound solvent (WP 0782 00, Item 16)

Personnel Required

Metal Worker 44B10

---

**SAFETY PRECAUTIONS**

1. Wear clothing such as leather or heavy denim. Do not wear clothing with loose pockets, trouser cuffs, or short or rolled-up sleeves.
2. Do not expose bare skin to welding arc.
3. Do not look directly at welding arc unless you are wearing a welding hood.
4. Wear flash goggles or tinted safety glasses (No. 2) in welding area.
5. Disconnect power source before changing parts or making equipment repairs.
6. Do not touch drive mechanism or any part of the electrode.
7. Make sure welding area has plenty of fresh air without being drafty. Remove all toxic and combustible material.
8. Make sure all electrical and gas connections are tight.
9. Do not touch any metal in welding area with bare hands. Aluminum does not change color when hot.
10. Do not weld in the fuel compartment where sealing compound has been applied.
11. Use a welding screen to protect personnel from arc flash.
12. When electric arc, or resistance welding on a carrier with the A20 (30/60k BTU) heater installed, the following action must be taken to avoid electrical damage to the circuit boards.
  - a. Disconnect the vehicle power cable from the heater MS Power Connector. Disconnect the power cable at the HEATER, not from the control panel (WP 0619 00 or WP 0621 00).
  - b. Welding ground point must be located as close as possible to the welding area. If heater is located between the area being welded and welding ground point, REMOVE THE HEATER (WP 0619 00 or WP 0621 00).

**ALUMINUM CASTINGS****CAUTION**

Heat distortion during welding will damage aluminum castings. Do not attempt to repair aluminum castings by welding.

1. Welding on final drive aluminum casting is not authorized. Do not attempt to weld on the final drive housing assembly.

**MAGNESIUM CASTINGS****WARNING**

Magnesium may catch on fire if welded on or exposed to high temperatures. Do not weld on magnesium castings or expose them to high temperatures.

1. Welding on fan magnesium castings is not authorized. Do not attempt to weld on these parts.

**WARNING**

Fine particles of magnesium can catch fire and burn you. Be very careful when filing or grinding on magnesium. Use grinding equipment marked **FOR MAGNESIUM GRINDING ONLY**. Keep a Class D fire extinguisher nearby.

2. You must observe the following safety precautions when filing or grinding on magnesium:
  - a. Use grinding equipment marked **FOR MAGNESIUM GRINDING ONLY**.
  - b. Use a suitable coolant when grinding magnesium to keep temperatures below ignition point.
  - c. Keep tools used on magnesium sharp.

**WARNING**

Water and foam-type fire extinguishers will cause magnesium fires to flare up. Use a Class D fire extinguisher or a sodium chloride base dry powder to fight magnesium fires.

- d. Keep a Class D fire extinguisher nearby for use on magnesium fires.
- e. Wear outer clothing of fire retardant cloth or leather. Brush clothing often to remove magnesium particles.



- f. Clean work area often. Do not let magnesium particles build up.

---

**WARNING**


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**Improper disposal of magnesium can cause a fire or explosion. Do not expose magnesium to high temperatures. Let magnesium dry before placing in sealed metal containers. Label containers and ship to a Class 1 hazardous waste disposal site.**

- g. Dispose of magnesium chips and filings according to regulations.

**EXTERNAL FUEL TANKS (M981 AND M1064 ONLY)**


---

**WARNING**


---



**Fuel fumes can explode and burn you. Before welding:**

**Drain all fuel.**

**Disconnect and cap all fuel and vent lines.**

**Purge fuel residue and fumes by steam cleaning.**

**Purge air from fuel tank with CO<sub>2</sub>.**

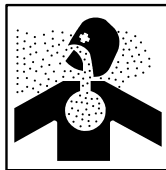
1. Observe the safety precautions for fuel tanks before welding.

**PLASTIC MOLDING MATERIAL**


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**WARNING**


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**Do not weld on plastic molding material. Welding on plastic molding creates toxic fumes. Fumes are hazardous to your health and can result in death.**

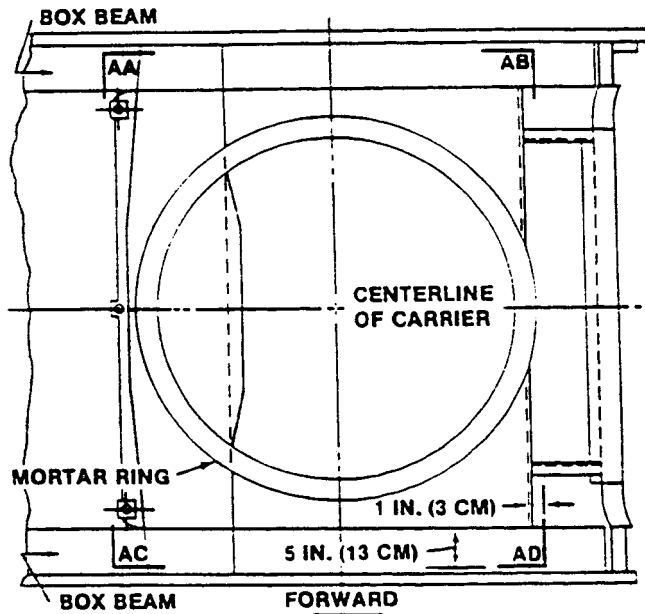
1. Welding on plastic molding material is not authorized. Do not attempt to weld on these parts. Replace part or notify your supervisor. The following is a list of plastic molding material parts and their locations:
- Driver's power plant compartment access panel.
  - Power plant rear compartment access panel.
  - Driver's seat upholstered backrest.
  - All armor made of plastic molding material.

## WELDING NEAR MORTAR RING (M1064 ONLY)

**CAUTION**

Welding on area around mortar ring will cause turntable to bind.

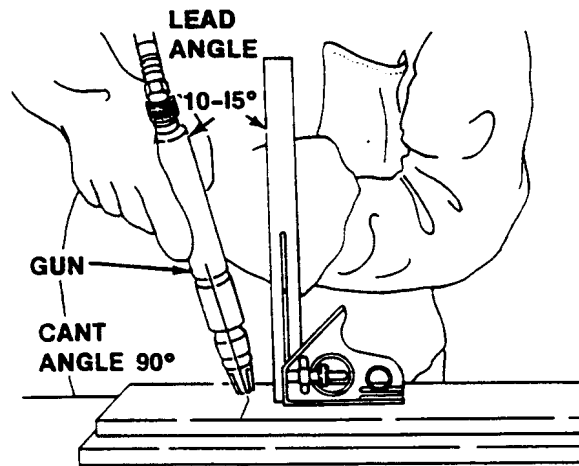
1. Do not weld on M1064 carriers in the area around mortar ring. The area extends from top of hull right through hull.

**GENERAL WELDING INSTRUCTIONS**

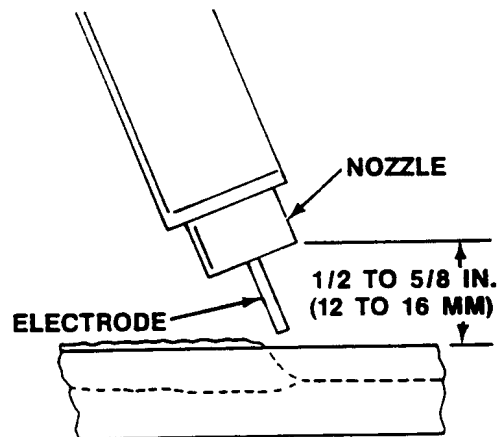
1. Remove any parts that are in the way or may be damaged.
2. Basic welding repairs are made on 5083 aluminum alloy using the MIG (Metal Inert Gas) welding method.
3. Aluminum welds contract about 6 percent in volume when they become solid. Welding at a slow speed may cause too much heating of the area around the weld. This will cause the metal to expand too much. It will then shrink too much when it cools.
4. Always use clean filler wire. Filler wire polluted by grease, oil, dust, or shop fumes causes porous welds. After welding, cover wire and store in a warm, dry place.
5. Always remove oxides, grease, oil films, paint, and all foreign matter from joint before welding. Wipe edges of joint with clean cloth dipped in solvent and let dry before welding. Sand with disc sander or brush well with clean stainless steel wire brush to remove oxide.
6. Good joint fit-up makes welding easier, saves filler wire and gas, and results in higher quality welds. You must tack weld to hold joint members in place if you do not have jigs. Tack welds should be small, neat, and placed to keep parts aligned before and during welding.
7. When welding unequal sections, direct arc against heavier piece to fuse the two edges evenly. Watch weld pool edge rather than arc to make sure weld pool edges fuse right.
8. When performing multipass welding, make sure edges of weld pool fuse right. Watch weld pool rather than arc. Any oscillating or weaving motion should be slight, smooth, and slow. Brush material with clean, stainless steel wire brush after each pass. On small weldments, lower amperage slightly after each pass if welding members become too hot.
9. Clean up weld area and touch-up paint all bare metal. see TM 43-0139 and TB 43-0242.
10. Install any parts removed for access.

**MIG WELDING METHOD**

1. MIG (Metal Inert Gas) uses a dc power source, control panel, and welding gun. The gun feeds a consumable bare electrode at a given rate into a molten pool beneath a blanket of inert gas. When an arc is struck, a molten pool forms at once. Move the welding gun along the joint line at a rate that shapes the right size bead. The covering of inert gas keeps air from polluting the weld zone. No flux is needed.
2. Lead angle and cant angle are important. Place gun at a lead angle of 10 to 15 degrees off vertical. Point gun in direction of weld travel for good gas coverage, cleaning, and preheating of material. Place gun at cant angle of 90 degrees to parent metal so filler wire and arc are directed toward apex of groove. This will give equal fusion to both sides of material, even weld buildup, and equal penetration.



3. Keep nozzle clearance of 1/2 to 5/8 inch (12 to 16 mm) for good gas coverage. Wrong nozzle clearance will cause the following:



- a. Oxide deposits in the weld bead.
- b. Force gas bubbles into the weld.
- c. Prevent cleaning action on the material in front of the weld pool.

4. You will hear a smooth hissing or buzzing sound when the right arc length is struck.
5. For further welding instructions, see TC 9-237.

**FOLLOW-THROUGH STEPS**

1. Connect battery ground strap (WP 0294 00).

**END OF TASK**

CHAPTER 27

UNIT MAINTENANCE INSTRUCTIONS  
FOR SMOKE GRENADE LAUNCHER

---

**WORK PACKAGE INDEX**

---

<u>Title</u>	<u>Sequence No.</u>
REPLACE SMOKE GRENADE LAUNCHER GUARD, PLATE, AND BASE (M113A2, M901A1, AND M1059 ONLY).....	0576 00
REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY).....	0577 00



**REPLACE SMOKE GRENADE LAUNCHER GUARD, PLATE, AND BASE (M113A2, M901A1, AND M1059 ONLY)**

**0576 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0576 00-1).
- Installation (page 0576 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Lockwasher (7)

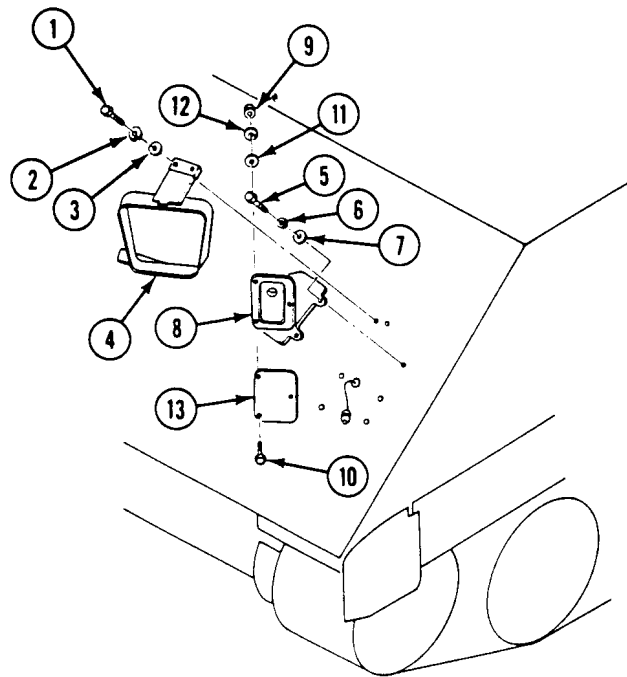
Lockwasher (3)

**REMOVAL**

**NOTE**

**Left side and right side guard, plate, and base are removed the same way.**

1. Remove four screws (1), lockwashers (2), washers (3), and guard (4) from front hull plate. Discard lockwashers.
2. Remove three screws (5), lockwashers (6), washers (7), and base (8) from front hull plate. Discard lockwashers.
3. Remove three nuts (9), screws (10), washers (11), lockwashers (12), and plate (13) from base (8). Discard lockwashers.



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**REPLACE SMOKE GRENADE LAUNCHER GUARD, PLATE, AND BASE (M113A2,  
M901A1, AND M1059 ONLY) — Continued**

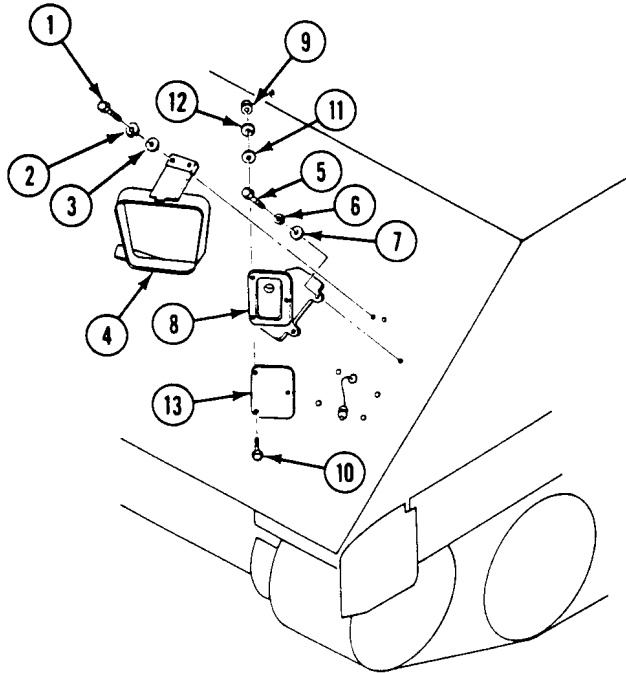
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0576 00

**INSTALLATION****NOTE**

Left side and right side guard, plate, and base are installed the same way.

1. Secure plate (13) to base (8) with three screws (10), washers (11), new lockwashers (12), and nuts (9).
2. Secure base (8) to hull front plate with three screws (5), new lockwashers (6), and washers (7).
3. Secure guard (4) to front hull plate with four screws (1), new lockwashers (2), and washers (3).

**END OF TASK**



---

**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS  
(M113A2, M1059, AND M901A1 ONLY)**

---

**0577 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0577 00-2).  
Installation (page 0577 00-7).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Battery ground lead disconnected (WP 0294 00)

Trim vane lowered and power plant front access door  
opened (see your -10)

Base and plate removed (WP 0576 00)

---

Materials/Parts

Locknut (10)

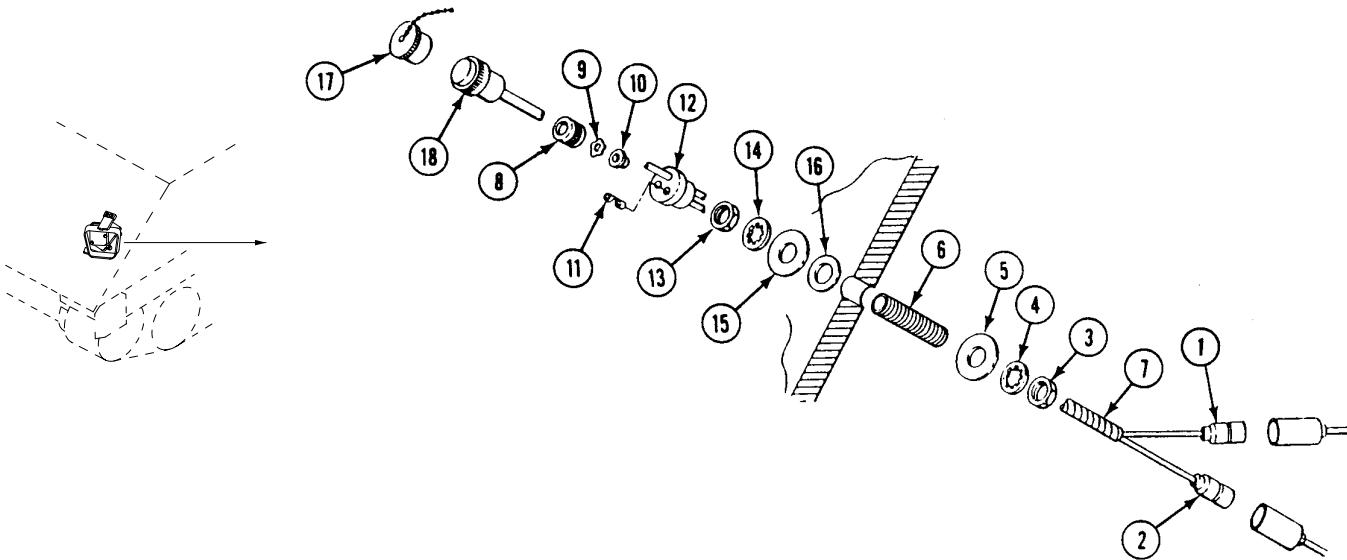
Locknut (4)

Locknut (4)

Lockwasher (17)

**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2,  
M1059, AND M901A1 ONLY) — Continued****0577 00****REMOVAL**

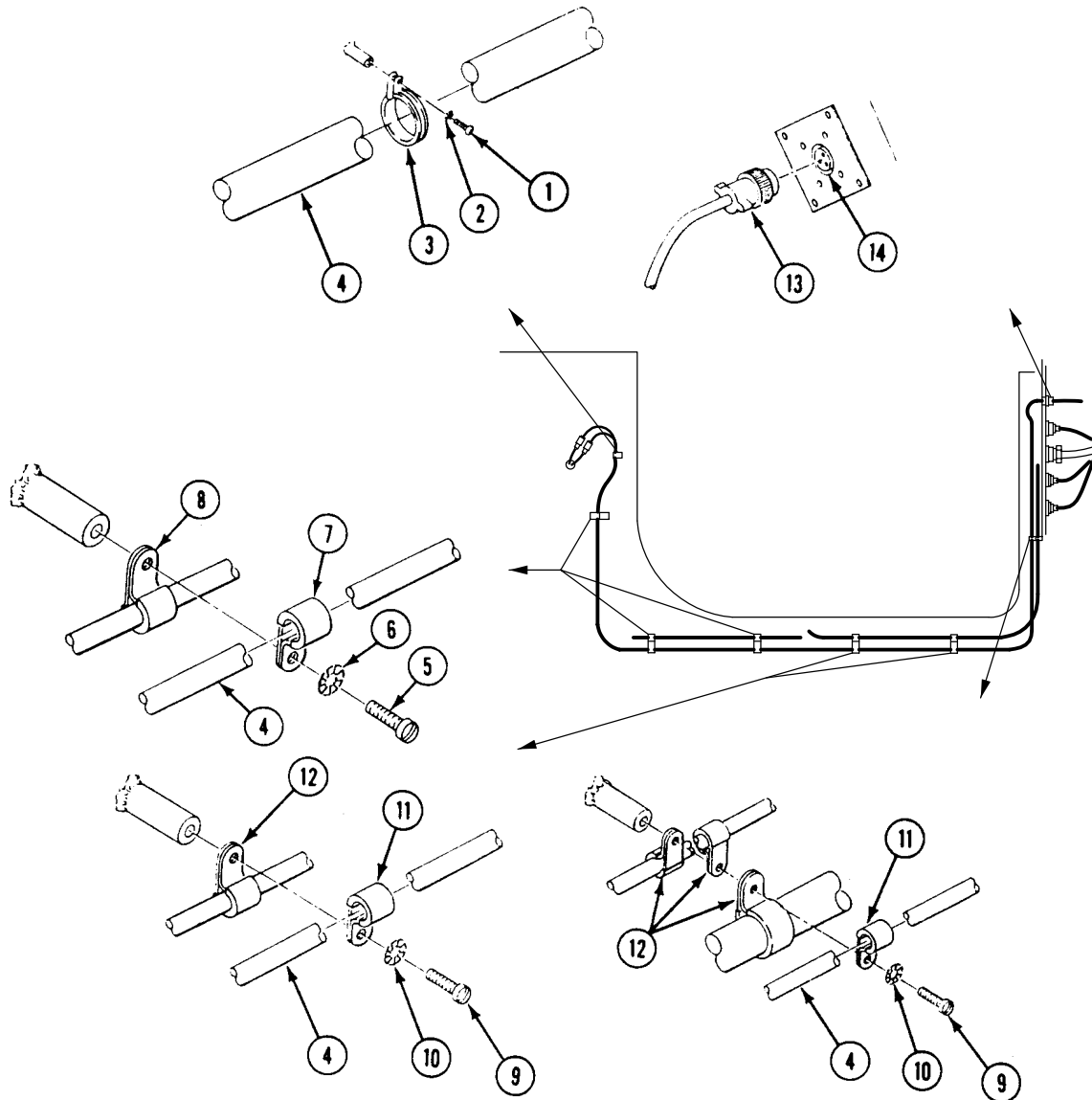
1. Disconnect circuit 7 lead (1) and circuit 799 lead (2) from inside carrier.
2. Remove locknut (3), lockwasher (4), and washer (5) from bushing (6) and wiring harness (7). Discard locknut and lockwasher.
3. Remove coupling nut (8), spring washer (9), packing retainer (10), end seal plug (11), and rubber bushing (12) from bushing (6).
4. Remove locknut (13), lockwasher (14), washer (15), and washer insulator (16) from bushing (6). Discard locknut and lockwasher.
5. Remove harness (7) from hull.
6. Remove cover (17) from connector (18).
7. Repeat Steps 1 - 6 for opposite side of carrier.



**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

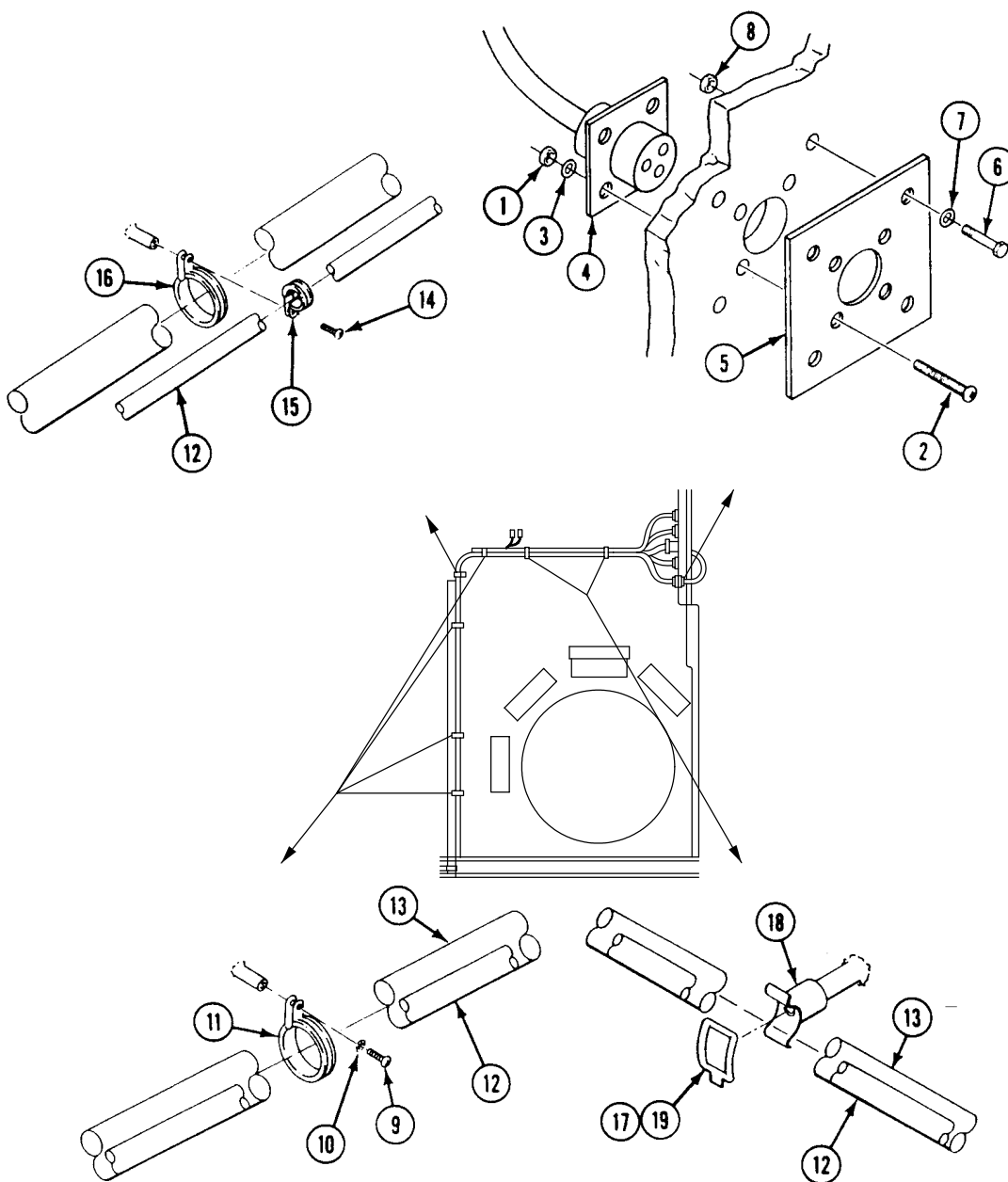
8. Remove screw (1), lockwasher (2), and clamp (3) (M901A1 only) from hull inside power plant compartment. Remove wiring harness (4) from clamps. Discard lockwasher.
9. Remove three screws (5), lockwashers (6), clamps (7), and heater harness clamps (8) from hull. Remove wiring harness (4) from clamps (7). Discard lockwashers.
10. Remove three screws (9), lockwashers (10), clamps (11), and clamps (12) from hull and bulkhead. Remove clamps (11) from wiring harness (4). Discard lockwashers.
11. Remove harness connector (13) from connector (14) on bulkhead.



**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

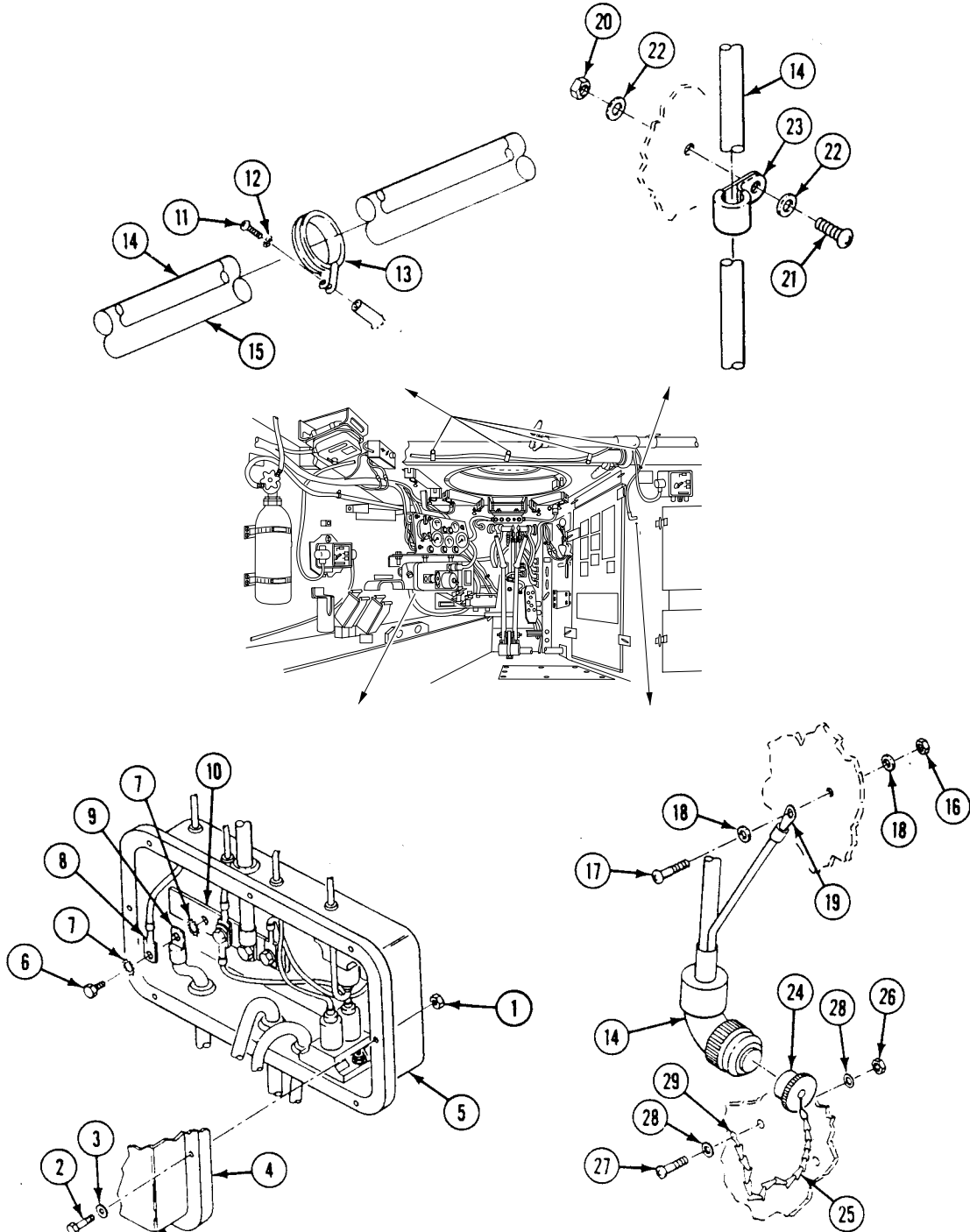
12. Remove four locknuts (1), screws (2), washers (3), and harness connector (4) from driver's compartment bulkhead. Have helper assist. Discard locknuts.
13. Inspect plate (5) on bulkhead. If defective, remove four screws (6), washers (7), and locknuts (8). Discard locknuts.
14. Remove two screws (9), lockwashers (10), and clamps (11) from front hull inside driver's compartment. Remove wiring harness (12) and main wiring harness (13) from clamps. Discard lockwashers.
15. Remove screw (14), clamp (15), and main wiring harness clamp (16) from front hull. Remove wiring harness (12) from clamp (15).
16. Remove cradle clip (17), wiring harness (12), and main wiring harness (13) from cradle (18) on front hull.
17. Remove four cradle clips (19), wiring harness (12), and main wiring harness (13) from four cradle (18).



**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

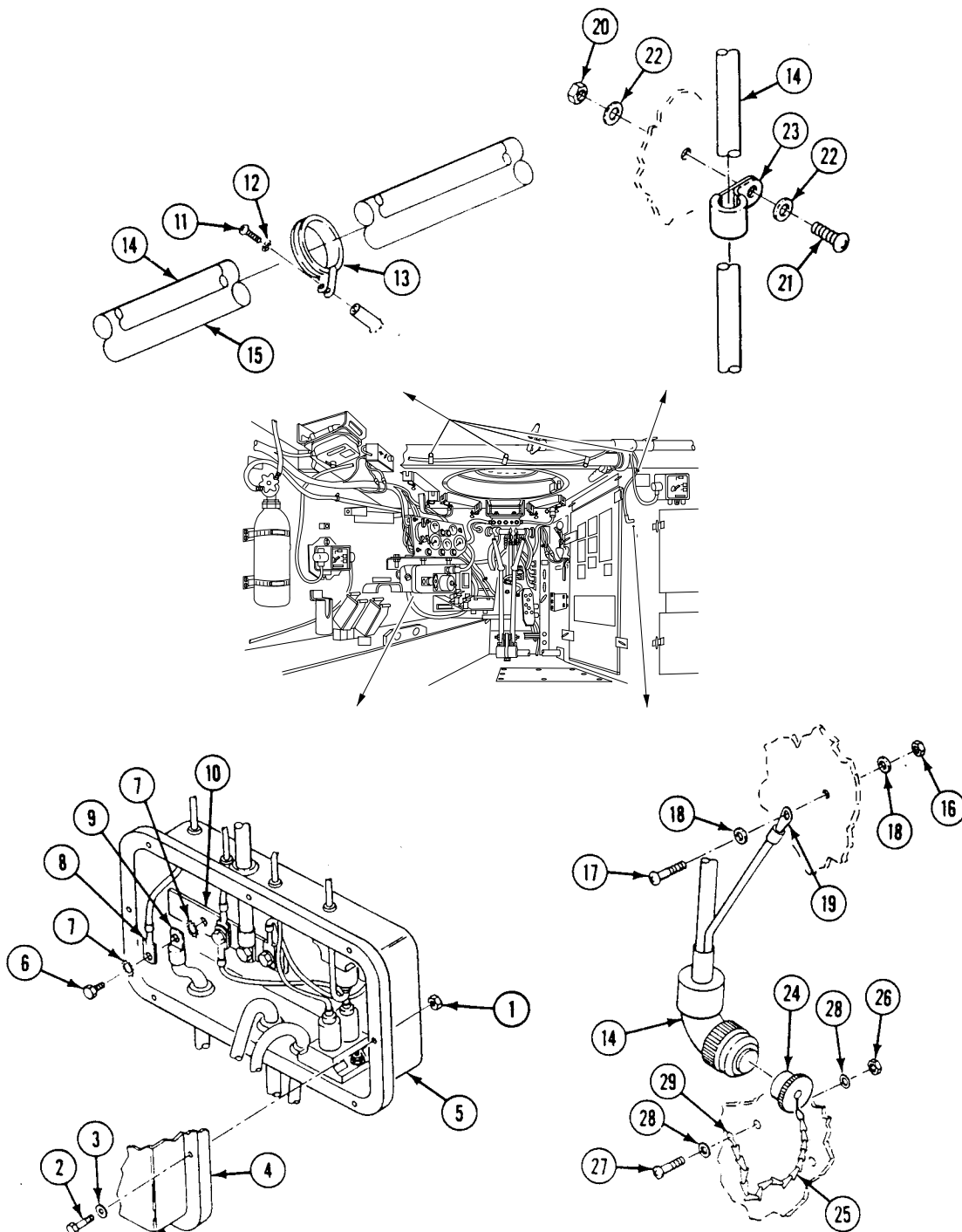
18. Remove eight locknuts (1), screws (2), washers (3), and master switch panel (4) from distribution box (5). Discard locknuts.
19. Remove screw (6), two lockwashers (7), circuit 6L lead (8), and circuit 6 lead (9) from bus bar (10). Discard lockwashers.
20. Remove four screws (11), lockwashers (12), and clamps (13) from bulkhead behind driver's compartment. Remove clamps from wiring harness (14) and intercom cable assembly (15). Discard lockwashers.



**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

21. Remove locknut (16), screw (17), two washers (18), and circuit 7 lead (19) from bulkhead. Discard locknut.
22. Remove locknut (20), screw (21), two washers (22), and clamp (23) from bulkhead. Remove clamp from wiring harness (14). Discard locknut.
23. Remove cover (24) with chain (25) from wiring harness (14).
24. Remove locknut (26), screw (27), two washers (28), and hook (29) from bulkhead. Discard locknut.
25. Remove all sections of wiring harness (14) from carrier.

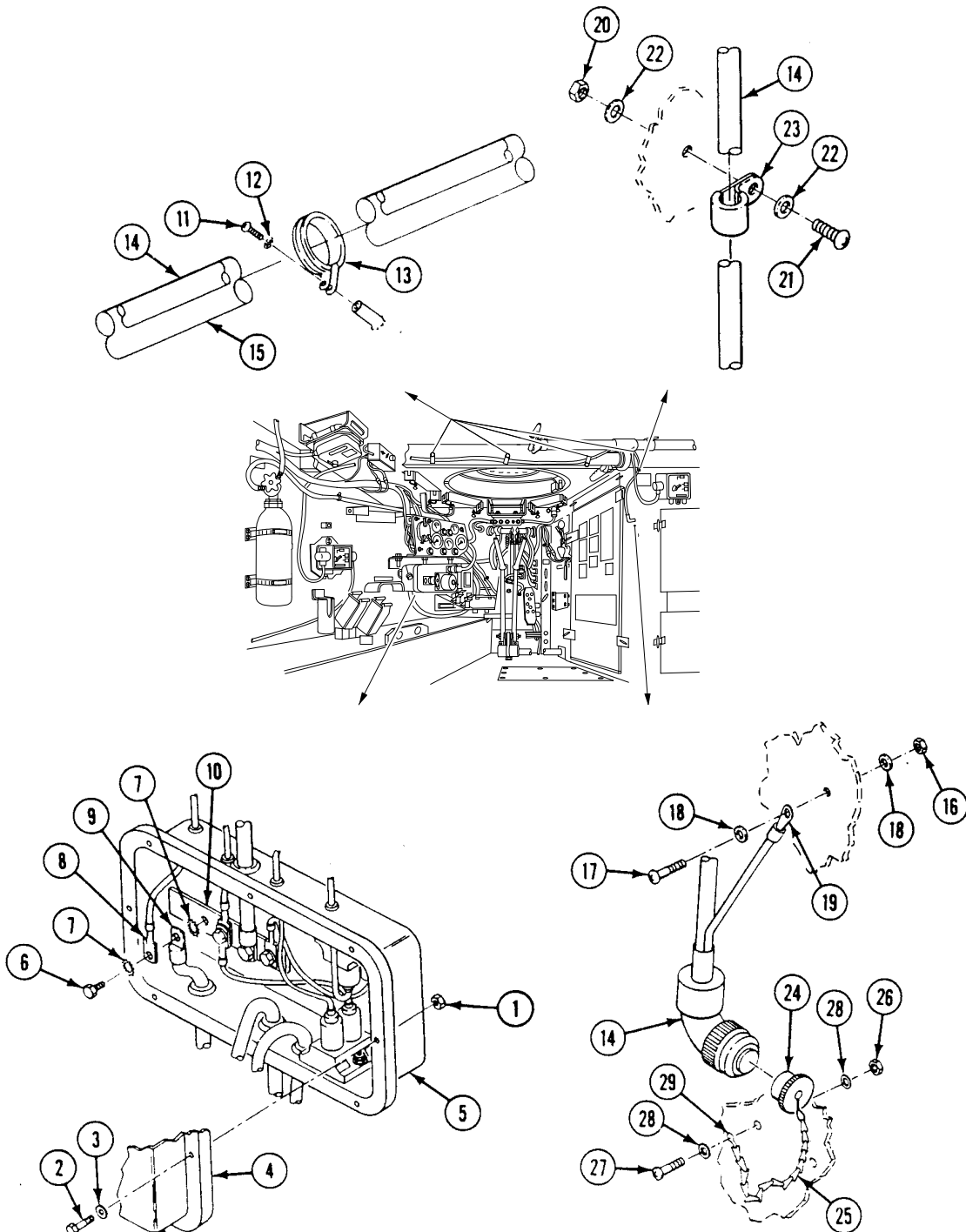


**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

**INSTALLATION**

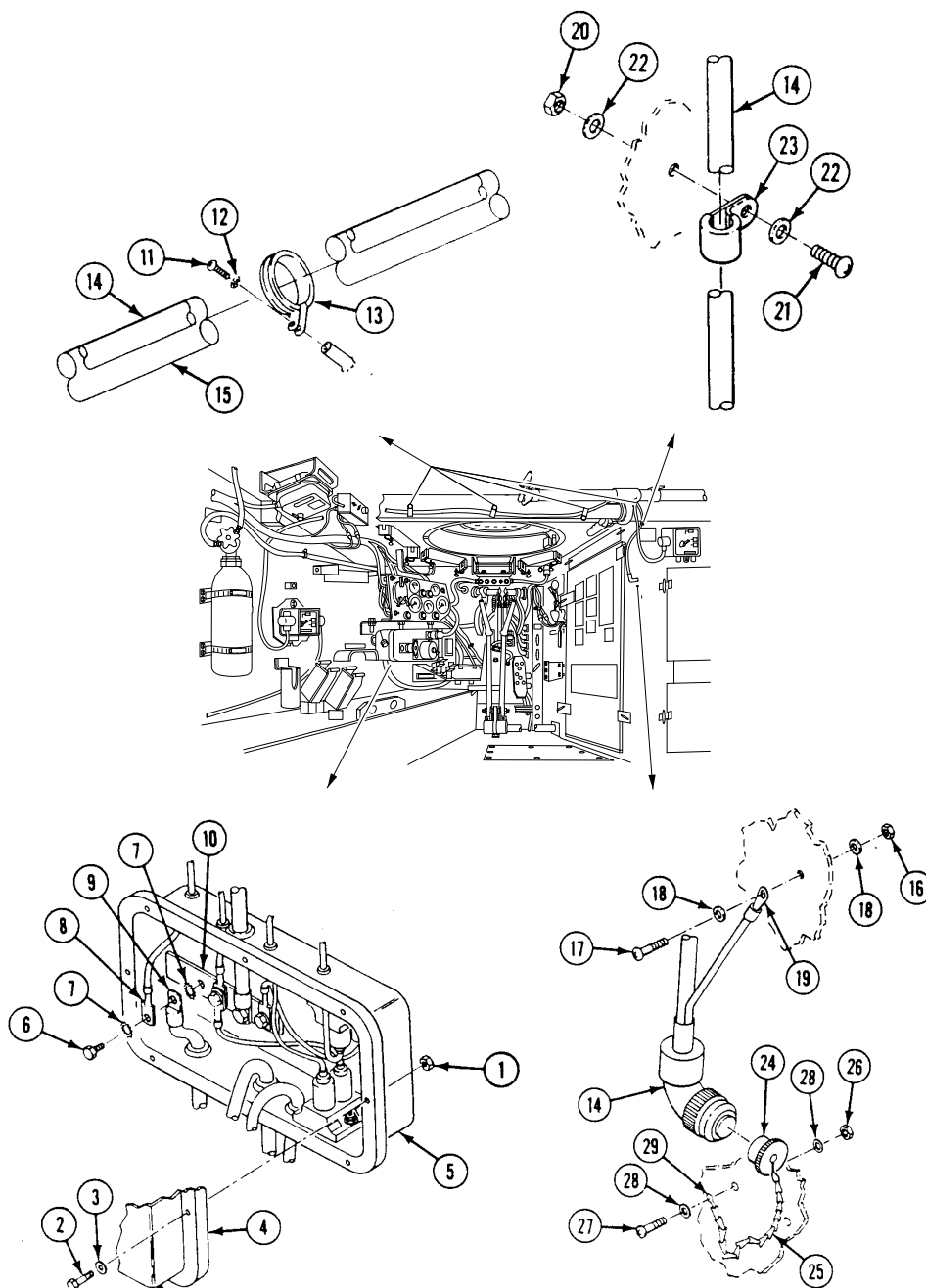
1. Place all sections of wiring harness (14) through front hull plate and in carrier.
2. Secure hook (29) to bulkhead with screw (27), two washers (28), and new locknut (26).
3. Install cover (24) with chain (25) on wiring harness (14).



**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

4. Install clamp (23) on wiring harness (14). Secure clamp to bulkhead with screw (21), two washers (22), and new locknut (20).
5. Secure circuit 7 lead (19) to bulkhead with screw (17), two washers (18), and new locknut (16).
6. Install four clamps (13) on wiring harness (14) and intercom cable assembly (15). Secure clamps to bulkhead with four screws (11) and new lockwashers (12).
7. Secure circuit 6L lead (8) and circuit 6 lead (9) to bus bar (10) with screw (6) and two new lockwashers (7).
8. Install master switch panel (5) to distribution box (4) with eight screws (2), washers (3), and new locknuts (1).

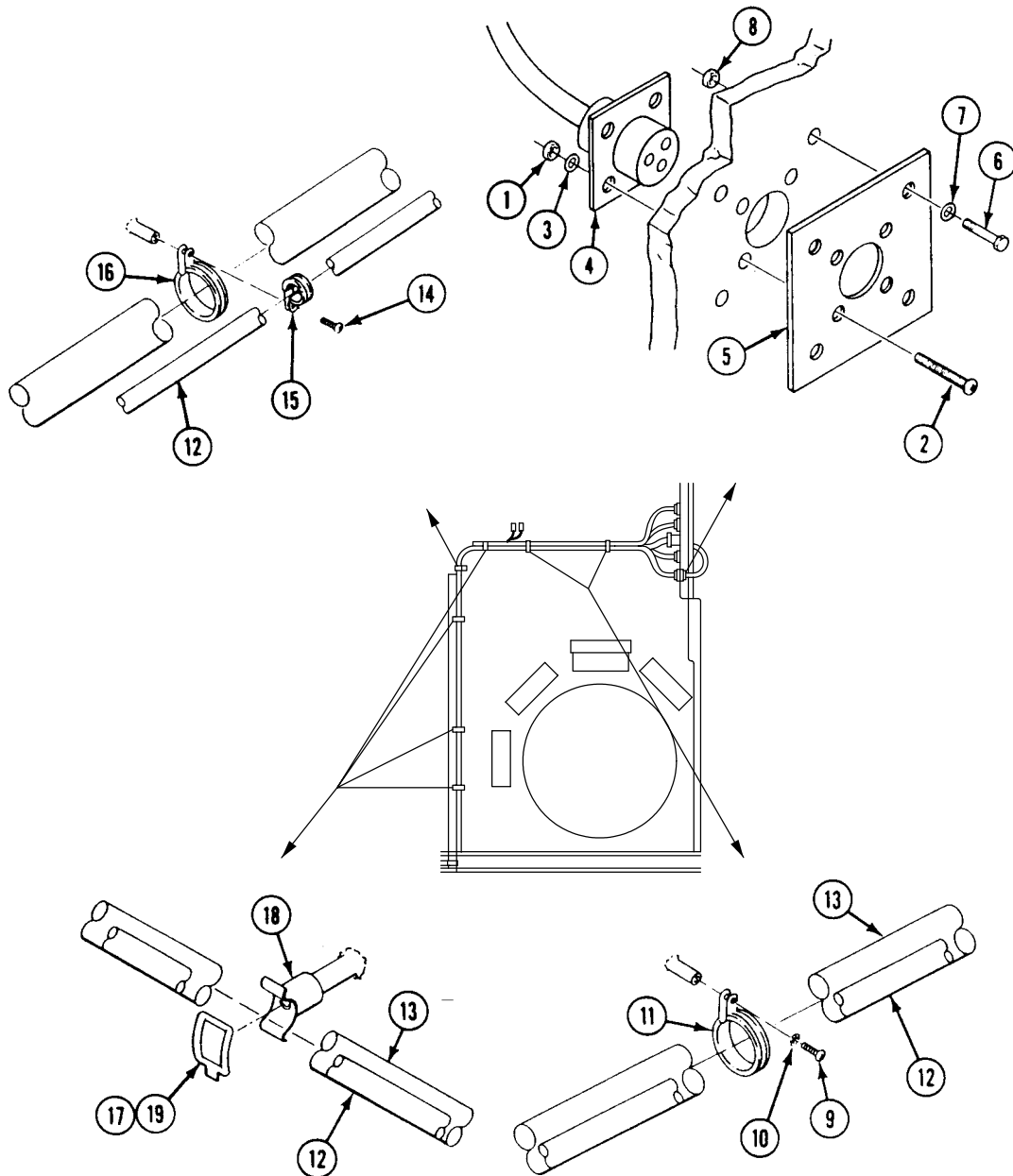




**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

0577 00

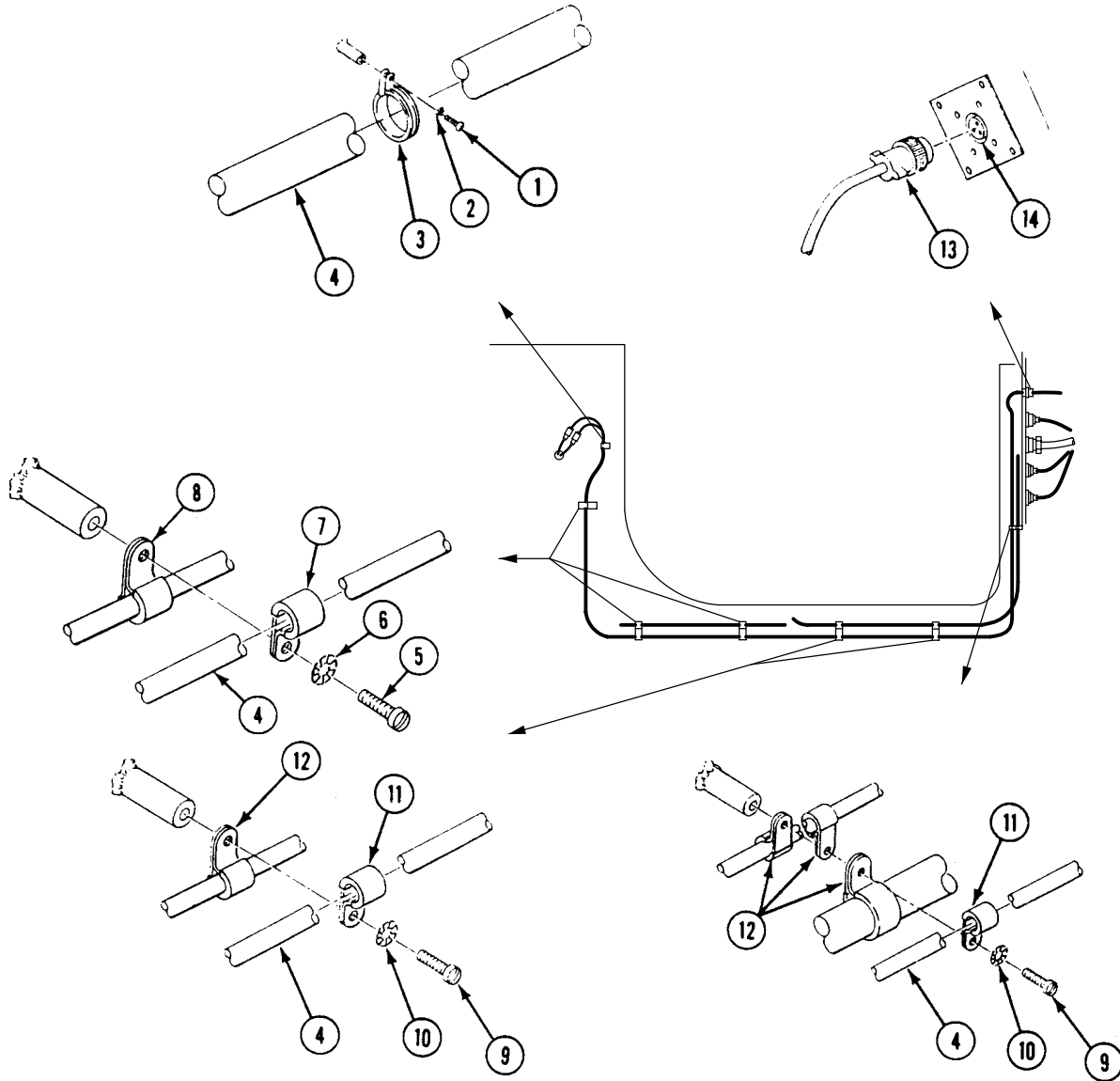
9. Install wiring harness (12) and main wiring harness (13) in four cradles (18). Secure with four clips (17).
10. Install wiring harness (12) and main wiring harness (13) in cradle (18). Secure with clip (19).
11. Install clamp (12) on wiring harness (15). Secure clamp (15) and main wiring harness clamp (16) to hull with screw (14).
12. Install two clamps (11) on wiring harness (12) and main wiring harness (13). Secure clamps to hull with two screws (9) and new lockwashers (10).
13. If removed, install plate (5) on bulkhead with four screws (6), washers (7), and new locknuts (8).
14. Secure harness connector (4) to bulkhead with four screws (2), washers (3), and new locknuts (1).



**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2, M1059, AND M901A1 ONLY) — Continued**

**0577 00**

15. Secure harness connector (13) to connector (14) on bulkhead.
16. Install three clamps (11) on wiring harness (4). Secure clamps (11) and clamps (12) to hull and bulkhead with three screws (9) and new lockwashers (10).
17. Install three clamps (7) on wiring harness (4). Secure clamps (7) and heater harness clamps (8) to hull with three screws (5) and new lockwashers (6).
18. Install clamp (3) on wiring harness (4) (M901A1 only). Secure clamp to hull with screw (1) and new lockwasher (2).



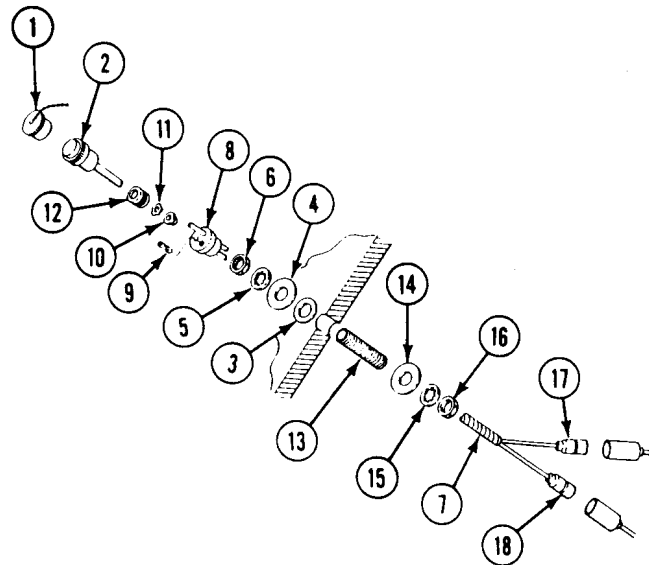
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**REPLACE SMOKE GRENADE LAUNCHER WIRING HARNESS (M113A2,  
M1059, AND M901A1 ONLY) — Continued**


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0577 00

19. Install cover (1) on connector (2).
20. Install wiring harness (7).
21. Install washer insulator (3), washer (4), new lockwasher (5), and new locknut (6) on wiring harness (7).
22. Install rubber bushing (8), end seal plug (9), packing retainer (10), spring washer (11), and coupling nut (12) on wiring harness (7).
23. Feed wiring harness (7) through bushing (13) and secure with washer (14), new lockwasher (15), and new locknut (16).
24. Install connectors (17) and (18) on wiring harness.
25. Connect circuit 7 lead (17) and circuit 799 lead (18) inside carrier.
26. Repeat Steps 19 - 25 for opposite side of carrier.

**FOLLOW-THROUGH STEPS**

1. Install base and plate (WP 0576 00).
2. Close power plant front access door and raise trim vane (see your -10).
3. Connect battery ground lead (WP 0294 00).

**END OF TASK**



CHAPTER 28

UNIT MAINTENANCE INSTRUCTIONS  
FOR HYDRAULIC SYSTEM - RAMP AND SUSPENSION LOCKOUT

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**WORK PACKAGE INDEX**

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<u>Title</u>	<u>Sequence No.</u>
HYDRAULIC FLUID FLOW DIAGRAM.....	.0578 00
RAISE/LOWER INOPERABLE/UNSAFE RAMP.....	.0579 00
REPLACE RAMP PUMP TO HYDRAULIC TANK STRAINER TUBE.....	.0580 00
REPLACE RAMP PUMP TO PRESSURE RELIEF VALVE HOSE.....	.0581 00
REPLACE RELIEF VALVE TEE TO QUICK DISCONNECT HOSE.....	.0582 00
REPLACE RAMP CONTROL VALVE TO HYDRAULIC TANK HOSE.....	.0583 00
REPLACE HYDRAULIC TANK STRAINER.....	.0584 00
REPLACE/REPAIR HYDRAULIC TANK.....	.0585 00
SERVICE HYDRAULIC TANK.....	.0586 00
REPLACE QUICK DISCONNECT AND RAMP CONTROL VALVE TUBE TO BULKHEAD CONNECTION.....	.0587 00
REPLACE RAMP PUMP.....	.0588 00
REPLACE RAMP CONTROL VALVE AND FITTINGS.....	.0589 00
REPLACE BULKHEAD CONNECTION TO RAMP CYLINDER HOSE.....	.0590 00
REPLACE RAMP CYLINDER BREATHER HOSE (ALL EXCEPT M1064).....	.0591 00
REPLACE RAMP CYLINDER BREATHER HOSE (M1064 ONLY).....	.0592 00
REPLACE RAMP CYLINDER.....	.0593 00



**HYDRAULIC FLUID FLOW DIAGRAM**

**0578 00**

**THIS WORK PACKAGE COVERS:**

**INITIAL SETUP:**

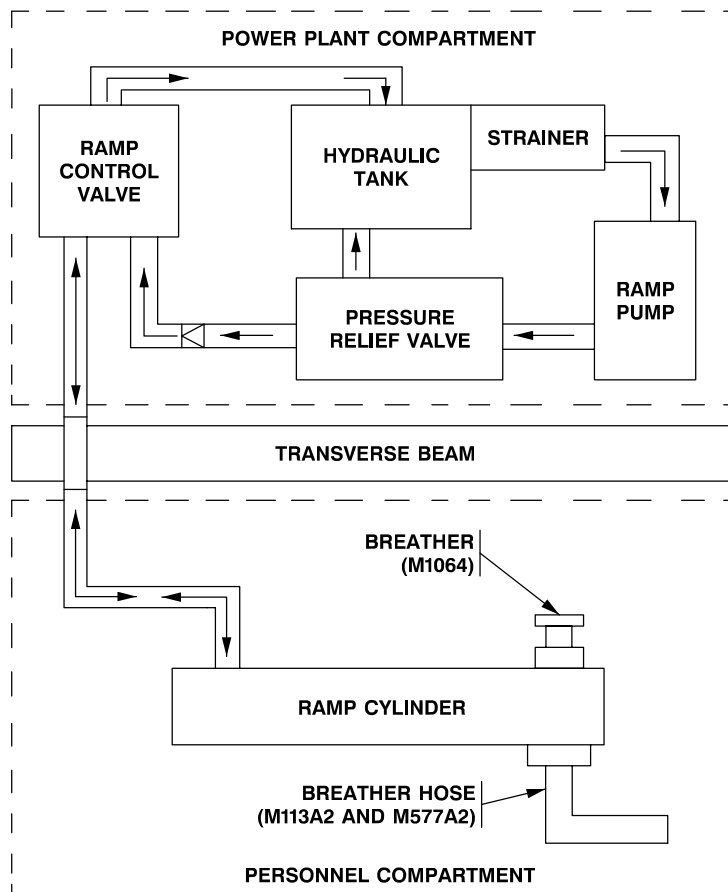
Maintenance Level

Unit

**INSPECTION OF INSTALLED ITEMS**

This task shows hydraulic flow in the M113 FOV.

**HYDRAULIC FLUID FLOW DIAGRAM**



**END OF TASK**





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**RAISE/LOWER INOPERABLE/UNSAFE RAMP**

**0579 00**

---

**THIS WORK PACKAGE COVERS:**

Raise Inoperable/Unsafe Ramp (page 0579 00-1).  
 Lower Inoperable/Unsafe ramp (page 0579 00-8).

---

**INITIAL SETUP:**

Maintenance Level

Unit

References

See your -10

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Powered lifting device with rated lift capacity of at least  
 700 lbs (318 kg)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp inoperable or unsafe

Personnel Required

Unit Mechanic

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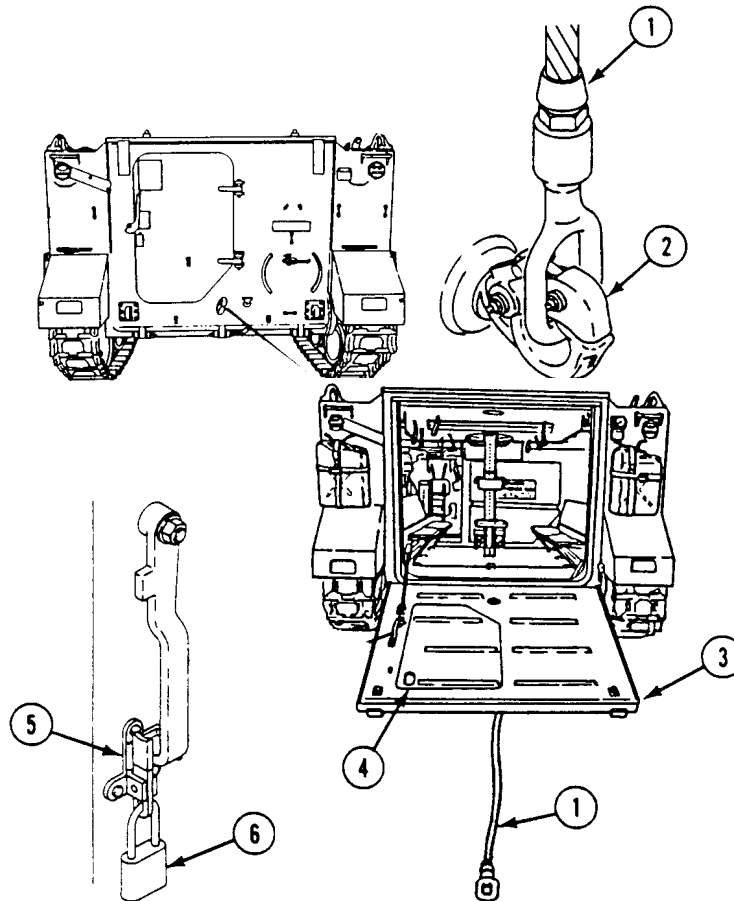
**RAISE INOPERABLE/UNSAFE RAMP**

**WARNING**



**An inoperable/unsafe ramp can fall and kill soldiers. Follow these procedures and never get behind a raised, inoperable/unsafe ramp that is not secured.**

1. Connect cable (1) to tow pintle (2) of ramp (3) and to lifting hook of powered lifting device. Place cable under center of ramp and out at top edge. If required, use crowbar to raise ramp slightly.
2. Close ramp access door (4) and secure with combat lock (5) (see your -10).
3. Secure combat lock (5) with padlock (6) from tool bag (see your -10)



4. Raise ramp (1). Make sure ramp actuator cable does not get caught between ramp and hull.
5. Close ramp (1) and secure with ramp lock (see your -10).

**WARNING**



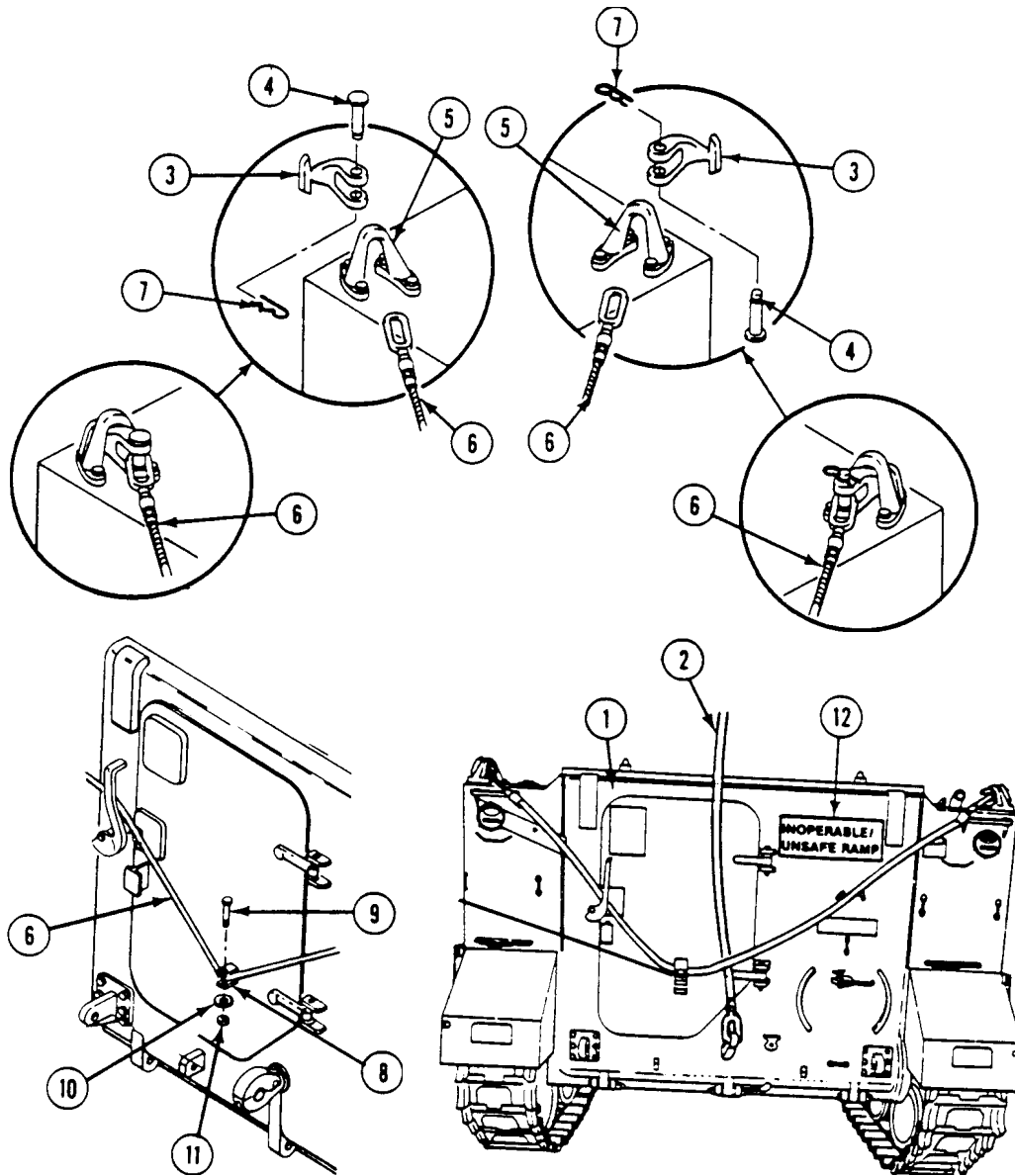
**An inoperable/unsafe ramp can fall and kill soldiers. Follow these procedures and never get behind a raised, inoperable/unsafe ramp that is not secured.**

**NOTE**

**Steps 6 - 10 apply to all carriers except M577A2, M1068, and carriers with external fuel tanks.**

6. With ramp lock engaged and lifting equipment cable (2) holding ramp (1) up, install two tow hooks (3) and headed pins (4) in rear lifting eyes (5).
7. Connect tow cable (6) to both tow hooks (3) with headed pins (4) and safety clips (7).
8. Secure tow cable (6) to ramp door striker bracket (8) with screw (9), washer (10), and locknut (11).
9. Post sign on ramp with the following warning:
  - a. **WARNING!**

**This inoperable/unsafe ramp can fall and kill you. Do not remove any cable unless proper lifting equipment is attached.**



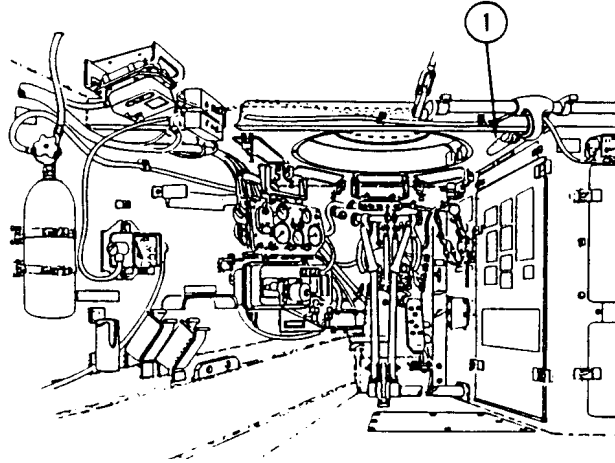
10. Tag driver's ramp lock lever (1) inside carrier with the following warning sign:

a. **WARNING!**

**Do not work behind an inoperable/unsafe ramp that is not secured. Use lifting device to make sure ramp cannot fall while cable is being secured to tow pintle.**

**NOTE**

Steps 11 - 14 apply to M577A2 and M1068 only.



11. With ramp lock engaged and lifting equipment holding ramp up, install tow hook (2), headed pin (3), and safety clip (4) in rear left hand lifting eye (5), and rear right hand towing eye (6).

12. Route tow cable (7) through tow pintle (8). Connect ends of tow cable to lifting eye (5) and towing eye (6), and secure with two tow hooks (2), headed pins (3), and safety clips (4).

13. Post warning sign (9) on ramp (10) with the following warning.

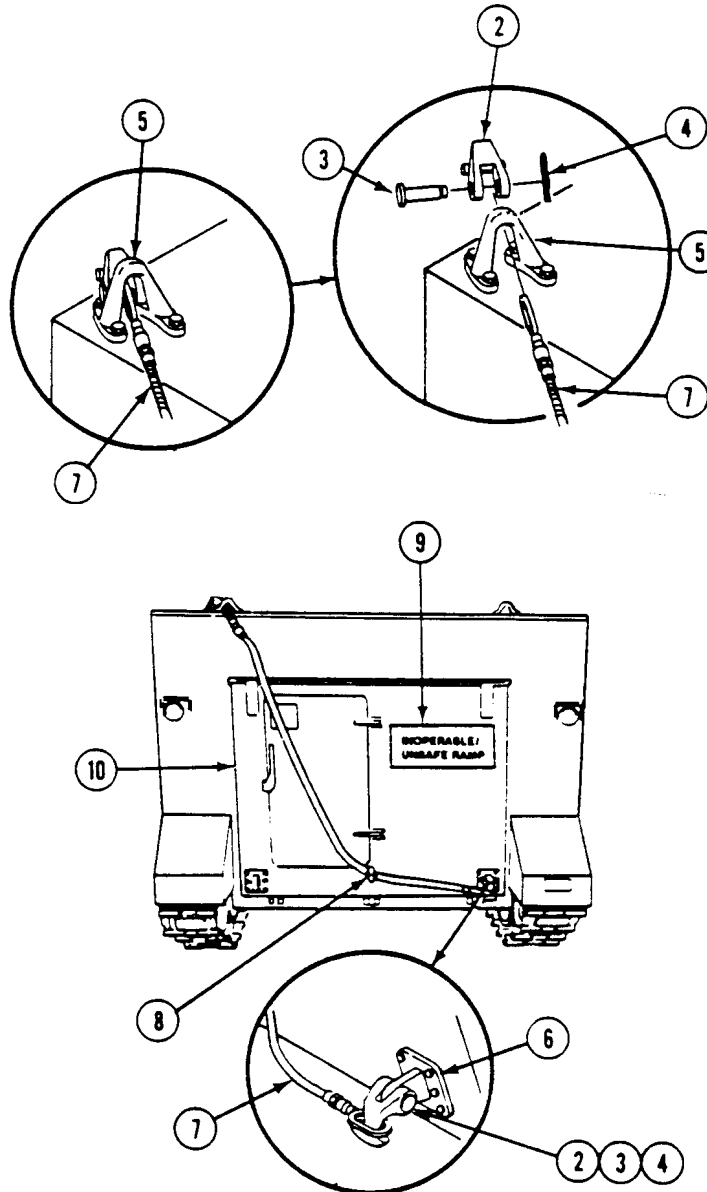
a. **WARNING!**

**This inoperable/unsafe ramp can fall and kill you. Do not remove any cable unless proper lifting equipment is attached.**

14. Tag driver's ramp lock lever (1) inside carrier with the following warning sign:

a. **WARNING!**

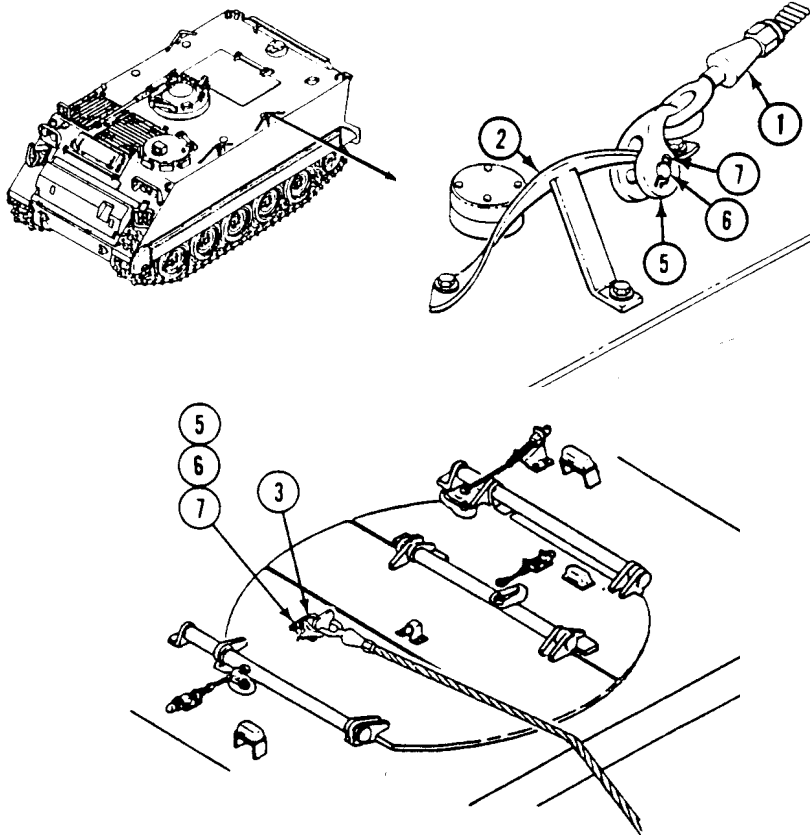
**Do not work behind an inoperable/unsafe ramp that is not secured. Use lifting device to make sure ramp cannot fall while cable is being secured to tow pintle.**



**NOTE**

**Steps 15 - 19 apply to carriers with external fuel tanks and without armor.**

15. Secure cable (1) to antenna brush guard (2) or mortar hatch catch (3) and tow eye (4) with two tow hooks (5). Secure tow hooks with headed pins (6) and safety clips (7).

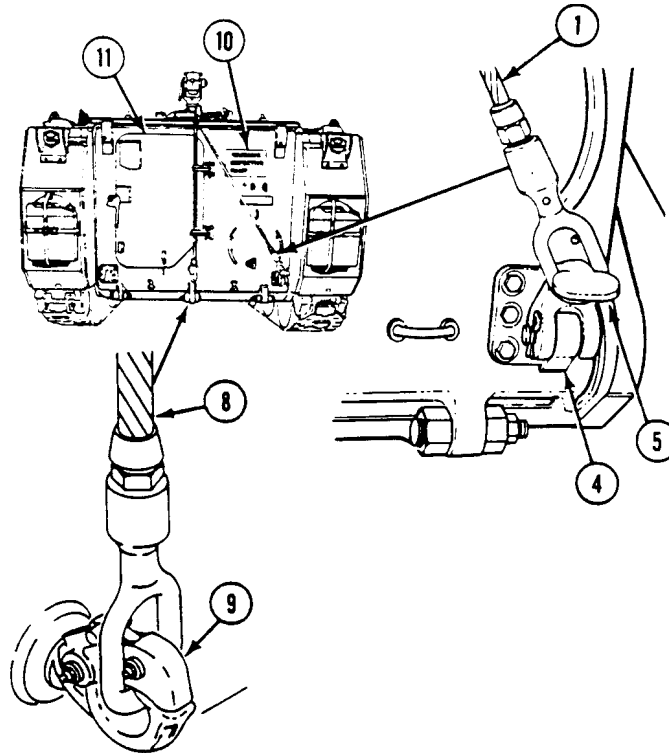


16. Release load from lifting device and remove cable (8) from tow pintle (9).  
 17. Secure ramp access door with combat lock and carrier padlock from tool bag (see your -10).

18. Post warning sign (10) on ramp (11) with the following:

a. **WARNING!**

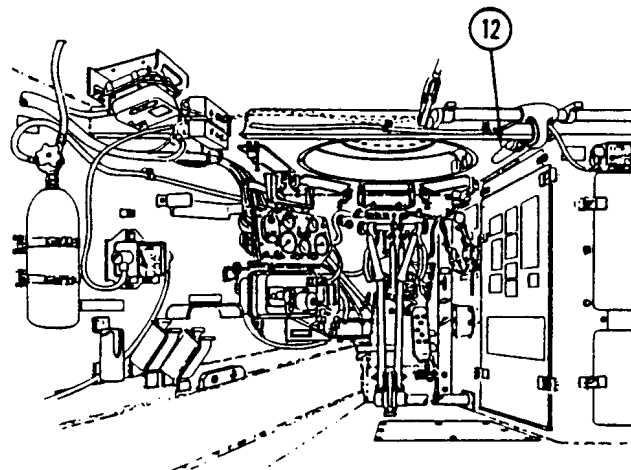
**This inoperable/unsafe ramp can fall and kill you. Do not remove any cable unless proper lifting equipment is attached.**



19. Tag driver's ramp locking handle (12) with the following warning sign:

a. **WARNING!**

**Do not work behind an inoperable/unsafe ramp that is not secured. Use lifting device to make sure ramp cannot fall while cable is being secured to tow pintle.**



LOWER INOPERABLE/UNSAFE RAMP

**WARNING**



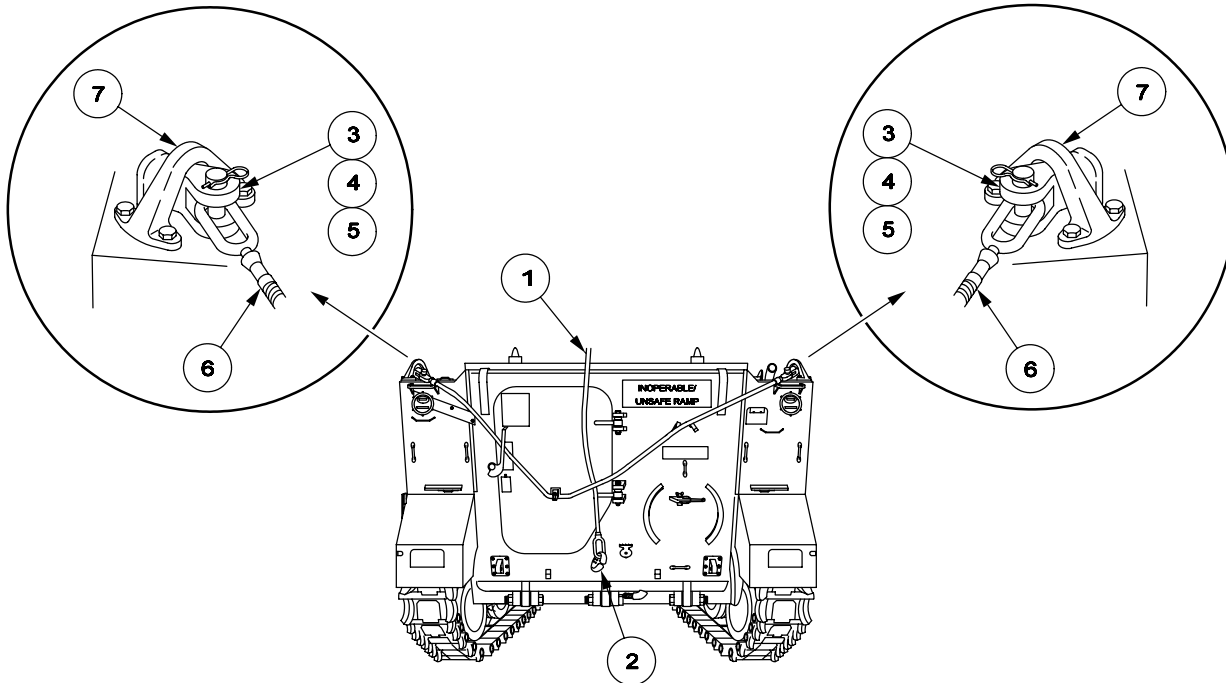
**An inoperable/unsafe ramp can fall and kill soldiers. Follow these procedures and never get behind a raised, inoperable/unsafe ramp that is not secured.**

1. Secure driver's ramp lock closed using ramp lock (see your -10).
2. Connect cable (1) to tow pintle (2) and to lifting hook of powered lifting device. Take up cable slack.

**NOTE**

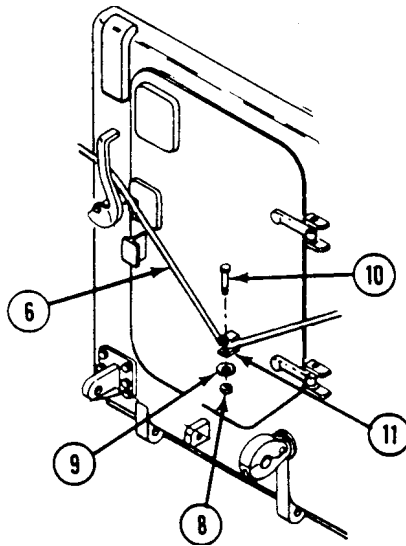
**Steps 3 - 4 apply to all carriers except M577A2, M1068, and carriers with external fuel tanks and without armor.**

3. If installed, remove two safety clips (3), headed pins (4), tow hooks (5), and tow cable (6) from two lifting eyes (7).





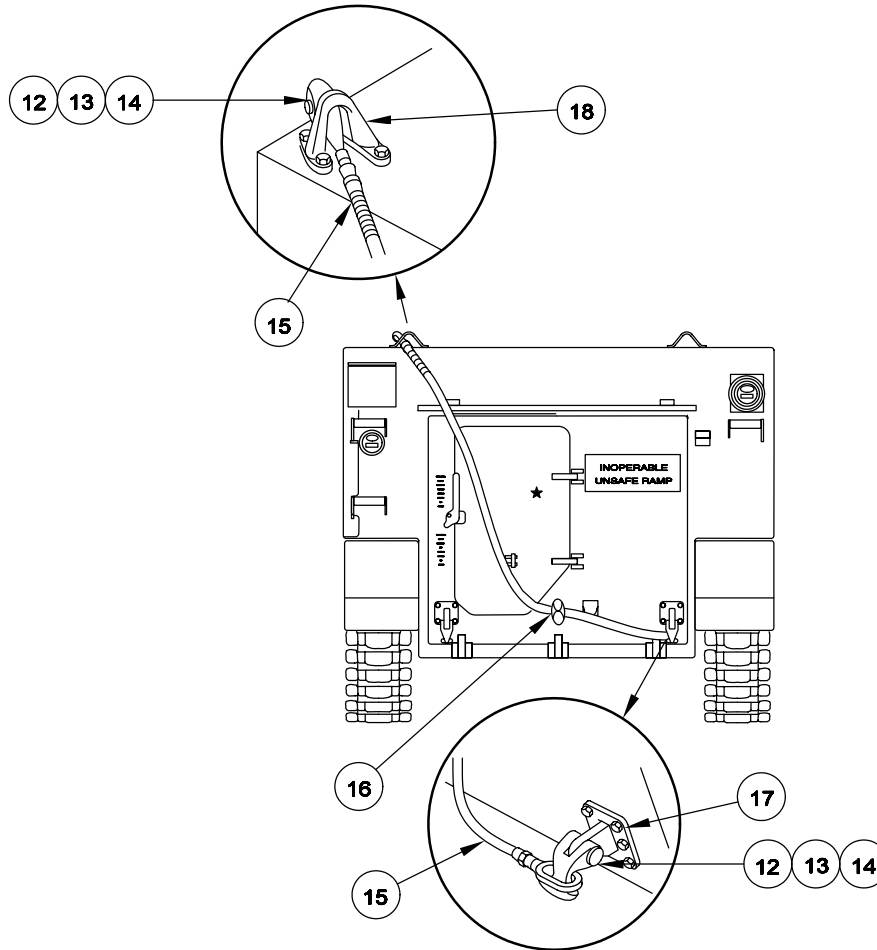
4. Remove locknut (8), washer (9), screw (10) and tow cable (6) from ramp door striker bracket (11).



**NOTE**

**Step 5 applies to M577A2 and M1068 carriers only.**

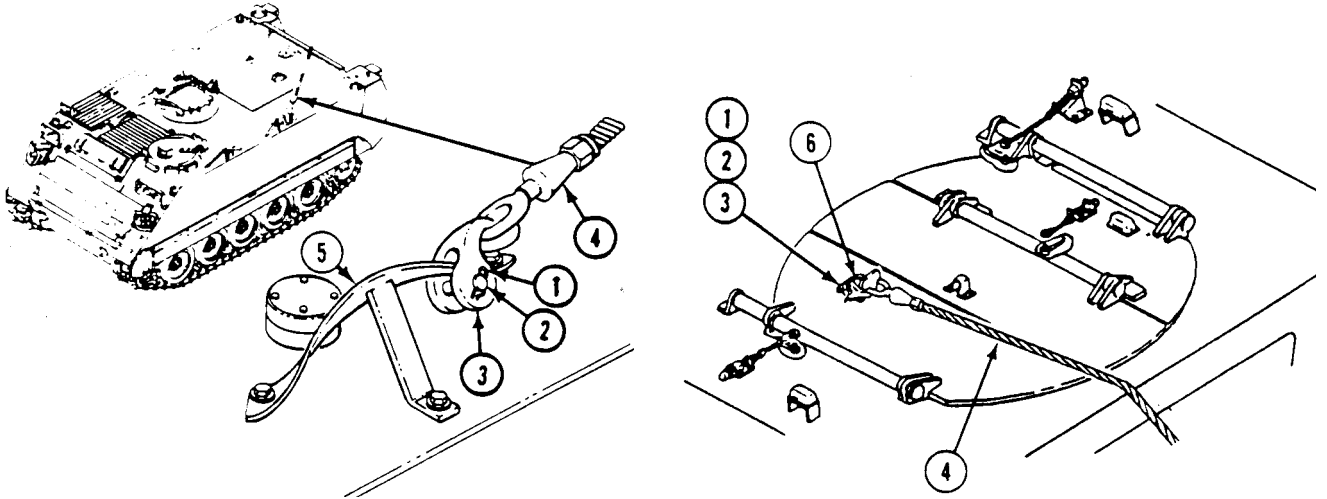
5. If installed, remove two safety clips (12), headed pins (13), and tow hooks (14), from tow cable (15). Remove tow cable from tow pintle (16), towing eye (17), and lifting eye (18).



**NOTE**

Steps 6 - 7 apply to all carriers with external fuel tanks and without armor.

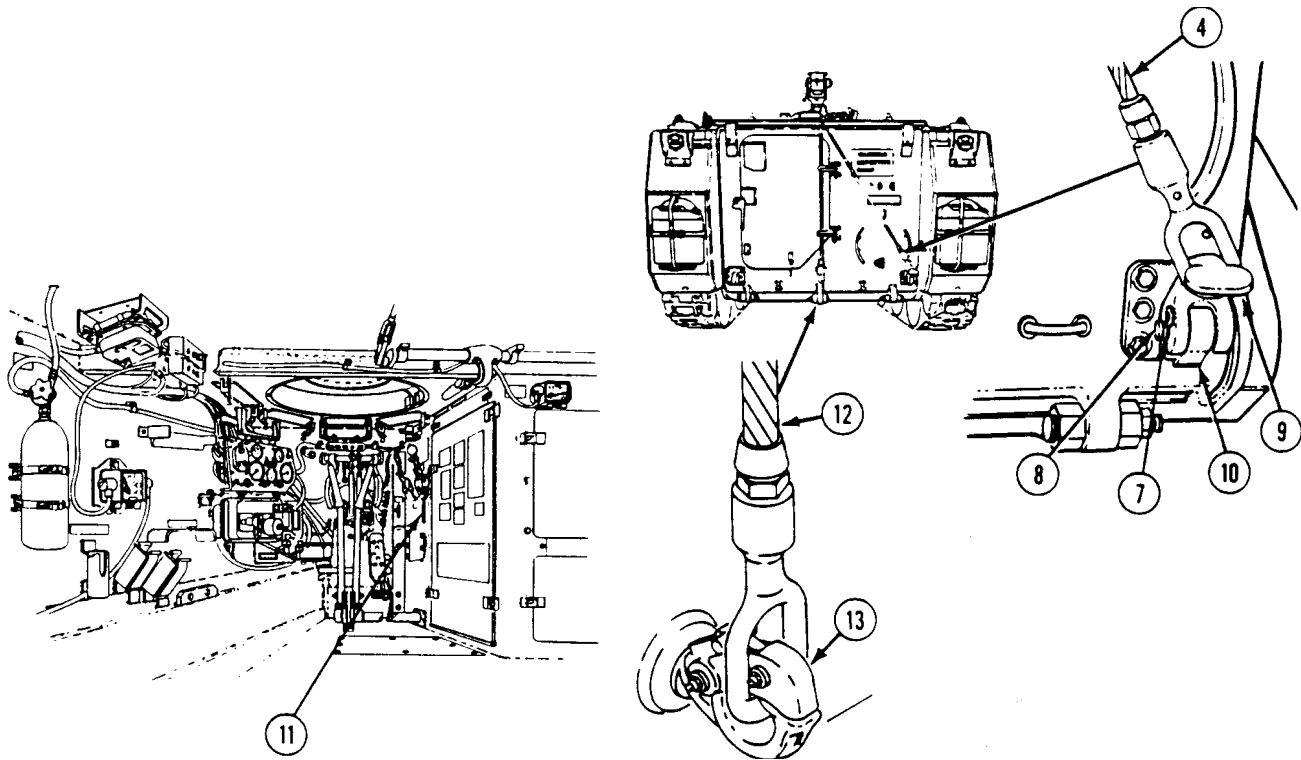
6. If installed, remove safety clip (1), headed pin (2), tow hook (3) and tow cable (4) from antenna brush guard (5) or mortar hatch catch (6).



## RAISE/LOWER INOPERABLE/UNSAFE RAMP — Continued

0579 00

7. If installed, remove safety clip (7), headed pin (8), tow hook (9) and tow cable (4) from towing eye (10).
8. Unlock driver's ramp lock handle (see your -10).
9. Lower ramp with lifting device while holding ramp control handle (11) in down position.
10. Disconnect cable (12) from tow pintle (13) and lifting hook of powered lifting device. If required, use crowbar to raise ramp slightly for cable removal.



END OF TASK

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**REPLACE RAMP PUMP TO HYDRAULIC TANK STRAINER TUBE**

---

**0580 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0580 00-2).
  - Clean, Inspect and Repair (page 0580 00-3).
  - Installation (page 0580 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped/shutdown (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Materials/Parts

Locknut (2)

Power plant rear access panel removed (WP 0431 00 or WP 0433 00)

Hydraulic tank drained (WP 0120 00)

Personnel Required

Unit Mechanic

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**REMOVAL**

1. Remove screw (1), clamp (2), and locknut (3) from clamp (4) on tachometer cable (5). Remove clamp (2) from tube (6). Discard locknut.
2. Remove screw (7), clamp (8), and locknut (9) from clamp (10) on ramp pump-to-relief valve hose (11). Remove clamp (8) from tube (6). Discard locknut.

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

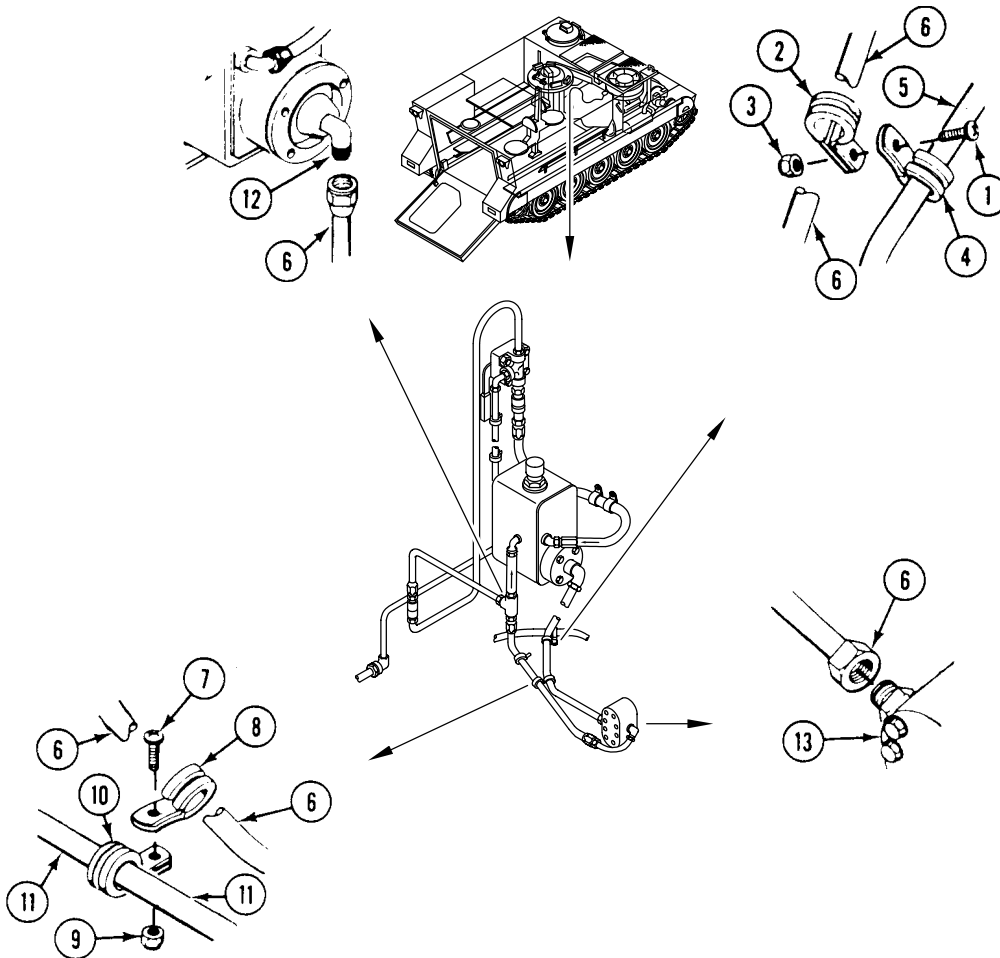
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

3. Remove tube (6) from elbow (12) and ramp pump (13).

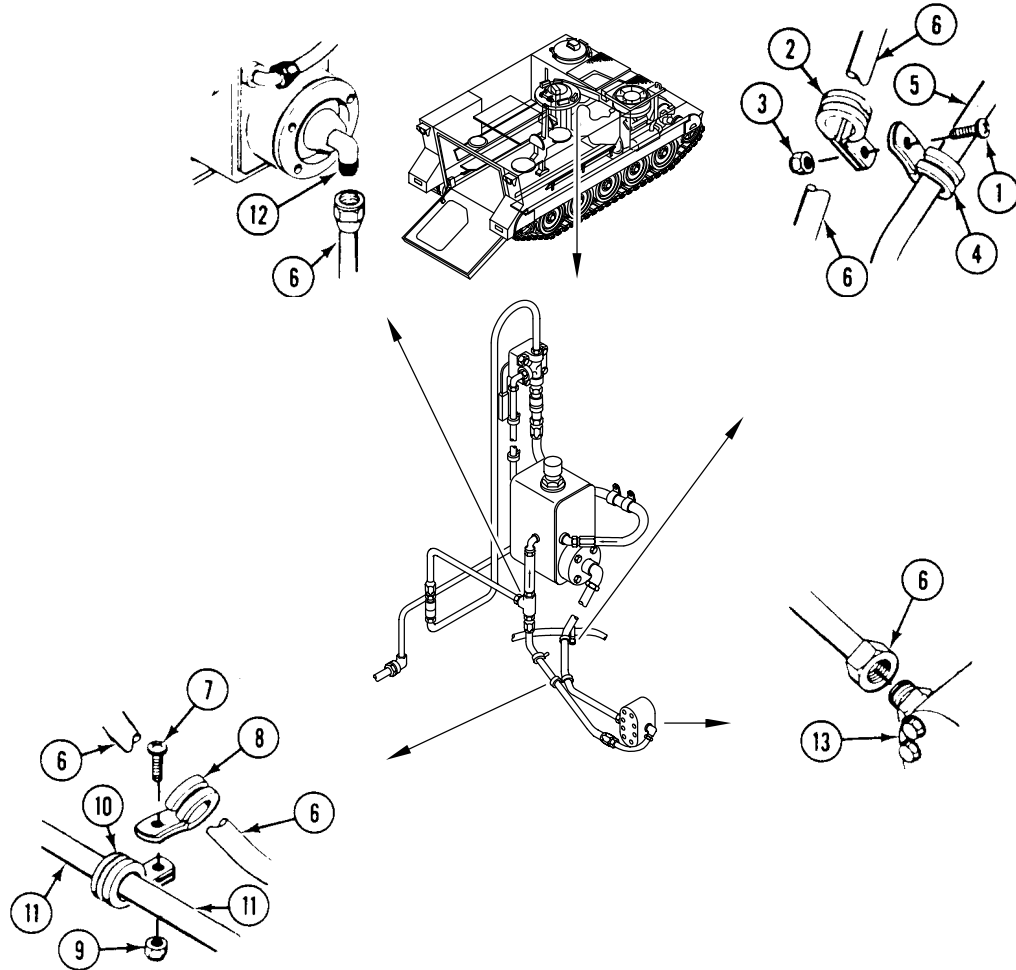


**CLEAN, INSPECT, AND REPAIR**

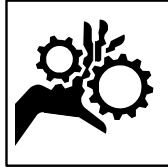
1. Check tube. Replace cracked or distorted tube.

**INSTALLATION**

1. Install tube (6) on elbow (12) and ramp pump (13).
2. Place clamp (8) on tube (6). Align clamp (8) with clamp (10) on hose (11). Secure with screw (7) and new locknut (9).
3. Place clamp (2) on tube (6). Align clamp (2) with clamp (4) on cable (5). Secure with screw (1) and new locknut (3).



## FOLLOW-THROUGH STEPS

**WARNING**

**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Fill hydraulic reservoir (WP 0120 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Install power plant rear access panel (WP 0431 00 or WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**



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**REPLACE RAMP PUMP TO PRESSURE RELIEF VALVE HOSE**

---

**0581 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0581 00-2).
  - Clean, Inspect, and Repair (page 0581 00-3).
  - Installation (page 0581 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Socket Wrench Set (WP 0780 00, Item 96)
- Torque Wrench (WP 0780 00, Item 101)

Equipment Condition

- Engine stopped/shutdown (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Power plant rear access panel removed (WP 0433 00)
- Hydraulic tank drained (WP 0120 00)

Materials/Parts

- Locknut
  - Tab washer
-

**REMOVAL**

1. Remove screw (1), clamp (2), and locknut (3) from clamp (4) on ramp-to-strainer tube (5). Remove clamp (2) from hose (6). Discard locknut.
2. Remove screw (7), tab washer (8), and clamp (9) from transfer gearcase. Discard tab washer.
3. Remove clamp (9) from hose (6).

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

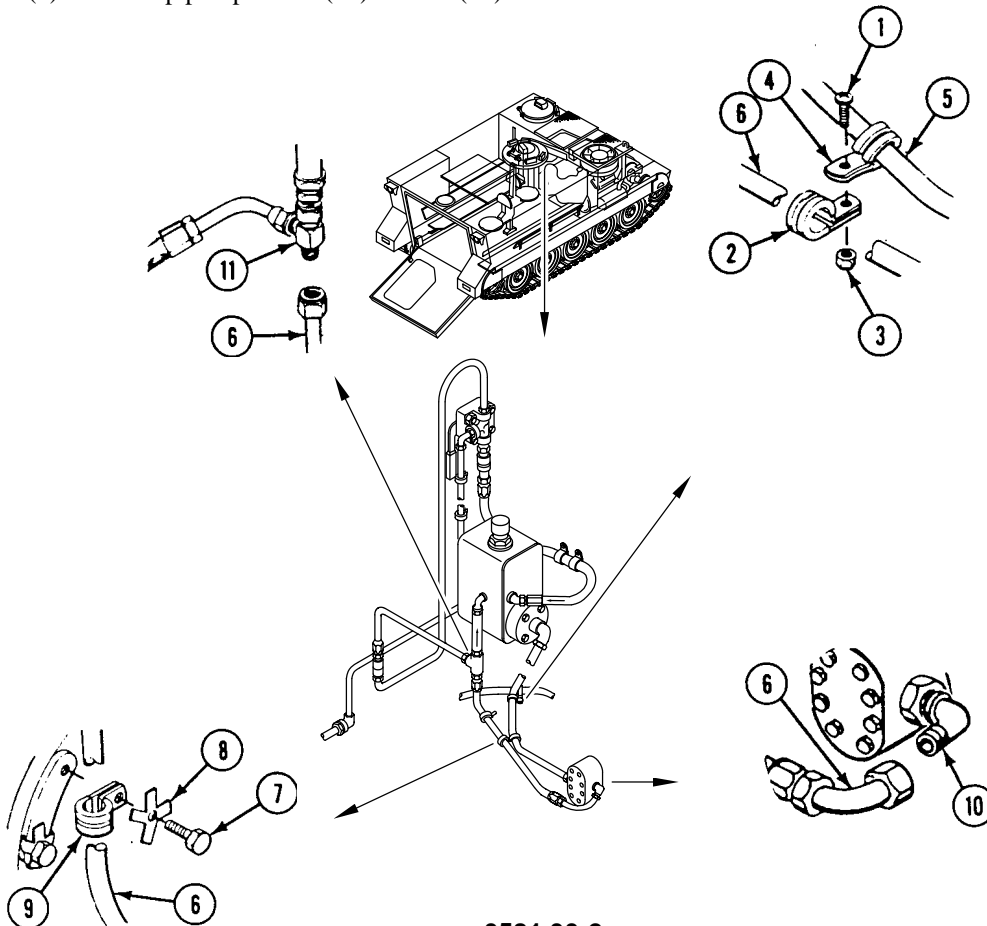
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

4. Remove hose (6) from ramp pump elbow (10) and tee (11).

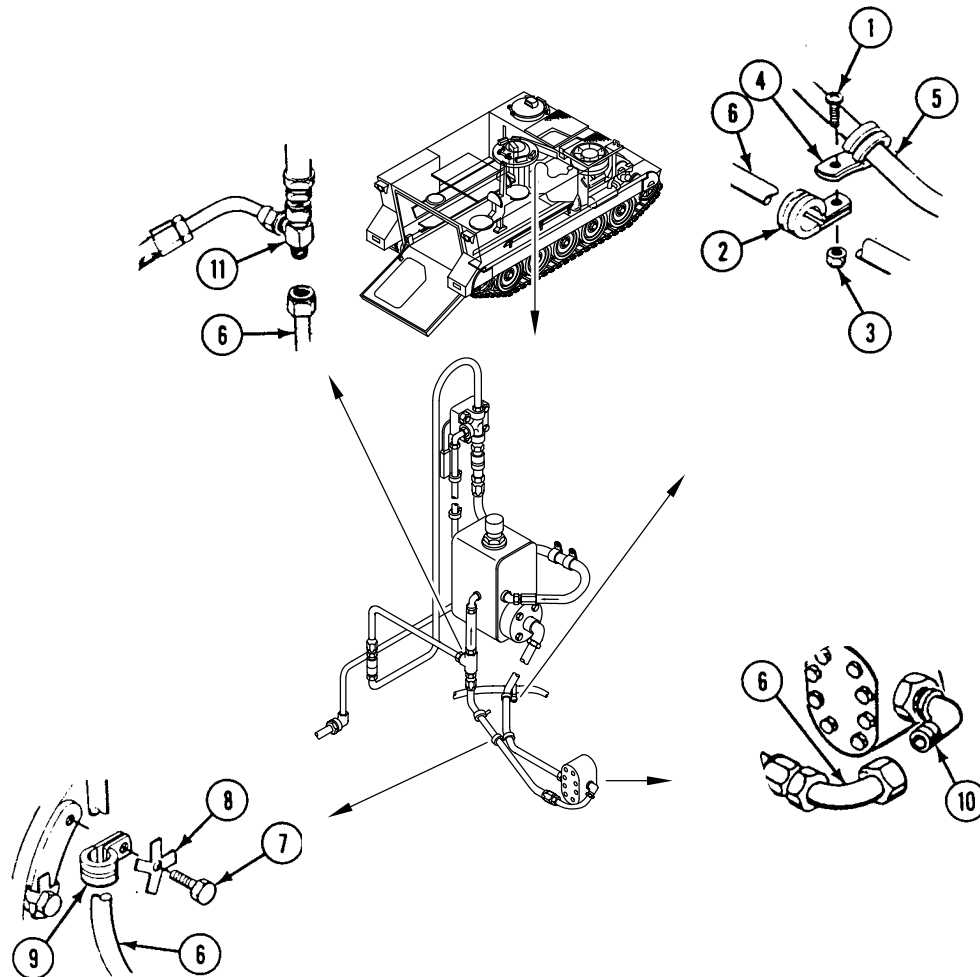


**CLEAN, INSPECT, AND REPAIR**

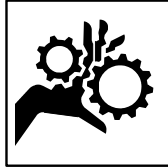
1. Check tube. Replace cracked or distorted tube.

**INSTALLATION**

1. Install hose (6) on tee (11) and ramp pump elbow (10).
2. Place clamp (9) on hose (6). Align clamp with transfer gearcase. Secure with new tab washer (8) and screw (7). **TIGHTEN SCREW TO 144-192 LB-IN (16-25 N·M) TORQUE.** Use torque wrench and socket wrench set.
3. Place clamp (2) on hose (6). Align clamp (2) with clamp (4) on tube (5). Secure with screw (1) and new locknut (3).



## FOLLOW-THROUGH STEPS

**WARNING**

**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Fill hydraulic tank (WP 0120 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Install power plant rear access panel (WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**

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**REPLACE RELIEF VALVE TEE TO QUICK DISCONNECT HOSE**

---

**0582 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0582 00-1).  
 Installation (page 0582 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Power plant rear access panel removed (WP 0431 00 or  
 WP 0433 00)

Hydraulic tank drained (WP 0120 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0782 00, Item 65)

Personnel Required

Unit Mechanic

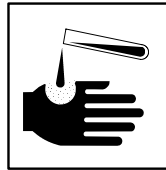
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**REMOVAL**

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**WARNING**

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**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

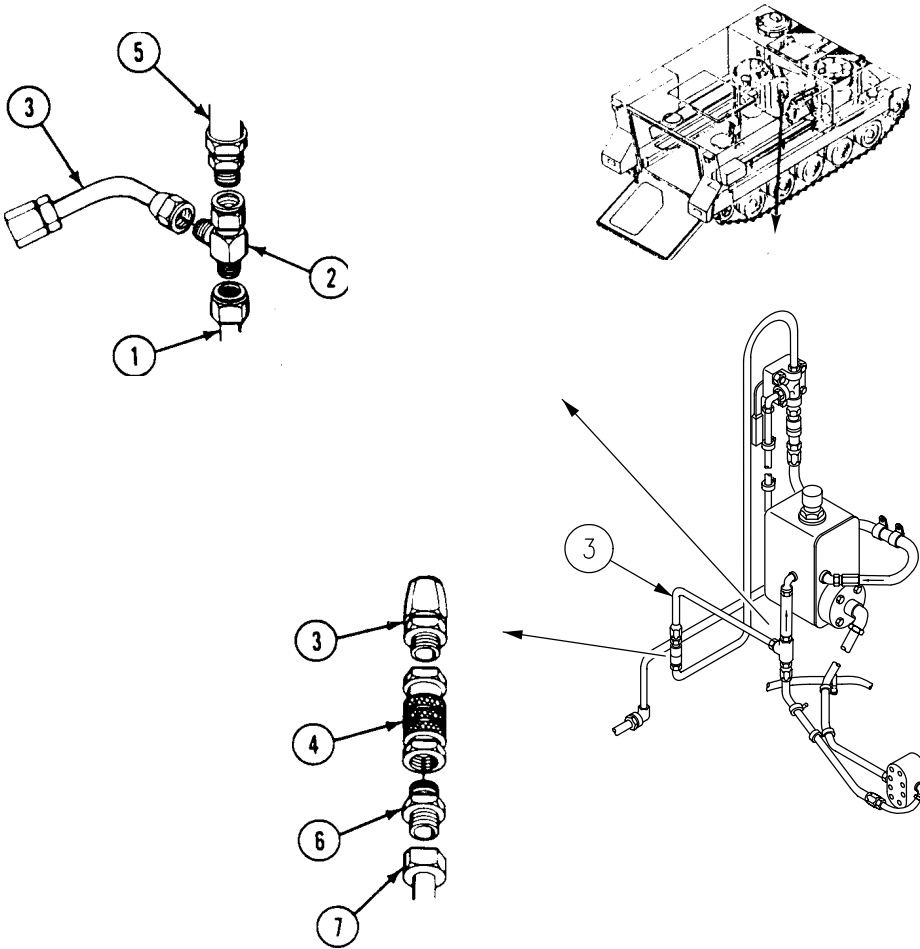
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

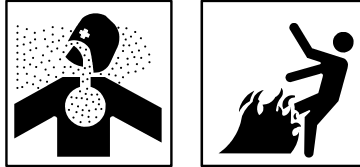
**If FRH is swallowed, get medical attention.**

1. Disconnect hose (1) from tee (2).
2. Remove hose (3) from tee (2) and quick disconnect assembly (4).
3. Remove tee (2) from pressure relief valve (5)
4. Remove quick disconnect assembly (4) from nipple (6).
5. Remove nipple (6) from tube (7).



INSTALLATION

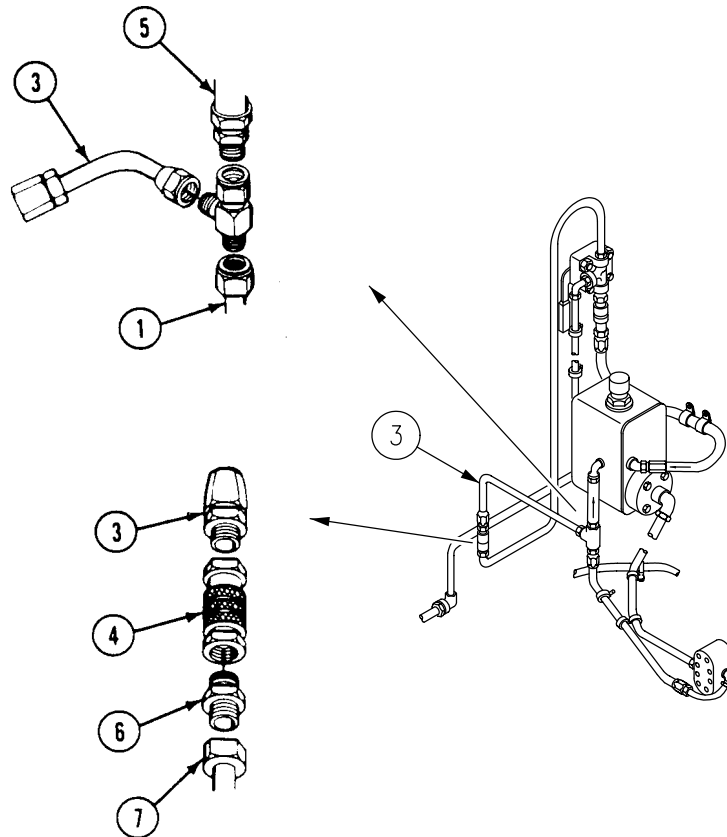
**WARNING**



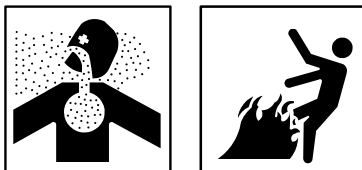
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply sealing compound to male threads of nipple (6). Install nipple into tube (7).
2. Install quick disconnect assembly (4) in nipple (6).



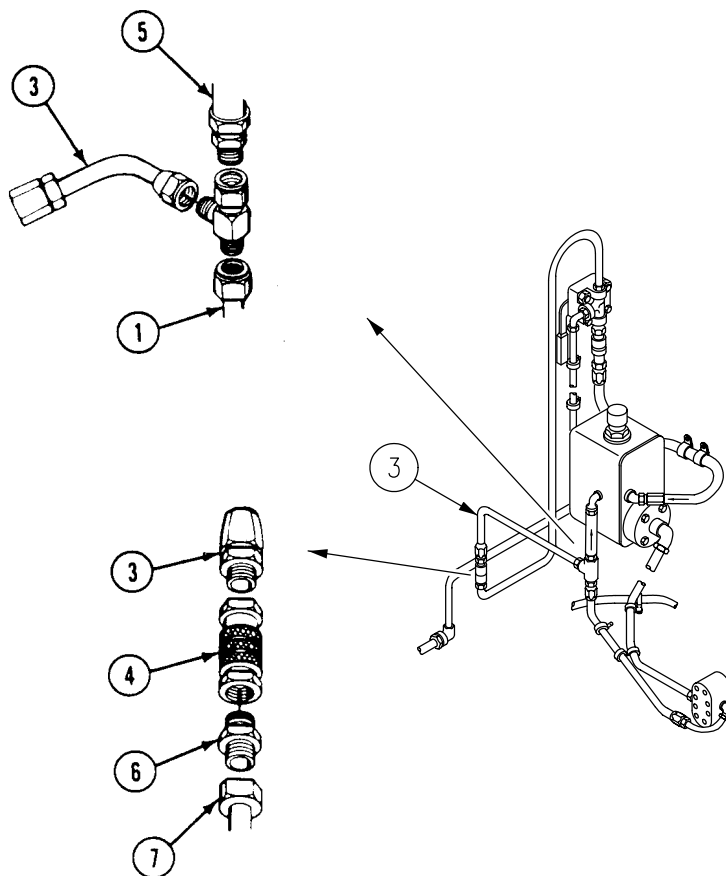
### WARNING



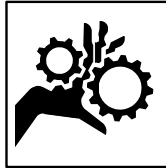
**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

3. Apply sealing compound to male threads of tee (2). Install tee (2) on pressure relief valve (5).
4. Apply sealing compound to male threads on hose (3). Install hose on quick disconnect assembly (4) and tee (2).
5. Connect hose (1) to tee (2).





**FOLLOW-THROUGH STEPS****WARNING**

**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Fill hydraulic tank (WP 0120 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Install power plant rear access panel (WP 0431 00 or WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**



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**REPLACE RAMP CONTROL VALVE TO HYDRAULIC TANK HOSE**

---

**0583 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0583 00-2).  
 Installation (page 0583 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Power plant rear access panel removed (WP 0431 00 or  
 WP 0433 00)

Hydraulic tank drained (WP 0120 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0782 00, Item 65)

Locknut (2)

Personnel Required

Unit Mechanic

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**REMOVAL**

1. Remove two locknuts (1), washers (2), and clamps (3) from oil filter bracket screws (4). Remove clamps from control valve-to-strainer hose (5). Discard locknuts.

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

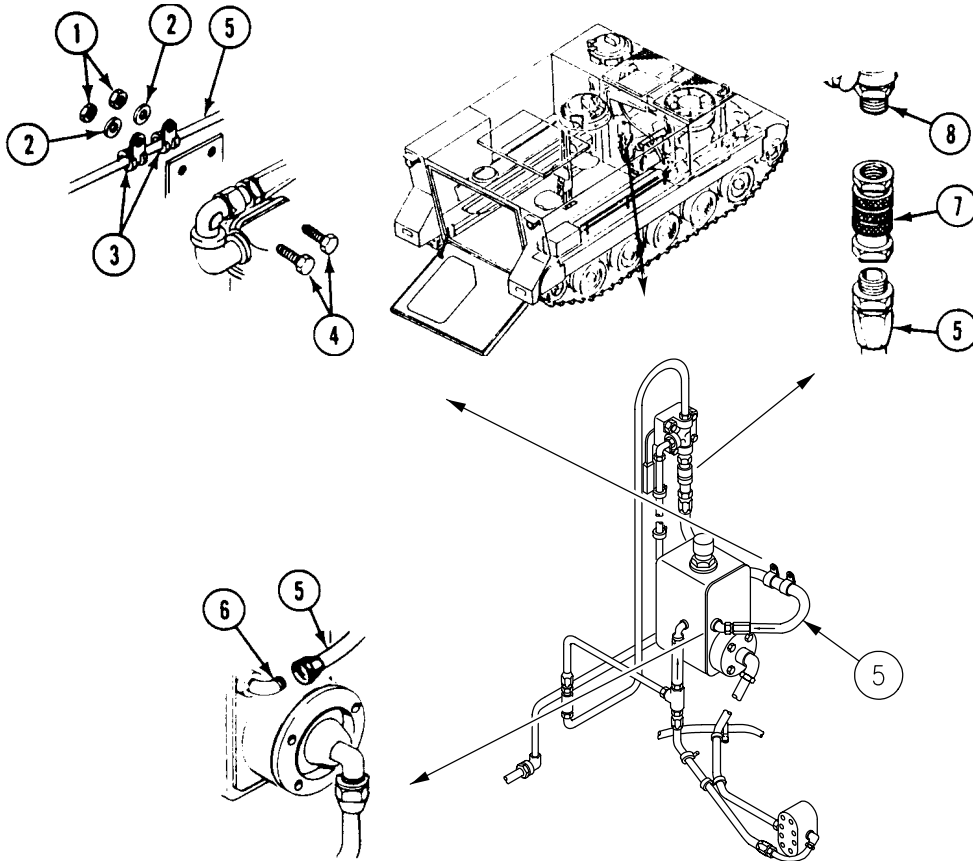
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

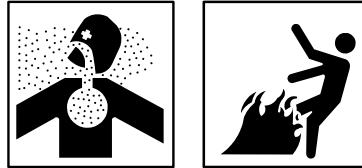
2. Remove hose (5) from elbow (6) and quick disconnect assembly (7).
3. Remove quick disconnect assembly (7) from adapter (8).



**INSTALLATION**

1. Install quick disconnect assembly (7) on adapter (8).

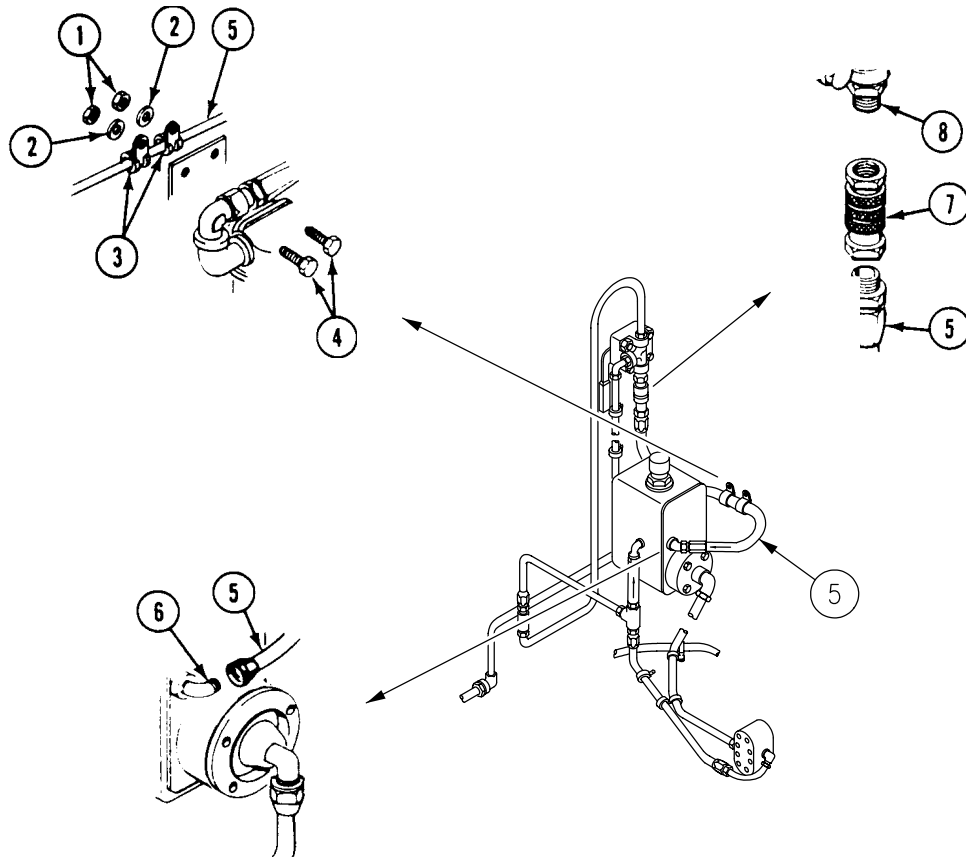
**WARNING**

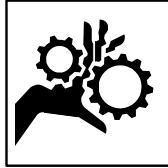


**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

2. Apply sealing compound to male threads of hose (5). Install hose on quick disconnect assembly (7) and elbow (6).
3. Place two clamps (3) on hose (5). Align clamps with oil filter bracket screws (4). Secure with two washers (2) and new locknuts (1).



**FOLLOW-THROUGH STEPS****WARNING**

**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Fill hydraulic tank (WP 0120 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Install power plant rear access panel (WP 0431 00 or WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**

---

**REPLACE HYDRAULIC TANK STRAINER**

**0584 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0584 00-2).  
 Installation (page 0584 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped/shutdown (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Power plant rear access panel removed (WP 0431 00 or  
 WP 0433 00)

Materials/Parts

Antiseize compound (WP 0782 00, Item 8)

Key washer (4)

Packing

Hydraulic tank drained (WP 0120 00)

Personnel Required

Unit Mechanic

---

## REMOVAL

**WARNING**

**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

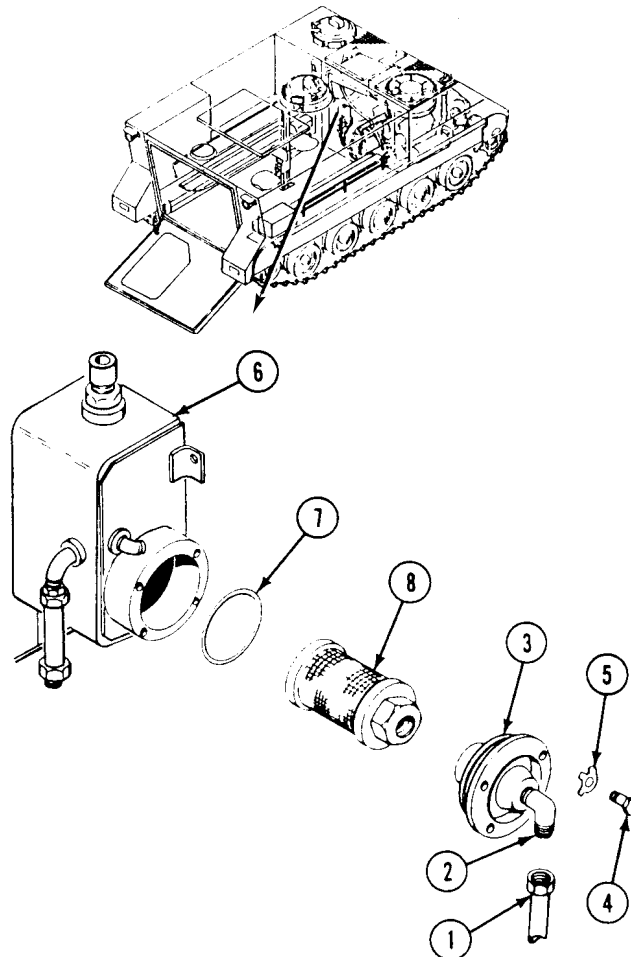
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

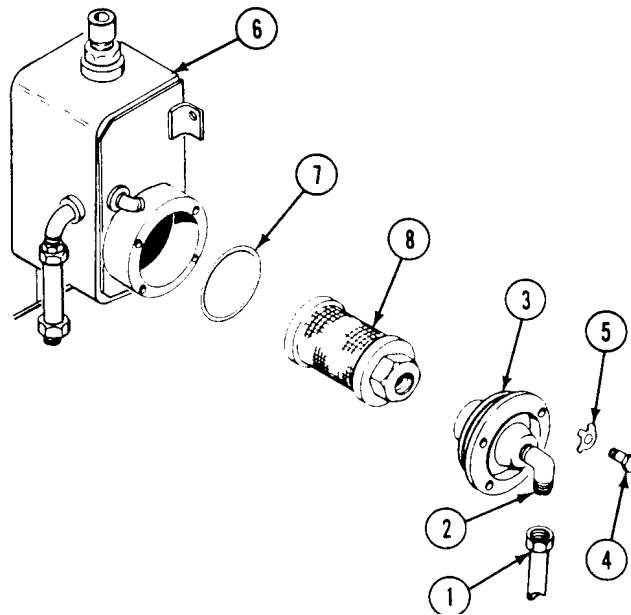
1. Disconnect tube (1) from elbow (2) on adapter (3).
2. Remove four screws (4), key washers (5), and adapter (3) from hydraulic tank (6). Discard key washers.
3. Remove packing (7) from adapter (3). Discard packing.
4. Remove strainer (8) from adapter (3).



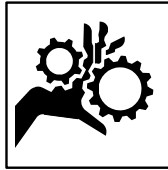


**INSTALLATION**

1. Install strainer (8) on adapter (3).
2. Install new packing (7) on adapter (3).
3. Apply light coat of antiseize compound to male threads of screws (4).
4. Install adapter (3), four new key washers (5), and screws (4) in hydraulic tank (6). Bend tabs on key washers to secure screws.
5. Install tube (1) on elbow (2) on adapter (3).



## FOLLOW-THROUGH STEPS

**WARNING**

**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Fill hydraulic tank (WP 0120 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Install power plant rear access panel (WP 0431 00 or WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**

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**REPLACE/REPAIR HYDRAULIC TANK**

**0585 00**

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**THIS WORK PACKAGE COVERS:**

- Removal (page 0585 00-2).
  - Clean, Inspect, and Repair (page 0585 00-4).
  - Installation (page 0585 00-4).
  - Fill Hydraulic Tank (page 0585 00-7).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

WP 0120 00

Materials/Parts

- FRH hydraulic fluid (WP 0782 00, Item 27)
- Sealing compound (WP 0782 00, Item 60)
- Gasket, breather
- Packing, pressure relief valve
- Packing, sight glass
- Suitable container
- Tab washer (8)

Equipment Condition

- Engine stopped (see your -10)
  - Carrier blocked (see your -10)
  - Ramp lowered (see your -10)
  - Power plant rear access panel removed (WP 0431 00 or WP 0433 00)
  - Driver's power plant access panel removed (WP 0430 00)
-

## REMOVAL

**WARNING**

**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

**Wear gloves and avoid contact with skin.**

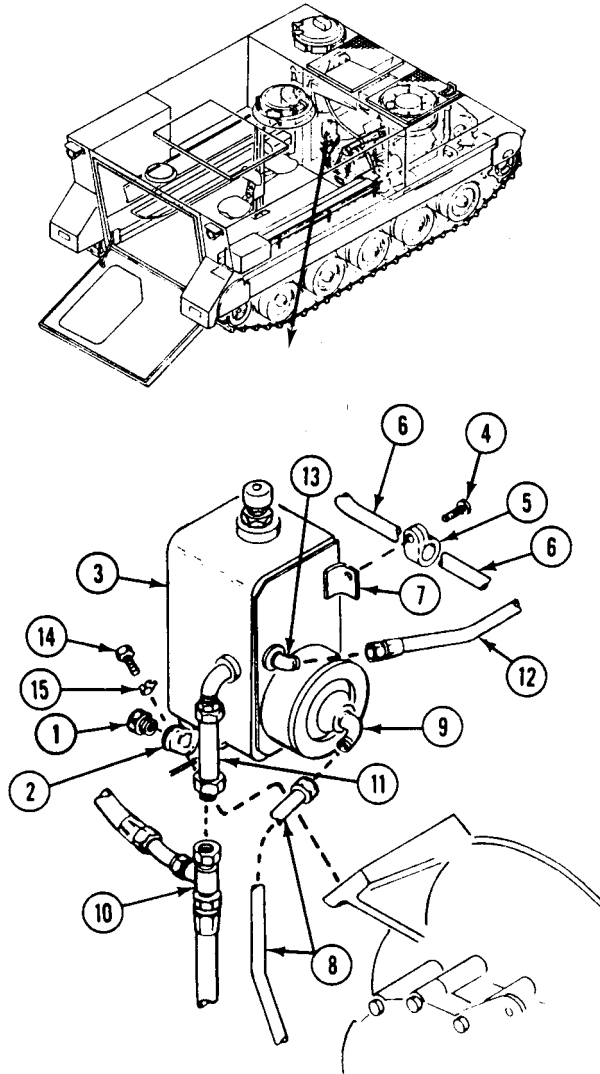
**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

1. Remove plug (1) from tank elbow (2). Drain hydraulic fluid from tank (3) (WP 0120 00). Use suitable container.
2. Remove screw (4) and clamp (5) on filler tube (6) from bracket (7) on tank (3).
3. Disconnect ramp pump-to-strainer tube (8) from elbow (9) on tank (3).
4. Disconnect pressure relief valve tee (10) from pressure relief valve (11).
5. Remove ramp control-to-tank hose (12) on elbow (13) from tank (3).

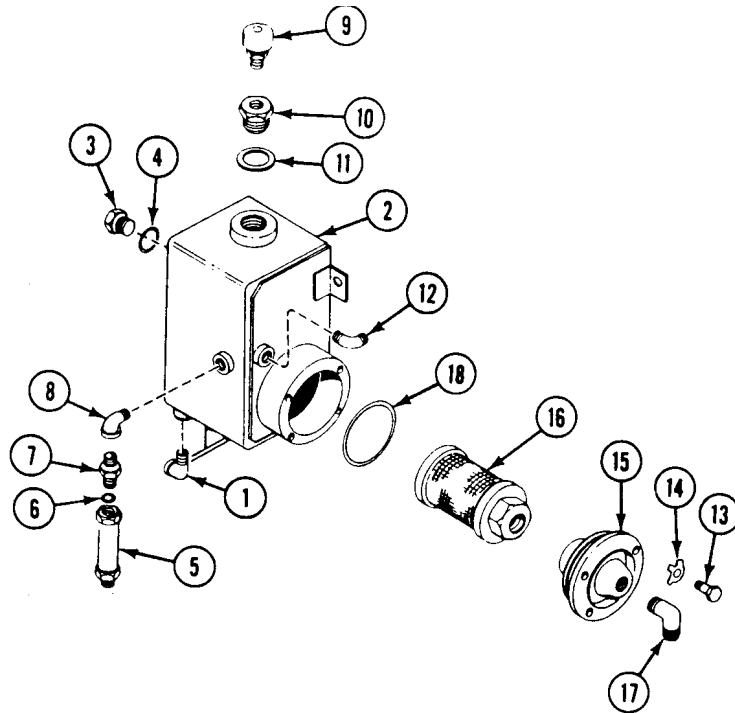
6. Remove four screws (14), tab washers (15), and tank (3) from transfer gearcase mount. Discard tab washers.



**REPLACE/REPAIR HYDRAULIC TANK — Continued**

**0585 00**

7. Remove elbow (1) from bottom of hydraulic tank (2).
8. Remove sight glass (3) and packing (4) from side of tank (2). Discard packing.
9. Remove pressure relief valve (5) and packing (6) from adapter (7). Discard packing.
10. Remove adapter (7) and elbow (8) from tank (2).
11. Remove breather (9) from bushing (10).
12. Remove bushing (10) and gasket (11) from top of tank (2). Discard gasket.
13. Remove elbow (12) from tank (2).
14. Remove four screws (13), tab washers (14), adapter (15), and strainer (16) from tank (2). Discard tab washers.
15. Remove elbow (17) and packing (18) from adapter (15). Discard packing.

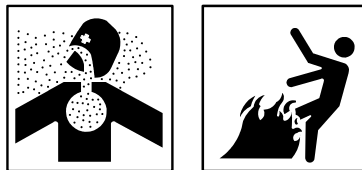


**CLEAN, INSPECT, AND REPAIR**

1. Check all hoses, valves, adapters, bushings, and strainer for cracks, wear, and damage. Replace if needed.

**INSTALLATION**

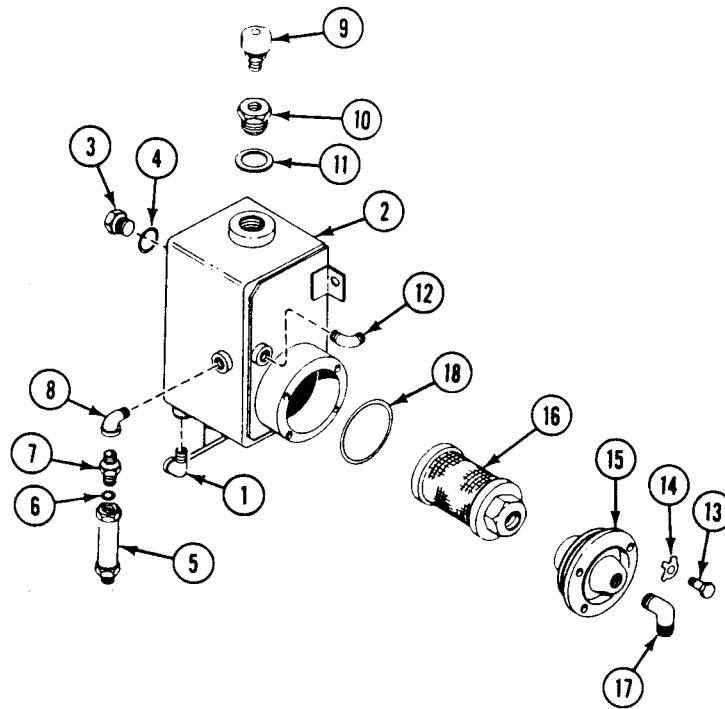
**WARNING**



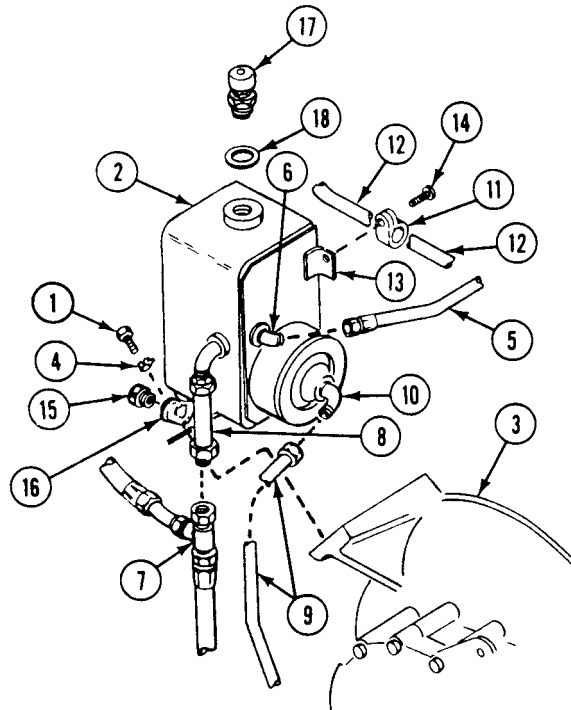
**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. Apply sealing compound to male tapered threads of all fittings except sight glass.
2. Install new packing (18) and elbow (17) on adapter (15).
3. Install strainer (16) and adapter (15) on tank (2). Secure with four new tab washers (14) and screws (13). Bend tabs on washers to secure screws.
4. Install elbow (12) on tank (2).
5. Install new gasket (11) on bushing (10). Install bushing (10) on tank (2).
6. Install breather (9) on bushing (10).
7. Install elbow (8) on tank (2). Install adapter (7) on elbow (8).
8. Install new packing (6) and pressure relief valve (5) on adapter (7).
9. Install new packing (4) and sight glass (3) on tank (2).
10. Install elbow (1) on tank (2).



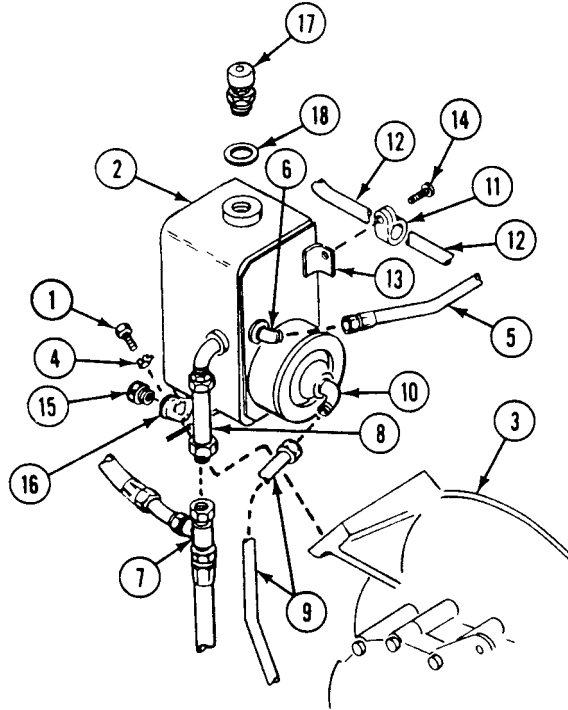
11. Apply light coat of antiseize compound to threads of four screws (1). Place tank (2) on transfer gearcase mount (3). Secure with four new tab washers (4) and screws (1). Bend tabs on washers to secure screws.
12. Connect ramp control-to-tank hose (5) to elbow (6) on tank (2).
13. Connect pressure relief valve tee (7) to pressure relief valve (8).
14. Connect ramp pump-to-strainer tube (9) to elbow (10) on tank (2).
15. Align clamp (11) on filler tube (12) with bracket (13) on tank (2). Secure with screw (14).
16. Install plug (15) on elbow (16) on tank (2).



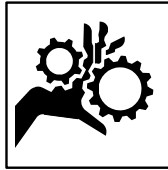


**FILL HYDRAULIC TANK**

1. Remove adapter with breather (17) and gasket (18) from tank (2). Discard gasket if worn.
2. Fill hydraulic tank (WP 0120 00).
3. Install gasket (18) and adapter with breather (17) on tank (2).



## FOLLOW-THROUGH STEPS

**WARNING**

**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Start engine (see your -10). Check for hydraulic leaks.
2. Raise and lower ramp several times to bleed air from system (see your -10).
3. Install driver's power plant access panel (WP 0430 00).
4. Install power plant rear access panel (WP 0431 00 or WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**

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**SERVICE HYDRAULIC TANK**

**0586 00**

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**THIS WORK PACKAGE COVERS:**

Disassembly (page 0586 00-1).  
 Assembly (page 0586 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

References

WP 0120 00

Materials/Parts

FRH hydraulic fluid (WP 0782 00, Item 27)  
 Hydraulic tank strainer  
 Breather gasket  
 Packing  
 Suitable container  
 Tab washer (4)

Equipment Condition

Hydraulic tank removed (WP 0585 00)

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**DISASSEMBLY**

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

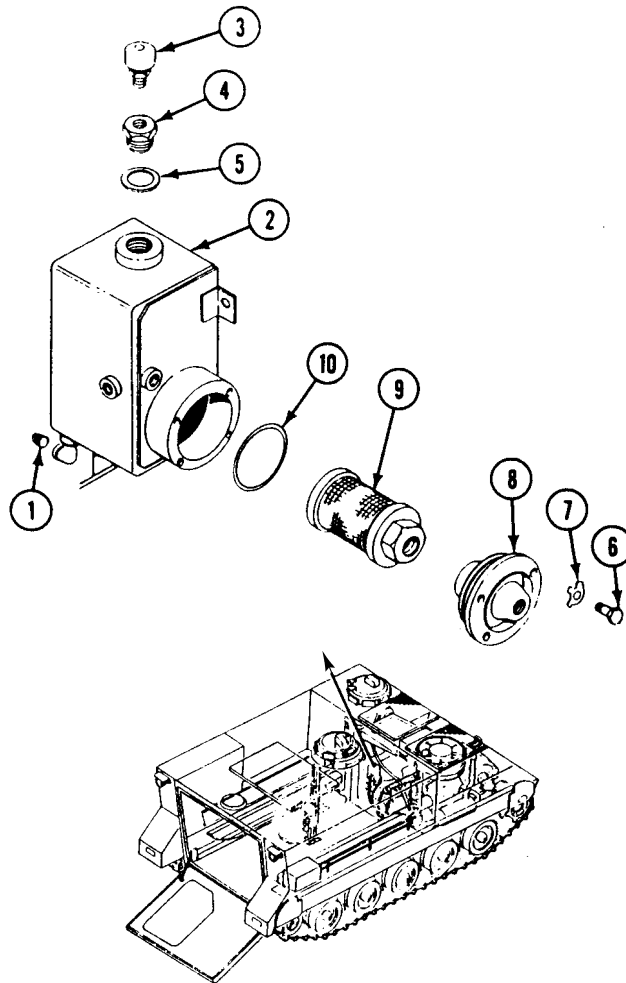
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

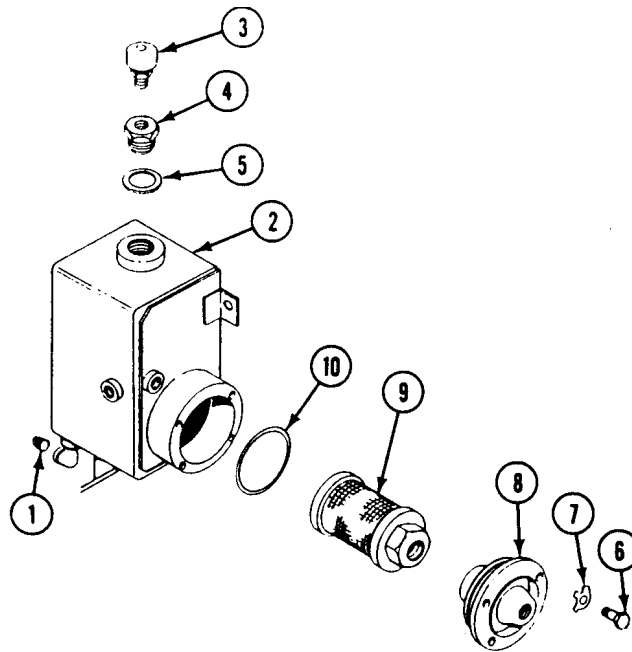
**If FRH is swallowed, get medical attention.**

1. Remove drain plug (1) from bottom of hydraulic tank (2). Drain hydraulic fluid from tank (WP 0120 00). Use suitable container.
2. Remove breather (3), bushing (4), and gasket (5) from top of tank (2). Discard gasket.
3. Remove four screws (6), tab washers (7), adapter (8), and strainer (9) from tank (2). Discard tab washers and strainer.
4. Remove packing (10) from adapter (8). Discard packing.



**ASSEMBLY**

1. Install drain plug (1) in tank (2).
2. Install new packing (10) on adapter (8).
3. Install new strainer (9) and adapter (8) on tank (2). Secure with four new tab washers (7) and screws (6). Bend tabs on washers to secure screws.
4. Fill hydraulic tank (WP 0120 00).
5. Install new gasket (5), bushing (4), and breather (3) on tank (2).

**FOLLOW-THROUGH STEPS**

1. Install hydraulic tank (WP 0585 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Raise and lock ramp (see your -10).
5. Stop/shutdown engine (see your -10).

**END OF TASK**



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**REPLACE QUICK DISCONNECT AND RAMP CONTROL VALVE  
TUBE TO BULKHEAD CONNECTION**

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**0587 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0587 00-2).  
Installation (page 0587 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Driver's power plant access panel removed  
(WP 0430 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Locknut (4)

Personnel Required

Unit Mechanic

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**REPLACE QUICK DISCONNECT AND RAMP CONTROL VALVE TUBE TO  
BULKHEAD CONNECTION — Continued**

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0587 00

**REMOVAL**

1. Remove four screws (1), washers (2), and clamps (3) on tube (4), and clamp (5) on tachometer cable (6) from four bulkhead weldnuts.
2. Remove four clamps (3) from tube (4).

---

**WARNING**

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**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

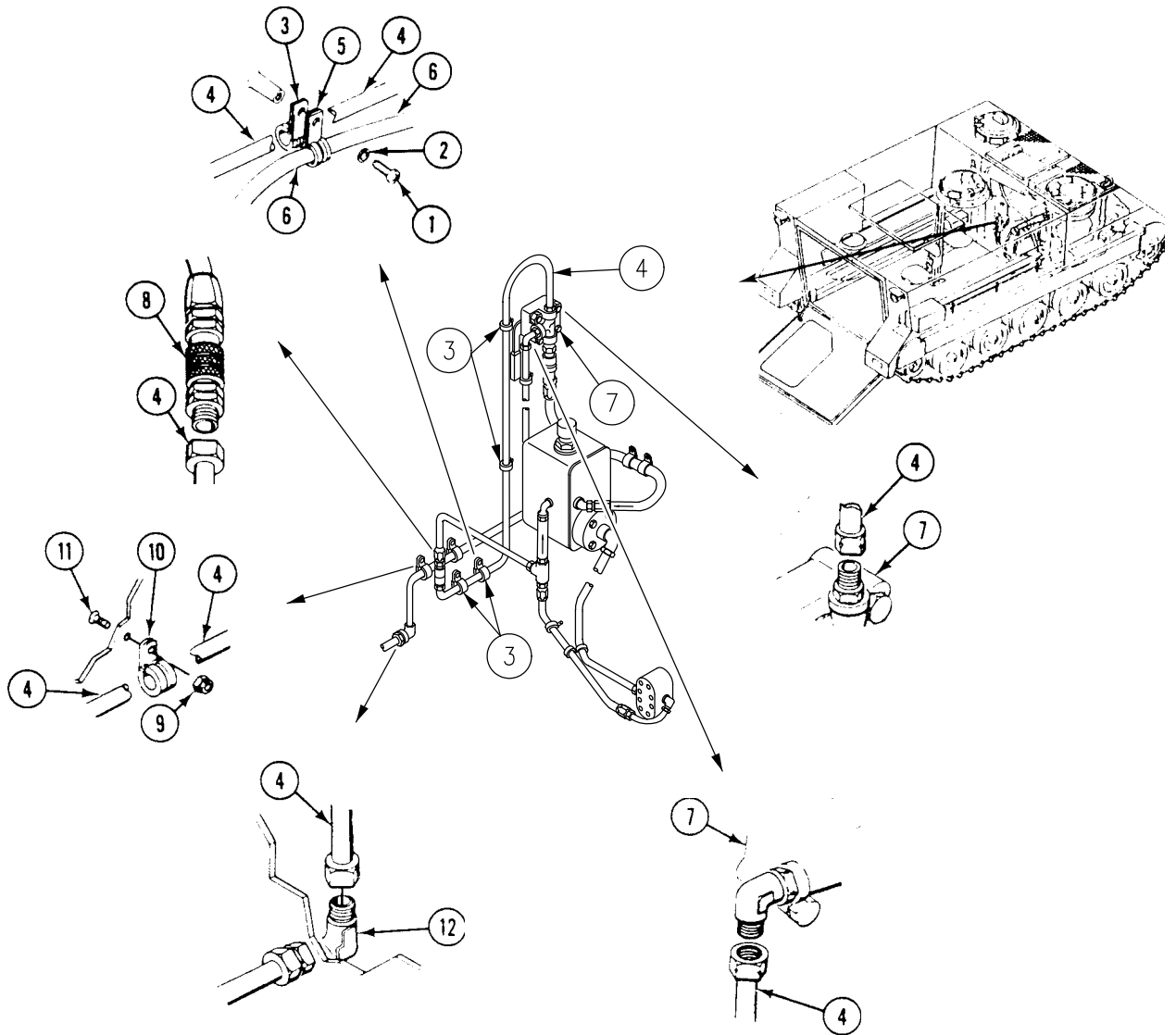
3. Remove tube (4) from ramp control valve (7) and quick disconnect (8).
4. Remove four locknuts (9), clamps (10), and screws (11) from power plant compartment bulkhead. Discard locknuts.
5. Remove tube (4) from ramp control valve (7) and bulkhead elbow (12).



REPLACE QUICK DISCONNECT AND RAMP CONTROL VALVE TUBE TO BULKHEAD CONNECTION — Continued

0587 00

6. Remove four clamps (10) from tube (4).

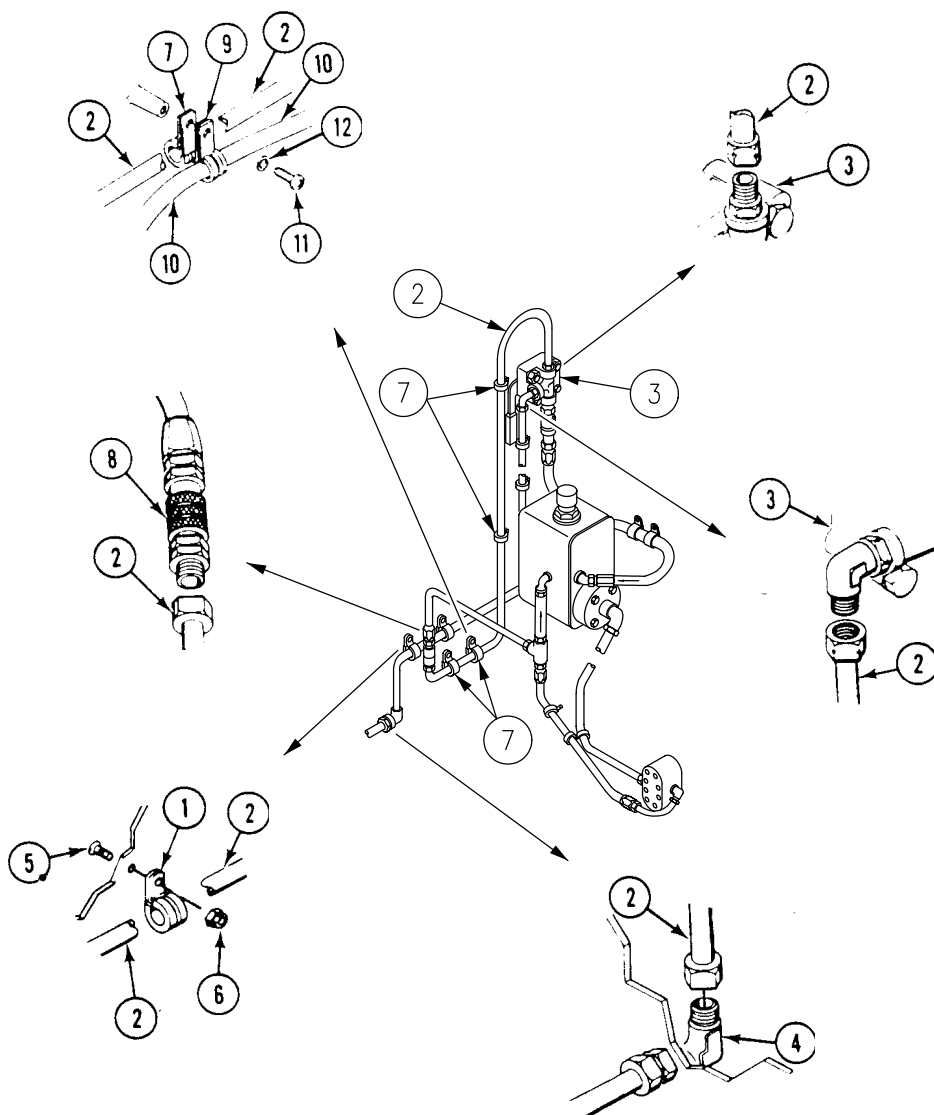


**REPLACE QUICK DISCONNECT AND RAMP CONTROL VALVE TUBE TO BULKHEAD CONNECTION — Continued**

0587 00

**INSTALLATION**

1. Install four clamps (1) on tube (2).
2. Install tube (2) on ramp control valve (3) and bulkhead elbow (4).
3. Align four clamps (1) with power plant compartment holes. Secure with four screws (5) and new locknuts (6).
4. Place four clamps (7) on tube (2).
5. Install tube (2) on ramp control valve (3) and quick disconnect (8).
6. Align four clamps (7) and clamp (9) on tachometer cable (10) with four bulkhead weldnuts. Secure with four screws (11) and new locknuts (12).



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**REPLACE QUICK DISCONNECT AND RAMP CONTROL VALVE TUBE TO  
BULKHEAD CONNECTION — Continued**

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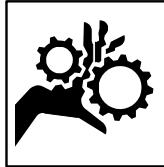
0587 00

**FOLLOW-THROUGH STEPS**

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**WARNING**

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**Loose clothing is dangerous around moving belts and pulleys. You could get badly hurt if your clothes get caught in moving parts.**

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**WARNING**

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**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

1. Check fluid level hydraulic tank (WP 0120 00).
2. Start engine (see your -10). Check for hydraulic leaks.
3. Raise and lower ramp several times to bleed air from system (see your -10).
4. Install driver's power plant access panel (WP 0430 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**



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**REPLACE RAMP PUMP**

**0588 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0588 00-2).  
 Installation (page 0588 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Socket Wrench Set (WP 0780 00, Item 96)  
 Torque Wrench (WP 0780 00, Item 102)

Equipment Condition

Engine stopped (see your -10)  
 Ramp lowered (see your -10)  
 Power plant rear access panel removed (WP 0431 00 or  
 WP 0433 00)  
 Hydraulic tank drained (WP 0585 00)  
 Transfer gearcase drained (WP 0120 00)

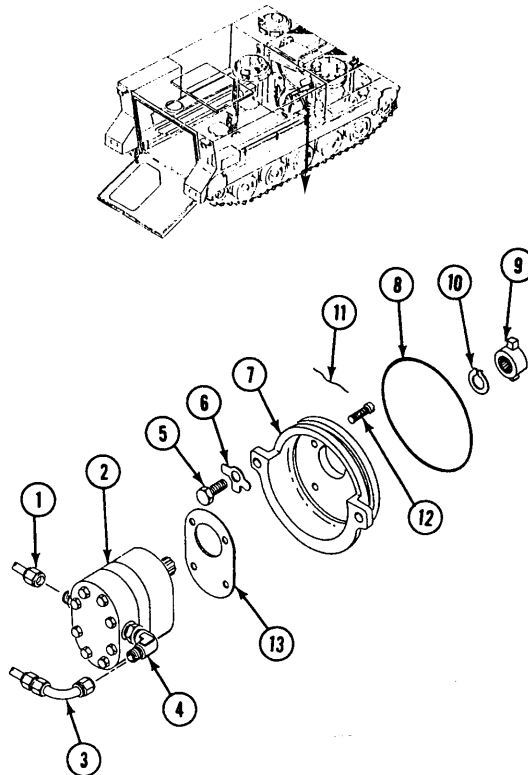
Materials/Parts

Bracket packing  
 Retaining ring  
 Elbow ring  
 Non-electrical wire, as needed  
 Pump fitting packing (2)  
 Pump-to-bracket gasket  
 Tab washer (2)

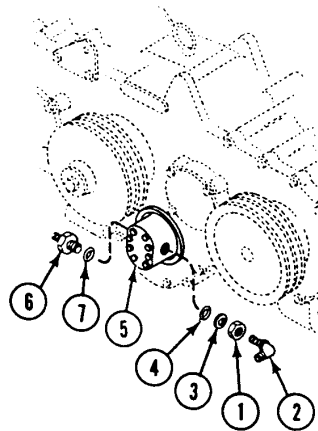
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**REMOVAL**

1. Remove pump inlet hose (1) from pump (2).
2. Remove pump outlet tube (3) from elbow (4).
3. Remove two screws (5), tab washers (6), and bracket (7), with pump (2) attached, from transfer gearcase. Discard tab washers.
4. Remove bracket packing (8) from bracket (7). Discard packing.
5. Remove coupling (9) and retaining ring (10) from pump (2). Discard ring.
6. Remove lockwire (11), four screws (12), pump (2), and gasket (13) from bracket (7). Discard lockwire and gasket.



7. Loosen jamnut (1). Remove elbow (2), ring (3), and packing (4) from pump (5). Remove jamnut (1) from elbow. Discard packing and ring.
8. Remove reducer (6) and packing (7) from pump (5). Discard packing.



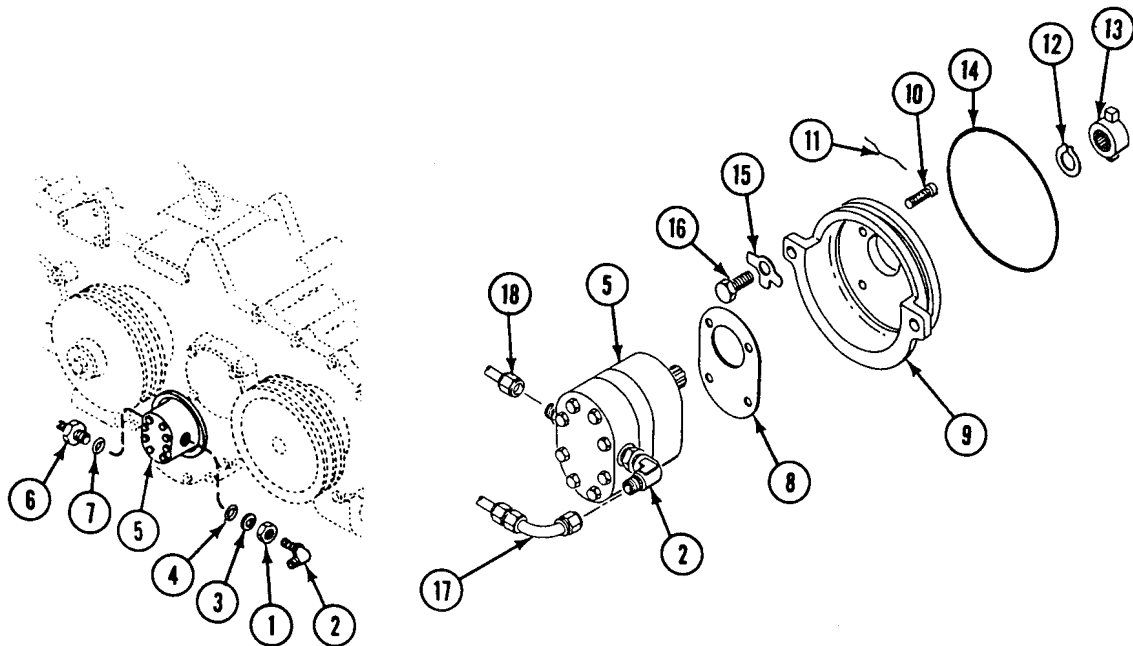
**INSTALLATION**

1. Install new packing (7) and reducer (6) in pump (5).
2. Install jamnut (1) on elbow (2). Install new packing (4), new ring (3) and elbow (2) in pump (5). Secure elbow with jamnut.
3. Install pump (5) and new gasket (8) in bracket (9). Install four screws (10). Secure with new lockwire (11).

**NOTE**

**Retaining ring needs to be installed first. It protects coupling from rubbing against bracket. During coupling installation, tabs on two tab washers must face away from pump. Otherwise, pump will not work.**

4. Install new retaining ring (12) and coupling (13) on pump (5).
5. Install new packing (14) on bracket (9).
6. Install bracket (9), with pump (5) attached, in transfer gearcase. Secure with two new tab washers (15) and screws (16). **TIGHTEN SCREWS TO 144-180 LB-IN (16-20 N·M) TORQUE.** Use torque wrench and socket wrench set. Bend tabs on washers to secure screws.
7. Connect pump outlet tube (17) to elbow (2).
8. Connect pump inlet hose (18) to pump (5).



**FOLLOW-THROUGH STEPS**

1. Fill transfer gearcase (WP 0120 00).
2. Fill hydraulic tank (WP 0585 00).
3. Start engine (see your -10). Check for hydraulic leaks.
4. Raise and lower ramp several times to bleed air from system (see your -10).
5. Install power plant rear access panel (see your -10).
6. Raise and lock ramp (see your -10).
7. Stop engine (see your -10).

**END OF TASK**



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**REPLACE RAMP CONTROL VALVE AND FITTINGS**

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**0589 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0589 00-2).  
 Installation (page 0589 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Driver's access panel removed (see your -10)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)

Preformed packing (3)

Tab washer (4)

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REMOVAL

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

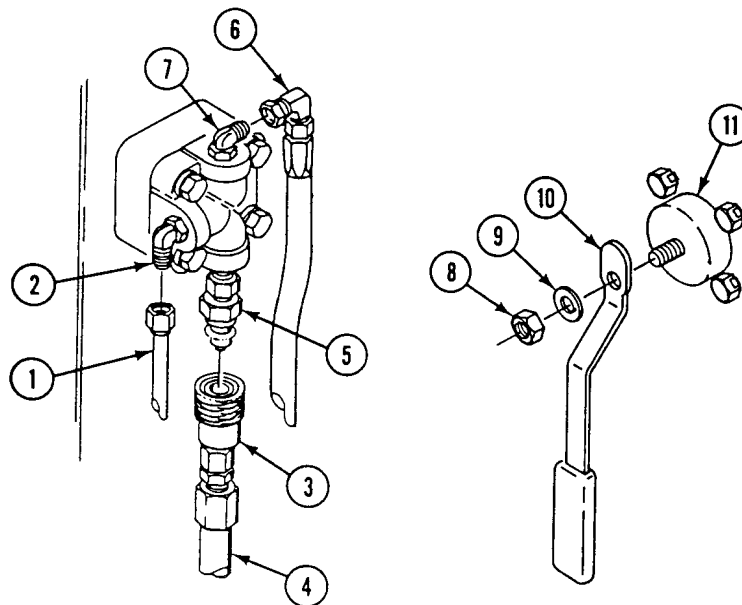
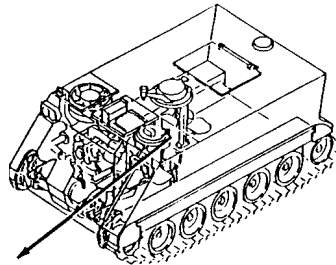
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

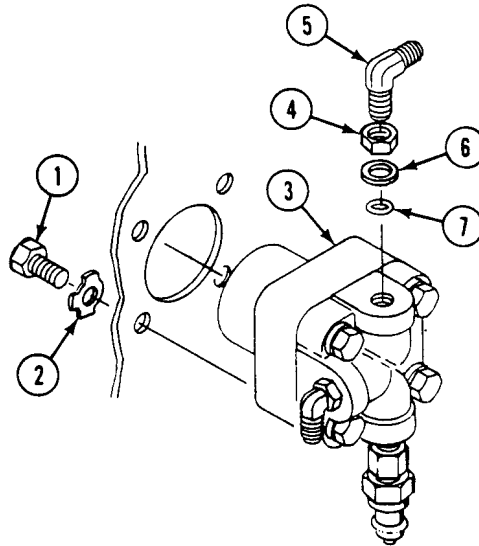
1. Disconnect tube (1) from elbow (2).
2. Disconnect quick disconnect (3) with hose (4) from quick disconnect (5) on control valve.
3. Disconnect elbow (6) from elbow (7).
4. Remove nut (8), washer (9), and handle (10) from valve (11).



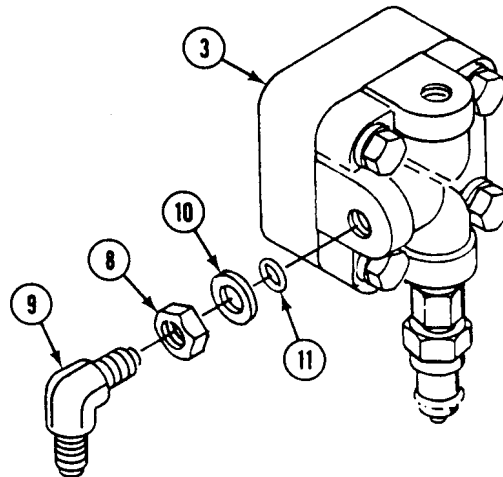
REPLACE RAMP CONTROL VALVE AND FITTINGS — Continued

0589 00

5. Remove four screws (1) and tab washers (2) from valve (3). Remove valve from bulkhead. Discard tab washers.
6. Loosen jamnut (4) on elbow (5). Remove elbow, jamnut, washer (6), and preformed packing (7) from valve (3). Discard packing.

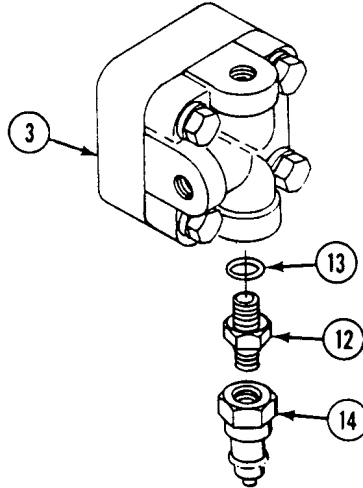
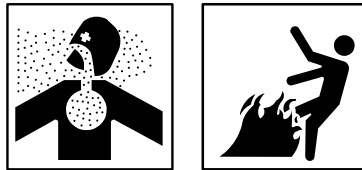


7. Loosen jam nut (8) on elbow (9). Remove elbow, jamnut, washer (10), and preformed packing (11) from valve (3). Discard packing.



**REPLACE RAMP CONTROL VALVE AND FITTINGS — Continued****0589 00**

8. Remove adapter (12) and preformed packing (13) from valve (3). Discard packing.
9. Remove quick disconnect (14) from adapter (12).

**INSTALLATION****WARNING**

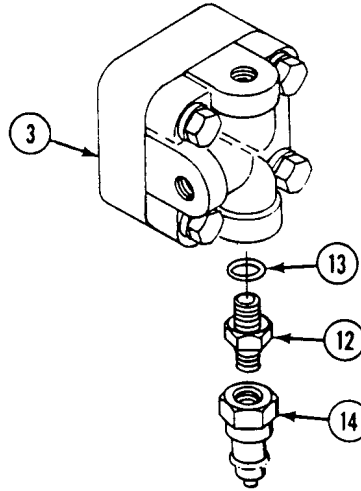
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

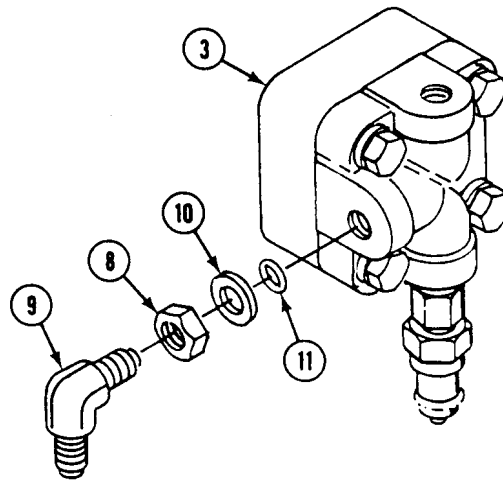
REPLACE RAMP CONTROL VALVE AND FITTINGS — Continued

0589 00

1. Apply sealing compound to clean male tapered threads of adapter (12).
2. Install adapter (12) and new preformed packing (13) on valve (3).
3. Install quick disconnect (14) on adapter (12).



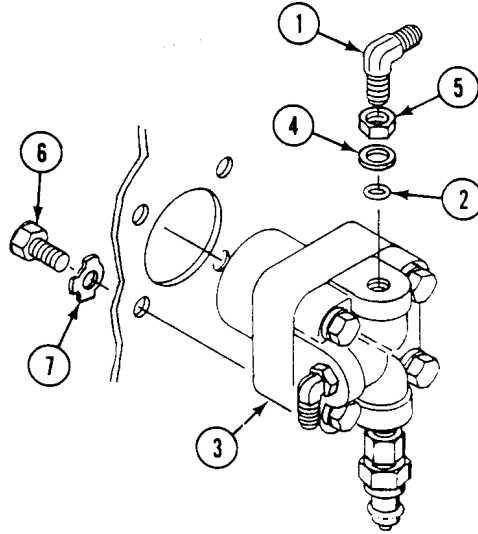
4. Install elbow (9) and new preformed packing (11) on valve (3). Secure with washer (10) and nut (8).



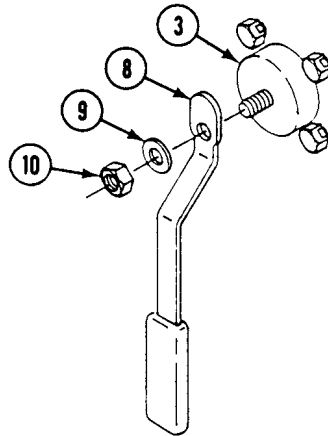
REPLACE RAMP CONTROL VALVE AND FITTINGS — Continued

0589 00

5. Install elbow (1) and new preformed packing (2) on valve (3). Secure with washer (4) and nut (5).
6. Install valve (3) on bulkhead. Secure with four screws (6) and new tab washers (7).

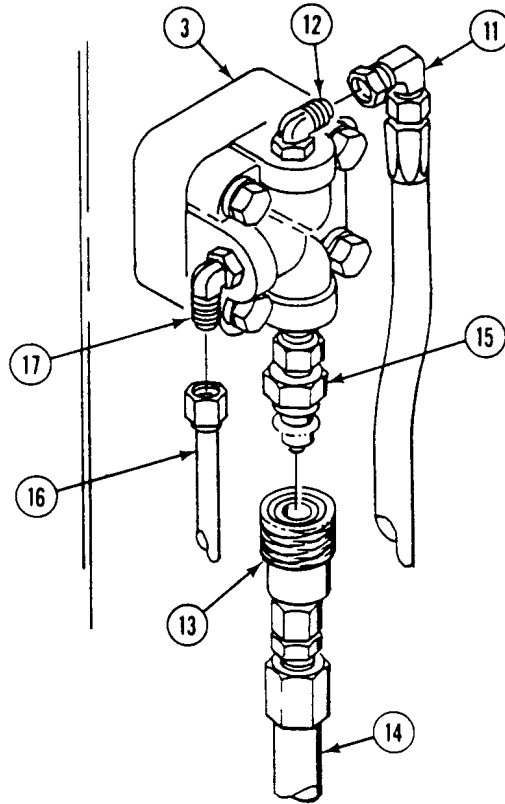


7. Install handle (8) on valve (3). Secure with washer (9) and nut (10).



**REPLACE RAMP CONTROL VALVE AND FITTINGS — Continued****0589 00**

8. Connect elbow (11) to elbow (12).
9. Connect quick disconnect (13) with hose (14) to quick disconnect (15) on control valve (3).
10. Connect tube (16) to elbow (17).

**FOLLOW-THROUGH STEPS**

1. Check and fill hydraulic reservoir (WP 0120 00).
2. Raise and lower ramp several times to bleed system (see your -10). Check for leaks and that the hydraulic reservoir is filled correctly (WP 0120 00).
3. Raise and lock ramp (see your -10).
4. Stop/shutdown engine (see your -10).
5. Install driver's access panel (see your -10).

**END OF TASK**





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**REPLACE BULKHEAD CONNECTION TO RAMP CYLINDER HOSE**

---

**0590 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0590 00-2).  
 Installation (page 0590 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Power plant rear access panel removed (WP 0431 00 or  
 WP 0433 00)

Materials/Parts

FRH hydraulic fluid (WP 0782 00, Item 27)

Sealing compound (WP 0782 00, Item 60)

Lockwasher (M1064 only) (6)

Lockwasher (All except M1064) (7)

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Floor plates removed (WP 0436 00, WP 0437 00,  
 WP 0438 00, or WP 0441 00)

REMOVAL

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

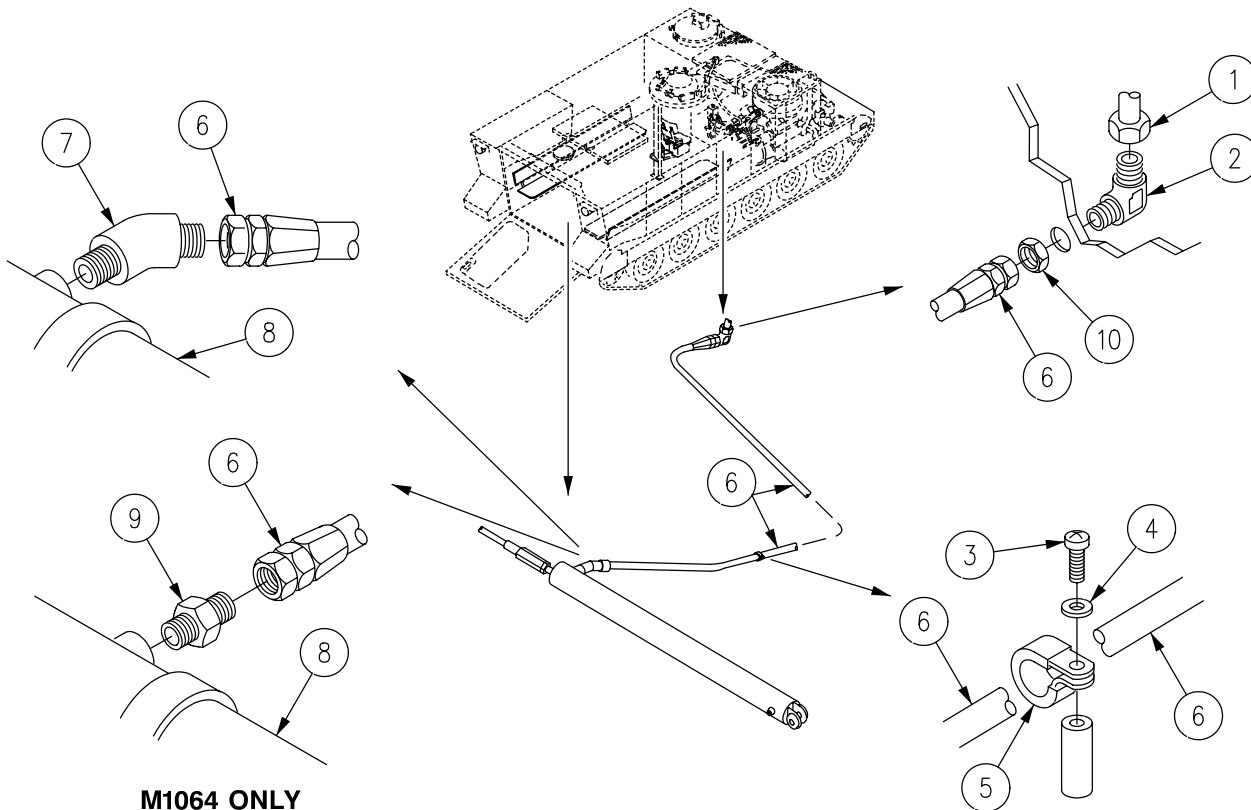
**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

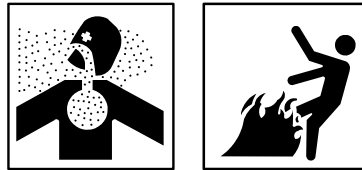
1. Disconnect tube (1) from elbow (2).
2. On M113A2 and M577A2 carriers, remove seven screws (3), lockwashers (4), and clamps (5) from hull weldnuts. Discard lockwashers.
3. On M1064 carriers, remove six screws (3), lockwashers (4), and clamps (5) from hull weldnuts. Discard lockwashers.
4. On all except M1064 carriers, remove hose (6) from elbows (2) and (7). Remove clamps from hose. Remove elbow (7) from ramp cylinder (8).
5. On M1064 carriers, remove hose (6) from elbow (2) and nipple (9). Remove clamps from hose. Remove nipple from ramp cylinder (8).
6. Remove jamnut (10) and elbow (2) from bulkhead.



**INSTALLATION**

1. Install elbow (2) in bulkhead. Secure with jamnut (10).

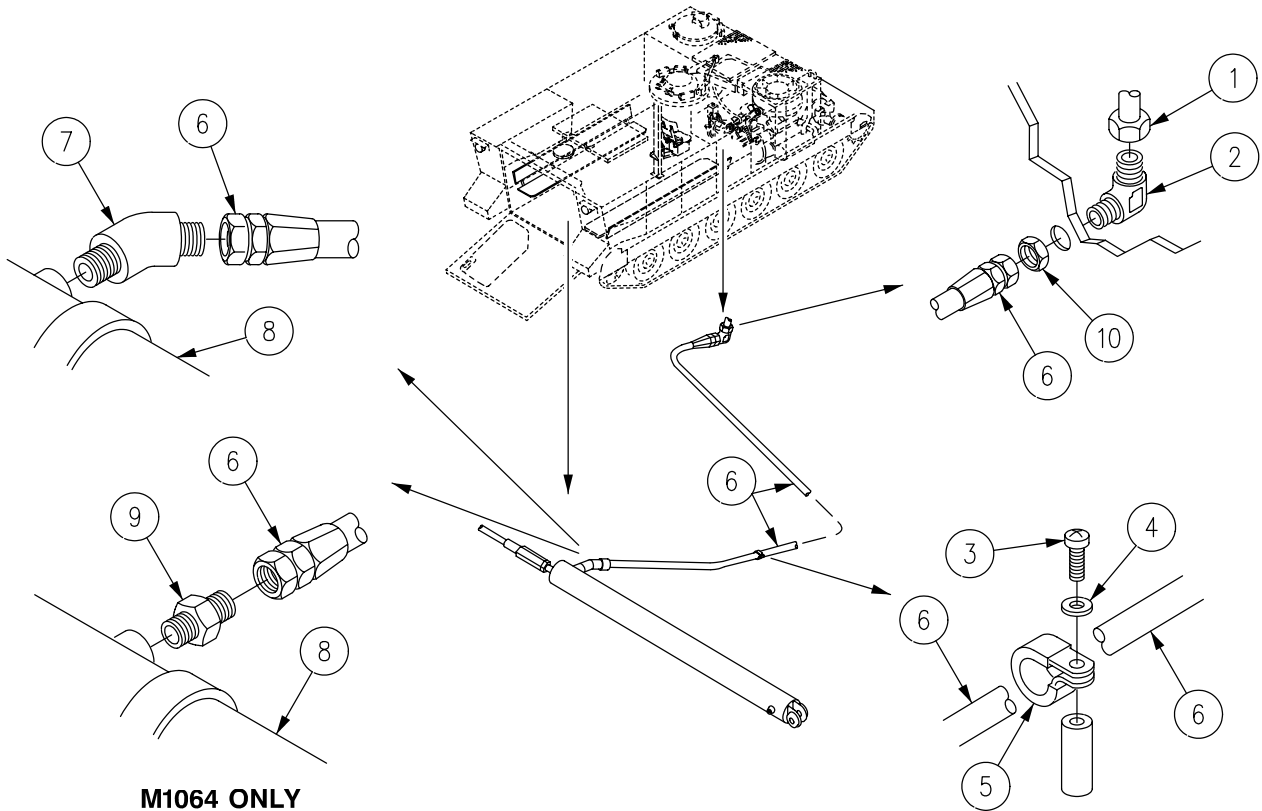
**WARNING**



**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

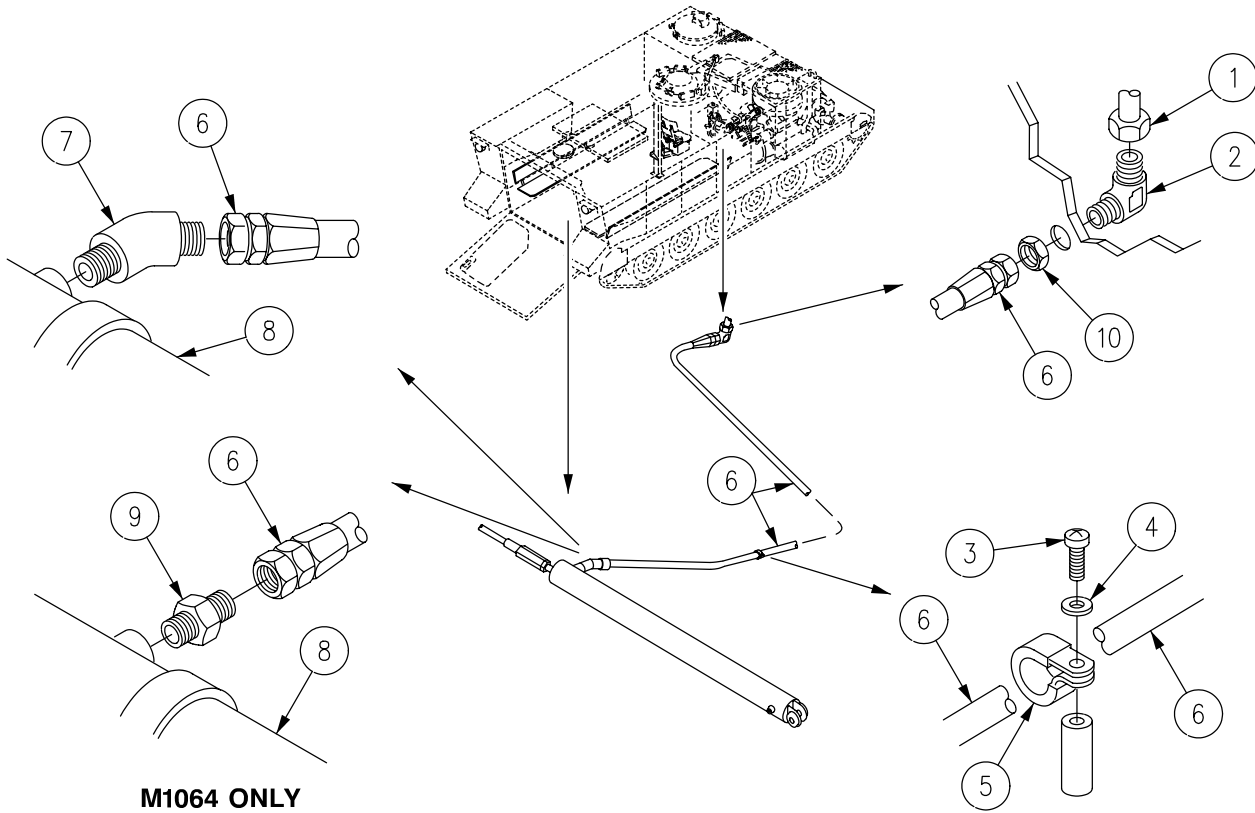
2. Apply light coat of sealing compound to external tapered threads. Do not apply sealant beyond small end of tapered threads.
3. On all except M1064 carriers install elbow (7) in ramp cylinder (8). Place clamps (5) on hose (6). Install hose on elbows (2) and (7).



REPLACE BULKHEAD CONNECTION TO RAMP CYLINDER HOSE — Continued

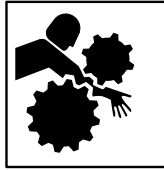
0590 00

4. On M1064 carriers, install nipple (9) on ramp cylinder (8). Place clamps (5) on hose (6). Install hose on elbow (2) and nipple (9).
5. On M113A2 and M577A2 carriers, align seven clamps (5) with hull weldnuts. Secure with seven new lockwashers (4) and screws (3).
6. On M1064 carriers, align six clamps (5) with hull weldnuts. Secure with six new lockwashers (4) and screws (3).
7. Connect tube (1) to elbow (2).



**FOLLOW-THROUGH STEPS**

1. Check fluid level in tank. Add fluid as needed (see your -10).

**WARNING**

**Wearing loose clothing around moving parts can allow personnel to get caught and could result in injury or death. Tuck in loose clothing.**

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

2. Start engine (see your -10).
3. Raise and lower ramp several times to bleed air from system (see your -10). Check for hydraulic leaks.
4. Install power plant rear access panel (WP 0431 00 or WP 0433 00).
5. Install floor plates (WP 0436 00, WP 0437 00, WP 0438 00, or WP 0441 00).
6. Raise and lock ramp (see your -10).
7. Stop/shutdown engine (see your -10).

**END OF TASK**



**REPLACE RAMP CYLINDER BREATHER HOSE (ALL EXCEPT M1064)**

**0591 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0591 00-1).  
 Installation (page 0591 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Rear floor plate removed (WP 0436 00, WP 0438 00,  
 or WP 0441 00)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)

Lockwasher (All except M577A2) (4)

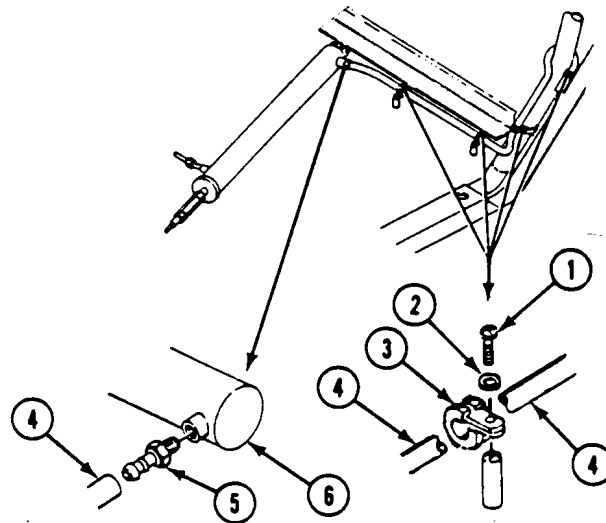
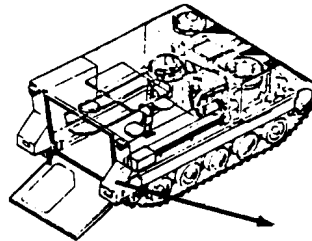
Lockwasher (M577A2 only) (5)

**REMOVAL**

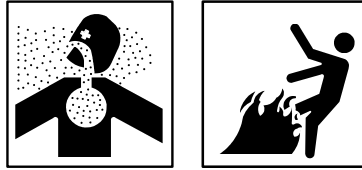
**NOTE**

**M577A2 carriers have five screws, washers, and clamps.**

1. Remove four screws (1), lockwashers (2), and clamps (3) from hull, box beam weldnuts, and clamp on bilge pump discharge tube. Discard lockwashers.
2. Remove hose (4) from adapter (5) on ramp cylinder (6). Remove clamps (3) from hose.
3. Remove adapter (5) from ramp cylinder (6).



## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

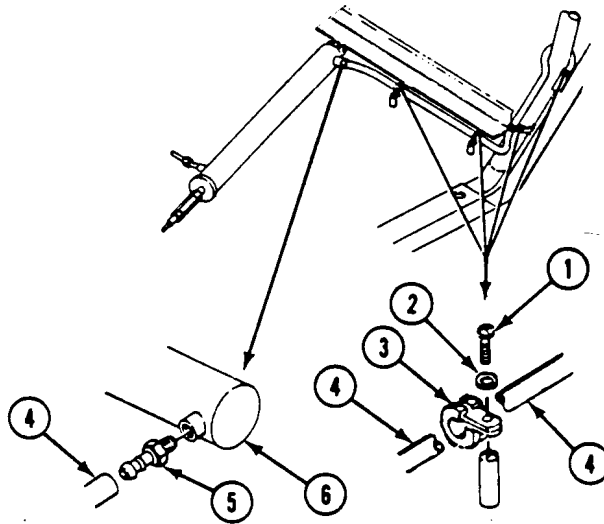
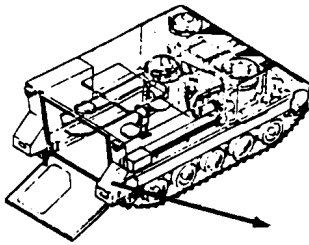
Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply light coat of sealing compound to threads of adapter (5). Install adapter in ramp cylinder (6).
2. Install hose (4) on adapter (5).

**NOTE**

M577A2 carriers have five clamps, washers, and screws.

3. Install four clamps (3) on hose (4). Align clamps with box beam, hull weldnuts, and clamp on bilge pump discharge tube. Secure with four new lockwashers (2) and screws (1).

**FOLLOW-THROUGH STEPS**

1. Install rear floor plate (WP 0436 00, WP 0438 00, or WP 0441 00).
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

**END OF TASK**



**REPLACE RAMP CYLINDER BREATHER HOSE (M1064 ONLY)**

**0592 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0592 00-1).  
 Installation (page 0592 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic  
 Helper (H)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Tread plate on mortar base plate raised (see your -10)

Materials/Parts

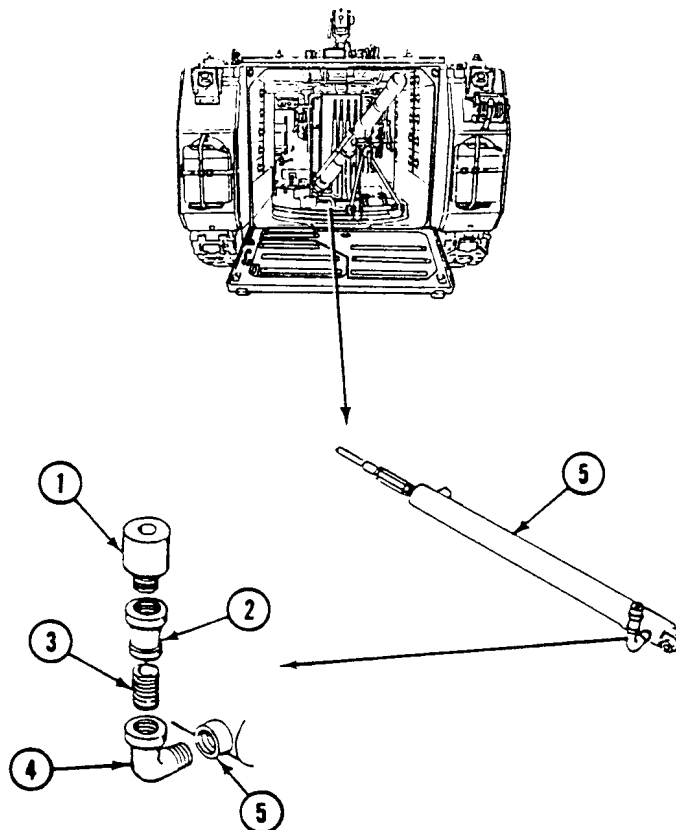
Sealing compound (WP 0782 00, Item 60)

**REMOVAL**

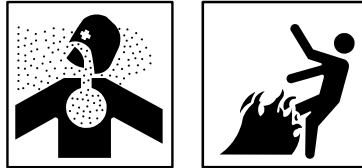
**NOTE**

**Rotate base plate to access breather. Have helper assist.**

1. Remove breather (1) from coupling (2).
2. Remove coupling (2) from nipple (3).
3. Remove nipple (3) from elbow (4).
4. Remove elbow (4) from ramp cylinder (5).



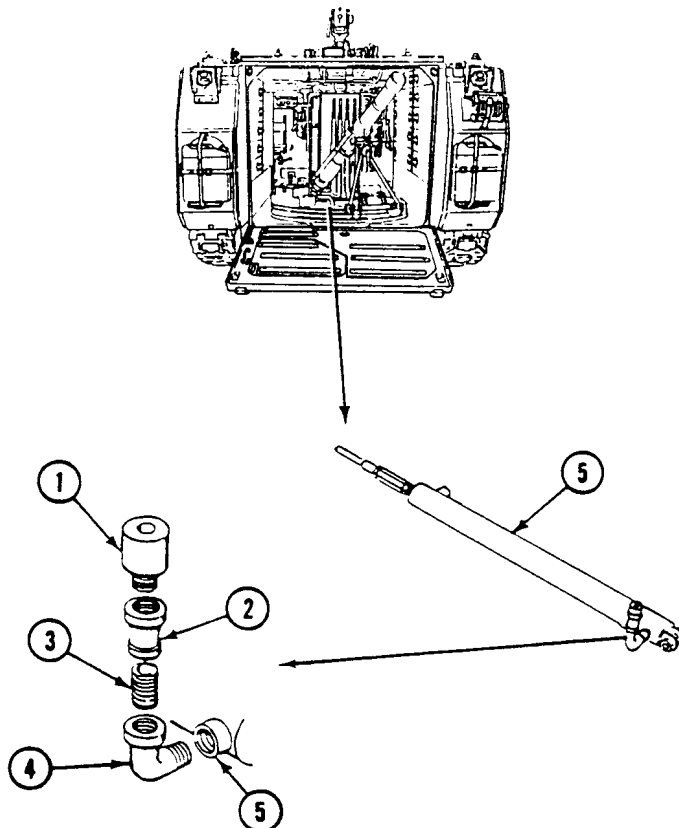
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply light coat of sealing compound to external tapered threads. Do not apply sealant beyond small end of external tapered threads.
2. Install elbow (4) in ramp cylinder (5).
3. Install nipple (3) in elbow (4).
4. Install coupling (2) on nipple (3).
5. Install breather (1) in coupling (2).



**FOLLOW-THROUGH STEPS**

1. Lower mortar base tread plate (see your -10).
2. Start engine (see your -10).
3. Raise and lock ramp (see your -10).
4. Stop engine (see your -10).

**END OF TASK**



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**REPLACE RAMP CYLINDER**

**0593 00**

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**THIS WORK PACKAGE COVERS:**

- Removal (page 0593 00-1).
  - Cleaning (page 0593 00-2).
  - Installation (page 0593 00-2).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Rear floor plate removed (WP 0436 00, WP 0438 00, or WP 0441 00)
- Ramp cylinder hose disconnected (WP 0590 00)
- Breather hose removed (WP 0591 00 or WP 0592 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

- Adhesive (WP 0782 00, Item 2)
- Cleaning compound solvent (WP 0782 00, Item 16)
- Cotter pin

Personnel Required

Unit Mechanic

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**REMOVAL**

**WARNING**



**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

**Wear gloves and avoid contact with skin.**

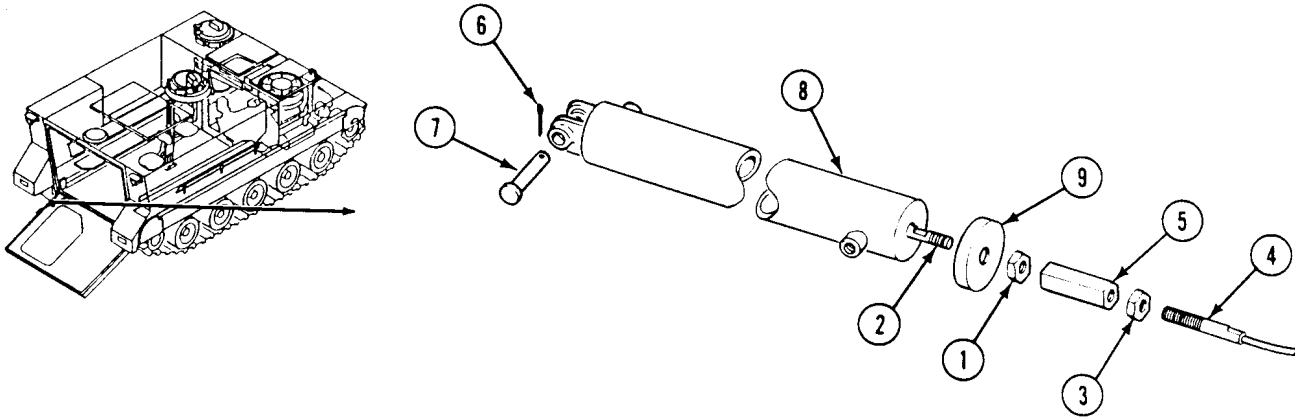
**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

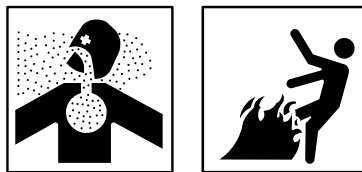
**If FRH is swallowed, get medical attention.**

**REPLACE RAMP CYLINDER — Continued****0593 00**

1. Loosen nut (1) on cylinder rod (2). Loosen nut (3) on cable (4).
2. Turn post (5) onto cable (4) until it clears cylinder rod (2). Remove nut (1) from rod.
3. Remove post (5) and nut (3) from cable (4).
4. Remove cotter pin (6) from clevis pin (7). Discard cotter pin.
5. Remove clevis pin (7) and ramp cylinder (8) from hull bracket.
6. Remove boot (9) from cylinder (8).

**CLEANING**

1. Clean boot mating surface on cylinder with cleaning compound.

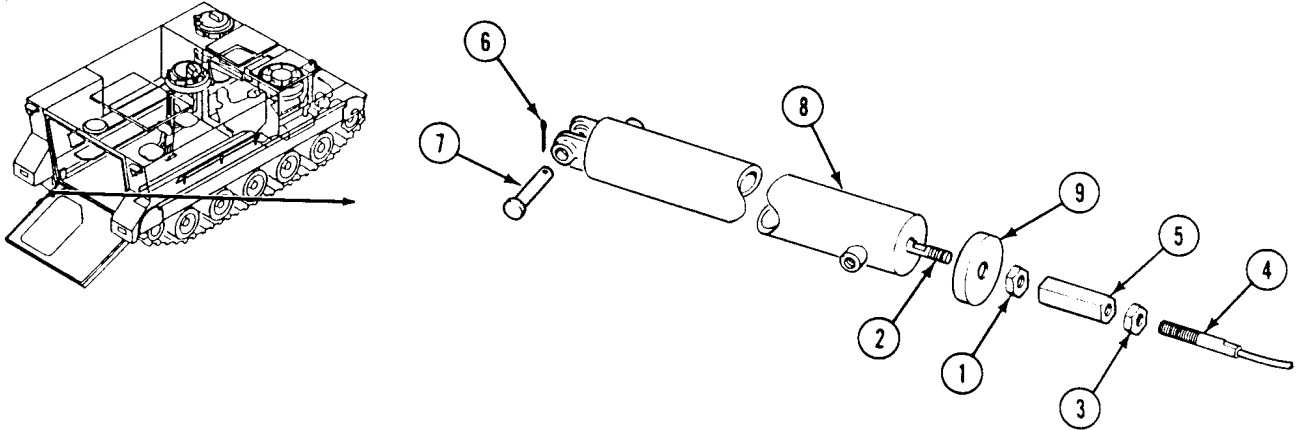
**INSTALLATION****WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

**REPLACE RAMP CYLINDER — Continued****0593 00**

1. Apply thin coat of adhesive to surfaces of boot (1) and cylinder (2). Allow adhesive to become tacky and install boot on cylinder.
2. Align cylinder (2) with hull bracket. Secure with clevis pin (3) and new cotter pin (4).
3. Install nut (5) and post (6) on cable (7).
4. Install nut (8) on cylinder rod (9).
5. Thread post (6) on cylinder rod (9). Secure with two nuts (5) and (8).

**FOLLOW-THROUGH STEPS**

1. Install breather hose (WP 0591 00 or WP 0592 00).
2. Connect ramp cylinder hose (WP 0590 00).

**WARNING**

**Fire Resistant Hydraulic fluid (FRH) is toxic if absorbed through skin or ingested.**

**Do not service hydraulic system when FRH is hot or pressurized.**

**Wear gloves and avoid contact with skin.**

**If FRH contacts skin, wash immediately with soap.**

**If FRH gets into eyes, wash with lots of water for 15 minutes and get medical attention.**

**If FRH is swallowed, get medical attention.**

3. Check fluid in tank. Add fluid as needed (WP 0120 00).
4. Start engine (see your -10). Check for hydraulic leaks.

**WARNING**

**An inoperable/unsafe ramp can fall and kill soldiers. Seal off area behind ramp during testing and bleeding of hydraulic lines.**

5. Raise and lower ramp several times to bleed air from system (see your -10).
6. Install rear floor plate (WP 0436 00, WP 0438 00, or WP 0441 00).
7. Raise and lock ramp (see your -10).
8. Stop/shutdown engine (see your -10).

**END OF TASK**



CHAPTER 29

UNIT MAINTENANCE INSTRUCTIONS  
FOR AUXILIARY GENERATOR

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**WORK PACKAGE INDEX**

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<u>Title</u>	<u>Sequence No.</u>
REPLACE 5.0 KW AUXILIARY POWER UNIT FUEL SHUTOFF VALVE (M577A2 AND M1068 ONLY).....	0594 00
REPLACE 5.0 KW AUXILIARY POWER UNIT VALVE-TO-BULKHEAD FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY).....	0595 00
REPLACE 5.0 KW AUXILIARY POWER UNIT BULKHEAD-TO-HULL FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY).....	0596 00



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**REPLACE 5.0 KW AUXILIARY POWER UNIT FUEL SHUTOFF VALVE (M577A2 AND M1068 ONLY)**

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**0594 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0594 00-2).  
 Installation (page 0594 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Battery ground lead disconnected (WP 0294 00)  
 Rear floor plate removed (WP 0436 00 or WP 0440 00)  
 Auxiliary equipment fuel shutoff valve closed  
 (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)  
 Locknut

Personnel Required

Unit Mechanic

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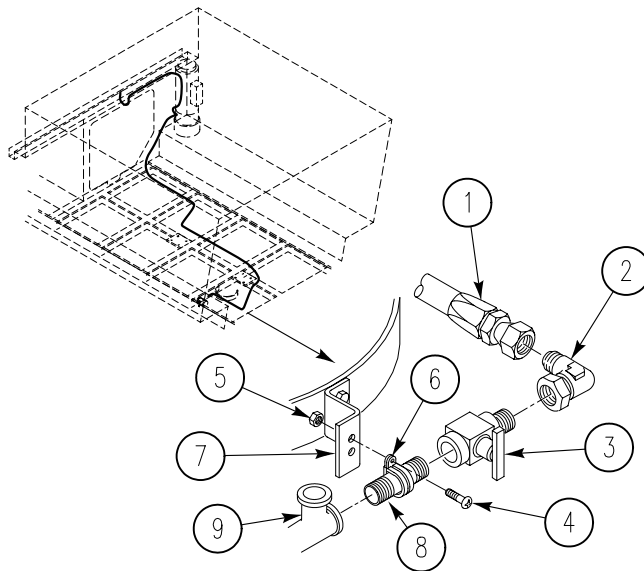
REMOVAL

**WARNING**



**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Disconnect hose (1) from elbow (2) on fuel shutoff valve (3).
2. Remove elbow (2) from shutoff valve (3).
3. Remove screw (4), locknut (5), and clamp (6) from bracket (7). Remove clamp from nipple (8). Discard locknut.
4. Remove shutoff valve (3) from nipple (8).
5. Remove nipple (8) from tee (9).



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**REPLACE 5.0 KW AUXILIARY POWER UNIT FUEL SHUTOFF VALVE (M577A2 AND M1068 ONLY) — Continued**


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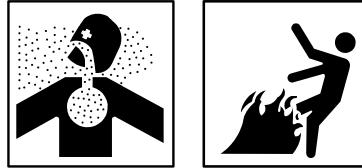
0594 00

**INSTALLATION**


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**WARNING**

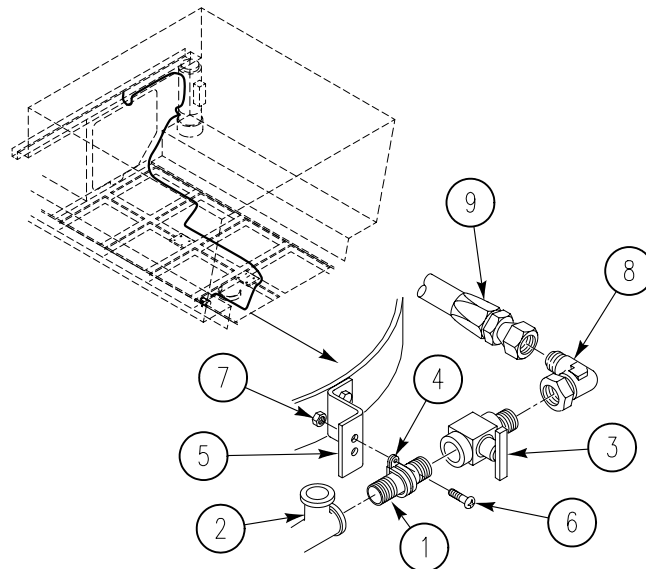

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**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of tapered threads.
2. Install nipple (1) in tee (2).
3. Install shutoff valve (3) on nipple (1).
4. Place clamp (4) on nipple (1). Secure clamp to bracket (5) with screw (6) and new locknut (7).
5. Install elbow (8) on shutoff valve (3).
6. Connect hose (9) to elbow (8).



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**REPLACE 5.0 KW AUXILIARY POWER UNIT FUEL SHUTOFF VALVE (M577A2  
AND M1068 ONLY) — Continued**

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**0594 00**

**FOLLOW-THROUGH STEPS**

1. Open auxiliary equipment fuel shutoff valve (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Start auxiliary power unit (see your -10). Check all fittings for leaks. Turn power unit off.
4. Install right front and rear floor plates (WP 0436 00 or WP 0440 00).
5. Start engine (see your -10).
6. Raise and lock ramp (see your -10).
7. Stop engine (see your -10).

**END OF TASK**

---

**REPLACE 5.0 KW AUXILIARY POWER UNIT VALVE-TO-BULKHEAD  
FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY)**

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**0595 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0595 00-2).
  - Installation (page 0595 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Battery ground lead disconnected (WP 0294 00)
- Personnel heater duct removed (WP 0617 00)
- Right front and rear floor plates removed (WP 0436 00  
or WP 0440 00)
- Auxiliary power unit fuel shutoff valve closed  
(see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

- Lockwasher (3)
- Lockwasher (2)
- Tie strap (AR)

Personnel Required

Unit Mechanic

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**REPLACE 5.0 KW AUXILIARY POWER UNIT VALVE-TO-BULKHEAD FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY) — Continued**

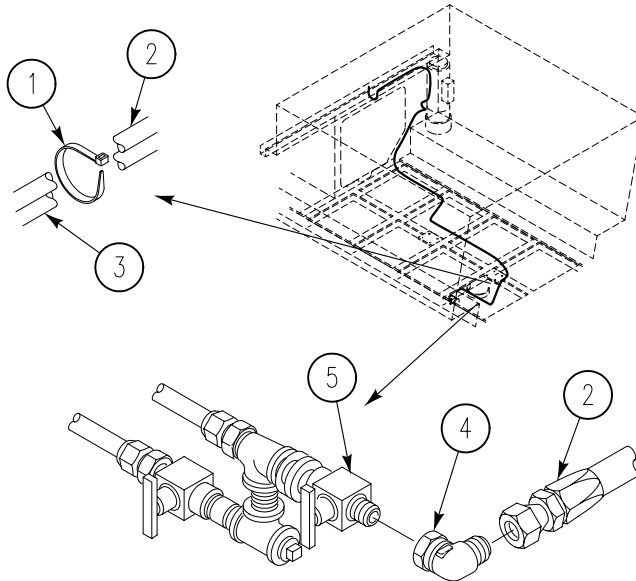
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0595 00

**REMOVAL****WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicle. Wipe up fuel spills immediately. Do not smoke near fuel or when working on fuel system.**

1. Remove two tie straps (1) holding fuel hose (2) to other hose (3). Discard tie straps.
2. Disconnect fuel hose (2) from elbow (4) on fuel shutoff valve (5). Remove hose from carrier.

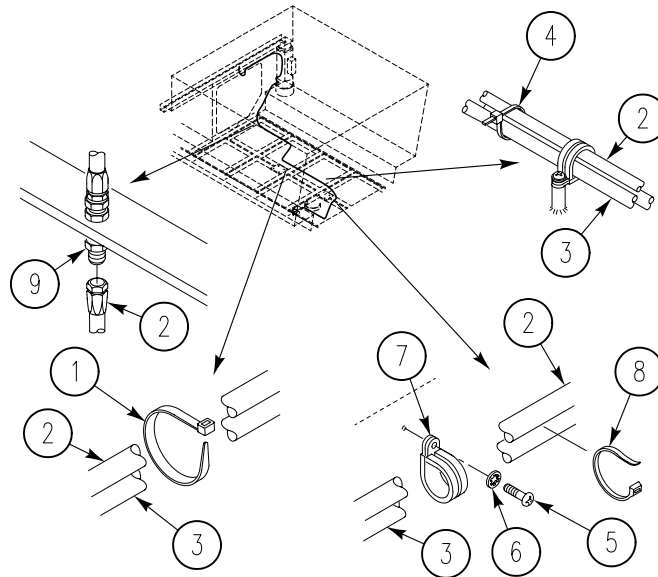




**REPLACE 5.0 KW AUXILIARY POWER UNIT VALVE-TO-BULKHEAD FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY) — Continued**

0595 00

3. Remove six tie straps (1) holding fuel hose (2) to other hose (3). Discard tie straps.
4. Remove nine tie straps (4) holding fuel hose (2) to other hose (3).
5. Remove screw (5), lockwasher (6), clamp (7), and tie strap (8) securing fuel hose (2) and other hose (3) to weldnut on hull floor and to the side of seat support. Discard lockwasher and tie strap.
6. Disconnect fuel hose (2) from nipple (9) in bulkhead crossbeam. Remove hose from carrier.



**REPLACE 5.0 KW AUXILIARY POWER UNIT VALVE-TO-BULKHEAD FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY) — Continued**

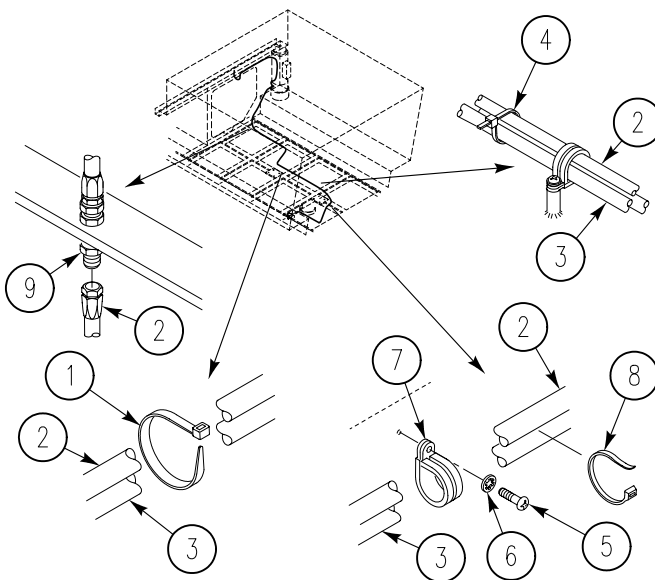
0595 00

**INSTALLATION**

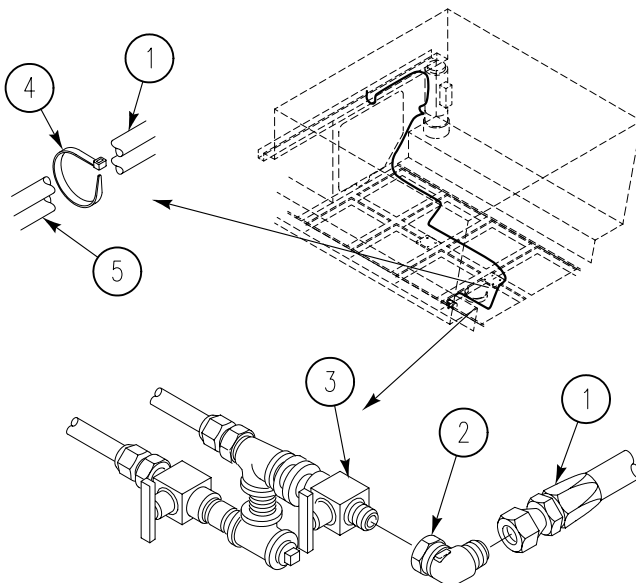
**NOTE**

**Replacing a flareless fuel hose may also require a new mating fitting such as a nipple.**

1. Connect fuel hose (2) to nipple (9) in bulkhead crossbeam. Route hose to rear of carrier.
2. Install clamp (7) on fuel hose (2). Secure clamps to weldnut on hull floor and to side of seat support with screw (5) and new lockwasher (6). Install new tie strap (8) around fuel hose (2) and other hose (3).
3. Secure fuel hose (2) to other hose (3) with nine new tie straps (4).
4. Secure fuel hose (2) to other hose (3) with six new tie straps (1).



5. Connect fuel hose (1) to elbow (2) on fuel shutoff valve (3).
6. Install two new tie straps (4) on fuel hose (1) and other hose (5).



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**REPLACE 5.0 KW AUXILIARY POWER UNIT VALVE-TO-BULKHEAD FUEL SUPPLY  
HOSES (M577A2 AND M1068 ONLY) — Continued**

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**0595 00**

**FOLLOW-THROUGH STEPS**

1. Open auxiliary power unit fuel shutoff valve (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Start auxiliary power unit (see your -10). Check all fittings for leaks. Turn auxiliary power unit off.
4. Install right front and rear floor plates (WP 0436 00 or WP 0440 00).
5. Install personnel heater duct (WP 0617 00).
6. Start engine (see your -10).
7. Raise and lock ramp (see your -10).
8. Stop engine (see your -10).

**END OF TASK**



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**REPLACE 5.0 KW AUXILIARY POWER UNIT BULKHEAD-TO-HULL  
FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY)**

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**0596 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0596 00-2).
  - Installation (page 0596 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Gasket

Lockwasher (3)

Tie strap (3)

Sleeve (2)

Personnel Required

Unit Mechanic

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Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Battery ground lead disconnected (WP 0294 00)

Personnel heater duct removed (WP 0617 00)

Right front floor plate removed (WP 0436 00 or  
WP 0440 00)

Power plant rear access panel removed (WP 0433 00)

Auxiliary power unit fuel shutoff valve closed  
(see your -10)

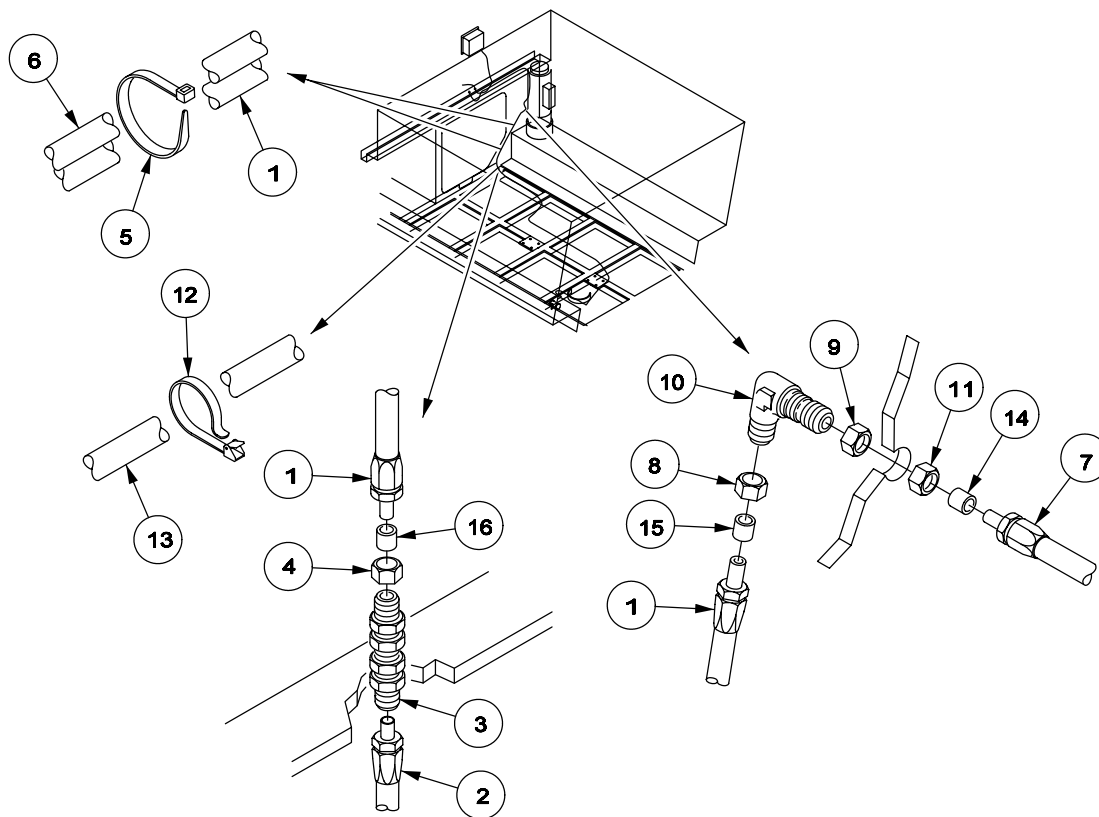
**REPLACE 5.0 KW AUXILIARY POWER UNIT BULKHEAD-TO-HULL FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY) — Continued**

0596 00

**REMOVAL**
**WARNING**


**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicle. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

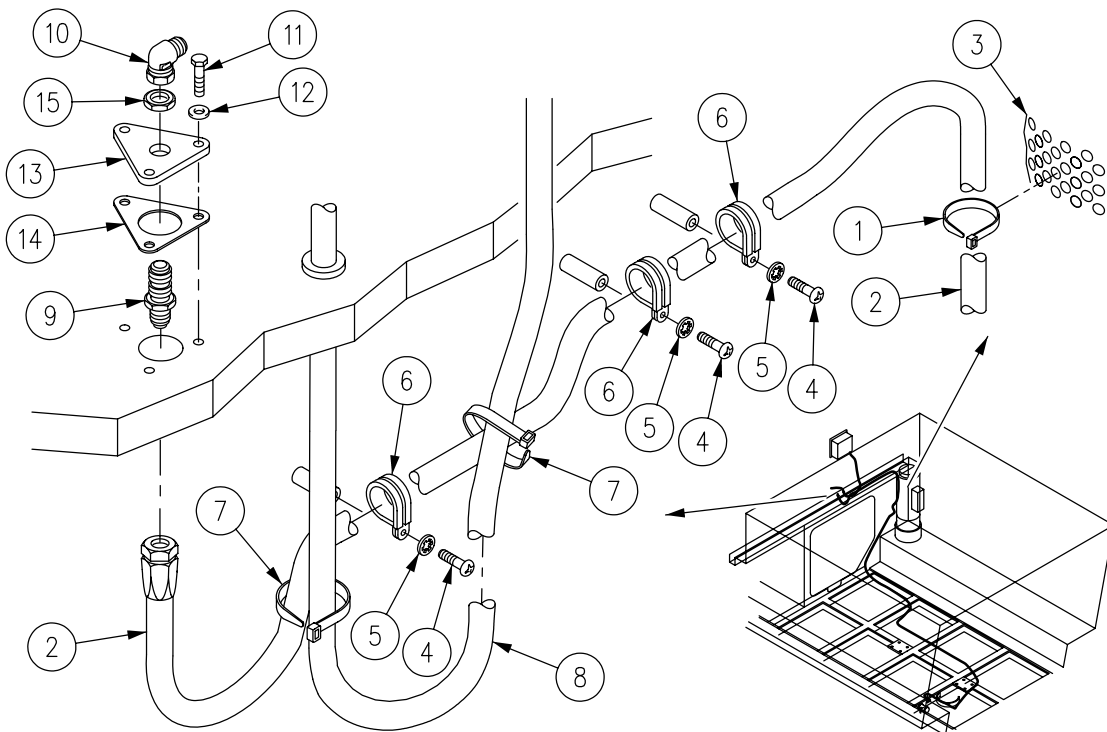
1. Disconnect fuel hoses (1) and (2) from nipple (3) in bulkhead crossbeam.
2. Remove jamnut (4) and nipple (3) from bulkhead crossbeam.
3. Remove two tie straps (5) holding fuel hose (1) to personnel heater fuel hose (6).
4. Disconnect fuel hoses (1) and (7) from jamnuts (8) and (9) and elbow (10) in bulkhead.
5. Remove jamnut (11) and elbow (10) from bulkhead.
6. Remove tie strap (12) from fuel supply hose (13). Discard tie strap.
7. Remove sleeve (14) from fuel hose (7) and sleeves (15) and (16) from fuel hose (1). Discard sleeves.



**REPLACE 5.0 KW AUXILIARY POWER UNIT BULKHEAD-TO-HULL FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY) — Continued**

0596 00

8. Remove tie strap (1) securing fuel hose (2) to personnel heater shield (3). Discard tie strap.
9. Remove screw (4), lockwasher (5), and clamp (6) securing fuel hose (2) to bulkhead crossbeam. Remove clamp from hose. Discard lockwasher.
10. Remove tie strap (7) securing remote control harness (8) to fuel hose (2). Discard tie strap.
11. Disconnect fuel hose (2) from nipple (9) in hull ceiling.
12. Remove elbow (10) from nipple (9).
13. Remove three screws (11), washers (12), flange (13) and gasket (14) from hull roof. Discard gasket.
14. Remove jamnut (15) and nipple (9) from flange (13).

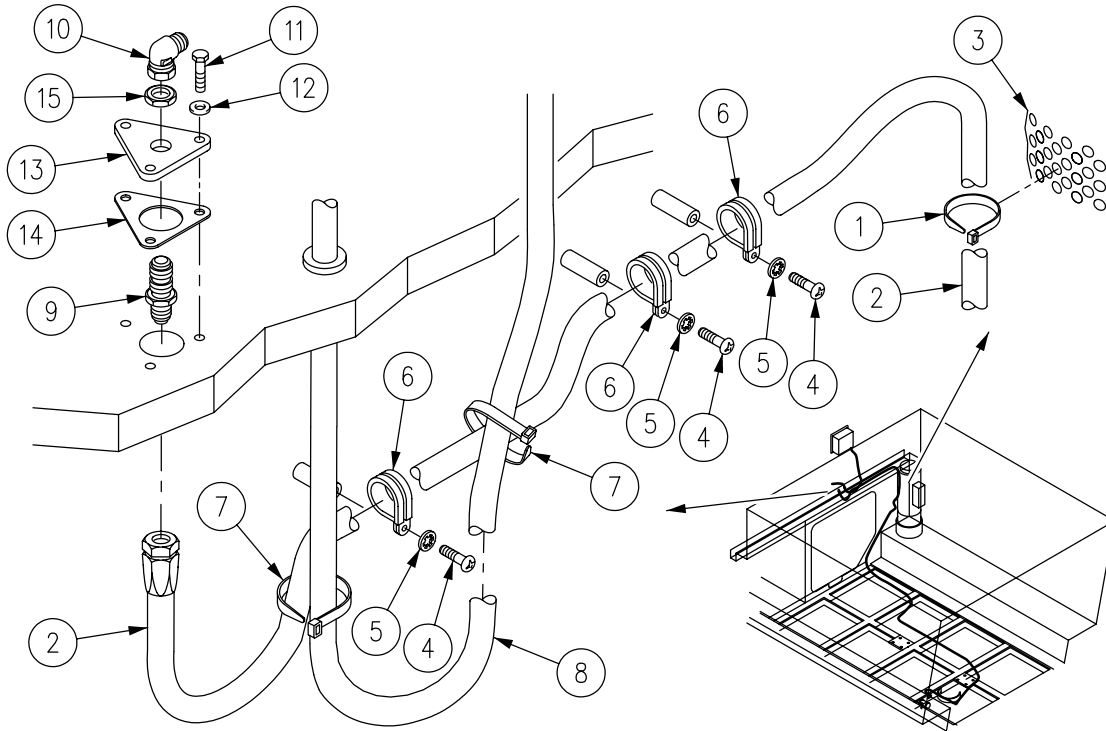


INSTALLATION

NOTE

Replacing a flareless fuel hose may also require new mating fittings such as a nipple or elbow.

1. Install nipple (9) in flange (13) and secure with jamnut (15).
2. Install new gasket (14) and flange (13) on hull roof and secure with three screws (11) and washers (12).
3. Install elbow (10) on nipple (9).
4. Connect fuel hose (2) to nipple (9) in hull ceiling. Route hose over to personnel heater.
5. Install new tie strap (7) securing fuel hose (2) to remote control harness (8).
6. Install clamp (6) on fuel hose (2). Secure clamp to bulkhead crossbeam with screw (4) and new lockwasher (5).
7. Secure fuel hose (2) to personnel heater shield (3) with new tie strap (1).

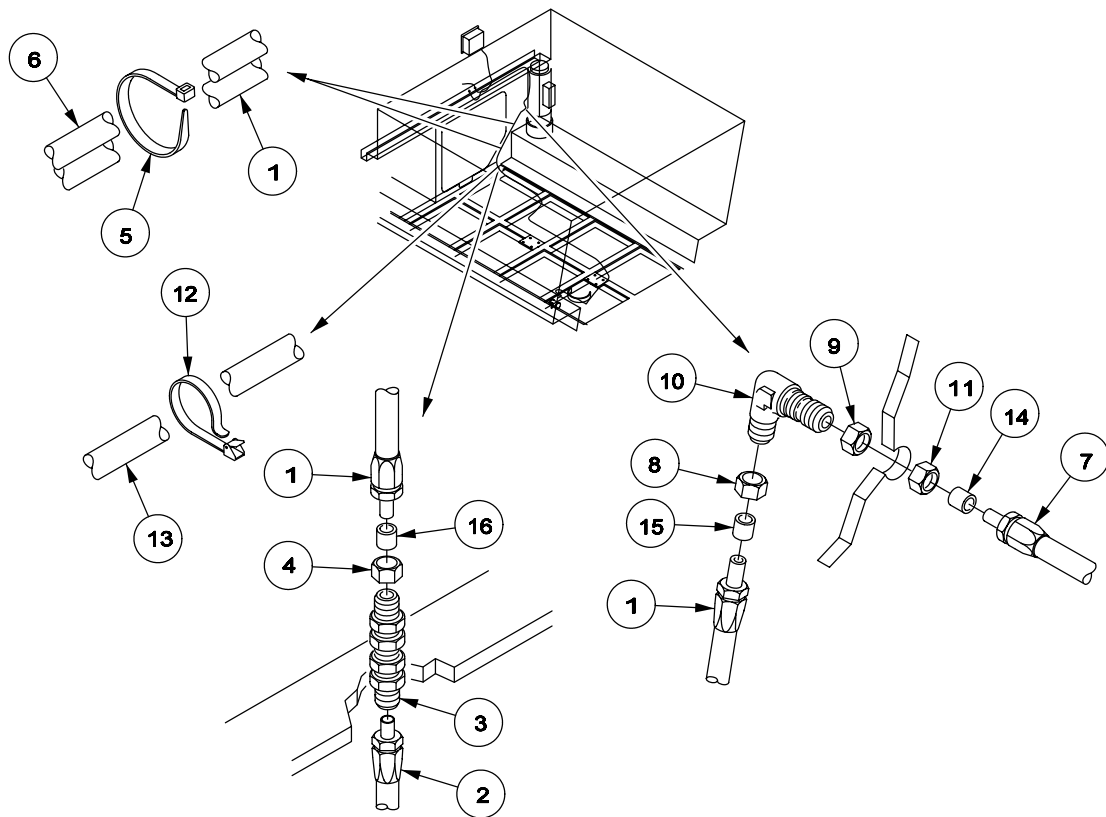




**REPLACE 5.0 KW AUXILIARY POWER UNIT BULKHEAD-TO-HULL FUEL SUPPLY HOSES (M577A2 AND M1068 ONLY) — Continued**

0596 00

8. Install tie strap (12) on fuel supply hose (13).
9. Install elbow (10) in bulkhead and secure with jamnuts (9) and (11).
10. Install new sleeve (14) and jamnuts (9) and (11) on fuel hose (7) and connect fuel hose to elbow (10).
11. Install nipple (3) in bulkhead crossbeam and secure with jamnut (4).
12. Install two new sleeves (16) and (15) on fuel hose (1), and connect fuel hose (1) to elbow (10) in bulkhead and to nipple (3) in bulkhead crossbeam. Secure with jamnut (8).
13. Secure fuel hose (6) to personnel heater fuel hose (1) with two tie straps (5).
14. Connect fuel hose (2) to nipple (3).



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**REPLACE 5.0 KW AUXILIARY POWER UNIT BULKHEAD-TO-HULL FUEL SUPPLY  
HOSES (M577A2 AND M1068 ONLY) — Continued**

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**0596 00**

**FOLLOW-THROUGH STEPS**

1. Open auxiliary power unit fuel shutoff valve (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Start auxiliary power unit (see your -10). Check all fittings for leaks. Turn auxiliary power unit off.
4. Install power plant rear access panel (WP 0433 00).
5. Install right front floor plate (WP 0436 00 or WP 0440 00).
6. Install personnel heater duct (WP 0617 00).
7. Start engine (see your -10).
8. Raise and lock ramp (see your -10).
9. Stop engine (see your -10).

**END OF TASK**

CHAPTER 30

UNIT MAINTENANCE INSTRUCTIONS  
FOR PERSONNEL HEATER KIT COMPONENT

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**WORK PACKAGE INDEX**

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<u>Title</u>	<u>Sequence No.</u>
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SERVICE PERSONNEL HEATER FUEL FILTER.....	.0598 00
BLEED AIR FROM COMPARTMENT HEATER FUEL LINES.....	.0599 00
REPLACE PERSONNEL HEATER FUEL PUMP (M113A2 AND M1059).....	.0600 00
REPLACE PERSONNEL HEATER FUEL PUMP (M1064 ONLY).....	.0601 00
REPLACE PERSONNEL HEATER FUEL PUMP (M577A2 AND M1068 ONLY).....	.0602 00
REPLACE BULKHEAD CONNECTION TO HEATER/FILTER SUPPLY HOSES (M113A2 AND M1059 ONLY).....	.0603 00
REPLACE FUEL TANK TO FUEL PUMP HOSE (M113A2, M901A1, AND M1059 ONLY).....	.0604 00
REPLACE TEE CONNECTION TO FUEL PUMP HOSE (M981 ONLY).....	.0605 00
REPLACE FUEL PUMP TO BULKHEAD CONNECTION HOSE (M113A2, M901A1, AND M1059 ONLY).....	.0606 00
REPLACE BULKHEAD CONNECTION TO HEATER TUBE (M981 ONLY).....	.0607 00
REPLACE FUEL PUMP HOSE TO HEATER FUEL SHUTOFF VALVE (M1064 ONLY).....	.0608 00
REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS (M1064 ONLY).....	.0609 00
REPLACE FUEL TANK TO FUEL PUMP HOSE (M577A2 AND M1068 ONLY).....	.0610 00
REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS, AND SHIELD (M577A2 ONLY).....	.0611 00
REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS AND SHIELD (M1068 ONLY).....	.0612 00
REPLACE PERSONNEL HEATER CONTROL BOX.....	.0613 00
REPAIR PERSONNEL HEATER CONTROL BOX.....	.0614 00
REPLACE FUEL SHUTOFF VALVE ASSEMBLY (M113A2 AND M1059 ONLY).....	.0615 00
REPLACE PERSONNEL HEATER FUEL FILTER/BACKET (M113A2 AND M1059 ONLY).....	.0616 00
REPLACE PERSONNEL HEATER DUCT AND HOSES.....	.0617 00
REPAIR PERSONNEL HEATER DUCT.....	.0618 00
REPLACE PERSONNEL HEATER ASSEMBLY (ALL EXCEPT M1064).....	.0619 00
REPAIR PERSONNEL HEATER ASSEMBLY.....	.0620 00
REPLACE PERSONNEL HEATER ASSEMBLY (M1064 ONLY).....	.0621 00
REPLACE HEATER AIR INTAKE AND EXHAUST PIPES (ALL EXCEPT M1064).....	.0622 00
REPLACE HEATER AIR INTAKE AND EXHAUST PIPES (M1064 ONLY).....	.0623 00



**SERVICE HEATER FUEL PUMP**

**0597 00**

**THIS WORK PACKAGE COVERS:**

Service Bendix/Facet (page 0597 00-1).  
 Service Walbro (page 0597 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

References

See your -10

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Battery ground lead disconnected (WP 0294 00)

Floor plate removed (WP 0436 00, WP 0438 00, or WP 0441 00)

Materials/Parts

Cleaning compound solvent (WP 0782 00, Item 16)

Wiping rag (WP 0782 00, Item 76)

Gasket

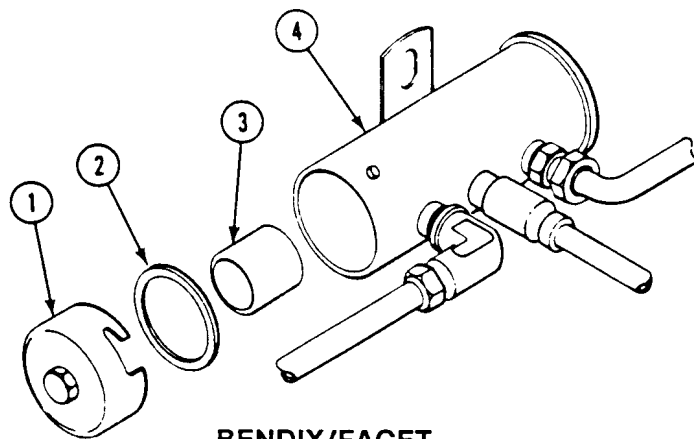
Gasket

Personnel Required

Unit Mechanic

**SERVICE BENDIX/FACET**

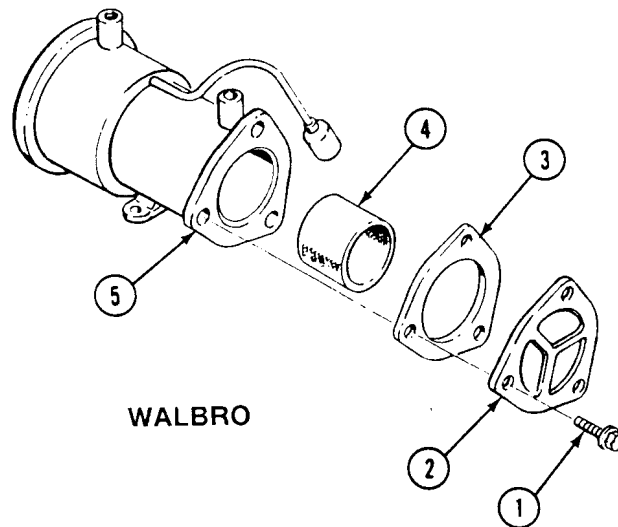
1. Close heater fuel shutoff valve (see your -10).
2. Remove cap (1), gasket (2), and strainer (3) from fuel pump (4). Discard gasket.
3. Clean cap (1) and strainer (3) with cleaning compound.
4. Check strainer (3). Replace strainer if screen is torn.
5. Install strainer (3), new gasket (2), and cap (1) on fuel pump (4).
6. Open heater fuel shutoff valve (see your -10).



**BENDIX/FACET**

**SERVICE WALBRO**

1. Close heater fuel shutoff valve (see your -10).
2. Remove three screws (1), cap (2), gasket (3), and strainer (4) from fuel pump (5). Discard gasket.
3. Clean cap (2) and strainer (4) with cleaning compound.
4. Check strainer (4). Replace strainer if screen is torn.
5. Install strainer (4), new gasket (3), cap (2), and three screws (1) on fuel pump (5).
6. Open heater fuel shutoff valve (see your -10).

**FOLLOW-THROUGH STEPS**

1. Connect battery ground lead (WP 0294 00).
2. Start heater (see your -10). Check fuel pump for leaks. Turn heater OFF.
3. Install floor plate (WP 0436 00, WP 0438 00, or WP 0441 00).
4. Raise and lock ramp (see your -10).
5. Stop/shutdown engine (see your -10).

**END OF TASK**

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**SERVICE PERSONNEL HEATER FUEL FILTER**

**0598 00**

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**THIS WORK PACKAGE COVERS:**

- Removal (page 0598 00-2).
  - Cleaning, Inspection, and Repair (page 0598 00-2).
  - Installation (page 0598 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Materials/Parts

Cleaning compound solvent (WP 0782 00, Item 16)

Wiping rag (WP 0782 00, Item 76)

Preformed packing

Lockwasher (4)

---

Personnel heater fuel shutoff valve OFF (see your -10)

REMOVAL

**WARNING**



**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

**NOTE**

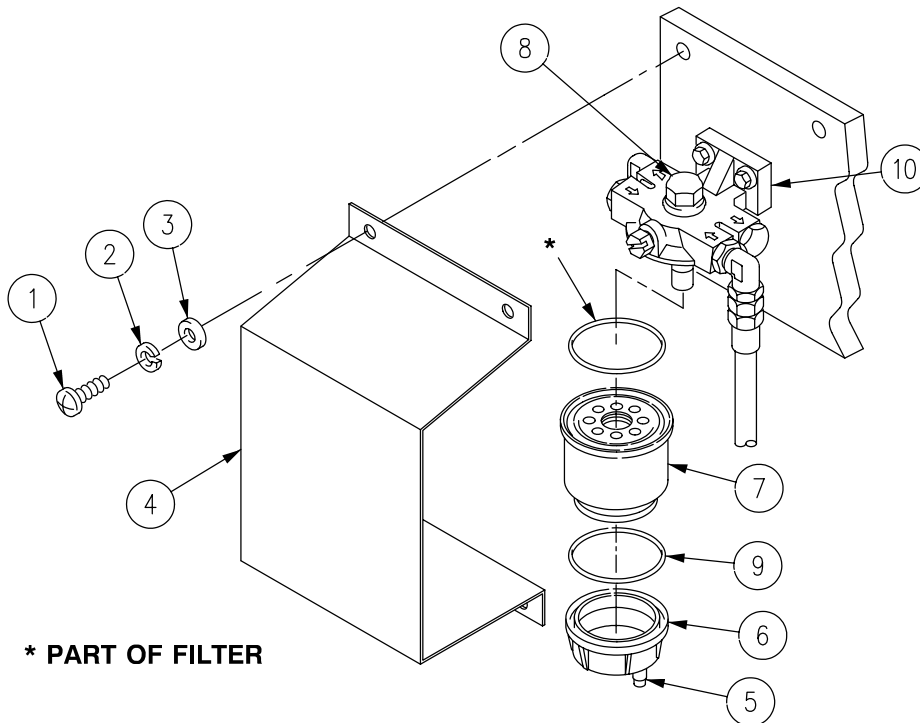
**Shield installed on M577A2 and M1068 carriers only.**

1. Remove four screws (1), lockwashers (2), washers (3), and shield (4) from sponson. Discard lockwashers.
2. Depress plunger (5) until fluid is drained from collector bowl (6). Wipe up spilled fuel.

**NOTE**

**Loosen head bolt as instructed. Do not remove head bolt from filter head.**

3. Loosen head bolt (8) until filter element (7) with preformed packing (9) can be removed from filter head (10). Remove head gasket (\*) from filter head (10). Discard preformed packing and filter element.

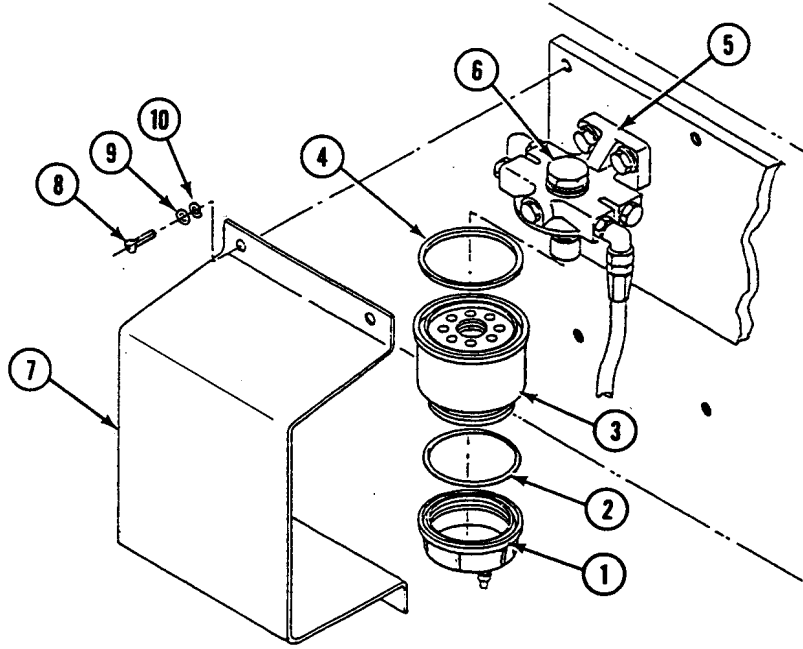


\* PART OF FILTER



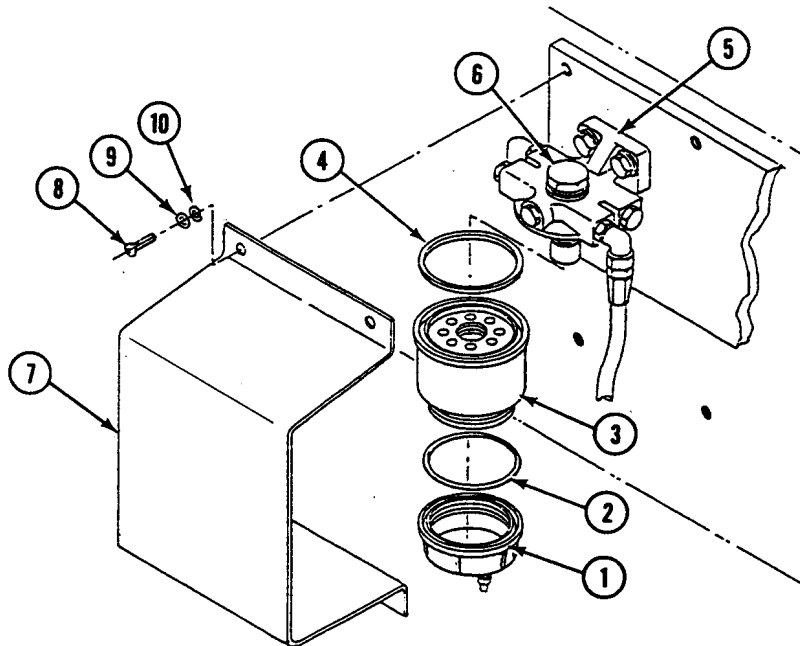
**CLEANING, INSPECTION, AND REPAIR**

1. Clean collector bowl (1) with cleaning compound and clean wiping rag.



**INSTALLATION**

1. Install new preformed packing (2) on new filter element (3).
2. Install collector bowl (1) in new filter element (3).
3. If head gasket (4) was removed, position same gasket in filter head (5) or on filter element (3).
4. Install new filter element (3) and gasket (4) on head bolt (6) and filter head (5).
5. Install shield (7), four screws (8), new lockwashers (9), and washers (10) on sponson over fuel filter/water separator assembly.

**FOLLOW-THROUGH STEPS**

1. Turn personnel heater fuel valve ON (see your -10).
2. Turn personnel heater ON (see your -10). Check for leaks.
3. Turn personnel heater OFF (see your -10).

**END OF TASK**

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**BLEED AIR FROM COMPARTMENT HEATER FUEL LINES**

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**0599 00**

**THIS WORK PACKAGE COVERS:**

Bleeding Air From System (page 0599 00-1).

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**INITIAL SETUP:**

Maintenance Level

Unit

References

See your -10

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped/shutdown (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Front or rear floor plate removed (WP 0436 00,

WP 0437 00, WP 0438 00, WP 0440 00, or

WP 0441 00)

Materials/Parts

Wiping rag (WP 0782 00, Item 76)

Personnel Required

Unit Mechanic

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**BLEEDING AIR FROM SYSTEM**

**NOTE**

The following bleeding procedure must be performed when disconnecting or replacing the following:

**Heater fuel shutoff valve or fittings**

**Heater fuel line (tank to pump)**

**Heater fuel pump**

**Heater fuel filter**

**Heater**

1. Make sure heater fuel shutoff valve is open (see your -10).

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**WARNING**

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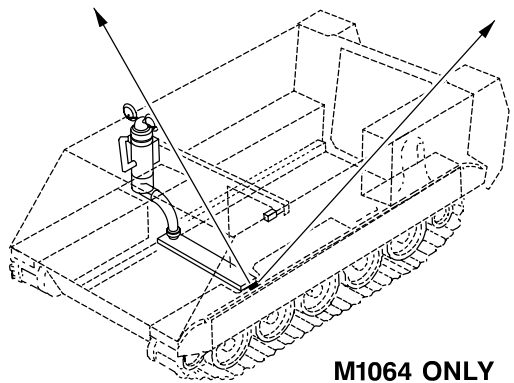
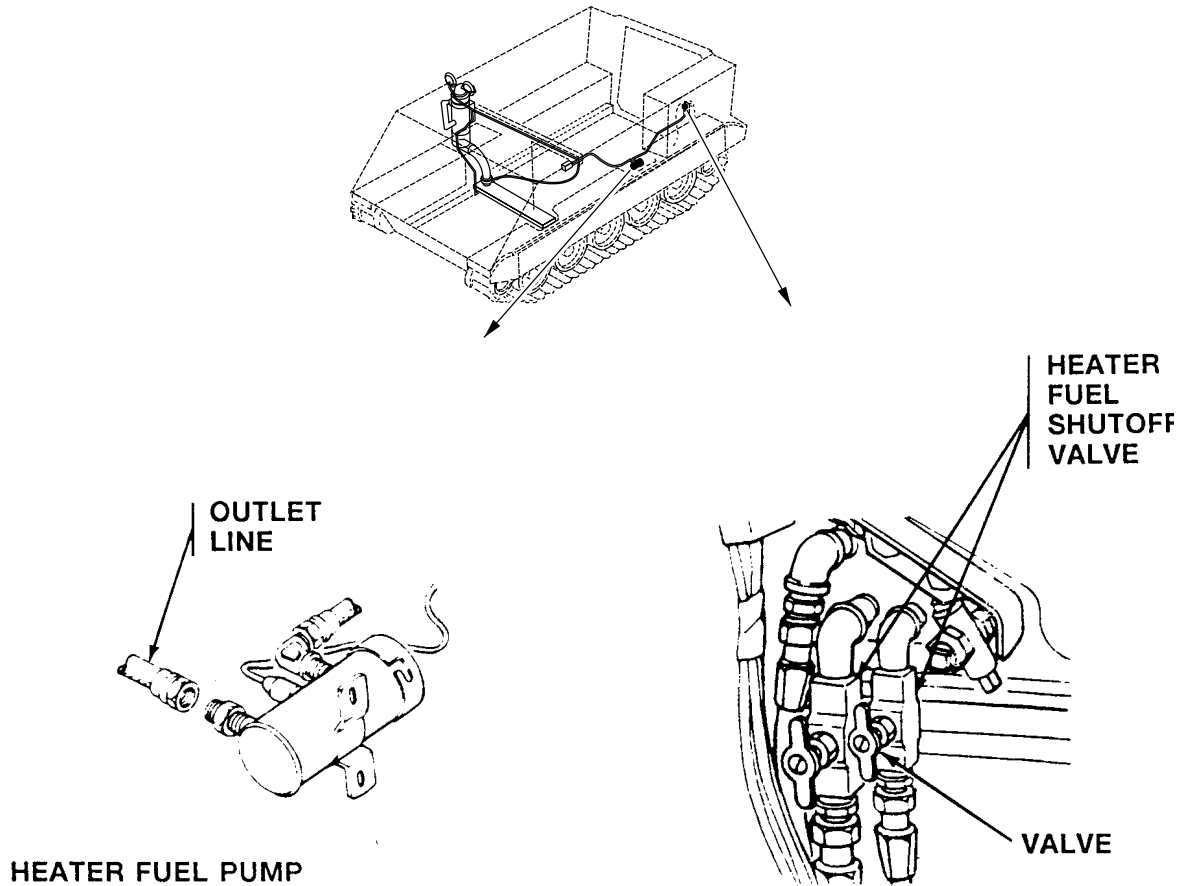
**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles.**

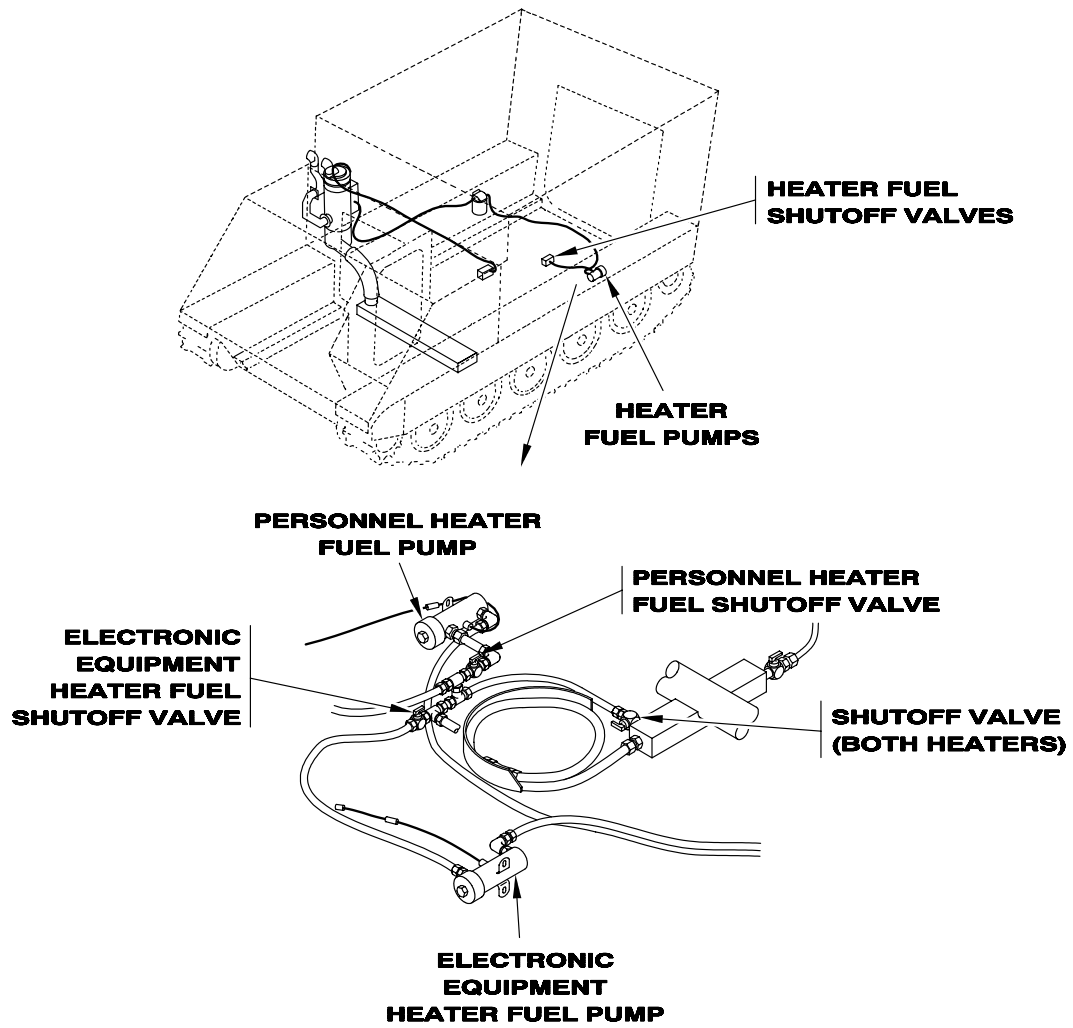
**Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

2. Turn heater ON (see your -10).
3. Loosen fuel line connection at outlet side of fuel pump. Tighten connection as soon as fuel begins to escape from the line. Wipe up spilled fuel with rags.
4. Loosen fuel line at inlet elbow of heater. Tighten connection as soon as fuel begins to escape from the line. Wipe up spilled fuel.
5. Check heater for proper operation and fuel leaks.
6. Turn heater OFF (see your -10).

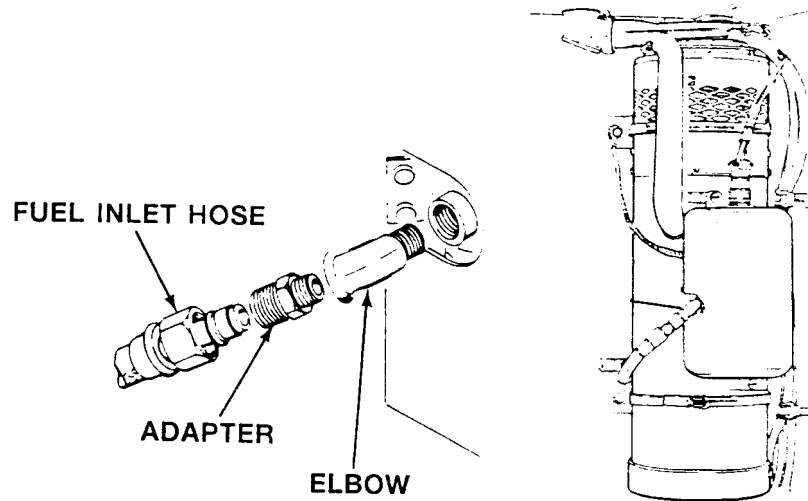
7. Check for leaks at fuel pump, at shutoff valve, and at line from fuel tank to heater.

**M113A2 AND M1059**

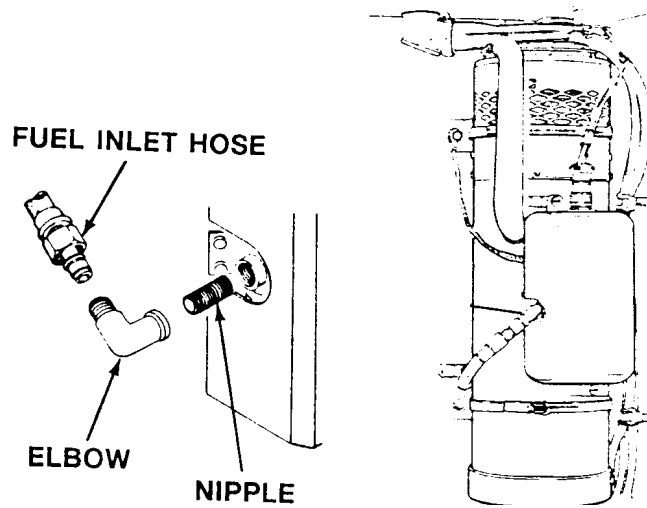




M577A2 AND M1068



M113A2 AND M1059 ONLY



ALL EXCEPT M113A2 AND M1059

#### FOLLOW-THROUGH STEPS

1. Raise and lock ramp (see your -10).
2. Stop/shutdown engine (see your -10).
3. Install front or rear floor plate, as applicable (WP 0436 00, WP 0437 00, WP 0438 00, WP 0440 00, or WP 0441 00).

END OF TASK

**REPLACE PERSONNEL HEATER FUEL PUMP (M113A2 AND M1059)**

**0600 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0600 00-1).  
 Installation (page 0600 00-3).

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)

Wiping rag (WP 0782 00, Item 76)

Lockwasher (6)

Personnel Required

Unit Mechanic

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

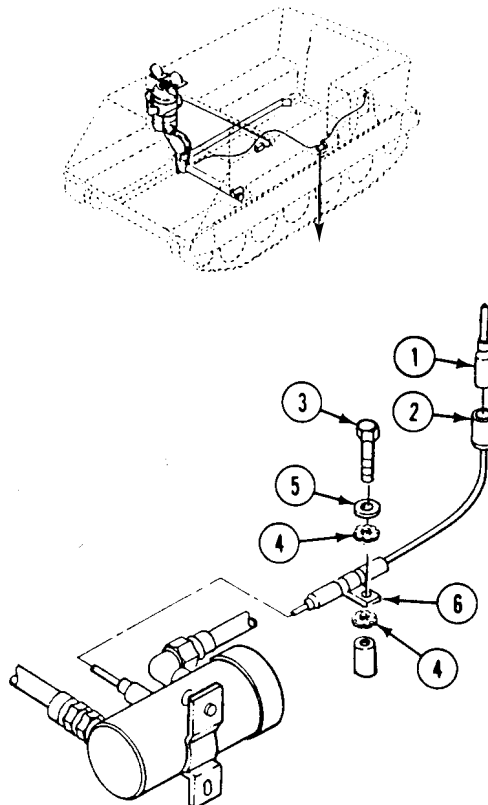
Heater fuel pump shutoff valve closed (see your -10)

Battery ground strap disconnected (WP 0294 00)

Rear floor plate removed (WP 0436 00 or WP 0438 00)

**REMOVAL**

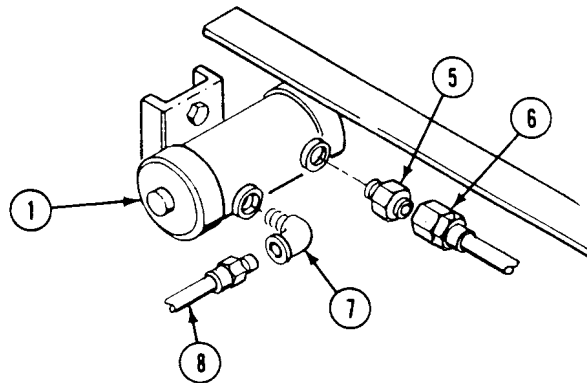
1. Disconnect circuit 402 lead (1) from fuel pump lead (2).
2. Remove screw (3), two lockwashers (4), washer (5), and clamp (6) from hull weldnut. Discard lockwashers.



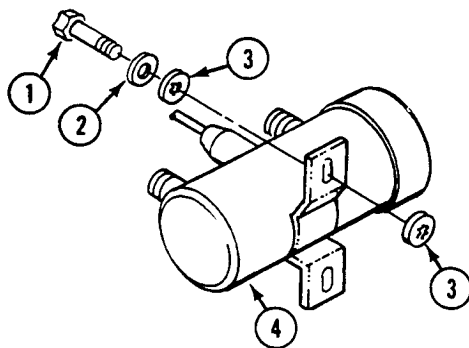
**WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

3. Disconnect fuel supply hose (8) from elbow (7). Clean up spilled fuel with wiping rags.
4. Disconnect fuel hose (6) from adapter (5). Remove adapter from fuel pump (1).



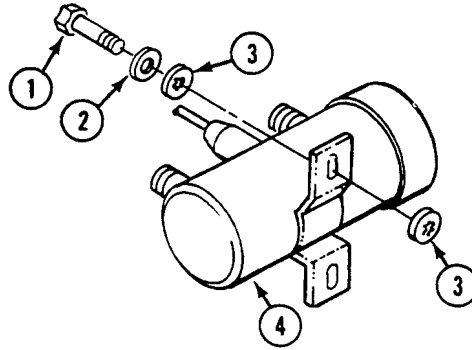
5. Remove two screws (1), washers (2), four lockwashers (3), and fuel pump (4) from bulkhead bracket. Discard lockwashers.



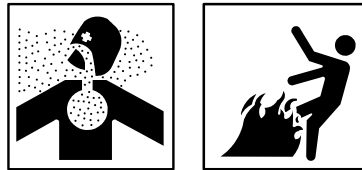


**INSTALLATION**

1. Place fuel pump (4) on bulkhead bracket. Secure with four new lockwashers (3), two washers (2), and screws (1).



**WARNING**



**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

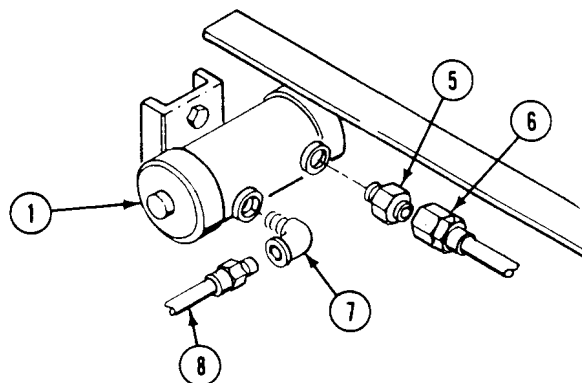
**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

2. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of tapered threads.
3. Install adapter (5) on fuel pump (1). Install hose (6) on adapter (5).
4. Install elbow (7) on fuel pump (1).

**NOTE**

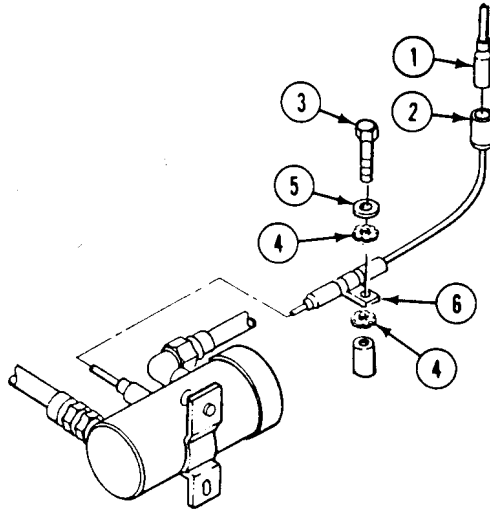
**If new hose assembly is being installed, reuse spiral tubing.**

5. Install fuel supply hose (8) on elbow (7).



**REPLACE PERSONNEL HEATER FUEL PUMP (M113A2 AND M1059) — Continued****0600 00**

6. Align clamp (6) on fuel pump lead (2) with hull weldnut. Secure with washer (5), two new lockwashers (4), and screw (3).
7. Connect fuel pump lead (2) to circuit 402 lead (1).

**FOLLOW-THROUGH STEPS**

1. Connect battery ground strap (WP 0294 00).
2. Open heater fuel shutoff valve (see your -10).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check for fuel leaks. Turn heater off.
5. Install rear floor plate (WP 0436 00 or WP 0438 00).
6. Raise and lock ramp (see your -10).
7. Stop engine (see your -10).

**END OF TASK**

---

**REPLACE PERSONNEL HEATER FUEL PUMP (M1064 ONLY)**

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**0601 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0601 00-2).  
 Installation (page 0601 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Battery ground strap disconnected (WP 0294 00)  
 Heater duct removed (WP 0617 00)  
 Front floor plate removed (WP 0437 00)  
 Heater fuel pump shutoff valve closed (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0780 00, Item 60)  
 Wiping rag (WP 0782 00, Item 76)  
 Lockwasher (6)

Personnel Required

Unit Mechanic

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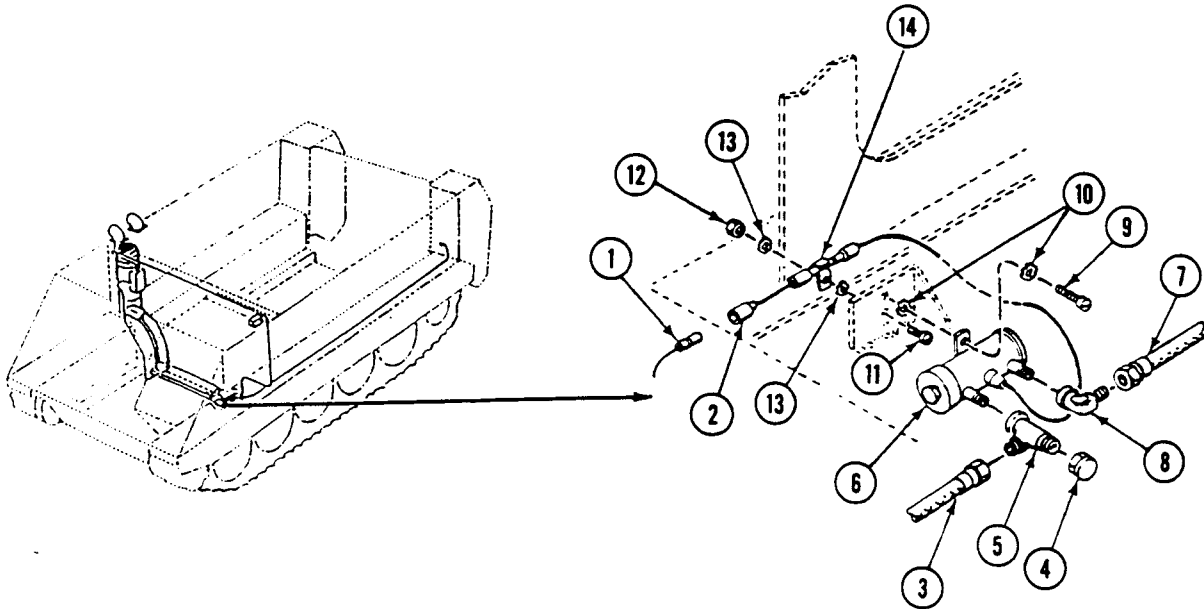
**REMOVAL**

1. Disconnect circuit 402 lead (1) from fuel pump lead (2).

**WARNING**

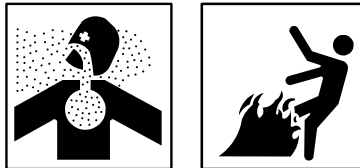
**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

2. Disconnect fuel hose (3). Remove cap (4) from tee (5). Remove tee from fuel pump (6).
3. Disconnect fuel hose (7) from elbow (8). Remove elbow from fuel pump (6).
4. Remove two screws (9), four lockwashers (10), and fuel pump (6) from hull bracket. Discard lockwashers.
5. Remove screw (11), nut (12), two lockwashers (13), and clamp (14) on fuel pump lead (2) from hull bracket. Discard lockwashers.



**INSTALLATION**

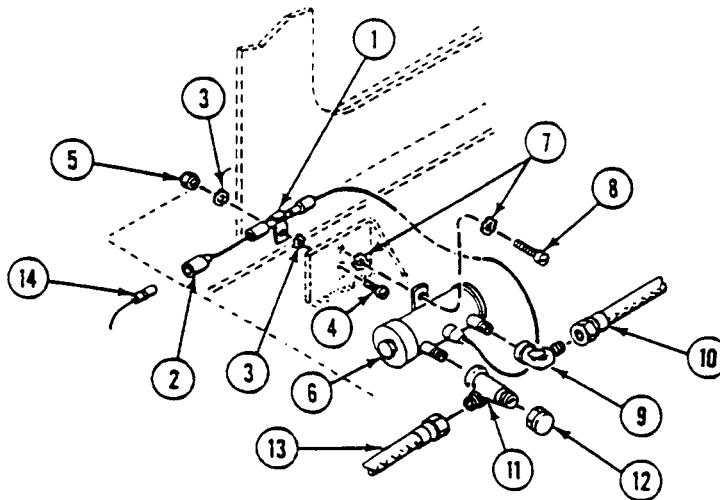
1. Align clamp (1) on fuel pump lead (2) with hull bracket. Secure with two new lockwashers (3), screw (4), and nut (5).
2. Place fuel pump (6) on hull bracket. Secure with four new lockwashers (7) and two screws (8).

**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

3. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of external tapered threads.
4. Install elbow (9) on fuel pump (6).
5. Install hose (10) on elbow (9).
6. Install tee (11) on fuel pump (6).
7. Install cap (12) on tee (11).
8. Install hose (13) on tee (11).
9. Connect fuel pump lead (2) to circuit 402 lead (14).



**FOLLOW-THROUGH STEPS**

1. Connect battery ground strap (WP 0294 00).
2. Open heater fuel shutoff valve. Bleed fuel line (WP 0599 00).
3. Start heater (see your -10). Check for fuel leaks. Turn heater off.
4. Install front floor plate (WP 0437 00).
5. Install heater duct (WP 0617 00).
6. Start engine (see your -10).
7. Raise and lock ramp (see your -10).
8. Stop engine (see your -10).

**END OF TASK**

---

**REPLACE PERSONNEL HEATER FUEL PUMP (M577A2 AND M1068 ONLY)**

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**0602 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0602 00-2).  
 Installation (page 0602 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Battery ground lead disconnected (WP 0294 00)

Rear floor plate removed (WP 0436 00 or WP 0440 00)

Heater fuel pump shutoff valve closed (see your -10)

---

Materials/Parts

Sealing compound (WP 0782 00, Item 60)

Wiping rag (WP 0782 00, Item 76)

Locknut (2)

Lockwasher (6)

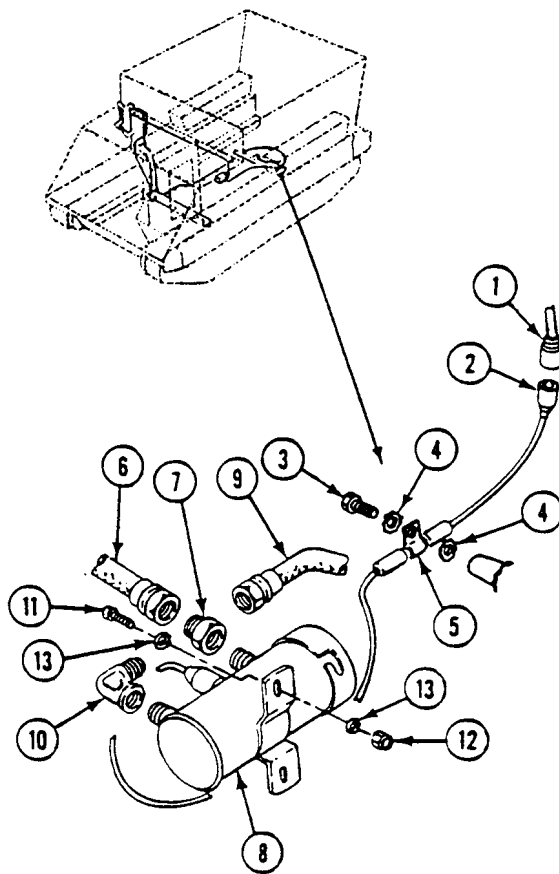
**REMOVAL**

1. Disconnect circuit 402 lead (1) from fuel pump lead (2).
2. Remove screw (3), two lockwashers (4), and clamp (5) from bulkhead weldnut. Discard lockwashers.

**WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

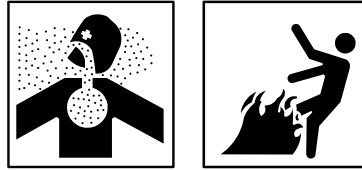
3. Disconnect fuel hose (6) from adapter (7). Remove adapter from fuel pump (8).
4. Disconnect hose (9) from elbow (10). Remove elbow from fuel pump (8).
5. Remove two screws (11), locknuts (12), four lockwashers (13), and fuel pump (8) from bulkhead bracket. Discard lockwashers and locknuts.





**INSTALLATION**

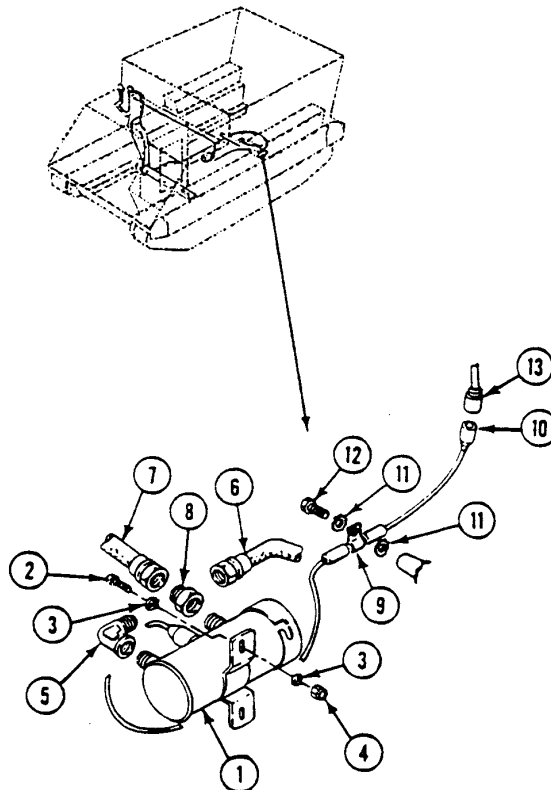
1. Place fuel pump (1) on bulkhead bracket. Secure with two screws (2), four new lockwashers (3), and two new locknuts (4).

**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

2. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of tapered threads.
3. Install elbow (5) on fuel pump (1). Install fuel hose (6) on elbow. Install hose (6) under hose (7).
4. Install adapter (8) on fuel pump (1). Install fuel hose (7) on adapter.
5. Align clamp (9) on fuel pump lead (10) with weldnut. Secure with two new lockwashers (11) and screw (12).
6. Connect fuel pump lead (10) to circuit 402 lead (13).



**FOLLOW-THROUGH STEPS**

1. Connect battery ground lead (WP 0294 00).
2. Open heater fuel shutoff valve (see your -10).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check for fuel leaks. Turn heater off.
5. Install rear floor plate (WP 0436 00 or WP 0440 00).
6. Start engine (see your -10).
7. Raise and lock ramp (see your -10).
8. Stop engine (see your -10).

**END OF TASK**

---

**REPLACE BULKHEAD CONNECTION TO HEATER/FILTER SUPPLY  
HOSES (M113A2 AND M1059 ONLY)**

---

**0603 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0603 00-2).
  - Installation (page 0603 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Battery ground lead disconnected (WP 0294 00)
- Heater duct removed (WP 0617 00 or WP 0623 00)
- Right front floor plate removed (WP 0436 00 or WP 0438 00)
- Power plant rear access panel removed (WP 0431 00 or WP 0432 00)
- Heater fuel shutoff valve closed (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

- Sealing compound (WP 0782 00, Item 64)
- Wiping rag (WP 0782 00, Item 76)

Personnel Required

Unit Mechanic

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**REPLACE BULKHEAD CONNECTION TO HEATER/FILTER SUPPLY HOSES  
(M113A2 AND M1059 ONLY) — Continued**

0603 00

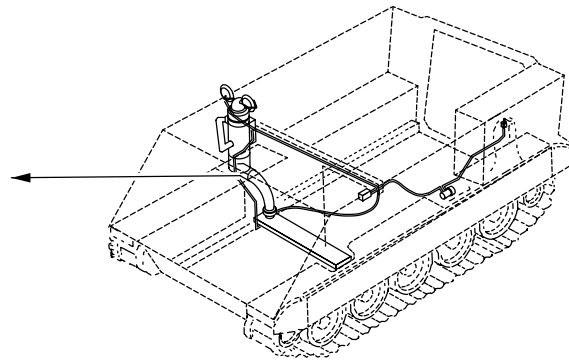
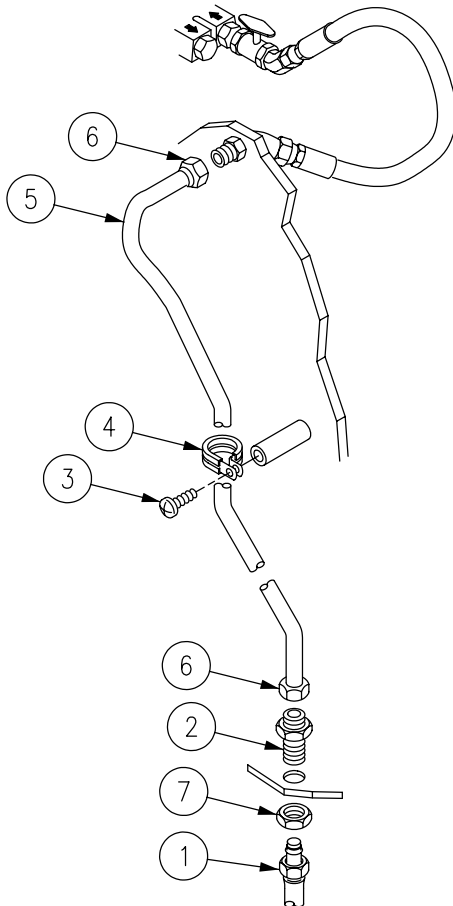
**REMOVAL**

**WARNING**



**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles.  
Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

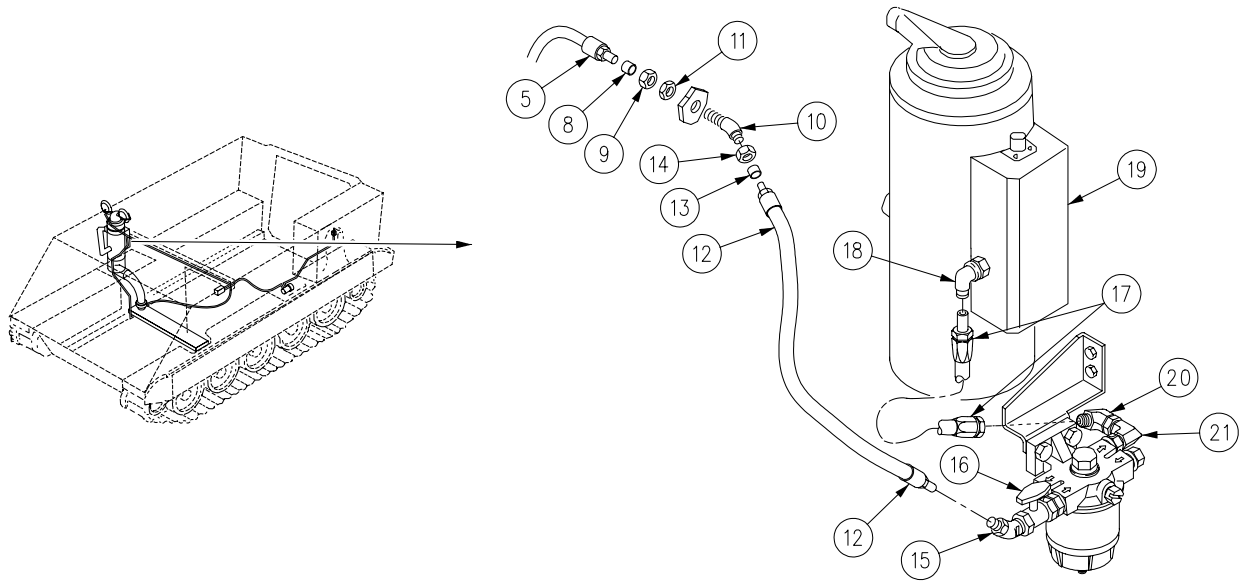
1. Remove fuel hose (1) from nipple (2).
2. Remove screw (3) and clamp (4) from bulkhead weldnut. Remove clamp from tube (5).
3. Loosen nut (6) on tube (5). Remove tube from nipple (2).
4. Remove jamnut (7) and nipple (2) from hull.



**REPLACE BULKHEAD CONNECTION TO HEATER/FILTER SUPPLY HOSES  
(M113A2 AND M1059 ONLY) — Continued**

**0603 00**

5. Remove sleeve (8), nut (9), elbow (10), and nut (11) from tube (5) and bulkhead.
6. Remove heater fuel filter supply hose (12), sleeve (13), and nut (14) on power plant compartment bulkhead and fuel shutoff valve inlet elbow (15) on valve (16).
7. Remove heater fuel supply hose (17) from fuel inlet elbow (18) on heater (19) and from elbow (20) on fuel filter outlet elbow (21).



**REPLACE BULKHEAD CONNECTION TO HEATER/FILTER SUPPLY HOSES  
(M113A2 AND M1059 ONLY) — Continued**

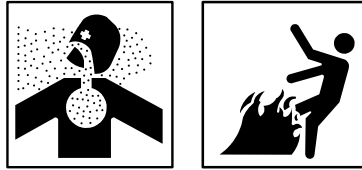
0603 00

**INSTALLATION**


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**WARNING**


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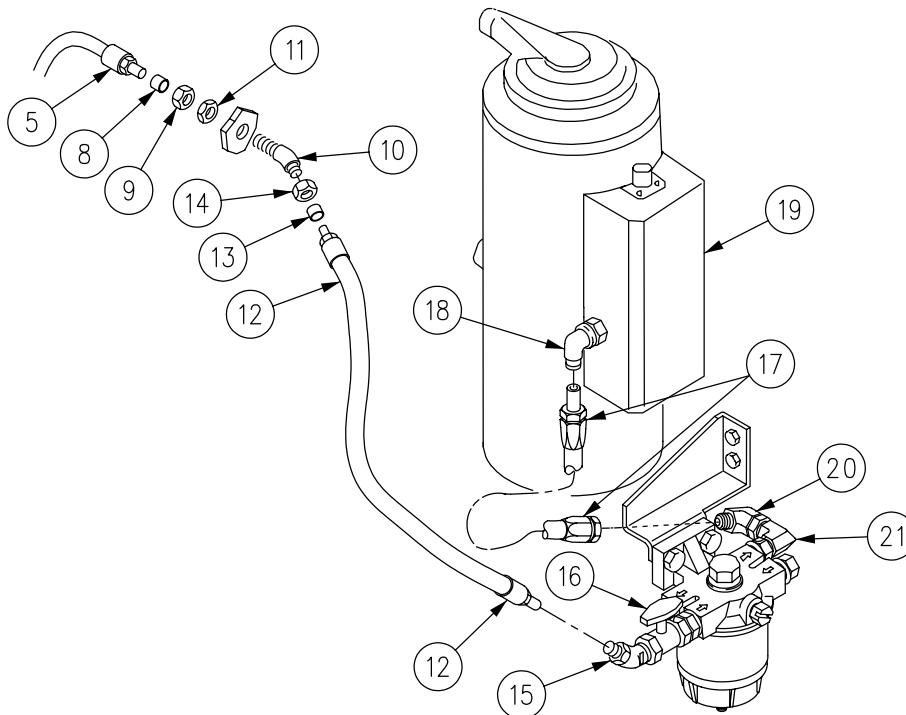
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

**NOTE**

Replacing a flareless fuel hose or tube assembly may also require new mating fittings such as a tee, elbow, or adapter.

1. Apply a light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of external tapered threads.
2. Connect heater fuel supply hose (17) to fuel inlet elbow (18) on heater (19) and to elbow (20) on fuel filter outlet elbow (21). Tighten loose nuts.
3. Connect heater fuel filter supply hose (12) to sleeve (13) and nut (14) on power plant bulkhead and fuel shutoff valve inlet elbow (15) on valve (16). Tighten loose nuts.
4. Install sleeve (8), nut (9), elbow (10), and nut (11) on bulkhead and tube (5).



0603 00-4

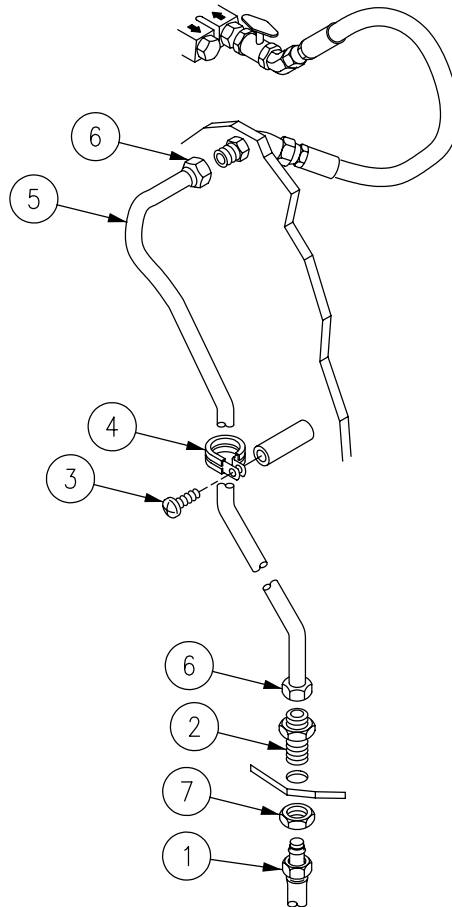
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**REPLACE BULKHEAD CONNECTION TO HEATER/FILTER SUPPLY HOSES  
(M113A2 AND M1059 ONLY) — Continued**


---

0603 00

5. Install nipple (2) on hull. Secure with jamnut (7).
6. Install tube (5) on nipple (2). Secure with nut (6) on tube.
7. Install clamp (4) on tube (5). Align clamp with bulkhead weldnut. Secure with screw (3).
8. Install fuel hose (1) on nipple (2).

**FOLLOW-THROUGH STEPS**

1. Open heater fuel shutoff valve (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for leaks. Turn heater off.
5. Install power plant rear access panel (WP 0431 00 or WP 0432 00).
6. Install right front floor plate (WP 0436 00 or WP 0438 00).
7. Install heater duct (WP 0617 00 or WP 0623 00).
8. Raise and lock ramp (see your -10).
9. Stop engine (see your -10).

**END OF TASK**





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**REPLACE FUEL TANK TO FUEL PUMP HOSE (M113A2,  
M901A1, AND M1059 ONLY)**

---

**0604 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0604 00-2).  
Installation (page 0604 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Battery ground lead disconnected (WP 0294 00)

Rear floor plate removed (WP 0436 00, WP 0438 00,  
or WP 0441 00)

Fuel tank drained (WP 0135 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0782 00, Item 64)

Wiping rag (WP 0782 00, Item 76)

Personnel Required

Unit Mechanic

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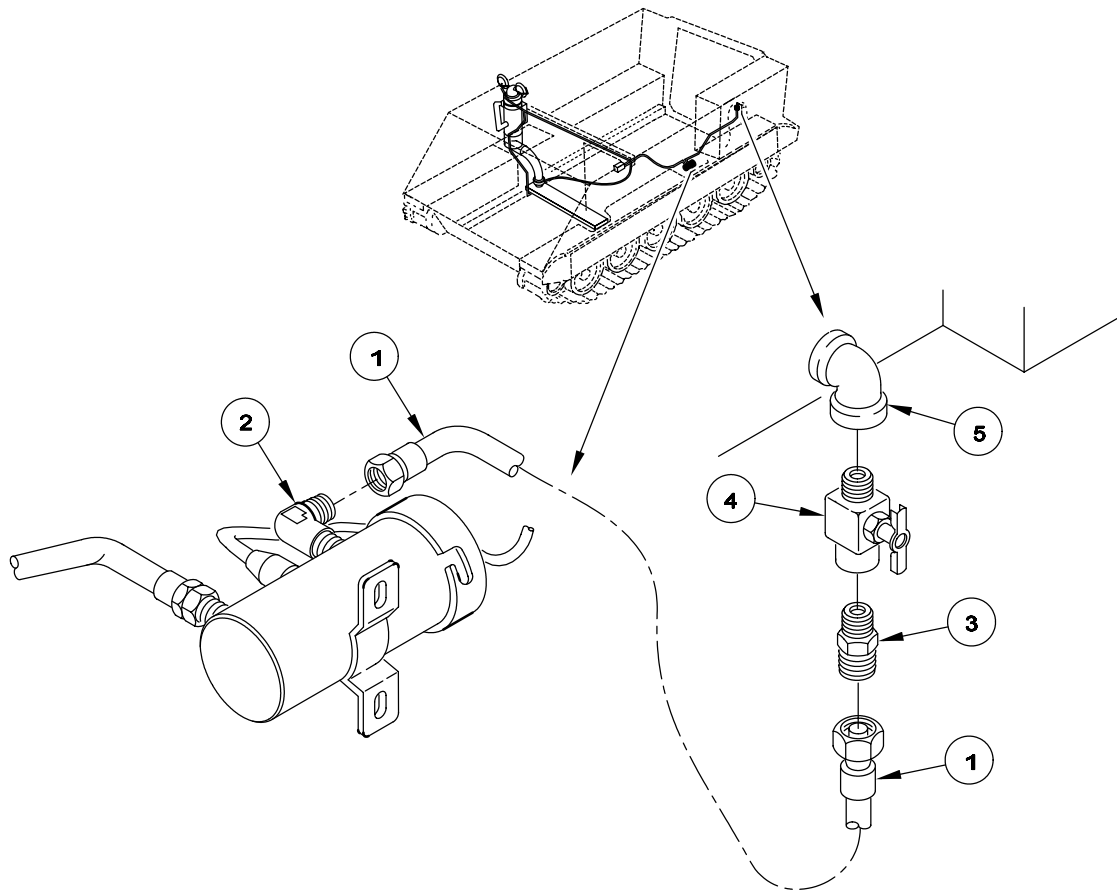
**REPLACE FUEL TANK TO FUEL PUMP HOSE (M113A2, M901A1, AND M1059 ONLY) — Continued**

0604 00

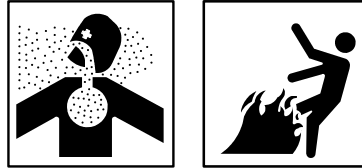
**REMOVAL****WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove fuel hose (1) from elbow (2) on fuel pump and from adapter (3).
2. Remove adapter (3) from shutoff valve (4).
3. Remove shutoff valve (4) from elbow (5).



## INSTALLATION

**WARNING**

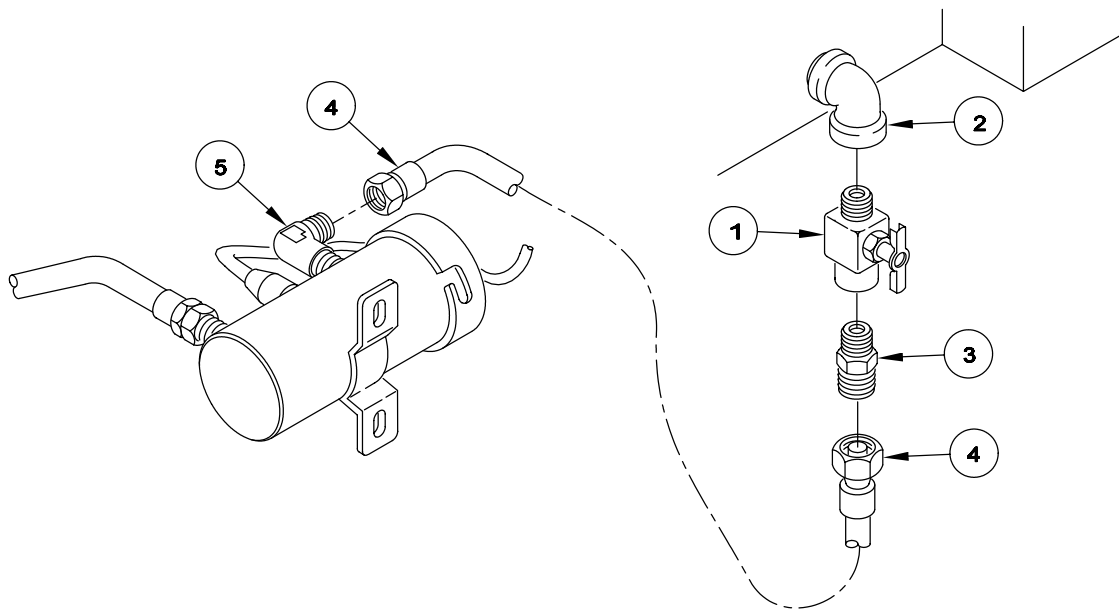
Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

**NOTE**

Replacing a flareless fuel hose or tube assembly may also require new mating fittings such as a tee, elbow, or adapter.

1. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of external tapered threads.
2. Install shutoff valve (1) on elbow (2).
3. Install adapter (3) on shutoff valve (1).
4. Install fuel hose (4) on elbow (5) and adapter (3).



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**REPLACE FUEL TANK TO FUEL PUMP HOSE (M113A2, M901A1, AND  
M1059 ONLY) — Continued**

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**0604 00**

**FOLLOW-THROUGH STEPS**

1. Fill fuel tank (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for fuel leaks. Turn heater off.
5. Install rear floor plate (WP 0436 00, WP 0438 00, or WP 0441 00).
6. Raise and lock ramp (see your -10).
7. Stop/shutdown engine (see your -10).

**END OF TASK**

---

**REPLACE TEE CONNECTION TO FUEL PUMP HOSE (M981 ONLY)**

---

**0605 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0605 00-2).  
 Installation (page 0605 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Battery ground lead disconnected (WP 0294 00)  
 Rear floor plate removed (WP 0441 00)  
 Engine fuel supply line shutoff valve closed (see your  
 -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Wiping rag (WP 0782 00, Item 76)

Personnel Required

Unit Mechanic

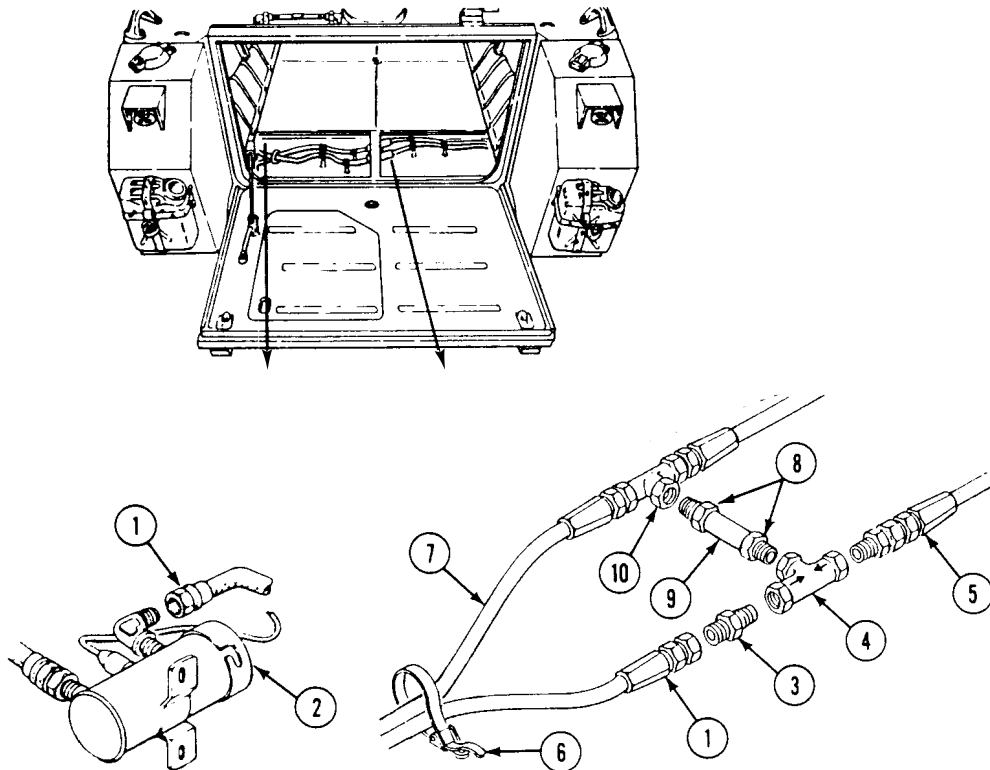
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## REMOVAL

**WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

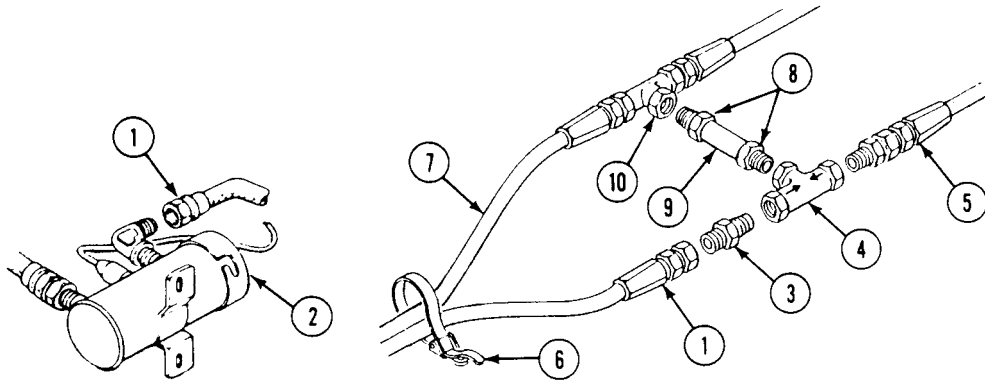
1. Disconnect fuel hose (1) from fuel pump (2) and reducer (3).
2. Remove reducer (3) from tee (4).
3. Remove hose (5) from tee (4).
4. Loosen strap (6) on hose (1) and hose (7). Remove hose (1).
5. Loosen two nuts (8) and remove tube (9) from tee (4) and tee (10).



**INSTALLATION****NOTE**

**Replacing a flareless fuel hose or tube assembly may also require new mating fittings such as a tee, elbow, or adapter.**

1. Install tube (9) on tee (10) and tee (4). Tighten two nuts (8).
2. Install reducer (3) in tee (4).
3. Install hose (5) on tee (4).
4. Install fuel hose (1) on reducer (3) and fuel pump (2).
5. Secure hose (1) to hose (7) with strap (6).

**FOLLOW-THROUGH STEPS**

1. Open engine fuel supply line shutoff valves (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for fuel leaks. Turn heater off.
5. Install rear floor plate (WP 0441 00).
6. Raise and lock ramp (see your -10).
7. Stop/shutdown engine (see your -10).

**END OF TASK**





**REPLACE FUEL PUMP TO BULKHEAD CONNECTION HOSE  
(M113A2, M901A1, AND M1059 ONLY)**

**0606 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0606 00-1).
- Installation (page 0606 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Both main fuel shutoff valves closed (see your -10)
- Battery ground lead disconnected (WP 0294 00)
- Heater duct removed (WP 0622 00 or WP 0623 00)
- Rear floor plates removed (WP 0436 00, WP 0437 00, WP 0438 00, or WP 0441 00)

Tools and Special Tools

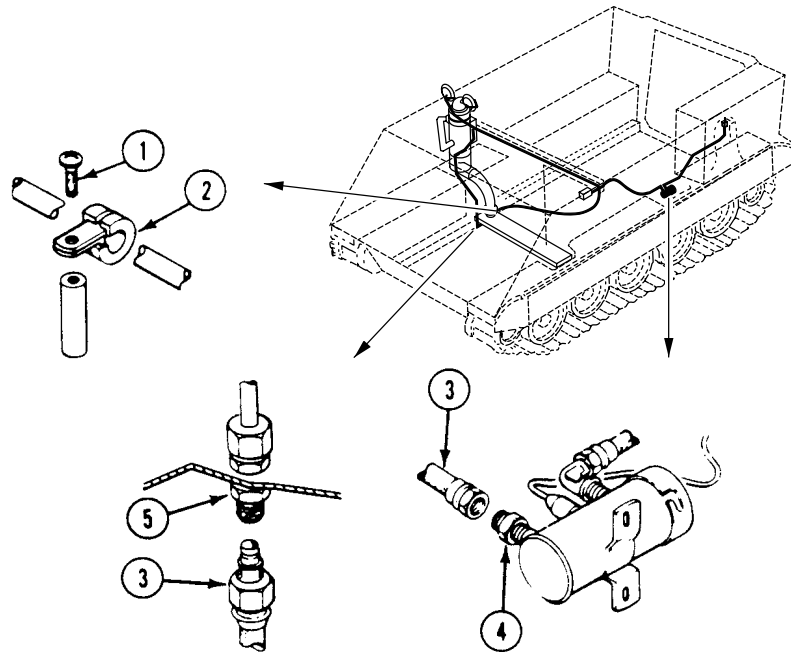
General Mechanic's Tool Kit (WP 0780 00, Item 29)

Personnel Required

Unit Mechanic

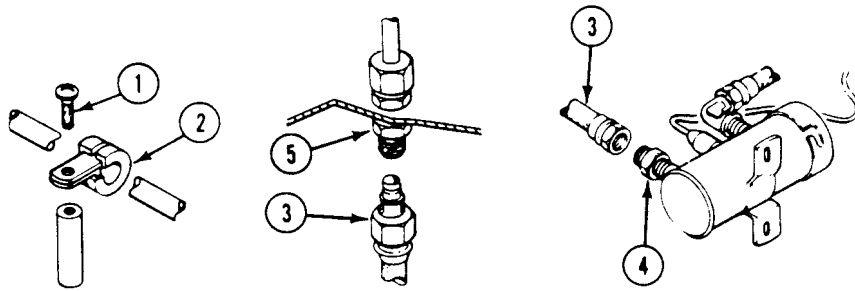
**REMOVAL**

1. Remove eight screws (1) and clamps (2) from hull weldnuts.
2. Remove fuel hose (3) from fuel pump adapter (4) and nipple (5). Remove hose.
3. Remove eight clamps (2) from hose (3).



**REPLACE FUEL PUMP TO BULKHEAD CONNECTION HOSE (M113A2,  
M901A1, AND M1059 ONLY) — Continued****0606 00****INSTALLATION**

1. Secure new hose (3) to fuel pump adapter (4).
2. Route hose (3) through hull openings. Connect hose to nipple (5).
3. Install eight clamps (2) on hose next to hull weldnuts. Secure clamps to hull weldnuts with eight screws (1).

**FOLLOW-THROUGH STEPS**

1. Open both main fuel shutoff valves (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for fuel leaks. Turn heater off.
5. Install rear floor plates (WP 0436 00, WP 0437 00, WP 0438 00, or WP 0441 00).
6. Install heater duct (WP 0622 00 or WP 0623 00).

**END OF TASK**

---

**REPLACE BULKHEAD CONNECTION TO HEATER TUBE (M981 ONLY)**

---

**0607 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0607 00-2).  
 Installation (page 0607 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing Compound (WP 0782 00, Item 62)

Personnel Required

Unit Mechanic

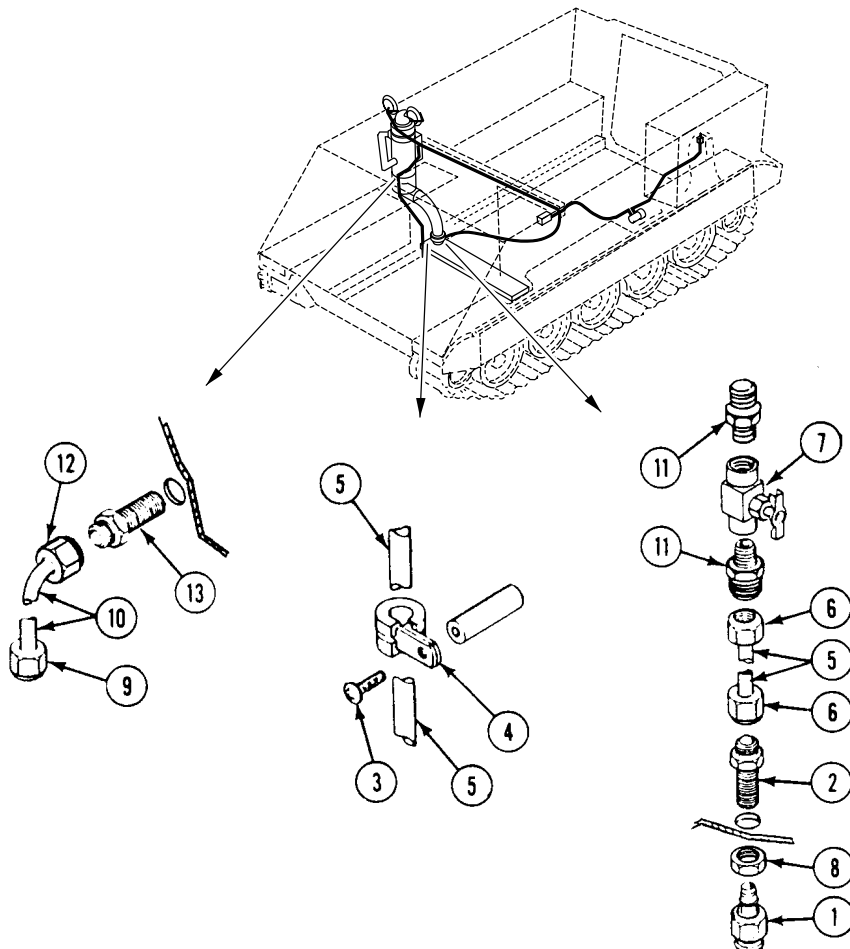
Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Battery ground lead disconnected (WP 0294 00)  
 Heater duct removed (WP 0617 00)  
 Right front floor plate removed (WP 0441 00)  
 Power plant rear access panel removed (WP 0431 00 or  
 WP 0433 00)  
 Engine fuel supply line shutoff valves closed (see your  
 -10)

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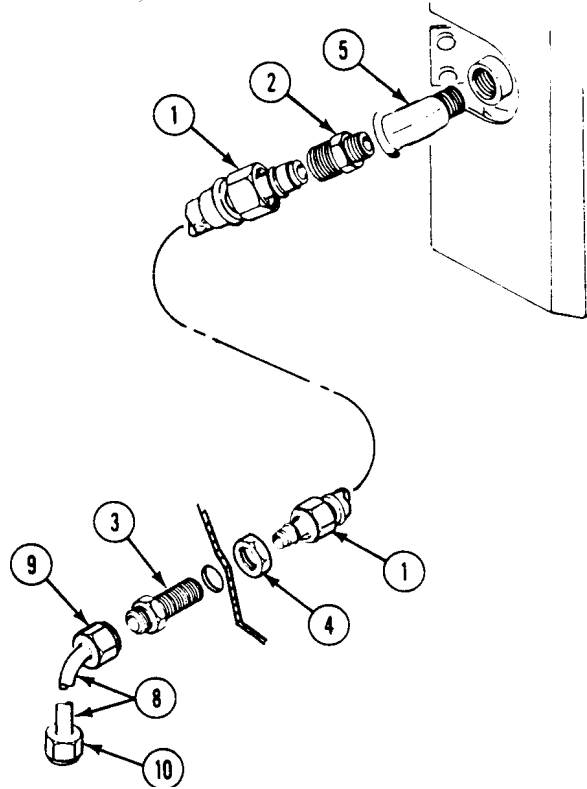
**REMOVAL**

1. Remove fuel hose (1) from nipple (2).
2. Remove screw (3) and clamp (4) from bulkhead weldnut. Remove clamp from tube (5).
3. Loosen two nuts (6) on tube (5). Remove tube from nipple (2) and shutoff valve (7).
4. Remove jamnut (8) and nipple (2) from hull.
5. Loosen nut (9). Remove shutoff valve (7) from tube (10).
6. Remove two adapters (11) from shutoff valve (7).
7. Loosen nut (12). Remove tube (10) from nipple (13).

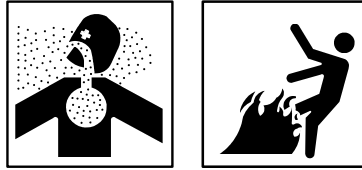


**REPLACE BULKHEAD CONNECTION TO HEATER TUBE (M981 ONLY) — Continued****0607 00**

8. Remove fuel hose (1) from adapter (2) and nipple (3).
9. Remove jamnut (4) and nipple (3) from power plant compartment bulkhead.
10. Remove adapter (2) from elbow (5).
11. Remove elbow (5) from heater.



## INSTALLATION

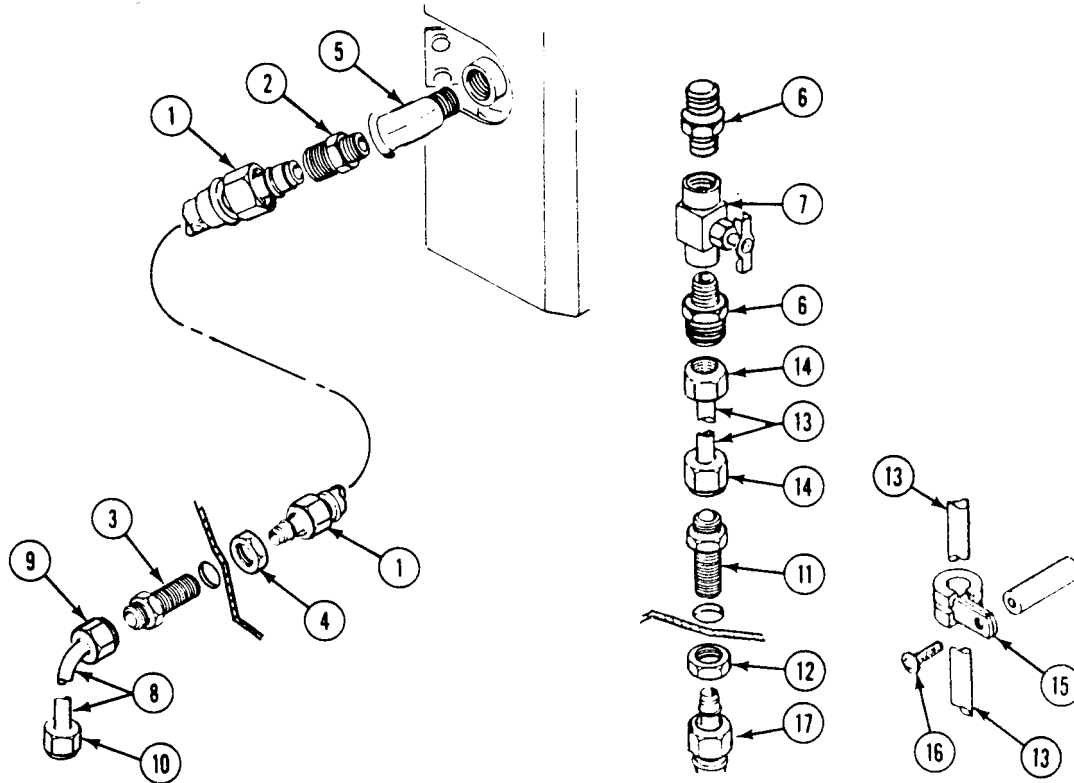
**WARNING**

**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of tapered threads.
2. Install elbow (5) on heater.
3. Install adapter (2) on elbow (5).
4. Install nipple (3) on power plant compartment bulkhead. Secure with jamnut (4).
5. Install fuel hose (1) on adapter (2) and nipple (3).
6. Install two adapters (6) on shutoff valve (7).
7. Install tube (8) on nipple (3). Secure with nut (9).
8. Install shutoff valve (7) on tube (8). Secure with nut (10).
9. Install nipple (11) on hull. Secure with jamnut (12).
10. Install tube (13) on shutoff valve (7) and nipple (11). Secure with two nuts (14).
11. Install clamp (15) on tube (13). Align clamp with bulkhead weldnut. Secure with screw (16).

12. Install fuel hose (17) on nipple (11).



**FOLLOW-THROUGH STEPS**

1. Open engine fuel supply line shutoff valves (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for fuel leaks. Turn heater off.
5. Install power plant rear access panel (WP 0431 00 or WP 0433 00)
6. Install right front floor plate (WP 0441 00).
7. Install heater duct (WP 0622 00 or WP 0623 00).
8. Raise and lock ramp (See your-10).

**END OF TASK**





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**REPLACE FUEL PUMP HOSE TO HEATER FUEL SHUTOFF VALVE (M1064 ONLY)**

---

**0608 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0608 00-1).  
 Installation (page 0608 00-2).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Heater fuel shutoff valve closed (see your -10)  
 Battery ground strap disconnected (WP 0294 00)  
 Heater duct removed (WP 0617 00)  
 Left front floor plate removed (WP 0437 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)  
 Wiping rag (WP 0782 00, Item 76)  
 Locknut (2)

Personnel Required

Unit Mechanic

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**REMOVAL**

**WARNING**

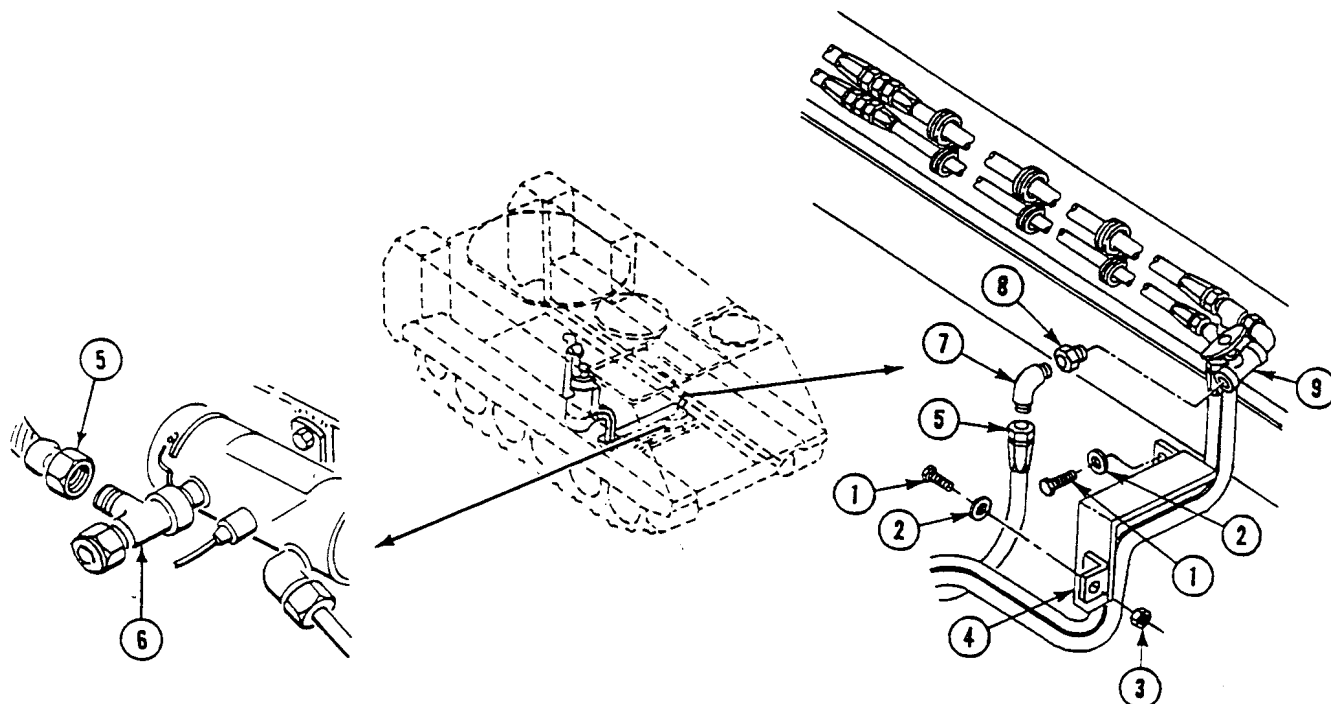
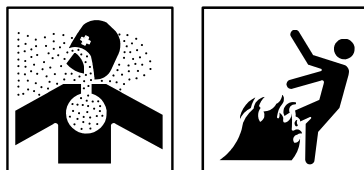


**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

**REPLACE FUEL PUMP HOSE TO HEATER FUEL SHUTOFF VALVE  
(M1064 ONLY) — Continued**

0608 00

1. Remove two screws (1), washers (2), locknuts (3), and guard (4) from hull. Discard locknuts.
2. Remove hose (5) from tee (6) and elbow (7).
3. Remove elbow (7) from adapter (8).
4. Remove adapter (8) from valve (9).


**INSTALLATION**
**WARNING**


**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

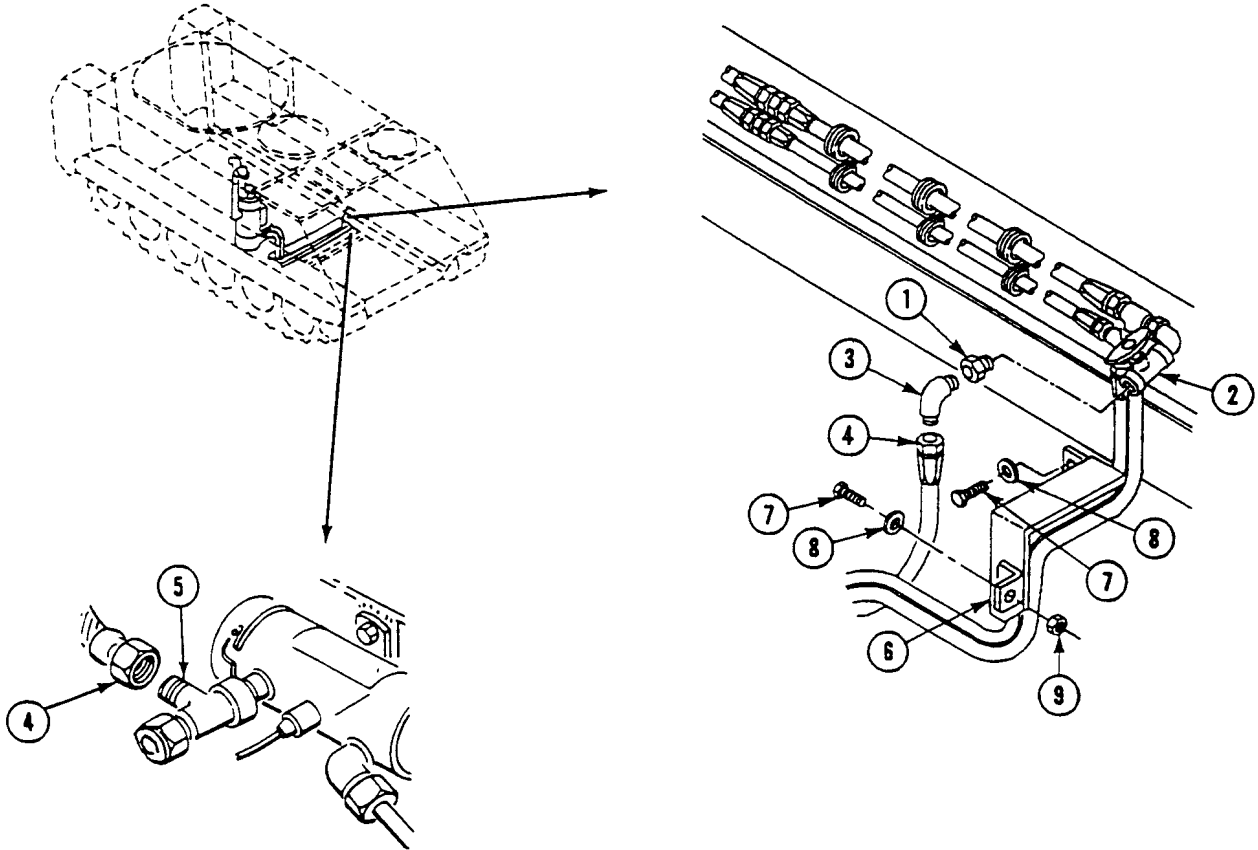
**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

1. Apply a thin, even coat of sealing compound to cleaned external threads of fitting before installation.
2. Install adapter (1) on valve (2).
3. Install elbow (3) on adapter (1).
4. Install hose (4) on elbow (3) and tee (5).

**REPLACE FUEL PUMP HOSE TO HEATER FUEL SHUTOFF VALVE  
(M1064 ONLY) — Continued**

0608 00

5. Install guard (6), two screws (7), washers (8), and new locknuts (9) on hull.



**FOLLOW-THROUGH STEPS**

1. Open heater fuel supply shutoff valve (see your -10). Check for leaks.
2. Install left front floor plate (WP 0437 00).
3. Install heater duct (WP 0617 00).
4. Connect battery ground strap (WP 0294 00).
5. Start engine (see your -10).
6. Raise and lock ramp (see your -10).
7. Stop engine (see your -10).

**END OF TASK**



**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES,  
AND FITTINGS (M1064 ONLY)**

**0609 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0609 00-1).
- Installation (page 0609 00-4).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Heater duct removed (WP 0617 00)
- Front floor plates removed (WP 0437 00)
- Battery ground strap disconnected (WP 0294 00)
- Heater fuel shutoff valve closed (see your -10)

Materials/Parts

- Sealing compound (WP 0782 00, Item 60)
- Wiping rags (WP 0782 00, Item 76)
- Lockwasher (2)
- Lockwasher (3)
- Preformed packing (4)
- Tie strap (3)

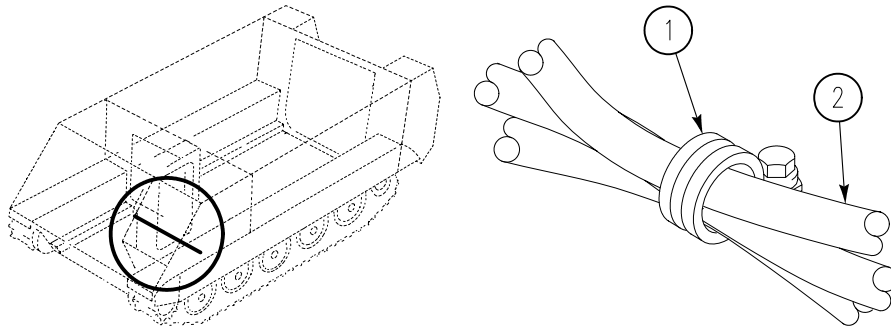
**REMOVAL**

**WARNING**



**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove three tie straps (1) from hose assembly (2). Discard straps.



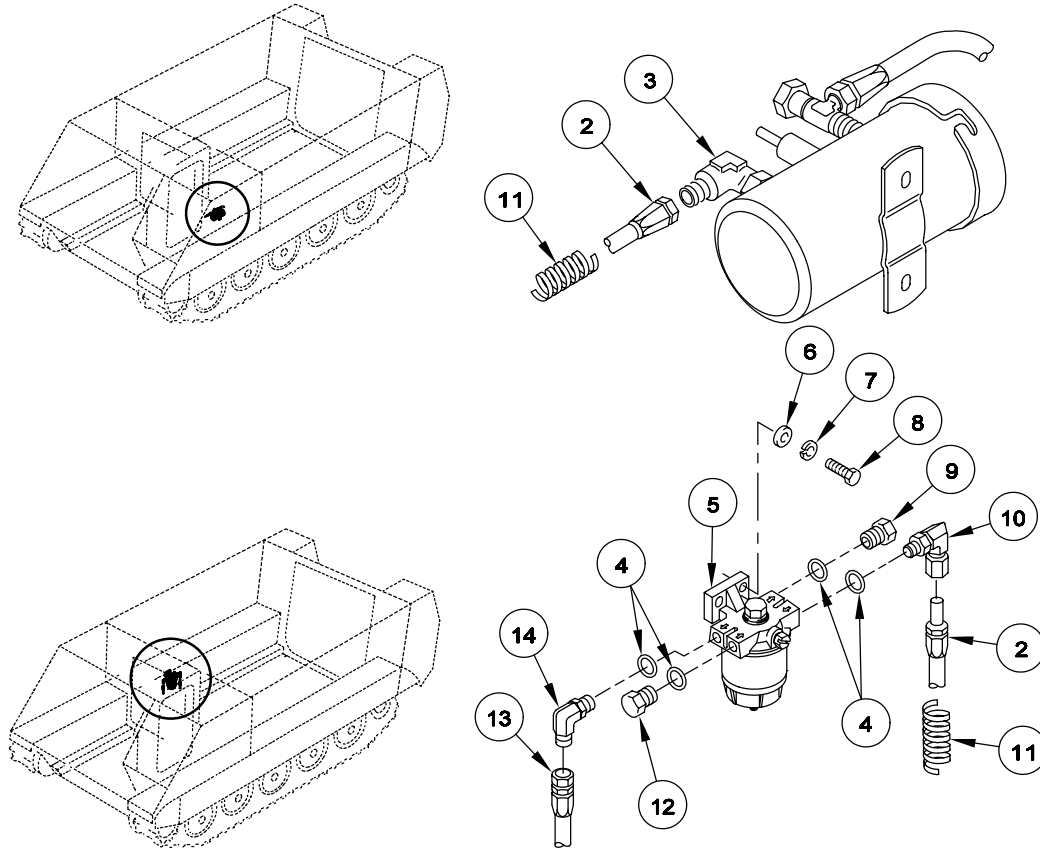
**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS  
(M1064 ONLY) — Continued**

0609 00

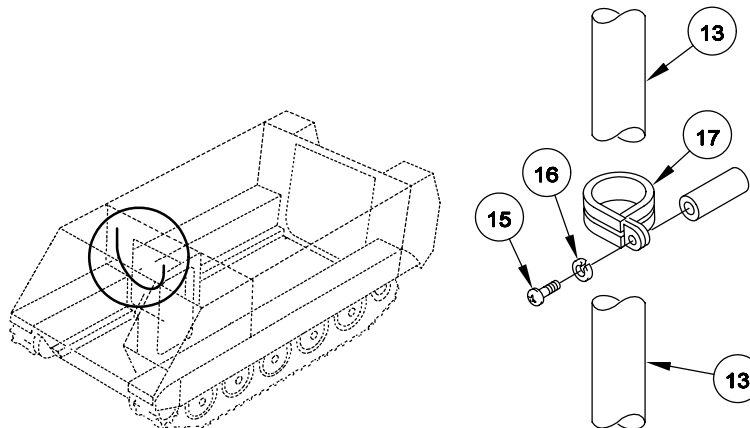
**NOTE**

**If hose assembly is being replaced, remove and reuse spiral tubing.**

- Remove hose assembly (2) and spiral tubing (11) from fuel pump elbow (3) and fuel filter elbow (10).



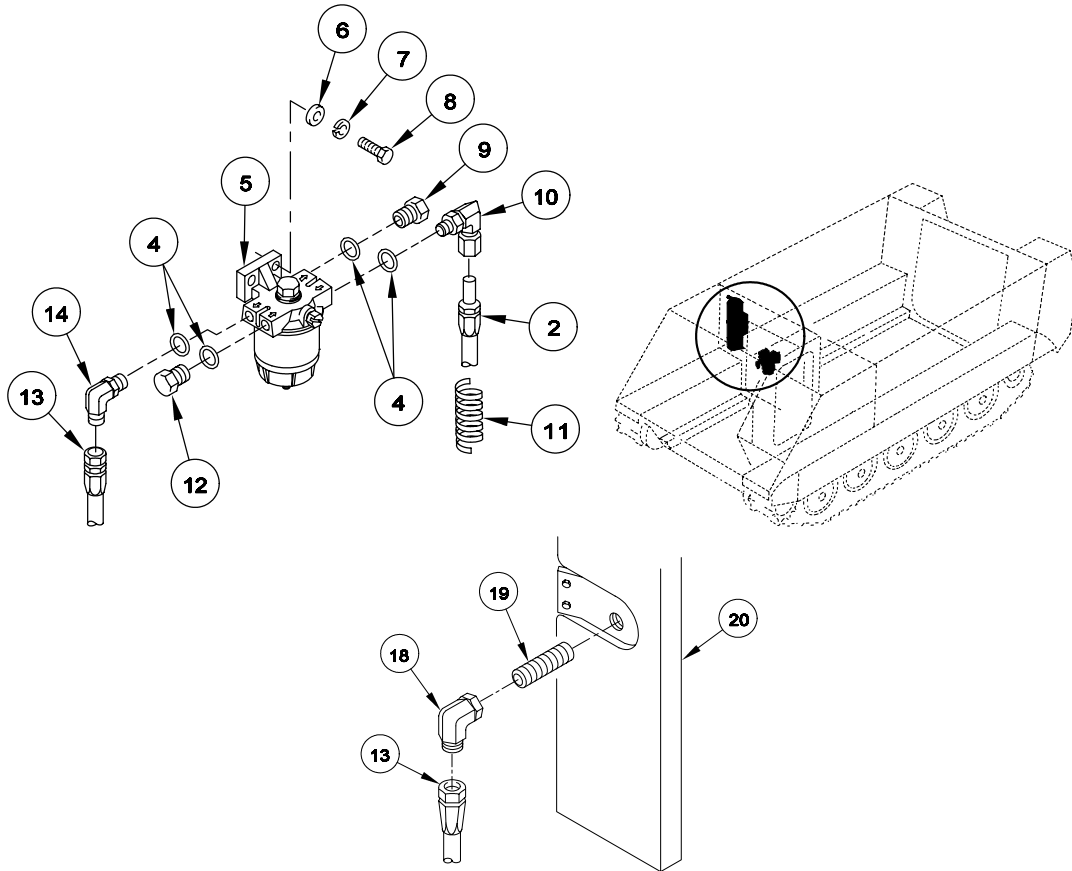
- Remove three screws (15), lockwashers (16), and clamps (17) from hose assembly (13). Discard lockwashers.



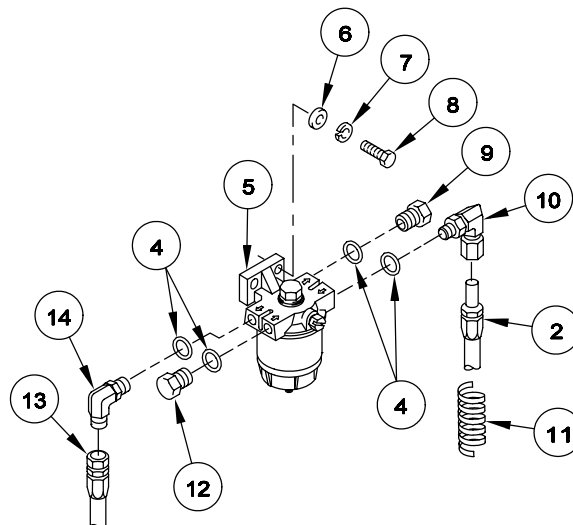
**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS  
(M1064 ONLY) — Continued**

0609 00

4. Remove hose assembly (13) from fuel filter elbow (14) and personnel heater elbow (18).



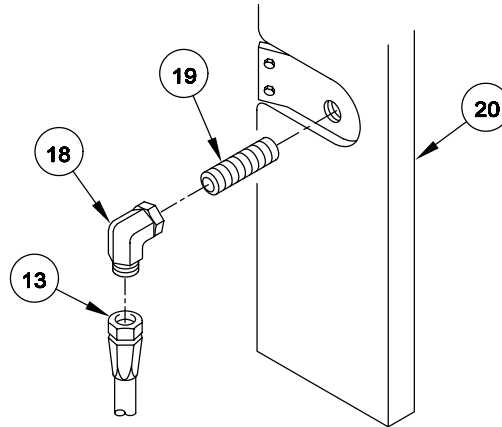
5. Remove two screws (8), lockwashers (7), washers (6), and fuel filter (5) from right sponson. Discard lockwashers.  
 6. Remove elbow (14) and packing (4) from fuel filter (5). Discard packing.  
 7. Remove elbow (10) and packing (4) from fuel filter (5). Discard packing.  
 8. Remove two plugs (9) and (12) and packings (4) from fuel filter (5). Discard packings.



**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS  
(M1064 ONLY) — Continued**

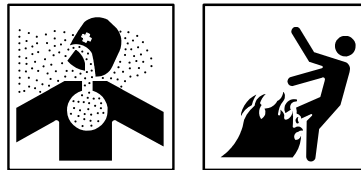
0609 00

- Remove elbow (18) from nipple (19) and nipple from heater (20).



**INSTALLATION**

**WARNING**



**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

- Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of external tapered threads.
- Install plug (12), plug (9), and new packing (4) in ports 1 and 4 of fuel filter (5).

**NOTE**

**Flareless (compression) fittings are used on the fuel lines. When these fittings are first installed, a sleeve is crimped on the tube or hose end. Consequently, when tubes or hoses are replaced, new fitting sleeves are also required.**

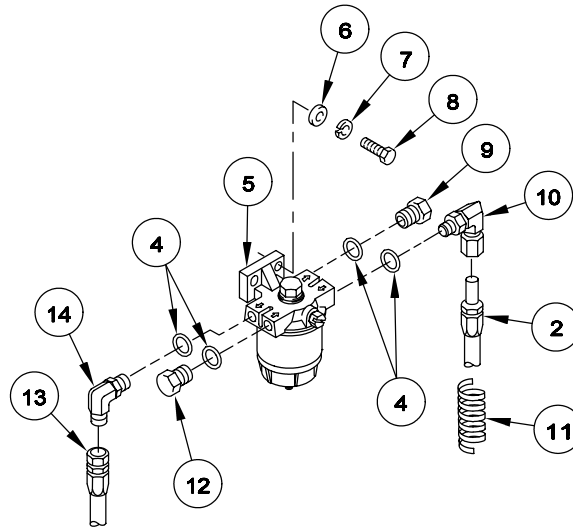
- Install two elbows (10) and (14) and new packings (4) in ports 2 and 3 of fuel filter (5).



**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS  
(M1064 ONLY) — Continued**

0609 00

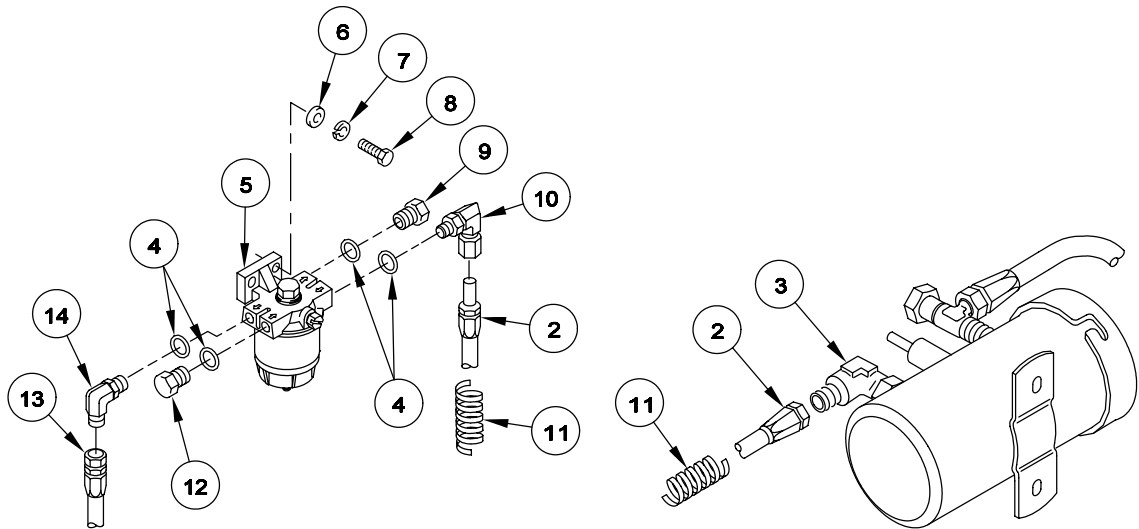
4. Install fuel filter (5) on sponson and secure with two screws (8), new lockwashers (7), and washers (6).



**NOTE**

**If new hose assembly is being installed, reuse spiral tubing.**

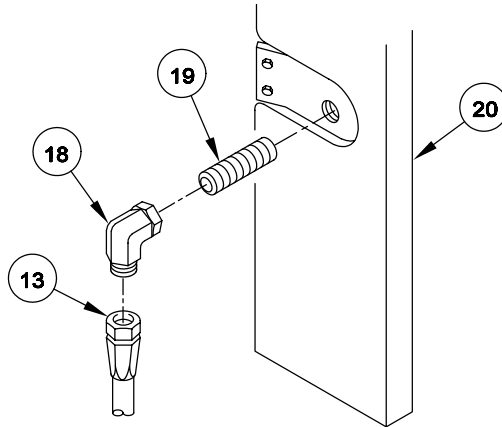
5. Connect hose assembly (2) with spiral tubing (11) installed to fuel filter elbow (10) and fuel pump elbow (3).



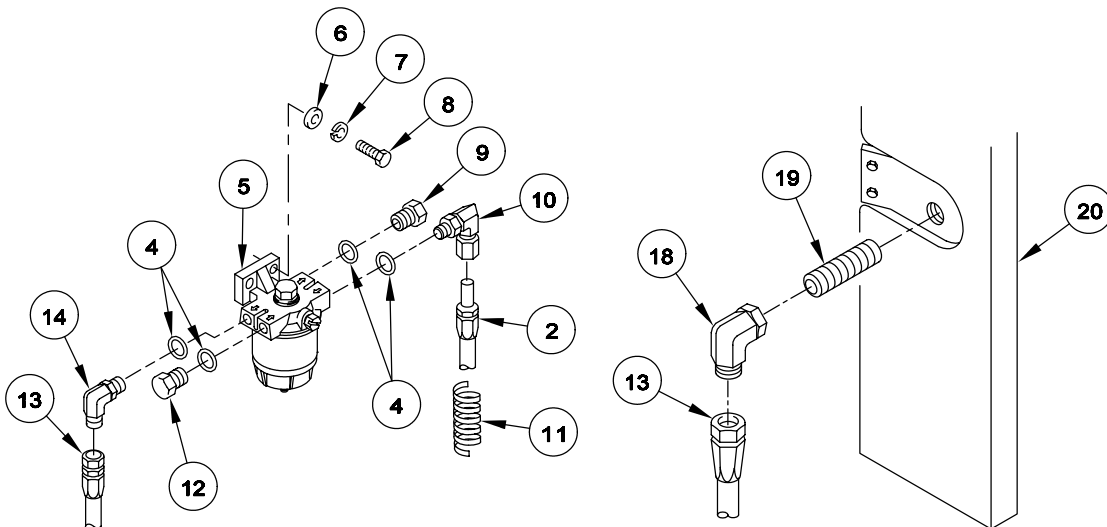
**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS  
(M1064 ONLY) — Continued**

0609 00

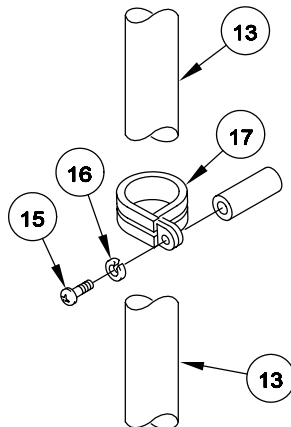
6. Install nipple (19) and elbow (18) on personnel heater (20).



7. Connect hose assembly (13) to fuel filter elbow (14) and personnel heater elbow (18).



8. Install three clamps (17), new lockwashers (16), and screws (15) on hose assembly (13).



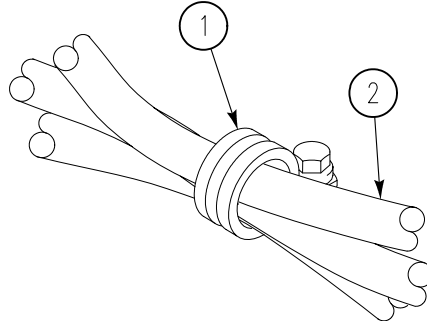
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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSES, AND FITTINGS  
(M1064 ONLY) — Continued**

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0609 00

9. Install three new tie straps (1) on hose assembly (2).

**FOLLOW-THROUGH STEPS**

1. Open heater fuel shutoff valve (see your -10).
2. Connect battery ground strap (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for leaks. Turn heater off.
5. Install front floor plates (WP 0437 00).
6. Install heater duct (WP 0617 00).
7. Start engine (see your -10).
8. Raise and lock ramp (see your -10).
9. Stop engine (see your -10).

**END OF TASK**



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**REPLACE FUEL TANK TO FUEL PUMP HOSE (M577A2 AND M1068 ONLY)**

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**0610 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0610 00-2).  
 Installation (page 0610 00-3).

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**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Battery ground lead disconnected (WP 0294 00)  
 Rear floor plate removed (WP 0436 00 or WP 0440 00)  
 Fuel tanks drained (WP 0153 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)  
 Pipe Wrench (WP 0780 00, Item 93)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)  
 Wiping rag (WP 0782 00, Item 76)

Personnel Required

Unit Mechanic

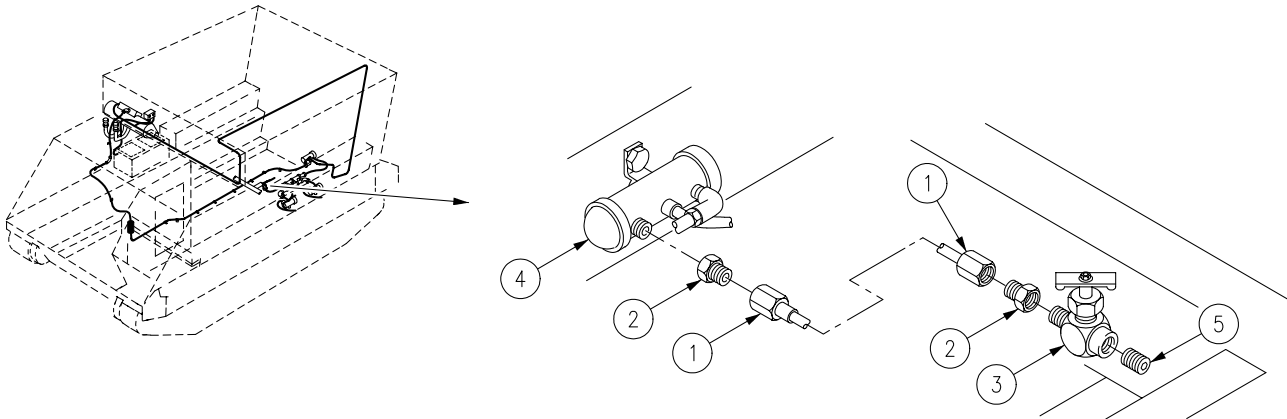
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## REMOVAL

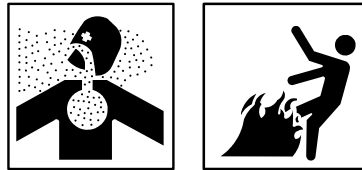
**WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove fuel hose (1) from two adapters (2).
2. Remove two adapters (2) from fuel pump (4) and shutoff valve (3).
3. Remove shutoff valve (3) from nipple (5).
4. If damaged, remove nipple (5) from fuel cross pipe. Use pipe wrench.



## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

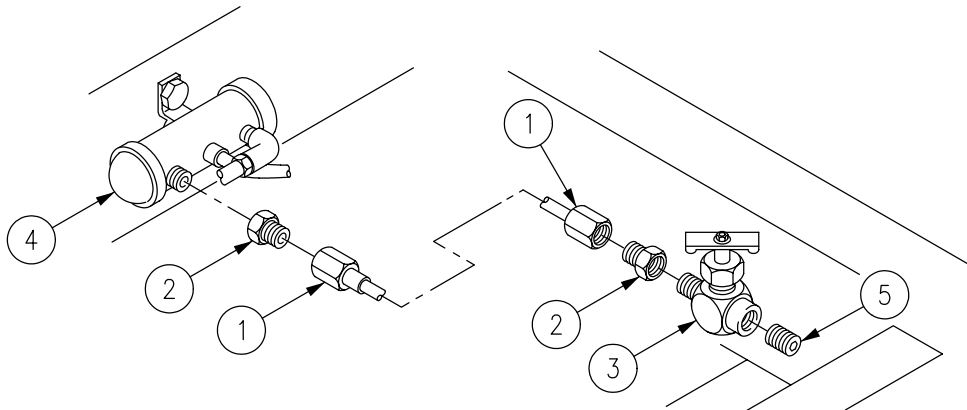
Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply light coat of sealing compound to all external tapered threads. Do not apply sealant beyond small end of external tapered threads.

**NOTE**

Flareless (compression) fittings are used on the fuel lines. When these fittings are first installed, a sleeve is crimped on the tube or hose end. Consequently, when tubes or hoses are replaced, new fitting sleeves are also required.

2. If necessary, install nipple (5) in fuel cross pipe.
3. Install shutoff valve (3) on nipple (5).
4. Install two adapters (2) on fuel pump (4) and shutoff valve (3).
5. Install fuel hose (1) on two adapters (2).



**FOLLOW-THROUGH STEPS**

1. Fill fuel tanks (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for leaks. Turn heater off (see your -10).
5. Install rear floor plate (WP 0436 00 or WP 0440 00).
6. Start engine (see your -10).
7. Raise and lock ramp (see your -10).
8. Stop engine (see your -10).

**END OF TASK**



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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE,  
FITTINGS, AND SHIELD (M577A2 ONLY)**

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**0611 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0611 00-2).
  - Installation (page 0611 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Battery ground lead disconnected (WP 0294 00)
- Heater duct removed (WP 0617 00)
- Floor plates removed (WP 0436 00)
- Heater fuel shutoff valve closed (see your -10)

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Pipe Wrench (WP 0780 00, Item 93)

Materials/Parts

- Wiping rag (WP 0782 00, Item 76)
- Lockwasher (12)
- Preformed packing (4)

Personnel Required

Unit Mechanic

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**REMOVAL**

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**WARNING**

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**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove six screws (1), lockwashers (2) two clamps (7), and seven clamps (3) from nine hull weldnuts. Discard lockwashers.
2. Remove fuel hose (4) and elbow (5) from fuel pump (6). Disconnect elbow from hose.
3. Remove two clamps (7), and seven clamps (3) from hose (4).
4. Remove four screws (8), lockwashers (9) flat washers (10), and shield (11). Discard lockwashers.
5. Remove nut (12), sleeve (13), adapter (14), and elbow (15) from heater (16).

**NOTE**

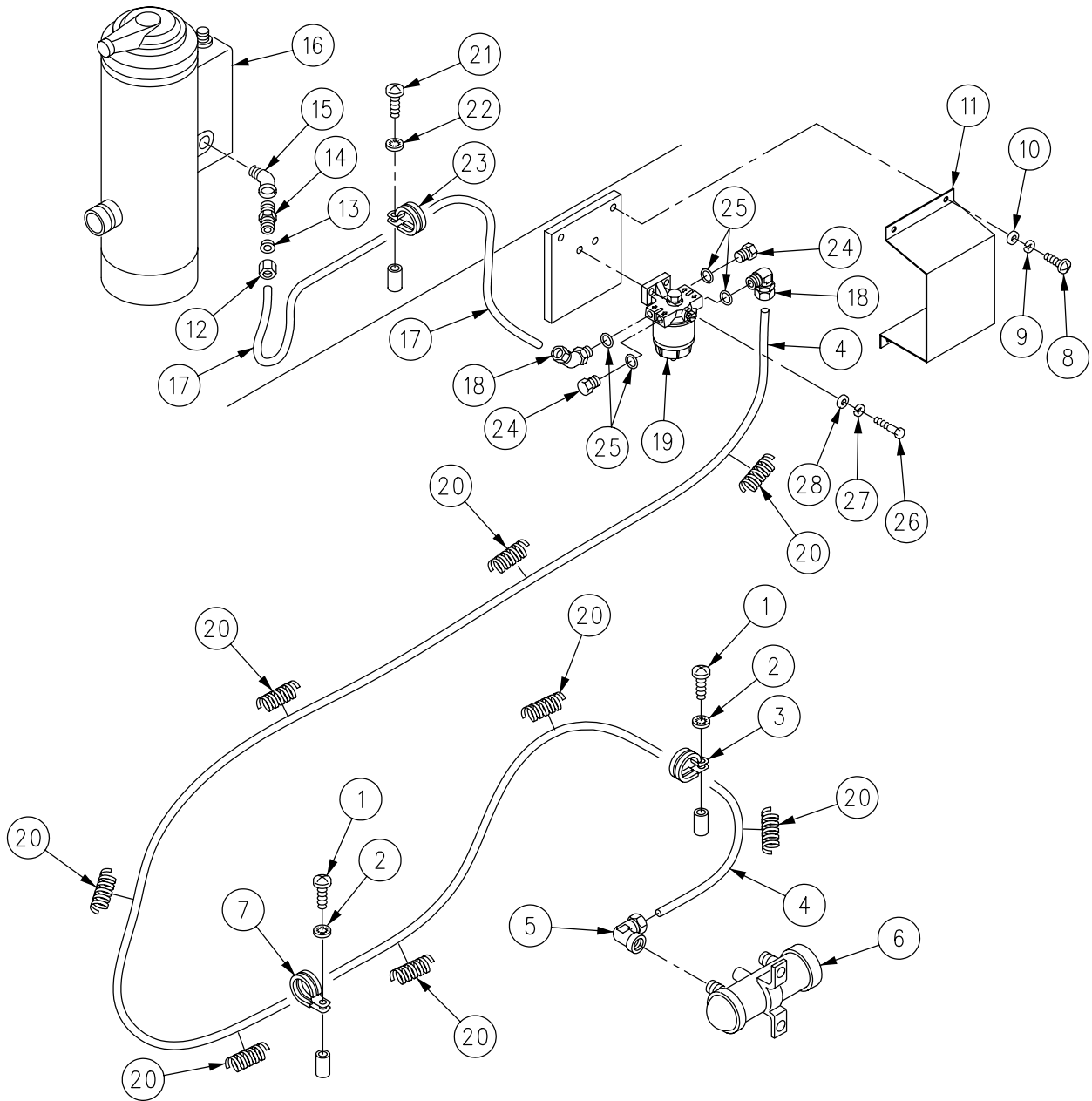
**Do not remove spiral wrap from fuel hose if hose is being replaced.**

6. Remove hose (17) and hose (4) from two elbows (18) on filter (19). Remove and discard spiral wrap (20) from hose (4).
7. Remove screw (21), flat washer (22), and clamp (23) from hose (17).
8. Remove two elbows (18), screws (24), and four packings (25) from filter (19). Discard packings.

**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS,  
AND SHIELD (M577A2 ONLY) — Continued**

0611 00

9. Remove two screws (26), lockwashers (27), flat washers (28), and filter (19). Discard lockwashers.



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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS,  
AND SHIELD (M577A2 ONLY) — Continued**

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0611 00

**INSTALLATION**

1. Install two screws (26), new lockwashers (27), flat washers (28), and filter (19).
2. Install two elbows (18), screws (24), and four packings (25) on filter (19).
3. Install screw (21), flat washer (22), and clamp (23) on hose (17).

**NOTE**

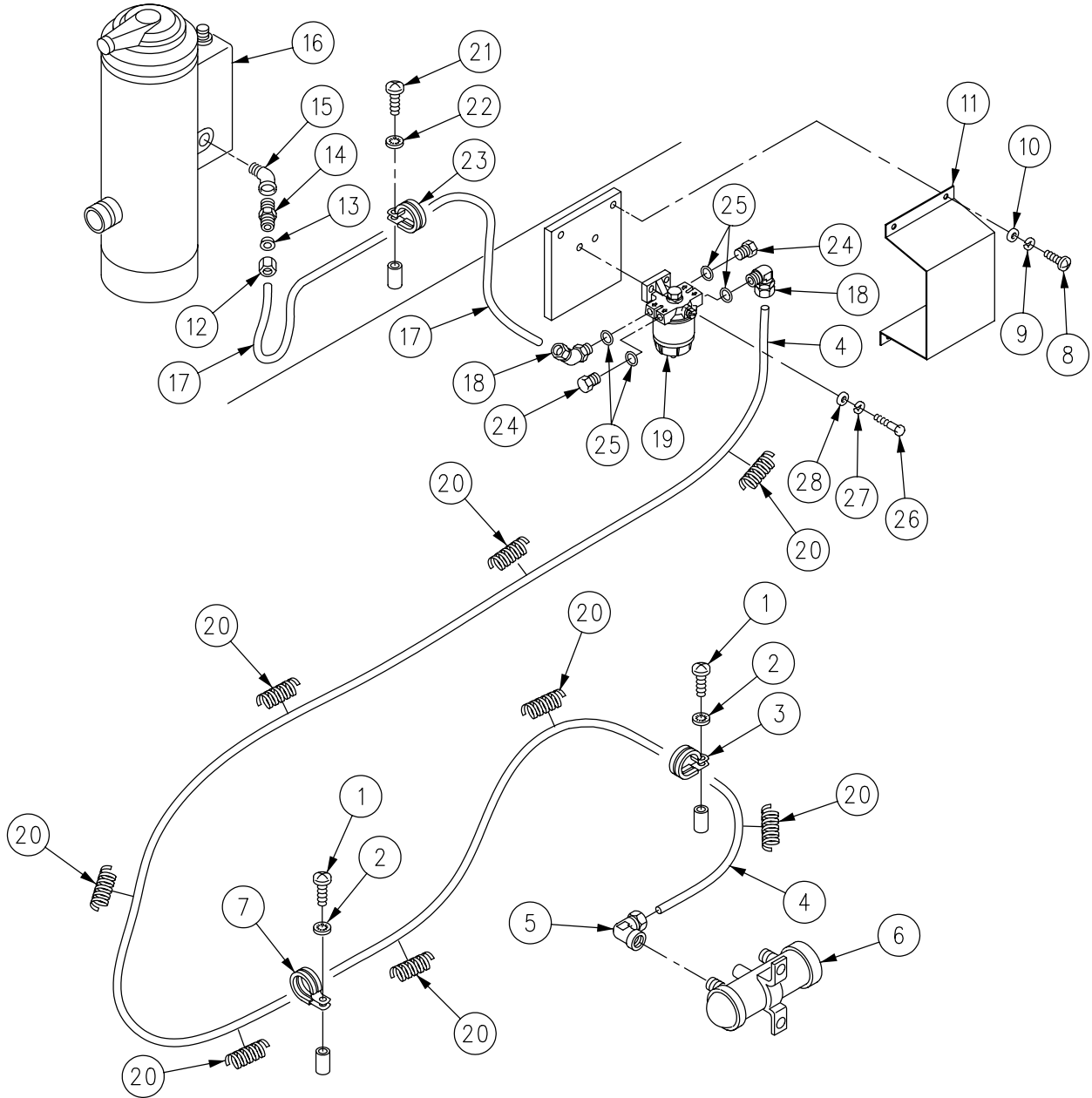
**If fuel hose was replaced do Step 4, otherwise go to Step 5.**

4. Install spiral wrap (20) on fuel hose (4).
5. Install hose (17) and hose (4) on two elbows (18). Install elbows on filter (19).
6. Install nut (12), sleeve (13), adapter (14), and elbow (15) on heater (16).
7. Install four screws (8), new lockwashers (9), flat washers (10), and shield (11).
8. Install two clamps (7) and seven clamps (3) on hose (4).
9. Route hose (4) through openings in hull cross members. Align seven clamps (3) and two clamps (7) with hull weldnuts. Secure with six new lockwashers (2) and screws (1).

**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS,  
AND SHIELD (M577A2 ONLY) — Continued**

0611 00

10. Install elbow (5) on fuel hose (4). Install elbow (5) on fuel pump (6).



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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS,  
AND SHIELD (M577A2 ONLY) — Continued**

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**0611 00**

**FOLLOW-THROUGH STEPS**

1. Fill fuel tanks (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Start heater (see your -10). Check all fittings for leaks. Turn heater off (see your -10).
5. Install rear floor plate (WP 0436 00 or WP 0440 00).
6. Install heater duct (WP 0617 00).
7. Start engine (see your -10).
8. Raise and lock ramp (see your -10).
9. Stop engine (see your -10).

**END OF TASK**

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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE,  
FITTINGS AND SHIELD (M1068 ONLY)**

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**0612 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0612 00-2).
  - Installation (page 0612 00-4).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Battery ground lead disconnected (WP 0294 00)
- Heater duct removed (WP 0617 00).
- Right front floor plate removed (WP 0440 00)
- Heater fuel shutoff valve closed (see your -10)

Materials/Parts

- Sealing compound (WP 0782 00, Item 64)
  - Wiping rag (WP 0782 00, Item 76)
  - Lockwasher (9)
  - Packing (4)
  - Tie strap (5)
-

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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS  
AND SHIELD (M1068 ONLY) — Continued**

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0612 00

**REMOVAL**

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**WARNING**

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**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles.  
Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove four screws (1), lockwashers (2), washers (3), and shield (4) from right sponson. Discard lockwashers.
2. Remove three screws (5), lockwashers (6), and clamps (7) from two weldnuts. Discard lockwashers.
3. Remove tie strap (8) from fuel tube (9). Discard tie strap.
4. Remove fuel tube (9) from fuel pump (10) and elbow (11) on fuel filter (12).

**NOTE**

**Do not remove spiral wrap from tube if tube is being replaced.**

5. Remove spiral wrap (13) from tube (9). Discard spiral wrap.
6. Remove four tie straps (14) from fuel hose (15). Discard tie straps.
7. Remove fuel hose (15) from straight adapter (16) on fuel filter (12) and elbow (17) on personnel heater (18).

**NOTE**

**Do not remove spiral wrap from hose if hose is being replaced.**

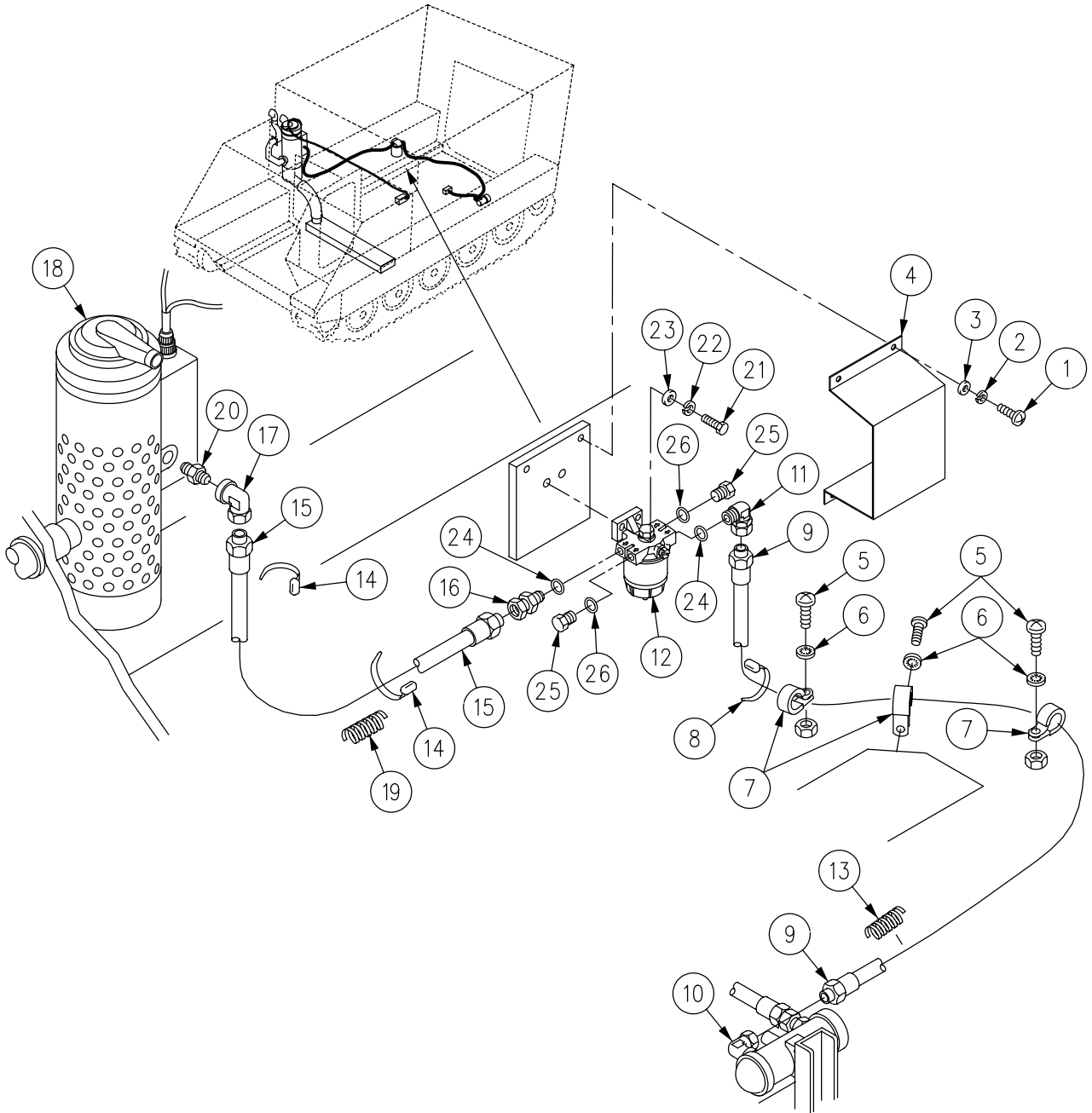
8. Remove spiral wrap (19) from hose (15). Discard spiral wrap.
9. Remove nipple (20) and elbow (17) from personnel heater (18).
10. Remove two screws (21), lockwashers (22), washers (23), and fuel filter (12) from right sponson. Discard lockwashers.
11. Remove elbow (11), adapter (16), and two packings (24) from fuel filter (12). Discard packings.



**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS  
AND SHIELD (M1068 ONLY) — Continued**

0612 00

12. Remove two plugs (25) and packings (26) from fuel filter (12). Discard packings.



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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS  
AND SHIELD (M1068 ONLY) — Continued**

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0612 00

**INSTALLATION**

1. Install two plugs (1) and new packings (2) in ports 1 and 4 of fuel filter (3)

**NOTE**

**Flareless (compression) fittings are used on the fuel lines. When these fittings are first installed, a sleeve is crimped on the tube or hose end. Consequently, when tubes or hoses are replaced, new fitting sleeves are also required.**

2. Install elbow (4), adapter (5), and two new packings (6) in ports 2 and 3 of fuel filter (3).
3. Install fuel filter (3) on sponson and secure with two screws (7), new lockwashers (8), and washers (9).
4. Connect nipple (10) and elbow (11) to personnel heater (12).

**NOTE**

**If fuel hose was replaced do Step 5, otherwise go to Step 6.**

5. Install new spiral wrap (13) to fuel hose (14).
6. Connect fuel hose (14) to straight adapter (5) on fuel filter (3) and elbow (11) to personnel heater (12).
7. Install four new tie straps (15) to fuel hose (14).

**NOTE**

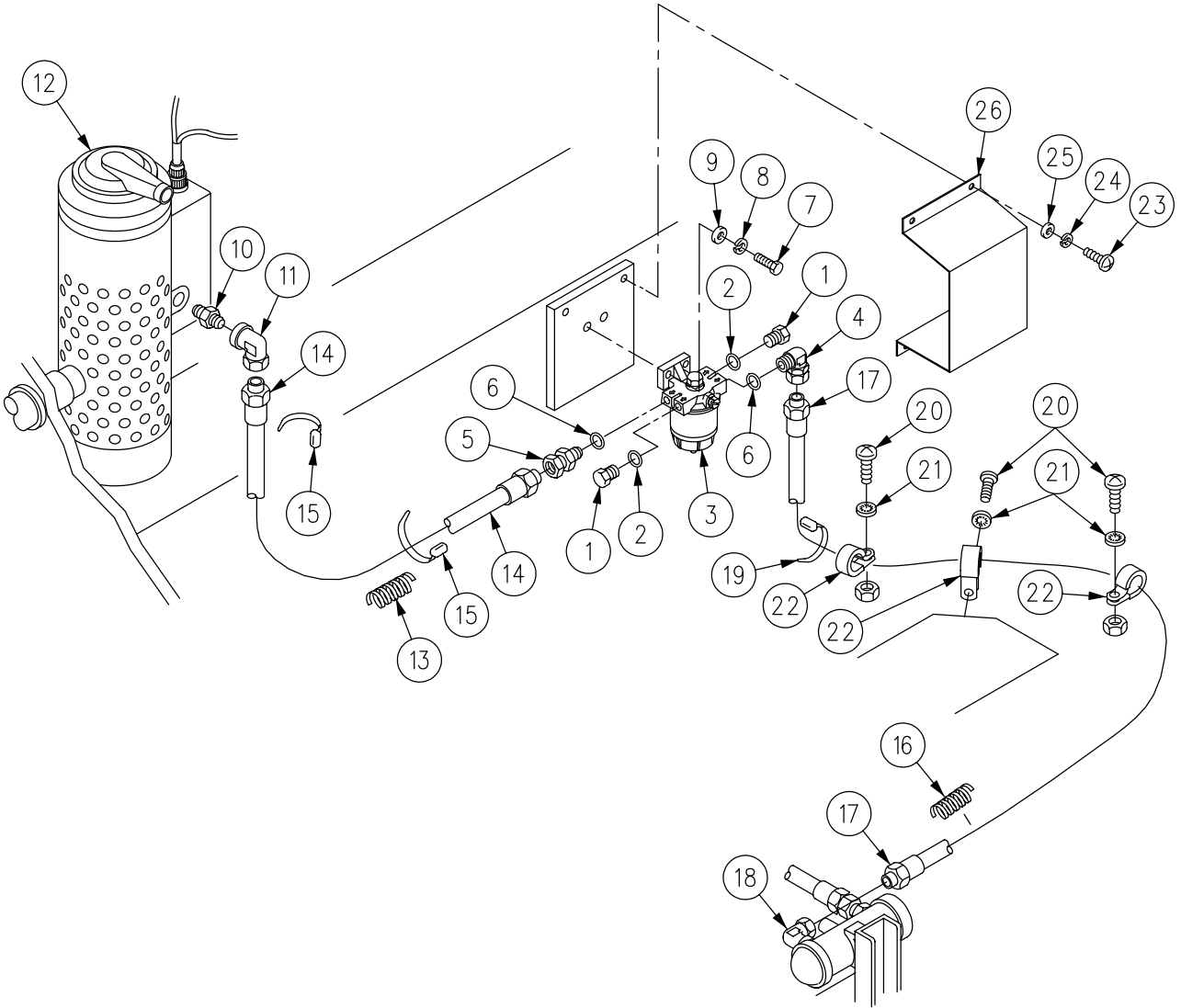
**If fuel hose was replaced do Step 8, otherwise go to Step 9.**

8. Install new spiral wrap (16) to fuel tube (17).
9. Connect fuel tube (17) to fuel pump (18) and elbow (4) to fuel filter (3).
10. Install new tie strap (19) to fuel tube (17).
11. Install three screws (20), new lockwashers (21), and clamps (22) to weldnuts.

REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS  
AND SHIELD (M1068 ONLY) — Continued

0612 00

12. Install four screws (23), new lockwashers (24), washers (25), and shield (26) to right sponson.



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**REPLACE PERSONNEL HEATER FUEL FILTER, HOSE, TUBE, FITTINGS  
AND SHIELD (M1068 ONLY) — Continued**

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**0612 00**

**FOLLOW-THROUGH STEPS**

1. Open heater fuel shutoff valve (see your -10).
2. Connect battery ground lead (WP 0294 00).
3. Bleed fuel line (WP 0599 00).
4. Install heater duct (WP 0617 00).
5. Install right front floor plate (WP 0440 00).
6. Start heater (see your -10). Check all fittings for leaks. Turn heater off.
7. Start engine (see your -10).
8. Raise and lock ramp (see your -10).
9. Stop engine (see your -10).

**END OF TASK**

**REPLACE PERSONNEL HEATER CONTROL BOX**

**0613 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0613 00-1).  
 Installation (page 0613 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

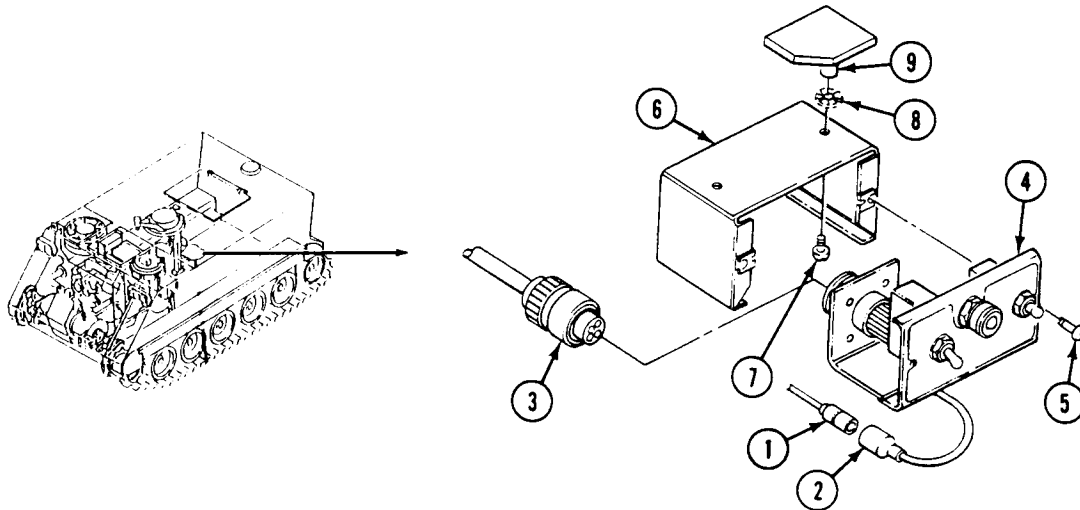
Battery ground strap disconnected (WP 0294 00)

Materials/Parts

Lockwasher (2)

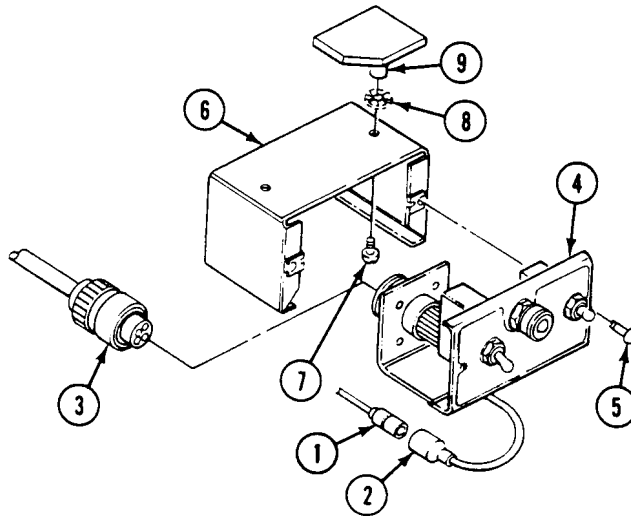
**REMOVAL**

1. Disconnect circuit 400 lead (1) from heater control box lead (2).
2. Disconnect heater wiring harness (3) from heater control box (4).
3. Remove two screws (5) and control box (4) from control box case (6).
4. Remove two screws (7), case (6), and lockwashers (8) from hull weldnuts (9). Discard lockwashers.



**INSTALLATION**

1. Place two new lockwashers (8) and control box case (6) on hull weldnuts (9). Secure with two screws (7).
2. Install heater control box (4) in case (6). Secure with two screws (5).
3. Connect heater wiring harness (3) to control box (4).
4. Connect circuit 400 lead (1) to control box lead (2).

**FOLLOW-THROUGH STEPS**

1. Connect battery ground strap (WP 0294 00).
2. Start heater (see your -10). Check that control box works right. Turn heater off.

**END OF TASK**

**REPAIR PERSONNEL HEATER CONTROL BOX**

**0614 00**

**THIS WORK PACKAGE COVERS:**

- Disassembly (page 0614 00-1).
- Repair or Replacement (page 0614 00-4).
- Assembly (page 0614 00-5).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

- General Mechanic's Tool Kit (WP 0780 00, Item 29)
- Multimeter (WP 0780 00, Item 43)

References

WP 0069 00

Equipment Condition

Heater control box removed (WP 0613 00)

Materials/Parts

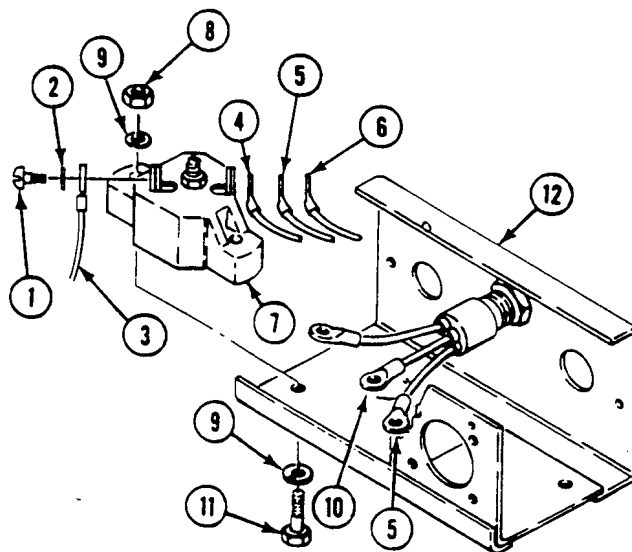
- Lockwasher (10)

**DISASSEMBLY**

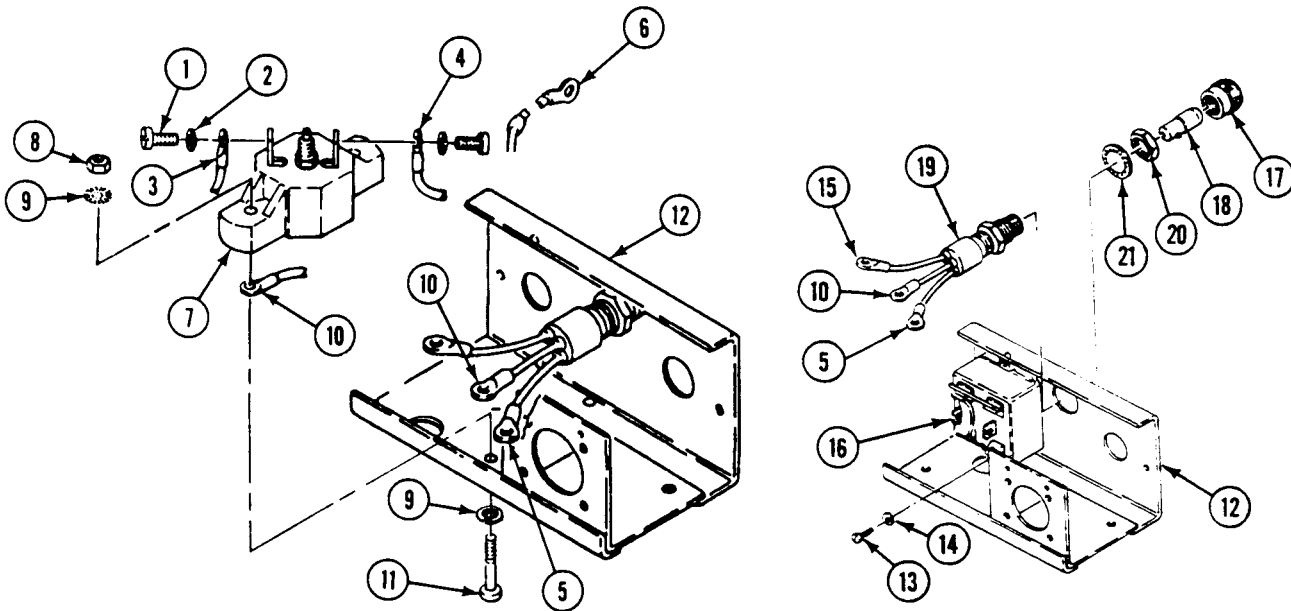
**NOTE**

**Tag all electrical leads before removing.**

1. Remove circuit breaker (7) from control box (12).
  - a. Remove two screws (1), lockwashers (2), lead 16 (3) from one terminal, and lead 17-D (4), lead 17-3 (5), and jumper 15-17 (6) from other terminal on circuit breaker (7).
  - b. Remove two nuts (8), four lockwashers (9), ground lead (10), two screws (11), and circuit breaker (7) from control box (12). Discard lockwashers.

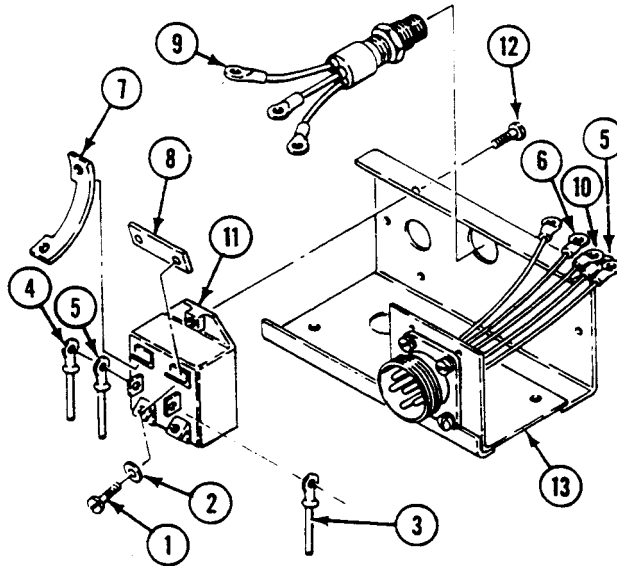


2. Remove indicator light assembly (19) from control box (12).
  - a. Remove nut (8), two lockwashers (9), and ground lead (10) from circuit breaker (7) mounting screw (11). Discard lockwashers.
  - b. Remove screw (1), lockwasher (2), and lead 17-3 (5) from circuit breaker (7).
  - c. Remove screw (13), lockwasher (14), and lead 19-2 (15) from RUN-OFF-START switch (16).
  - d. Unscrew cap (17) and remove bulb (18) from light assembly (19).
  - e. Remove nut (20), lockwasher (21), and light assembly (19) from control box (12).

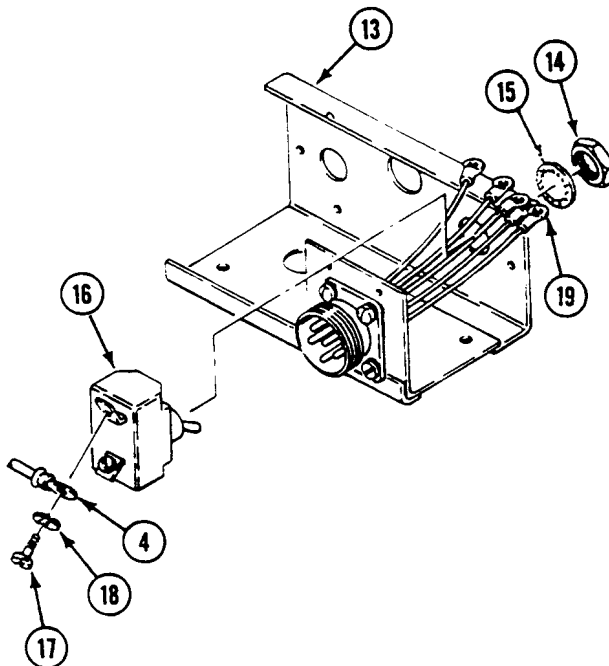




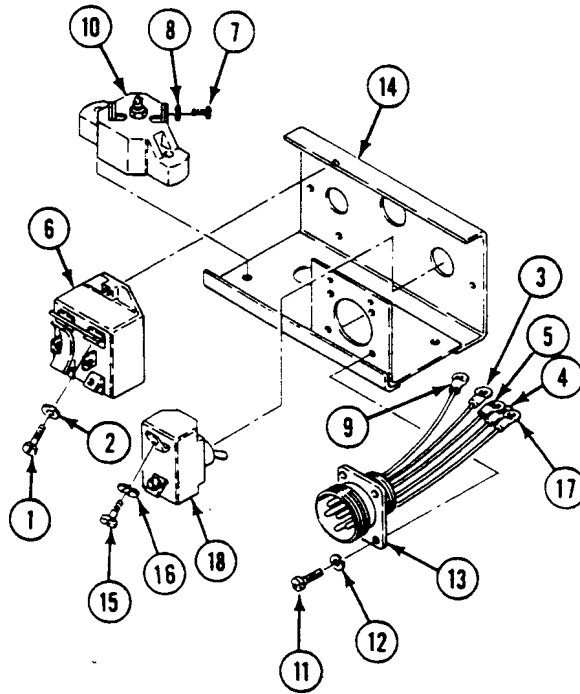
3. Remove RUN-OFF-START switch (11) from control box (13).
  - a. Remove six screws (1), lockwashers (2), jumper 15-17 (3), jumper 13-20 (4), lead 20-C (5), lead 14-A (6), jumper 21-18 (7), jumper 21-14 (8), lead 19-2 (9), and lead 19-E (10) from RUN-OFF-START switch (11).
  - b. Remove two screws (12) and RUN-OFF-START switch (11) from control box (13).



4. Remove HI-LO heat switch (16) from control box (13).
  - a. Remove nut (14), lockwasher (15), instruction plate (if applicable), and HI-LO switch (16) from control box (13).
  - b. Remove two screws (17), lockwashers (18), jumper 13-20 (4), and lead 12-B (19) from HI-LO switch (16).



5. Remove receptacle (13) from control box (14).
  - a. Remove three screws (1), lockwashers (2), lead 14-A (3), lead 20-C (4), and lead 19-E (5) from RUN-OFF-START switch (6).
  - b. Remove screw (7), lockwasher (8), and lead 17-D (9) from circuit breaker (10).
  - c. Remove four screws (11), lockwashers (12), and receptacle (13) from control box (14). Discard lockwashers.
  - d. Remove screw (15), lockwasher (16), and lead 12-B (17) from HI-LO switch (18).



## REPAIR OR REPLACEMENT

1. Check circuit breaker. See troubleshooting (WP 0069 00). Replace bad circuit breaker.
2. Check indicator light assembly and bulb. See troubleshooting (WP 0069 00). Replace bad light or bulb.
3. Check RUN-OFF-START switch and HI-LO switch. See troubleshooting (WP 0069 00). Replace bad switch.
4. Check receptacle for continuity from pins to lead ends. Replace damaged terminal lugs (WP 0312 00). If pins are damaged, notify supervisor.

ASSEMBLY

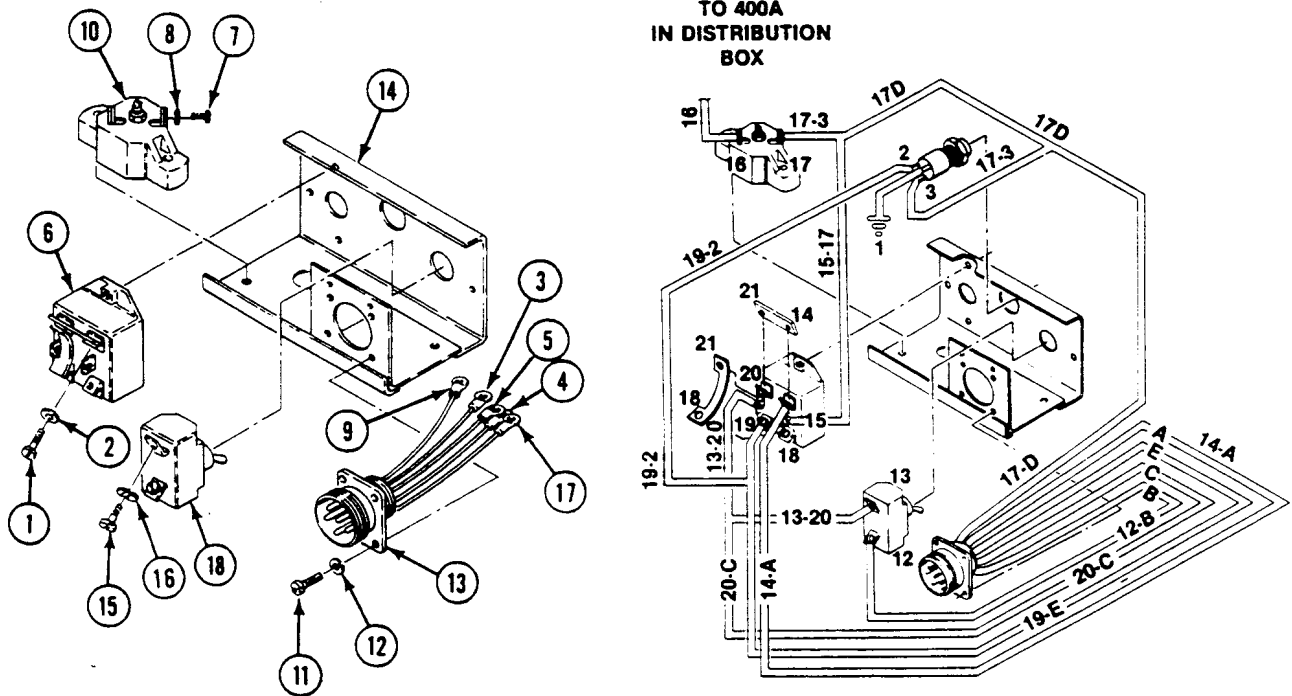
NOTE

Before connecting electrical leads, check tags and wiring diagram below to verify proper connection.

NOTE

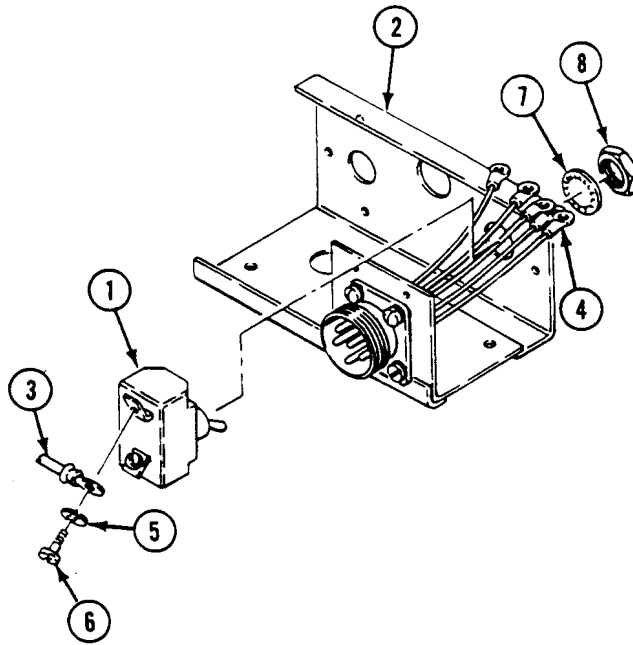
Make sure key in receptacle is at the top.

1. Install receptacle (13) in control box (14).
  - a. Install receptacle (13) in control box (14). Secure with four new lockwashers (12) and screws (11).
  - b. Install lead 17-D (9) on circuit breaker (10). Secure with lockwasher (8) and screw (7).
  - c. Install lead 12-B (17) on HI-LO switch (18). Secure with lockwasher (16) and screw (15).
  - d. Install lead 19-E (5), lead 20-C (4), and lead 14-A (3) on RUN-OFF-START switch (6). Secure with three lockwashers (2) and screws (1).



**NOTE****Switch is marked ON and OFF.**

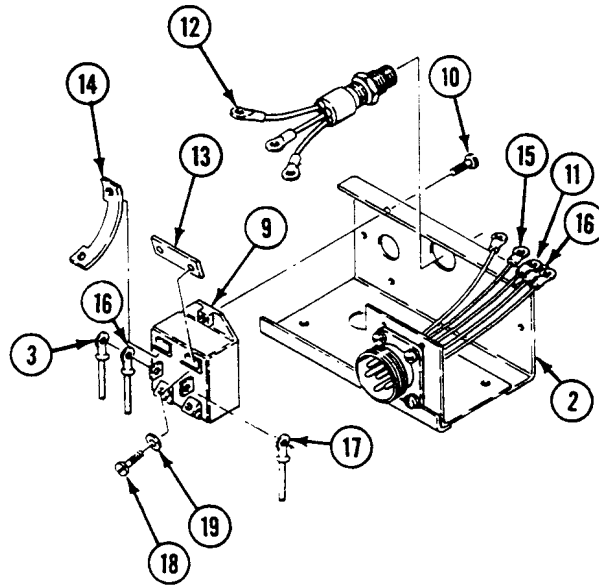
2. Install HI-LO heat switch (1) in control box (2).
  - a. Install switch (1) in control box (2) with ON at the top.
  - b. Install jumper 13-20 (3) and lead 12-B (4) on switch (1). Secure with two lockwashers (5) and screws (6).
  - c. Install instruction plate on switch (if applicable). Secure plate and switch with lockwasher (7) and nut (8).



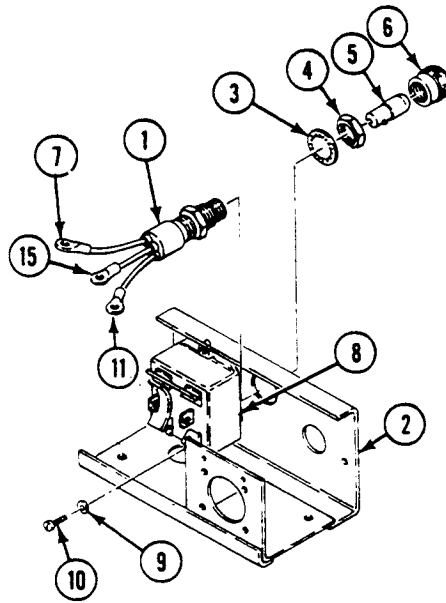
**NOTE**

**Start switch has locked RUN position and spring-loaded START position.**

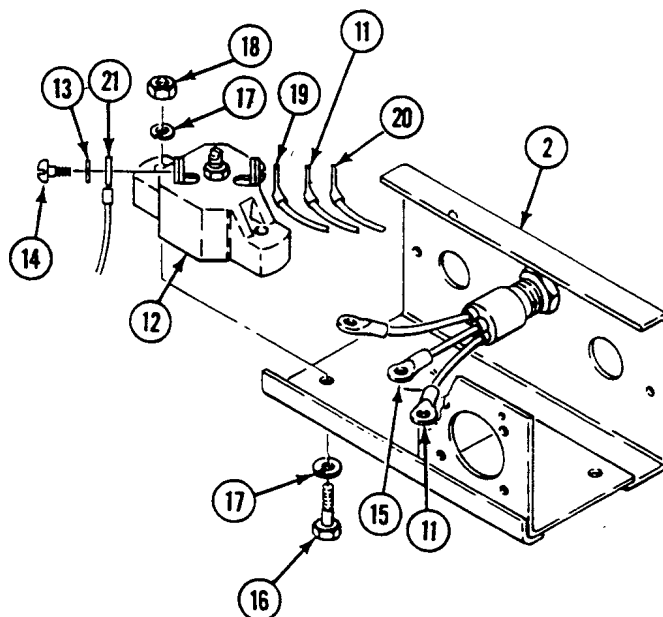
3. Install RUN-OFF-START switch (9) in control box (2).
  - a. Install switch (9) in control box (2) with locked position at the top. Secure with two screws (10).
  - b. Install lead 19-E (11), lead 19-2 (12), jumper 21-14 (13), jumper 21-18 (14), lead 14-A (15), lead 20-C (16), jumper 13-20 (3), and jumper 15-17 (17) on RUN-OFF-START switch (9). Secure with six lockwashers (18) and screws (19).



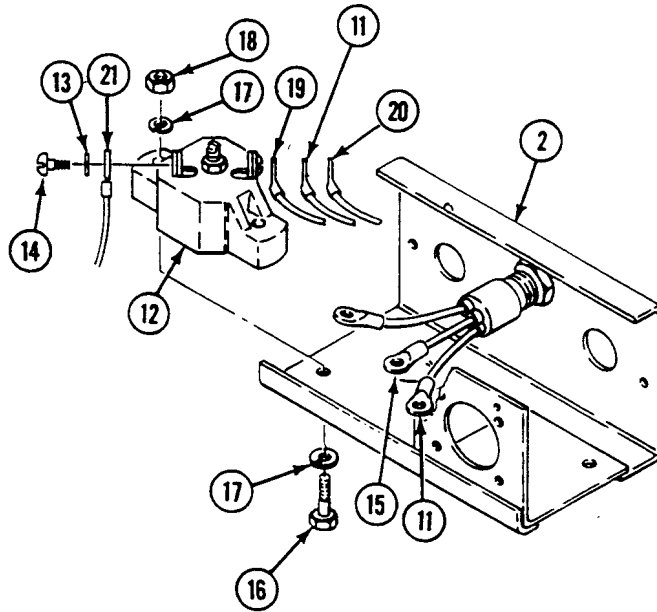
4. Install indicator light assembly (1) in control box (2).
  - a. Install light assembly (1) in control box (2). Secure with lockwasher (3) and nut (4).
  - b. Install bulb (5) and cap (6) in light assembly (1).
  - c. Install lead 19-2 (7) on RUN-OFF-START switch (8). Secure with lockwasher (9) and screw (10).



- d. Install lead 17-3 (11) on circuit breaker (12). Secure with lockwasher (13) and screw (14).
  - e. Install ground lead (15) on circuit breaker (12) mounting screw (16). Secure with two new lockwashers (17) and nut (18).



5. Install circuit breaker (12) in control box (2).
  - a. Install circuit breaker (12) in control box (2). Secure with four new lockwashers (17), two screws (16), ground lead (15), and two nuts (18).
  - b. Install lead 17-D (19), lead 17-3 (11), and jumper 15-17 (20) on one terminal, and lead 16 (21) on other terminal of circuit breaker (12). Secure with two lockwashers (13) and screws (14).



#### FOLLOW-THROUGH STEPS

1. Install heater control box (WP 0613 00).

**END OF TASK**





**REPLACE FUEL SHUTOFF VALVE ASSEMBLY (M113A2 AND M1059 ONLY)**

**0615 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0615 00-1).  
 Installation (page 0615 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Heater fuel shutoff valve closed (see your -10)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)

Wiping rag (WP 0782 00, Item 76)

Preformed packing

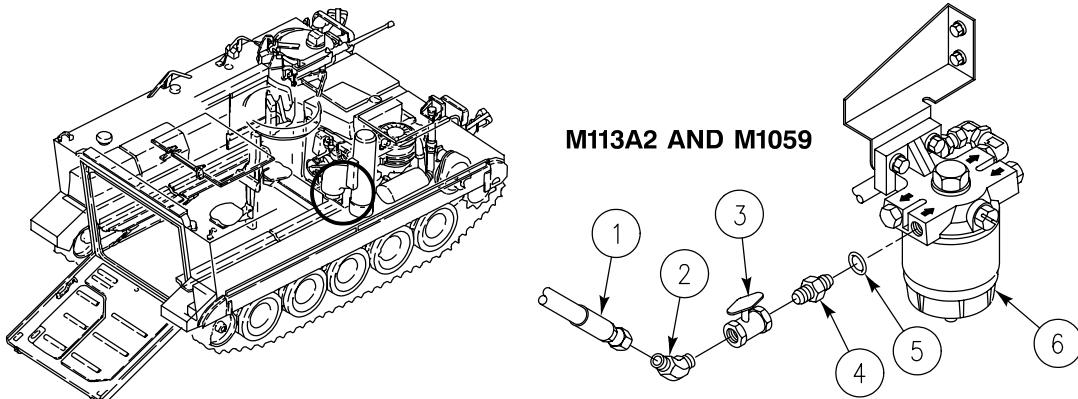
**REMOVAL**

**WARNING**

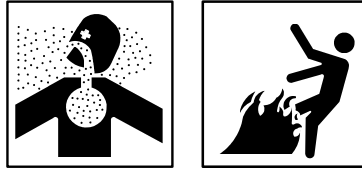


**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove fuel filter supply hose (1) from adapter (2) on elbow. Wipe up spilled fuel with rags.
2. Remove inlet elbow (2) from shutoff valve (3).
3. Remove shutoff valve (3), adapter (4), and preformed packing (5) from heater fuel filter (6). Discard preformed packing.



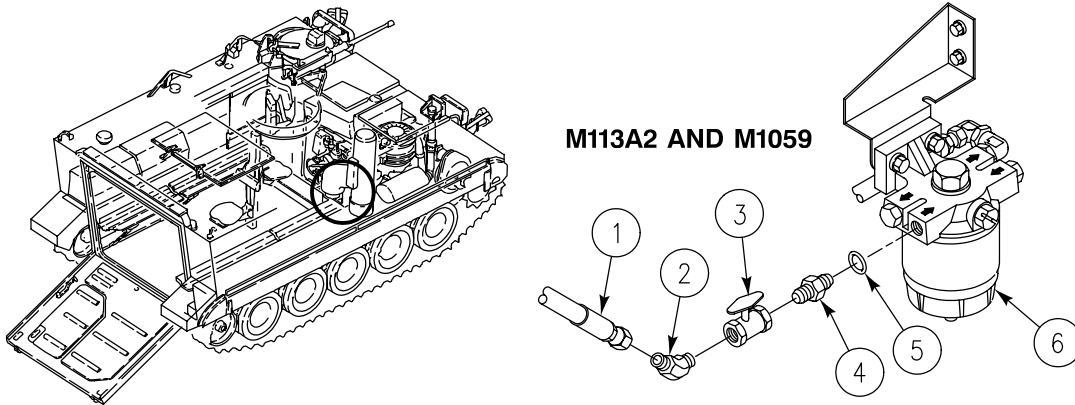
## INSTALLATION

**WARNING**

Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.

Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.

1. Apply thin layer of sealing compound to external tapered threads.
2. Install new preformed packing (5), adapter (4), and shutoff valve (3) on heater fuel filter (6).
3. Install inlet elbow (2) on shutoff valve (3).
4. Install fuel filter supply hose (1) on adapter (2).

**FOLLOW-THROUGH STEPS**

1. Open heater fuel shutoff valve (see your -10).
2. Bleed air from fuel lines (WP 0599 00).
3. Turn heater ON (see your -10). Check for proper operation and leaks.
4. Turn heater OFF (see your -10).

**END OF TASK**

---

**REPLACE PERSONNEL HEATER FUEL FILTER/BRACKET  
(M113A2 AND M1059 ONLY)**

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**0616 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0616 00-2).  
Installation (page 0616 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Heater fuel shutoff valve closed (see your -10)

Materials/Parts

Sealing compound (WP 0782 00, Item 60)

Wiping rags (WP 0782 00, Item 76)

Locknut (2)

Lockwasher (2)

Packing (4)

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**REPLACE PERSONNEL HEATER FUEL FILTER/BRACKET (M113A2 AND M1059 ONLY) — Continued**

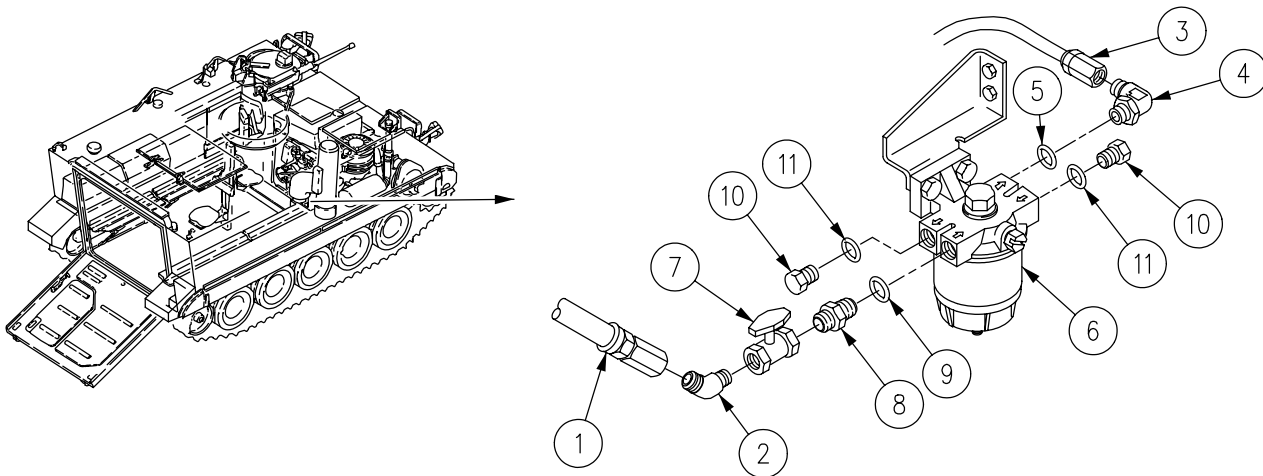

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0616 00

**REMOVAL****WARNING**

**Diesel fuel can catch fire and seriously injure or kill soldiers and damage or destroy vehicles. Wipe up fuel spills immediately. Do not smoke near fuel or when working on the fuel system.**

1. Remove heater fuel inlet hose (1) from elbow (2). Wipe up spilled fuel with rags.
2. Remove heater fuel outlet hose (3) from elbow (4). Wipe up spilled fuel with rags.
3. Remove elbow (4) and packing (5) from port 4 of fuel filter (6). Discard packing.
4. Remove elbow (2), valve (7), adapter (8), and packing (9) from port 1 of fuel filter (6). Discard packing.
5. Remove two plugs (10) and packings (11) from ports 2 and 3 of fuel filter (6). Discard packings.



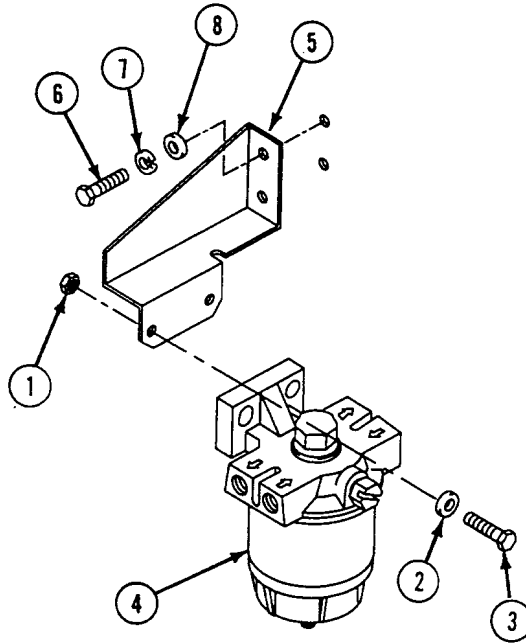
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**REPLACE PERSONNEL HEATER FUEL FILTER/BRACKET (M113A2 AND M1059 ONLY) — Continued**

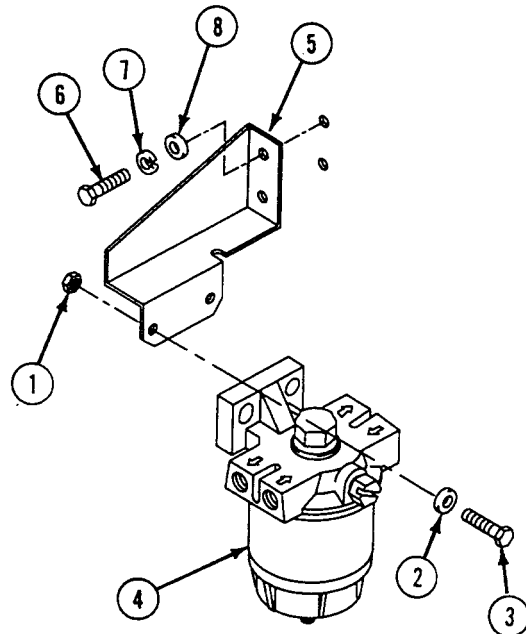

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0616 00

6. Remove two locknuts (1), washers (2), screws (3), and fuel filter (4) from bracket (5). Discard locknuts.
7. Remove two screws (6), lockwashers (7), washers (8), and bracket (5) from hull. Discard lockwashers.

**INSTALLATION**

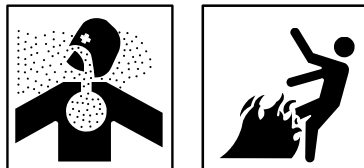
1. Install bracket (5) on hull. Secure with two screws (6), new lockwashers (7), and washers (8).
2. Install fuel filter (4) on bracket (5) with port 4 facing hull. Secure with two screws (3), washers (2), and new locknuts (1).



**REPLACE PERSONNEL HEATER FUEL FILTER/BRACKET (M113A2  
AND M1059 ONLY) — Continued**

0616 00

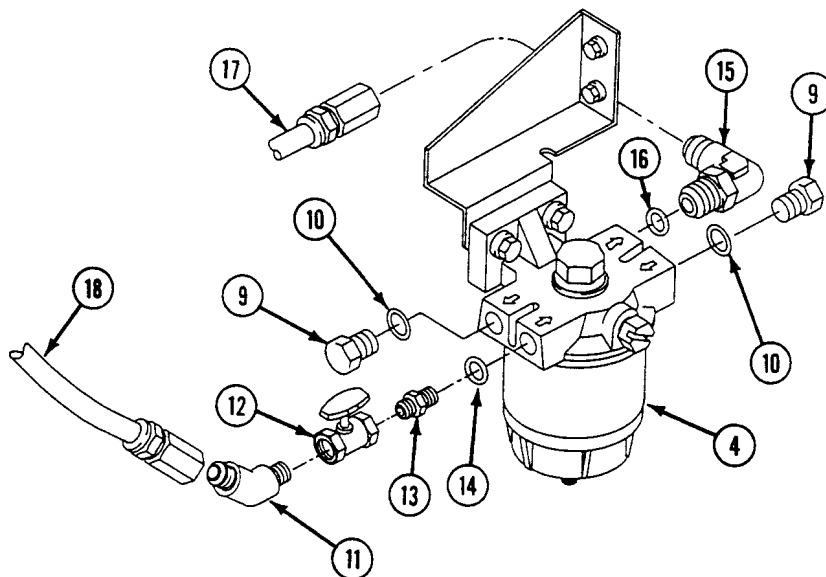
- Install two plugs (9) and new packings (10) in ports 2 and 3 of fuel filter (4).

**WARNING**


**Adhesive, primer, sealant compounds, and isopropyl alcohol are toxic and flammable. These compounds are toxic to eyes, skin, and respiratory tract. Continued exposure can make you dizzy and irritate your eyes and throat.**

**Always use in well ventilated areas, away from heat, sparks, and flames. Do not breathe fumes. Do not allow into contact with skin and eyes. Use goggles or face shield and protective gloves.**

- Install elbow (11), valve (12), adapter (13), and new packing (14) in port 1 of fuel filter (4). Apply sealing compound to external pipe threads of elbow and adapter.
- Install elbow (15) and new packing (16) in port 4 of fuel filter (4).
- Install outlet hose (17) on elbow (15).
- Install inlet hose (18) on elbow (11).


**FOLLOW-THROUGH STEPS**

- Open heater fuel shutoff valve (see your -10).
- Bleed air from fuel lines (WP 0599 00).
- Start heater (see your -10). Check for leaks. Turn heater off.

**END OF TASK**

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**REPLACE PERSONNEL HEATER DUCT AND HOSES**

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**0617 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0617 00-2).  
Installation (page 0617 00-3).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

Ramp lowered (see your -10)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

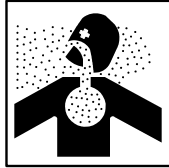
Personnel Required

Unit Mechanic

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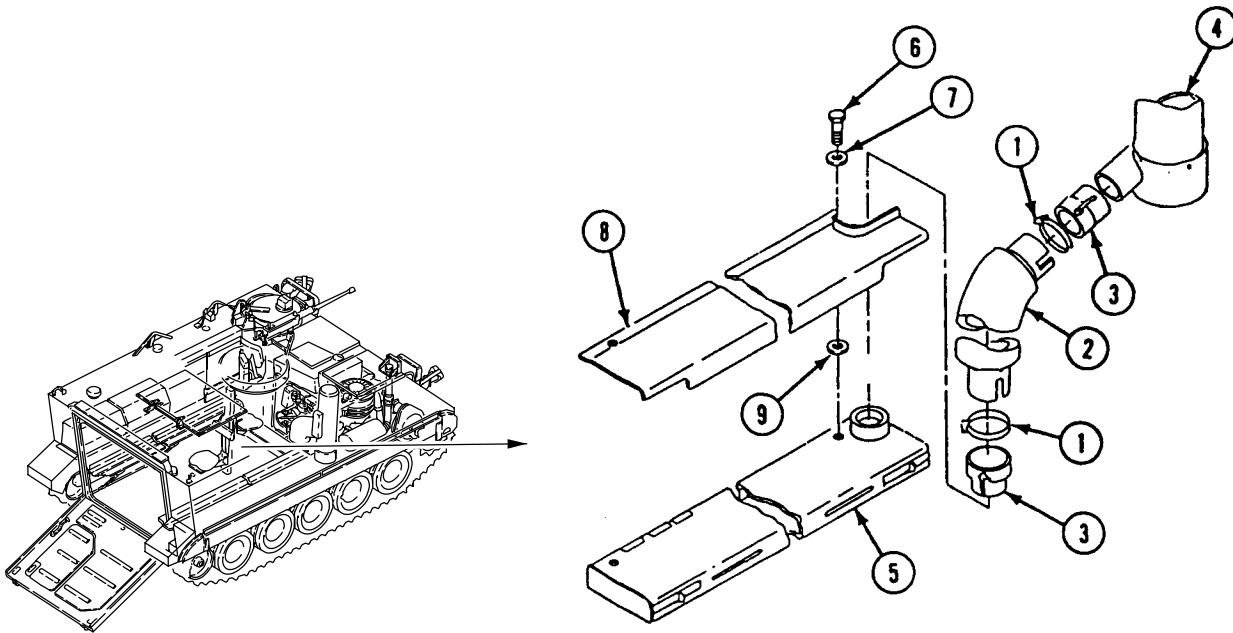
**REMOVAL**

1. Loosen two clamps (1). Remove hose (2) from two nipples (3). Remove clamps from hose.
2. Loosen latches. Remove nipple (3) from duct (4) and nipple (3) from duct (5).

**WARNING**

**The insulator blanket is made out of asbestos. Handle with care. Discard insulator blanket properly as a hazardous material per local standard operating procedure. The insulator washer takes the place of the blanket.**

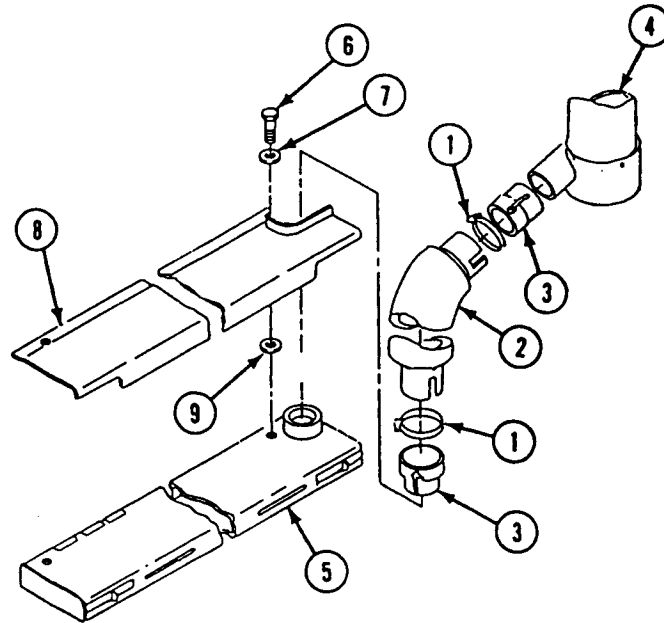
3. Remove three screws (6), washers (7), shield (8), three insulator washers (9), and duct (5) from carrier.





**INSTALLATION**

1. Align duct (5), three insulator washers (9), and shield (8) with holes in carrier floor. Secure with three washers (7) and screws (6).
2. Install nipple (3) in duct (5) and nipple (3) in duct (4). Secure with latch on each nipple.
3. Install two clamps (1) on hose (2). Secure hose in two nipples (3) with clamps.

**FOLLOW-THROUGH STEPS**

1. Start engine (see your -10).
2. Raise and lock ramp (see your -10).
3. Stop engine (see your -10).

**END OF TASK**



**REPAIR PERSONNEL HEATER DUCT**

**0618 00**

**THIS WORK PACKAGE COVERS:**

Disassembly (page 0618 00-1).  
 Assembly (page 0618 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

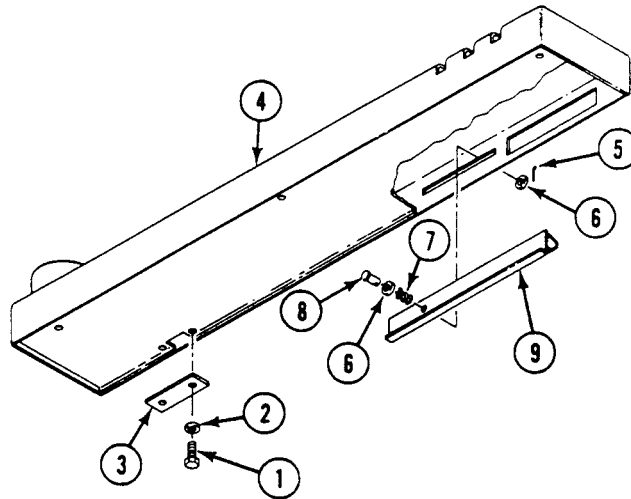
Heater duct removed (WP 0617 00)

Materials/Parts

Cotter pin (2)

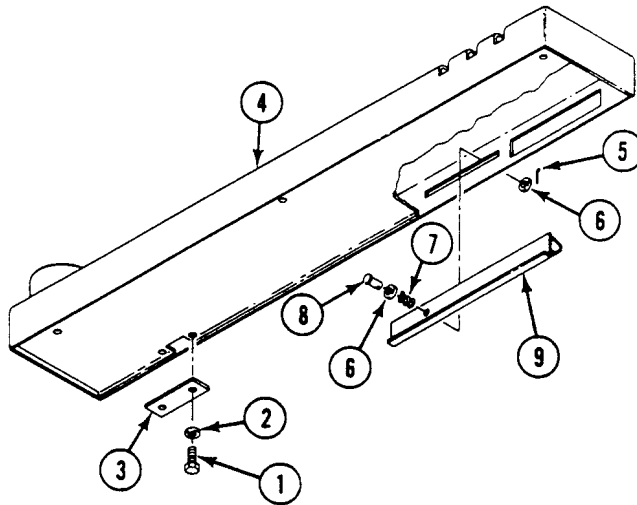
**DISASSEMBLY**

1. Remove four screws (1), washers (2), and two access covers (3) from bottom of heater duct (4).
2. Remove two cotter pins (5), four washers (6), two springs (7), pins (8), and valves (9) from duct (4) through access openings. Discard cotter pins.



**ASSEMBLY**

1. Install two valves (9) through bottom access openings on heater duct (4). Install two pins (8), four washers (6), and two springs (7) through valves. Secure with two new cotter pins (5).
2. Install two access covers (3) to bottom of heater duct (4). Secure with four washers (2) and screws (1).

**FOLLOW-THROUGH STEPS**

1. Install heater duct (WP 0617 00).

**END OF TASK**

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**REPLACE PERSONNEL HEATER ASSEMBLY (ALL EXCEPT M1064)**

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**0619 00**

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**THIS WORK PACKAGE COVERS:**

Removal (page 0619 00-2).  
 Installation (page 0619 00-5).

---

**INITIAL SETUP:**

Maintenance Level

Unit

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

Lockwasher (11)

Personnel Required

Unit Mechanic

References

TM 9-2540-207-14&P

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Equipment Condition

Engine stopped (see your -10)

Carrier blocked (see your -10)

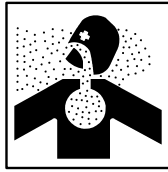
Battery ground strap disconnected (WP 0294 00)

Power plant rear access panel removed (WP 0431 00,  
 WP 0432 00, and WP 0433 00)

Heater hose removed from plenum (WP 0617 00)

Heater fuel shutoff valve closed (see your -10)

## REMOVAL

**WARNING**

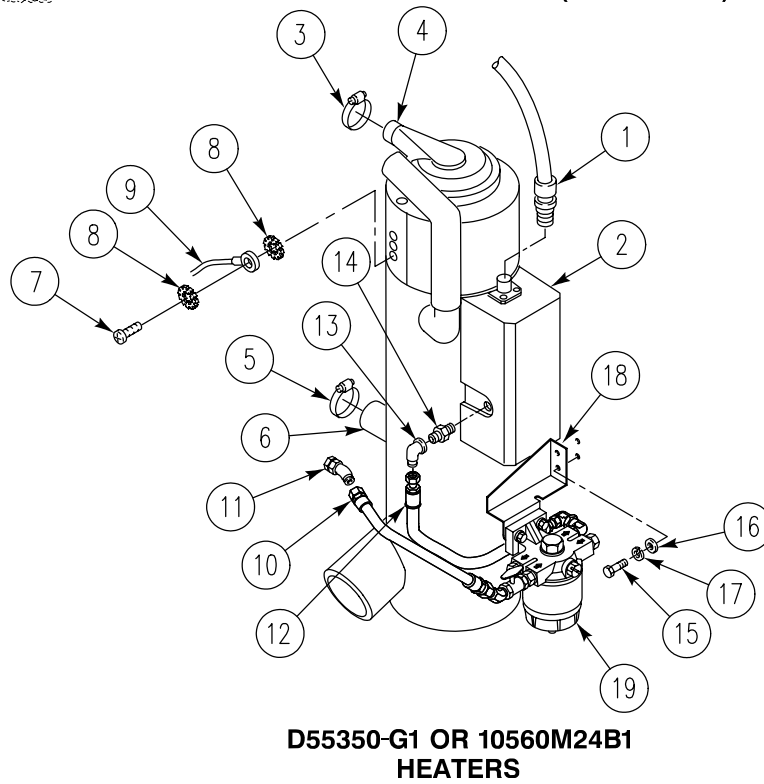
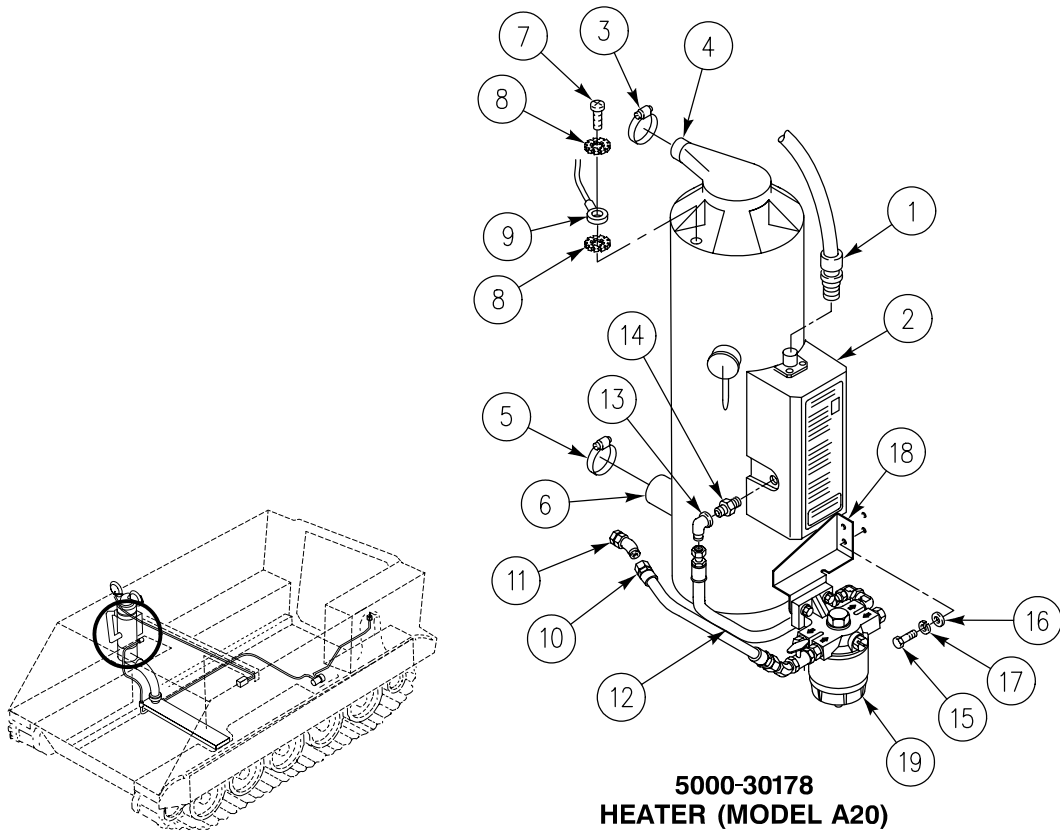
**Exhaust fumes can poison you if wrong heater is installed. Do not interchange “common air” heater for a “dual air” heater.**

1. Disconnect heater wiring harness (1) from heater (2).
2. Loosen clamp (3) on heater intake pipe (4).
3. Loosen clamp (5) on heater exhaust pipe (6).
4. Remove screw (7), two lockwashers (8), and ground strap (9) from heater (2). Discard lockwashers.
5. Remove heater fuel inlet hose (10) from fitting (11) on bulkhead.
6. Remove inlet hose (12) from elbow (13) on heater (2).
7. Remove elbow (13) from nipple (14). Remove nipple from heater (2).

**NOTE**

**Do Step 8 if heater fuel filter has been added to your carrier.**

8. Remove two screws (15), washers (16), lockwashers (17), and bracket (18) from bulkhead. Remove bracket, filter (19), and fuel hoses (10) and (12) from carrier. Discard lockwashers.







**INSTALLATION**

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**WARNING**

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Exhaust fumes can poison you if wrong heater is installed. Do not interchange “common air” heater for a “dual air” heater.

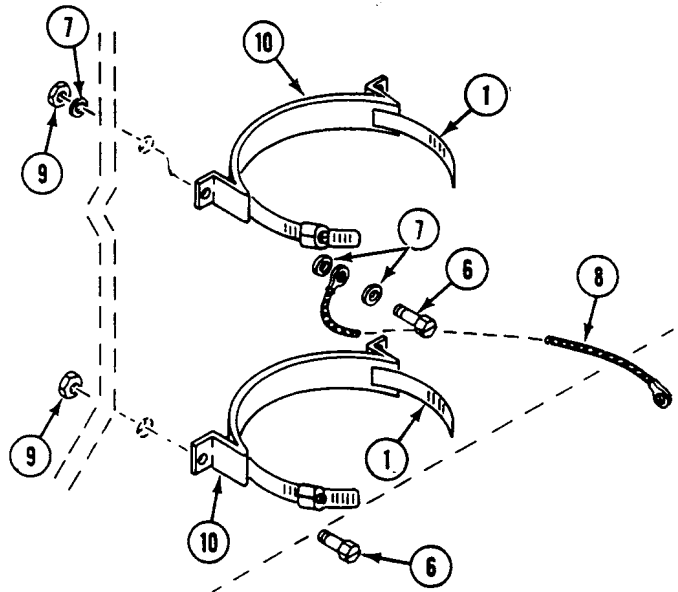
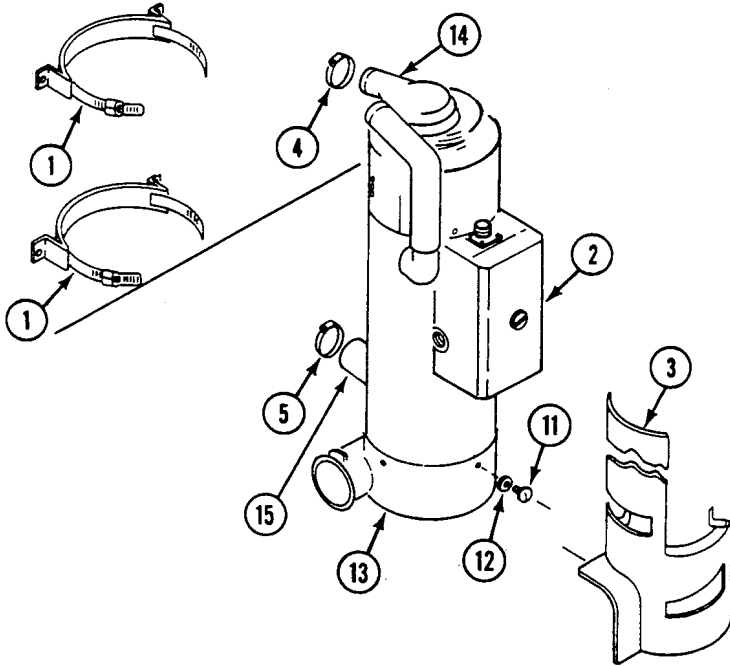
**NOTE**

Heater (P/N 5000–30178) has a vent outlet seal where plenum (13) is secured to heater (2). Install new vent outlet seal each time plenum is removed. See TM 9-2540-207-14&P, Model A20.

REPLACE PERSONNEL HEATER ASSEMBLY (ALL EXCEPT M1064) — Continued

0619 00

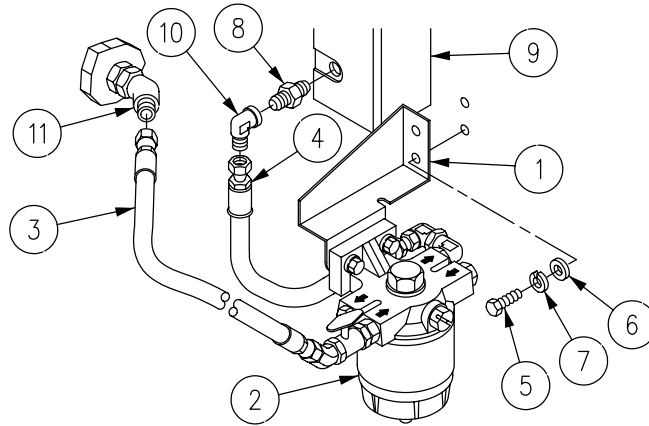
1. Install plenum (13) on heater (2). Secure with four new lockwashers (12) and screws (11).
2. Install two clamps (1) in two mounts (10).
3. Install two mounts (10) on power plant bulkhead. Secure with four screws (6), three new lockwashers (7), ground strap (8), and four nuts (9).
4. Slide clamp (4) on heater intake pipe (14) and clamp (5) on heater exhaust pipe (15). Install heater (2) and shield (3) on mounts (10). Secure with two clamps (1).



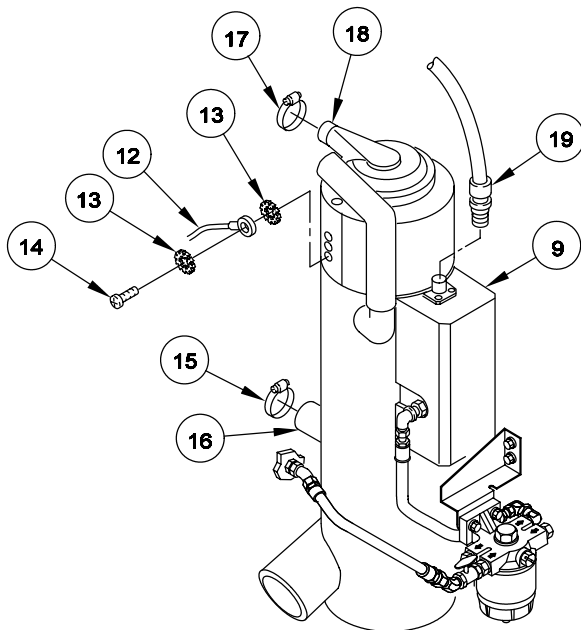
**NOTE**

**Do Step 5 if your carrier has the heater fuel filter.**

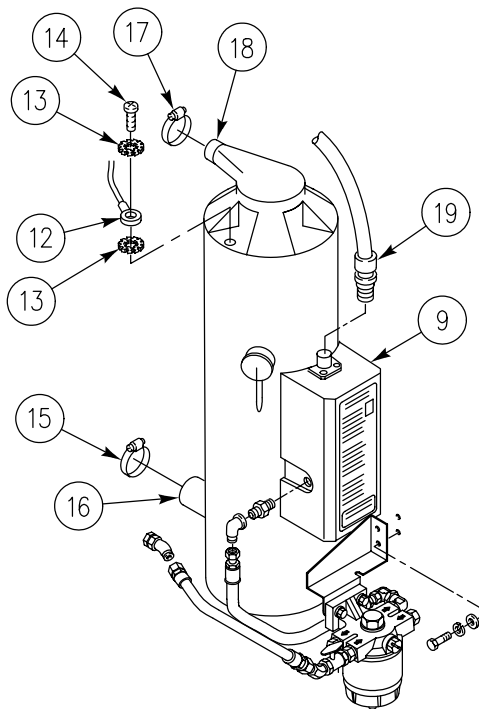
5. Install bracket (1) with filter (2) and fuel hoses (3) and (4) on bulkhead. Secure with two screws (5), washers (6), and new lockwashers (7).
6. Install nipple (8) in heater (9).
7. Install elbow (10) on nipple (8).
8. Connect fuel hose (4) from OUT port of filter (2) to elbow (10) on heater (9).
9. Connect fuel hose (3) from IN port of filter (2) to fitting (11) on bulkhead.



10. Install ground strap (12) on heater (9). Secure with two new lockwashers (13) and screw (14).
11. Tighten clamp (15) on heater exhaust pipe (16).
12. Tighten clamp (17) on heater intake pipe (18).
13. Connect heater wiring harness (19) to heater (9).



**D55350-G1 OR 10560M24B1  
HEATERS**



**MIL-PRF-6255012  
HEATER (MODEL A20)**

**FOLLOW-THROUGH STEPS**

1. Install heater hose on plenum (WP 0617 00).
2. Install power plant rear access panel (WP 0431 00, WP 0432 00, and WP 0433 00)
3. Connect battery ground strap (WP 0294 00).
4. Open heater fuel shutoff valve (see your -10).
5. Start heater (see your -10). For heater with P/N 5000-30178 (Model A20), see TM 9-2540-207-14&P. Check heater for proper operation. Turn heater off.

**END OF TASK**

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**REPAIR PERSONNEL HEATER ASSEMBLY**

**0620 00**

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**THIS WORK PACKAGE COVERS:**

Repair (page 0620 00-1).

---

**INITIAL SETUP:**

Maintenance Level

Unit

References

TM 9-2540-205-24&P

TM 9-2540-207-14&P

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Personnel heater assembly removed (WP 0619 00 or WP 0621 00)

Personnel Required

Unit Mechanic

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**REPAIR**

1. To repair personnel heater (P/N D55350-G1 or 10560M24B1), see TM 9-2540-205-24&P.
2. To repair personnel heater (P/N 5000-30178), see TM 9-2540-207-14&P.

**FOLLOW-THROUGH STEPS**

1. Install personnel heater assembly (WP 0619 00 or WP 0621 00).

**END OF TASK**



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**REPLACE PERSONNEL HEATER ASSEMBLY (M1064 ONLY)**

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**0621 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0621 00-2).  
 Installation (page 0621 00-4).

---

**INITIAL SETUP:**

Maintenance Level

Unit

References

TM 9-2540-207-14&P

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

Ramp lowered (see your -10)  
 Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Battery ground strap disconnected (WP 0294 00)  
 Heater fuel shutoff valve closed (see your -10)  
 Heater hose removed from plenum (WP 0617 00)  
 Fuel hose disconnected from heater (WP 0609 00)  
 Power plant rear access panel removed (WP 0433 00)

Materials/Parts

Locknut (4)  
 Lockwasher  
 Lockwasher (3)  
 Lockwasher (4)

Personnel Required

Unit Mechanic

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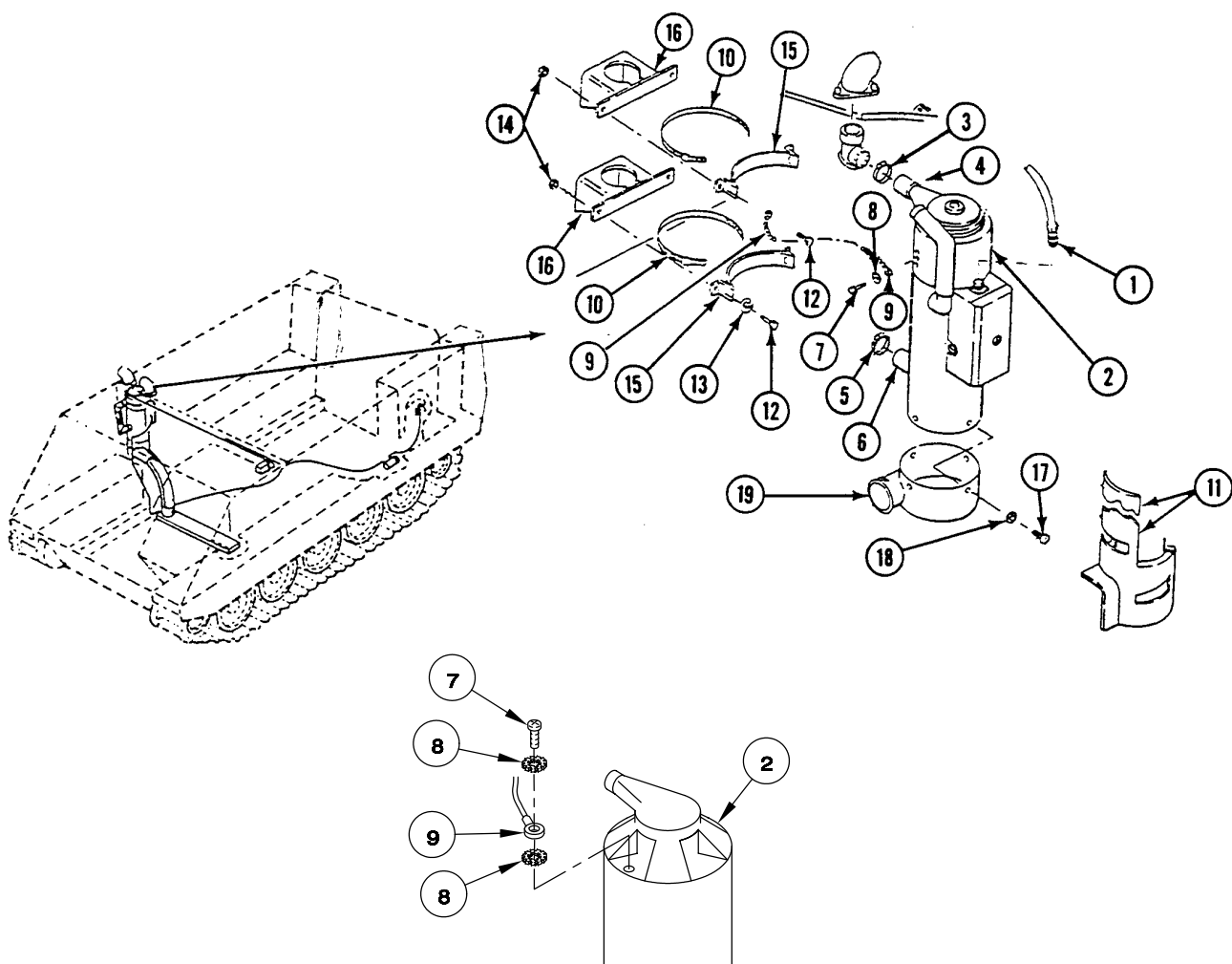
**REMOVAL**

1. Disconnect wiring harness (1) from heater (2).
2. Loosen clamp (3) on heater intake pipe (4).
3. Loosen clamp (5) on heater exhaust pipe (6).

**NOTE**

**For A20 heaters, ground strap is attached to top of heater.**

4. Remove screw (7), lockwasher (8), and ground strap (9) from heater (2). Discard lockwasher.
5. Loosen two clamps (10). Remove heater (2) and shield (11) from carrier. Remove clamps (3) and (5) from heater.

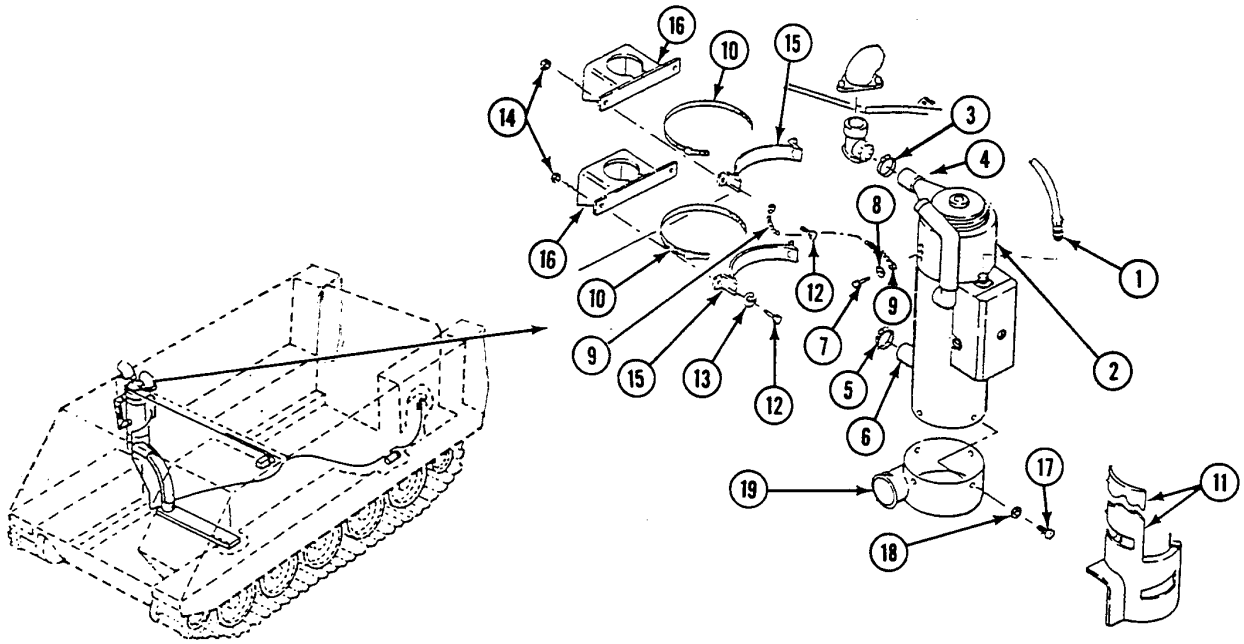




REPLACE PERSONNEL HEATER ASSEMBLY (M1064 ONLY) — Continued

0621 00

6. Remove four screws (12), three lockwashers (13), ground strap (9), four locknuts (14), and mounts (15) from right wall mounts (16). Remove two clamps (10) from mounts (15). Discard lockwashers and locknuts.
7. Remove four screws (17), lockwashers (18), and plenum (19) from heater (2). Discard lockwashers.



## INSTALLATION

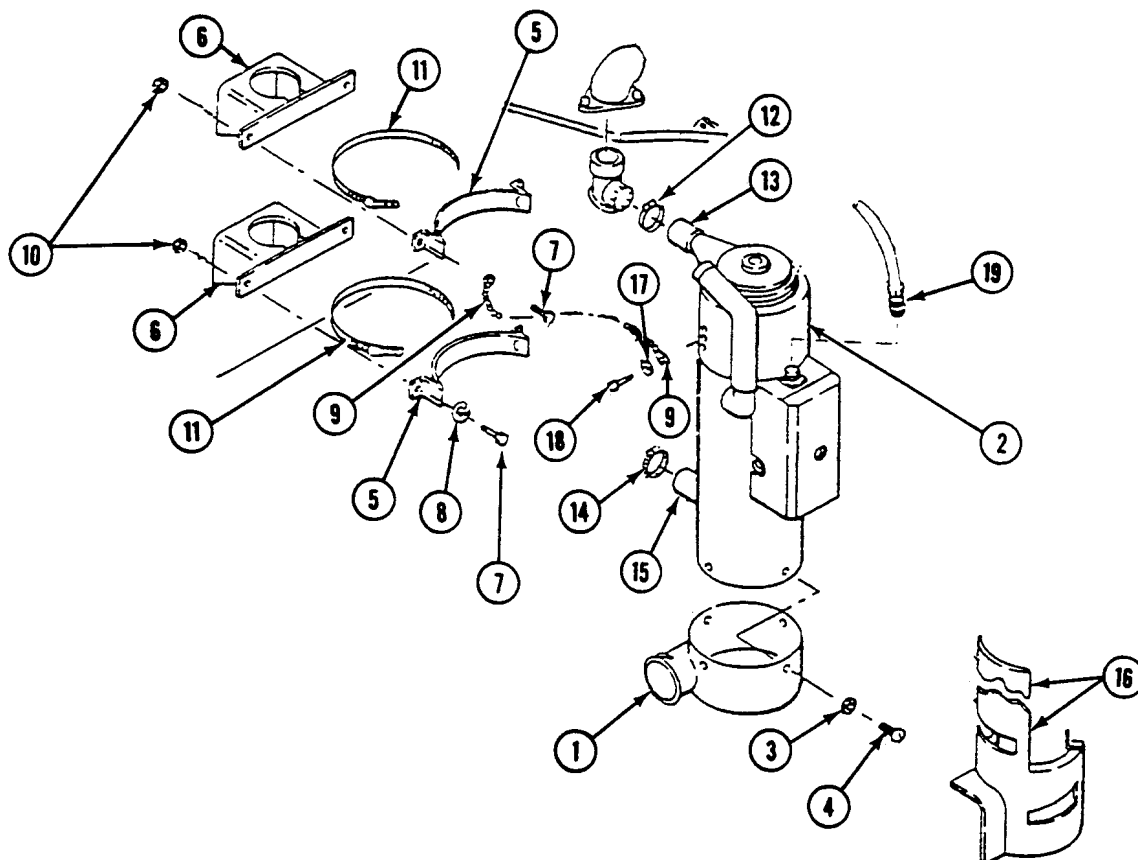
**WARNING**

Exhaust fumes can poison you if wrong heater is installed. Do not interchange “common air” heater for a “dual air” heater.

**NOTE**

For A20 heaters, the vent outlet seal must be replaced EVERY time the heater is reinstalled into a vent ducting system. See TM 9-2540-207-14&P.

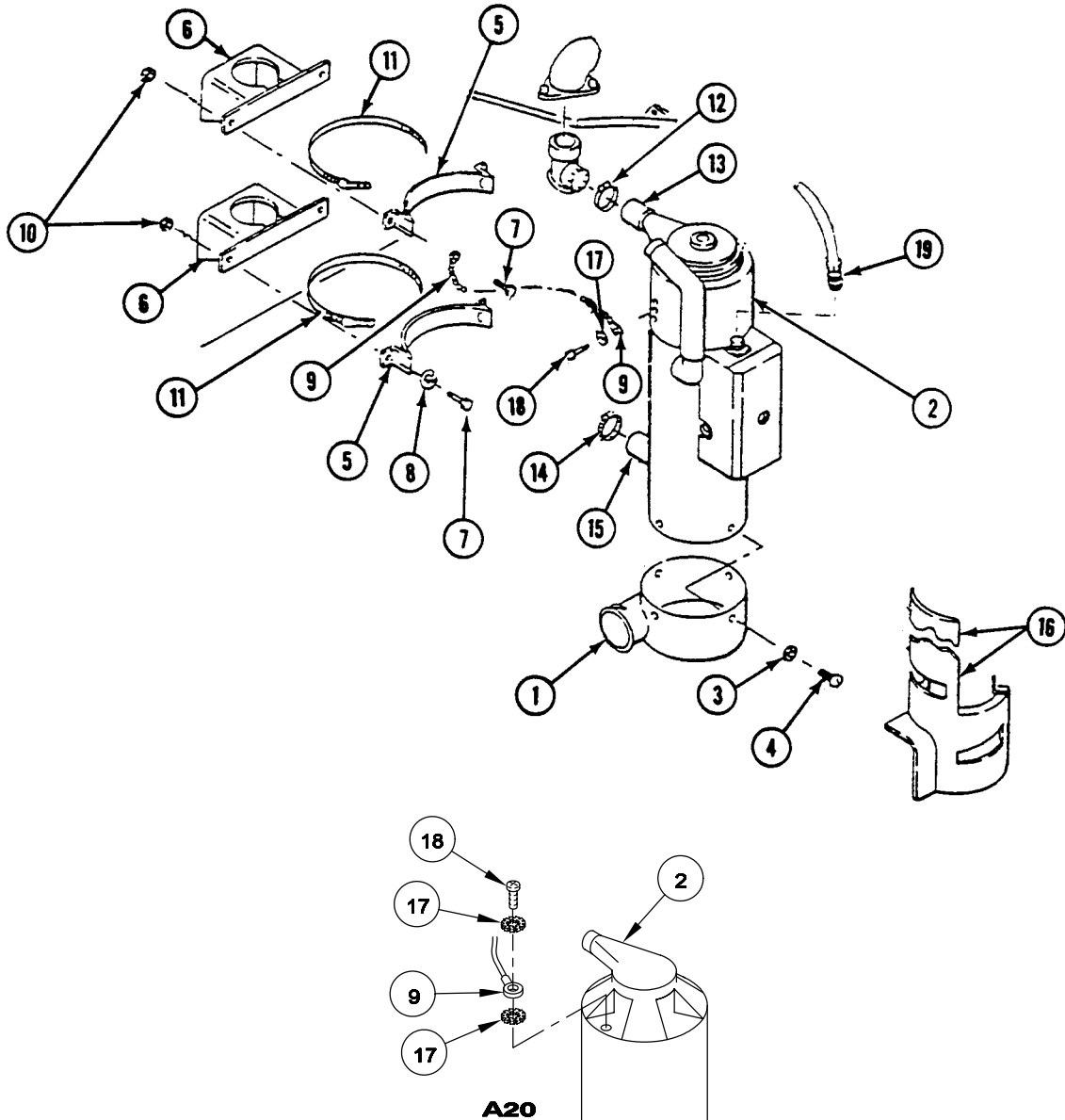
1. Install plenum (1) on heater (2) with four new lockwashers (3) and screws (4).
2. Install two mounts (5) on right wall mounts (6). Secure with four screws (7), three new lockwashers (8), ground strap (9), and four new locknuts (10).
3. Install two clamps (11) in two mounts (6).
4. Slide clamp (12) on heater intake pipe (13) and clamp (14) on heater exhaust pipe (15). Place heater (2) and shield (16) on mounts (5). Secure with two clamps (11).



**NOTE**

**For A20 heaters, ground strap is attached to top of heater.**

5. Place ground strap (9) on heater (2). Secure with two new lockwasher (17) and screw (18).
6. Tighten clamp (14) on heater exhaust pipe (15) and clamp (12) on heater intake pipe (13).
7. Connect heater wiring harness (19) to heater (2).



**FOLLOW-THROUGH STEPS**

1. Connect fuel hose to heater (WP 0609 00).
2. Install heater hose on plenum (WP 0617 00).
3. Open heater fuel shutoff valve (see your -10).
4. Install power plant rear access panel (WP 0433 00)
5. Connect battery ground strap (WP 0294 00).
6. Start heater (see your -10). For heater with P/N 5000–30178 (Model A20), see TM 9-2540-207-14&P. Check heater for proper operation. Turn heater off.
7. Raise and lock ramp (see your -10).
8. Stop/shutdown engine (see your -10).

**END OF TASK**

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**REPLACE HEATER AIR INTAKE AND EXHAUST PIPES  
(ALL EXCEPT M1064)**

---

**0622 00**

**THIS WORK PACKAGE COVERS:**

- Removal (page 0622 00-2).
  - Installation (page 0622 00-3).
- 

**INITIAL SETUP:**

Maintenance Level

Unit

Equipment Condition

- Engine stopped (see your -10)
- Carrier blocked (see your -10)
- Ramp lowered (see your -10)
- Battery ground strap disconnected (WP 0294 00)
- Power plant rear access panel removed (WP 0431 00,  
WP 0432 00, and WP 0433 00)
- Heater assembly removed (WP 0619 00)

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Materials/Parts

- Gasket (2)
- Gasket (2)
- Locknut (4)

Personnel Required

Unit Mechanic

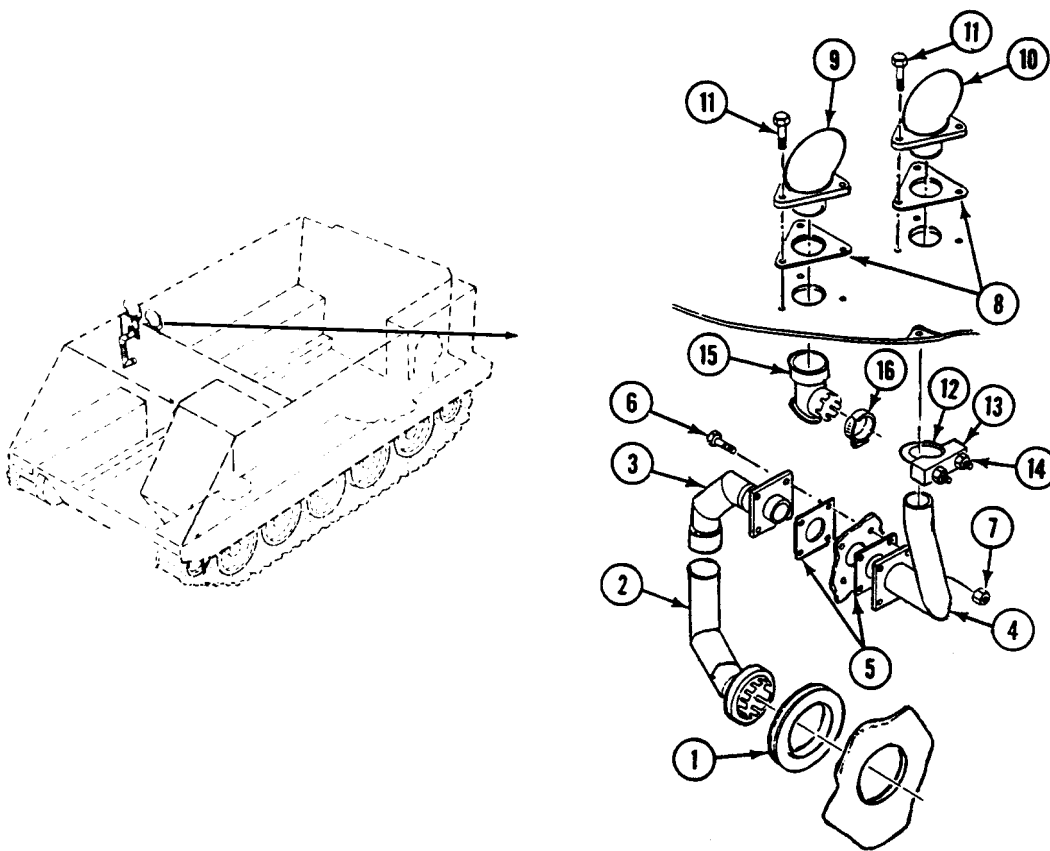
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**REPLACE HEATER AIR INTAKE AND EXHAUST PIPES (ALL EXCEPT M1064) — Continued**

0622 00

**REMOVAL**

1. Remove clamp (16) and elbow (15) from intake elbow (9).
2. Remove two nuts (14), U-bolt (12), and clamp (13) from exhaust pipe (4).
3. Remove six screws (11), intake elbow (10), exhaust elbow (9), and two gaskets (8) from carrier top deck. Discard gaskets.
4. Remove four screws (6), locknuts (7), two bulkhead gaskets (5), and exhaust pipes (2), (3), and (4) from power plant bulkhead. Discard gaskets and locknuts.
5. If necessary, remove grommet (1) from power plant bulkhead. Discard grommet.



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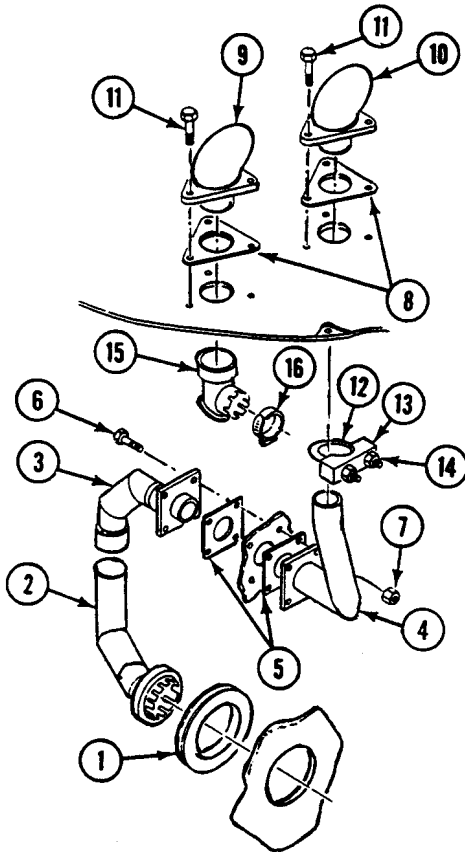
**REPLACE HEATER AIR INTAKE AND EXHAUST PIPES (ALL EXCEPT M1064) — Continued**


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0622 00

**INSTALLATION**

1. If grommet (1) was discarded, install new grommet in power plant bulkhead.
2. Install exhaust pipe (2) in grommet (1). Install exhaust pipe (3) on pipe (2).
3. Align two exhaust pipes (3) and (4) and two new bulkhead gaskets (5) with power plant bulkhead. Secure with four screws (6) and new locknuts (7).
4. Place new elbow gasket (8) on exhaust elbow (10). Install elbow in top deck.
5. Place new elbow gasket (8) on intake elbow (9). Install elbow in top deck.
6. Secure two elbows (9) and (10) to top deck with six screws (11).
7. Secure pipe (4) to exhaust elbow (10) with U-bolt (12), clamp (13), and two nuts (14).
8. Connect elbow (15) to intake elbow (9) and place clamp (16) on intake elbow (9).



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**REPLACE HEATER AIR INTAKE AND EXHAUST PIPES (ALL EXCEPT M1064) — Continued**

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**0622 00**

**FOLLOW-THROUGH STEPS**

1. Install heater assembly (WP 0619 00).
2. Connect battery ground strap (WP 0294 00).
3. Start heater. Check for intake and exhaust leaks. Turn heater off (see your -10).
4. Install power plant rear access panel (WP 0431 00, WP 0432 00, and WP 0433 00).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**



**REPLACE HEATER AIR INTAKE AND EXHAUST PIPES (M1064 ONLY)**

**0623 00**

**THIS WORK PACKAGE COVERS:**

Removal (page 0623 00-1).  
 Installation (page 0623 00-2).

**INITIAL SETUP:**

Maintenance Level

Unit

Personnel Required

Unit Mechanic

Tools and Special Tools

General Mechanic's Tool Kit (WP 0780 00, Item 29)

Equipment Condition

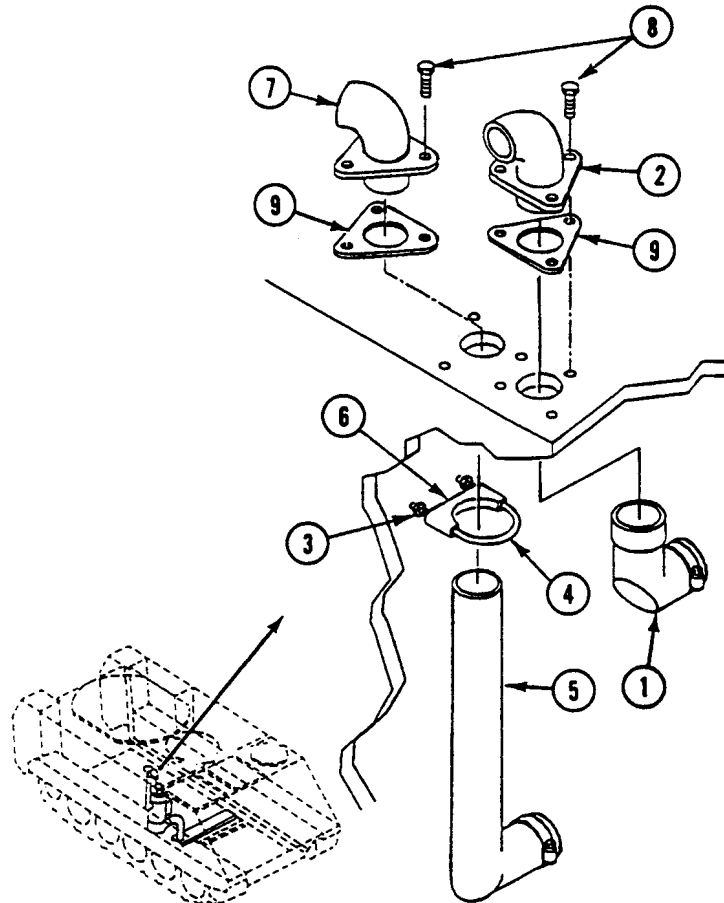
Engine stopped (see your -10)  
 Carrier blocked (see your -10)  
 Ramp lowered (see your -10)  
 Battery ground strap disconnected (WP 0294 00)  
 Heater assembly removed (WP 0621 00)

Materials/Parts

Gasket (2)

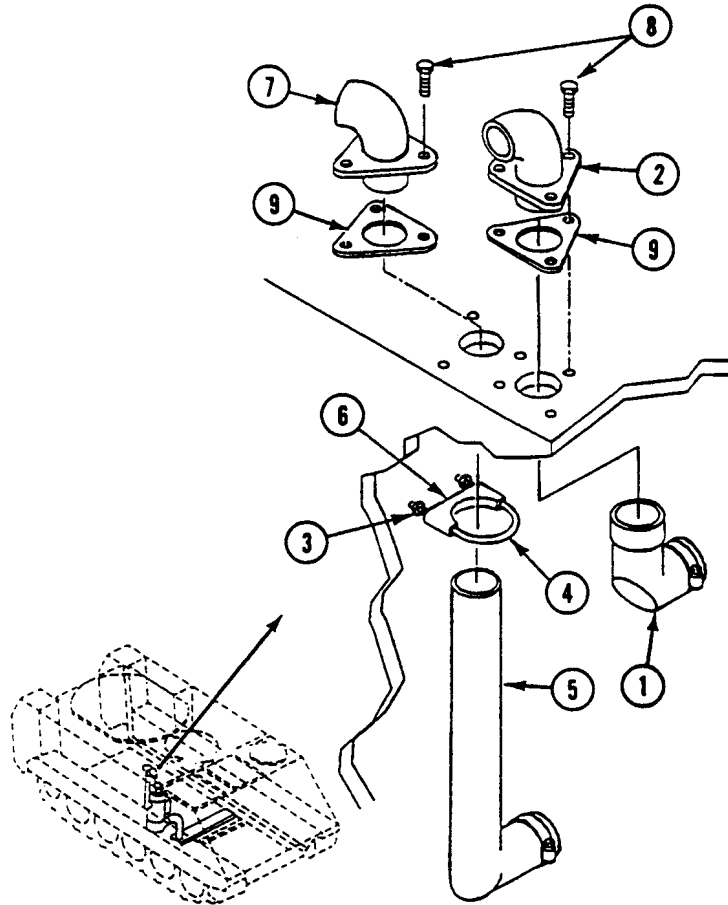
**REMOVAL**

1. Remove air intake pipe (1) from intake elbow (2).
2. Loosen two nuts (3) on U-bolt (4), and remove exhaust pipe (5) and clamp (6) from exhaust elbow (7).
3. Remove six screws (8), intake elbow (2), exhaust elbow (7), and two gaskets (9) from carrier top deck. Discard gaskets.



**INSTALLATION**

1. Install exhaust elbow (7), intake elbow (2), and two new gaskets (9) on carrier top deck. Secure with six screws (8).
2. Install exhaust pipe (5) on exhaust elbow (7). Secure with U-bolt (4), clamp (6), and two nuts (3).
3. Install intake pipe (1) on intake elbow (2).



**FOLLOW-THROUGH STEPS**

1. Install heater assembly (WP 0621 00).
2. Connect battery ground strap (WP 0294 00).
3. Start heater. Check for intake and exhaust leaks. Turn heater off (see your -10).
4. Start engine (see your -10).
5. Raise and lock ramp (see your -10).
6. Stop/shutdown engine (see your -10).

**END OF TASK**



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<b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b>  <b>For use of this form, see AR 25-30; the proponent agency is ODISC4.</b>	Use Part II (reverse) for Repair Parts and Special Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals SC/SM).	Date
<b>TO:</b> (Forward to proponent of publication or form) (Include ZIP Code)	<b>FROM:</b> (Activity and location) (include ZIP code)	

**PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS**

PUBLICATION/FORM NUMBER TM 9-2350-261-20-3	DATE 26 AUGUST 2005	TITLE Unit Maintenance Manual for M113A2, M577A2, M1064, M1068, M1059 and M901A1
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ITEM	PAGE	PARA	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON
0052 00-4						Inspection Step 1 WP reference should be (WP 0003 00)  <div style="text-align: center; font-size: 4em; opacity: 0.5;">             SAMPLE           </div>

*\*Reference to line numbers within the paragraph or subparagraph.*

TYPED, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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<b>TO: (Forward direct to addressee listed in publication)</b>	<b>FROM: (Activity and location) (Include Zip Code)</b>	<b>Date</b>
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**PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS**

<b>PUBLICATION/FORM NUMBER</b> TM 9-2350-261-20-3	<b>DATE</b> 26 AUGUST 2005	<b>TITLE</b> Unit Maintenance Manual for M113A2, M577A2, M1064, M1068, M1059 and M901A1
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<b>PAGE NO.</b>	<b>COLM NO.</b>	<b>LINE NO.</b>	<b>NATIONAL STOCK NUMBER</b>	<b>REFERENCE NO.</b>	<b>FIGURE NO.</b>	<b>ITEM NO.</b>	<b>TOTAL NO. OF MAJOR ITEMS SUPPORTED</b>	<b>RECOMMENDED ACTION</b>
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**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).*

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By Order of the Secretary of the Army:

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

Official:

  
SANDRA R. RILEY  
*Administrative Assistant to the*  
*Secretary of the Army*  
0520002

**DISTRIBUTION:** To be distributed in accordance with the initial distribution requirements for IDN: **371201**, requirements for TM 9-2350-261-20-3.

# THE METRIC SYSTEM AND EQUIVALENTS

## LINEAR MEASURE

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

## WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1000 Grams = 2.2 Lb.  
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

## LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

## SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches  
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet  
 1 Sq. Kilometer = 1,000 Sq. Meters = 0.386 Sq. Miles

## CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches  
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

## TEMPERATURE

$5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
 212° Fahrenheit is equivalent to 100° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 $(9/5 \times ^{\circ}\text{C}) + 32 = ^{\circ}\text{F}$

## APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Millimeters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

